Australian Government

Jobs and Skills Australia

Our Gen AI Transition

Implications for Work and Skills

Final Overarching Report

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Acknowledgement of Country

Jobs and Skills Australia acknowledges the Traditional Owners of Country throughout Australia and recognises the continuing connection to lands, waters and communities. We pay our respect to Aboriginal and Torres Strait Islander cultures, and to Elders past and present.

Foreword - Gen AI in context

Technology has shaped today's global economy

Decades of technological progress have transformed how we produce goods, deliver services, and work. Artificial intelligence (AI) is the latest major shift. Though its potential has been discussed for 70 years, AI gained new momentum in 2022 with breakthroughs in neural networks and deep learning.

Generative AI offers major productivity potential and policy challenges

Generative AI (Gen AI) deserves special attention. It can boost productivity in Australia and other advanced economies by improving the quality and quantity of goods and services without raising costs. This could make products more accessible and enable us to increase our service delivery, including essential services.

Australia has begun considering Gen AI's potential impact through policy work on privacy, intellectual property, environmental effects, and ethical use. This study focuses on its implications for the labour market and skills – areas central to both the benefits and risks of Gen AI.

Gen AI isn't the only technological shift happening, nor the only AI development. Australia's approach to Gen AI should be broad and flexible enough to also prepare us for Agentic AI and future technological developments.

Gen AI will reshape how we work

Gen AI can change how work is done. It can enhance workers' skills, increase output, save time, and allow more focus on higher-value tasks or skilling. It could also help address structural issues in the labour market.

However, its ability to handle complex tasks raises questions about the future roles of labour and capital, and education and training.

Automation is a key concern to many people. A recent survey found 60% of people expect AI to replace jobs and cut costs rather than improve work. While disruption is part of progress, job losses can be costly for individuals. Some worry it could lower job quality or worker wellbeing if used poorly.

The future is not fixed - decisions now will shape the outcome

The impact of Gen AI is not pre-determined. Decisions made across the economy, in the labour market and skills system, and in policy will shape how Australia will realise the opportunities of this new technology and manage the challenges.

All labour market and skills system actors can play a role in Australia's transition to a Gen AI-enabled labour market.

This study is timely and essential

The global shift to a Gen AI-driven economy is underway. Countries are taking different paths in policy and regulation, competing in areas like chip production, model development, and data infrastructure. These broader issues are being addressed in other government initiatives, such as the National AI Capability Plan.

Productivity gains are not limited to the industries where technology is developed, and there are potential applications across most occupations and industries. Australia's ability to adopt top-tier technology – widely and effectively – will shape its economic future.

Effective use of Gen AI depends on how well it is integrated into work. That means skilled workers are essential. Australia must act quickly to build the right skills – not just to use Gen AI, but to adapt to future technologies.

Policymakers must act amid uncertainty

This transition will likely be ongoing, as AI continues to evolve. Australia must develop forward-looking policies despite the current uncertainty.

We are still early in the transition, and evidence is limited. While some caution is reasonable, policy delays – especially in skills and training – can worsen uncertainty and miss opportunities. Policymakers need to be proactive, even if Gen AI's potential or likely impact is not clear.

This study helps fill some of the evidence and research gaps in Australia. Using both qualitative and quantitative analysis, it looks at Gen AI's potential, Australia's current position, key policy challenges, and medium-term options. It offers a framework for employment and skills policy to respond to Gen AI and future technologies.

Executive summary

Australia is at a critical and formative point in its transition to a Gen AI-enabled economy. Gen AI offers major opportunities to boost productivity, reshape work, and strengthen national capabilities. However, there are also important challenges that need attention, including the risks of workforce displacement, inequality, and skills mismatches.

How Australia responds to both the opportunities and challenges from Gen AI (and future waves of AI and other technologies, like Agentic AI) will fundamentally shape our economy and society. The extent to which Australia approaches this effectively, at a time when all countries are also exploring these opportunities and challenges, will also have major implications for us as part of the global economy and society.

Importantly, we are early in the broader digital and AI transition. Australia can decide how to best leverage the opportunities and appropriately minimise the challenges. A well-managed labour market and skills transition is possible, provided there is sufficient strategic focus, sense of urgency and shared commitment.

Australia has managed structural change in the past and all actors across the labour market and skills system could support the required and significant structural reform in a way that supports industries and workers in transition.

This Study is therefore very timely, in providing a whole-of-labour-market view of Gen AI and its potential impact, current impact, and medium-term implications for labour market and skills.[1]

Section 1 of this report highlights that Gen AI has the capacity to be used across a wide range of tasks and across the majority of occupations. Task exposure analysis shows that it appears to have a greater capacity to augment work than automate work, looking at its current task-level potential. It notes:

- **Gen AI's impact depends on exposure, adoption, and adaptation.** The study uses a framework where Gen AI's labour market effects are shaped by how widely it can be applied (exposure), how deeply it is adopted, and how workplaces adapt over time.
- **Augmentation generally outweighs automation.** Current Gen AI technologies are more likely to enhance workers' efforts in completing tasks, rather than replace them, especially in high-skilled occupations. The higher potential for automation is concentrated in routine clerical and administrative roles.
- **Labour market outcomes are not predetermined.** The effects of Gen AI on employment and productivity will vary based on workplace decisions, consumer demand, and policy responses, making proactive planning essential.

[1] This is a distinct set of issues to those related to AI more broadly, which have been the subject of other government processes – including the development of guardrails for high-risk uses of AI; the safe and responsible use of AI; legal reforms regarding privacy and intellectual property rights; and the environmental impacts of AI technology. These areas of regulation have a significant bearing on the climate of certainty that workers and investors operate in, and as a consequence on how Gen AI affects workers and workplaces. But given the policy processes running in parallel, it is beyond the scope of this study to address these issues at depth.

- **Adaptation is critical for long-term transformation**. Beyond initial adoption, Gen AI will drive reorganisation of work processes, requiring continuous learning and mobility for workers.

Section 2 of this report highlights the early and uneven adoption of Gen AI across Australian industries, highlighting worker-led experimentation, emerging productivity gains, and the critical need for coordinated policy and workforce readiness to support a successful national transition. It notes:

- **Adoption is accelerating but uneven**. While some industries and firms – particularly in tech and finance – are rapidly adopting Gen AI, many others remain in early stages due to barriers like workforce skills, organisational readiness, and regulatory uncertainty.
- **Worker-led 'shadow use' is an important part of adoption to date**. A significant portion of employees are using Gen AI tools independently, often without employer oversight, indicating grassroots enthusiasm but also raising governance and risk concerns.
- **Early productivity impacts are promising**. Firms report task-specific efficiency gains, especially in software development and administrative tasks, though broader organisational transformation is still limited.
- **Investment is increasing but is early**. Analysis of ASX200 companies shows they are investing in AI through in-house development, partnerships, and acquisitions, with motivations ranging from customer service improvements to risk management.

Section 3 of this report explores how Gen AI is reshaping skills demand in the Australian labour market, emphasising the growing importance of both digital and human-centric capabilities, the emergence of new workforce personas, and the need for adaptive, inclusive skills development strategies. It notes:

- **Gen AI is accelerating skill change**. The technology is increasing demand for both digital literacy and higher-order human skills like critical thinking, communication, and adaptability, while also intensifying the pace of occupational skill evolution.
- **New Gen AI related workforce 'personas' are emerging through the transition**. The study identifies seven distinct roles in the Gen AI transition – from leaders and professionals to educators and affected workers – each requiring tailored skillsets and support.
- **Lifelong learning is essential**. As Gen AI reshapes job content and accelerates change, continuous upskilling and reskilling become critical for maintaining employability and productivity.
- **Skills development must be inclusive**. Groups of workers will be impacted by the transition in different ways and to different extents, depending on occupation, industry, and demographic factors, reinforcing the need for equitable access to training and support.

Section 4 of this report examines how the Gen AI transition will create both challenges and opportunities across the workforce, with particular implications for entry-level roles, labour mobility, and equity across diverse worker cohorts, reinforcing the need for inclusive, adaptive policy responses. It notes:

- **Entry-level roles may be more likely to transform than diminish**. While Gen AI may automate routine tasks often performed by junior staff, there is no current evidence of widespread displacement in Australia. This may partly reflect the early stage of adoption in Australia. In addition, entry-level roles are also likely to evolve, requiring more judgment and oversight of AI-generated outputs.
- **Labour mobility will shape long-term impacts**. Workers' abilities to adapt to changes in their occupations, and to transition between occupations, will be critical. Some roles face repeated exposure to automation with limited mobility options, highlighting the need for targeted upskilling and transition support.
- **The pace of change could affect how experience is valued**. Occupations experiencing faster skill evolution tend to reward experience differently, increasing the importance of lifelong learning and adaptive capacity across the career lifecycle.
- **Impacts will vary across worker cohorts**. The transition will not be experienced equally. Women, older workers, First Nations Australians, and people with disability may face disproportionate risks due to occupational concentration and digital access gaps.

Section 5 of this report outlines some emerging approaches for effectively implementing Gen AI in workplaces, emphasising the importance of organisational adaptability, leveraging the expertise of workers, and investment in skills development to ensure safe, effective, and inclusive adoption. It notes:

- **Organisational adaptability is critical**. The depth of Gen AI adoption and AI maturity within firms determines their ability to redesign work processes and harness productivity gains. This adaptability varies by business size, sector, and readiness.
- **Leveraging the expertise of workers enhances implementation.** Effective Gen AI use often depends on leveraging the expertise of experienced practitioners. Engaging workers in designing AI integration improves outcomes and supports safe, context-sensitive use.
- **Training and a skills-first approach are essential**. Investing in workforce development – both technical and human-centric skills – is key to enabling meaningful adoption and mitigating risks such as job displacement or skill erosion.

Section 6 of this report highlights the urgent need for a responsive, coordinated, and inclusive skills system to support Australia's Gen AI transition, emphasising adaptive capacity, industry-education collaboration, and national stewardship to ensure workforce readiness. It notes:

- **The pace of skills change demands system-wide agility**. Gen AI is accelerating the rate of occupational skill evolution, requiring flexible and timely updates to training packages, curricula, and delivery models across both VET and higher education.
- **Traditional qualifications remain essential**. Formal qualifications develop domain expertise, critical thinking, and abilities to learn and adapt – capabilities that will remain valuable for those entering a Gen AI-enabled labour market.
- **Adaptive capacity must be built across the system**. A dynamic skills response requires support for educators, flexible program design, and a well-functioning ecosystem of formal and informal learning pathways.
- **Collaboration between industry and education and training is critical**. Structured partnerships between industry and tertiary education providers are needed to ensure training remains relevant, scalable, and aligned with emerging workforce needs.

The data and findings in Section 1 through to Section 6 reflect qualitative and quantitative analysis, often with novel methods and approaches, that JSA will continue to refine over time. These sections are supported by a series of analysis papers and case studies, which explore these topics in further detail, published separately on the JSA website.

Section 7 of this report includes 10 recommendations, focused on the labour market and skills system, that would enable Australia to best realise the potential opportunities and manage the challenges of the digital and AI transition. These are copied below and further information, including corresponding advice for policy makers for each recommendation, is included in this report.

Recommendation 1: Committing now to stewarding the transition

The Australian Government should take a leadership role in stewarding the medium-term transition to a Gen AI-enabled labour market and economy. This stewardship should leverage the Government's convening power to engage labour market actors, acting with urgency and dynamism proportionate to the scale of both the opportunities and challenges ahead.

Stewardship of this digital and AI transition should be guided by the following principles:

- Equity: Ensure all Australians can participate in, benefit from, and contribute to the digital and AI transition.
- Productivity: Drive economic dynamism and resilience, job quality and better service outcomes, through productivity gains.
- Proportionality: Ensure investments and other actions are based on maturity, risk, and systemic importance, avoiding creating issues when addressing critical needs.
- Technology Neutrality: Remain adaptable to diverse and evolving technologies.

Recommendation 2: Establishing a mechanism for stewardship and coordination

The Australian Government should collaborate with labour market actors to create a stewardship mechanism for guiding the digital and AI transition, with a focus on both immediate and medium-term needs. This mechanism should define clear principles, roles, and commitments to effectively manage this transition.

A National Compact would be the recommended framework to foster shared understanding and secure commitments from labour market actors during this critical transition period.

Recommendation 3: Enacting stewardship and coordination through an appropriately centralised, coordinated and independent capacity or institution

In addition to a mechanism, the Australian Government should enact stewardship through a centralised, coordinated and independent whole-of-government capacity or institution.

Recommendation 4: Australian governments ensuring principles are put into practice in the non-market sector to lead by example

All Australian governments should work towards being exemplars for principles-based implementation of digital and AI technologies in government and human services over the medium term.

Recommendation 5: Mobilising the entire skills system to prioritise whole-of-population digital and AI capability uplift

Australian governments should commit to digital and AI capability uplift across the skills system as a priority. Whole-of-system efforts should target uplift across the population, in line with the spectrum of needs and aspirations of learners and industry.

Recommendation 6: Supporting digital and AI foundations

Australian governments should ensure foundational digital skills and AI literacy are included in foundation skills initiatives, while acknowledging that Gen AI will raise the importance of all foundational skills including literacy and numeracy.

Recommendation 7: Embedding contemporary data, digital and AI skills in qualifications

Australian governments should prioritise efforts to embed contemporary data, digital and AI skills in the design and delivery of higher education and VET qualifications. This should include consideration of mechanisms to enable qualification design and delivery to respond to fast-evolving digital and AI skill requirements for different study and career pathways.

Recommendation 8: Activating short-form training in digital and AI

Australian governments should consider options to promote relevant and accessible short-form training targeting digital and AI capability uplift and training that provides skills for occupation mobility into high-growth roles.

Recommendation 9: Uplifting the digital and AI capability of the tertiary education workforce

The Australian Government should consider options to support educators and trainers to acquire and maintain current skills and knowledge in the Gen AI era. This should include keeping up to date with the implications of AI for teaching, learning and assessment as well as for industry practice in the relevant field.

This should be accompanied by consideration of options for AI capability uplift of the broader tertiary education workforce, especially in relation to roles where AI offers potential to increase productivity, reduce administration burden and/or improve the quality of services.

Recommendation 10: Regular data and reporting to monitor and understand the digital and AI transition

The Australian Government should consider options to regularly collect, analyse and report data and insights on the AI transition as a priority area for measurement.

1. Framing Gen AI's potential

Gen AI encompasses a set of technologies that can be applied across a range of activities in society and the economy.[2]

The potential for a broad range of applications presents both opportunities and challenges. While AI offers the promise of improved productivity and innovation, it also brings risks from disruption and the need to develop skills at pace. It is important to take a balanced, holistic view when considering this potential and recognise that Australia is still early in its AI transition, with significant scope to shape how this potential translates into actual outcomes.

The overall impact of Gen AI on the labour market will be subject to a range of dynamics (Box 1). This complexity has the following implications for policy:

- **The impact of Gen AI depends on how and where it is used**. Its effects depend on the extent of adoption; whether adoption results in automation (tasks accomplished by technology alone) or augmentation (tasks completed by workers using new technology); and how adaptations occur over time. These effects determine how work can be organised and undertaken in the workplace.
- **Labour market outcomes will also depend on the extent and treatment of productivity impacts**. Implementing Gen AI in a work process can increase output and save time. The way saved time is recouped or reallocated depends largely on decisions in the workplace and across the labour market. It depends partly on the demand for increased quality or quantity of different outputs, both within the firm and in the market.
- **Australia's path is not set and there are many potential paths**. There is significant uncertainty around adoption trajectories for Gen AI in Australia. The speed and quality of implementation is likely to vary across industries and occupations. It is also unclear how employers will respond to productivity impacts, or how consumer preferences will adapt. As such, a range of labour market outcomes is possible in the medium term.

However, despite this uncertainty, we can consider Gen AI's potential within the context of the Australian economy and labour market, based on the current state of technology.

- First, **exposure** describes the feasible application of current technology to existing work tasks – reflecting the state of technological progress in AI and related fields. Estimates of exposure give an indication of how current technologies could be applied, including the extent to which tasks could be *either* augmented or automated.
- Second, in order to understand what effects and labour market outcomes are occurring in practice, it is necessary to estimate the **adoption** of the technology.
- Third, the way Gen AI is adopted over time across industries will affect **labour market dynamics**. Exploring this involves economy-wide modelling of different scenarios of adoption trajectories while accounting for occupation-specific exposure.
- Finally, **adaptation** to Gen AI is not fully captured in either exposure analysis or economy-wide modelling. Adaptation facilitates deeper, ongoing changes to how work is undertaken, including the formation of new occupations.

[2] Generative AI is increasingly considered to be a general purpose technology, both on conceptual and empirical basis

Box 1 Conceptual framework for Gen AI's labour market impact

The primary effects[3] of Gen AI on work can be categorised as follows.

- **Automation** involves technology undertaking tasks that were previously completed by people. Automation often leads to the redesign of jobs and work processes, typically removing the need for labour on some tasks, and often requiring human intervention to supervise automated processes and check outputs.
- **Augmentation** involves people continuing to undertake work tasks but doing them with the aid of a new tool. Augmentation requires workers to learn skills in how to use the technology effectively.
- **Adaptation** occurs when production processes are adapted to account for new technology. Adaptation requires continuous learning and development to adjust to the changing job market and can lead to the redeployment of workers to new tasks.

These concepts do not predetermine the effect on productivity, workloads, or the demand for skills and labour. The extent to which Gen AI saves time or improves productivity depends on the quality of the technology, how well it is implemented and used, and the extent to which it creates further work (such as checking outputs).

What effect does Gen AI have on work and labour demand?

Labour market outcomes depend not only on how technology is used, but how it changes work processes and how any productivity impacts are translated. A range of decisions (made by employers, workers, governments, and others in society) will determine the extent of any productivity gains and their implication for workers and workplaces.

How is Gen AI incorporated into the work process?

Demand for labour in a given occupation depends in part on the extent of automation. If a high proportion of tasks in an occupation is automated, displacement could occur. If, however, tasks require human skills and expertise, work on these tasks may become more valuable (and wage levels would depend on the scarcity of the required skills).

What are the implications for workloads?

Where the technology improves overall productivity, this allows either an increase or improvement in output or saving of work hours.[4] The effect on the worker would then depend on whether the saved hours of labour were **redeployed** within the same task or in other related or different tasks in the organisation, **recouped** by the worker as leisure time; or whether they would result in a reduction in hours of employment. This is highly context-dependent, as it will depend on the extent to which firms and their consumers demand greater quantity or quality of outputs.

How does Gen AI affect demand and supply for skills?

Previous waves of technological innovation have led to changes in business process, firms and industry structures, driven by old methods being retired and replaced by new ones. This involves demand for some occupations declining while others increase. Increases in demand for labour can create upward pressure on wages and employment

– either for particular occupations or more broadly – and the opposite when demand decreases.

New occupations are also created, which may not be evident until partway through a transition. Workers' ability to transfer to occupations in demand is critical to managing workforce disruption and any risks that persist. Whether workers move to higher-skilled and higher-productivity jobs, or otherwise, can determine whether labour productivity and wages will rise or fall for those workers. These in turn affect incentives for individuals to invest in training and skills.

Is there a market for additional (or higher quality) outputs?

If an occupation experiences a productivity increase (say, via augmentation), workers can produce more or better outputs in the same amount of time. If more outputs can be sold at market, this makes it more likely that demand for labour could increase. If the firm cannot sell additional outputs, it may produce the same quantity with less demand for labour hours (i.e. creating downward pressure on wages and employment).

Are people willing to pay more for the same outputs?

Wages can rise as a result of productivity increases *elsewhere* in the economy. The Baumol effect suggests that the rising wages among occupations with improved productivity can lead to higher prices paid for the outputs of some sectors where demand is less responsive to price changes (Baumol & Bowen, 1965). This may apply most directly to services that are not easily substituted, and for goods and services that consumers may demand regardless of rising costs. In this way, some occupations that do not directly harness new technologies may still benefit.

What institutional structures and frameworks help determine employment outcomes?

In practice, outcomes will be shaped by institutional structures for setting wages and conditions. For instance, minimum wages and conditions are set in Australia through regulatory frameworks that have significant bearing on wage differentials across occupations and industries.

Mechanisms for setting employment, wages and conditions in the non-market sector are subject to a unique set of dynamics The non-market sector tends to include industries where productivity gains are difficult to measure, let alone capture. Deliverables are often framed by quality frameworks and universal service requirements and governed by budgetary and regulatory frameworks.

[3] These processes are not unique to Gen AI – rather, they capture how technologies can change work processes. Indeed, there has been automation, augmentation, and adaptation across recent decades in the Australian labour market, in response to changes in machinery, computing, and connectivity.

[4] Automation of tasks would mean that the same output could be produced with fewer working hours. Augmentation would allow workers to produce equal, more or better outputs in the same amount of time. If the production expands output (given unmet demand or increased market share) the number of working hours may not reduce. If the same level of output is produced then this output can be undertaken with fewer work hours under augmentation.

1.1 Exposure to Gen AI – more augmentation than automation

Exposure analysis provides a useful indication of how current AI technologies could potentially be applied to tasks and occupations in the Australian labour market (Box 2). Necessarily, the analysis is reflective of a point in time, as it is based on current Gen AI technologies. These exposures are subject to change as technologies improve and evolve.[5]

Box 2 Exposure to Gen AI automation and augmentation

Several recent reports have examined exposure to Gen AI in Australia using a method based on Felten et al. (2021).

This study extends on these analyses by implementing a method developed by the ILO (Gmyrek, Berg, & Bescond, 2023) and enhancing it for the Australian ANZSCO classification system. We also include an additional direct and ordinal measure of augmentation, as opposed to the residual binary measure the ILO applies.

This reflects a more up-to-date understanding of Gen AI technology than Felten's and offers a more granular estimate of its effects than the ILO's.

Essentially, the method estimates and interprets exposure as follows:

- Estimated scores show both the potential to augment (augmentability) and automate (automatability) each work task within an occupation, with two scores per task ranging from 0 to 1.
- The exposure scores of a particular occupation reflect the average potential automatability and augmentability for all work tasks within that occupation.
- To assess the spread in task-level scores within an occupation, we then use the standard deviation of scores across tasks. That is, within the same occupation, some tasks could be highly automatable or augmentable and some the opposite.

The scores are intended to aid comparison between tasks and occupations. Our interpretation of the scores are as follows: for a given task, a low automation score suggests that very little (if any) of that task could be automated, and that there is little scope for the task to be automated. This suggests that a human worker would have to undertake most of that task in most situations. The medium augmentation score suggests that the worker completing the task would benefit from working with Gen AI tools.

The scores cannot be used to infer the quality with which Gen AI might acquit a task.

Our analysis suggests a far greater potential for occupations to undergo augmentation rather than automation, based on current technology. Overall, around 4% of the current workforce

[5] The emergence of agentic AI has some implications for the automation and augmentation of tasks. To date, agentic AI appears to have a much greater likelihood of automating tasks that are structured, predictable, and low risk. Where agents are applied to more complex, less routine tasks, our consultations suggest human involvement will likely continue to be needed for decision-making, judgment, accountability, or contextualisation.

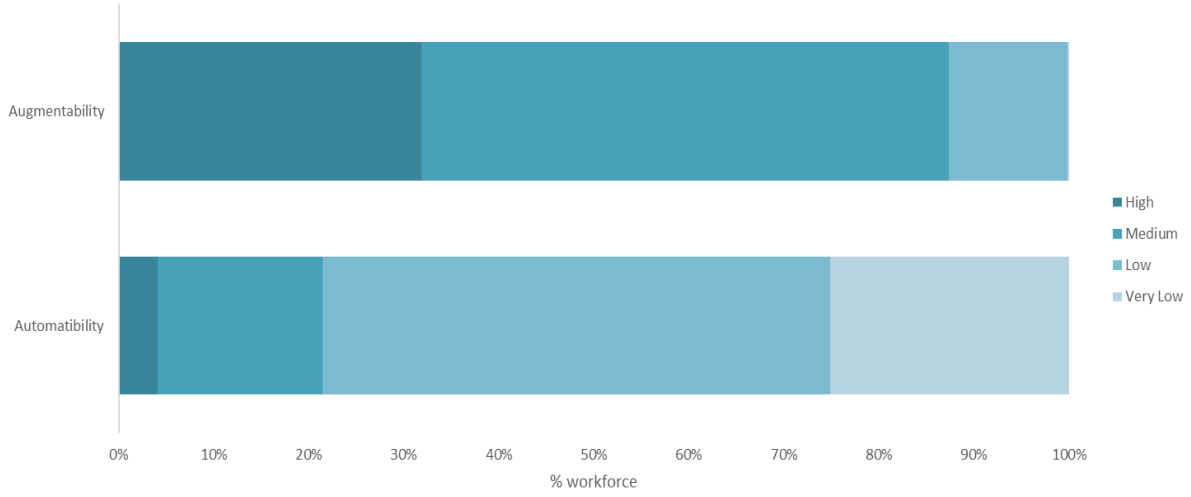
are in occupations that have high automation exposure to Gen AI, whereas 79% has low automation exposure (Figure 1).

Since the analysis is done at the task level, each occupation comprises tasks that could be either automated or augmented. Around 21% of occupations have medium to high likelihood of automation with some augmentation as well (Table 1).

Nearly half of all workers are currently in occupations with low automation and medium augmentation scores, suggesting the occupation would more likely experience change rather than disruption (given most of their tasks could not be automated, and some of their tasks could potentially be augmented by the use of Gen AI tools).

It is important that individuals are not lost in this aggregate picture of the labour market. These exposures relate to occupations that people are working in. They highlight that some people will be particularly impacted by this technology change in the labour market - some negatively impacted and some positively impacted. When we look across the broad picture of the labour market these exposure insights help identify groups of workers and their occupations where the challenges of the transition may be particularly acute. However, it's important that, in turn, these acute challenges aren't generalised across the board, and to all occupations.

Figure 1: Most of the workforce are in jobs with low automation but mid to high augmentation exposure



Note: High, medium, low and very low refer to exposure scores. In this chart, exposure scores of 0.7 and above are labelled ‘high’; scores between 0.5 and 0.7 are labelled ‘medium’; scores between 0.25 and 0.5 are labelled ‘low’, and scores below 0.25 are labelled 'very low'

Source: JSA Analysis; ABS ANZSCO, Version 1.3 (v1.3), ABS Census 2021 (Tablebuilder).

