pwc

Where next for skills?

How business-led upskilling
can reboot Australia

August 2020

Executive summary

Pre-COVID-19, Australia was already in a prolonged productivity slump. Now that's set to worsen unless the nation upskills – and fast.

The workforce has suffered a significant shock due to COVID-19, characterised by substantial job losses, a drastic drop in migration, and a shift to digital delivery. What Australia needs now is a business-led recovery that's built on upskilling and supported by government initiatives.

Prior to COVID-19, technological change was already reshaping the skills that workers needed to thrive in a digital world. Post COVID-19, emerging technologies and increased automation will drive the digitalisation of business at an accelerated pace. This will fundamentally change the way many jobs are carried out.

This accelerated digitalisation of businesses presents opportunities for productivity and growth, but also challenges. As machine learning, automation and artificial intelligence (AI) advance, jobs will be disrupted, augmented and replaced.

As jobs change, the ability of the workforce to flex into new roles and develop capabilities will be key to individual and organisational success. The degree to which leaders and economies benefit from this rapid transformation will in large part depend on the skills of the workforce and the ability to adapt to the digital world.

Technical and transferable skills are highly complementary, and both are fundamental for success in a digital world.
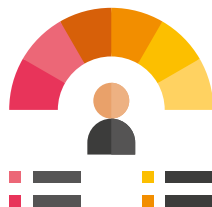
Technical skills:

A technical skill is the ability to carry out a task associated with technical roles such as IT, engineering, mechanics, AI, robotics, science or finance. Typical technical skills are programming, data analysis or the use of specific tools.

Transferable skills:

Transferable skills, often referred to as 'enterprise or soft skills', include digital literacy, problem solving, collaboration, adaptability and creativity among others. These skills represent the ability to collaborate in a virtual world and use rapidly evolving data to solve problems.

For the purposes of this report, the term 'skills' will be used to represent this broader definition of both enterprise (human centred) and technical competency.
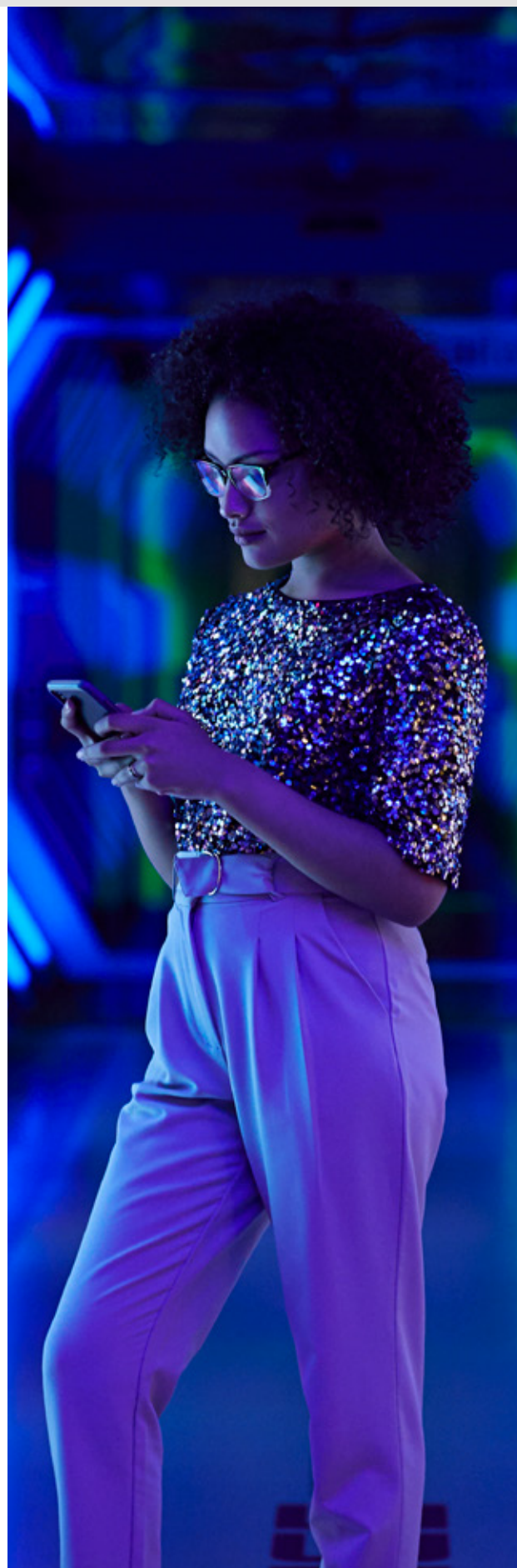
The case for upskilling predates COVID-19

Even pre-COVID-19, technology was predicted to make substantial changes to the workforce. In an Australian context, it is estimated that one in five workers – some 2.7 million people – have jobs that could be completely replaced by automation by 2034, and 4.5 million more Australians now have jobs that could be augmented by technology in a way that will lift their productivity.[1]

PwC has projected the areas most likely to require reskilling and upskilling using our Geospatial Economic Model (GEM) of 2,300 regions across Australia. While the most concentrated job losses will be in the central business areas; industrial sites like Port Botany in NSW, West Melbourne and Melbourne Airport will be most heavily affected.

Pre-COVID-19, Australia was not adequately addressing the upskilling challenge

The PwC global CEO Survey highlighted that 78% of Australian CEOs believe that the availability of key skills is a 'top three' threat to growth.[2]

Despite this apparent concern, PwC's Upskilling Hopes and Fears survey of over 22,000 respondents across the globe, including over 2,000 adults in Australia, shows that Australian workers are less likely to be upskilling than their global peers. Only 23% of Australians say that upskilling is happening within their workplace (second least likely behind the UK).[3]

The COVID-19 pandemic has magnified the need for new skills

The need to retrain is significant. As a result of the COVID-19 lockdown, Australia faces years of higher unemployment.[4] The unemployed are most likely to be at the extremes of their working lives (ie. younger and older workers).

Traditionally, many Australian businesses relied on skilled migration to fill local skills gaps.[5] The sudden closure of international borders has made that almost impossible for the time being. (Migration is expected to be 85% lower in the coming year.)[6] Australia therefore needs to reskill local workers to fulfil roles where there are skills shortages.

Due to COVID-19, the existing skills challenge has become more complex and more urgent.

In a post-COVID-19 recovery, upskilling can be led by business

To meet the demands of accelerated technological change without skilled migration, business needs to shift its focus and urgency to reskilling and upskilling employees. Technology and accelerated digitalisation will not deliver the promised productivity gains if there are not enough workers with the right skills, and the ability to apply them.

Specifically, business needs to:

- **See skills as an investment, not an expense:** If people are a priority for business, then skilling them must be a priority, too. One way to ensure this is to make upskilling the responsibility of the CEO and executive leadership team; it can't be the responsibility of HR or Learning and Development alone.

- **Determine the skills required to thrive in an accelerated digital environment:** Organisations need to identify and understand their skills needs. This is not just about identifying 'big' technical skills of the future (eg. AI, automation, robotics, data visualisation); it's also about the core transferable (enterprise or soft) skills that enable digital know-how, such as communication and collaboration in a virtual world, and rapid data-based problem solving.

- **Rethink and digitise traditional learning pathways:** The exponential rate of change to in-demand technical and transferable skills requires organisations to rethink their learning programs to enable workers to learn fast, and to apply their learning faster. Digitising learning pathways and delivery methods is key.

- **Unleash citizen-led innovation:** This is about creating a shared movement. Leaders should ensure that digital experimentation is formally integrated into an employee's day-to-day role, and oriented toward direct contribution.

- **Embed upskilling as a key part of employee experience:** As organisations compete for key talent and skills, investment in the 'whole' employee experience is integral. The benefits of upskilling programs include stronger corporate culture, employee engagement, higher workforce productivity, improved talent acquisition, and employee retention. An embedded upskilling approach differentiates organisations in the marketplace.

At the same time, recovery needs to be supported by governments that:

- **Work with business to deliver more responsive upskilling opportunities:** Business and government work in partnership to enable individuals to iteratively upgrade their skills in a way that protects them against the rising tide of automation, and allows them to progress through their career with a lifetime of learning.

