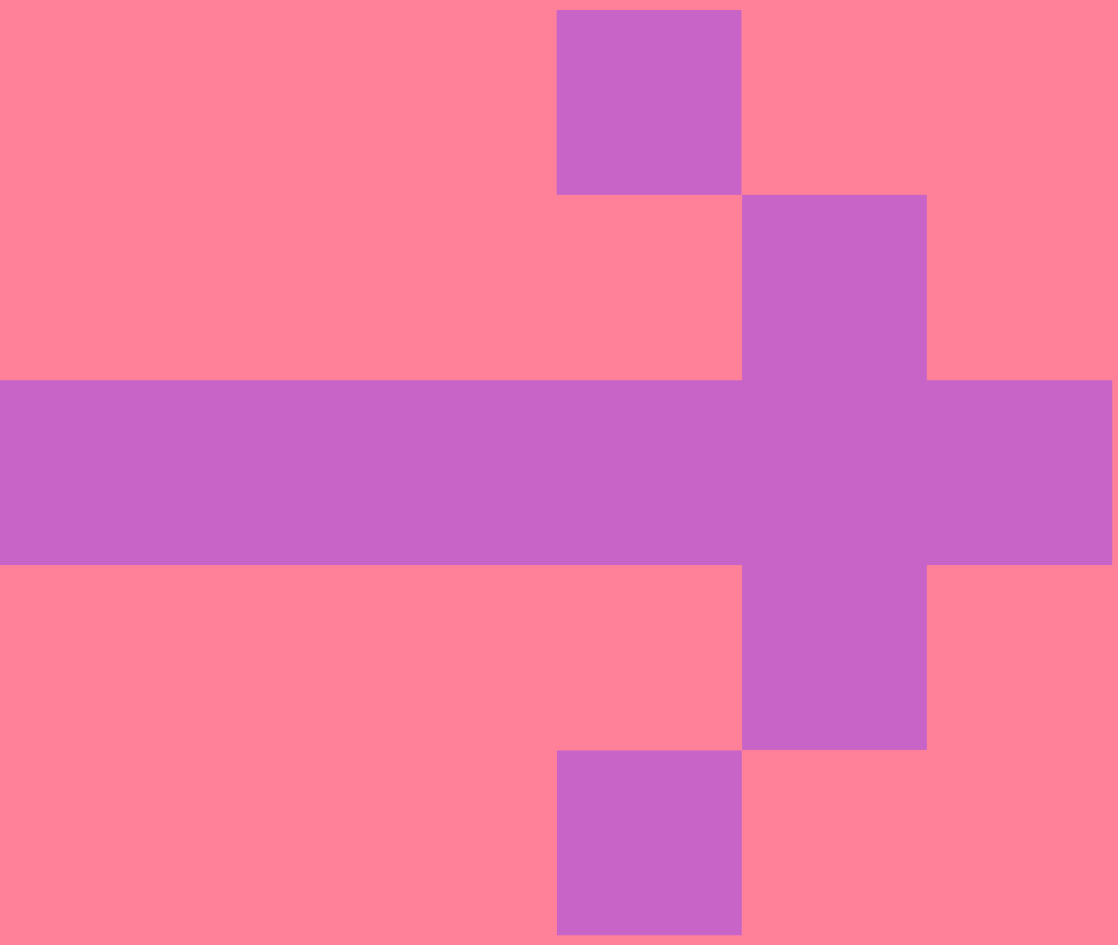
RMIT Online

READY, SET, UPSKILL:

Prioritising skills for a resilient workforce

2023 | PREPARED WITH DELOITTE ACCESS ECONOMICS



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0.1 Executive summary

Australia's job market is highly competitive, with unemployment reaching a record low of 3.5% and job postings up 15% year-on-year.[1,2] In addition, nearly two-thirds of job postings were advertised for 31 days or longer, indicating that businesses continue to struggle to find staff.[3]

While forecasts suggest Australia's economic growth will slow in 2023, demand for workers continues to rise. Four in five (80%) surveyed businesses expect to hire at least as many people in 2023 as they did in 2022.

Digital skills are a critical part of Australia's skills landscape, with job advertisement data indicating that four out of the top ten fastest growing skills were digital skills. In fact, digital skills such as proficiency using office productivity software[i] was the fourth most highly requested skill across the labour market in 2022. The top three in-demand skills were all soft skills, including communication skills, teamwork, and planning, reflecting the fact that soft skills are required in most roles.

While demand for digital skills remains high, supply can't keep pace. 3/5 surveyed Australian businesses said their workforce lacked or had outdated digital skills.[ii]

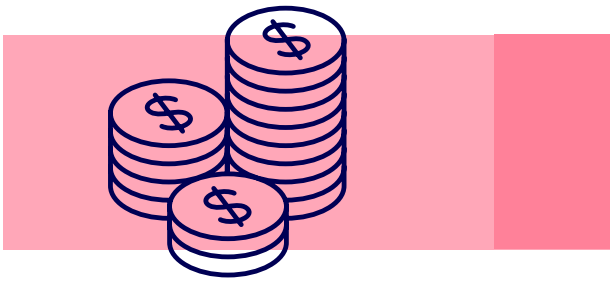
This has not changed much since 2021, despite an 171% increase in migrant arrivals and a suite of Government policies aimed at building Australia's skills.[4]

This report is the third edition of *Ready, Set, Upskill*, a series that analyses the current state of skills in Australia and the role of upskilling and reskilling in helping to meet demand for skills. The focus of this year's report is on understanding the cost to Australian businesses of digital skills gaps, and role of training in helping to close these gaps. This report has been informed by bespoke surveys of approximately 1,000 Australian employees and 400 employers. While the findings are not intended to be representative of the business and employee population in Australia, they provide a snapshot of the top skills demanded, broader business sentiment, and workforce trends among the surveyed sample.

Skills shortages are costly to employers. Deloitte Access Economics estimates that existing digital skills gaps (such as those in data science analytics, cyber security tools and coding) are costing large Australian businesses $3.1 billion each year, equivalent to approximately $9 million a day (Figure 1.1).[iii] To put this cost into perspective, this is equivalent to the size of the entire internet publishing and broadcasting industry in Australia.

i Office productivity software captures data from Lightcast aggregating Microsoft Excel, Microsoft Office, Microsoft Power BI, Microsoft Powerpoint, and Microsoft Word.
ii In this report, a business is said to have a digital skill shortage if one or more digital skills that are required by the employer is recognised by an employer to be either out of date or lacking.
iii Large Australian businesses are defined as businesses with more than 200 employees.

FIGURE 1.1 : The cost of digital skills gaps for large Australian businesses



$3.1 billion a year

— costs of digital skills gaps among existing workers for large Australian businesses

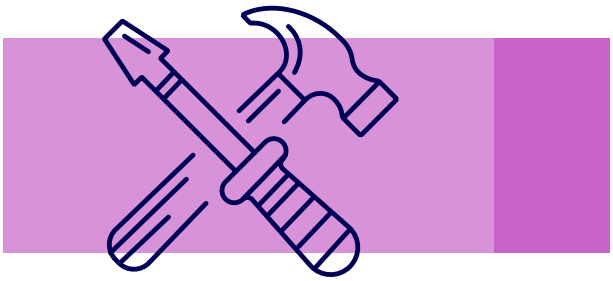
Source: Deloitte Access Economics calculations based on data from ABS, Lightcast data, and employer and employee surveys fielded by Ipsos.

It is important to note that this $3.1 billion only reflects the current costs attributed to existing employees who lack digital skills in large businesses and does not consider the costs associated with new employees required to fill digital skills gaps more broadly. The full opportunity from digital technology is likely to be much larger. Previous research by Deloitte Access Economics found that the adoption and use of digital will add $22.6 billion to the Australian economy between 2020 and 2024.[5] Addressing the current digital skills gaps is therefore just one component of the broader economic opportunity associated with digital.

Businesses recognise the costs that skills gaps within their workforce can create. The most frequently identified costs of skills gaps identified by surveyed respondents include loss of business revenue (19%), additional costs of outsourcing work to external staff or contractors (19%) and reduced productivity (18%).

To fill skills gaps, surveyed businesses don't seem to have a strong preference between upskilling employees (48%) and hiring externally (52%). There are pros and cons to each approach. Training can be an effective tool to enhance employee retention and engagement, but it needs to delivered the right way in order to be effective, and it can take substantial time and resources for employees to develop skills that align to business needs. At the same time, hiring externally is often effective in securing specific skills quickly, but businesses may need to pay a premium to attract staff with the skills they need. On average, businesses pay 18% more for new staff, equivalent to $12,000 per year for the average Australian employee.[iv,6]

FIGURE 1.2 : National training spend required by Large Australian businesses to address existing digital skills gaps



$1.5 billion

— digital skills training spend required to address employees' existing digital skills gaps

Source: Deloitte Access Economics calculations based on employer and employee surveys fielded by Ipsos and desktop research (2023).

A reliance on hiring externally – for example through sources of talent like migration, job seekers, and the graduate pool – to fill skills gaps has flow-on consequences for the sustainability of Australia's labour-market. It can put pressure on an already tight supply of labour, particularly for workers with digital skills.

Modelling for this report finds that to address the existing digital skills gap, large Australian businesses would need to spend $1.5 billion this year on digital skills training, equivalent to an additional $885,355 per business. This represents around 0.3% of total business expenditure for the average large Australian business.[v] This cost of digital skills training reflects the cost for large businesses to solve current skill gaps, however, training would need to be undertaken each year to ensure Australian workers maintain their digital capabilities.

iv Large Australian businesses are defined as businesses with more than 200 employees.

v This estimate of average expenditure is based on the total expenditure of large Australian businesses ($1,466,689 million) and the number of large Australian businesses (4,533), provided by the ABS.

The longevity of skills varies substantially by skill type. Some research suggests that a skill becomes about half as valuable, compared to when it was learnt, after about five years.[7] This suggests that the value from investing in training today would endure at least beyond the current year. Other skills could remain relevant for even longer, particularly where skills are transferable and can be used for several different applications.

More broadly, the accelerating pace of change in the skills required for work demands more frequent exposure to training across the course of an individuals' working life. Surveyed employers and employees both tend to agree that employees should regularly refresh their skills.

One in four surveyed employees (26%) believe they should refresh their skills (including digital skills, technical skills, job specific skills, and other skills) at least once a year, while one-third of surveyed employers (33%) think this should happen at least every six months.

While the benefits of training are well-recognised, getting training right isn't always easy. Training can be ineffective, costly and it can be difficult to find the time to dedicate to learning and development. Some of the key barriers to learning new skills reported by surveyed employees include work commitments (18%), the cost of training courses (12%) and lack of employer resources or support (9%). To help tackle these barriers, there are various actions employers can take to help get the most out of training. This includes establishing a dedicated learning and development budget, creating space for employees to undertake training by establishing time for regular learning at work, rewarding employees for undertaking training, and by testing job candidates' skills before hiring (Figure 1.3).