Table 1. The distribution of Australia's workforce according to the exposure of their occupation to Gen AI

	Low and Very Low automation	Medium automation	High automation	Total
Low and Very Low augmentation	13%	0%	0%	13%
Medium augmentation	49%	5%	2%	56%
High augmentation	17%	12%	2%	31%
Total	79%	17%	4%	100%

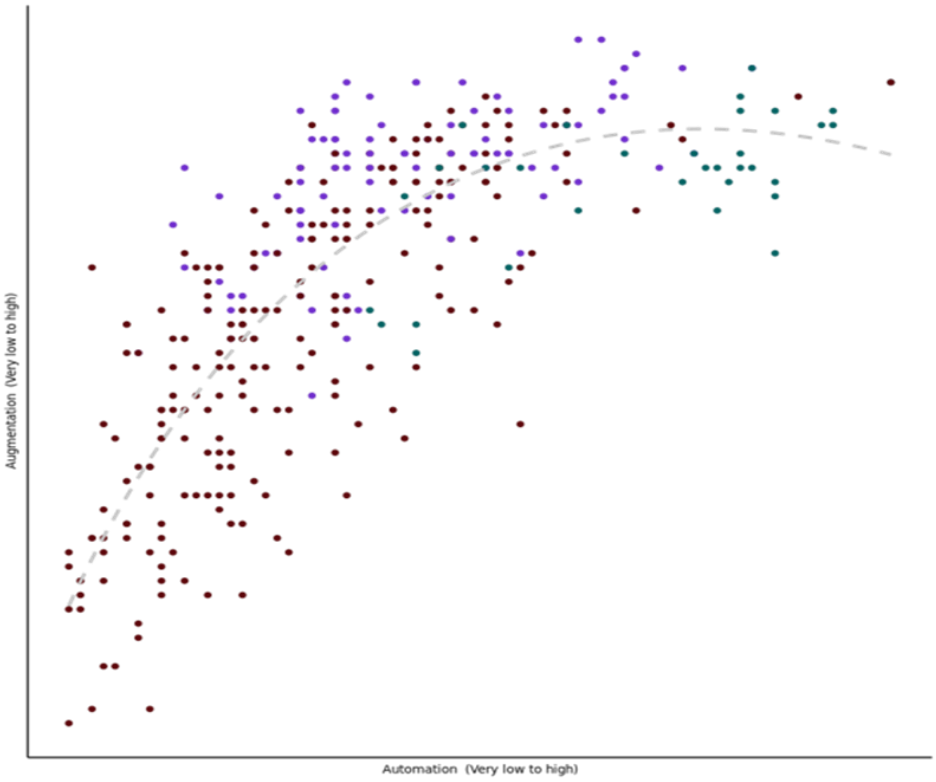
Note: High, medium and low refer to exposure scores. In this simple summary table, exposure scores of 0.7 and above are labelled 'high'; scores between 0.5 and 0.7 are labelled 'medium' and scores below 0.5 are labelled 'low and very low'.

Source: JSA analysis, Census 2021 (Tablebuilder).

Figure 2 shows the augmentation and exposure scores for the 998 occupations identified at the 4-digit level of the ANZSCO classification. Exposure varies widely across individual tasks and occupations – unsurprising given that use cases vary significantly across the economy. The results illustrate the spread of occupations in their exposure to both potential automation and augmentation, noting that augmentable tasks (that make use of knowledge or technical skills) are often accompanied by routine, standardised or repetitive tasks (such as administrative tasks).

Figure 2: Professional occupation group skews towards augmentation

Potential augmentation versus automation of occupations



Note: Professional occupations (ANZSCO Major Group 2; purple), administrative and clerical occupations (ANZSCO Major Group 5; teal), and other (ANZSCO Major Groups 1, 3, 4, 6, 7,8; brown).

Source: JSA Analysis; ANZSCO (v1.3), Census 2021 (Tablebuilder).

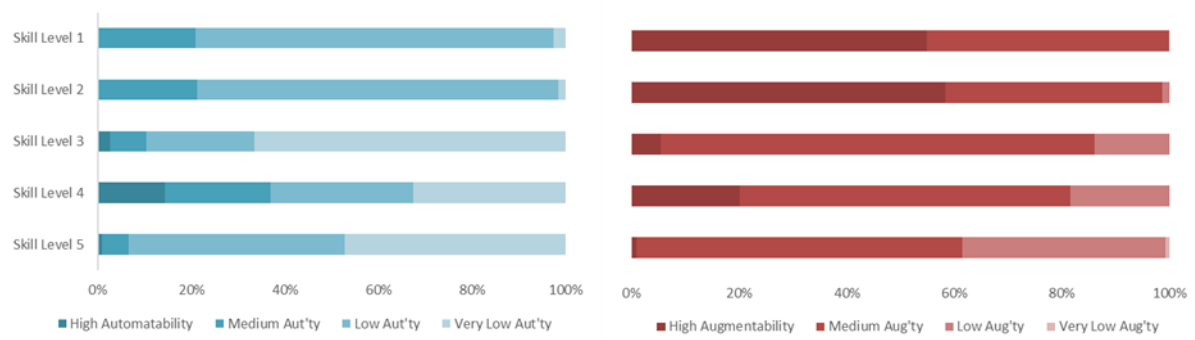
Gen AI's transformative potential stems from the nature of its role in production and the vast set of potential applications. However, this does not necessarily mean that it will transform each occupation. Some occupations have relatively low exposures – those facing low exposure to automation will likely have a small proportion of tasks undertaken by Gen AI. Those exposed to augmentation will still require human involvement, although the nature of involvement may change.

Knowledge work and higher-skilled occupations are more **augmentable**, based on their current tasks. While the estimated exposures vary between occupations, their distributions show that potential augmentation outweighs potential automation across all skill levels and specialisations. Gen AI has a higher propensity to augment work in higher-skilled occupations (ANZSCO skill levels 1 and 2 in the right panel of Figure 3). This likely reflects the opportunities for the technology to be incorporated into knowledge-based work, as well as technical tasks.

The potential to **automate** tasks is highest for the middle-skill occupations, particularly at ANZSCO skill level 4, which includes several forms of clerical work (left panel in Figure 3). Many clerical tasks – that were not affected by previous waves of automation – could now be undertaken in large part by Gen AI (Figure 4). Higher skill levels reveal greater exposure to medium automation potential, suggesting highly skilled occupations could discover new efficiencies based on the current technology. These scores would be expected to shift as Gen AI technologies evolve, especially with more integration of robotics and complementary technologies.

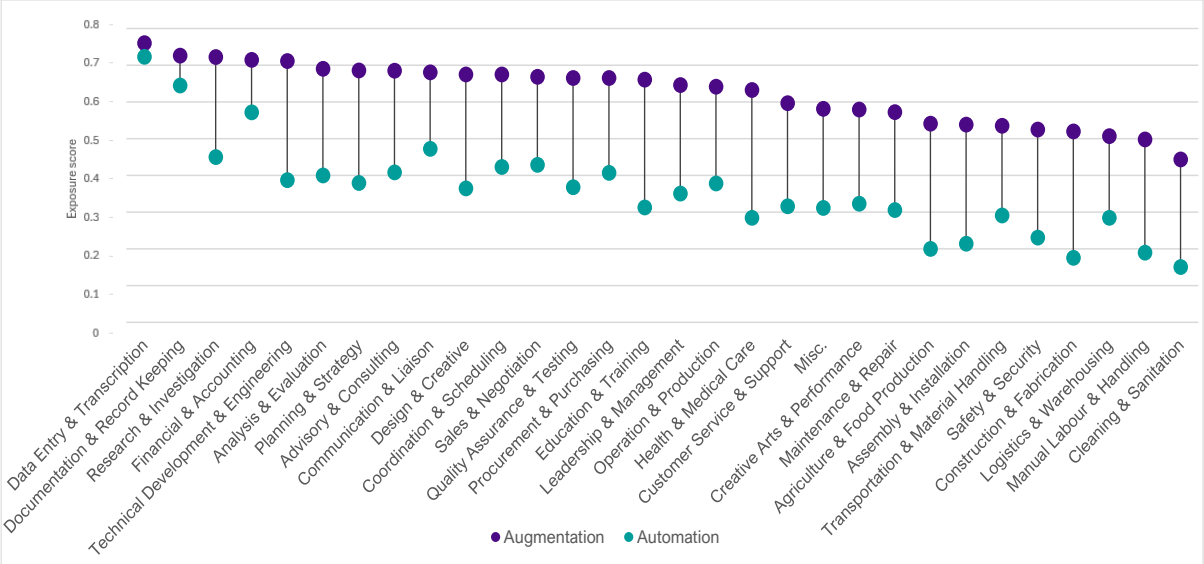
Figure 3: Highest skill levels are most exposed to Gen AI

Potential automation (blue) and potential augmentation (red) - % workforce (x axis) exposed to Gen AI by occupation skill level



Source: JSA Analysis; ANZSCO (v1.3), Census 2021 (Tablebuilder).

Figure 4: Exposure varies by task routine and labour intensity



Source: JSA Analysis; ANZSCO (v1.3), Census 2021 (Tablebuilder).

While exposures can help describe the potential use of Gen AI in the Australian labour market, it does not account for many practical aspects of work. Many tasks that are 'exposed' to Gen AI may not be automated for reasons related to social norms, inherent value of human interaction, regulations affecting adoption, or other factors. For example, while communication tasks might technically be exposed to automation, it is unlikely that automation would be used to deliver a legal judgment, or communicate sensitive news.[6] These practicalities are not reflected in the exposure scores. As such, the scores provide a useful but limited frame for considering where the scope of work could evolve with technological change.

The scores do not provide *direct* insights on labour market outcomes such as wages or employment levels, but are useful in supporting a range of analysis into labour market and skills implications.

Importantly, exposure will change over time as technology changes. In some cases, technological advancement will be needed simply to achieve current estimates of potential automation and augmentation (for instance, existing technologies may need to improve in accuracy). In other cases, technological progress will mean that tasks can more easily be automated or augmented. The emergence of Agentic AI raises these questions – there are some indications that it will apply most directly to structured, routine tasks that may already be considered exposed to automation. It may also expand the extent of augmentation, as workers spend more time managing autonomous agents.

1.2 Adoption and labour market dynamics

Exposure to Gen AI does not determine when Gen AI would be adopted and used.

The adoption of Gen AI will depend on its performance against particular tasks – both in comparison to workers and as a complement to workers. Evidence suggests that accuracy is a common perceived and experienced risk associated with AI use (KPMG, 2025). Others

[6] Moreover, given Gen AI technology has not been adopted in full, real effects will be lower than theoretical estimates of exposure.

note that AI will increasingly be used for tasks where it can perform tasks in ways that humans cannot, even if accuracy is sacrificed:

> *"When a system has a bottleneck related to speed, scale, scope or sophistication, or when one of these factors poses a real barrier to being able to accomplish a goal, it makes sense to think about how AI could help. Equally, when speed, scale, scope and sophistication are not primary barriers, it makes less sense to use AI. This is why AI auto-suggest features for short communications such as text messages can feel so annoying. They offer little speed advantage and no benefit from sophistication, while sacrificing the sincerity of human communication." (Schneier & Sanders, 2025)*

At the same time, decisions on how to implement Gen AI depend on a range of factors aside from the capability of the technology. Human decision-making and accountability is often critical to managing significant risks. People may also manage better with non-routine and unstructured work processes (Section 3). And for some tasks, human involvement may be inherently valuable.

A growing body of research is moving beyond the binary view of adoption (i.e. whether technology has or has not been adopted).[7] In its simplest form, the concept of adoption fails to capture the extent of integration, use, and impact. Different stages of technology maturity can be identified by the extent or depth of adoption (Figure 5).

While the economic impact of Gen AI increases as its use is more deeply embedded and accompanied by transformation of business processes and models, this does not mean the earlier stages are to be ignored. Organisations require different skills and capabilities to make the most of each stage. For instance, passive adoption via software updates may be facilitated through a broader Software as a Service ecosystem and cloud computing. Use of off-the-shelf adoption requires sound procurement capabilities. Strategic and transformational adoption requires investment and change management, and the ability to configure AI solutions to specific business needs.

[7] For example, the OECD has considered the intensity of AI use (2023), while others such as Accenture (2021) has considered AI maturity. 'Shadow use of AI' or 'shadow AI' has been highlighted by the technology sector, including IBM (Krantz, Jonker, & McGrath, 2025).

Figure 5: AI adoption is not a simple concept

Shadow use (Individual worker-led)	**1. Aware / Passive (no active use)** Updates to existing software increasingly contain AI and are adopted as a matter of course.
	2. Experimental / Tactical (Pilots) Off-the-shelf technology applied directly to existing work tasks. Requires sound procurement.
	3. Operational / Systematic (Deployed at scale) Solutions are progressively integrated across the organisation. Use cases require configuration.
	4. Strategic / Integrated (Embedded and aligned) AI is embedded in core processes, with alignment in strategy and governance.
	5. Transformational (Reshapes and enables) AI drives innovation, new capabilities, or shifts in business models.

An unusual feature of the adoption of AI technologies is that it is often led by individual workers who have sourced their own tools and training. Individual adopters seek to realise individual productivity gains either to recoup time or be rewarded for improved quality and performance. This type of adoption can occur without employers' involvement or awareness – known as 'shadow use'. While it can produce positive outcomes, shadow use also results in responsibility for governance and risk management being transferred to the worker. Organisation-level adoption allows more uniform and deeper implementation, as well as consideration of centralised governance of data and AI tools.

Gen AI's potential is only realised if the technology is adopted and well-implemented. Different workplaces, organisations and industries are likely to progress through stages of maturity and depth of adoption in according to different trajectories.

Adoption trajectories and labour market dynamics

Through different phases of adoption, there will be interactions between the quality of technology; the degree of trust people have in the technology; the extent to which people use the technology; and productivity.

Workers who use AI more frequently have been found to be more trusting of the AI (FSO, 2025). This may reflect a dynamic where increased use results in greater trust, or alternatively, it may indicate that people who trust AI more are more willing to use it.

The extent and frequency of use in turn will have implications for the quantum of productivity gains that are realised. And while evidence suggests significant lack of trust of AI technologies (Deloitte Access Economics, 2024), the trustworthiness of AI tools is likely to improve as they become more accurate and effective. It is unclear how quickly these factors will evolve or how the adoption of Gen AI will unfold. As such, while technologies may become standard practice in the long term, the short and medium terms may still be characterised by leaders and laggards.

Economy-wide modelling can be useful to explore how exposure and Gen AI adoption may influence the labour market over time (Box 3). Our analysis used a Computable General Equilibrium (CGE) modelling similar to what currently underpins the JSA employment projections, but with a novel design that accounts for the potential augmentation and

automation effects of Gen AI. Importantly, the model allows for the fact that occupations are subject to both automation and augmentation to different degrees.

Box 3 Dynamics of adoption across the labour market

Computable General Equilibrium (CGE) modelling was undertaken by JSA in conjunction with the Victoria University Centre of Policy Studies.

The Victoria University model was adapted to account for both the automation and augmentation effects of Gen AI on occupations. The approach itself aligns more closely with the automation, augmentation, adaptation framework this study has adopted from (Acemoglu & Restrepo, 2022) and makes use of the exposure estimates produced in our study.

At this early point in time, CGE modelling of the impacts of Gen AI is best suited to considering broad and illustrative scenarios.

For illustrative purposes, three stylised scenarios were explored through the modelling:

1. Augmentation and automation occurring simultaneously, reaching 50% of the full potential Gen AI use (as defined by exposure analysis) at 8 years.
2. The non-market sector adopting Gen AI at a slower rate (reaching 50% of the full potential use by 12 years) compared to the market sector (reaching 50% of the full potential use by 8 years, as in the first scenario).
3. Augmentation occurring faster (reaching 50% of the full potential use by 5 years) than automation (reaching 50% of the full potential use by 10 years), to provide an illustration of different effects from augmentation and automation through adjusting their respective timing.

In addition to these three scenarios being compared against each other, it is also useful to compare them against a ‘baseline scenario’, which is the existing published JSA employment projections. The differences in the timing of changes in these scenarios largely reflect the underlying assumptions around the pace and extent of adoption.

Our use of this model was geared toward exploring the unfolding and varied effects of Gen AI adoption across the labour market, with a strong compositional focus, rather than on aggregate macroeconomic outcomes.

Further work would be needed in considering the potential effects of Gen AI on a range of macroeconomic indicators, including total factor productivity (TFP). This would require a more detailed treatment of parameters and assumptions, such as the costs of AI-related capital, adoption rates more informed by real-world data, and the industry-specific effects on TFP.

The model is intended to illustrate stylised relationships rather than forecast how employment is expected or likely to change. It does not seek to answer the inherently challenging question forecasters grapple with of exactly how many jobs will be added and how many will be replaced as a result of the use of Gen AI, or if the full potential of the exposures will actually be realised. It instead shows how Gen AI adoption scenarios could influence economic and labour market trajectories, based on the potential exposure of occupations to Gen AI related change.

One of the inherent limitations of the CGE model's treatment of employment levels is that it presumes all 'time saved' results in displacement (as opposed to the various dynamics discussed in Box 1). The full quantity of displaced labour is then translated to reduced labour input, which then moves into adjacent occupations or industries (based on qualifications and with next best return). Importantly, even as stylised outcomes, this model cannot account for:

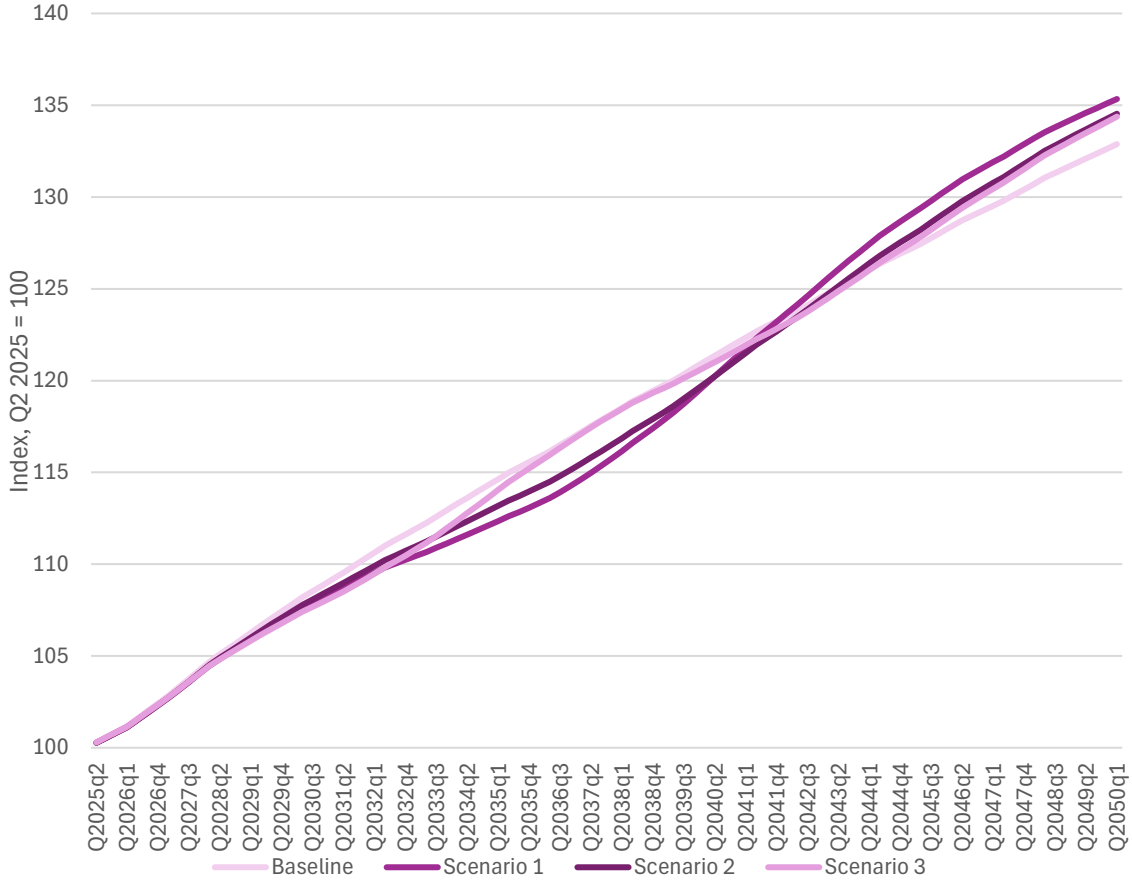
- the creation of new tasks or occupations
- adaptations to the design of work processes and occupations (and hence demand for particular skillsets)
- changes to goods and services themselves that may occur as a result of technological advances and consumer preferences
- how working arrangements may change, particularly the hours worked and whether automation and augmentation could lead to changes in underemployment or overemployment within employment

Any assumptions around timing in these models are also that - assumptions. It's important to note that neither JSA or VU are forecasting that these adoption rates would necessarily occur by these dates, but they illustrate how change could progressively occur in the labour market, as the exposure of tasks to potential augmentation and automation progressively translate into changes for occupations.

With this in mind, the CGE model results suggests that employment growth could be slower in the medium term due to Gen AI use, as the labour market adjusts to Gen AI, followed by much faster employment growth after this adjustment period (Figure 6). It should also be noted that the models show continued employment growth over the period. This illustrative modelling suggests the Gen AI transition will be marked less by the structural shocks of large numbers of people being displaced and more by gradual reallocation of labour and shifts in task composition.

Figure 6: Projected employment increases under the baseline and illustrative scenarios

Index of employment, 100 = 2nd quarter 2025



Source: JSA analysis of illustrative Computable General Equilibrium scenarios conducted with Victoria University.

Still the extent of any adjustment effect on employment growth from Gen AI – and indeed how quickly a rebound could occur – would depend on how well the economy can make use of a greater supply of skilled labour. If the full potential of Gen AI is realised the CGE model suggests increases in employment and the size of the economy compared to the base case scenario by 2050.[8]

Given Gen AI is assumed to automate on average 13% of tasks and augment around 55% of tasks, the model assumes this labour is no longer used for its original purpose. This creates a productivity gain, which increases overall output. The increase in output increases the demand for labour in general, which in turn uses up displaced labour. Ultimately, the productivity gain leads to higher overall employment but with a different composition of employment by occupation and industry. The difference is driven by the degree of automation and augmentation of each occupation plus the response of each occupation to the increase in demand created by higher productivity.

Adaptability of employers and the workforce, as well as dynamism in the labour market and economy more broadly, will be critical to facilitating greater allocation and redeployment of labour to support these potential gains, and in reducing the scope for displacement to lead to increases in unemployment.

[8] Noting that this model was geared toward exploring the effects of Gen AI adoption across the labour market, rather than on macroeconomic outcomes.

This will vary according to exposure of different occupations to augmentation and automation, and the different occupational composition of industries and groups of workers. This compositional story from the CGE modelling is where it is more useful. It suggests that:

- Employment in occupations with high AI exposure indices, particularly the clerical occupations and some professional occupations, will be below base case, as employment increases in occupations less subject to automation or augmentation, particularly the trades and community service occupations.
- The five **occupations** (3-digit ANZSCO level) which would lose the most employment in 2050 relative to the base case are General clerks, Receptionists, Accounting clerks and bookkeepers, Sales, Marketing and public relations professionals, and Business and systems analysts, and programmers. The five **industries** with the greatest losses are Retail trade, Public administration and safety, Financial and insurance services, Professional, scientific and technical, and Rental, hiring and real estate.
- The five **occupations** which would gain the most employment in 2050 relative to the base case are Cleaners and laundry workers, Midwifery and nursing professionals, Business administration managers, Construction and mining labourers, and Hospitality workers. The five **industries** with the greatest gains are Construction, Accommodation and food services, Manufacturing, Education and training, and Agriculture, forestry and fishing.

Based on the trajectories of Gen AI uptake, the modelling suggests that the displacement and reallocation disruption effects on employment would be at their greatest extent in the middle of the transition, before improving above the current baseline projections. Regardless of the actual speed of transition, this should be a sufficient amount of time for Australia to prepare policy and other actions to effectively influence the outcome.

Where Gen AI adoption is lagged – either in terms of the non-market sector lagging the market sector, or where labour-augmenting technologies are implemented faster than automating technologies – this mechanically reduces the degree of employment displacement and reallocation. These lags also affect the rate at which economic benefits are accrued. In reality, such trade-offs between employment effects and the benefits of Gen AI are not assumed. To the extent that saved time can be redeployed within the firm, or where workers can move quickly to new occupations, or where already overstretched workers simply avoid overtime hours, the use of Gen AI need not reduce employment. Where Gen AI expands the potential for service delivery, particularly where there is unmet demand, it may increase the demand for particular occupations.

In considering labour market implications it is also important to continue to remember that these could extend beyond employment, such as the hours that people work or other working arrangements. Some automation and augmentation will potentially translate into reduced hours that some people work and contribute to underemployment (people with insufficient work). Also, without appropriate skills uplift occurring or occurring at a sufficient pace, the Gen AI transition could also see more highly skilled people being overemployed (people with too much work, including people working long hours). As the transition progresses it will be important to explore broader implications, beyond employment, as early insights into working arrangements emerge.

1.3 Adaptation and the re-organisation of work

As new technology is implemented into existing business operations and activities, adaptation and re-organisation will occur. For example, when electricity was introduced, it was first integrated into existing plants and factories but in subsequent periods it led to the major redesign of plants and factories (to best harness electricity), to new products and processes, and ultimately, to the next waves of innovation in work and output (Agrawal, Gans, & Goldfarb, 2022).

This is also likely to be true for Gen AI, with the extent of adaptation around this new technology not easily identifiable in data in the short to medium term.

That said, emerging job adaptation can be identified in multiple ways, such as:

- Job hybridisation: Through similar jobs combining as a result of AI automating tasks in previously distinct jobs.
- Job specialisations: Through new jobs combining together clusters of niche AI tasks as a new specialisation.
- Emerging trends: Evidence from job profiles indicating areas of emerging trends in the novel applications of AI in the economy.

Expanding on our task-based exposure analysis, we considered theoretically how occupational change patterns could occur as a result of Gen AI (Box 4). We used a method involving similarity scores estimated for pairs of occupations. Where tasks are highly exposed to automation, we estimate how, based on remaining tasks that are not automated, occupations may become more or less similar. We also considered the potential for augmentation of particular tasks to make occupations more or less similar.

While a conceptual exercise, it is possible to visualise clusters of possible new specialised jobs in the intersection of AI tasks across jobs through network analysis. The following clusters of jobs are those where the similarity score has increased across a number of related jobs. Therefore, where AI tasks naturally cluster in the intersection of jobs and have the potential to form new jobs are within the domains of engineering and trades, sales and logistics, hospitality and customer service, health, and management and administration.