- **Deliver a national credentialing system that embraces shorter-form credentials:** Micro-credentialing is an obvious area where government and industry can partner to achieve better outcomes. In developing incentives and programs to support micro-credentials, government can assist by reducing the administrative burden and simplifying the system so individuals can easily engage with upskilling opportunities.

- **Target roles at risk of automation and prioritise policy to address Australia's digital divide:** Digital acceleration in the coming years will exacerbate the digital divide and impact every industry. Workers who have the opportunity to upskill and improve their digital literacy on the job will have a significant advantage over those who do not.

- **Reprioritise skilled migration:** When borders reopen skilled migration could be reprioritised for technical and transferable skills required for a digital world. There is an opportunity to more acutely drive the system to support skills development. This does not mean more skilled migrants for the sake of having more; care needs to be taken to better match volumes and skills with the needs of industry.
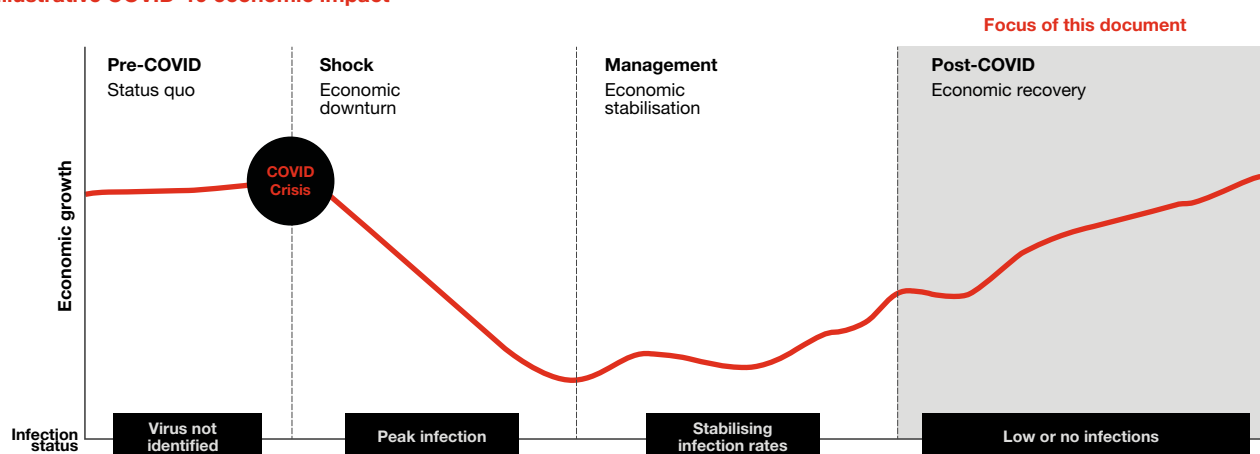
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01 Introduction

Australia has moved through the 'shock' phase of the COVID-19 pandemic and is now beginning the management phase that involves secondary outbreaks. (see figure 1.1).

FIGURE 1.1
The four phases of the COVID-19 pandemic[7]

Illustrative COVID-19 economic impact

Focus of this document

| Pre-COVID | Shock | Management | Post-COVID |
| Status quo | Economic downturn | Economic stabilisation | Economic recovery |

Economic growth

COVID Crisis

| Infection status | Virus not identified | Peak infection | Stabilising infection rates | Low or no infections |

Governments are actively seeking to minimise the risk of business failure and business-specific skills loss through a range of general interventions (e.g. JobKeeper) and other skills-specific interventions (e.g. JobTrainer and Supporting Apprentices and Trainees wage subsidy).[8]

While it is necessary to focus on the immediate 'shock' and 'management' phases, it is also important to consider what the economy and nation will look like in a post-COVID-19 world.

There is a risk that Australians aspire to return to a nation as it was before the pandemic.

Such nostalgia would be a mistake; both in the desirability of that previous state and the ability to return to it. The pace and scale of the shock caused by COVID-19 means that Australia has already changed, and further change is inevitable.

In this report we consider:

- changes arising from the COVID-19 pandemic – particularly given the loss of jobs, the drastic drop in migration, the shift to digital delivery and increased automation

- how business needs to deliver more embedded and effective upskilling

- the role governments can play in supporting improved upskilling.

02 What has changed and what has intensified, as a result of the COVID-19 pandemic?

Key observations

The COVID-19 pandemic has exacerbated Australia's skills challenge.

The recession will mean higher unemployment for the next half decade or so, posing a particular challenge for those who have been displaced most (i.e. those under 20, older workers and females). This will be coupled with rapid technological change that will only intensify as business pivots to digital.

Faced with physical distancing obligations, business and consumers embraced digital, accelerating existing trends. Consumers shifted to online purchasing in greater numbers, workers increasingly worked from home, and businesses moved sales, communication channels and some distribution online. The digital skills needed to support this were already in short supply; these shifts have magnified that shortage.

Traditionally, many Australian businesses have relied extensively on filling skills shortages by tapping the skilled migration channel. This becomes almost impossible in the short term as migration is expected to be 85% lower in the coming year.

Due to COVID-19, the existing skills challenge has become more complex and more urgent.

Employment impacts

Since the COVID-19 crisis began Australia has seen more than a million new people looking for work.

Official Australian Bureau of Statistics (ABS) unemployment figures (figure 2.1), suggest the official unemployment rate understated the true impact of the lockdown. It also reflects:

- the Australian Government's move to protect jobs via the JobKeeper Payment scheme

- a significant drop in workforce participation (figure 2.2). The drop in female participation was initially twice that for males, likely reflecting women taking on greater responsibility for caring for children (temporarily) not at school. In one month, six years of improved female workforce participation was erased.

FIGURE 2.1
Official employment estimates (seasonally adjusted) ABS[9]

ABS unemployment estimates (% of workforce unemployed)		
	Total looking for work (thousands)	Seasonally adjusted
January	435	5.3
February	696	5.1
March	716	5.2
April	842	6.4
May	923	7.1
June	992	7.4

FIGURE 2.2
Workforce participation rate[10]
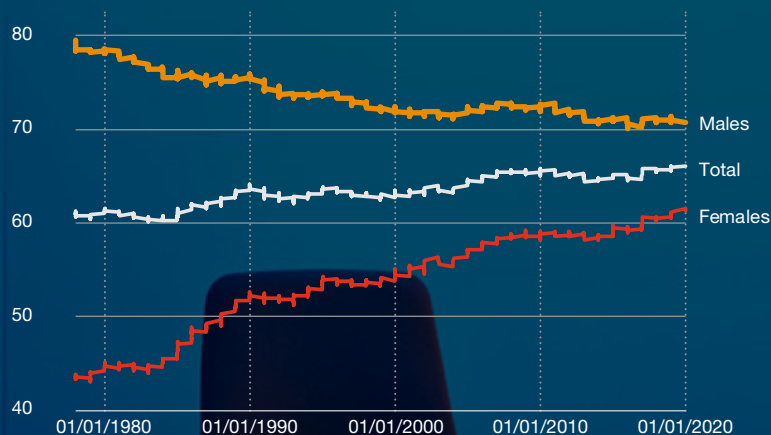
Alternative measures of workforce participation provide greater insight.

Roy Morgan's alternative measure of unemployment, for instance, paints a grimmer picture of the number of people looking for work (figure 2.3).

FIGURE 2.3
Employment estimates: Roy Morgan[11]

	Total looking for work (thousands)	Workforce Unemployed (%)
January	1361	9.7
February	1174	8.3
March (All)	1715	12.2
March (Early)	1019	7.3
March (Late)	2407	16.8
April	2159	15.3
May	2090	14.8
June	2408	14.5

Impacts also varied by gender. It appears that:

• industries that are likely to be last to unwind the imposed shutdown measures are disproportionately female dominated (e.g. arts and recreation, and accommodation and food services).