FIGURE 1.3 : Key actions to address barriers attached to training

1. BUDGET

- Create a dedicated budget for employees to access learning and development opportunities
- **Subsidised learning is the top ranked enabler to learning a new skill reported by employees**
- Having a dedicated budget encourages employees to actually take their employers up on learning and development commitments

2. INTEGRATE

- Integrate learning and development into day-to-day working life
- **Work commitments is the top ranked barrier to learning a new skill reported by employees**
- By setting time aside for employees to learn on a regular basis (i.e., a couple hours a week or a day a month), employers remove stigma of undertaking training during office hours

3. REWARD

- Reward employees for learning or developing skills
- **A pay rise was the second ranked enabler to learning a new skill reported by employees**
- A pay rise indicates to employees that learning and development is valued by leadership

4. SKILLS TEST

- Include skills testing when hiring externally
- **Only 1 in 3 businesses incorporates skills testing when hiring externally**
- Skills testing ensures businesses hire people with the skills their business needs

Source: Deloitte Access Economics (2023)"

Leading businesses are already setting an example of best practice when it comes to upskilling and reskilling.

For example, Budgy Smuggler – an Australian swimwear brand - offers employees a generous learning budget to learn the skills required to perform their role, while also offering employees an additional $1,000 and two days off work to undertake training not directly related to their role.

Similarly, Think & Grow – a recruitment agency for tech start-ups – focuses on recruiting based on the specific traits required to be successful in a role. This approach encourages employers to consider a different pool of talent, who may not have the formal qualifications or relevant experience, but whose values and core skills align to the job being advertised.

Successfully delivering training doesn't only help to close Australia's skills gaps, it also benefits employees too. Employees who received promotions in 2022 spent 50% more time on training on average than surveyed employees who did not receive a promotion.

Surveyed employers also recognise the benefits of upskilling as greater employee engagement and retention (53%), positively influences team culture and performance (46%) and cost effectiveness (44%). These factors give rise to a model of continuous learning, where frequent engagement in training and upskilling is key to keeping pace with evolving workforce needs.[8]

0.2
Introduction

This report is the third edition of *Ready, Set, Upskill*, a series that analyses the current state of skills in Australia and the role of upskilling and reskilling in helping to meet demand for skills.

The focus of this year's report is on understanding Australia's skills landscape, the cost to Australian businesses of skills gaps, employers' attitudes towards upskilling, the training imperative, and the benefits employees derive from continuous learning. In particular, this report quantifies the annual cost of existing digital skills gaps to large Australian employers, and the training expenditure required to help close this gap.

This research draws on a range of diverse data sources, including:

- bespoke surveys of around 400 employers and 1,000 employees in Australia, fielded by Ipsos in December 2022 (see below)
- job advertisements data from Lightcast
- economy-wide data from the Australian Bureau of Statistics (ABS)
- available research and literature on skills and reskilling, informed by a detailed desktop review
- consultations with two leading Australian businesses to understand their perspectives and provide real life examples.

This report is set out as follows:

Chapter 1 reviews the current state of the Australian skills landscape, including in-demand skills and the key skills gaps.

Chapter 2 investigates the cost of existing skills gaps to Australian businesses.

Chapter 3 seeks to understand the role of training in filling skills gaps, and quantifies the amount of training expenditure required to close the gap.

Chapter 4 presents the case for continuous learning among employees. Bespoke employee and employer surveys.

Bespoke employee and employer surveys

1. Employer survey

The employer survey was fielded by Ipsos to 401 business leaders in December 2022. Survey respondents were individuals who are currently employed as executives, board members and owners, directors, or managers.

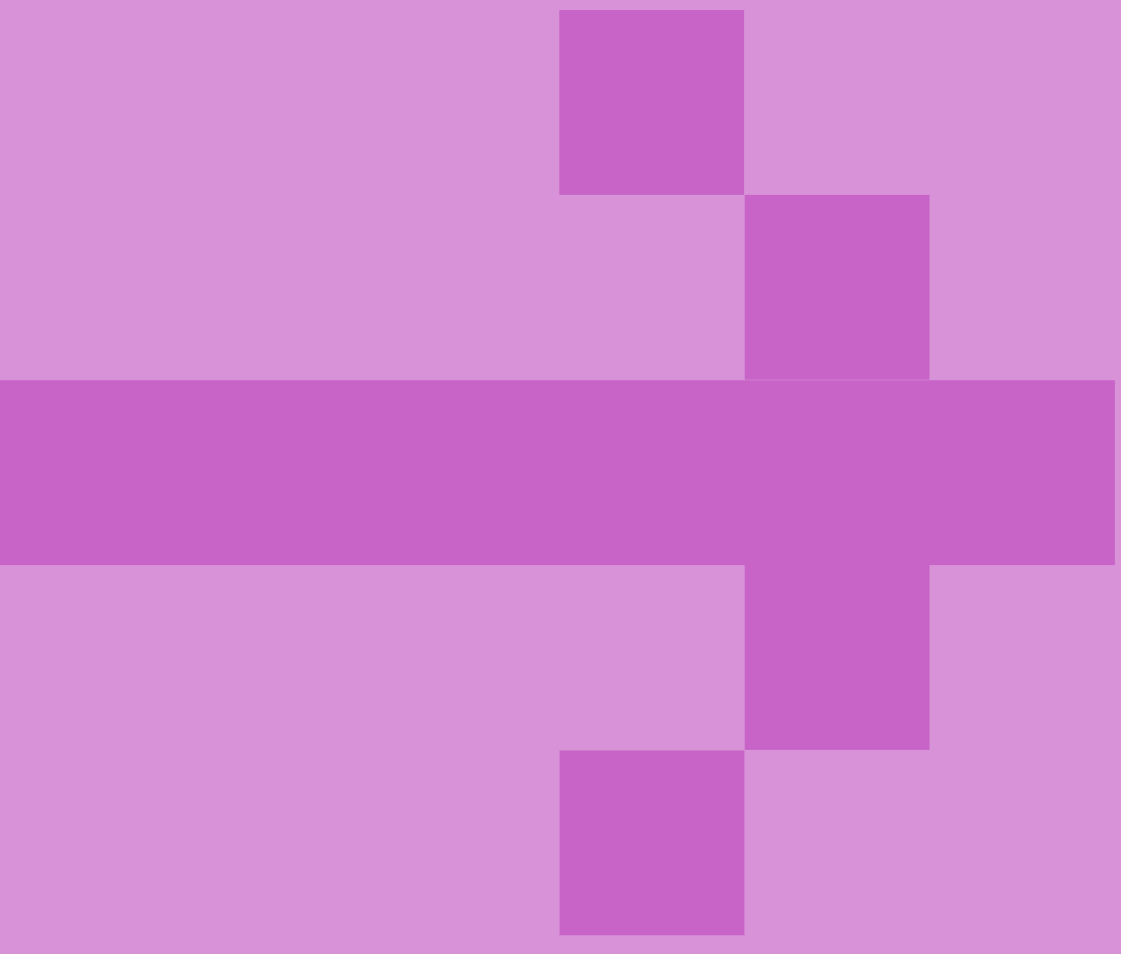
In industry terms, the survey captured a broad range of primary and service industries. The survey focuses on employers with 100 or more employees.

2. Employee survey

The employee survey was fielded by Ipsos to 1,001 employees in Australia.

Survey respondents were employed individuals over the age of 18 across all jurisdictions. The survey included those who are working full-time, working part-time, working casually, and those who are self-employed. If respondents indicated that they were unemployed they were excluded from the survey. The survey included individuals in the six ABS occupational categories with the highest levels of post-school qualifications, namely: managers, professionals, technician/trade workers, community and personal service workers, clerical and administrative workers and sales workers.

Figures contained in the report relate to surveyed individuals, unless otherwise specified. As such, results may not be representative of whole population of businesses or employees in Australia.



1.0
Australia's skills landscape

KEY FINDINGS

Australia's labour market is expected to remain tight through 2023 with 80% of surveyed employers expecting to hire at least as many people in 2023 as in 2022. Job advertisements are 15% higher than in 2021, and almost two-thirds (64%) of jobs ads were advertised for 31 days or longer, indicating they are hard to fill positions.

Digital skills such as proficiency using office productivity software was the fourth most in-demand skill for professionals, cited more frequently in job advertisements than other essential business skills like problem solving and organisational skills.

Four out of ten of the fastest growing skills for professionals in the past five years were digital skills. Furthermore, two of the top five skills shortages identified by surveyed employers were digital skills.

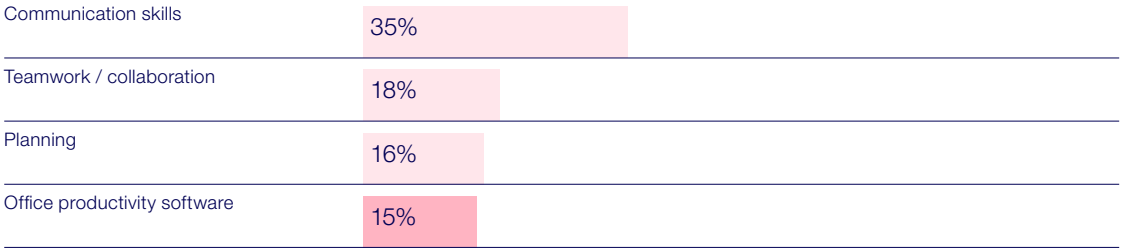
Despite rising interest rates and high inflation, 2022 was characterised by a tight labour market, with unemployment reaching an all-time record low of 3.5%.[9] Job advertisements were up 15% year-on-year,[10] and nearly two-thirds of these job ads (64%) were advertised for 31 days or longer, suggesting that finding the right staff was no easy task. In fact, nearly three million people started their current job in the year to February 2022.[11] Workforce and skill shortages persisted within the economy even as Australia began to open up to the rest of the world.

Looking ahead, Australian CFOs are wary about the national economic outlook, with the latest inflation figures from the ABS indicating prices rose 7.8% in the past year.[12] However, this has not dampened overall business confidence, with most CFOs (66%) reporting that they are optimistic about the year ahead.[13] In fact, most Australian businesses surveyed (80%) are expecting to hire at least as many people or more people than they did in the previous financial year.[14] This means demand for skills will be as high as ever, and the question of how to meet the nation's skills needs remains unanswered.

In the current job market, digital skills are recognised as core business skills. Proficiency using office productivity software[vi] was the fourth most frequently requested skill in job advertisements data for professional workers in 2022, trailing behind communication skills, teamwork or collaboration, and planning (Chart 1.1). A total of 15.2% of job advertisements referenced this skill, more frequently demanded than skills such as problem solving (12%), organisational skills (7%), and project management (6%).