The augmentation effects are strongest in tasks associated with data entry, documentation, and research. Similarity or intensification of each type of tasks within jobs can result in increased hybridisation or niche clusters.

It is important to note that some degree of adaptation is a normal feature of the labour market, which is only emphasised by technological disruption. Some aspects of adaptation are observed through recent changes in skills supply and demand (see Section 3).

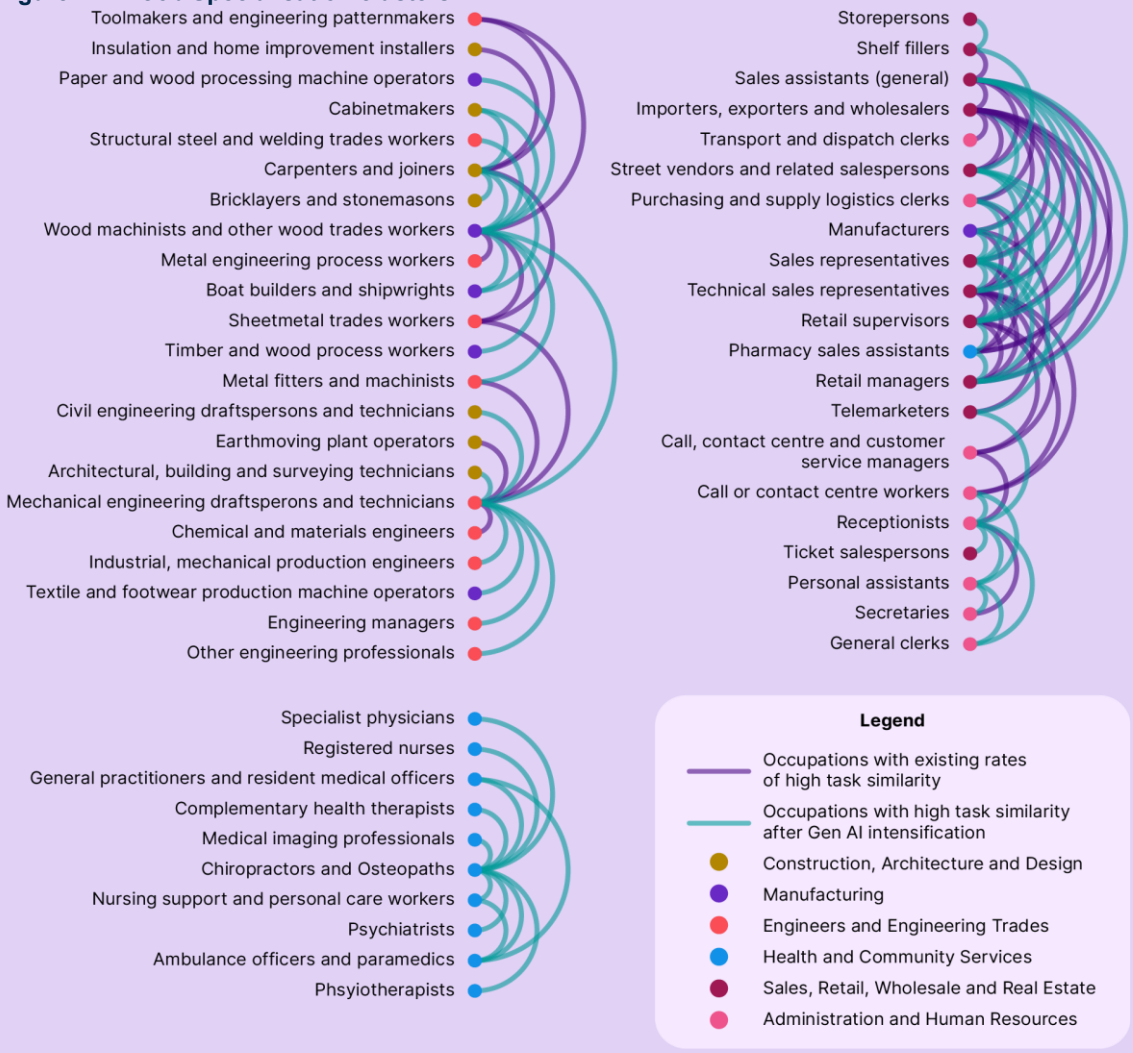
Box 4 Adaptation frontiers - hybridising and specialising jobs with Gen AI

We explored job specialisations and hybridisation using the ANZSCO unit occupations (that is, at 4-digit level of the classification) and exposure estimates at the task level. This involved computing similarity scores between occupations according to the kinds of tasks involved (Analysis Paper C). By intensifying AI and non-AI tasks in jobs and measuring their similarity, we understand how jobs can evolve and emerge.

The analysis showed that while clusters already exist between occupations with similar tasks (nodes connected by purple lines in Figure B4.1) the implementation of Gen AI to automate and augment particular tasks could lead to occupations becoming more similar, creating new connected clusters or opening new pathways (nodes connected with teal lines in Figure B4.1).

This does not necessarily mean those occupations will change, but shows that workers may have more transferable skills sets within these clusters and that could lead to job redesign or the emergence of hybrid roles.

Figure B4.1: Job Specialisation clusters



Source: JSA analysis; ANZSCO v1.3.

1.4 Implications for policy

Ultimately, labour market outcomes will depend on the extent of automation and augmentation of tasks, the role of workers' expertise, the gap between high and low skilled users of the technology, and how supply and demand in the labour market and broader economy changes in response to these technology changes.

Our analysis shows that, while Gen AI exposure is far from uniform, its ability to augment occupations is broad. Its effects will also depend on how well AI is implemented across occupations and industries and how employers respond to productivity impacts. The adaptability of the workforce to new technologies will be instrumental in achieving the benefits from labour-augmenting tools. The adaptability and dynamism of the labour market will dictate how saved time can be redeployed and reallocated, and the extent to which it impacts employment growth, both positively and negatively.

Some labour market dynamics will differ between early and late stages of adoption. If early adopters are able to improve productivity and increase their market share, this may have different implications for their workforce than in a more mature phase of adoption, where all competitors have adopted the technology. As such, the implications for displacement, or the extent of labour market disruption, are particularly difficult to assume at this stage. While early observations and experiences are useful as examples, this may not necessarily set expectations of future dynamics.

Moreover, the effects of Gen AI are unlikely to be linear, given that technology adoption typically follows an S-curve, characterised by leaders and laggards, where the majority of adoption occurs in a relatively short space of time. Under these assumptions, our illustrative economy-wide modelling suggests we may not see the most significant employment effects for a decade, which could accord with the time taken for deeper adoption and related structural changes.

Finding 1: Gen AI could be applied to most occupations but to different extents, and there is generally greater potential for task augmentation than automation

At this stage, Gen AI could be applied to some portion of the tasks in the majority of occupations. Overall, there is far greater potential for occupations to be augmented than to be automated.

The potential impact of Gen AI is uneven across the economy. There is more potential for augmentation in medium- and higher-skilled occupations and to knowledge-work. There is more potential for automation in repetitive, structured and routine clerical tasks.

Exposure will change over time where new technological developments allow AI to be applied differently or to different tasks (including improvements in the capabilities of Gen AI and robotics, or the ongoing emergence of Agentic AI).

Exposure scores do not capture all the practicalities that may make Gen AI more or less applicable in a given situation. Neither does it reflect the implications for the replacement of previous technologies and retirement of assets.

Finding 2: Adoption and adaptation will determine how Gen AI's labour market impacts and its potential are realised

The quality of adoption and implementation will be instrumental in achieving the benefits of labour-augmenting tools. Implementing Gen AI requires adaptability for both employers and the workforce.

More broadly, adaptability and dynamism in the labour market (and the economy) will dictate how any saved time could be redeployed and reallocated. This will ultimately determine how the use of Gen AI influences employment growth, both positively and negatively (as modelled).

Over time, the use of Gen AI and other technologies will lead to various forms of adaptation. This includes changes within-occupations, across occupations and with regard to working arrangements. As such, the effect of technology on the labour market will continue to evolve.

Considering "first order" adaptation – where automation and augmentation may cluster tasks – can help identify where specialised or hybrid roles could emerge within existing occupations and roles.

Given the complexity of dynamics of Gen AI use, a wide range of labour market outcomes is possible in the medium term (around 15 years, for the purposes of this Study). This will require regular monitoring, to inform effective strategy and planning across the labour market and skills system.

2. The current state of Australia's Gen AI transition

Gen AI adoption is at a relatively early stage in Australia. Adoption has been measured and monitored in the past 2 years through a range of industry surveys (Box 5). These surveys indicate expanding awareness and engagement with AI technologies, however they provide limited information about how the technologies are being used in work processes beyond piloting and experimentation.

We explored a range of other indicators, together with qualitative research, both of which support the suggestion that Gen AI adoption is relatively early and highly variable in Australia, including across different firm sizes and industries.

Box 5 Survey evidence on adoption

A variety of surveys suggest that AI adoption has increased significantly in the past two years (Table B5.1). Surveys of this kind, focused on AI in businesses, are prolific and partial. Nevertheless, the diversity of results gives some insight, at least into why businesses are considering adoption, as well as into seemingly disparate rates of adoption by different businesses and industries. Ongoing monitoring by NAIC shows significant variations in adoption by business size (with significantly higher adoption for larger businesses) and between industries (National AI Centre, 2025).

Table B5.1: Simple estimates of AI Adoption in Australia

Adoption rates of AI technologies, which may or may not include Gen AI, as measured by various surveys of Australian businesses. Non-ABS survey samples are not designed to be representative of the whole of the economy

Survey	Year	AI Adoption rate[D]	Sample
ABS Characteristics of Business Survey[A]	2022	1%	70,000 Australian businesses
MYOB (2024)[B]	2024	19%	1,012 Australian SMEs
NAB (2024)[B]	2024	23%	700 Australian SMEs
PwC (Pagram, 2024)[C]	2024	25%	116 Australian businesses
Ai Group (2024)[B]	2024	52%	182 Australian businesses
NAIC (2025)	Jan – Jun 2025	27%	400 Australian businesses

[A] Results predate introduction of ChatGPT. While at an early point in adoption, the 2022 ABS Characteristics of Business Survey showed that adoption already varied by size (9.5% for those with 200 or more employees, 3.3% for 20-199, 1.4% for 5-19, and 1.1% for 0-4) and industry (7.7% for Information media and telecommunications, 3.6% of Professional, scientific and technical services, and through to industries with virtually no adoption). [B] Reporting on data and results covers various AI technologies and does not identify Gen AI explicitly but Gen AI is taken as being included in the definition of AI applied given responses. [C] Reporting on data and results explicitly identifies Gen AI. [D] Reporting on data and results covers various AI technologies.

Source: ABS *Characteristics of Australian Businesses*; Ai Group (2024); NAIC (2025); Pagram (2024); NAB (2024); MYOB (2024).

2.1 Indicators of increasing Gen AI use

Investment in AI, technology and related skills

Business investment in AI and related technology and applications of technology are a critical part of adoption. An analysis of ASX200 company 2024 reports showed that the vast majority of Australia's largest employers are actively investing in some form of digital technologies, including many that underlie the use of Gen AI.

More than half had mentioned investments in AI technologies specifically, which suggests movement toward the implementation of AI among large employers. To the extent that such investments are part of longer-term projects, they may not yet result in observable uses of AI or changes in how work is being undertaken.

The reasons for investment have also varied, focusing on different forms of productivity improvement, including improved customer service, new products, and risk management (Box 6). These reasons illustrate to some degree to what extent further AI use will depend on the design of internal work processes, and to what extent customer preferences will affect adoption trajectories.

Box 6 Companies are investing in AI and technology

In 2024, the vast majority of ASX200 mentioned technology investments in their annual reports (84%) with more than half of ASX200 companies mentioning AI-related investments (57%). Those mentioning investments in AI tended to be larger companies, representing 77% of market capitalisation.

Many companies are investing in technologies that could eventually facilitate Gen AI use, including cloud infrastructure and platform services (85 companies); cybersecurity and data protection (167 companies); enterprise software and digital automation (134 companies); data analytics and business intelligence (63 companies).

Investments in AI and related technologies have taken various forms. In 2024:

- 86 companies had allocated resources to developing AI capabilities in-house, including establishing AI research teams or developing projects with internal staff.
- 61 companies had purchased rights to use existing AI technologies developed by other organisations.
- 25 companies had purchased one or more startups specialising in AI technology to integrate their capabilities, IP and talent.
- 37 companies had an official agreement with established AI technology providers to implement technology together.

The reasons for investing in AI also varied across the ASX200.

- For 57 companies, AI investment focused on improving interactions with customers, e.g. chatbots and customer insights tools.
- For 84 companies, AI investment focused on streamlining internal processes, reducing manual tasks and generally improving efficiency.
- For 56 companies, AI investment focused on enhancing existing offerings by creating new products or new features for existing products.
- For 35 companies, AI investment focused on identifying, assessing or mitigating business risks or adherence to regulatory requirements.

Using Crunchbase data, AI investment by financial institutions into startups and scaleups was $9.8 billion in 2024, down from $15.5 billion in 2023. Of that, 28% went to the professional, scientific and technical services industry, 16% went to the financial and insurance services industry, and 11% went to the manufacturing industry.

Source: JSA-commissioned analysis of ASX200 and Crunchbase data.

Individual-led ‘shadow’ use is evident

There is increasing evidence that AI adoption has been led by workers in a number of workplaces across Australia. Many employees have reported using Gen AI without the knowledge of their managers. Deloitte Access Economics (2024) found that around 27% were using Gen AI secretly at work, while another study (Fusion Digital Agency, 2024) found that 21% of white-collar workers were doing so.

We heard in our consultations from employees who had proactively implemented Gen AI – across health, financial, legal, and other professional occupations, often without their employers' involvement or knowledge. We also heard that some individuals deliberately avoided using Gen AI due to personal views of the technology, including among academics and workers in creative industries.

Workers may be using AI in an unofficial capacity for different reasons. For instance, a survey conducted by Slack listed the most common reasons why employees hide their AI usage were: that they "feel that using AI is cheating"; they have a "fear of being seen as lazy"; and they have a "fear of being seen as less competent". These findings align with survey evidence from Microsoft that found 19% of respondents reported feeling like they are 'cheating' when they use Gen AI to undertake their work tasks (Microsoft, 2024). Another survey showed individual workers were more likely to use AI tools if they were employed by larger businesses.[9]

The Fusion Digital Agency (2024) survey also showed that transparency around AI use increases with company size. For example, 83% of white-collar employees at large enterprises (over 5,000 employees) reported being open about their AI use with employers, compared to only 57% at small businesses.

Adoption also appears to vary according to age. Fusion Digital Agency (2024) found that white-collar workers aged 58 years or more were the least likely to use AI, with only 75% identifying as AI users. In contrast, those aged 27-42 years were the most likely to adopt AI tools at work, with 90% of respondents in this age group indicating they used AI.

How often and for which tasks Gen AI is used

There is limited evidence in Australia to show the extent to which Gen AI is being applied to specific tasks. However, globally, a recent study by Anthropic analysed task-level use of Gen AI with an unprecedented level of detail – it used over four million user 'conversations' with Gen AI tool Claude.ai and mapped them to tasks and occupations via the U.S. Department of Labor's O*NET Database (Handa, et al., 2025). They estimated that use of Claude.ai is particularly concentrated for tasks related to software development and technical writing, and more likely for augmentation than automation.[10] They also noted the importance of analysing usage at the task level rather than at the occupation level, given that, for example, not all people who search for nutritional advice would be employed as nutritionists. Overall, they note that:

"Currently, we observe usage concentrated in specific tasks… rather than wholesale automation of occupations. If this pattern persists—with AI affecting only a subset of tasks within jobs—it suggests occupations will evolve rather than disappear."

[9] Survey evidence from Fusion Digital Agency (2024) found that 81% of white-collar employees used AI tools in small businesses (1–100 employees), compared to 87% in medium-sized businesses (100–500 employees), 88% in large businesses (500–5,000 employees), and 93% for enterprises with over 5,000 employees.

[10] Handa et al. (2025) note that usage is suggestive of marginally less automation (43%) than augmentation (57%) of human capabilities.

While the work of Handa et al. (2025) presents a leap forward in assessing the use of Gen AI for particular work tasks, it presents relatively limited inferences for the Australian experience.[11] In part this is because it focuses on Claude.ai (which has less than 3% of market share in Australia) and uses a global sample of conversations. The authors also recognise that, given O*NET is a 'US-centric classification', this may 'overlook significant occupational categories and tasks from other regions' (p. 12).

If the study by Handa et al. (2025) were to be replicated for Australia using the ANZSCO occupation classification, it would still only provide an understanding of a small proportion of AI users. Moreover, the strength of its estimates would depend heavily on the ability to map conversations to tasks and occupations. Overall, however, this kind of analysis would be valuable as part of future monitoring of Gen AI adoption in Australia.

A similar study was undertaken by Microsoft using 200 000 anonymised conversations with Copilot from users in the United States (Tomlinson, Jaffe, Wang, Counts, & Suri, 2025). They also used O*NET as a means of classification and found that Copilot is mostly used to provide 'information and assistance, writing, teaching, and advising', making it most directly applicable to knowledge work, administrative support, and occupations involving communicating information.

Some survey evidence illustrates how often Gen AI is being used in particular industries. The Future Skills Organisation (FSO) reports that respondents to their survey of Finance and Technology workers that among those using Gen AI, 33% used it on a daily basis and 44% on a weekly basis (Future Skills Organisation, 2025).[12] The survey also found that individuals who have used AI for longer are likely to use AI more frequently – of those who have used AI for less than 6 months, 24% were daily users, compared to 39% of those who had used AI for 1-3 years.

Over time, it can be expected that Gen AI will be applied more often and to more tasks, thereby increasing the depth of use in the economy. This is as important to labour market and productivity as the breadth of diffusion and adoption.

2.2 Varied progress during early stages

There are signs that adoption is still at an early stage in Australia, even among highly exposed occupations. In a number of industries, 'early adopters' are moving further and more quickly than their competitors (including in financial services, legal services, higher education, and other knowledge work) (National AI Centre, 2025). At the same time, the past 12 months has shown that adoption can progress at a rapid pace.

> *We heard in our consultations from one software company that implementing Gen AI into their software engineering team involved a 6-month rollout program. Within 12 months, all of its engineering teams had fully integrated the technology and, as a result, the company had begun to make changes to*

[11] In addition, Handa et al. (2025) does not consider the quality or depth of Gen AI use, or whether the use is individual or firm led. The authors also do not explicitly identify whether the tasks Claude undertook were undertaken within an employment context or otherwise.

[12] FSO note that this is broadly consistent with other research which finds that 29% of people who use generative AI are 'power users' who use it several times a week, and that 21% of employees are 'heavy users' who use generative AI at least every second day.

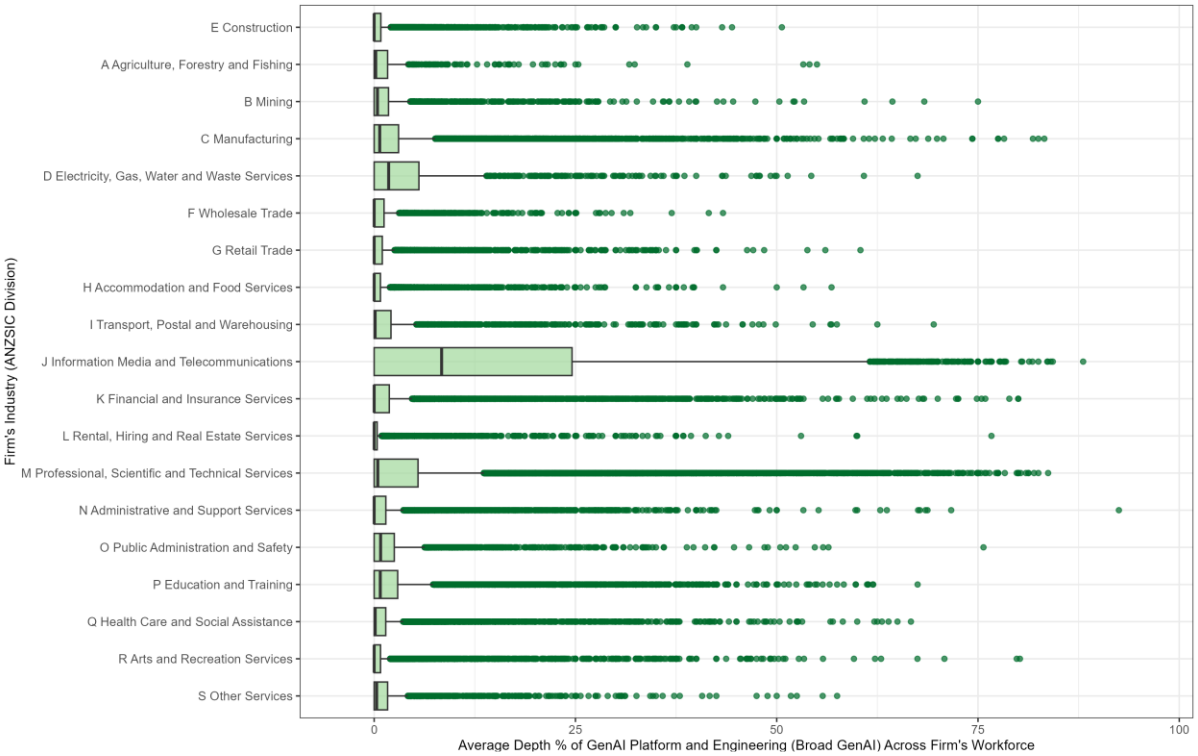
its recruitment practices and workforce structure. (Case Study 2 — Gen AI adoption and adaptation at ReadyTech)

As might be expected, some of the earliest and quickest adopters of technology are within the technology sector itself. These experiences show how the impact of Gen AI on a firm's workforce can develop rapidly, particularly if the use case is well-developed and straightforward to implement; and if the organisation is well-equipped to work with advanced technology.

However, experiences in the technology sector are not always easily generalised to other industries. Simple measures of adoption consistently find diverse rates of AI use and awareness across industries (National AI Centre, 2025) (FSO, 2025). Our analysis of Revelio worker profiles data shows that workers with skills relating to Gen AI platforms and engineering are concentrated in the technology sector, with varying levels and distributions in other industries (as can be seen in the relative size of the boxes in Figure 7).

Figure 7: Specialist AI skills depth varies among firms and across industries

Depth of Gen AI platform and engineering skills in individual firms by industry



Note: This chart shows the distribution of firms in each industry with regard to the depth of specialist AI-related skills in their workforce, proxied by a worker's average specialist AI skills stock as a % of total skills. The boxes show the mean and inner quartiles of firms in each industry, with individual outlier firms denoted by dots.

Source: JSA-commissioned analysis of Revelio worker profiles data.

A range of other industry-specific factors can complicate the process of implementing new technologies. For example:

- In several industries, the adoption process requires organisations to address **complex implications of individual as well as firm-led AI use**. In universities, for example, the use of Gen AI by students and staff can have complex implications for the quality of teaching and learning. In 2024, universities and TEQSA undertook foundational work on

coordinated approaches.[13] In addition, some universities have moved further than others in terms of implementation and integration, often by building and trialling their own tools.[14] And while these actions have helped progress adoption, around 30% of surveyed university staff had not used Gen AI at all in 2024, which again suggests that uptake is at an early stage (McDonald, Hay, Cathcart, & Feldman, 2024).

- In some sectors, the use of Gen AI is **both complex and high-risk**. For example, there are potential use cases for Gen AI across the health sector, relating to both administrative and substantive tasks. However, it may not be straightforward to design use cases that best balance risks and opportunities for health outcomes, accountability, and worker wellbeing. The Australian Nursing and Midwifery Federation, for instance, recommended that AI should never be used in isolation for clinical decision-making, noting the need for transparency, explainability, and avoiding bias with regard to race and gender (Australian Nursing and Midwifery Federation, 2024).
- While regulatory settings are vital to managing high-risk settings, adoption can be slowed where **regulation is slow to adapt or is simply uncertain**.[15] Both globally and in Australia, a range of key areas of AI regulation are in the process of reform, including to particular areas of use (such as healthcare and social services) or to more general principles (such as intellectual property and privacy).
- Where use cases are complex, technology often requires **development, training, piloting and experimentation**. The Australian Government conducted a 6-month whole-of-government trial of Copilot in 2024. Legal firm Gilbert + Tobin have trialled several Gen AI tools and incentives for use.[16]
- In both journalism and voice-over work, the potential for displacement of labour has led to **attempts to limit its use**. For example, news media publication Crikey has established a policy where they have 'absolutely and categorically banned using generative AI to create the stuff that you expect us to write or make', while also developing an AI-enabled tool to help readers understand AI-generated misinformation (Wilson, Andrews, & Black, 2024).
- The **challenges of investing in digital capabilities in the not-for-profit sector**, which often stem from funding constraints and uncertainty, can have a significant negative effect on adoption and capability building. Survey evidence suggests that 20% of organisations are hesitant to use AI as they don't know enough about it, and 42% did not see it as a priority due to the lack of budget, skilled resources and/or rapidly changing AI

[13] In 2024, all Australian higher education providers submitted to TEQSA an institutional action plan addressing the risk Gen AI poses to award integrity. TEQSA published a toolkit in November 2024 titled Gen Ai Strategies for Australian Higher Education: Emerging Practices (Tertiary Education Quality and Standards Agency, 2024).

[14] The University of Sydney has taken a number of steps to implementing Gen AI ahead of some other universities. It has developed the Cogniti platform – an in-house AI tool – to allow educators to build custom chatbot agents that can be given specific instructions, and specific resources, to assist student learning in context-sensitive ways. They are currently planning to expand Cogniti.ai over the course of 2025. From Semester 1 2025, the university will permit Gen AI use in assessments by default, except for exams and in-semester tests, or if teaching staff choose not to. From Semester 2 2025, a "two-lane" assessment approach will be adopted (University of Sydney, 2024).

[15] The Productivity Commission (2024) found overall that AI is evolving more quickly than health regulations can anticipate, noting that efforts should focus on ensuring regulatory approvals keep pace.

[16] In 2023, Gilbert + Tobin offered their staff cash incentives for ideas on how to use AI and undertook pilots of Gen AI tools such as Harvey AI, CoCounsel, Lexis+ AI (Pelly, 2023).

environment (Infoxchange, 2024). At the same time, only 11% had implemented a guideline, framework or policy to manage data and ethical risks.