• a greater percentage of females dropped out of the workforce (see figure 2.2), presumably to look after children being home-schooled.
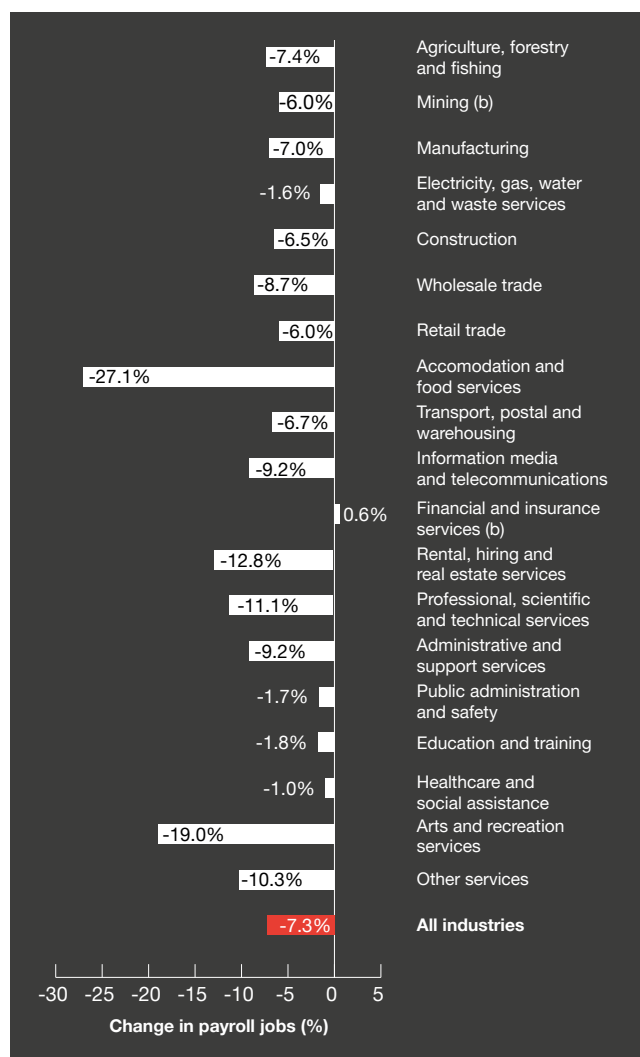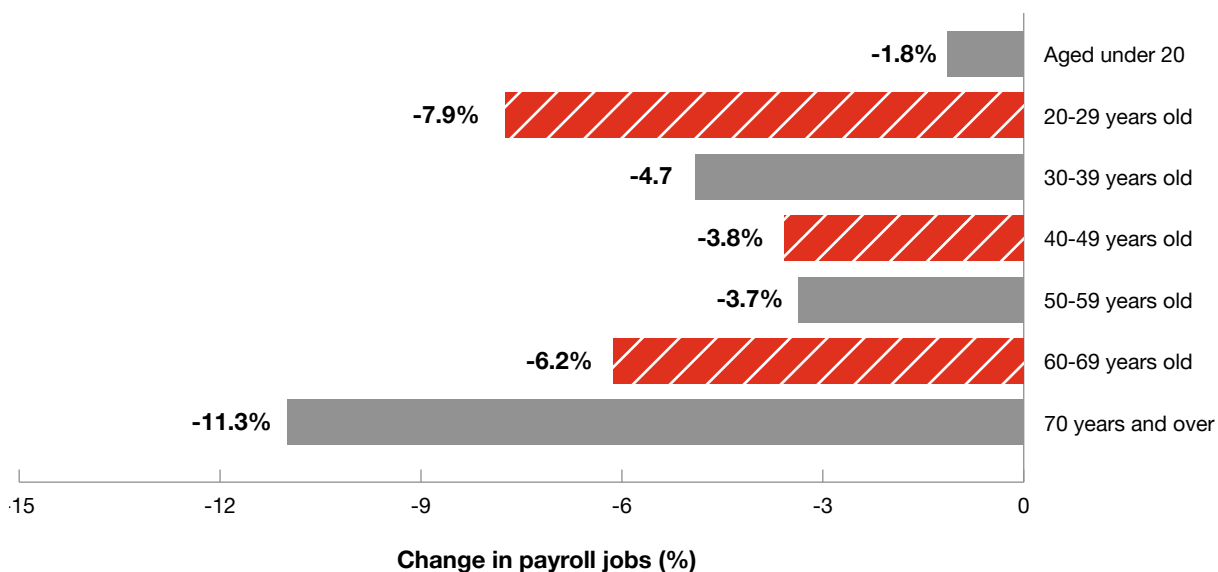
FIGURE 2.4
Employment estimates: Roy Morgan[12]

FIGURE 2.5
Change in payroll jobs between 14 March and 2 May 2020, by age group[13]

-1.8%	Aged under 20
-7.9%	20-29 years old
-4.7	30-39 years old
-3.8%	40-49 years old
-3.7%	50-59 years old
-6.2%	60-69 years old
-11.3%	70 years and over

Change in payroll jobs (%)

Looking at age impacts (figure 2.5), since the week ending 14 March the largest changes in jobs was for:

- people aged 20-29, where jobs decreased by 7.9%

- those aged 70 years and over, where jobs decreased by 11.3%.

While the government has sought to protect employment through the JobKeeper scheme, Australians can expect higher unemployment for some time.[14]

This means Australia has a re-employment challenge that may last a number of years, and which will affect different industries to varying degrees. It also has both age and gender implications. In short, COVID-19 has created new complexity because of the scale and pattern of unemployment.

Border controls

The first step in Australia's response to COVID-19 was to restrict people coming from overseas. As the pandemic evolved, Australia introduced even stronger barriers to international travel, at the same time as airlines reduced capacity. With international travel restrictions likely to remain in place throughout 2020 and 2021, greater clarity and consistency around travel exemptions based on critical skills criteria is important.

With travel bans in place, the Australian government is expecting 'quite significant falls' in net migration with an estimated 85% decrease in net migration this financial year (i.e. an increase of just 36,000 people), mostly as a result of border closures.[15]

This is a significant decline from the 2018-2019 year, when the ABS reported that the country's population grew by nearly 240,000. In fact, Australia's net migration figure has exceeded 180,000 every year since 2006 and, if these predictions are correct, then Australia will experience the lowest population increase in more than 40 years.

A reduction in immigration is a substantial issue for many Australian businesses because of their reliance on migrants to fill skills gaps.

A pivot to digital

The imposition of social distancing obligations, and the shutdown of certain activities, unleashed a number of self-reinforcing forces.[16] In particular:

- **Remote working will become the new normal:** In June, PwC's Global COVID-19 CFO Pulse survey found that more than 50% of CFOs plan to make remote work a permanent option (where feasible), and 75% believe the work flexibility they have created in response to the crisis will benefit

their company in the long run.[17]

- **Consumers purchasing more online:** Technology has been driving changes in consumer behaviour over the past decade, however, this trend was dramatically accelerated with the economic shock caused by COVID-19.

- **Businesses flexing to deliver services remotely (i.e. principally through digital channels):** The ABS reports that in March 38% of businesses changed the method of delivery for goods or services (including via online).[18] Those businesses most commonly reporting this change were in: accommodation and food services (66%); health care and social assistance (66%); education and training (57%); other services (57%); and information, media and telecommunications (56%).

It's safe to assume a significant portion of these changes will be embedded in Australia's post-COVID-19 environment. In fact, these changes will likely intensify. Roughly half of CFOs said they intend to automate and implement new ways of working as they transition back to on-site operations.[19] These shifts pose clear skills and policy challenges, including:

- Increased reliance on technology-enabled delivery means new and/or more high-tech skills will be required over traditional lower-tech skills.

- Ensuring that any digital divide is managed to overcome barriers of access, affordability, and digital ability.

COVID-19 & the Digital Divide

During the lockdown ABS household survey identified that 15% of households have had no access to a stable internet connection. This is reinforced by Figure 2.6 which shows key demographics that have lower than average Australian Digital Inclusion Index (ADDI) scores.