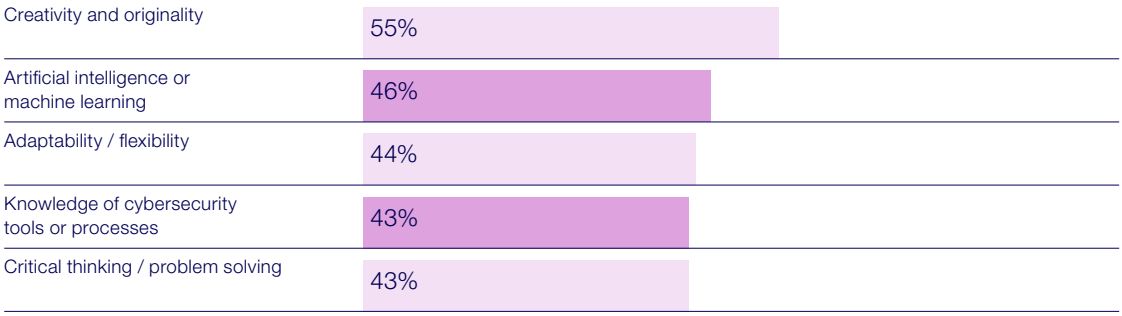
vi Office productivity software captures data from Lightcast aggregating Microsoft Excel, Microsoft Office, Microsoft Power BI, Microsoft Powerpoint, and Microsoft Word.

CHART 1.1 : Top five most frequently requested skill in job advertisements



Source: Deloitte Access Economics calculations based on Lightcast data.

CHART 1.2 : Top five lacking and outdated skills within businesses



Source: Deloitte Access Economics calculations based on employer survey fielded by Ipsos (n=401).

Four out of ten of the fastest growing skills for professionals in the past five years were digital skills. According to Lightcast data, managing student data topped the list, followed closely by open-source software Kubernetes,[vii] Microsoft Power BI, and Facebook.[viii] This suggests that there was exponential and substantial growth in employer demand for sophisticated and complex digital skills over the past five years, even outpacing the growth in demand for vaccination skills during the pandemic.

With growing demand for digital skills, it comes as no surprise that two out of the top five skills shortages according to surveyed employers were digital skills.[ix]

Indeed, almost half (46%) of surveyed employers lacked artificial intelligence and machine learning skills (Chart 1.2), an increase from last year's 38%. Another 43% of surveyed employers said their organisations lacked sufficient knowledge of cybersecurity tools or processes. These figures suggest employer demand of sophisticated and complex digital skills are on the rise, in line with the rapid development of advanced digital technologies.

Beyond digital skills, soft skills will continue to play a key role in the labour market. Surveyed employers identified communication skills (14%) as the most important future skill for their teams' success in five years' time.[15] This is mirrored by surveyed employees, who identified leadership skills (27%) and communication skills (19%) as essential for succeeding in the future workforce.[16] Previous research by Deloitte Access Economics found that investment into employees' soft skills, which are difficult to automate and essential regardless of industry or occupation, was found to boost productivity enough to increase average business revenue by over $90,000 a year.[17]

The future of work will continue to evolve as the rate of digitisation accelerates in the post-pandemic economy. As businesses become more reliant on digital processes, basic digital literacy skills will become mandatory for the workplace. In fact, surveyed employees identified digital literacy (11%) as the third most important skill for their professional success in five years' time. Yet, in 2022, 38% of surveyed businesses said they lacked digital literacy skills, suggesting further investment in upskilling employees will be important in meeting future demand.

vii Kubernetes is a tool that helps run and manage computer applications more effectively, making it easier to scale the application up or down as needed.

viii The growth levels were 3,425%, 1,960%, 752% and 373% respectively. These high levels of growth are driven, at least in part, by the small base from which growth has been measured (i.e., it is relative to the modest number of job advertisements which demanded these skills in 2017).

ix In this report, a skill shortage is defined as a skill that is recognised to be either out of date or lacking from an organisation from an employer's perspective. From an employee's perspective, employees are asked to compare their self-assessed skill level and their employer's requirements.

CASE STUDY:

Budgy Smuggler

"Budgy Smuggler started as a bit of a laugh in a backyard in Australia when some mates decided to write 'Budgy Smuggler' on the back of a speedo-style swimwear. A few people found it funny, so we got a little website set up to sell online"[18].

More than ten years later, Budgy Smuggler has established itself an iconic Australian brand with all swimwear produced in Australia. In 2016, the organisation started expanding overseas, first to the United Kingdom and more recently France, with the goal of bringing a piece of Australia to every beach in the world.

The biggest skills in-demand are soft skills

Nathan Linforth – head of operations and strategy at Budgy Smuggler – highlighted that the biggest skills in-demand are communication and customer service skills. In particular, Nathan specified that time in role was the largest barrier to securing these skills at Budgy Smuggler.

"Someone needs to be with the business for six or seven months before they become familiar enough with Budgy's business processes and brand that they can get on the phones and actually talk to our customers in the way we would like" – Nathan

In addition to soft skills, Nathan also highlighted that over the next five years he expects manufacturing skills to be in high demand, due to the ageing workforce paired with the fact the Smuggler production process cannot be automated. This can be attributed to the type of fabric used to produce Smugglers, which cannot be handled by machines.

Budgy Smuggler approaches learning and development with an open mind

Budgy Smuggler has three types of staff: retail, warehousing and head office. All staff receive some form of training, although the frequency and intensity of this training is dependent on learning need and employee type. More casualised workforces, particularly warehousing receive less frequent and intense training. While permanent staff, such as head office and retail staff, given they are much more likely to stay with the organisation they receive much more frequent learning and development opportunities.

Budgy Smuggler allows office employees to "choose their own journey" when it comes to learning and development. The organisation offers employees an unlimited budget, within reason, to learn skills required to perform their role, with employees responsible for finding the time to complete the training. On top of this, each office employee receives a formal budget of $1,000 and two days to undertake training unrelated to their role. Some employees are using this time to learn skills such as a new language, others have used this allowance to visit the zoo seeking inspiration for future Smuggler designs.

In addition to training, Budgy Smuggler offers employees other perks such as travelling overseas to work at Budgy's international stores which has an added business benefit of bringing the Australia brand to life overseas.

"Ultimately all these perks are geared towards making sure people stick around and it seems to be working as retaining staff is not at issue for us". – Nathan

Nathan had three pieces of advice for start-ups looking to grow their business:

1. Great staff helps. It's important to have a good team around you that believe in the same cause.

2. Target sustainable growth. It's not worth pursuing exponential growth that is not sustainable, because this will ultimately impact the longevity of your business.

3. Find the right customers and they'll remain loyal to your business for years.

2.0
The cost of skills gaps

KEY FINDINGS

Three in five (58%) surveyed Australian employers lack one or more of the digital skills required to do business.

This has changed little since 2021 (with 61% of surveyed employers saying the same), despite a 171% increase in migrant arrivals and a suite of Government policies aimed at building Australia's skills (e.g., Job Trainer).

The costs of skills shortages include a loss of businesses (19%), outsourcing to external staff or contractors (19%) and reduced productivity (18%).

Skill shortages for digital skills (such as data science analytics, cyber security tools and coding), among existing workers alone are costing large businesses in Australia $3.1 billion a year (equivalent to approximately $9 million each day). This cost would be even higher when considering small and medium businesses (SMBs), government, the non-for-profit sector, and others.

Currently, three in five (58%) Australian businesses lacked one or more of the digital skills they required to do business.

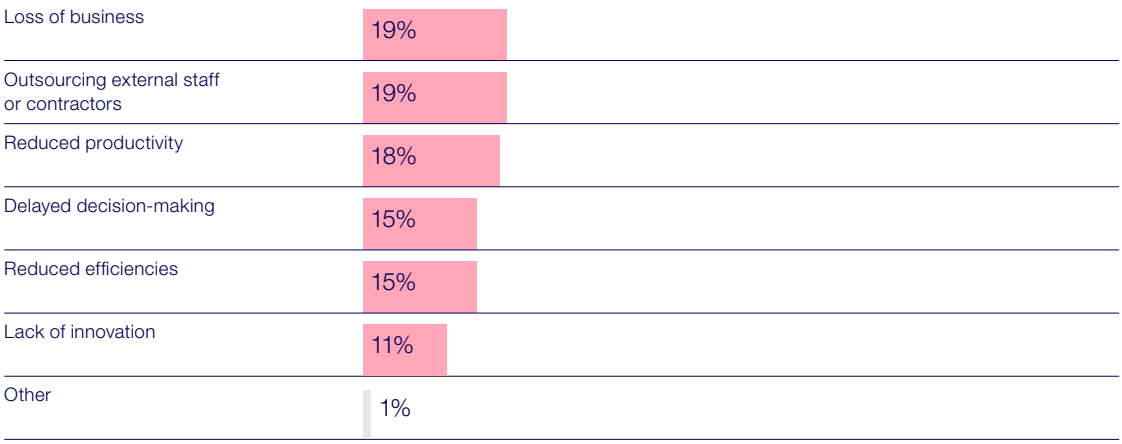
Digital skills are critical for business performance. The digitisation of the Australian economy, accelerated by the pandemic, will continue to drive demand for increasingly complex digital skills such as artificial intelligence, cybersecurity, and machine learning. Previous research highlighted that the Australian economy was $126 billion larger in 2019 than it would have been without the productivity impacts of the telecommunications industry.[19] More broadly, research consistently shows that investment into ICT hardware and digital skills improves firm productivity.[20,21,22,23]

Currently, three in five (58%) surveyed Australian businesses lacked one or more of the digital skills they required to do business.[x,24] This has not changed since 2021 (with 61% of surveyed employers saying the same),[xi] despite a 171% increase in migrant arrivals and a suite of Government policies aimed at building Australia's skills (e.g., Job Trainer).[25]

Skills gaps are costly for businesses. The most commonly identified costs by surveyed employers include a loss in business revenue (19%), additional costs of outsourcing external staff or contractors (19%), and reduced productivity within the organisation (18%) (Chart 2.1).[26]

x In this report, a business is defined as lacking a skill if that skill is recognised by the surveyed employer to be either out of date or lacking from their organisation.
xi This figure differs to last year's published results, which captured the proportion of businesses who selected "My organisation lacks these skills" for each digital skill, on average.

CHART 2.1 : Surveyed employers' cost of skills gaps to their organisation



Source: Deloitte Access Economics calculations based on employer survey fielded by Ipsos (n=401).

As discussed in Chapter 1, demand for digital skills remained high in 2022, and is likely to increase in demand moving forward. There are two different types of costs digital skills gaps impose on businesses:

- First, it impacts businesses' capacity to generate returns from its labour i.e., the output of its employees. For example, an employee who is not well-versed in coding may take a longer time to complete tasks and have a higher chance of making mistakes compared to an employee with sufficient coding and programming skills.

- It can also impact businesses' returns to capital (related to a business' equipment and machinery such as computers and other digital tools). For example, having the right skills ensures that employees are using capital in the most efficient way possible, increasing profits.