Where industries are in the early stages of adoption, this often requires a range of foundational steps, such as setting protocols and regulation; developing and investing in AI tools; and experimentation. How these are addressed in each sector will influence adoption in these sectors, and for the broader economy. While it appears that some early adopters will continue at pace[17], it is less clear how quickly changes will occur for others. In addition, it is unclear how quickly early adopters will successfully incorporate lessons learned from experimentation and how quickly these lessons might be shared.

Displacement due to Gen AI

Internationally there have been overt announcements about job loss due to replacement of workers by Gen AI and these layoffs have not been limited to the technology industry. In Australia, however, there is limited evidence that similar retrenchments are occurring to the same extent.

Among firms in Australia that reported group retrenchments (of 15 or more employees) during 2024, only 12 cited Gen AI or related to technological change as a reason. Many of these companies also retained a portion of the affected workforce and upskilled employees, ultimately transferring them to different divisions within the company. In 2025, there continue to be examples of job losses attributed by employers to AI adoption. While these are limited, both in terms of their share of the overall labour market and the industries and sector that these firms operate within, it is also important that they are not ignored and continue to be monitored.

Gen AI has already had direct effects on some employment in some occupations where the primary task has become largely or fully automatable. This appears to be occurring to some degree as AI voice technologies are applied to voice-over work. The Australian Association of Voice Actors reported that some forms of voice recording work have declined significantly. One talent agency reported that narrations for content videos had decreased by around 80%. Work had also reduced for various production occupations including those recording, producing and editing content, given that ‘an entire piece of content can now be developed using AI’ (Australian Association of Voice Actors, 2024). Experiences in recent years show that while some forms of voice-over work still require a unique human recording, some forms are rapidly being replaced through Gen AI voice technology.

Positive productivity impacts to date

At this early stage, workplace-level evidence generally suggests that Gen AI has had positive impacts on productivity, although results have varied between organisations and tasks. Evidence from a number of sources suggests that most people who use Gen AI in office work tend to save time in completing their tasks and/or improve the quality of their outputs (Table 2). Use cases related to software development have been particularly

[17] Legal firm MinterEllison reported that at least 80% of its lawyers and partners will use AI tools in their daily work by March 2025 (Tadros, 2024). The firm will reportedly provide lawyers with three AI tools and training. In 2024, Suncorp announced a five-year partnership with Microsoft to accelerate adoption of AI technologies and is actively exploring 120 GenAI internal use cases across its operations, with the aim to implement 20 of these in 2024-25 financial year (Suncorp, 2024).

productive. For instance, ReadyTech reported that Gen AI improved coding efficiency by more than 25%, in part by reducing time on debugging and rework (ReadyTech, 2025).

We also encountered evidence of Gen AI enabling activity that would not otherwise have been possible:

> *We heard in our consultations about a secondary school using Gen AI to personalise learning materials to the interests of students in their classroom in a way that would not have been possible without Gen AI due to time constraints. (Case Study 3 – Gen AI and the digital divide)*

Given that the available evidence on Gen AI and productivity comes largely from surveys and trial evaluations, it typically reflects experiences of early adopters, and often in their initial implementation and experimentation phases. Over time, workers in these firms are likely to increase their frequency of AI use and to improve their ability to use the technology.

> *"When ethically implemented, generative AI offers opportunities to reduce workload pressure, improve decision-making, and enable earlier intervention. For example, in aged care, child protection and family violence contexts, AI could detect patterns across case data such as trends in falls, individualised escalating risk patterns, or 'frequent flyers' in a service system and prompt timely evidence-based responses. … More broadly, AI may help identify systemic issues, enabling targeted responses and allowing skilled practitioners to focus on direct care rather than administration." (Gen AI Capacity Study Consultation Hub Response – HumanAbility)*

Table 2. Time savings resulting from Gen AI

	Deloitte (2024) survey	DTA (2024) APS CoPilot trial evaluation	Other surveys
Time saved / improved speed	75%	69%	-
Improved quality of outputs	67%	61%	-
Time allocated to other activities	47%	40%	-
Nature of productivity gains / time savings	Improved their ability to generate new ideas (70%); Increased the quality of outputs (67%); Improved their ability to learn new skills (60%); Increased the accuracy of their outputs (56%).	Communicating through digital means other than meetings (0.5 hrs), Summarising existing information (1.1 hrs), Preparing first draft of a document (1.0 hrs), Searching for information required for a task (0.8 hrs), Undertaking preliminary data analysis (0.5 hrs), Preparing meeting minutes (0.9 hrs).	Microsoft (2024) survey: Saved 1+ hour per day overall (51%), Saved 2+ hours per day overall (21%) Atlassian survey (2024): Saved 53 minutes per day on average (59%) Saved 105 minutes per day on average (33%)

Source: Deloitte Access Economics (2024); Digital Transformation Agency (2024); Microsoft (2024); Sands (2024).

At the same time, successful AI projects are not necessarily easily accomplished. Some evidence suggests that a relatively high proportion of AI-related projects do not proceed to full implementation (Shellshear & Gray, 2025). This may reflect the experimental stage of adoption, where organisations test the business case for adoption. Evidence also suggests that if AI is poorly implemented and used ineffectively, it can marginally reduce productivity (Simkute, et al., 2024). A range of elements could be relevant to successful implementation, including many relating to skills and workforce (see Section 5).

2.3 Implications for policy

Australia's early adoption has been relatively passive (updates to existing software) and shallow (applying ready-to-use software to existing work tasks and processes). Organisations leading adoption, however, have taken more strategic approaches to the transition and the transformational opportunities. This requires greater firm-level technology-related sophistication, investment, and capabilities to redesign work processes. Given transformational adoption often occurs through longer term projects, many labour market effects are yet to be observed.

Early adoption of AI seems to have been concentrated in medium and large tech-enabled firms and particular sectors. There is also considerable evidence of worker-led adoption in Australia, suggesting that workers themselves are often not against the use of the technology – particularly where they have a say in the design of its use.

A range of dynamics help explain why Gen AI adoption varies across firms and industries. Market structures shape adoption patterns by influencing competitive pressures and responsiveness. In trade-exposed industries, firms may accelerate adoption to maintain competitiveness, especially as global peers undergo their own AI transitions.

In contrast, non-market sectors (including health, aged care, education, and public administration) face distinct constraints. These include higher assurance and interoperability requirements, as well as budget constraints. While relatively insulated from global market forces, these sectors must navigate complex systems, stakeholders and risks that limit scope for experimentation.

Finding 3: Adoption is advancing in digitally mature industries and sectors, slower in the non-market sector, and broadly well below its exposure potential.

Australia's Gen AI adoption is accelerating in digitally mature industries and large firms. This reflects a multi-speed transition, where uptake is shaped by sectoral readiness, organisational capability, and risk tolerance.

Advanced adoption is concentrated in technology, finance, and other knowledge-intensive sectors, where firms possess the data infrastructure, technical expertise, and strategic intent to integrate Gen AI at scale. In these sectors, larger organisations have been able to leverage investments, expertise, and experimentation, applying Gen AI for productivity gains in areas like software development, customer service, and administrative workflows.

The non-market sector, including government, health, education, and social services, faces higher barriers to adoption despite high exposure potential. These sectors are slower to adopt due to complex outcomes, coordination and implementation risks, ethical and regulatory constraints, and more limited digital maturity.

Across the economy, adoption in Australia is tracking well below its exposure potential.

Finding 4: The multi-speed adoption and transition has important implications.

The multi-speed adoption risks widening digital divides and investment gaps between industries and firm sizes, and between market and non-market domains.

Multi-speed capital investment in digital and AI technologies can also lead to workforce capability gaps across the sectors.

Targeted technology and workforce capability uplift can help close these gaps and manage future disruptions, especially where readiness is low but exposure is high.

Because adoption is complex in some sectors, coordination and stewardship are needed to guide (but not dictate) the transition.

Finding 5: Shadow use shows workers driving adoption and experimentation.

The rise of shadow use, where workers adopt Gen AI tools without formal organisational approval, demonstrates that the workforce is actively driving bottom-up innovation in some sectors. While this signals initiative and experimentation, it also shifts governance and risk management responsibilities onto individuals.

Without responsive organisational strategies, shadow use may lead to uneven implementation and missed opportunities for structured capability building.

Finding 6: Early evidence of productivity impacts is mostly positive.

Early experiments and workplace data from overseas show that Gen AI tools can improve productivity, particularly in routine, text-heavy tasks and among less experienced workers.

In Australia, most Gen AI users surveyed in early adopting workplaces self-report task-specific productivity gains. This has had varied effects on overall workload depending on how saved time is used.

But full-scale adoption remains limited. Many firms that are aware of Gen AI have not implemented it, and many AI-related projects do not proceed to full implementation.

Finding 7: Gen AI adoption is reshaping skill demand and roles. Large-scale job displacement is yet to emerge, with current impacts limited to early-adopters.

Among early-adopting firms in Australia, Gen AI use has been linked to increased demand for certain skills and roles, while reducing demand for others, particularly in routine or clerical functions.

There is evidence of only limited job displacement to date. Some task-specific occupations, such as voice-over artists, have seen reduced demand overall. Most observed impacts involve the evolution of roles, upskilling, and redeployment of workers, rather than widespread job loss.

Many organisations have yet to adopt the technology in significant ways. And some firms are only early in the process of large-scale change-management projects, meaning that any employment effects have not yet emerged.

3. How Gen AI affects skills use in the labour market

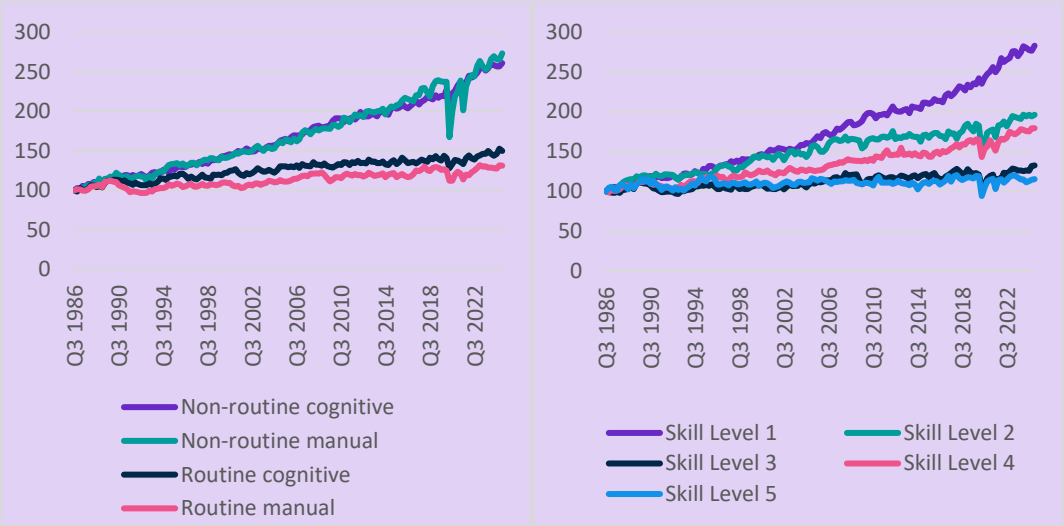
The impact of Gen AI will unfold within a labour market that has already been shaped by years of technological and structural change (Box 7). Over time, Australia has experienced steady growth in the share of higher-skilled and non-routine work, including those requiring digital capabilities. At the same time, many occupations involving routine and repetitive work tasks have experienced slower rates of growth. Technological change since the latter half of the 20th century (particularly the diffusion of computer-based technologies prior to Gen AI) has typically been viewed as complementary to those with higher skills.

Gen AI has the potential to accelerate these trends – by augmenting how work is undertaken, by increasing the importance of particular skillsets, and by altering the pace of change.

Box 7 Gen AI in the context of existing trends towards higher skilled and non-routine work

Gen AI adoption is occurring in an Australian labour market that has been characterised by trends of increasing skilling and complexity. Labour Force Survey data shows a longstanding trend of increasing employment in non-routine occupations, relative to routine occupations, and higher employment growth in higher skilled occupations.

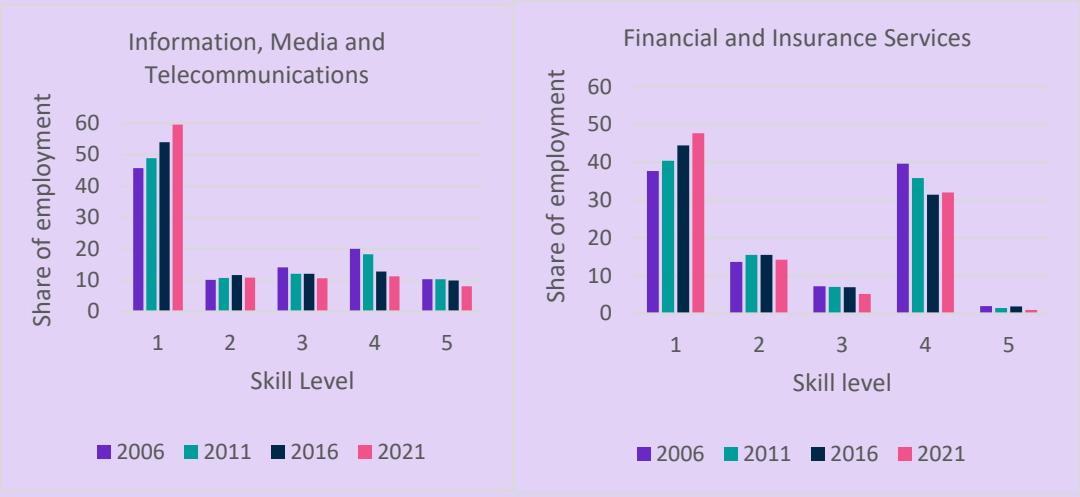
Figure B7.1 Index of hours worked by skill level and job type of main occupation, 1986 to 2025 (Q3 1986 = 100)



Source: JSA analysis of ABS Labour Force Survey data, 1986-2025

Employment has been increasingly geared towards higher-skilled work in industries that account for high levels of technology investment, such as *Information, Media and Telecommunications* and *Financial and Insurance Services*.

Figure B7.2. Share of employment by skill level, selected industries, 2006-2021 (%)



Source: ABS Census of Population and Housing, 2006, 2011, 2016 and 2021

3.1 Changes to Australia's skill and capability needs

The skills and knowledge individuals require will vary according to the breadth, depth and type of their engagement with Gen AI, and the role that they play around its adoption and use. Through our study, we have identified seven relevant personas:

- **Gen AI leaders** – individuals whose role involves senior responsibility for decision-making regarding the adoption, deployment and governance of Gen AI within organisations. This persona includes board members, business owners, senior executives and other leadership roles such as heads of relevant departments (e.g. Head of Innovation).
- **Gen AI change drivers** – individuals whose role serves to enable adoption and implementation of Gen AI by others within a firm or organisation. This persona includes those tasked with optimising business processes and workflows; identifying, recruiting and/or developing the skills required by the firm, and ensuring the use of Gen AI is compliant with legal and regulatory requirements. Roles characterised by deep technical skills in AI are excluded from this persona and are instead captured below.
- **Gen AI professionals** – individuals with deep technical skills whose role involves developing, deploying and maintaining foundational AI models or the applications built on top of these models. This persona includes roles such as AI engineers, data scientists and other specialist technical roles.
- **Gen AI enabled workers** – individuals whose role involves working with or alongside Gen AI technologies to accomplish work tasks and processes. This persona encompasses a broad range of roles where non-specialist Gen AI skills and knowledge are applied alongside domain expertise.
- **Gen AI affected workers** – individuals whose role or function is affected by the implementation of Gen AI in other areas of an organisation.

  Gen AI informed citizens – other members of the public. This persona includes workers in roles where use of Gen AI is not expected, the unemployed, and those outside the labour force. This persona may interact with Gen AI as consumers and/or require digital and AI skills to participate in work, study and the community now and in the future.
- **Gen AI educators** – individuals whose role relates to developing the skills and knowledge required by others to operate effectively in a Gen AI-enabled society and economy. This persona includes educators across accredited, non-accredited, and on-the-job education and training settings.

Depending on the complexity and sensitivity of the work setting, hybrid expertise bringing together two or more of the personas above may be required. For instance, in complex settings in the health sector AI adoption may be best championed by individuals who combine clinical expertise with technical expertise in Gen AI.

Knowledge work, higher-level skills, and information-based industries are more exposed to augmentation

As noted in Section 1, Gen AI has a higher propensity to augment work in higher-skilled occupations and for the *Managers* and *Professionals* specialisation. This likely reflects the opportunities for the technology to be incorporated into knowledge-based work, as well as technical tasks.

It also noted the potential to automate tasks is highest for the middle-skill occupations, particularly at ANZSCO skill level 4, which includes several forms of clerical work. Many clerical tasks – that were not affected by previous waves of automation – could now be undertaken in large part by Gen AI. Occupations with low augmenting and automating potential would capture the presence of tasks that require physical action, and Gen AI could not carry out (at various skill levels).

Higher skill levels reveal greater exposure to medium automation potential, suggesting highly skilled occupations could discover new efficiencies based on the current technology. These scores would be expected to shift as Gen AI technologies evolve, especially with more integration of robotics and complementary technologies.

Given that occupations vary in their exposure to Gen AI, this creates different profiles of exposure in different industries.[18] All industries show higher exposure to augmentation than to automation, particularly in the non-market sector and information-based industries. Industries focused on knowledge work, information and services are more likely to have occupations with automating potential, as opposed to industries that involve working more directly with physical materials.

In addition, both the occupations and industries that are more exposed to automation account for significantly smaller workforce numbers, reinforcing the observation that the automating potential of Gen AI is limited at the task level and narrower at the occupation level.

3.2 The importance of digital and non-digital capabilities

Gen AI will affect the types of expertise that are valued in the labour market overall.[19] Some stakeholders have raised concerns outsourcing expertise to technology (for instance, where highly skilled workers are no longer required to produce an output, and instead are tasked with checking the outputs of AI processes) may erode the quality of work and capabilities over time (Rinta-Kahila, 2024).[20]

In addition, where highly skilled workers are increasingly tasked with validating Gen AI outputs and processes, this could increase the cognitive load and accountability of the worker (JSA Roundtable Consultation 2, (Simkute, et al.,). Without the requisite adjustments to scope of practice or skills development, this could lead to intensification of work or “scope creep” over time.

Gen AI will shape the types of skills and capabilities needed in the labour market, including by:

[18] Based on current employment patterns (by occupation), production processes and technology.

[19] In different circumstances, workers may be valued for their ability to apply expertise as an artisan or specialist; or their expertise in using standardised tools; or their advanced level of subject matter expertise. Different eras of technology have shifted the importance of each of these forms of expertise in the labour market. In some contexts, the use of AI technologies may mean that people are not required to retain advanced levels of subject matter expertise – rather they may need a grounding in the subject matter and an understanding of how to leverage and query advanced digital tools to produce useful outputs.

[20] One survey-based analysis found younger participants exhibited both a higher dependence on AI tools and lower critical thinking scores (Gerlich, 2025). Another found higher confidence in Gen AI to be associated with lower critical thinking scores, while higher self-confidence was associated with higher critical thinking scores (Lee, et al., 2025).

- Increasing demand for the **skills required to use Gen AI technology effectively** (including data literacy, prompt engineering, or checking AI outputs).
- Increasing the value of **capabilities that complement the use of Gen AI** such as critical thinking (including problem solving and ethical decision-making) or interpersonal skills.

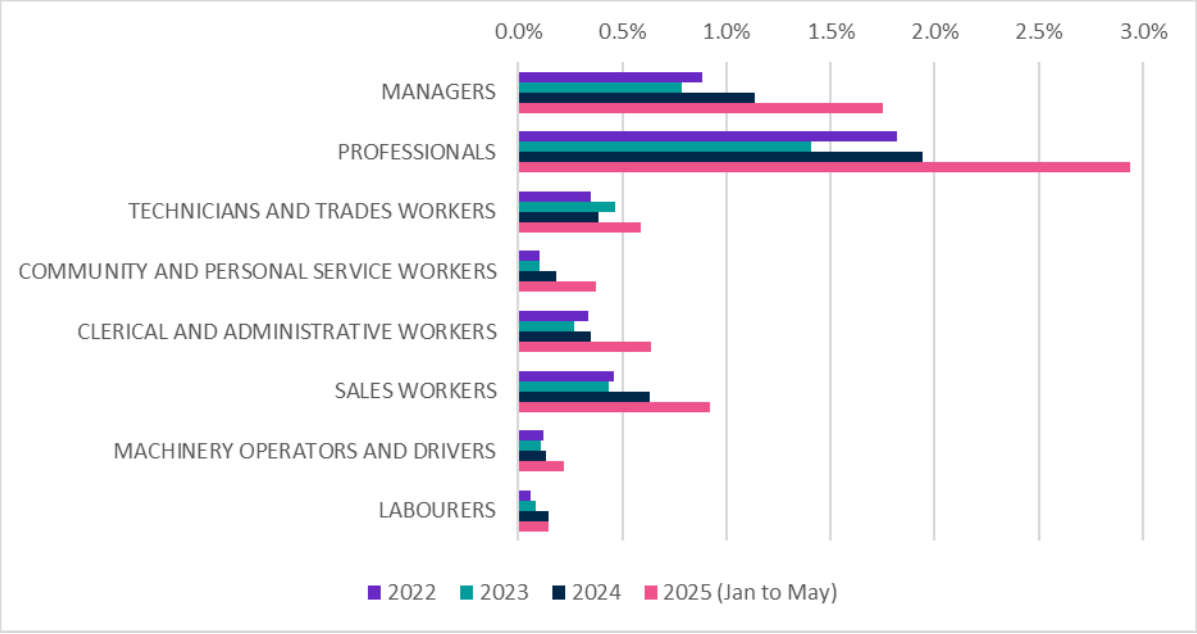
Gen AI skills across occupations

There is some evidence of how Gen AI skills are being factored into hiring in different occupations. For instance, the proportion of job advertisements listing AI skills increased in the early months of 2025 compared with previous years across most occupation groups (Figure 8).

Specifically, AI skills were most likely to be mentioned in job advertisements for Professionals, followed by Managers and Sales Workers. The higher percentage for Professionals and Managers aligns with the higher exposure to augmentation in these occupation groups, but also where the early adoption is most concentrated.

Figure 8: AI skills are more often advertised for Professionals and Managers

Share of job advertisements listing AI skills, by occupation major group and year

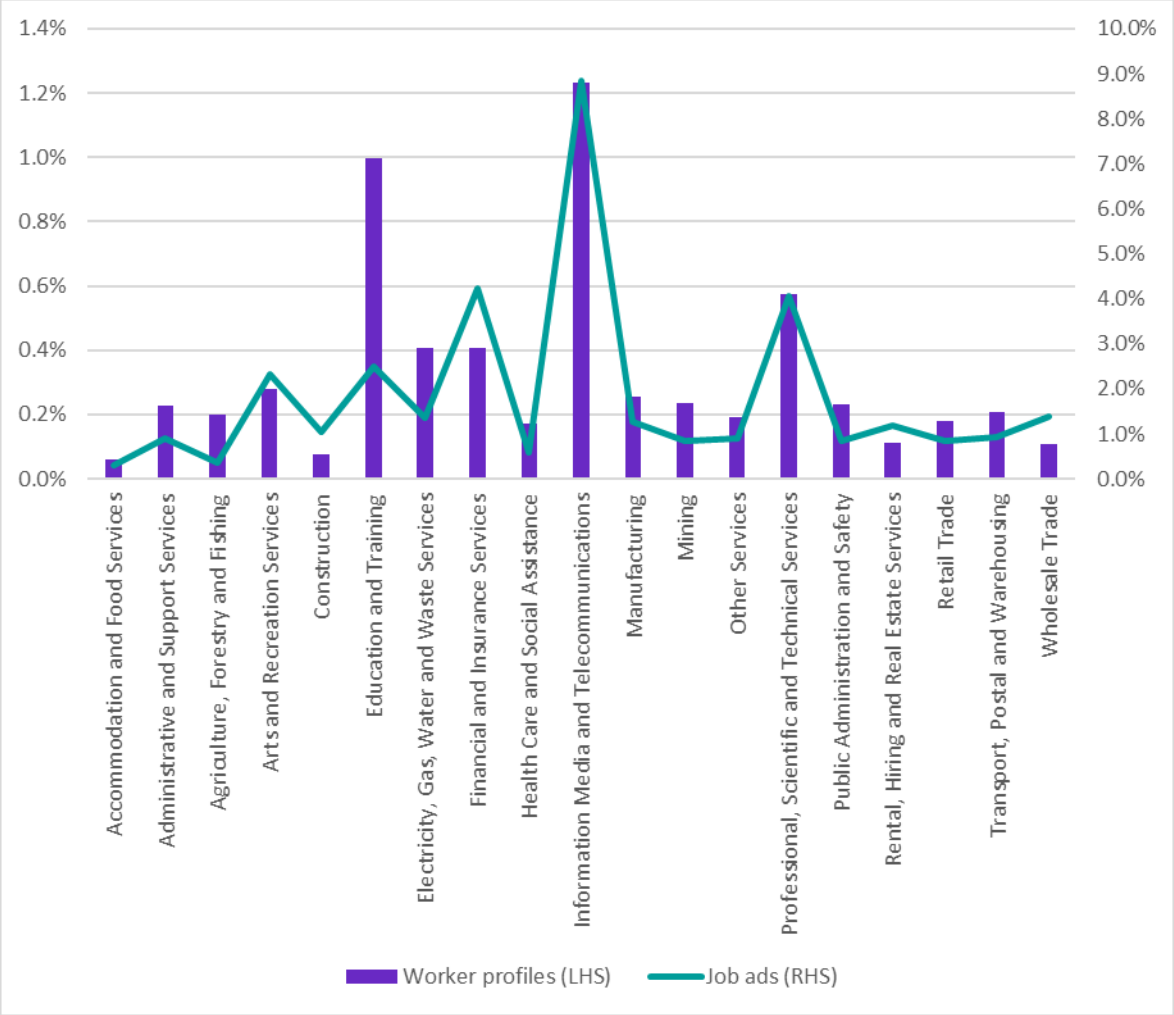


Source: JSA analysis of Lightcast job advertisement data.

Analysis also shows that Gen AI skills are also increasingly present in the skillsets that workers include in their online profiles. This gives some indication of the available supply of these skills in different occupations and industries. Typically, the industries with greater demand for AI skills (as observed by job advertisements) also have greater numbers of workers who are identifying they can supply those skills (as observed by profiles) (Figure 9).