Rank	Select Demographic	ADDI Score	Points change since 2018
1	Household Income Q5 (Under $35k)	43.3	+2.1
2	Mobile only	43.7	+1.1
3	Aged 65+	48.0	+2.1
4	Less than secondary education	49.4	+2.1
5	Disability	52.0	+2.4
6	Household Income Q4 ($35-60k)	53.1	+1.8
7	Not in labour force	53.8	+1.9
8	Indegenous Australians	55.1	+1.0
9	Completed Secondary	59.6	+1.1
10	Aged 50-64	60.4	+2.3
	Australia	**61.9**	**+1.7**

Barriers of access, affordability, and digital ability confront many Australians who find themselves on the wrong side of the digital divide.[21] The ability including cognitive skills and digital acumen, required to engage in the digital economy will be even more critical in a post COVID-19 world. These skills can make the difference between an individual who can participate in the economy, access government services, connect with their community, and someone who cannot. People without basic digital and cognitive skills are at risk of being isolated and disconnected from opportunity.

First Nations Australians also experience disproportionate impacts and a lack of employment opportunities compared with Australia's non-indigenous population. First Nations peoples' unique circumstances should also be factored into strategies to digitise workforces and/or communities.

To manage this risk, organisations need to first identify if there will be disproportionate impacts to First Nations peoples as COVID-19 and accelerated digitisation reshape business-as-usual operations.

From there, upskilling strategies can be put in place to mitigate the impacts of workforce dislocation.

Even workers who are not directly impacted by the digital divide may still come up against barriers that prevent them from fully participating in the post COVID-19 digital world. Employees who have the opportunity to upskill and develop their digital acumen on the job will have a significant advantage over those who do not.

Worker perspectives

Before the pandemic hit workers saw the rise of digital technologies as a disruptive force. PwC's Upskilling Hopes and Fears survey showed that 60% of Australian adults are worried that automation is putting jobs at risk.[22] 59% believe technology will change their job in the next three to five years, and 68% believe it will change over the next six to 10 years. Yet there is readiness among Australians to learn. Sixty-nine percent of adults are prepared to learn new skills or completely retrain in order to improve their future employability (this figure jumps to 77% among 18–34 year olds).

Despite this willingness PwC found that only 28% of Australian workers had been provided with skills training in the past 12 months. (see figure 2.7).

60% of Australian adults are worried that automation is putting jobs at risk.

	Yes	No	Not Sure
Has your employer provided you with skills training in the past 12 months to help you adjust to the impact of new technology?	27.7	72.3	-
Does your employer explain how retraining or upskilling will enable you to better perform your role?	31.7	68.3	-
Is your employer providing you with retraining and upskilling in areas that you believe are relevant to the needs of your role?	27.9	46.9	25.2

FIGURE 2.8
What skills do you need in the next 12 months to prepare you for the impact of technology on your role? (Rank up to five skills from the provided list.) The skills that were considered by workers as most needed are identified in green in the below graph.[24]
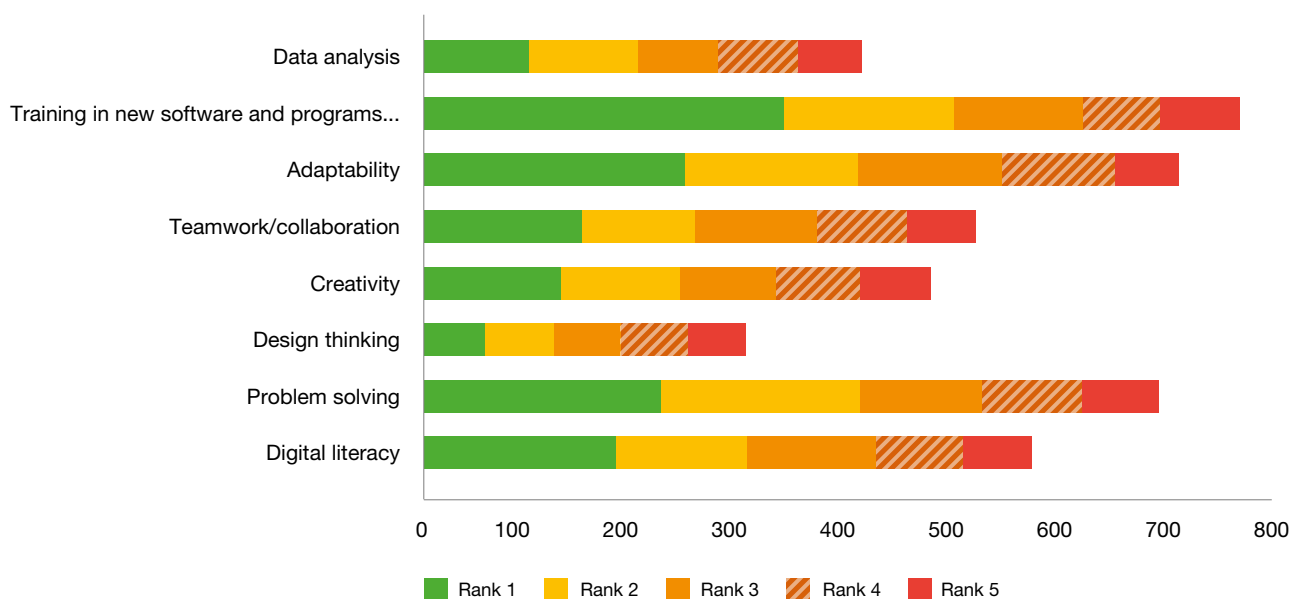
PwC also asked Australian workers to list in priority order what skills they needed to help them adjust to the impact of technology in their role. The top three skills ranked were training in new software, adaptability and problem solving as shown in figure 2.8.

Australia continues to lag behind other developed nations in addressing this skills mismatch. In 2019, the World Economic Forum ranked Australia's population 24th in the world for digital skills, behind the United States, Philippines, Malaysia, Lebanon and Estonia.[25]

03 Business-led digital upskilling

Key observations

If industry wants people with the right skills, they can and should lead the way. Opportunities exist for organisations when addressing ongoing skills formation, development, and re-formation across all levels of their workforce. This requires breaking the mould around how Australian employers (private and public sector) think about learning, upskilling and career development. The opportunities are :

See skills as an investment, not an expense: If people are a priority for a business, then skilling them has to be a priority, too. One way to ensure this is to make upskilling the responsibility of the CEO and executive leadership team; it can't be the responsibility of HR or learning and development alone.

Determine the skills required to thrive in an accelerated digital environment: Organisations need to identify and understand their skills needs. This is not just about identifying 'big' technical skills of the future (e.g. AI, automation, robotics, data visualisation); it's also about the core transferable (or enterprise) skills that enable digital know-how, such as communication and collaboration in a virtual world, and rapid data-based problem solving.

Rethink and digitise traditional learning pathways: The exponential rate of change to in-demand technical and transferable skills requires organisations to rethink their learning programs to enable workers to learn fast, and to apply their learning faster. Digitising learning pathways and delivery methods is key.

Unleash citizen-led innovation: This is about creating a shared movement that everyone is a part of. Leaders can ensure that digital experimentation is formally integrated with an employee's day-to-day role, and oriented toward direct contribution.

Embed upskilling as a key part of your employee experience: As organisations compete for key talent and skills, investment in the 'whole' employee experience is integral. The benefits of upskilling programs include stronger corporate culture, higher workforce productivity, improved talent acquisition, and employee retention. An embedded upskilling approach differentiates organisations in the marketplace.

Australia's institutional training system is well equipped to deliver full qualifications to people not yet in the workforce. These qualifications are often one to four years in length, and enable people to secure their first job. While this will remain important, Australia will also need to invest in skills delivery systems that help people adapt to technological change and to different jobs throughout their career.

At the moment, industry is not upskilling effectively enough. Less than half of Australia's CEOs compared with global CEOs (15% versus global 31%) say their upskilling programs have been very effective at achieving greater innovation and accelerated digital transformation.[26]

15% of Australia's CEOs versus 31% of global CEOs say their upskilling programs have been very effective at achieving greater innovation and accelerated digital transformation.

See skills as an investment, not an expense

Even before the COVID-19 crisis, the majority of CEOs agreed that significant retraining and/or upskilling was the most important way to close a potential skills gap in their organisation. However, only 18% made significant progress towards establishing an upskilling program.[27]

If people are a priority for a business, then skilling them has to be a priority too.