Bespoke modelling for this report finds that even considering the digital skills gaps among existing workers, the cost to large Australian businesses could be as much as $3.1 billion each year, equivalent to approximately $9 million each day.[27]

To put this figure into context, this is equivalent to the size of the internet publishing and broadcasting industry in Australia.[xii] Further detail on the steps taken to estimate the costs of digital skills gaps are provided in Appendix A.

FIGURE 2.1 : The cost of digital skills gaps for large Australian businesses

$3.1 billion a year

— costs of digital skills gaps among existing workers for large Australian businesses

Source: Deloitte Access Economics calculations based on data from ABS, Lightcast data, and employer and employee surveys fielded by Ipsos.

xii In 2020-21, the entire internet publishing and broadcasting industry recorded total income of $3.1 billion.

The impact of skills gaps could be as large as a $12 trillion gap in unrealised business revenues.

It is important to note that this $3.1 billion only reflects the current costs attributed to existing employees who lack digital skills in large businesses and does not consider the costs associated with new employees required to fill digital skills gaps more broadly. For example, one global study suggested the impact of skills gaps across all skills and including new workers could be as large as a $12 trillion gap in unrealised business revenues and a shortfall of 85 million unfilled jobs by 2030.[28]

Furthermore, this cost is only applicable for large businesses, as the survey is fielded from large businesses. Additional detail on digital skills gaps in small and medium businesses are provided in Box 2.1.

In addition, the full opportunity from digital technology is likely to be much larger. Previous research by Deloitte Access Economics found that the adoption and use of digital will add $22.6 billion to the Australian economy between 2020 and 2024.[29] Addressing the current digital skills gaps is therefore just one component of the broader economic opportunity associated with digital.

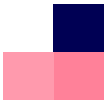
BOX 2.1 : Digital skills in SMBs

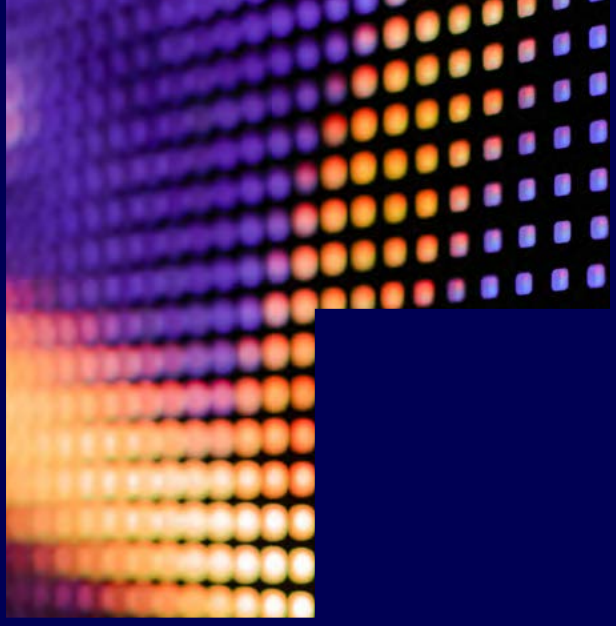
Small and medium businesses (SMBs) dominate the Australian business landscape, comprising 99.8% of total Australian businesses.[30]

Digitisation is a key driver of success in small businesses.[31] SMBs that possess an advanced level of digital engagement have been found to be 50 per cent more likely to experience business growth. They found that businesses with digital skills earned 60% more revenue per employee, relative to businesses with only basic digital engagement.[32]

While digitisation is critical to small business success, digital skills tend to be less advanced among smaller businesses on average (noting there is a high degree of variability, for example tech startups have a high degree of digital proficiency). Barriers to digital engagement tend to be more pervasive, and the ability to hire employees with digital skills or upskill current employees is considerably harder for smaller businesses as there are asymmetries in resources and assets. In addition, the cost of obtaining the relevant technology to implement these skills can be a significant barrier to small businesses. Six out of ten small business employers cite the cost associated with digital technology as their main reason for not adopting digital practices.[33]

The post COVID shift to online business models means the demand for digital skills among employees is increasing. The National Skills Commission found that skills such as software orchestration/automation, artificial intelligence, data analysis, cyber security and online marketing are the fastest growing, demonstrating the growing dependency demand for digital skills in the workplace.[34] A survey administered by Jobs Queensland found that 19% of smaller companies who participated in the survey had used blockchain, while 25% and 42% had used robotic process automation and artificial intelligence, respectively. In comparison, 34% of respondents from larger companies reported their business had used blockchain, and 68% and 70% said their business had used robotic process automation and artificial intelligence respectively.[35] This underscores the underutilisation of these digital skills in small businesses.





CASE STUDY:

Think & Grow

Think & Grow was established in 2015 by co-founders Anthony Scohan and Jonathan Jeffries (JJ), partnering with technology companies to help them attract the best talent, develop their businesses and people, and scale effectively.

They blend in-house search and advisory expertise with in-depth market knowledge and a global network. Overall, they aim to help businesses to curate workplace cultures that reward, develop and encourage teams to innovate and elevate performance, as well as working with businesses to design and establish talent and growth strategies. Since establishment, Think & Grow has filled more than 1,000 positions with fastgrowth technology companies.

Management and leadership are the top missing skills for organisations

JJ highlighted that while there is a high level of skills shortages across the technology sector in general, managers and leaders who are adequately equipped to train and develop employees were most in-demand.

"One of the biggest challenges is there is a lack of managers and leaders who have both a high emotional intelligence, in other words the ability to recognise soft skills in humans and recognise why those are important to an individual role, while also achieving good commercial outcomes" - JJ

This has flow-on impacts for future generation of managers and leaders, who have not been provided the opportunity to develop these critical management skills – which are best learnt in the workplace by mirroring a good manager or leader.

Think & Grow focuses on securing good talent by establishing value alignment between employee and employer.

“Great and highly skilled talent is always hard to find regardless of the economic conditions, with securing good talent at the start-up level even more important, as getting each hire right is critical” - JJ

As a direct result, Think & Grow’s recruitment approach moves away from traditional hiring practices; instead focusing on understanding the specific traits and core skills required to be successful in a role. When filling positions, Think & Grow prioritises creating value alignment between candidates and employers. This approach encourages employers to consider a different pool of talent, who may not have formal qualifications or relevant experience, but whose values and core skills are closely aligned to the organisation and the role. This provides an innovative method of securing talent in technology, an industry that has always faced deep skills shortages.

COVID-19 has served as the catalyst for employees to question their overall satisfaction in their current role. Against this backdrop, Think & Grow’s unique approach is delivering strong results as employee’s values are already closely aligned to those of their employers. Critically, JJ highlighted the key to maintaining this value alignment lies in providing employees with choice to determine their own career pathway, “It’s important not to force employees into career pathways that suits the business rather than the employee.”

An example of this approach in practice can be found in a technology women and minority focused traineeship program that recruits individuals based on soft skills. Then the program upskills the new recruits with the relevant technical abilities needed to excel in the role. This innovative approach helps to both deal with the technology talent shortage in addition to building a more diverse workforce.

“It’s important not to force employees into career pathways that suits the business rather than the employee.” – JJ

3.0 The need for training

KEY FINDINGS

To fill skills gaps, surveyed businesses don't seem to have a strong preference between upskilling employees (48%) and hiring externally (52%).

Training can be an effective tool to enhance employee retention and engagement, but there are no guarantees that the training delivered will be effective, and it can take substantial time and resources for employees to develop skills that align to business needs.

At the same time, hiring externally is often effective in securing specific skills quickly, but businesses may need to pay a premium to attract staff with the skills they need. On average, businesses pay 18% more for new staff, equivalent to $12,000 for the average Australian employee.[xiii,36]

Just to address employees' existing digital skills gap, large Australian businesses would need to spend $1.5 billion on digital skills training.

Clearly, many Australian businesses are facing skills gaps within their organisation, and these gaps are costing large businesses roughly $9 million each day.

However, the ultimate question businesses face when it comes to filling skills gaps is whether to upskill their existing workforce or hire new staff with the skills they need.

There are pros and cons to each approach. Training can be an effective tool to enhance employee retention and engagement, but there are no guarantees that the training delivered will be effective, and it can take substantial time and resources for employees to develop skills that align to business needs. At the same time, hiring externally is often effective in securing specific skills quickly, but it can take time before new employees are able to add value (for example, due to onboarding procedures). Furthermore, businesses may need to pay a premium to attract staff with the skills they need.

On average, businesses pay 18% more for new staff, equivalent to $12,000 for the average Australian employee.[xiv,37]

When surveyed employers were asked whether they preferred to hire externally or upskill existing employees, just over half of surveyed businesses (52%) indicated they preferred to hire externally, as opposed to upskilling or reskilling (48%) (Chart 3.1).

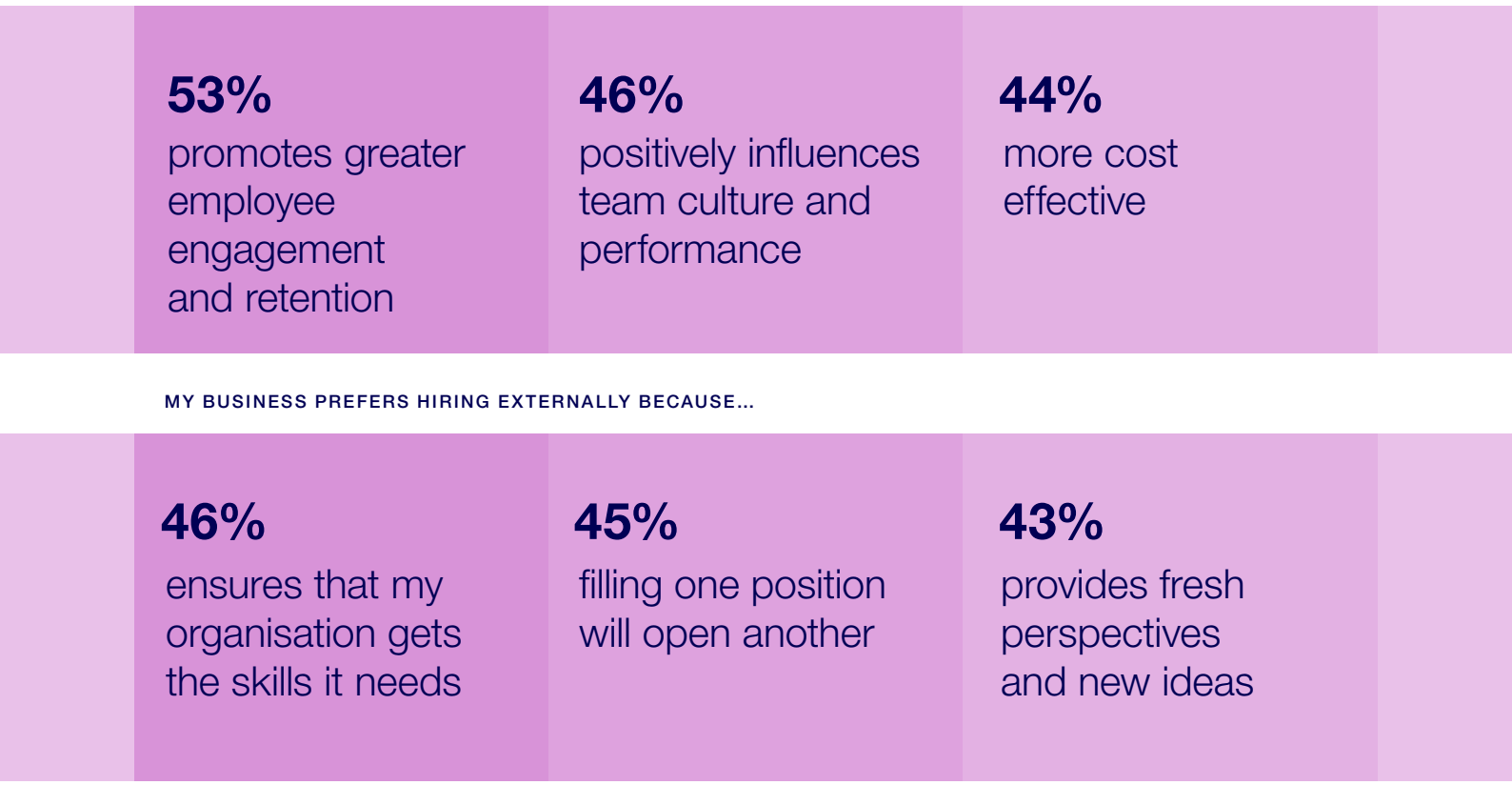
xiii This estimate is based on the median employee weekly earnings ($1,250) from the ABS.
xiv This estimate is based on the median employee weekly earnings ($1,250) from the ABS.