Figure 9: Industries vary in terms of their demand and supply of AI skills

Share of worker profiles and online job advertisements listing AI skills by industry, 2025



Source: JSA analysis of Lightcast job advertisement data and Revelio worker profiles data.

Early observations of demand for non-digital, higher-order skills

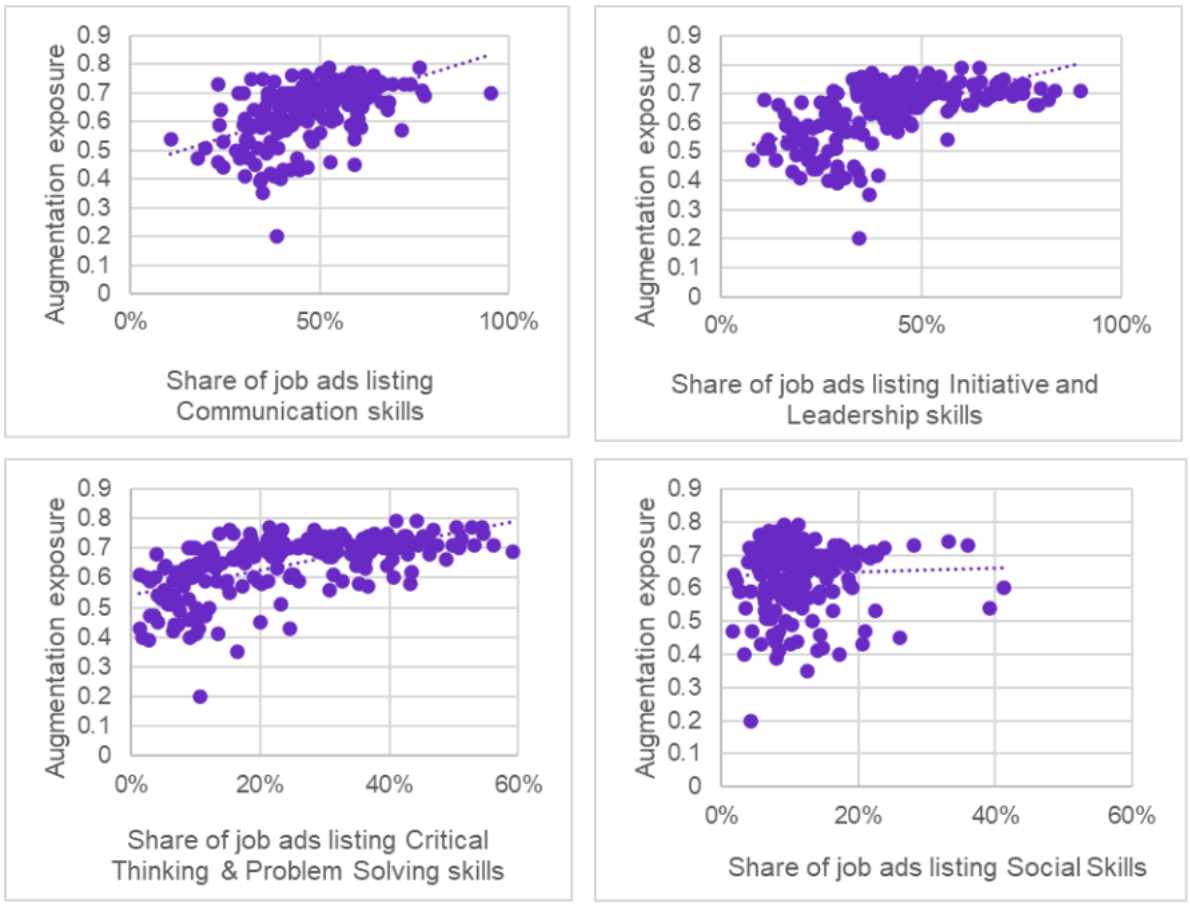
As people increasingly work with and alongside Gen AI, this not only raises the importance of digital and AI literacy, but also of human-centric skills as well as critical thinking and judgment.

An analysis of job advertisements showed that occupations with higher Gen AI augmentation exposure tend to exhibit higher shares of online job advertisements listing Communication, Initiative and Leadership, and Critical Thinking and Problem Solving skills (Figure 10). That is, the dots in the scatterplots – which represent each occupation – generally shift to the right as augmentation increases vertically. This trend is less significant in relation to Social Skills.

This aligns with public submissions to a recent Parliamentary Inquiry into the use of generative artificial intelligence in the Australian education system (House Standing Committee on Employment, Education and Training, 2024). At least 30 of these submissions pointed to the importance of critical thinking, while several others referenced human or soft skills.

Figure 10: More augmentable jobs are more likely to demand human skills

Share of online job advertisements by occupation citing select human skills by augmentation exposure, January to May 2025 (min 100 online job advertisements)



Source: JSA analysis of Lightcast job advertisement data. Excludes occupations with fewer than 100 online job advertisements per occupation in 2025.

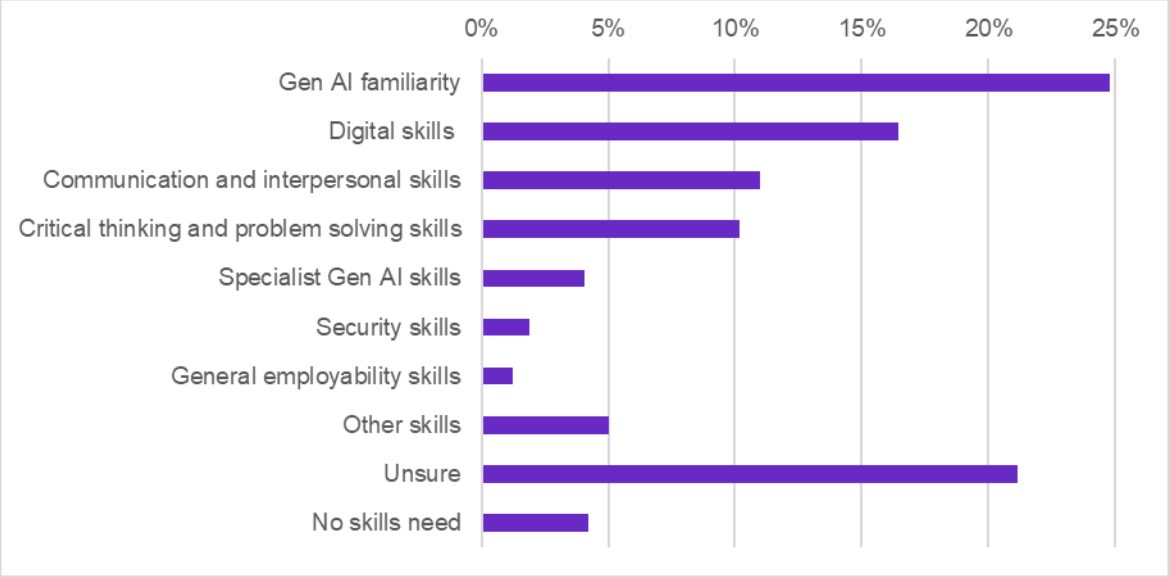
JSA's Recruitment Experiences and Outlook Survey (REOS) provides an insight into the skills that businesses consider when working with Gen AI (Figure 11). The data indicates that businesses most commonly consider familiarity with Gen AI as important, followed by digital skills and human skills such as communication and critical thinking skills.

Notably, more businesses flagged that familiarity with Gen AI was more important than specialist Gen AI skills, likely reflecting that the latter skills are more relevant to a relatively narrow set of technology-related professionals.

These results also align with our analysis of job advertisement data, which shows high and increasing rates of demand for communication skills, initiative and leadership, and other human-centric capabilities (Figure 12).

Figure 11: Businesses consider a range of skills important for workers to have when working with Gen AI

Percentage of business respondents citing select skills as important when working with Gen AI

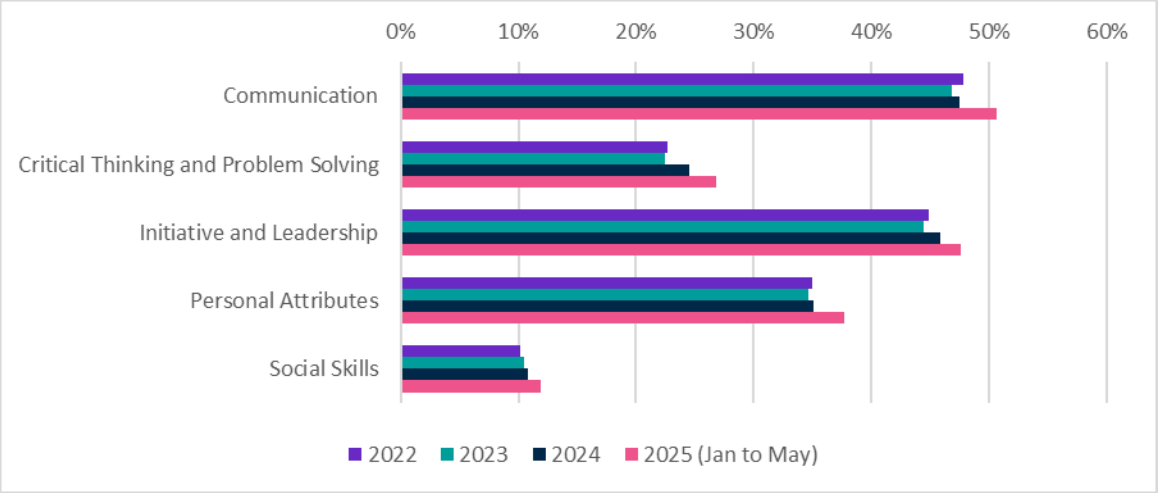


Note: Based on the categorisation of open-ended survey responses. The same business respondent can include multiple important skills in their response.

Source: JSA, Recruitment Outlook and Experiences Survey: Generative AI module, February 2025.

Figure 12: Job advertisements continue to list human-centric and higher-order skills

Share of online job advertisements listing select human skills by year, 2022 to 2025



Note: 2025 job advertisements are for the period between January and May.

Source: JSA analysis of Lightcast job advertisement data.

Our discussions with skills system actors also stressed that developing learners with sound judgement, self-regulation and co-regulation skills is central to worker adaptability during the Gen AI transition. Specific expertise related to a given field of work ('Domain expertise') will also remain important, though new combinations of skills and knowledge will be necessary.

Harnessing Gen AI and human capabilities

Where productivity allows for more time to be allocated to more valuable tasks, this can have different effects on worker experiences and quality of work as well as scope of practice. For instance, if automation occurs for repetitive, low-intensity tasks, this could allow workers more time and space to work towards high-value objectives (i.e. freeing up time for more

important and specialised uses). This could allow workers to devote more time to tasks that benefit most from human involvement and align more closely with their expertise.

> *"Customer service remains a vital component of the shopping experience, as two-thirds of Australian consumers view brick-and-mortar stores as a key touchpoint between a business and its customers. As such, interpersonal skills such as empathy, problem-solving and communication will become increasingly valuable as they complement AI capabilities. This shift underscores the need for both technical expertise and human-centric skills." (Gen AI Capacity Study Consultation Hub Response – SaCSA)*

Importantly, the role of Gen AI technologies in work processes – and whether they automate a task, provide assistance to workers, or are not used at all for particular tasks – will vary across use cases and situations. The degree of human involvement required is likely to be high in some aspects of patient care in health services, or interactions with students in education, or some creative tasks in the arts.

> *"The sector consistently tells us that workers enter the care and support sector for its relational and human centred nature—supporting older people, people with disability, helping secure housing, and educating children. However, rising administrative burden has become a source of dissatisfaction, as it reduces the time available for the person-centred work, they value most." (Gen AI Capacity Study Consultation Hub Response – HumanAbility)*

Others point out that allowing workers to tend to human-centred tasks is also critical for quality of service in many aspects of care.

> *"While these technologies can be used to support workflows, they cannot and should not replace the human workforce required in many sectors, particularly healthcare. The use of Gen AI in healthcare requires human oversight to ensure accuracy and the presentation of information that accounts for human element of healthcare (such as responsiveness, assurance, courtesy, empathy, communication, and understanding)." (Gen AI Capacity Study Consultation Hub Response – ANMF)*

HumanAbility also noted that Gen AI use could improve staff retention in some care occupations, given survey evidence found administrative burden to be a significant factor in engagement and burnout in the NDIS; and that carers are often highly motivated by client interaction.

However, while eliminating some of the frustrating elements for some workers presents benefits to wellbeing, other types of task changes also carry risks. For example, some workers could experience an *intensification* of their workday – a situation where a person's workload is increasingly comprised of challenging tasks without the reprieve of low-intensity tasks or adequate breaks. Intensification does not result simply from the removal of low-intensity tasks, but from changes to performance expectations, as workers may be expected to complete a greater workload of challenging tasks. At the extreme, intensification poses

risks to worker wellbeing.[21] However, assessing such task changes needs to be situation-specific, as not all complex tasks are seen by workers as stressful, and not all administrative tasks are seen as a reprieve.

3.3 Implications for policy

It is critical that all workers are able to develop the skills and expertise in demand. These will range from digital skills to critical thinking and interpersonal skills.

The adaptation of education and training to Gen AI requirements – including digital skills and literacy – through schools, VET, higher education and other forms of training will be critical to how the economy responds to the opportunities and challenges of the transition.

The actual outcomes in each sector should be guided by an understanding of what would improve longer-term outcomes – including for quality of services and for attraction and retention of staff.

Finding 8: Gen AI is already being reflected in the demand for skills and supply of skills in the labour market, along with broader digital, AI and complementary skills

Gen AI is already influencing demand and supply of skills. This has included growing demand for AI technical specialist skills.

Both digital and non-digital skills will remain relevant in a Gen AI-enabled labour market, with employers indicating a growing need for higher-order, human-centric skills.

Finding 9: Different 'personas' are being observed in Gen AI adoption

New Gen AI-related workforce personas are emerging through the transition, each requiring skills and knowledge relevant to the role they play in Gen AI adoption and use.

Relevant personas include Gen AI leaders, Gen AI change drivers, Gen AI professionals, Gen AI enabled workers, Gen AI affected workers, Gen AI informed citizens, and Gen AI educators. These personas can support the development of new hybrid capabilities within organisational settings.

[21] A review of literature on work intensification found that some forms of intensification – involving accelerated pace of work and increased effort and demands for effectivity at work – were related to negative outcomes for employees, including impaired well-being and motivation (Mauno, Herttalampi, Minkkinen, Feldt, & Kubicek, 2022).

4. Workforce challenges and opportunities

Just as the impacts of Gen AI will vary across occupations and industries, so will the impacts vary for different groups and cohorts of workers.

The exposure of different groups of workers to augmentation and automation will reflect the occupations and industries that they work in, which are often concentrated according to demographic and other characteristics, including geography. Different groups within the workforce will therefore have different opportunities for being exposed to valuable experiences to build Gen AI skills and different risks of displacement and change as disruption occurs.

In addition, experiences of AI can also vary between different workers within the same occupation or the same workplace, for reasons related to structural, historical or social context and personal circumstances. These factors highlight that as Gen AI technologies evolve, the relationship between Gen AI and workers will also occur in the context of existing inequality and discrimination (Meredith Whittaker, 2019).

4.1 Implications for workers across their careers

Entry-level roles could be disproportionately affected

Entry-level roles are essential in the labour market as they provide critical initial jobs for individuals beginning their careers, helping them gain foundational skills and experience. These roles also support ongoing workforce renewal by creating talent pipelines for future growth, promote social and economic inclusion, and can be the preferred level for people with diverse needs, including for flexibility.

To the extent that Gen AI is geared toward automating standardised and repetitive tasks, this could affect entry-level occupations in particular. Some international experiences, including in the United States, suggest that entry-level roles may already be in decline in some early-adopting sectors. For example, some large technology firms have suggested that they will significantly reduce their intake of junior and potentially mid-level software engineers[22] or adjust how they recruit entry-level digital workers.

There is not strong evidence that this is occurring to the same extent in Australia.

An examination of online job advertisements data showed that between 2023 and 2024, demand for AI-related technical skills differed across levels of seniority. In the sample of online job advertisements analysed, around 24% of ads that mentioned technical skills relevant to Gen AI specialists were for ‘senior’ roles, or roles requiring at least 5 years’ experience – as opposed to 11% of online job advertisements overall.

That does not necessarily indicate a change in demand for entry-level roles, as this coincides with technology companies changing how they hire entry-level workers. In

[22] The CEO of Salesforce noted that the company is ‘seriously debating’ whether to hire any software engineers in 2025, given the progress of AI technologies (Okemwa, 2024). The CEO of Meta has reportedly outlined a vision where AI will function as the equivalent of a mid-level software engineer by 2025 (Liang, 2025).

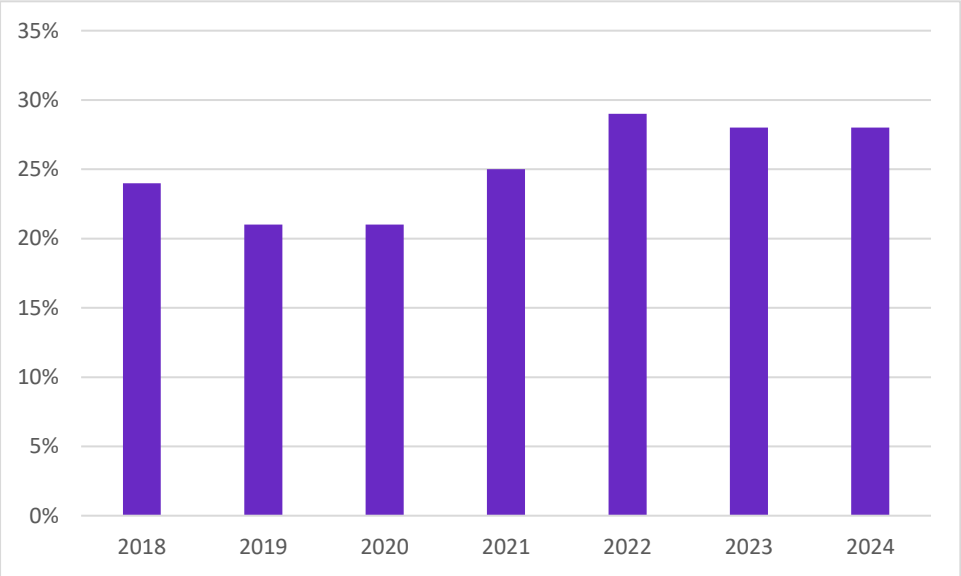
December 2024, 22 organisations signed a commitment that 20% of all digital entry-level recruitment would come from ‘alternative educational pathways’ by 2030 (NSW Government, 2024). The initiative aims to ‘meet the 85,000 digital worker shortfall, while increasing diversity and equity within the digital industry’. Software developer ReadyTech has taken steps to ensure their talent pipeline through alternative pathways.

> *'We have doubled down on our successful strategy of employing individuals with potential from any background in our support team where they are immersed in our culture, our products, our customers and our ways of working. In this time, we work to identify the right pathway to pursue, we define, design and deliver the skills they need through partnerships. And when the time is right, we will support these individuals into that opportunity. As they move onwards and upwards, it frees up a place to allow us to repeat the pattern.' (Case Study 2 – Gen AI adoption and adaptation at ReadyTech)*

The overall share of entry-level roles in Australian online job advertisements has remained stable since 2022 (Figure 13). As with all online job advertisements, there was a drop in entry-level roles in 2019-2020, during the COVID-19 pandemic, but they have generally been relatively consistent between 2023 and 2025.

Figure 13: Entry-level job ads have remained relatively stable

Percentage of online job advertisements for entry level positions by year

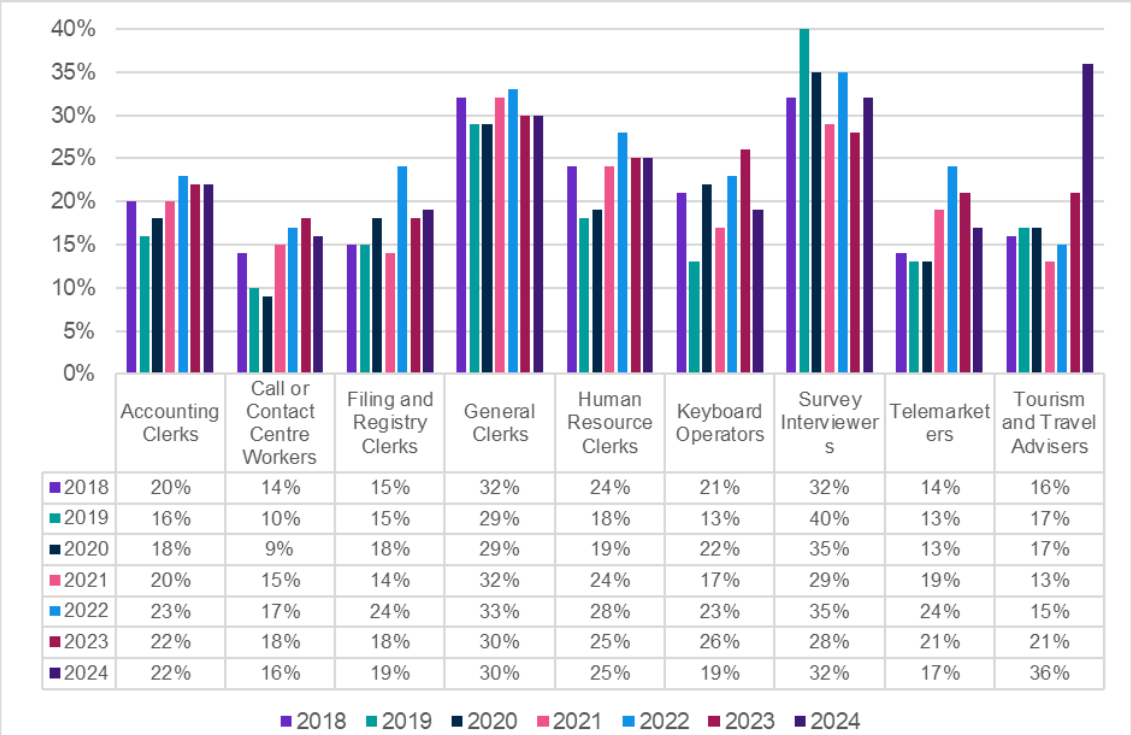


Source: JSA analysis of Lightcast job advertisement data.

More detailed data shows the proportion of hiring at the entry level has been uneven in occupations with high exposure (Figure 14) as well as across industries (Figure 15). There isn’t any indication from these data that entry-level roles have been impacted either according to AI exposure or based on early data on industry adoption. This is not surprising, given the early stage of adoption, when other factors, such as broader economic conditions, are likely to be more significant.

Figure 14: Not all highly-exposed occupations show declining entry-level hiring

Percentage of online job advertisements for entry-level roles in occupations most exposed to Gen AI, 2018-2024



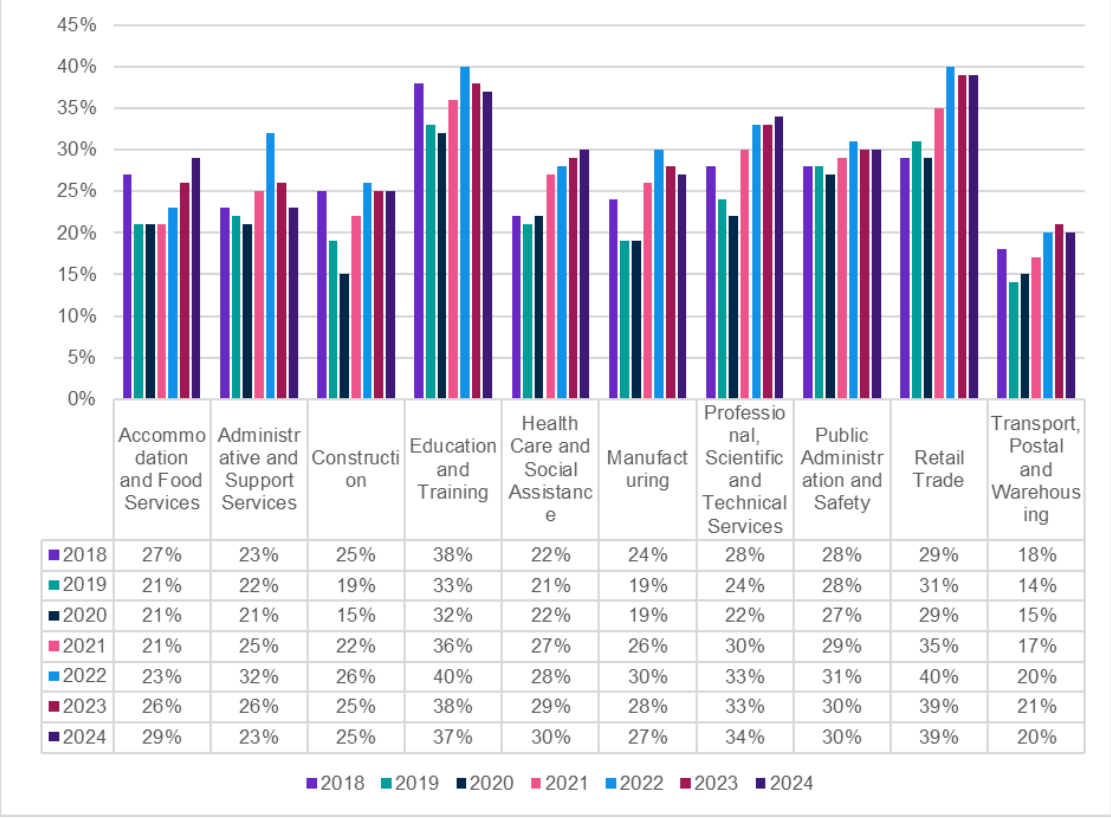
	Accounting Clerks	Call or Contact Centre Workers	Filing and Registry Clerks	General Clerks	Human Resource Clerks	Keyboard Operators	Survey Interviewers	Telemarketers	Tourism and Travel Advisers
2018	20%	14%	15%	32%	24%	21%	32%	14%	16%
2019	16%	10%	15%	29%	18%	13%	40%	13%	17%
2020	18%	9%	18%	29%	19%	22%	35%	13%	17%
2021	20%	15%	14%	32%	24%	17%	29%	19%	13%
2022	23%	17%	24%	33%	28%	23%	35%	24%	15%
2023	22%	18%	18%	30%	25%	26%	28%	21%	21%
2024	22%	16%	19%	30%	25%	19%	32%	17%	36%

Note: Top 10 occupations most exposed to automation. Betting Clerks are excluded from this list as they have only one year where any entry-level roles are recorded.