One way to ensure this is to make upskilling the responsibility of the CEO. Of the companies who consistently derive the best value from their digital investments - from growth and profits to innovation and more - 84% make delivering via new ways of working mandatory. This includes making it a core element of their business strategy. These companies consistently invest in the leadership skills and tools needed to make that happen.[28]

When PwC announced its **New World. New Skills** initiative – a $3 billion global upskilling program – in 2019 it was launched by Global Chairman, Bob Mortiz, and was championed by the senior partner in each country. This sent a clear signal that upskilling was a priority for the most senior leaders in the business, which, in turn, encouraged participation and engagement.

While human resource leaders should continue to be the stewards of the workforce, if talent development remains a strictly HR function, without the visibility and drive of the organisation's CEO and executive leadership team, it will likely be seen as a business-as-usual initiative, and not as a strategic priority.

Determine the skills required to thrive in an accelerated digital environment

For CEOs to take ownership of the upskilling agenda, they first need to identify and understand their skills needs. It's important to cast a wide net when defining critical areas for upskilling investments – not just identifying 'big' technical skills of the future such as artificial intelligence, automation, robotics, data visualisation, digital security.

Strategic, enterprise skills are required so that employees in any role can collaborate, troubleshoot, lead and resolve work-related problems in the digital environment.[29] In this context, investment in collaboration, creativity, innovation, imagination and design skills are critical business enablers, alongside digital and technical skills.[30]

Thirty-one percent of Australian CEOs (ahead of 27% of their global peers) say they're making progress in identifying technical upskilling and re-skilling needs.[34] But only 13% of Australian CEOs said they have made 'significant progress' in 'establishing an upskilling program that develops a mix of soft, technical and digital skills'.[35]

When embarking on an upskilling initiative many organisations discover they don't have a sufficient understanding of their current competency profile. Organisational charts and role descriptions are useful starting points for determining the current competencies in a workforce, but they are often not detailed enough to make a meaningful connection to the broader organisational strategy.

First, organisations need to assess and understand what skills will be needed. This should be agnostic of the skills that organisations currently have in order to support and drive business strategy over the next 12, 24 and 48 months. Next, identify the key processes and areas where automation will significantly reduce cost, increase business performance and/or maximise return on investment. Finally, assess which specific roles, teams and employees require targeted upskilling so that they can use new tools and/or perform their job-based tasks.

To build effective adoption and buy-in, organisations should ask: What enabling skills sets are required (across all employee groups) in order to create a culture of digital innovation, curiosity and effective leadership?

A strategic approach to upfront assessment activities could jump-start two of the critical digital enterprise skills identified by the National Centre for Vocational Education Research (NCVER). These critical digital transferable (enterprise) skills are:

- **Digital attitude:** The values and beliefs workers need to master and demonstrate in the digital age

- **Cognitive know-how:** The use of logical, intuitive, innovative and creative thinking in the digital space.[31]

Through assessment activities, organisations have an opportunity to build a groundswell of curiosity across the employee population, augmenting employees' baseline digital awareness.

Rethink and digitise traditional learning pathways

As upskilling becomes not just a business-as-usual initiative but a strategic priority, organisations need to think about, and design, a different way of learning. The skills organisations need today and in the future – creativity, problem solving, an understanding of how digital technology can be used – are a moving target. Planning for the short term used to be relatively easy, but the rapidly evolving landscape makes predictions more precarious. In this new world, organisational learning pathways need to enable workers to learn and apply their skills fast.

Many corporate learning and training efforts fall short because they stop at delivering knowledge. This gives employees new information about digital trends and tools but no opportunities for using them. In a digital world, building digital proficiency must move beyond the classroom and become a key component of an employee's day-to-day work through action-based, real-time learning.

The more directly applicable the learning is to a person's work, the more meaningful it would be as an upskilling experience. To speed up learning, organisations should focus not just on the technical skills, but on building people's strategic acumen so they can come up with new ways to solve real-world business problems, using new tools as part of the solution.

Equally important is for workers to build a diverse skill set, including developing skills outside of their current role description. When thinking about the future of work, the only certainty is that it will look different from today. Workers need to prepare for the changing nature of roles in the workplace.

To do so, organisations of sufficient scale could set up their own credentialisation system using micro-credentials and badges. Such a system acts as recognition for achievement and provides transferability of skills in the future. Micro-credentials are already embraced by many parts of the world and some parts of the Australian economy. In Chapter 4 we discuss the potential for a national micro-credentialing system supported by government.

Unleash citizen-led innovation

A citizen-led approach is more ambitious than workers acquiring new skills or knowledge; it's about creating a shared movement that everyone is a part of.

In a fast-paced digital economy, employees need to be able to upskill on the job and apply new ways of working that boost productivity. It's important to develop a formal model of continual learning in each job. This ensures digital experimentation is formally integrated with an employee's day-to-day role, and oriented toward direct contribution. Inclusion builds a shared reality, a sense of community rooted in the belief that anyone can, and will, adapt to changing ways of work. When everyone buys in, excitement and energy become contagious.

A good skills system will link training and assessment to job roles. A great skills system will find a way of training and assessing via practical on-the-job scenarios. When learning takes place through day-to-day experience, and is directly tied to experimenting and innovating with specific job-based tasks, it is far more relevant. As a result, employees can see the connection to the work they are already doing and how their new digital skills are directly contributing to the organisation's goals and strategy. Nothing is mandated or required. Instead, it's about giving people the resources and the parameters to shake things up from within.

With leadership guidance in place, employees are free to innovate, build, share and test solutions. Turning each employee into an agent of change, innovating and improving business at all levels, every day. Sharing solutions they've built themselves, like bots and automated workflows gets other people invested and builds momentum. Change spreads quickly across the organisation, helping to achieve efficiencies at scale.

Embed upskilling as a comprehensive part of your employee experience

Organisations that invest in their people develop stronger cultures and are more confident of their future success. Forty-one percent of CEOs surveyed by PwC said their upskilling program has been 'very effective' in creating a stronger corporate culture and engaging employees.[32] The survey also revealed that organisations that are more advanced in their upskilling journey registered higher levels of confidence for revenue growth.[33]

Organisations are competing for key talent and skills, and so an investment in the 'whole' employee experience is integral. The benefits of upskilling programs shown in figure 3.1 (e.g. stronger corporate culture and employee engagement, higher workforce productivity, improved talent acquisition and retention) differentiate organisations in the marketplace.

FIGURE 3.1

The top three outcomes from upskilling programs[36]