CHART 3.1 : Surveyed employers' preferences towards upskilling and reskilling and hiring externally

Source: Deloitte Access Economics employer survey fielded by Ipsos (n=401) (2023).

For surveyed employers that preferred to hire externally, the top reasons included ensuring their organisation gets the skills it needs (46%), that reskilling opens another vacant position in the organisation (45%), and that hiring injects fresh perspectives and new ideas (43%). Of surveyed employers who reported a preference for upskilling, the top cited reasons included promotes greater employee engagement and retention (53%), that it positively influences team culture and performance (46%) and is more cost effective (44%) (Figure 3.1). Interestingly, only about a third of surveyed employers reported that upskilling or reskilling employees ensures that their organisation gets the skills it needs (31%). This suggests that upskilling and reskilling employees is about more than just filling skills gaps, and it can be associated with a range of other benefits particularly those related to enhancing organisation culture and employee retention.

FIGURE 3.1 : Reasons surveyed employers prefer to fill skill gaps through upskilling and reskilling existing employees, as opposed to hiring externally (multiple response)



Source: Deloitte Access Economics (2023).

BOX 3.1 : Types of training

Workplace training refers to educational programs and courses designed to upskill or reskill employees. It comes in several forms, such as on-the-job training, formal or classroom-style training, online training, microcredentials, workshops, and seminars.

1

On-the-job training: Employees learn and train through hands-on experience within the workplace, commonly under the guidance of a more experienced employee or supervisor.[38] Conducted in the actual work environment, this training provides immediate practical applications of the skills being learned. It is cost effective, as it requires minimum additional resources or training facilities, and practical, as it allows employees to see the direct connection between the training and application in their day-to-day work.[39] However, it can be time-consuming and may not provide as much structure or feedback as alternative forms of training. It is also reliant on the availability and willingness of senior colleagues to provide training to junior staff.

2

Formal or classroom-style training: This type of training takes place in a formal educational setting, such as a training room or classroom, and typically involves lectures, presentations, and group discussions. Formal training provides a structured and focused learning environment and allows for direct interaction with instructors and peers. It also provides an opportunity to learn in a group setting and receive immediate feedback. However, it can be expensive and may require employees to take time off work. It may also be less relevant to employees' specific work environments.[40]

3

Online training: Online training involves learning through digital platforms, such as online courses and webinars. Employees can learn at their own pace and from anywhere with internet access. Online training is generally recognised as being convenient, cost-effective, and flexible. However, it may lack interactive and hands-on elements common to other forms of training, fewer opportunities for immediate feedback, and the need for self-motivation necessary to complete this type of training.[41]

4

Microcredentials: These are short, targeted learning programs that provide individuals with recognition for specific skills or competencies.[42] It is a flexible and cost-effective way to upskill and gain recognition for specific competencies necessary in their field or industry. Employees can use this to demonstrate their commitment to professional development, showcase their skills to potential employers and gain a competitive advantage in the job market. The Australian Government supports microcredentials as a way to upskill the workforce and address skill shortages within specific industries.[43]

5

Workshops and seminars: These are short, focused sessions that provide in-depth training on a specific topic. They can take place in a variety of settings, including on-site at the workplace, off-site at a conference centre, or online. Employees can receive specialised and targeted training on a specific topic in a short amount of time.[44] However, these workshops and seminars can be expensive, as they typically require travel and accommodation. They may also be less hands-on or provide less opportunities for practical applications of skills.

The ABS work-related training and adult learning survey found that 42% of Australians (7.8 million people) aged 15-74 participated in learning in the last 12 months (2020-21 financial year).[45] Of these, a smaller portion undertook formal training (21%), compared to work-related training (23%). Importantly, online learning was the most common method of delivery for work-related training, with take-up doubling from 19% in 2016-17 to 55% in 2020-21.[46] This is likely to continue in the coming years.

Importantly, there is no one size fits all approach to training. The ideal training type will be dependent on several factors such as the skill being developed, the familiarity of the individual with the subject matter, the degree to which learners are self-directed, the speed of learning, the willingness of the organisation to pay for formal learning, underlying preferences, and more.

It's important that organisations consider which of these training types makes the most sense based on their unique situation and attributes of their employees.

A reliance on hiring externally – for example through sources of talent like migration, job seekers, and the graduate pool - to fill skills gaps has flow-on consequences for the sustainability of Australia's labour-market. It can put pressure on an already tight supply of labour, particularly for workers with digital skills. In fact, recent commentary suggests that the reopening of international borders will not be a silver bullet for Australia's skill shortage crisis.[47] As a significant proportion (67% across 2021-22) of Australia's skilled permanent migration places are consistently granted to migrants who are already in Australia on temporary visas, this does not lead to any additional skills in Australia.[48] Continuing to rely on external sources of talent fails to build the skills Australia needs in the long run, limiting the potential of Australian businesses.

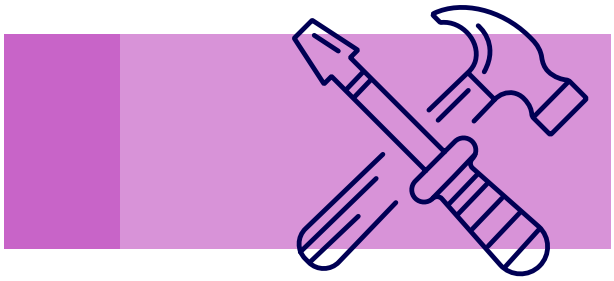
On the other hand, reskilling or upskilling employees helps to build the skills of the existing workforce, reducing the market's reliance on external sources of talent.

In fact, modelling for this report finds that to address the existing digital skills gap, large Australian businesses would need to spend $1.5 billion on digital skills training, equivalent to an additional $885,355 per business. To put this into context, this is roughly 0.3% of large businesses total expenditure.[xv] Importantly, the cost to large businesses to upskill existing workers at $1.5 billion is only about half of the cost of the digital skills gap itself (estimated to cost $3.1 billion each year).

The longevity of skills varies substantially by skill type. Some research suggests that the half-life of a skill is about five years,[49] suggesting that the value from investing in training today would endure at least beyond the current year. Other skills could remain relevant for even longer. This is particularly the case where skills are transferable and can be used for several different applications. Nevertheless, it is important for businesses continuously upskill their employees, to help them leverage the benefits of new and emerging technologies.

xv This estimate of average expenditure is based on the total spend of large Australian businesses ($1,466,689 million) and the number of large Australian businesses (4,533), both provided by the ABS.

FIGURE 3.2 : Training spend required to address existing digital skills gaps



$1.5 billion

— digital skills training spend required to address employees' existing digital skills gaps

Source: Deloitte Access Economics calculations based on employer and employee surveys fielded by Ipsos and desktop research (2023).

To estimate the costs of digital skills training, this modelling considers digital skills gap among existing employees of large businesses (informed by survey data), and the average cost of short training courses in Australia (informed by desktop research).[xvi] Given the large breadth of learning resources available online for free (for example, YouTube tutorials or online blogs), the modelling recognises that not all learning would be paid for by the employer. Information from the survey reveals that employees spend about half (48%) of their time learning using free resources.[xvii] This is incorporated into the modelling to estimate the weighted average cost of training for businesses.

According to the survey, employees lack on average one and a half digital skills required to perform their role.[xviii] These digital skills vary but include skills such as digital literacy, data visualisation, coding and programming or digital transformation. Applying these figures to the number of large Australian businesses, the proportion of businesses that use digital skills (84%) and the proportion with a digital skills gap (45%),[xix] and the average number of employees in businesses with 200 or more employees, this yields an estimate of $1.5 billion (Appendix B).

Given time represents one of the largest barriers to training, there is an additional cost associated with the time required to complete training. Information from the survey reveals that on average, surveyed employees conduct approximately half (46%) of their training during work hours.

This is time an employee could otherwise be spending on other value-adding activities, referred to as the opportunity cost. However, the majority of training time (54%) is undertaken in employee's personal time, instead of other leisure activities such as watching TV or exercising.

The value of time can be measured differently depending on whether the employee conducts the training at work or during their leisure time. The former is measured based on their wage rate, while the latter is measured at 40% of their wage rate (reflecting the slightly lower value of leisure time).[xx]

These values were applied to the average number of digital skills an employee lacks informed by the survey, the average time to learn a new skill from desktop research,[xxi] the number of large Australian businesses, the proportion of businesses that use digital skills (84%) and the proportion with a digital skills gap (45%), and the average number of employees in businesses with 200 or more employees, to determine the cost of time associated with undertaking training.

Based on this approach, it is estimated that the cost of time associated with undertaking training to fill existing digital skills gaps is $954 million for the hours completed at work and $451 million for the hours completed at home. These costs would likely be borne by the employer and employee respectively (Appendix B).

xvi This was estimated to be $710 per digital skill, based on the average cost of digital skills courses and the associated hours of learning required (48 hours). This cost estimate is only related to digital upskilling short courses geared towards professionals, it is noted that this can vary significantly depending on the audience and field of study.