Source: JSA analysis of Lightcast job advertisement data.

Figure 15: Industries vary in their post-pandemic entry-level hiring

Percentage of online job advertisements for entry-level roles by top 10 industries, 2018-2024



	Accommodation and Food Services	Administrative and Support Services	Construction	Education and Training	Health Care and Social Assistance	Manufacturing	Professional, Scientific and Technical Services	Public Administration and Safety	Retail Trade	Transport, Postal and Warehousing
2018	27%	23%	25%	38%	22%	24%	28%	28%	29%	18%
2019	21%	22%	19%	33%	21%	19%	24%	28%	31%	14%
2020	21%	21%	15%	32%	22%	19%	22%	27%	29%	15%
2021	21%	25%	22%	36%	27%	26%	30%	29%	35%	17%
2022	23%	32%	26%	40%	28%	30%	33%	31%	40%	20%
2023	26%	26%	25%	38%	29%	28%	33%	30%	39%	21%
2024	29%	23%	25%	37%	30%	27%	34%	30%	39%	20%

Source: JSA analysis of Lightcast job advertisement data.

Overall, concerns about the impact of Gen AI on entry-level jobs have not yet been borne out in the Australian labour market. Evidence suggests that entry-level hiring remains active across many industries and firms, including those investing in AI technologies and occupations with higher exposure to AI changes.

However, there is likely to be considerable variation between industries that will be useful to monitor over the coming years. While the technology sector may be among the first to restructure its entry-level intake, its experiences may also not be generalisable to the broader economy. Our consultations and focus groups provided a wide range of insights and expectations regarding the effect of Gen AI on entry-level roles, including in healthcare, legal services, and creative industries.

This analysis to date does not indicate that entry-level positions in Australia won't be affected by Gen AI in the future. As generative and agentic technologies are further implemented, they are likely to apply more easily to structured and routine work tasks such as internal administration. In such cases, while this could lead to a reduction in hiring of entry-level workers, it is also likely to result in a shift in what entry-level work looks like.

Workers may need to apply more judgment and expertise in overseeing AI-generated outputs. This may shift the emphasis on capabilities, for instance, to apply domain expertise and critical thinking in order to make decisions and take accountability. As such, the challenge for policy is not only ensure that there are appropriate pathways for workers to enter the labour market and occupations, and to be able to learn from their experiences in those roles, but to support entry-level workers to be prepared for the evolving expectations of a Gen AI-enabled labour market.

Occupations and mobility pathways

Most people work in multiple occupations or industries through the course of their careers. For instance, many workers will move between jobs of related skills sets or qualifications. Others will apply transferable skills across industries. And others will move to occupations or industries with fewer barriers to entry.

Over the medium and longer term, workers experiences of Gen AI will not only be based on their current occupation, but any subsequent occupations across their careers. Historical patterns of occupational mobility offer some insight into how workers are positioned for transition, in the event they are displaced as part of the disruption during the AI transition, as well as the extent to which the usual destination occupations are also exposed to automation.

In particular, some workers may typically move within clusters of occupations that have similar exposures to Gen AI. This could represent a risk of repeated disruption (and also repeated opportunities to develop skills from experience around Gen AI tools and their applications).

We examined occupational mobility using a measure that combines churn rates and the diversity of destination occupations. This analysis also considers how workers have historically moved between occupations with regard to their exposure to Gen AI automation.

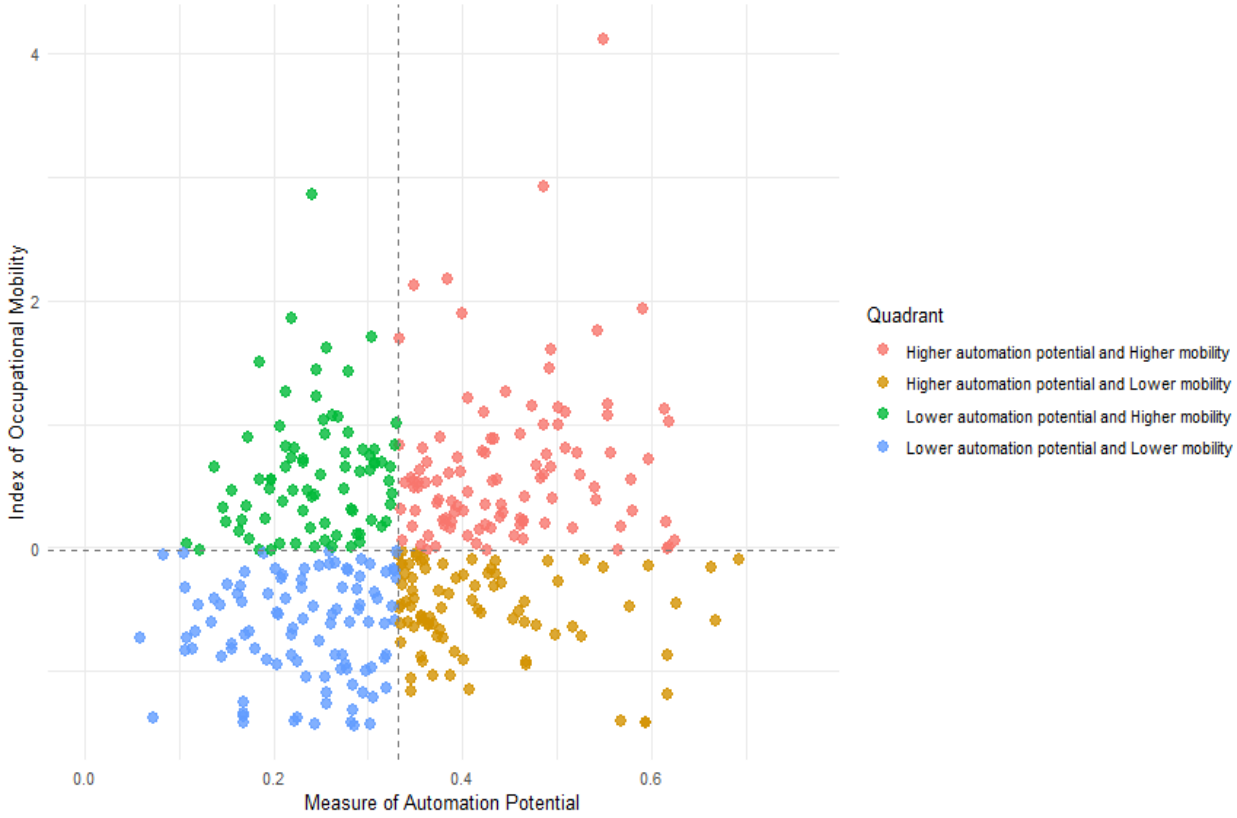
Although based on pre-Gen AI data, the findings show that some occupations may already have limited and narrow mobility, often concentrated in roles with higher exposure to automation (bottom right quadrant, Figure 16). This does not imply displacement, but

highlights which occupations may need to adapt their mobility patterns if automation becomes more widespread.

Occupations with low mobility and high pathway exposure could be considered more vulnerable. It's also important to note how many occupations sit near the boundaries of these categories, suggesting that transitions may be possible with the right support.

Figure 16: Job mobility compared with pathway exposure to automation

Historical occupation mobility 2021-2022, compared with pathway exposure to Gen AI automation



Note: The measure of automation potential (x axis) is a weighted index of automation exposures of starting and destination occupations to understand how dynamic a transitional pathway might be when exposed to automatability. The index of occupational mobility (y axis) is a composite of churn, entropy, and diversity partial measures of labour mobility. Churn measures turnover rate in occupations. Diversity captures the number of unique occupations people move to/from. Entropy captures the concentration of flows (whether people move to a few or many different jobs).These calculations have also been undertaken for augmentation potential, but are not presented here.

Source: JSA analysis of Data on Occupation Mobility; ANZSCO (v1.3), Census 2021 (Tablebuilder).

However, focusing on the bottom right quadrant, our analysis over the period 2024 to 2025 indicated that there are 76 occupations in this cluster. Of these occupations, 66 typically transition into jobs that are not expected to grow over the next decade[23] (Table 3). Of the remaining 10 occupations, 8 would typically transition to similar occupations with an equivalent or higher skill profile and similarity score.[24] This provides some indication of the nature of skill acquisition that could be needed.

[23] Defined as occupations for which employment could be at least 0.5% higher in 2035 under scenario 1 compared to the base scenario (100% adoption of automating and augmenting Gen AI in JSA's CGE illustrative scenario 1, compared to 2024 JSA Employment Projections.)

[24] Based on JSA's similarity scores as described in Box 4, these occupations scored less than 0.75.

Table 3: Mobility patterns in occupations vulnerable to repeated automation disruption

	Typically transition into growing jobs	Typically transition into declining jobs
Typically transition into high job-similarity jobs (high similarity and into equally or higher skilled job)	8 occupations • Secretaries • Electronics Engineers • Architects and Landscape Architects	18 occupations • Artistic Directors, and Media Producers and Presenters • Authors, and Book and Script Editors • Interior Designers
Typically transition into non-similar jobs (low or medium similarity or into lower skilled job)	2 occupations • Surveyors and Spatial Scientists • Caravan Park and Camping Ground Managers	48 occupations • Telemarketers • Librarians • Keyboard Operators

Source: JSA analysis of Data on Occupation Mobility & illustrative CGE scenarios conducted with VU; Revelio worker profiles data; ANZSCO (v1.3), Census 2021 (Tablebuilder)

The mobility of workers during the ongoing Gen AI transition will have significant implications for skills. First, workers may face repeated scenarios in their career where automation occurs to *part* of the occupation, increasing the importance of skills used in the remaining tasks.

Second, workers who are displaced as a result of automation will need to be equipped to move to occupations in demand and at less risk of automation. Additional skills may be needed or useful in making these transitions – for instance, skills such as business management, project management and sales are particularly important in destination and high growth transition options. This would also be useful to explore, as part of ongoing and regular monitoring of the AI transition.

The pace of change and adaptive capabilities

As technologies become more useful and accessible, the resulting changes to production processes and the organisation of work will be important drivers of the relative demand for skilled labour.

Our analysis suggests that the pace of change affects how workers' experience in an occupation is valued – which has significant implications for lifelong learning (Box 8). The evidence suggests that the pace of job skill change is faster in technology-intensive occupations. A faster rate of job skill change can be associated with:

- an increased emphasis on adaptability and lifelong learning
- greater demands for pace of updates to related education and training content
- greater demands on educators in related fields to maintain industry currency
- faster rises and falls in demand for specific skills with potential implications for the timing of learning across the career lifecycle.

These effects reveal a relationship between technological disruption and incentives for workers to build skills and expertise. Gen AI could significantly increase the pace of technological change, given its application to research and development.

Evidence suggests that skill change has advanced at a more rapid pace in the years leading up to the advent of Gen AI (OECD, 2025). It also suggests that in the years since, AI-

exposed occupations have experienced accelerating skill change both globally and in Australia (PWC, 2025).

If accelerated rates of skill change occur at scale in Australia, it will likely change how experience is rewarded, increasing the value of lifelong learning, upskilling, and reskilling.

Box 8 Skill change and returns to experience

As workers build experience in a particular occupation, their wages typically rise for several years over the course of their careers. Underlying this is a complex relationship between skills and pay. The skills learned in initial qualifications may help workers earn more over time, but may also become obsolete. The skills workers learn during their careers, including on the job, may help them keep up with rapid changes.

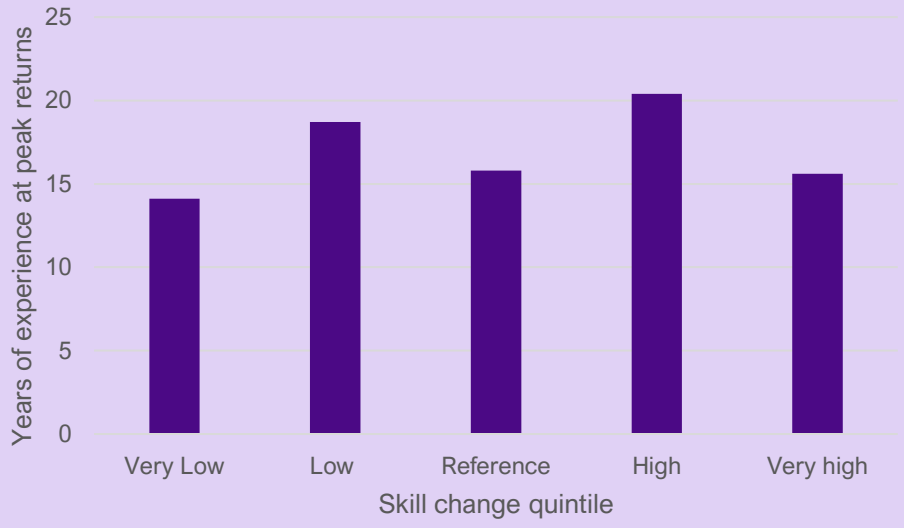
Using a fixed effects regression of HILDA data, we tested whether differences in the rate of skill change between occupations have an effect on returns to experience. Essentially, we test whether occupations with more rapidly changing skillsets show greater increases in pay over time. It enables us to consider potential implications for the timing of learning throughout the life-cycle, including where experience (as opposed to newly acquired skills) might be most rewarded.

The analysis shows that in an occupation with high rates of skills change, accumulated experience is rewarded well into their career, with wage curves peaking around 20 years into their career. For an occupation with low rates of skills change, experience is still rewarded but peaks earlier in the career path.

The results also show that skill change does not necessarily equate to economic value of experience. In Very High change roles, skills may become obsolete faster — so older experience may lose value more quickly. In contrast, High change roles may strike a "sweet spot", with enough evolution to reward experience, but not so much disruption that experience becomes irrelevant.

Figure B8.1 Rates of skill change can influence returns to experience

Years of tenure at peak wage returns to experience



Source: JSA analysis of HILDA dataset.

4.2 Implications for worker cohorts

The effects of Gen AI on particular occupations necessarily have implications for different cohorts of workers by virtue of the makeup of the Australian workforce. For example, General Clerks have a relatively high exposure to Gen AI-related automation and a medium

exposure to augmentation. According to recent data on the make-up of the workforce, this would affect 3.7% of employed women; 3.1% of workers with disability; 2.5% of the Indigenous workforce; and 2.6% of the workforce aged 55 years or more.[25]

Aside from the cohort effects that arise as a result of the makeup of the workforce, there is a growing global literature on how workers' experience of technology can vary between groups of workers, and according to intersecting personal characteristics or circumstances. Workers in Australia are diverse across multiple dimensions, and the use of Gen AI could vary along several lines.

Some of the opportunities and challenges highlighted in this section are relevant for all cohorts in focus and some are specific to particular cohorts. The implications of Gen AI depend on how well the technology accounts for diverse populations – whether datasets are representative, whether algorithms generalise based on the majority, and whether the results echo society's existing inequities and biases.

Access, affordability and the digital divide

Addressing the digital divide and the need for effective policies and training are key to ensuring equitable access to Gen AI technologies and developing workforce skills. An inclusive approach, which equips all students and disadvantaged groups with the necessary digital skills and AI literacy, will best position Australia to realise the potential benefits of Gen AI, and to address the challenges.

The 'digital divide', which refers to unequal access to and use of digital technologies, is not a new concept (Min, 2011). Traditionally, it has referred to disparities based on geography, education, and income (Hargittai, 2008). Further layers of complexity are added to this divide, encompassing not only access to hardware, software, or the Internet, but also gaps in AI literacy and digital skills (Box 9) (Hendawy, 2024).

In their submission to the Select Committee on Adopting Artificial Intelligence (AI) , the Australian Digital Inclusion Alliance (ADIA) stated that without a focus on digital inclusion, the uptake of AI threatens to further widen the digital divide in Australia (Submission No.175, p.5).

In 2023 Australian Digital Inclusion Index (ADII), 9.4% of the population in Australia was highly digitally excluded, with an additional 14.2% also facing digital exclusion. This means that nearly a quarter of Australians (23.6%) are digitally excluded to some extent, with the most affected groups being First Nations Australians, individuals with disabilities, those living in public housing, those who are over 75 years of age, and people who have not completed secondary school (Submission No.175, p.1).

[25] According to workforce compositions derived from the 2021 Census.

Box 9 Gen AI use to serve marginalised young people

We consulted staff from a vocational school in Australia serving disadvantaged and marginalised young people and community organisations and digital inclusion experts.

The School's journey with AI began in 2024, with a focus on understanding its implications for both the school and its students, and how to bridge the equity divide, foster engagement, improve digital literacy among students, and prepare them for future workforce. Despite the School's efforts, significant challenges remain, particularly related to the digital divide faced by students from disadvantaged backgrounds.

Many young people studying at this school are marginalised from mainstream social situations and education, including digital technologies, due to their lived experiences of homelessness and insecure housing. They also have limited exposure to digital technologies; many do not even have access to smartphones.

Despite its vocational focus, the School aims to prepare their students for further education and employment by providing them with the tools to think critically about AI and its impact on their lives. For these young people, motivational access is also important. AI may not be inherently exciting to many of them, so this school must ensure that it is relevant to their lives or lived experiences. Engaging students in their learning process through Gen AI, such as creating tailored songs and podcasts, has proven to be an effective strategy. As one of the school leaders highlighted:

> *'Our students don't have that. So, we've got to provide something that is more engaging than whatever it else it is they're doing, because if we're not more engaging, they don't come.' Consultation participant, School Leader*

Physical or material access remains a barrier. Young people at this school frequently lack stable access to digital devices, internet, or private spaces to study. This often stems from poverty, homelessness, or family disruption, and directly limits their ability to access and engage with Gen AI tools.

> *'Our students have not been fairly represented, and they've not been fairly treated and they've not had equitable access.' Consultation participant, School Leader*

Source: Case study 3 – Gen AI and the digital divide.

The use of Gen AI requires a foundation of digital capabilities (such as the use of computers, smartphones, applications, and accessing the internet). While many Australians have strong foundational digital capabilities, there is ample evidence of a divide in digital inclusion

(Thomas, et al., 2023) which not only affects employment and training opportunities, but also adaptability to an increasingly digital economy.[26]

Some survey evidence suggests that basic digital skills are a high priority for over 40% of businesses (Ai Group, 2024). To the extent that Gen AI increases the importance of digital skills in the workplace, a lack of basic digital skills and digital access will become more costly. This could affect different cohorts of society, given digital access and inclusion can vary by ethnicity, age, income levels, and educational background.

In addition, access to general purpose AI tools themselves could reduce or exacerbate inequality over time. Many are available on a fee-free basis, making it more accessible to individuals and small businesses than some previous technologies. At the same time, 'free' versions cannot keep up with the quality required in complex and regulated sectors, which paid versions of AI (proprietary AI) are designed to do. A widening gap in quality could affect the tools and training individual workers can access, and therefore the nature of their transition in a Gen AI-enabled labour market.

Implications of Gen AI for women

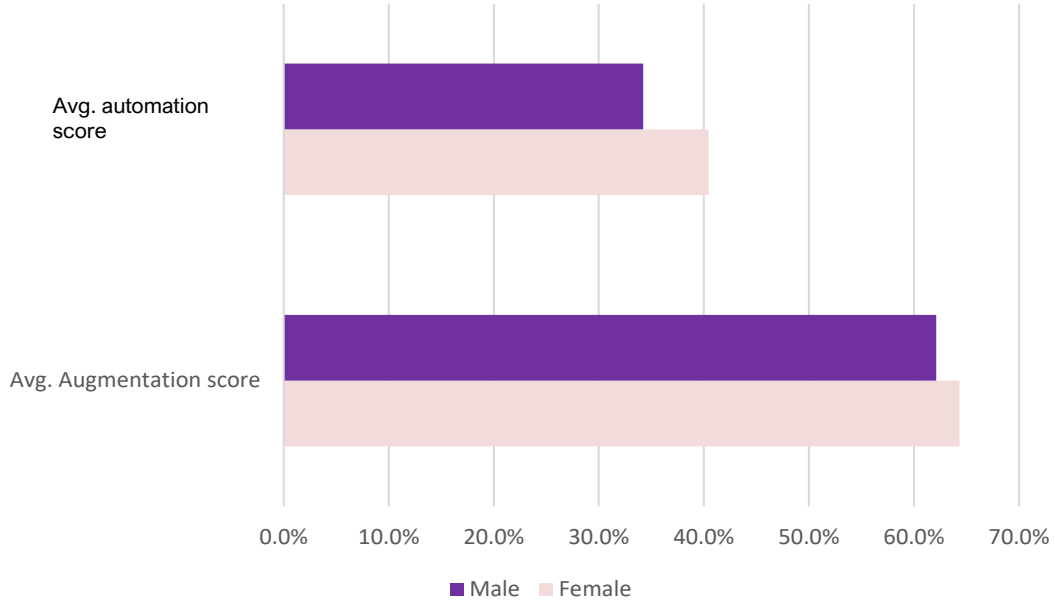
Several submissions to the Senate Select Committee on Adopting Artificial Intelligence address the impact of AI, particularly Gen AI, on different workforce cohorts. These submissions highlight that Gen AI could disproportionately affect women in work, as there are more women in roles exposed to Gen AI-driven changes, particularly in their exposure to automation.

Our analysis of occupation-specific exposures shows that, according to the current makeup of the Australian workforce, women are marginally more exposed to both augmentation and automation (Figure 17). Given this is based on occupation-level exposures, the analysis does not account for any gendered effects of Gen AI for workers within the same occupation.

[26] For example, online advertising is the most common method of recruitment in Australia, used by 63% of recruiting employers. Many training opportunities for working age adults are also online – according to the 2020-21 Work-Related Training and Adult Learning survey, more than half (55%) of people did their most recent work-related training course mainly through online delivery.

Figure 17: Women are slightly more exposed to Gen AI in their current roles on average

Weighted average automation and augmentation scores by gender



Source: JSA analysis of ANZSCO (v1.3), Census 2021 (Tablebuilder).

This accords with some previous findings in Australian research. In the financial services sector, for example, female employment is high in occupations that are projected to see low-growth, including Accounting Clerks, Bookkeepers, Payroll Clerks, and Bank workers, all of which face significant exposure to Gen AI (FSO, 2024). The FSO has also pointed to occupations in other sectors, such as Medical Administrative Assistants as well as Legal Assistants as being particularly exposed (Mandala, 2024).

This also aligns with ILO findings that occupations with the highest automation exposure employ more women than men (although automation exposure is low overall). Moreover, critical occupations and industries that are female-dominated could need more investment in Gen AI technologies and skills to support already stretched workforces, with opportunities from these technologies (Gmyrek, Berg, & Bescond, 2023). Faster and more informed adoption of Gen AI in the female-dominated care economies, for example, could improve job quality and productivity in these sectors, and support them to meet increasing demand and existing unmet demand.

Gen AI opportunities and risks for First Nations Australians

Under the National Agreement on Closing the Gap, Target 17 aims to ensure Aboriginal and Torres Strait Islander people have equal levels of digital inclusion by 2026. A range of policy levers could potentially contribute to greater digital inclusion, for instance, as those recommended by the (First Nations Digital Inclusion Advisory Group, 2024). While the implications of Gen AI are not divorced from the broader issues of digital inclusion, they create new opportunities and risks for First Nations Australians.

For example, where Indigenous people remain excluded from the development, design, or use of AI technologies, this can perpetuate risks to Indigenous knowledges and structural exclusion (Carlson, 2023).

The lack of Indigenous Cultural and Intellectual Property (ICIP) protections has meant AI-generated art continues to threaten the viability of Indigenous art and cultural knowledge (Worrell, 2024). Around 19,000 Aboriginal and Torres Strait Islander people are employed or receive income from the sale of visual arts (Productivity Commission, 2022). Gen AI tools could mass-produce inauthentic, Indigenous-style products, thereby diluting returns for artists. Failing to attribute Traditional Owners, providing false information, disregarding cultural protocols, and creating works that misappropriate ICIP without consultation can lead to an erosion over time of cultural capital as well as economic opportunities that derive from it.

To remedy this, Fitch et. al. (2024) argue, 'reinserting Indigenous sovereignty and self-determination practices within the AI space can alleviate this concern'. Carlson (2023) explains to this end that Indigenous lawyers are finding ways to integrate intellectual property with cultural rights while a global push for Indigenous Data Sovereignty continues to gain momentum to empower "economically" in the AI age.

Working with Gen AI and being involved in how it is designed and applied, is creating opportunities for economic and technological empowerment on the ground. One example is Indigital, an Indigenous-owned profit-for-purpose company, which is also leveraging Gen AI augmentation. By combining Indigenous knowledge with the technology, Indigital is able to generate novel ways to preserve connection to Country, accelerate conservation efforts and educate young people. Another example is of conservation efforts prioritising Indigenous-led expertise in technological design to help preserve biodiversity across Kakadu National Park.

A key part of improving how Gen AI is designed and applied is to increase the participation and success of Indigenous people in the tech industry, which is the objective of not-for-profit organisation Indigitek. This organisation was established to normalise the presence of Aboriginal and Torres Strait Islander people in technology, foster culturally safe workplaces, and create accessible pathways into the digital economy. The organisation's approach to increasing Indigenous participation in the tech industry is underpinned by a strong network of partnerships with training providers and technology companies.

- With training providers, the organisation collaborates to design and deliver technology learning pathways that are tailored to the needs of Aboriginal and Torres Strait Islander learners.
- Tech companies are expected to participate in regular events, aligning with the organisation's strategic priorities, and offer tangible opportunities such as internships and employment placements.

Case study 4 (Gen AI and Indigenous Peoples in Inclusive Transitions) further explores and highlights potential opportunities and risks that Gen AI may pose for First Nations Australians.

Gen AI and people with disability

Gen AI has a range of implications for people with disability. Just as there is a broad diversity of experiences of the workplace for people with disability, Gen AI presents a range of opportunities and challenges. For example, it can potentially help people undertake tasks more easily or participate meaningfully in the workforce, in both low and high-skilled work and training. However, the design or use of Gen AI can also introduce or increase bias that disadvantages people with disability.

We heard in our consultations that natural language models can be used in a number of enabling technologies for people with communication difficulties or disabilities. Yet, AI-produced captions can frequently be of poor and unusable quality. If Gen AI-enabled solutions skew to lower quality workplace supports (for the purposes of reducing costs) this puts at greater risk the economic and social participation of people with disability.