| | 41%* | 22% | 17% |
| | 41% | 30% | 28% |

Stronger corporate culture and employee engagement — 1

Higher workforce **productivity** — 2

Improved talent **acquisition and retention** — 3

🟥 Australia   ⬜ Global

*All percentage very effective
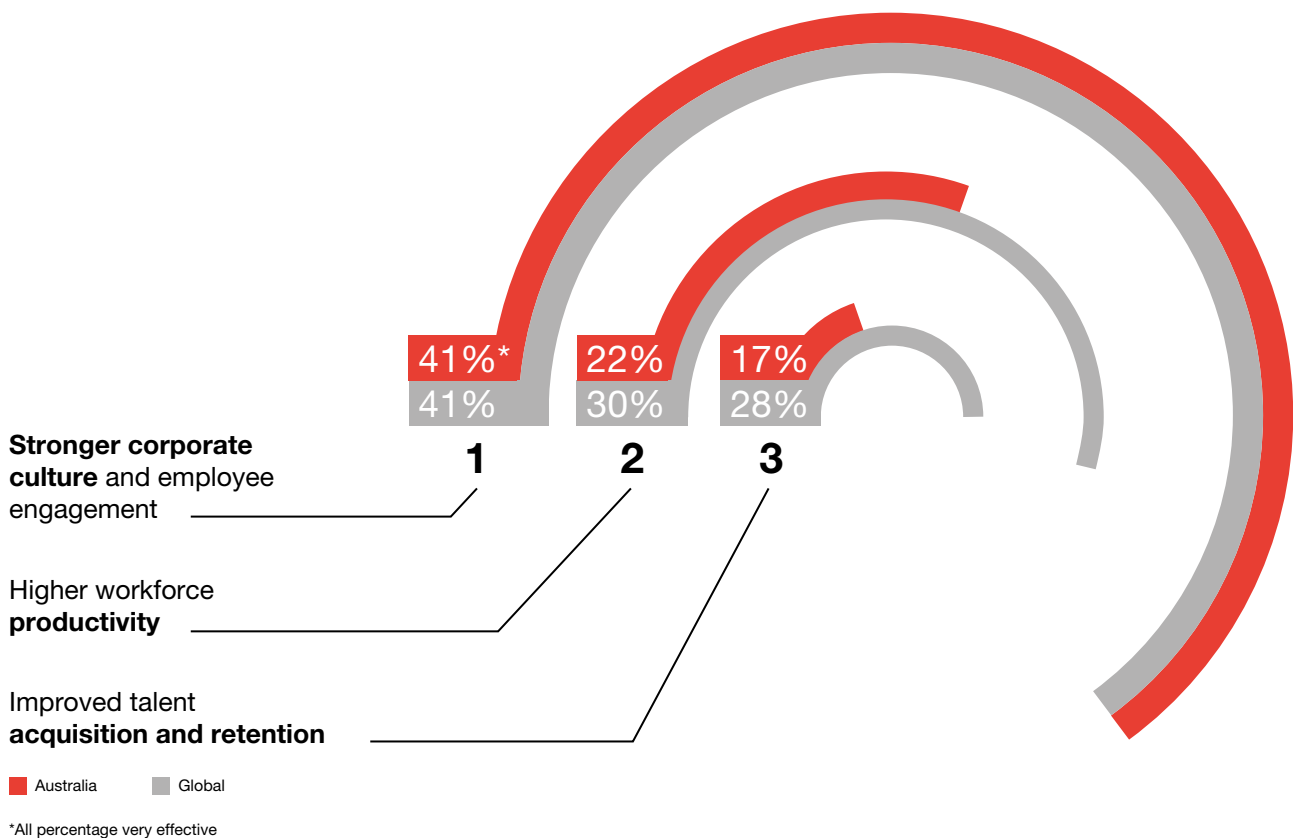
04 Business-led, government-enabled

Key observations

While business should lead on reskilling, governments have a key role to play in supporting this, including:

- working with business to deliver more responsive upskilling opportunities

- delivering a national micro-credentialing system

- targeting at-risk roles and addressing Australia's digital divide

- reprioritising migration for technical and transferable skills, as required for a digital world.

Organisations that are large enough (and that can afford comprehensive upskilling as outlined in the previous chapter) will enjoy a competitive advantage in the post-COVID-19 world. But the millions of Australians who work in SMEs (small to medium enterprise), or in businesses which do not or cannot invest in upskilling, should not be disadvantaged. As such, the Federal Government's $2 billion JobTrainer skills package, subsidising apprenticeships and providing training for school leavers and job seekers in growth sectors, is an important foundation. [37]

To build a modern workforce, Australia needs to introduce greater flexibility and speed in order to deliver the necessary upskilling. The current system is dominated by traditional institutional learning structures that are fundamental bedrocks, but that don't always meet the needs of the workforce that seeks modular, accessible and timely upskilling experiences.

For this reason, even in a business-led upskilling environment, the government has a role to play.

The rapid changes triggered by COVID-19 present a unique moment for business and government to work in partnership with education providers. Together, they can help individuals continually upgrade their skills in a way that protects them against the rising tide of automation, and allows them to progress through their career with a lifetime of learning.
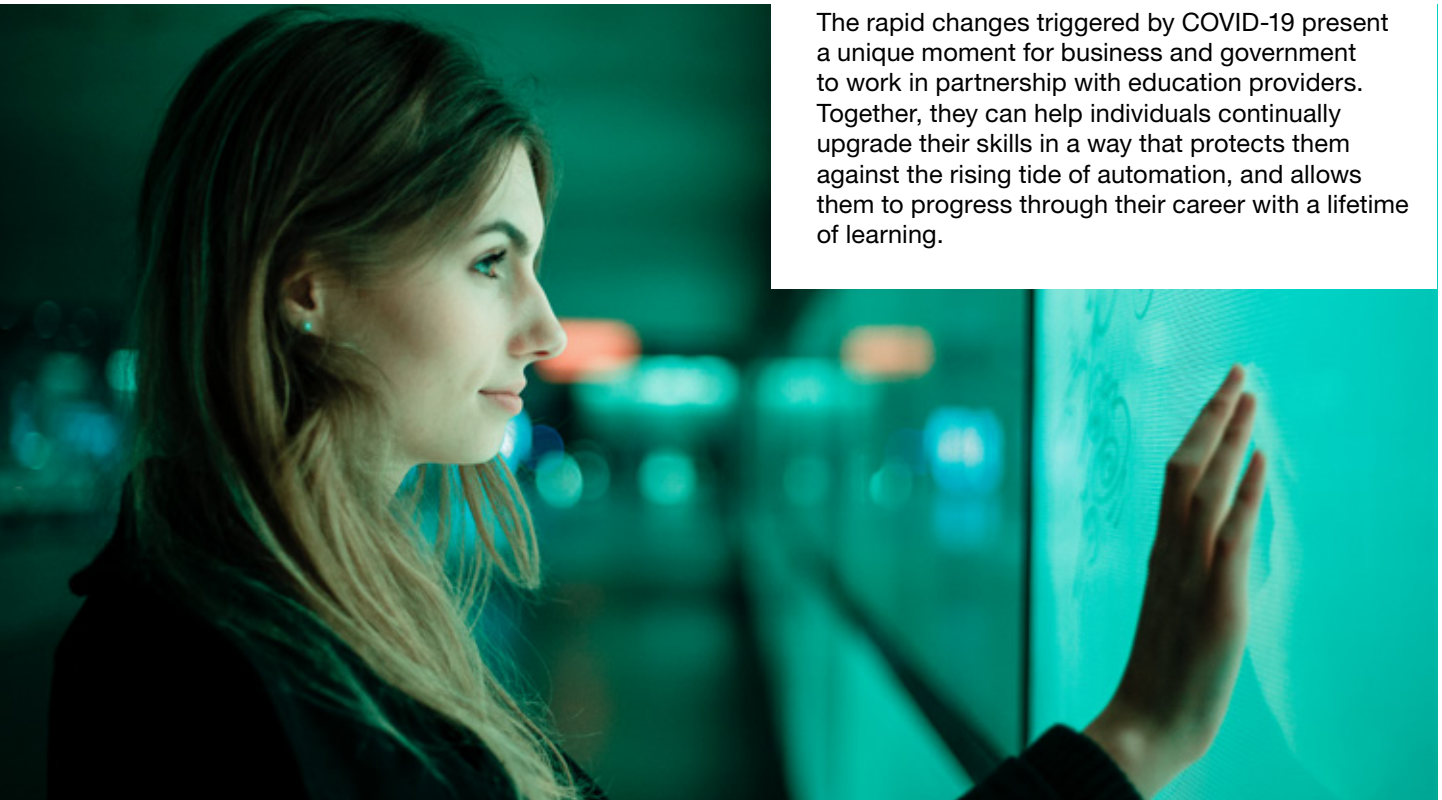
Business and government working better together

The government system is robust and high quality. Training standards and regulations are designed to protect the government's investment in skilling its citizens by ensuring learners gain skills that are needed in the economy. However, this system is not yet geared towards providing rapid-response solutions for the upskilling and gap filling we need now.

In a federal system, qualifications have multiple checks and balances and large-scale consultation is required to alter training standards. While there are aspects that can be streamlined, a quality national system, appropriately regulated and endorsed by states and territories, will usually find it more difficult to respond to urgent, new needs.

If Australia is going to meet the challenge of accelerated digitisation in a COVID-19 environment our quality, institutional skills system needs to be complemented with nimble upskilling opportunities. This is where business could step in. As discussed in chapter 3, industry and large businesses should be more responsive to the upskilling needs of employees.

Government and business have an opportunity to work closely together to ensure Australia's upskilling system is faster to respond, and more flexible in the post COVID-19 environment. From the outset, businesses need to clearly articulate what skills they require, now and into the future so training organisations can produce the graduates that industry needs.

Finding a way to better recognise the skills that an individual builds throughout their professional life will benefit both employers and workers.