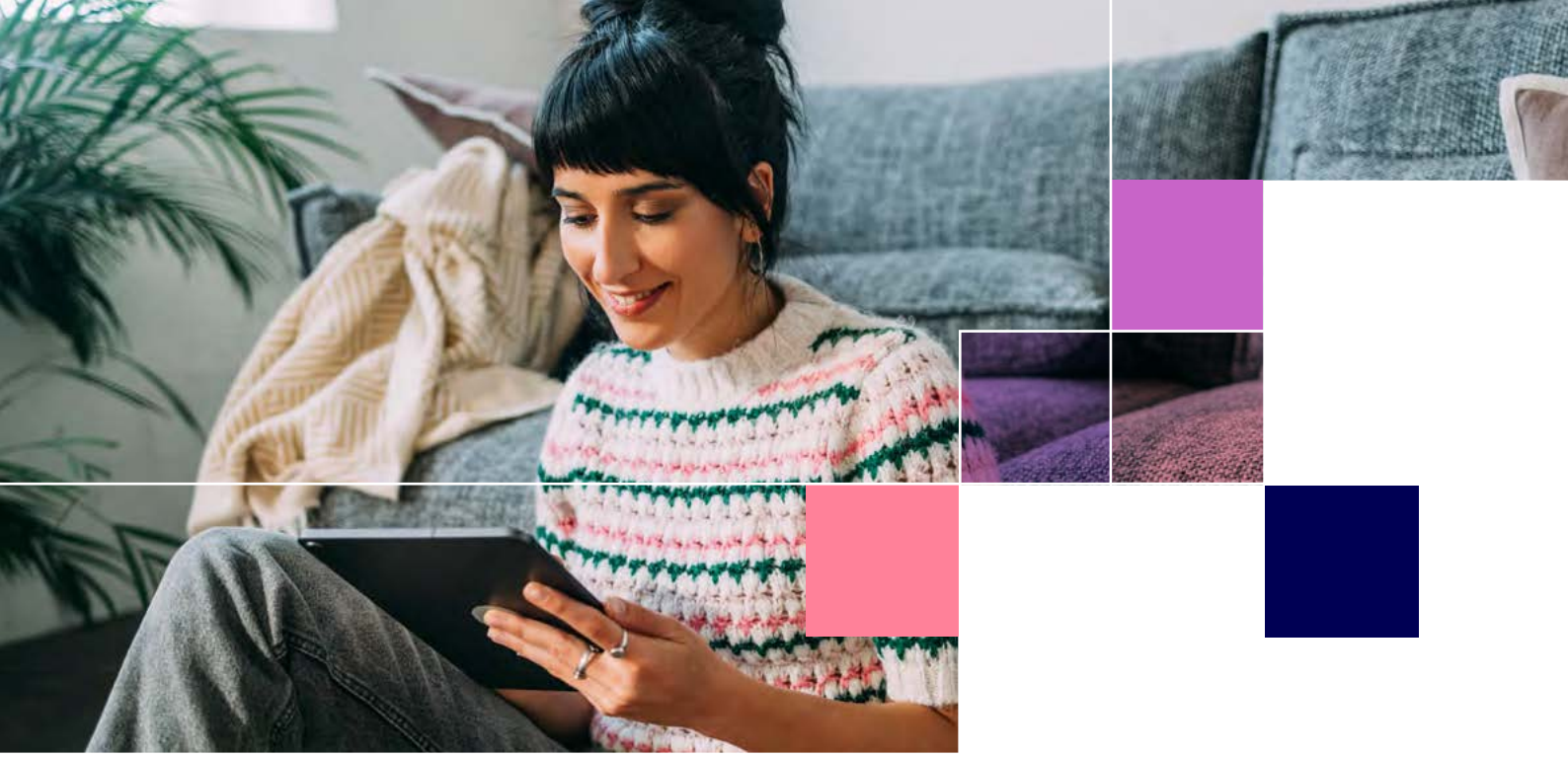
xvii In the survey, free learning is defined as self-directed learning, informal short courses or microcredentials and free online courses.

xviii In the survey, this is defined as an employee considers their skill "don't have the skill level required" or "out of date".

xix The proportion of businesses which use digital skills is estimated to be 84%, informed by the ABS. The proportion of businesses with a digital skills gap is estimated to be 45%, based on the employer survey fielded by Ipsos.

xx This was estimated to be $1,201, based on the time required to learn a new skill informed by desktop research (48 hours), the median weekly wage ($37) provided by the ABS. Although, given an employee spends 54% of their total time spent on training outside of work provided in the employee survey, this time is valued at 40% of their hourly wage rate, according to the NSW Government.

xxi The average time to learn a skill is estimated to be 48 hours for fee-incurring courses and 3.3 hours for free online courses based on desktop research.



4.0
The case for continuous learning

KEY FINDINGS

Employees who received promotions in the past year on average spent 50% more time on training than surveyed employees who did not receive a promotion, this is equivalent to five more hours each week.

Over a quarter of surveyed employees (26%) believe that it is necessary to refresh their skills at least every year, but surveyed employers think this should happen more often, with a third of surveyed employers (33%) indicating employees should refresh their skills at least every six months.

According to surveyed employees, the top barrier to learning new skills are work commitments (18%); while the key enabler was employer-subsidised learning (15%).

While surveyed businesses recognise the importance of skills, most rely on traditional approaches to hiring such as interviews (78%), resume screenings (60%) and phone interviews (53%) and most do not (63%) incorporate skills testing as part of their organisation's hiring practices.

Investment in training has consistently been demonstrated to enhance business performance.

Research has found that companies that offer comprehensive training programs have 24% higher profit margin and 218% higher income per employee in comparison to businesses without formalised training.[50]

Training isn't only good for business performance, but it can also yield substantial returns for employees as well. Some of these benefits include higher pay or greater likelihood to receiving a promotion.

On average, surveyed employees who received a promotion in 2022 spent 50% more time on training than employees who did not receive promotions

This is equivalent to five more hours each week (Chart 4.1). And surveyed employers value this time spent on training, with nearly a quarter of surveyed employers (24%) indicating that the frequency of engaging in training, upskilling or reskilling opportunities would highly influence an employee likelihood of receiving a promotion.

CHART 4.1 : Average hours spent on training of surveyed employees who received a promotion

Source: Deloitte Access Economics employee survey fielded by Ipsos (n=1,001) (2023).

It is not enough for employees to stop learning after completing a formal qualification. Technological advances alongside the accelerating pace of change in the skills required for work demands more frequent exposure to training across the course of an individuals' working life. It is also a critical ingredient for businesses to remain innovative.[51] Giving rise to a model of continuous learning where frequent engagement in training and upskilling is the key to maintaining pace with the evolving needs of industry.[52]

While surveyed employers and employees both agree employees should regularly refresh their skills, there are misaligning expectations surrounding how often this should occur. A quarter of surveyed employees (26%) believe that they should refresh their skills (including digital skills, technical skills, job specific skills, and other skills) at least every year. While employers believe that this should happen more often, with a third of surveyed employers (33%) indicating employees should refresh their skills at least every six months.

In terms of efficacy of training, the majority of employees believe that it does improve their skills with 78% of surveyed employees indicating employer-provided training helps to improve their skills.

Of course, the effectiveness of training is heavily dependent on the way in which it is delivered. Surveyed employees reported the most valuable types of training includes mandatory on-the-job training (20%), formal qualifications (17%) and formal certifications (15%) (Chart 4.2).

CHART 4.2 : Surveyed employees' attitudes towards training

Source: Deloitte Access Economics employee fielded by Ipsos (n=1,001) (2023).

KEY BARRIERS TO TO LEARNING NEW SKILLS

Work commitments

18%

Cost of training courses

12%

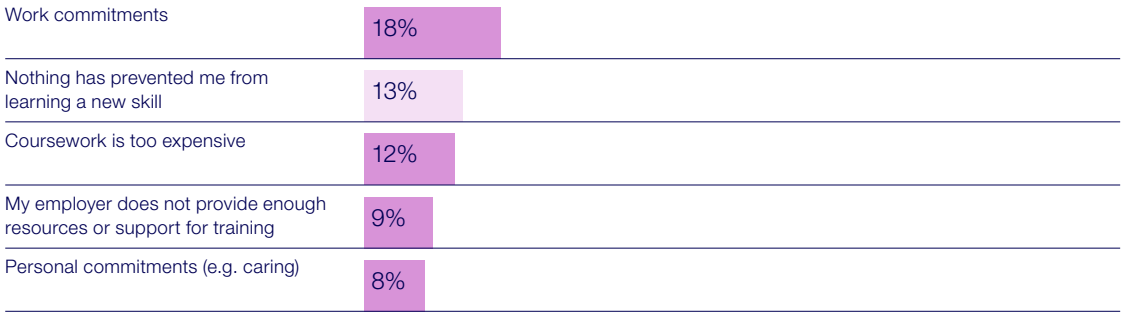
Lack of employer support

9%

The key for employers and employees alike to reap these benefits lies in addressing some of the key barriers to training. Some of the key barriers to learning new skills reported by surveyed employees include work commitments (18%), cost of training courses (12%) and lack of employer resources or support (9%) (Chart 4.3). While surveyed employees reported the key enabler was employer-subsidised learning (15%). These results reveal that the training gap cannot be attributed to employees' lack of interest in training, rather the key to closing the gap lies with employers in facilitating more learning and development opportunities.

While employers frequently report the importance of skills, with nearly two thirds of surveyed employers (65%) reporting that they hire and promote based on skills and ability to perform certain tasks, few actually incorporate skills testing into their hiring process (Figure 4.1). Only about a third (37%) of surveyed employers reported incorporating skills testing such as online skills and aptitude tests with fewer utilising practical questions or assessments (25%) and take-home case studies (12%). Instead, most surveyed employers tend to rely on traditional hiring practices such as interviews (78%), resume screenings (60%) and phone interviews (53%).

CHART 4.3 : Employee reported barriers to learning a new skill



Source: Deloitte Access Economics employee survey fielded by Ipsos (n=1,001) (2023).

FIGURE 4.1 : Surveyed employers' hiring practices

65%

The proportion of businesses that say they promote, and hire based on skills

37%

Yet only 37% incorporate skills testing when hiring

Source: Deloitte Access Economics employers survey fielded by Ipsos (n=401) (2023).

To help tackle the barriers attached with training identified by employees associated with training, there are four key actions employers can take. These include creating a dedicated budget for employees, integrating learning into day-to-day working life, rewarding employees for developing skills, and including skills testing when hiring externally (Fig 4.2).