Co-design in the development of Gen AI use cases is often key to ensuring AI-driven tools suit the needs of people with disability. One example involved DeafMob and aimed to co-design a translating tool between English, Auslan, and Aboriginal sign language (Box 10).

Box 10 Deaf Mob – Gen AI use to bridge communication gaps for Deaf and hard-of-hearing Aboriginal people

The Breaking the Silence: AI for Deaf Mob project was launched to examine whether technology could bridge the divide for deaf Aboriginal and Torres Strait Islander people.

The project research focused on creating a culturally appropriate AI-driven translation tool. The goal was to co-design a framework, methodology, and prototype for translating between English, Auslan, and Aboriginal sign language. The project aimed to make the tool accessible and useful for Aboriginal and Torres Strait Islander communities, as well as mainstream organisations in Health and Justice.

The result of this co-designed process was a “DeafMobDoRite” prototype app, which was developed in Wiradjuri country. It was designed to improve communication for Deaf and Hard-of-Hearing Aboriginal Australians (Deaf mob), especially in health and justice contexts. The app features several innovative tools:

- AI Chatbot (AskAura): David can use AskAura to upload photos of documents, like a legal document, and ask questions in a conversational manner. The chatbot, trained for Deaf mob and legal contexts, simplifies complex legal terms, empowering users to understand their legal rights and navigate the justice system.
- Pre-recorded Avatar Messaging: Pre-recorded messages allow David to introduce himself and explain his communication needs in unfamiliar environments, reducing anxiety and ensuring his perspective is acknowledged.
- Live Translation: Real-time text-to-speech and speech-to-text functionalities facilitate David’s engagement in conversations with professionals, translating across modalities as required.
- Symbol-Based Communication: For users with limited English or Auslan, the app supports personalised symbol-based interaction, making it inclusive for those with additional cognitive or physical impairments. David can use a symbol-based mode to express thoughts through personalized symbols, which are then translated to text and speech, making communication more efficient and accessible for users with different language abilities and physical or cognitive challenges.

Source: Inclusive Design Collective; Case Study 4 – Gen AI and Indigenous Peoples in Inclusive Transitions.

In addition, to the extent that Gen AI is geared towards automating standardised and repetitive tasks, or entry-level occupations more broadly, this may disproportionately affect people with disability. Moreover, the effect of Gen AI for people with disability may depend in part on other workplace trends, such as the availability of flexible work arrangements.

In recruitment, mainstream Gen AI applications could 'propagate built-in ableist biases and discrimination' (OECD, 2023). For example, using resume data in automated hiring can amplify past biases and career interruptions, while affirmative recruitment measures risk flagging disability without addressing bias in recruitment.

The implications of Gen AI depend on how well the technology accounts for diverse populations – whether datasets are representative, whether algorithms generalise based on the majority, and whether the results echo society's existing inequities and biases.

Looking beyond task exposure to the risks of AI compounding disadvantage in the labour market

While considering the exposure of *occupations* to augmentation and automation is important, there is the potential for *groups of people* in the labour market that have a higher likelihood of labour market disadvantage (including women, First Nations people, people with disability, cultural and linguistically diverse people, and others) to experience this exposure more acutely within occupations, if not in aggregate. They may be more likely to experience the negative labour market impacts - either earlier or to a greater extent.

As the Gen AI transition progresses from this very early stage it will be important to gauge how the technology is being used across workplace functions, and the extent to which these applications effectively address the risks of potential biases that affect these groups of people. For instance, how Gen AI is used in communication, hiring and firing decisions, rostering, career development, performance evaluation and feedback, work health and safety, and other functions and features of the workplace.

4.3 Implications for policy

As new technologies are implemented, it will be important to ensure that groups of workers are able to participate meaningfully. Individual workers differ in their engagement with technology, potentially due to their circumstances, access, and environmental influences. Gen AI has the potential to reduce inequities and disadvantage, but also risks entrenching existing disadvantages.

Risks tend to stem from both the design and use of AI. For example, some workers face bias in recruitment where Gen AI models are used. As an example, open-source foundational large language models were found to affect labour market prospects with significant discrepancies between the skill levels and prospects assigned to applicants depending on gender and migrant status (UNESCO, IRCAI, 2024). To the extent that software developers and businesses who use Gen AI are able to mitigate these risks, this could build a broader trust across the workforce.

Equally, it is vital that Australia has the supply of skills and capabilities needed in an AI-enabled economy. Inclusion must be a focus of education and training – including how to ensure that training is accessible and relevant to different cohorts and to suit different needs.

Finding 10: The number of entry level roles hasn't declined even as the work has, and should continue to be monitored closely

Entry-level recruitment has been relatively stable, based on job advertisements data. Anecdotally, in early adopting sectors, employers are changing or considering changes to their entry-level intake. This includes changes to the nature of entry-level roles in workplaces where Gen AI is being used for routine tasks.

Overall, entry-level roles should remain an area of focus given the capabilities of Gen AI and the emerging capabilities of agentic AI to undertake structured, routine tasks.

Finding 11: Women face both risks and opportunity in the Gen AI transition

Women are overrepresented in highly automatable roles, and current mobility data suggests they are more likely to move from moderately augmentable roles into highly automatable ones, reinforcing exposure to automation. However, there are many occupations that are growing and have strong potential for augmentation, more than automation.

This opens up opportunities for the labour market and skills system to help groups at higher risk of displacement within certain roles to move into more productive and in-demand occupations.

Finding 12: Indigenous expertise needs to play a role in innovation and resilience in Australia's digital future

Gen AI presents opportunities for First Nations Australians when Indigenous communities lead the design, development, and deployment of AI technologies. Indigenous knowledge systems offer unique strengths, including in environmental stewardship, cultural heritage, and community health. These can be amplified through Gen AI tools when co-designed with respect for Indigenous Data Sovereignty and Cultural Intellectual Property.

Many Aboriginal and Torres Strait Islander people work in the health, education, and community services sectors. These sectors show strong augmentation potential, and embedding Indigenous expertise in the design of transition strategies will help ensure the technology and augmented roles are effective and culturally grounded.

Finding 13: Improved design and implementation will make the most of Gen AI and reduce barriers for people with disability

Gen AI is already having an impact on people with disability, with enabling technologies supporting communication, access, and participation in work and training.

But progress is uneven. While co-designed tools, such as culturally appropriate translation systems and adaptive technologies, can achieve meaningful inclusion, *current* mainstream Gen AI systems often fall short. These can have inconsistent quality and risks of bias or exclusion in workplace design as well as recruitment.

Finding 14: Workers experience the opportunities and challenges of the digital and AI transition differently, in application and outcomes

The effect of Gen AI will vary between different groups of workers and according to different circumstances and identities. In some cases, groups of people will be more

acutely exposed to Gen AI by virtue of their skills and occupations. In other cases, workers within the same occupation may face different access, opportunities, pressures, and challenges.

A focus on different groups (that is, an intersectional lens) will be important when considering which workers may be more likely to experience negative labour market impacts – either earlier or to a greater extent. An intersectional lens – including in monitoring the transition – can therefore also reveal new insights on how Gen AI technologies can adapt to varied contexts.

5. Effective implementation and business adaptability

The capacity to implement Gen AI and adapt to changes in technology varies considerably across employers and workplaces. Organisation-level adaptability is shaped by factors such as AI maturity and depth of technology adoption.

In practice, adaptability challenges vary by business size as well as other characteristics. Understanding these factors is critical to designing effective policies for Australia's diverse business landscape.

Adaptability can be considered at various levels, including:

- at the **organisational level**, adaptability is shaped by factors such as AI maturity and depth of technology adoption. In practice, adaptability challenges vary by business size as well as other characteristics. Understanding these factors is critical to designing effective policies for Australia's diverse business landscape.
- at the **industry level** the process of implementing Gen AI is subject to various complicating factors, such as protocols and regulation; developing and investing in AI tools; and experimentation.
- in the **broader economic environment**, several factors will influence an organisation's ability to invest in new technologies, to redesign work processes, and to make effective use of skills in the labour market. Factors such as access to capital, regulatory clarity, infrastructure readiness, and the responsiveness of the education and training system. While some of these macro-level factors are beyond the scope of this study, they are nonetheless vital to the adaptability of employers and hence will be critical determinants of the labour market impacts of Gen AI.

Some key factors include how workers expertise is leveraged and how they are engaged, and skills development and training.

5.1 Leveraging expertise and engagement

Analysis of Gen AI exposure, as well as the Australian experiences to date, suggest that realising the potential benefits is highly dependent on workers.

- In many use cases, the technology is best used as an augmenting tool to support human judgment or enhance problem solving.
- In other cases, AI-generated outputs will require human oversight, both to assess and contextualise.

As Gen AI is integrated into work processes, it is often experienced practitioners who are best placed to design the use of Gen AI in their own work.

Implementation of new technology into a workplace does not always involve processes that harness the expertise of the workforce. This has been true of some early experiences of Gen AI. For many workers, it is not clear what approach their workplace will take to implementing AI technologies. Deloitte Access Economics (2024) found 47% of surveyed workers were not aware of 'any actions taken by their business' to respond to AI use in the workforce.

Moreover, only 20% of employees believed their business was ‘taking full advantage of Gen AI’ (Deloitte Access Economics, 2024).

A study involving focus groups of nurses, retail workers and public servants highlighted that workers are often not opposed to AI technologies, but are often not involved in the development and implementation of AI systems (UTS Human Technology Institute, 2024).

While these examples are not necessarily representative of all workers or all industries and sectors, seeking greater involvement and input from workers could improve the effectiveness of the technology, by leveraging workers’ expertise in the design of work processes, as well as building skills and familiarity among workers. We have heard in consultations that early stages of adoption often benefit from periods of experimentation by workers, where they can provide input and feedback.

Where Gen AI is comprehensively integrated into work processes, leveraging the expertise of workers through co-design could be a valuable part of implementation. An example of this is the University of Sydney’s Ai Collaborative, which brought together academics, technologists, and students to co-develop approaches to Gen AI use (Box 11).

Box 11 Case study on co-design at the University of Sydney

The University of Sydney has embraced Gen AI with a strategy centred on productive and responsible engagement (University of Sydney, n.d.) (Liu, Inquiry into the use of generative artificial intelligence in the Australian education system. Submission 100., 2024). From the beginning, it rejected outright bans in favour of encouraging educators and students to collaborate in discovering and fostering productive and responsible ways to engage with AI. The University's governance model has been key to this journey.

A central feature of this approach is co-design. Rather than implementing top-down mandates, the University empowers academic staff to lead the development of AI-integrated practices. Faculty members have trialled a variety of innovative practices, from using AI for instant and personalised student feedback to designing workplace conversations, which incorporate Gen AI tools (Liu, 2023).

In support of this innovation, the University launched Cogniti, a homegrown platform that enables educators to create tailored AI agents specific to their course requirements. Cogniti supports responsible experimentation by giving staff control over prompts, datasets, and student interactions. The platform is now used by more than 60 educational institutions. This technical empowerment is reinforced through targeted professional development, with workshops and learning series designed to build confidence in teaching with AI (Liu & Bridgeman, 2024) (University of Sydney, 2024).

'[…] So, what we're doing at Sydney is we're actually helping academics think about how they can create their own agentic AIs to act on their behalf with their students in order to enhance the work that they do. "The analogy that we like using with academics is a stunt double. And so in a movie, a stunt double's role is not to replace the actor, but to basically do things which are physically impossible for the actor to do. And in a similar way, AI now can do things which are physically impossible for you to do as an academic because it can be with your students 24/7 and one to one. So how do you, as an academic, think about how you can augment your teaching with the help of an AI which you design in order to basically be your agents, be your stunt double to your students all the time. And our academics have a lot of fun thinking about this and thinking about how. And basically pick up a new skill of working with AI in this different way.' (Professor Danny Liu, JSA Roundtable Consultation 3)

Source: Case Study 9 – Gen AI implementation and co-design at the University of Sydney.

Leveraging expertise through co-design can be particularly critical in settings where the effective and safe use of Gen AI depends on a deep understanding of the workplace and content. For example, in healthcare settings, the implementation of new technology can affect critical decisions, clinical workflows, and ultimately patient outcomes. Harnessing the expertise of clinicians is particularly valuable for both the design of new work processes and the effective take-up of the technology (Box 12).

Box 12 Case study: Co-design in healthcare settings

During consultations, several participants from the health sector discussed the potential benefits and challenges of implementing AI and technology in their work. They highlighted the need for co-design and collaboration with clinicians to ensure that the technology meets their needs and integrates seamlessly into their workflows.

'It absolutely has to be built from ground up with the input of the workplace to fit the workplace. And yes, it's going to change the work you do, but ultimately, I think that's kind of the point.' (Consultation participant, Occupational Therapist)

One of the participants emphasised the importance of involving hybrid experts who act as change drivers as well as translators to communicate to and on behalf of end users in the co-design and implementation of new technology. This ensures that the technology meets the needs of those who will be using it daily. However, they also highlighted the challenges of consulting a large and diverse workforce.

'The people that I see consulted on some of this stuff are very, very, very senior clinicians [...] There's not a great deal of consultation at that the actual end user level.' (Consultation participant, Union Member)

Health IT specialists, who have both clinical and IT backgrounds, play a key role in bridging the gap between IT and clinical languages, which is essential for implementing new systems or changes effectively.

'[…] there's been a big growth in Health IT; it essentially is its own sort of specialty now. [This includes] people, you know, I guess, like myself [who] have a clinical background. So we can speak the [clinical as well as IT] language[s], which is really important to implement change because clinicians [treat] it like it is a different language. (Consultation participant, Union Member)

Source: Case Study 5 – Gen AI in healthcare.

5.2 Valuing and investing in skills development and training

Consultations to date have also shown varied practices in terms of the provision of training. Where there has been more in-depth engagement with employees, training is often provided. At the other extreme, employees have simply been notified of new tools.

"We heard in our consultations from one employee who noted that they received 'zero training' on Gen AI, only receiving an email that their organisation had 'now developed their own ChatGPT'."

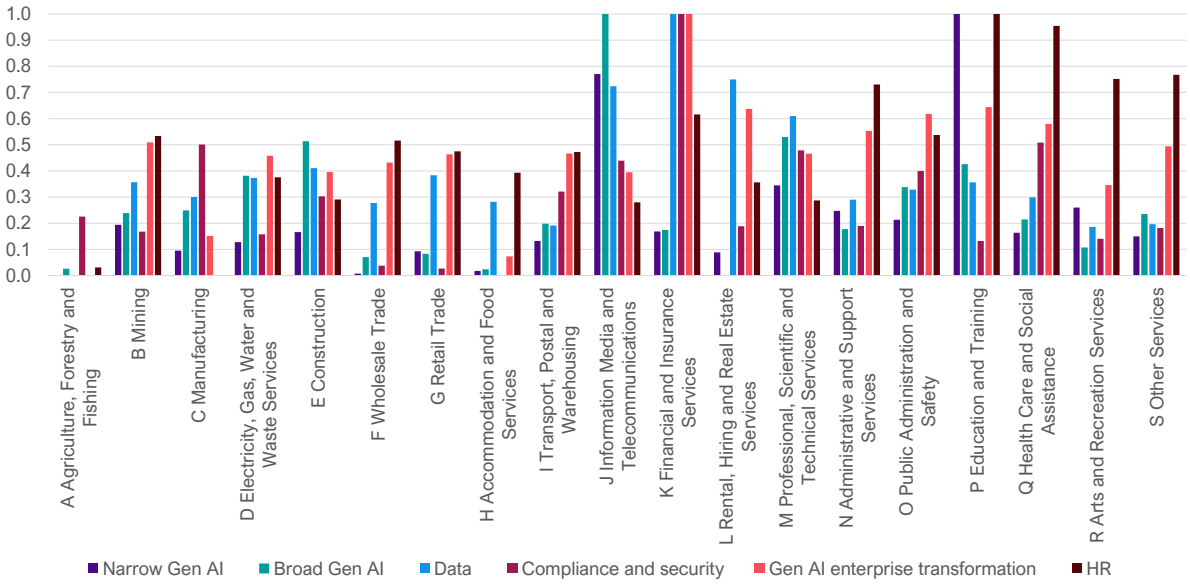
Among ASX200 companies, 19% mentioned AI training in their annual reports in 2023, and this rose to 25% in 2024. It is not always clear what training is being provided, but several companies flagged training focused on leadership development or executive education focused on AI strategy, ethics, or management (18%), with a smaller share allocating resources to training programs focused on how employees can use, operate, or work with existing AI tools, platforms, or applications in their daily work (12%).

Training is not only vital for less technically-inclined workers. A survey of qualified engineers suggests that larger engineering firms are more likely to have policies, training and support covering AI (Engineers Australia, 2025).

To date, industries vary significantly in terms of the skills needed to implement Gen AI (Figure 18).

Figure 18: Industries vary in terms of firms' skills for implementing Gen AI

Average share of firms that hold selected capabilities for implementing Gen AI



Note: Data skills are the most closely correlated with narrow and broad Gen AI skills.

Source: JSA-commissioned analysis of Revelio worker profiles data.

Moreover, it is important for organisations to value and optimise the skills of their workforce. When employers take a skills-first approach – focusing on their workers' specific capabilities and potential rather than their qualifications or job titles alone – this can facilitate responsiveness to change. In theory, it allows employers to identify transferable skills and redeploy talent internally.

One example of this approach is technology firm Workday, who said of their transition to a skills-based organisation:

"This transition was driven by the need to enhance employee engagement and provide more opportunities for career development. … The transition to a skills-based organisation has led to several positive outcomes for Workday. There has been a 42% increase in internal mobility, with employees participating in gigs and career development opportunities. Additionally, skills-based hiring across the enterprise has resulted in a 15% decrease in time to hire and an 8% increase in offer acceptance."

To the extent that employers can take a skills-first approach, this could facilitate adoption of Gen AI and more rapid adaptation to its effects. It would be particularly relevant where job roles evolve more rapidly than formal qualifications can keep up. As highlighted by the OECD (2025), it is important to balance the advantages of the approach (such as broadening talent pools for employers and improving access to jobs for individuals) with the risks (such as the potential for biases, diminishing future-readiness, and lowering professional standards).

In valuing and investing in skills, businesses also need to invest in strengthening their technology-focused management capabilities, as critical enablers to successful adoption and adaptation. This is particularly in ensuring firms have effective leadership 'personas' (as outlined in Section 3), given leaders play a pivotal role in aligning AI initiatives with broader strategy, ensuring workforce readiness, and mitigating risks during implementation.

5.3 Implications for policy

The adaptability of employers will be a decisive factor in shaping the relationship between Gen AI and the labour market. While the technology's capabilities are advancing rapidly, the way it is adopted – and the organisational practices that support or hinder its integration – will determine its effect on work and employment.

At the organisation-level, employers face various challenges and differ in their readiness to address them. At the industry level, structural and cultural dynamics, as well as regulatory settings, continue to be influential. Elements of the broader economic environment that influence investment – including infrastructure and regulation – can also enable or constrain employers' adaptability.

If Gen AI is to deliver its full potential while supporting inclusive economic participation, this requires not only on the diffusion of technology, but on the capacity of employers to adopt and adapt effectively. This requires conditions in which firms – of various sizes and settings – can invest in innovation, adapt job roles, and make full use of available skills.

Finding 15: Firms progress through a spectrum of digital and AI capability – from adoption, to integration, to maturity.

Organisations move through three broad stages along a spectrum of capability:

- Adoption: identifying relevant AI opportunities, investing in infrastructure, and building foundational workforce skills.
- Integration: embedding AI into workflows, supported by data readiness, hybrid expertise, and change management.
- Maturity: scaling AI use, applying adaptive leadership, and embedding responsible governance.

At each stage, organisations demonstrate varying depth and breadth across a set of enabling factors: strategic leadership and alignment, workforce skills and hybrid expertise, data infrastructure and readiness, operational integration and change management, as well as responsible AI governance.

Organisations follow different paths to maturity, shaped by sectoral context, workforce composition, and organisational priorities. This also applies to sectors.

Early adopters offer insights into implementation, but readiness is also shaped by broader economic conditions, regulatory settings, and the ability to redesign work and invest in skills as well as technology.

6. Skills system readiness

The skills system will play a central role in Australia's response to the Gen AI transition. As workplaces adopt Gen AI, individuals' abilities to adapt depends not only on their current skills but on timely and relevant training. Importantly, a responsive and inclusive skills system can help ensure that Gen AI augments work rather than displaces it, while supporting equitable access to emerging opportunities.

The challenge for skills systems is well summarised by the OECD:

> *"The rapid evolution of skills demands calls for upskilling approaches that are fast, targeted, and accessible to everyone – not just those in formal education." (OECD, 2025)*

The system must be equipped to deliver the right skills – those needed across the Gen AI-enabled labour market, reflecting up-to-date technology. It must deliver training to in ways that are accessible to workers of different cohorts and in various stages of their careers. And overall, the challenges posed by Gen AI must be considered in a system-wide lens.

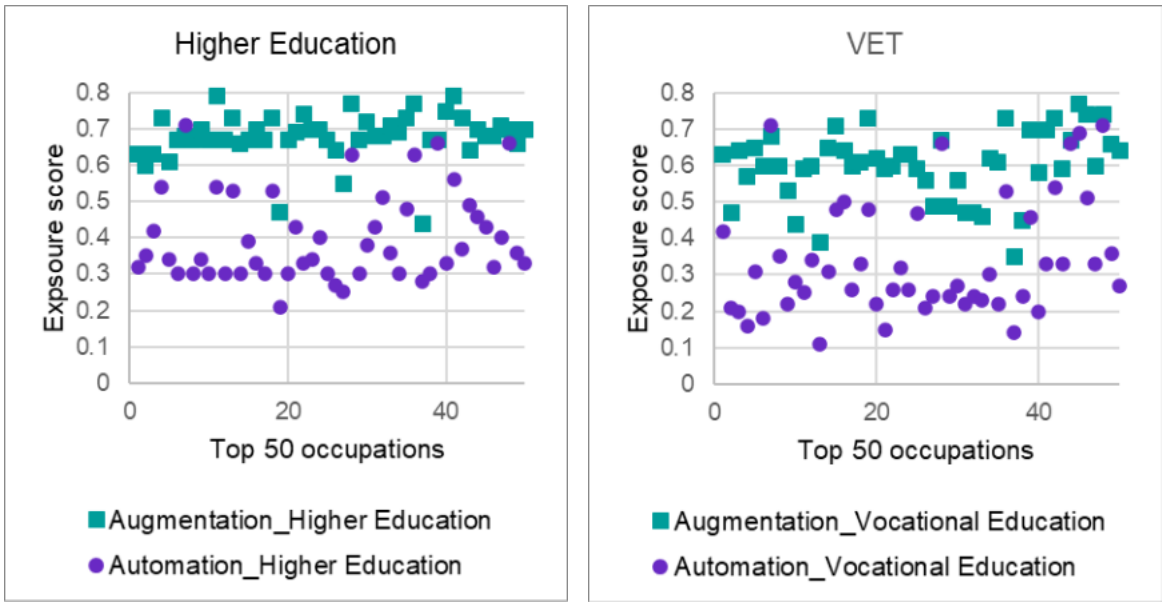
6.1 A system-wide challenge

Given the breadth of its potential application, Gen AI holds significant implications across the education and training system.

Gen AI technologies are more readily applied in knowledge work, and not easily applied to tasks involving a manual skill. As such, occupations linked to higher education have greater exposure to both Gen AI augmentation and automation, although many VET-related occupations show similarly high augmentation exposures (Figure 19). This suggests that tertiary graduates from both VET and higher education are likely to be work with or alongside Gen AI.

Figure 19: Both VET and higher education graduates are likely to work in Gen AI-exposed jobs

Exposure scores of top 50 occupations for higher education and VET graduates



Note: Exposure score assigned at the unit group level to which the detailed occupation belongs.

Source: JSA analysis of ABS PLIDA data linking Census, higher education and VET statistics, 2018-20; ANZSCO v1.3.

Popular fields of study have significant potential for task augmentation and automation. By analysing pathways from education to occupation, we can observe which graduates have more propensity to enter roles exposed to Gen AI.

- In the 20 most common fields of higher education, there is significant variation in the potential for graduates to be exposed to Gen AI augmentation in their occupation after completion (Figure 20).
- The top 20 vocational education and training packages also vary in terms of the likelihood of graduates entering occupations exposed to Gen AI, with greater exposure for knowledge work and creative fields (Figure 21).

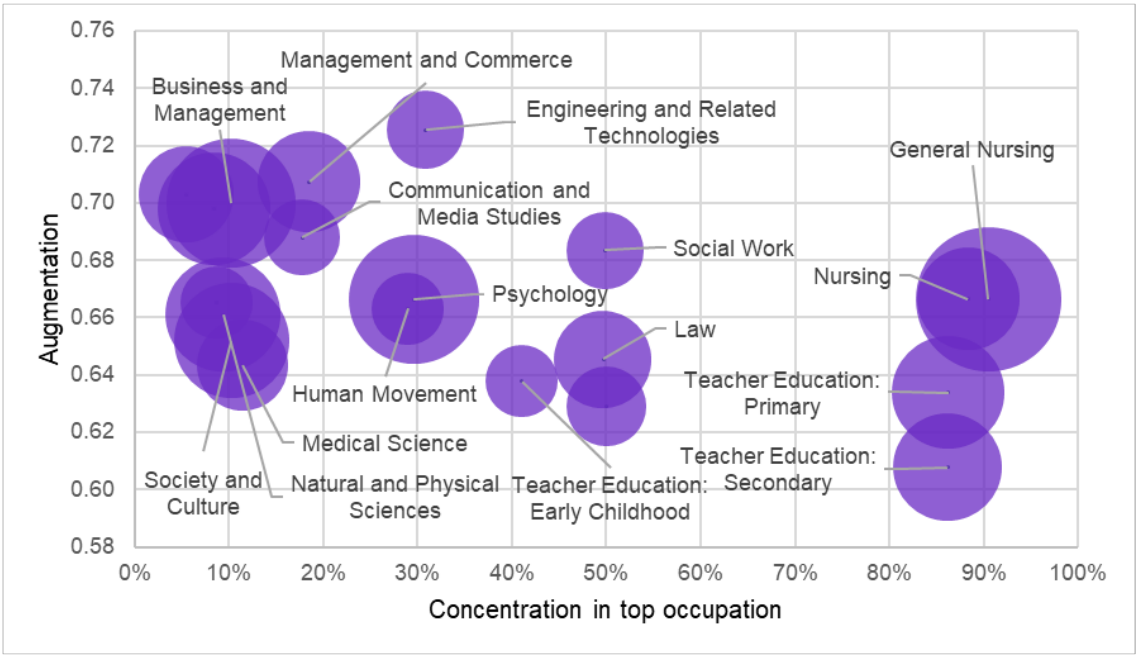
For higher education in particular, graduates in some fields largely funnel into a single occupation while in others they are more widely dispersed (Figure 20). For fields of study that lead to a broad range of related occupations with high potential for augmentation (such as business and management courses) equipping graduates with the capability to use Gen AI could contribute to their adaptability, mobility, and resilience in the labour market.