## The need for national micro-credentialing

One area where government and industry can partner to achieve better outcomes is: incremental upskilling.

Not all skills acquisition needs formal training. Institutional learning is often impractical for busy employees. From a worker perspective, incremental upskilling is important because it can be difficult to find the time to undertake full qualifications while in the workforce. From an employer perspective, and as the Joyce Review into vocational education and training (VET) highlighted: 'Employers often didn't need to train workers for full qualifications and preferred to train them for the parts of qualifications relevant at the time'.[38]

'Micro-credentials' is the term often used for this type of training. Recent major reviews in Australia have dedicated significant attention to the better use of micro-credentials as an effective method of upskilling existing workers.

However, Australia is only scratching the surface in terms of using incremental upskilling as a foundation for a lifelong learning system. The Joyce Review recommended that 'consideration be given to further encouraging the use of short-form credentials',[39] while the review of the Australian Qualifications Framework (AQF) recommended that 'guidelines' be developed to facilitate recognition of short-form credentials.[40] In June, the Australian government announced the establishment of a 'microcredential marketplace' to help students identify suitable courses.[41]

These are important, but early steps.
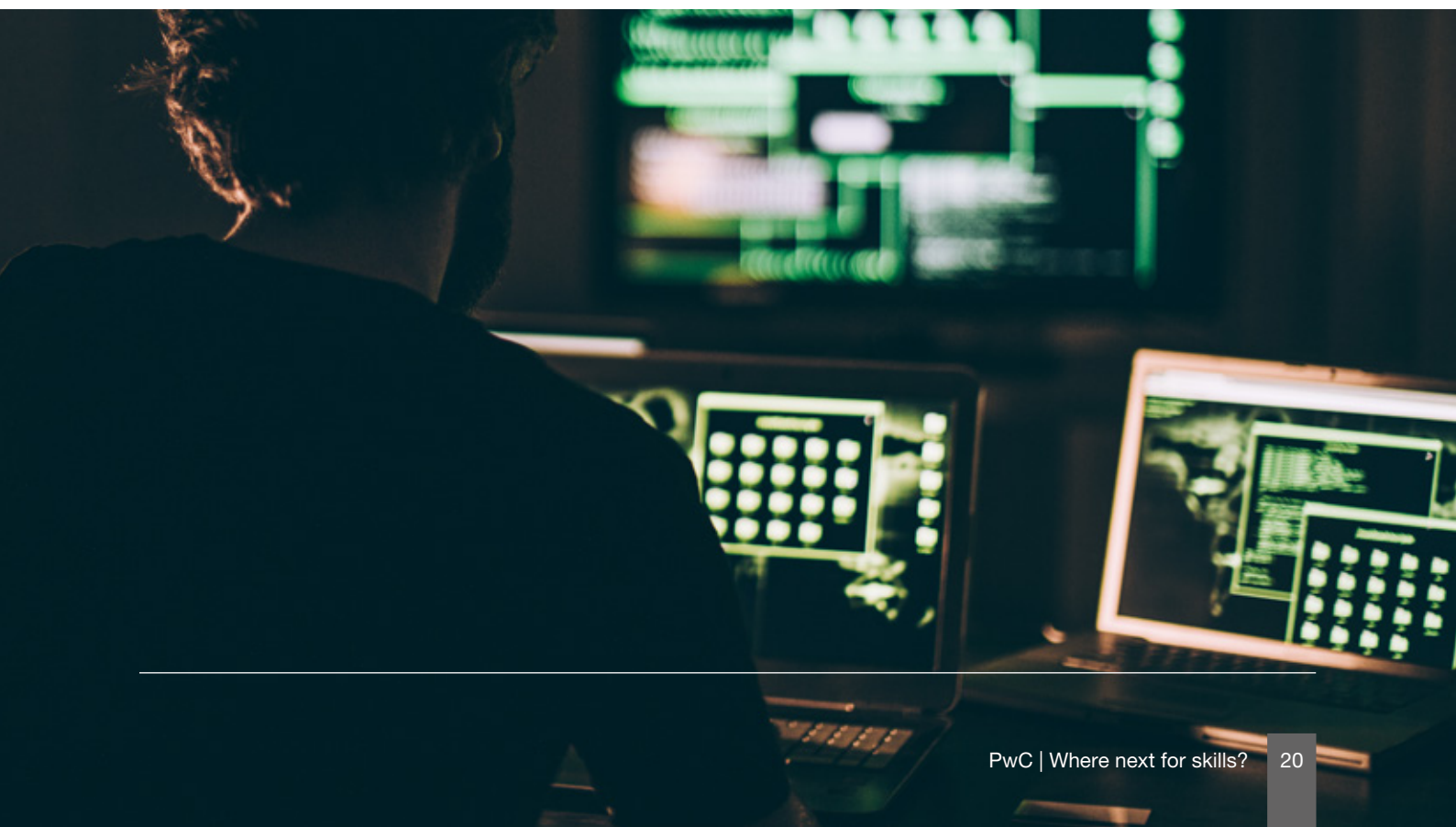
Learners are currently embracing shorter-form credentials in the absence of a nationally consistent approach. For example, half of all enrolments (2.1 million) in the VET system are in short courses (skill sets or subject-only enrolments).[42]

Individuals and industry are more likely to support shorter-form credentials as a way of upskilling their people, rather than full qualifications. Micro-credentials take the person away from the business for less time and they cost less. Short courses are also less likely to contain superfluous units or subjects because businesses and/or individuals have greater ability to customise the learning program.

It's important the recommendations from the Joyce Review and the AQF Review are implemented. This will set up the architecture for short-form credentials, which is essential.

More broadly, consideration needs to be given to the 7.6 million Australians who work in SMEs and who don't have the capacity to build their own in-house upskilling programs. In developing incentives and programs to support micro-credentials, government can assist by reducing the administrative burden and simplifying the system so individuals can easily engage with upskilling opportunities.

Targeting at-risk roles and prioritising the digital divide

Before COVID-19, automation was already disrupting Australian jobs. Faethm (2020) suggests that:

- one in five workers, or 2.7 million Australians, now have jobs that could be completely replaced by automation by 2034

- 4.5 million Australians now have jobs that could be augmented by technology in a way that will lift their productivity by 15%

- men will be hit hardest by the rise of technologies such as autonomous vehicles; 56% of the 2.7 million vanishing positions will be jobs now currently held by males

- the nation will be able to capture 85% of the potential new jobs created by technological advancements, resulting in structural unemployment of nearly 400,000 people.

The sectoral impacts are shown in figure 4.1.

FIGURE 4.1
Impact of technology on Australia workers over the next 15 years[43]

	Unimpacted (%)	Augmentable (%)	Automatable (%)	Job at risk of automation (million)
Health Care and Social Assistance	50	39	11	1.83
Retail Trade	39	34	27	1.67
Wholesale Trade	39	34	27	1.67
Education and Training	54	39	7	1.22
Construction	45	30	25	1.16
Accommodation and Food Services	46	32	22	1.03
Professional, Scientific and Technical Services	40	41	19	0.95
Public Administration and Safety	45	38	17	0.9
Manufacturing	37	33	30	0.64
Transport, Postal and Warehousing	40	26	33	0.59
Other Services	47	35	19	0.47
Administrative and Support Services	38	29	33	0.43
Financial and Insurance Services	35	34	31	0.35
Agriculture, Forestry and Fishing	46	22	32	0.31
Real Estate Services	45	37	17	0.21
Mining	41	34	25	0.2
Information Media and Telecommunications	40	42	18	0.18
Arts and Recreation Services	56	31	14	0.17
Electricity, Gas, Water and Waste Services	42	33	25	0.11

This impact will not be felt evenly from a spatial perspective. Using our Geospatial Economic Model (GEM) of 2300 regions across Australia,[44] figure 4.2 shows the regions with the largest number of jobs that are automatable tend to be CBD regions. However, in a relative sense, the most affected regions are more likely to be different industrially focused regions.