FIGURE 4.2 : Key actions to address barrier attached to training

1. BUDGET

- Create a dedicated budget for employees to access learning and development opportunities
- **Subsidised learning is the top ranked enabler to learning a new skill reported by employees**
- Having a dedicated budget encourages employees to actually take their employers up on learning and development commitments

2. INTEGRATE

- Integrate learning and development into day-to-day working life
- **Work commitments is the top ranked barrier to learning a new skill reported by employees**
- By setting time aside for employees to learn on a regular basis (i.e., a couple hours a week or a day a month), employers remove stigma of undertaking training during office hours

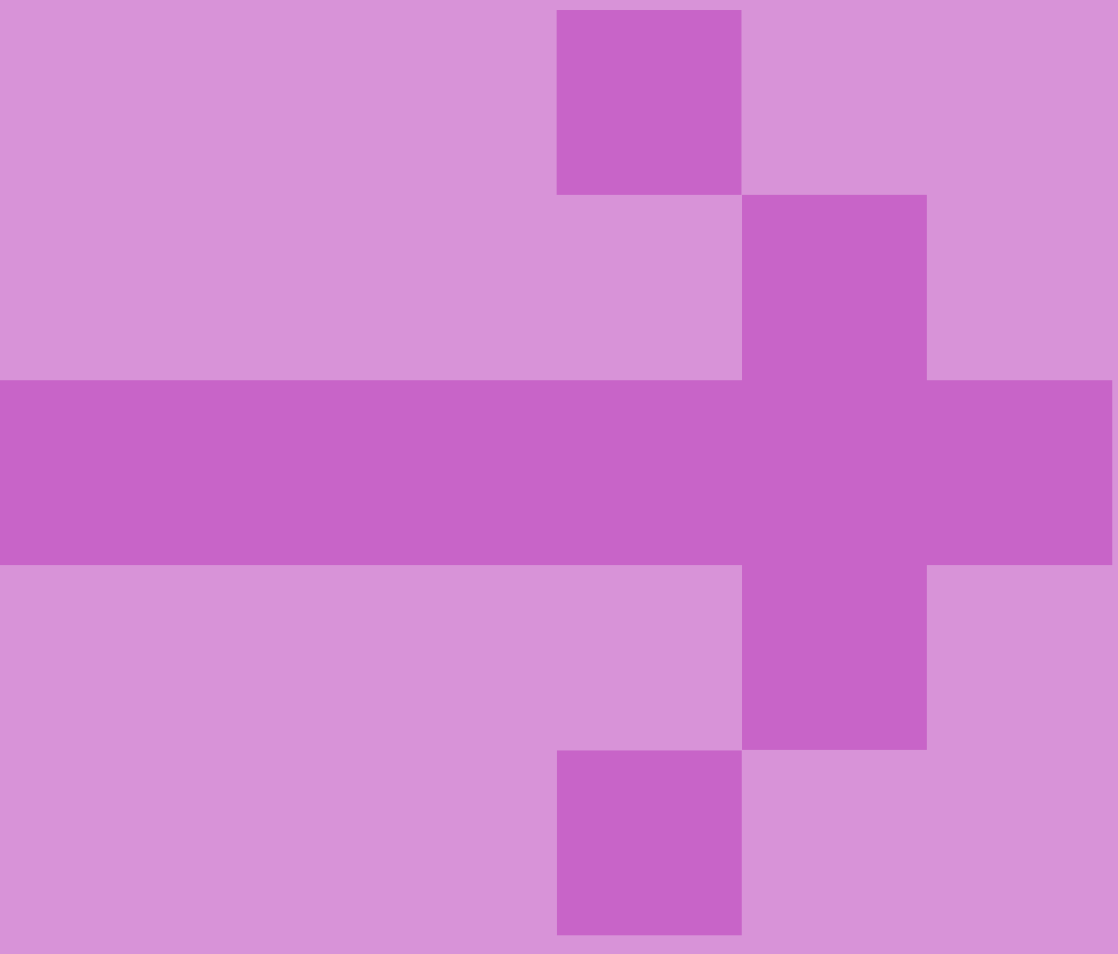
3. REWARD

- Reward employees for learning or developing skills
- **A pay rise was the second ranked enabler to learning a new skill reported by employees**
- A pay rise indicates to employees that learning and development is valued by leadership

4. SKILLS TEST

- Include skills testing when hiring externally
- **Only 1 in 3 businesses incorporates skills testing when hiring externally**
- Skills testing ensures businesses hire people with the skills their business needs

Source: Deloitte Access Economics (2023)"



5.0
Appendix A: Modelling the cost of digital skills gaps

5.1 Approach

This report estimates the costs of digital skills gaps for large Australian businesses, by considering the costs to a business' labour and capital outputs. This estimate is based on data from the employee and employer survey fielded by Ipsos, ABS, and Lightcast.

The total cost considers the impacts to a businesses' labour and capital outputs due to existing digital skills gaps. To capture the costs to labour, modelling for this report drew on data from last year's Ready Set Upskill report on the wage premium for an employee with digital skills, estimated to be 9%.[53] An employee's median wage in 2022 was $66,000, indicating that for every employee lacking digital skills, businesses incur a cost of $6,000.

These figures were applied to the proportion of employees and employers that lack or have outdated digital skills from the survey, estimated to be 21% and 45% on average, respectively. To account for differences by industry, the modelling considers the size of the digital skill gap by industry, and applies this gap to the size of the industry as a proportion of the total business population, drawing on data from the ABS.

To capture the costs to capital, the modelling takes the ratio of capital to labour across the economy and applies this to the labour costs described above.[xxii] We note that this is an imperfect proxy given that the ratio of capital to labour across the economy may vary for individual large businesses.[54]

Further details about the various inputs are summarised in the table below (Table 5.1).

TABLE 5.1 : Inputs informing cost of digital skills gaps

#	INPUT	VALUE	SOURCE / DESCRIPTION OF CALCULATION
1	Digital skills wage premium	9%	A) Wage premium of people with digital skills, Lightcast data (2021)[55]
		$65,709	B) Average median employee earnings, ABS [56]
		$5,914	A * B
2	Number of employees within a business experiencing a digital skills gap	857	A) Average number of employees (FTE) in a large business, ABS [57]
		21%	B) Proportion of employees with a digital skills gap, based on the employee survey
		178	A * B
3	Number of large Australian businesses, adjusted for those that have a digital skills gap	4,533	A) Number of large businesses in Australia, ABS[58]
		84%	B) Proportion of businesses using digital skills, based on the employer survey
		45%	C) Proportion of businesses with a digital skills gap, based on the employer survey and adjusted by industry using ABS data[59]
		1,705	A * B * C
4	Lost returns / costs to labour	$1.8 billion	1 * 2 * 3
5	Lost returns / costs to capital	0.74	A) Ratio of capital to labour within economy, ABS [60]
		$1.3 billion	A * 4
6	Costs of digital skills gaps	$3.1 billion	4 + 5

Source: Deloitte Access Economics estimates (2023) based on data from ABS, Lightcast data, and employer and employee surveys fielded by Ipsos.

xxii Mathematically, this is calculated as the ratio of total operating profits before tax to total wages and salaries within the economy using data from the ABS.

5.2 Results

Modelling for this report finds that for large Australian businesses, the digital skills gap costs $1.8 billion in costs to labour and a further $1.3 billion in costs to capital. Together, these figures suggest that digital skills gaps are costing large Australian businesses $3.1 billion each year, equivalent to approximately $9 million each day (refer to Table 5.2). It is noted that this reflects the costs of current digital skills gaps. If employers do not take action and these gaps continue to grow, the cost in future years could be even higher.

TABLE 5.2 : Results of modelling the costs of digital skills gaps

RESULTS	VALUE
Costs to labour	$1.8 billion
Costs to capital	$1.3 billion
Total costs of digital skills gap	**$3.1 billion**

Source: Deloitte Access Economics estimates (2023) based on data from ABS, Lightcast data, and employer and employee surveys fielded by Ipsos.

5.3 Limitations

It is important to note that this modelling is subject to several key limitations:

- Firstly, estimates of the proportion of employees and employers that lack digital skills are informed by bespoke survey data. These surveys are based on a select sample of the employee and employer population in Australia. Therefore, the true extent of the skills gap by industry may vary across the broader business population in Australia.

- Furthermore, survey respondents are asked to self-report the extent of digital skills gaps within their organisation (in the employer survey) and their proficiency in using digital skills (in the employee survey). Because these are not objective measures, it is possible respondents have over or under reported on these measures, biasing results.

- The modelling assumes that businesses will have the resources (such as the necessary digital software or infrastructure) and demand to utilise employees with these digital skills.

- Digital skill needs (capturing the intensity of digital skill use) and digital skill proficiency can vary significantly across industry and occupations. For example, a professional service worker may need to apply digital skills in their role more frequently and at a more advanced level than a construction worker. In the modelling, we attempt to capture the industry variation by calculating the proportions of employee and employer digital skills gaps for each industry, and calculating a weighted average based on the share of large businesses within the economy from that industry. While we have accounted for industry variation, we have not presented estimates of the cost of skills gaps for each individual industry in this report. Additionally, we do not explicitly capture differences in digital skill gaps at the occupational level.

- Finally, it is noted that digital skills are a set of skills with different levels of sophistication, technicality, and specificity, implying that there are different costs associated with each skill. However, the modelling uses an average when estimating the cost from lacking a digital skill.

6.0

Appendix B: Modelling the national digital skills training expenditure gap

6.1 Approach

This report estimates the national digital skills training expenditure gap based on two components: the cost of digital skills training, and the cost of time required to undertake the training. The approach to model each component is outlined below.

6.1.1 Cost of digital skills training

The first component of the modelling is the cost of digital skills courses paid for by large Australian businesses. At a high-level, this was estimated based on data from the employee survey on the number of digital skills an employee lacks on average, multiplied by the average cost of digital skills courses in Australia (accounting for free learning materials available online). Further details about each of these inputs is described below.

- The average digital skill gap among existing employees was drawn from the employee survey, which found that employees lack on average one and a half digital skills required to perform their role. These digital skills vary but include skills such as digital literacy, data visualisation, coding and programming or digital transformation.
- The average cost of a short training course in Australia is estimated to be $1,200, based on information about costs of digital skills courses offered by RMIT Online. However, the modelling recognises that not all learning materials are paid for by Australian employers, for example due to free learning material being available online (e.g., through YouTube tutorials, online blogs, and other resources). To account for this, the modelling draws on data from the survey around the proportion of time spent by employees on various learning activities. This revealed that employees spend roughly half (48%) of their learning time using free resources.[xxiii] This was weighted by the average cost of short courses in Australia (described above), to yield an estimate of $710, reflecting the cost to employers from employees learning a new digital skill.

These figures were applied to the number of employees at large Australian businesses (defined as businesses with over 200 employees) which require digital skills. This figure is based on the number of large Australian businesses, the proportion of these businesses which use digital skills (based on a weighted industry average see Appendix A), the proportion of businesses with a digital skills gap (see Appendix A) and the average number of employees at large Australian businesses (see Table 6.1).