FIGURE 4.2
Regions most affected by future automation pre COVID-19

Top five affected regions (per state) by absolute automatable jobs			
	Region	Automatable jobs	Proportion of jobs that are automatable
NSW	Sydney - Haymarket - The Rocks	82,018	23%
	Parramatta - Rosehill	11,964	22%
	North Sydney - Lavender Bay	11,103	22%
	Macquarie Park - Marsfield	11,018	21%
	Pyrmont - Ultimo	7009	18%
VIC	Melbourne	56,110	22%
	Docklands	18,959	25%
	Dandenong	16,881	24%
	Southbank	9215	20%
	Richmond (Vic.)	8482	21%
QLD	Brisbane City	25,480	21%
	Brisbane Airport	6556	28%
	Newstead - Bowen Hills	5177	24%
	Ormeau - Yatala	4990	26%
	South Brisbane	4920	16%
SA	Adelaide	22,798	20%
	The Parks	4980	25%
	Richmond (SA)	4622	24%
	Enfield - Blair Athol	3824	25%
	Plympton	3422	22%
WA	Perth City	28,182	22%
	Ashburton (WA)	7114	24%
	Madeley - Darch - Landsdale	4443	24%
	Osborne Park Industrial	4184	22%
	Welshpool	3837	27%
TAS	Hobart	6270	18%
	Launceston	2664	19%
	Devonport	1117	18%
	Burnie - Wivenhoe	1108	22%
	Derwent Park - Lutana	1096	24%
NT	Darwin City	2018	21%
	Woolner - Bayview - Winnellie	1230	24%
	Charles	1071	20%
	Katherine	1014	22%
	Brinkin - Nakara	809	17%
ACT	Civic	6680	19%
	Fyshwick	3261	24%
	Belconnen	2591	20%
	Barton	2307	17%
	Phillip	1986	18%

Top five affected regions (per state) by proportion automatable jobs			
	Region	Automatable jobs	Proportion of jobs that are automatable
NSW	Port Botany Industrial	1440	30%
	Newcastle Port - Kooragang	1217	29%
	Banksmeadow	1758	29%
	Port Kembla Industrial	383	29%
	Erskine Park	1990	29%
VIC	West Melbourne	1000	30%
	Melbourne Airport	4546	29%
	Lockington - Gunbower	168	28%
	Moorabbin Airport	776	28%
	Swan Hill Region	363	27%
QLD	Stanthorpe Region	370	32%
	Pallara - Willawong	2049	29%
	Wamuran	572	29%
	Carole Park	1254	29%
	Collinsville	1024	29%
SA	Dry Creek - North	189	30%
	Renmark Region	413	29%
	Virginia - Waterloo Corner	804	29%
	Adelaide Airport	1741	28%
	Mallala	184	28%
WA	Carabooda - Pinjar	255	28%
	Kwinana Industrial	1331	28%
	Hope Valley - Postans	179	28%
	Hazelmere - Guildford	1742	28%
	Kewdale Commercial	1584	28%
TAS	North West	320	27%
	Quoiba - Spreyton	422	26%
	Northern Midlands	291	26%
	Turners Beach - Forth	162	26%
	Central Highlands	155	26%
NT	Elsey	243	32%
	Weddell	524	32%
	Barkly	292	32%
	Victoria River	206	32%
	East Arm	526	29%
ACT	Hume	931	25%
	Fyshwick	3261	24%
	Mitchell	1382	23%
	Casey	140	23%
	Kingston (ACT)	652	22%

To help mitigate the impacts of automation, business and government need to come together. Government could work with large organisations to develop pathways for roles at risk, or by using the national training system to promote and incentivise upskilling for individuals.

Preventative policies targeted at individuals in at-risk roles, regions and demographics are critical in the post-COVID-19 environment because routine jobs won't come back. Inaction now will result in an expanding digital divide, and a heightened risk of social upheaval. A better skilled workforce leads to a better skilled community, higher levels of aspiration, and an appreciation for the benefits of learning and technological change.

Skilled migration

Australia should continue working to fill existing and future skills gaps in the domestic workforce. However, skilled migration will still be an important part of any future skills supply chain.

The COVID-19 border shutdown provides an opportunity to refocus the visa system, and to more acutely drive the system to support skills development.

This does not mean more skilled migrants for the sake of having more; care needs to be taken to better match volumes and skills with the needs of industry, and to have industry willing to use them.[45]

In a post-COVID-19 environment PwC recommends a review of two key levers to help the government continue to develop Australia's skilled migration agenda:

01

Currently, Australia's Standard Classification of Occupations (ANZSCO) works by defining occupations, not skills. As a result the system isn't flexible enough to capture emerging skills. Instead, the system constrains organisations into a static list of occupations – a list that isn't in step with the rapidly changing needs of the modern workforce.

There is an opportunity to think more dynamically about how Australia classifies occupations to capture the skills required for the digital world. New Zealand is already considering this as part of their post-COVID-19 migration strategy.[46]

Clearer and more strategic distinctions are needed between the objectives of temporary versus permanent skilled migration programs. The migration framework could be changed to include more, rather than fewer, visa pathways.

Australia's current skilled migration framework includes individual sponsorship based on an applicant's profile (skills, age, English proficiency), or via employer sponsorship (ie. meeting skills requirements, and being tested in the local labour market). This framework could be refreshed to include visa pathways tailored to desired skill sets and industry needs.

Australia needs more programs to support the permanent intake of skilled migrants, such as the Global Talent Scheme that attracts skilled migrants who have critical skills in science, technology, engineering and maths (STEM) occupations. This would give the government greater agility in the development and evolution of a skilled migration strategy.

02

Stakeholder Actions

Australia's post COVID-19 skills challenge requires a whole of society approach. In many ways it is, and should be, a nation building effort. It's time to shift our mindsets away from the 'war over talent' and toward building a world class workforce together. There is an opportunity for business to lead and to do so inclusively. Inaction now will result in an expanding digital divide and dislocated workforce.

01
Business consider elevating the upskilling agenda so it becomes the responsibility of the CEO and executive leadership teams.

02
Business should work with government to deliver a national micro-credentialing system.

03
Prioritise the digital divide to remove barriers of access, affordability, and importantly digital ability.

The technical and transferable skills required to access and drive the post COVID-19 economy are critical for almost every organisation. These skills will make the difference between an individual who can participate in the economy, access government services, connect with their community, and someone who cannot. People without these skills are at risk of being further isolated and disconnected from opportunity. Upskilling offers the key to a better skilled community, higher levels of aspiration, and an economy that is more productive because it has a workforce capable of driving Australia into the new world.

Endnotes

1   Faethm (2020)

2   PwC (2019)

3   PwC (2019) Australia's Mismatched Workforce

4   See PwC (2020)

5   See NAB (2017) and Department of Home Affairs (2019)

6   Morrison (2020a)

7   PwC (2020a

8   Department of Education, Skills and Employment (2020)

9   ABS (2020x)

10 ABS (2020#)

11 Roy Morgan (2020)

12 ABS (2020)

13 ABS (2020)

14 See PwC (2020)

15 Scott Morrison (2020a)

16 See PwC (2020)

17 PwC's COVID-19 CFO Pulse May 11 (2020)

18 ABS (2020D)

19 PwC (2020) June CFO Pulse

20 The Australian Digital Inclusion Index (2019

21 ABS (2020H)

22 PwC (2019y)

23 PwC (2020x)

24 PwC (2020x)

25 World Economic Forum (2019)

26 PwC (2019) 23rd CEO Survey

27 PwC (2019) 23rd CEO Survey

28 PwC (2020y) Global Digital IQ

29 NCVER (2019, p.20)

30 NCVER (2019, p.20)

31 PwC (2019)

32 PwC (2019) Addressing Australia's skills shortages

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37 Scott Morrison (2020)

38 Department of the Prime Minister and Cabinet, Joyce Review (2019)

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40 Australian Government, (2019) Review of the Australian Qualifications Framework Final Report p. 62 https://docs.education.gov.au/system/files/doc/other/aqf_review_2019_0.pdf

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42 Commonwealth of Australia, Joyce Review, (2019) p.10

43 Faethm (2020)

44 Regions are ABS-defined Statistical Area Level 2 (SA2) regions

45 See Cebulla & Tan (2019)

46 New Zealand Immigration (2020) July 7

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