TABLE 6.1 : Inputs informing the cost of digital skills training

#	INPUT	VALUE	SOURCE / DESCRIPTION OF CALCULATION
1	Average digital skill gaps among existing employees	1.45	Ipsos employee survey
2	Average cost of short training courses in Australia	$1,200	A) The average cost of a short course, based on desktop research[61]
		52%	A) The proportion of learning which is paid for by employers, derived from the employee survey
		$710	1A * 1B
3	Number of large Australian businesses, adjusted for those which use digital skills with a digital skills gap	4,533	A) Number of large Australian businesses, ABS[62]
		84%	B) Proportion of businesses using digital skills, based on the ABS
		1,709	3A * 3B * 3C
		45%	C) Proportion of businesses with a digital skills gap
4	Median number of employees at large Australian businesses	857	Average number of employees (FTE) in a large business, ABS[63]
5	Number of employees at large Australia businesses which use digital skills	1,464,363	3 * 4
6	Training expenditure required to close existing digital skills gaps	$1.5 billion	1 * 2 * 5

Source: Deloitte Access Economics (2023).

xxiii Free resources are defined as self-directed learning, informal short courses and microcredentials and free online courses.

6.1.2 Cost of time to learn the required digital skills

Given time represents one of the largest barriers to training, there is an additional cost associated with the time required to complete training. This report estimates the opportunity cost associated with the time required to complete digital skills training. This involved estimating the average digital skills gap among existing employees (described above) and the average time to learn a new skill.

The average time to learn a new skill is estimated to be 48 hours based on the recommended learning hours associated with RMIT Online courses. Although, based on desktop research, free learning courses on average require significantly fewer hours, therefore the average time to learn a new skill using free resources is estimated to be 3.3 hours. As noted above, employees spend roughly half (48%) of their learning time using free resources. This time represents time that employees could be spending on other activities, referred to as the opportunity cost, which can be defined as the value of you have to give up in order to do something else.

However, not all training time is completed during work hours. Information from the survey reveals that on average, surveyed employees conduct approximately 46% of their training during work hours, with the remaining 54% occurring during employees' personal time. The value of time can be measured differently depending on whether the employees undertake training at work or during their leisure time. The former is measured based on their average hourly wage rate ($37) informed by the ABS, while the former can be measured at 40% of their wage rate based on NSW Government guidelines.

These figures were applied to the number of employees at large Australian businesses (defined as businesses with over 200 employees) which require digital skills. This figure is based on the number of large Australian businesses, the proportion of these businesses which use digital skills (based on a weighted industry average see Appendix A), the proportion of businesses with a digital skills gap (see Appendix A) and the average number of employees at large Australian businesses (see Table 6.2).

TABLE 6.2 : Inputs informing the cost of time to learn the required digital skills

#	INPUT	VALUE	SOURCE / DESCRIPTION OF CALCULATION
1	Average digital skill gaps among existing employees	1.45	Ipsos employee survey
2	Average time to learn a new skill	3.3 hours	A) For a free course, based on desktop research
		48 hours	B) For a fee-incurring course, based on desktop research[64]
3	Proportion of time spent learning using free (A) and fee-incurring (B) courses	48%	A) On free courses, based on Ipsos employee survey
		52%	B) On fee-incurring courses, based on Ipsos employee survey
4	Number of employees at large Australia businesses who are lacking digital skills	1,464,363	A) See Table 6.1, Input 5
		2,294,768	1 * 4A
5	Number of employees undertaking free (A) and fee-incurring (B) courses	1,029,639	3A * 4A
		1,100,344	3B * 4B
6	Proportion of time spent learning at work (A) and in personal time (B)	46%	A) Learning at work, Ipsos employee survey
		54%	B) Learning in personal time, Ipsos employee survey
7	Total hours learning undertaking free courses at work (A) and at home (B)	1,573,134 hours	A) During work hours, (2A * 6A) * 5A
		1,858,994 hours	B) During personal time, (2A * 6B) * 5A
8	Total hours learning undertaking fee-incurring courses at work (A) and at home (B)	24,208,726 hours	A) During work hours, (2B * 6A) * 5B
		28,607,786 hours	B) During leisure time (2B * 6B) * 5B
9	Value of time	$37	A) Value of work time, based the median hourly wage (ABS) [65]
		$14.80	B) Value of leisure time, valued at 40% of the wage rate[66]
10	Cost to learn a new skill for employees using free courses (A) and fee-incurring courses (B)	$27,513,118	A) Using free courses, 7B * 9B
		$423,395,231	B) Using fee-incurring courses, 8B * 9B
		$451 million	C) 10A + 10B, reflecting the total opportunity cost to employees
11	Cost to learn a new skill for employers using free courses (A) and fee-incurring courses (B)	$58,205,967	A) For free courses, 7A * 9A
		$895,722,865	B) Using fee-incurring courses, 8A * 9A
		$954 million	C) 11A + 11B, reflecting the total opportunity cost to employers
12	Total opportunity cost to employers and employees	$1.4 billion	10C + 11C

Source: Deloitte Access Economics (2023)

6.2 Results

Modelling for this report finds that large Australian businesses would need to spend an additional $1.5 billion to address employees' existing digital skill gaps, equivalent to an additional $885,355 per business. It is noted that this reflects the cost to large Australian businesses to solve current digital skills gaps and training would need to be undertaken each year to ensure Australian workers maintain their digital capabilities.

Alongside this, it is estimated that the cost of time associated with undertaking training to fill existing digital skills gaps is $954 million for the hours completed at work and $451 million for the hours completed at home. These costs would likely be borne by the employers and employee respectively.

TABLE 6.3 : The national training expenditure gap results

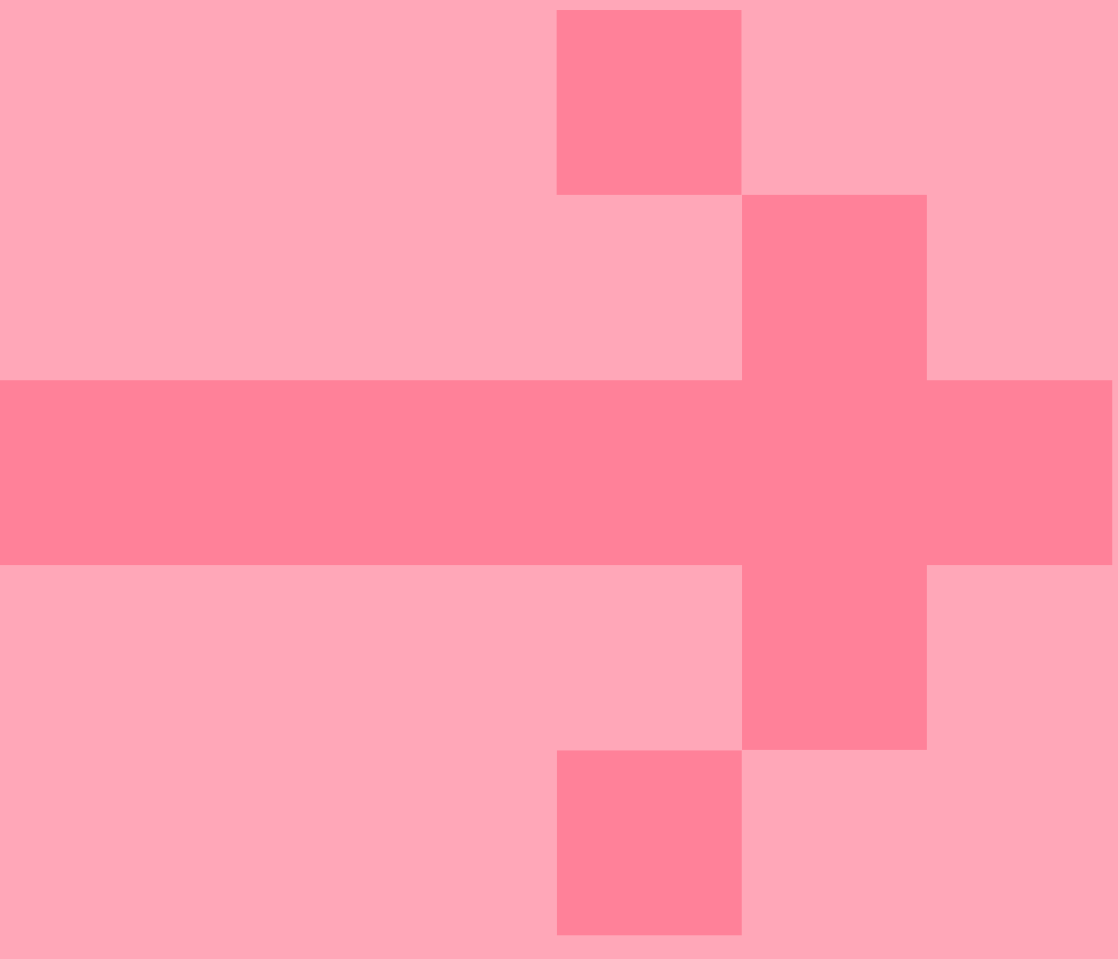
RESULTS	VALUE
Cost of training	$1.5 billion
Cost of employees' time to undertake the training during work	$954 million
Cost of employees' time to undertake the training during leisure time	$451 million
Total	**$2.9 billion**

Source: Deloitte Access Economics (2023).

6.3 Limitations

It is important to note that this modelling is subject to several key limitations:

- Firstly, estimates of the proportion of employees that lack digital skills, the proportion of time spent using free online learning resource and the proportion of time spent learning during work hours are informed by bespoke survey data. These surveys are based on a select sample of the employee population in Australia. Therefore, the true extent of the skills gap by industry may vary across the broader business population in Australia.
- Furthermore, survey respondents are asked to self-report their proficiency in using digital skills (in the employee survey). Because these are not objective measures, it is possible respondents have over or under reported on these measures, biasing results.
- The modelling assumes that businesses will have the resources (such as the necessary digital software or infrastructure) and demand to utilise employees with these digital skills.
- Digital skill needs (capturing the intensity of digital skill use) and digital skill proficiency can vary significantly across industry and occupations. For example, a professional service worker may need to apply digital skills in their role more frequently and at a more advanced level than a construction worker. In the modelling, we attempt to capture the industry variation by calculating the proportions of employee and employer digital skills gaps for each industry, and calculating a weighted average based on the share of large businesses within the economy from that industry. While we have accounted for industry variation, we have not presented estimates of the cost of skills gaps for each individual industry in this report. Additionally, we do not explicitly capture differences in digital skill gaps at the occupational level.
- The average cost of a short course estimate only relates to digital skills courses geared towards professionals. However, it is noted that this can vary significantly depending on the field of study and audience.
- The median wage used in this modelling, informed by the ABS, represents an estimate of workers across all industries. It is likely that this captures workers who do not need digital skills in order perform their role.
- The modelling assumes that business face the entire cost of digital skill training. However, it is likely that some of these courses will be subsidised, either partly or fully, by Government.



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