Meanwhile, where specific special courses educate the pipeline of newly registered professionals (e.g. for teachers and nurses), Gen AI adoption in the occupation could be significantly enabled or inhibited by extent to which the course provides the skills, knowledge and capabilities needed to work with and alongside Gen AI.

In the VET system, popular training packages vary more significantly with respect to Gen AI exposure with greater exposure for cognitive skill-intensive training packages (Figure 21). Gen AI exposure of VET pathways also tends to increase alongside the level of qualification, with Certificate IV qualifications and above more highly augmentable.

Figure 20: Augmentation exposure varies among fields of study with broad and narrow pathways

Top 20 detailed fields of education by weighted average augmentation and graduate concentration in the main post-study occupation

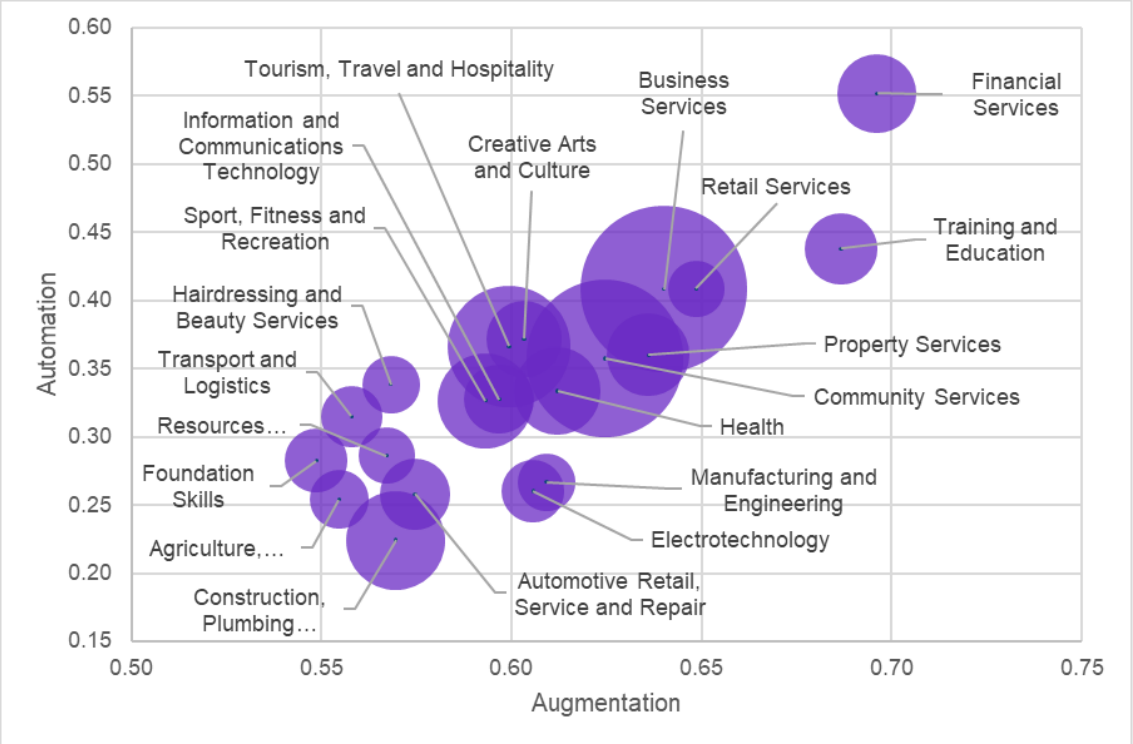


Note: Concentration in top occupation represents the percentage of graduates whose post-study occupation unit group is known who pathway to the same occupation unit group. Bubble size indicates number of higher education completions in the broad field of education, with larger bubbles representing more completions.

Source: JSA analysis of PLIDA data linking Census and higher education, 2018-20; ANZSCO v1.3.

Figure 21: Gen AI exposure varies across VET training packages

Top 20 training packages by weighted average exposure scores



Note: Bubble size indicates number of VET completions in the training package, with larger bubbles representing more completions.

Source: JSA analysis of PLIDA data linking Census and VET statistics, 2018-20; ANZSCO v1.3.

The response to date across the tertiary education and training sectors

The extent to which students learn how to use Gen AI, including how to work with and alongside AI-generated outputs, is also related to how Gen AI use occurs in the course of teaching and assessment. Notwithstanding the risks and complexities Gen AI entails for academic integrity and learning outcomes, there is increasing recognition that blanket prohibitions are counteractive to equipping students with the skills they will need in the workforce:

> *"There is little value in ignoring AI or implementing blanket bans on particular tools or technologies. These are oversimplified solutions to a complex set of problems and overlook what is already known about good assessment practice. As AI use becomes commonplace across schools and workplaces, it will be increasingly important to consider how these tools are integrated into learning and teaching in higher education in intelligent ways" (Lodge, Howard, & Bearman, 2023).*

To date, skills system actors have approached Gen AI use in vastly different ways (Box 13). Some extent of diversity is likely to be a feature of the tertiary education sector's approach to Gen AI use in teaching and assessment. Broadly, flexibility allows innovation as well as tailoring to specific needs and contexts. It is important to allow program-level strategies to prepare students for real-world use of Gen AI and other technologies.

Given the myriad approaches to Gen AI that are emerging, there is no standardised student experience of Gen AI within either the higher education or VET sectors, with the potential for key differences to emerge or increase between them. One survey suggested that only 21% of VET providers had a formalised AI strategy (ReadyTech, 2025).

Greater coordination of approaches to Gen AI could be valuable across tertiary education, without necessitating rigid consistency. The ability to disseminate and scale best practice across education and training providers was described by stakeholders as a potentially limiting functional gap in the existing approach – a dispersed and resource-intensive approach of individual providers developing their own resources and products, with limited mechanisms to share the learnings of early experimentation in relation to Gen AI.

Box 13 Tertiary students encounter varying approaches to Gen AI

Tertiary students encounter different approaches to Gen AI use depending on their study paths and on their education provider.

La Trobe University: In 2024, La Trobe University unveiled its 'AI-first' strategy which aims to integrate AI into curricula to prepare graduates for an AI-ready workforce and encourage staff to embrace an AI-first mindset, training them to use AI safely, ethically and responsibly to enhance productivity and improve student experience.

La Trobe's AI-first strategy is supported by partnerships with Microsoft and Cyber CX and will include opportunities to build expertise and experience through guest lecturers, industry participation, scholarships and skills programs, funding for digital transformation, and industry-recognised certifications and micro-credentials (LaTrobe University, 2025).

University of Sydney: From Semester 2 2025, the University of Sydney will move to a two-lane approach to assessment in the age of Gen AI (Bridgeman & Liu, 2025). The two-lane approach summarised below distinguishes between two roles of assessment with different roles for Gen AI:

Table B13.1: University of Sydney approach to Gen AI assessment

	Secure (Lane 1)	Open (Lane 2)
Role of assessment	Assessment *of* learning	Assessment *for* and *as* learning
Level of operation	Mainly at program level	Mainly at unit level
Assessment security	Secured, in person	'Open' / unsecured
Role of Gen AI	May or may not be allowed by examiner	As relevant, use of AI scaffolded and supported
TEQSA alignment	Principle 2 – forming trustworthy judgments of student learning	Principle 1 – equip students to participate ethically and actively in a society pervaded with AI

TAFE SA: TAFE SA provide guidance to students to support make informed decisions regarding using AI, including noting that the use of Gen AI tools in assessment is not supported by (TAFE SA, 2025). TAFE SA Libraries has also compiled information on AI for the reference of students and staff, including in relation to the use of AI for teaching purposes and in the industries taught by TAFE SA.

Short-form training and industry-education partnerships

Several stakeholders suggest that the implementation of Gen AI tools in leading firms and industries has moved faster than the integration of relevant skills into formal education and training.

An important stop gap has been the emergence of new forms of training delivery, often in partnership between education providers and industry (Box 14). These and similar delivery models play a significant role in:

- providing expertise that has yet to be reflected in other standard qualifications – that is, a stop gap to cover the lag until qualifications are updated
- providing those already in the workforce with expertise additional to their existing qualifications
- providing those without other qualifications with expertise that could be applied directly to work situations or lead to further study
- ensuring key skills are acquired with limited time commitments and cost – particularly important for workers employed in small business and non-market sector organisations.

While industry-education engagement is occurring (Box 14), there are opportunities to achieve greater efficiency. Particularly in relation to the higher education sector, stakeholders described industry-education engagement as frequently ad hoc and challenging to scale. As the Australian Universities Accord Final Report (2024) highlighted:

> *there is a need for a forum between industry and universities to support skills delivery, the co-design of both course curriculum and work integrated learning programs, and improved industry utilisation of higher education research and knowledge.*

Given the accelerated pace of skill change that typically occur in the context of widespread adoption of new technologies, this need is only likely to become greater.

Box 14 Partnerships between the technology industry and education and training providers

The IAT Digital is a partnership between TAFE NSW, Microsoft, Macquarie University, and the University of Technology Sydney (UTS). It develops and delivers short-form training on AI, cyber security, software development, cloud computing, and data analytics.

> *"Our academic and professional staff are working with industry partners to co-design, co-develop and co-deliver micro-credentials … These new offerings fast-track the development of skills and knowledge in exciting and emerging areas…" (Macquarie University, 2024)*

In 2019, Telstra signed Memorandums of Understanding (MoUs) with RMIT University, University of Melbourne, UNSW Sydney, University of Sydney, and University of Technology Sydney (UTS) to jointly develop technology-related short-form training (Telstra, 2019). The partnership created microcredentials on data analytics, data engineering and machine learning. Over 2,500 Telstra employees have trained under the collaboration (University of Technology Sydney, 2025). At the same time, Telstra agreed to work with each university

> *"… to enhance student learning through providing input into curriculums, industry placements and integrated work experiences, research and innovation opportunities, and early access to career opportunities." (Telstra, 2019).*

The University of the Sunshine Coast has embedded technology industry certifications into each year of its technology degrees. This includes certifications and badges from Microsoft, ITS, CISCO and EC-Council, equipping them with additional professional skills.

> *"Students can earn while they learn by using in-demand industry certifications and badges to secure jobs and internships in the booming technology sector as they study – and graduate with high-level, job-ready professional skills." (University of Sunshine Coast, 2022)*

Supplementing domestic skills supply with international expertise

The response of Australia's education and training systems in developing our digital skills base will need to continue to be supplemented with international expertise sourced through skilled migration. The FSO (2025) calculates that migrants constitute 41% of the workforce in technology occupations, who help to meet the demand for these skills, and also bring valuable skills and experience with technologies gained in other labour markets and skills systems.

This strong demand for specialist skills in digital technologies, including AI, highlights the importance of efforts to develop these capabilities through Australia's education and training systems – both in terms of increased enrolments and addressing suitability gaps.[27]

[27] According to executives surveyed by the World Economic Forum (2025) as part of the Future of Jobs Survey, the jobs expected to grow the fastest in relative terms by 2030 are specialist digital and AI roles such as Big Data Specialist, FinTech Engineers, AI and Machine Learning Specialists, and Software and Applications Developers.

However, efforts to develop these capabilities through Australia's education and training systems should continue to be complemented as appropriate by skilled migration, given the time gap involved in increasing the domestic skills pipeline and the contribution highly skilled migrants can make to innovation and productivity.

6.2 Delivering a range of Gen AI-related skills

Given that Gen AI will apply in varied use cases across many different roles in the economy, it is critically important to acknowledge that different individuals will require different types and levels of Gen AI-related skills. That is, while some foundational literacy will be broadly valuable, the skills and knowledge individuals require will vary according to their engagement with Gen AI. Primarily, this means meeting the different skill needs of the personas discussed in Section 3.

A baseline of digital access and skills for everyone is an important enabler of participating in work, study and society (foundations). Beyond this, the skills system should aim to deliver learner-centric, purpose-led digital capabilities including developing the competent application of digital skills, knowledge and attitudes (competence) as well as the digital and non-digital capabilities required to achieve positive outcomes through the use of digital technology including AI in relevant settings (fluency).

One key takeaway is that some foundational level of digital and AI literacy and capability will be important for all workers. And while this may be usefully embedded into existing training pathways, there is often value in providing AI user training to workers who are otherwise technically adept. For instance, even qualified engineers have been shown to gain confidence in their use of and decision-making about Gen AI through training (Engineers Australia, 2025).[28]

Another key point is that workers will vary considerably in how they interact with Gen AI, and hence what may constitute an appropriate level of knowledge. For example, where workers use Gen AI as a source of information (to supplement their own expertise) it is critical to understand the abilities and limitations of the technology, and workers' responsibilities for checking, accountability, transparency. Where workers also use Gen AI in conjunction with client data (including personal data) there are additional needs to understand data risks and responsibilities regarding privacy and cybersecurity.

It will be important for AI skills policy to avoid a one-size-fits-all approach, where any interaction with Gen AI is linked to a checklist of training or compliance unrelated to the use case in question.

Multiple paths and formats are needed to suit worker needs

The nature of Gen AI exposure makes clear that training needs will fall on workers at various stages of their careers and in different personal circumstances. It is critical that the training is delivered in formats with suitable financial and time costs. Multiple methods of education and training delivery will be needed at scale.

- For those preparing to enter the workforce, basic digital and AI literacy at a minimum should occur through existing education pathways, with the extent of digital and AI capability dependent on the area and level of study. Basic digital and AI literacy will also need to be made available to people who have not received these skills from standard

[28] Career formal & informal training N=293, Career limited training N=197, Career no training N=884.

educational pathways. This may involve direct to individual training (particularly for those outside the workforce).

- For the current workforce, in addition to foundational digital and AI skills, workers will need training in particular use cases that pertain to their current occupations. This may necessitate various forms of short-form courses and on-the-job training.
- As Gen AI adoption over time leads to changes in labour and skill demand, this will necessitate a renewed emphasis on adaptability and lifelong learning – including non-digital skills and various areas of domain expertise.
- Adaptation of occupations could result in new combinations of skills and knowledge being required, including skills that cut across domain boundaries.

In short, upskilling opportunities need to be available and accessible at multiple career stages. Our consultations with skill system actors suggested that coordinated and effective workforce planning and skill gap identification is key, given no single provider can address national skills gaps on their own.

6.3 Keeping up with the pace of change

Responding to the pace of change is a critical challenge. Our analysis has shown that technology-intensive occupations historically exhibit higher rates of change in skills demanded. Gen AI is likely to accelerate the rates of skill change across many occupations in the labour market, particularly as technology use cases continue to evolve.

The ability of higher education and VET to respond to emerging skill demands is shaped by structural arrangements around both training product development and delivery.

- In the VET sector, nationally endorsed training packages provide strong alignment with industry-defined competencies and ensure a degree of consistency across providers. However, the formal process for updating these packages is frequently described as too slow to respond to technological developments (Joyce, 2019) (Productivity Commission, 2019).
- Higher education institutions have more autonomy in designing and updating curricula, which can allow more responsiveness to technological change. And while the Australian Universities Accord (2024) highlights this flexibility as a key strength, it also flags the need for strong integration between universities and industry, including through partnerships and national frameworks.

It is important to note that, regardless of AI-led changes, traditional qualifications will remain essential. They provide the foundational knowledge, critical thinking, and abilities to learn and adapt – capabilities that will be critical for those entering the Gen AI-enabled workforce.

Moreover, there are multiple key aspects of potential improvement to account for accelerated rates of change. First, the skills and expertise of trainers and educators are a key element to mitigating any structural lags. Second, there are ways to reduce the structural lags where needed. And finally, each of these elements suggest the need for deep involvement from the technology industry and industry more broadly.

Some improvements in speed to market are possible

In moments of rapid technological developments that result in step changes to skill needs in particular fields, standard processes for developing and accrediting training products and

curricula may prove too rigid. The Future Skills Organisation has initiated the Digital Capability Training Product Trial – aimed to improve the agility of training product development and speed to market (Box 15). While some approaches could be useful for a once-off step change to new technical paradigms, others could embed improved adaptability to future developments.

In higher education, curriculum development could be more responsive to technological change where it pertains to short-form programs such as microcredentials. These are generally not subject to the same formal accreditation processes as full qualifications. While this may help minimise the time needed to develop training products, it also complicates delivery and how government funding could be applied.

In short, governments will need to consider how speed to market can be improved for particular education and training products and in particular circumstances, even if standard development and accreditation processes for full qualifications cannot be significantly shortened.

Box 15 FSO Digital Capability Training Product Trial

The Digital Capability Training Product Trial aims to fast-track industry-led, high-quality digital capability skills, including generalist AI and generalist cyber skills, to address Australia's critical digital skills gap.

The trial will involve:

- designing units of competency that define essential digital skills across the economy developed based on the Digital Competence Framework for Citizens 2.2 (DigComp 2.2), and
- collaborating with partners to develop and deliver training resources which enable the draft training product to be in the market in parallel with the Training Package Product Development Process.

The early testing enabled by the draft training product will also mean feedback can be incorporated as part of the finalisation of the accredited training products. This approach has the potential to reduce the need for time and resource-intensive updates down the line where issues are identified after the accreditation of the training product is finalised. If successful, the trial could provide a prototype for rapid development and deployment of training in the VET context in response to urgent skills gaps.

Capability, capacity and currency of educators will be key

The capability of educators and trainers across the tertiary sector plays an important role in mitigating structural limitations. Gen AI has led to two key areas of change for educators and trainers across the tertiary sector:

- **Education, training and assessment**: All educators and trainers will require at least a baseline level of AI skills and literacy. This should include educators and trainers having access to relevant Gen AI tools as well as guidance and training on how to:
  - leverage digital technologies such as Gen AI responsibly to improve delivery, and

  - ensure high-quality, robust assessment in the era of AI.
- **Industry practice**: Where they are up to date with current and emerging industry practice in the relevant field, educators and trainers can be well placed to contextualise and tailor delivery within the bounds of training products and curricula. This could involve the introduction of contemporary tools, techniques and examples.

Continuing professional development to maintain currency with contemporary educational and industry practices is a familiar concept across VET and higher education. However, Gen AI introduces an additional reason to reinforce and strengthen mechanisms for targeted professional development.

During consultations for this study, we heard that educators and trainers have a desire to act and innovate in relation to Gen AI. In part, this is motivated by an acknowledgement that Gen AI is already available to many students and cannot be simply ignored. Beyond this, there is also an awareness of the opportunities Gen AI presents in many cases to plan, deliver and administer high-quality education and training more efficiently and effectively.

Industry can provide training, partnerships, and work placements

Industry and employers are critical actors within the skills system. In relation to Gen AI, the tech industry – and industry more broadly – play a role in providing training to businesses (including small business owners[29]), students and individual technology users. This can include vendor training, industry certifications, online courses, boot camps and other forms of training.

While some larger employers provide in-house training (often in conjunction with the technology sector or education and training providers) many other workers have noted a lack of training at their workplace during the implementation of Gen AI.

A further opportunity to improve industry-relevance of education and training is to ensure students are able to spend time in the workplace. Work-integrated learning opportunities, such as internships, placements, and apprenticeships, are another way that industry (broadly) can support skill development. Making these arrangements more widespread, accessible, and meaningful could help improve ongoing alignment between education and industry needs.

The technology industry has particular opportunities to both deliver training and to partner with other training providers.

6.4 Implications for policy

In order to deliver the digital and non-digital skills and capabilities needed for an adaptable workforce, and to maintain currency amid a fast pace of change, a number of types and formats of training will be relevant and should be supported. This may include new and emerging methods of delivery.

[29] For example, the Cyber Wardens program (established by COSBOA with the support of the Australian Government, the Commonwealth Bank, and Telstra) provides small-business specific training on digital and cyber issues including 'Safe artificial intelligence for small business' (Cyber Wardens, 2025).

Finding 16: The skills system will be critical in the Gen AI transition

The workforce – and the skills and knowledge they possess – is a key enabler of Gen AI adoption. No single skills system actor can be expected to equip Australians for the digital and AI transformation on their own. Alignment across skills system actors on key objectives and coordination of effort will help ensure the most effective and efficient skills system response.

Finding 17: Gen AI exposure has important implications for education and training pathways, based on their common destination occupations

The Gen AI exposure of education and training pathways varies across fields of education, training package, and qualification types.

Alongside other considerations, such as the volume of completers and evidence of AI adoption, the Gen AI exposure of education and training pathways provides a useful guide for prioritisation to those with responsibilities for qualification design and delivery.

Finding 18: Demand for specialist digital and AI capabilities will require domestic skills development and leveraging international expertise

There is strong demand for specialist digital and AI capabilities. Domestic skill development efforts are required, complemented as appropriate by skilled migration.

Finding 19: There is a spectrum of AI capabilities for individuals – from foundations, to competence, to fluency

A one-size-fits-all approach to capability uplift will not meet the needs of individuals or the labour market. A baseline of digital and AI access and foundational skills is a crucial enabler of participating in work, study and society (foundations). Beyond this, the skills system should aim to deliver learner-centric, purpose-led digital and AI capabilities including developing:

- the competent application of digital and AI skills, knowledge and attitudes (competence), and
- the digital and non-digital capabilities required to achieve positive outcomes with digital technology including AI in relevant settings (fluency).

Finding 20: The skills system will need to focus even more on building adaptive capacity to respond to the pace of change

The skills system will need to develop graduates with strong adaptive capacity while responding to the pace of change. Formal qualifications and short-form learning each have important and often distinct roles to play in achieving these objectives.

A dynamic skills response requires support for educators, flexible program design, and a well-functioning ecosystem of formal and informal learning pathways.

Finding 21: The role of industry, including its engagement with the education and training sector, will be vital

Industry-led training is an important source of dynamism in the skills system, including training provided to businesses, students and individual technology users.

Greater collaboration and coordination between the technology industry – and industry more broadly – and the tertiary education and training sector will also be vital in ensuring the relevance and responsiveness of education and training in fast-evolving industries and job types.

While ad hoc engagement introduces some level of dynamism, more structured and coordinated engagement can enable dynamism with greater scale and sustainability.

Finding 22: The capability, capacity and currency of educators and trainers will be vital in ensuring high-quality and relevant learning experiences.

Educators and trainers will need to be equipped to manage the implications of Gen AI for learning, teaching and assessment, and for current industry practice in their field.

7. A national approach to Australia's Gen AI transition

7.1 Stewarding the Gen AI transition, beginning now

This Study shows that the transition is already underway and that the benefits can be maximised and the risks mitigated with coordination in objectives and approach.

Shared objectives and principles across labour market actors would not only help Australia to keep pace, but to ensure our technological adoption is aligned and directed towards longer-term value.

The need for a strategic approach

At this early and formative stage, the absence of a coordinated strategic economy-wide approach to the transition raises several risks for Australia in being able to realise its opportunities and effectively manage its challenges.

- First, there is a risk that **fragmented and uneven adoption may create capability gaps across the economy**. At its current pace, adoption of technologies like Gen AI is proceeding in pockets, led by digitally mature firms and select sectors, while others follow or experiment without support (which may reflect barriers they face). This may contribute to different expectations of workforce capability across sectors and roles, variable implementation quality, and limited spillover, scale and network benefits.
- Second, differences in expectations of how Gen AI technologies should/could be used may **risk amplifying the inequities in access to skills and labour market opportunities** – both to groups of people but also groups of businesses. Entry-level work is changing depending on how Gen AI is used, older and digitally disconnected workers face higher barriers to ongoing participation, and health, education and social services sectors must navigate complex risks.
- Third, short-term, uncoordinated adoption, without an understanding of how best to use and manage the technology, **could risk poor adoption outcomes**. For example, in the rush to respond to the opportunities and challenges, it could see capital committed to less-than-ideal systems, missed opportunities and a drag on productivity. Faced with cost pressures, firms will be under pressure to find "quick efficiency wins", which could hard-code process design or investments difficult to reverse. At this early stage of adoption, firms also seem to have mixed levels of capability or frameworks to support adopting Gen AI formally to augment their work. In the absence of clear governance, shadow use may proliferate. This informal experimentation, while a source of innovation, can also fragment practices that are hard to scale or integrate later. It also increases risks around data security, accountability and compliance, and inconsistent outcomes.
- Fourth, **structural barriers in key sectors** would benefit from careful and coordinated attention to **support dynamic adoption**. In sectors like education, healthcare, and community services, system actors would benefit from being provided the scope to test the productive potential of Gen AI in light of complex regulatory, ethical, and service demands that have institutionalised technological systems and infrastructure and specific

risk cultures. These special considerations make experimenting in non-market settings more involved and the costs of poor implementation higher. Coordinated approaches and lessons (for example, with regard to risk management, procurement, skills uplift and workforce engagement) would help alleviate the heavier transition cost these critical sectors face.

- Finally, **many workers face barriers to meaningfully using Gen AI, despite wanting to use it**. Even when Gen AI may be technically available, this Study has heard workers, across public services, care sectors, and lower-resourced organisations (including small businesses and those in the not-for-profit sector) face varying obstacles to using the technology and using effectively. These include lack of knowledge about effective use, unclear guidance on coordinated use and institutional settings that do not support experimentation. There is willingness to engage when implementation is supported and in some cases, workers have been ahead of their employers in take up of AI in their work (shadow use). But uneven capability building across industries and roles could entrench passive or ineffective use, or resistance.

Labour market outcomes will depend on the extent of adoption in industries and occupations, the subsequent degree of task automation and augmentation, and how the skills system responds to these technology changes.

While difficult to predict, a coordinated approach can help in identifying adaptive opportunities of Gen AI technologies. Adaptation in the labour market is an enduring and inevitable feature, giving rise to new work, work structures and occupations, and in turn requiring new skills. The adaptation analysis in this Study provides options for system actors in thinking about adaptations, but newer AI technological frontiers (such as Agentic AI) continue to emerge. Ongoing monitoring will be required to identify emerging opportunities and the skill system pivots required to realise them.

A strategic national approach can help scale what works, while allowing for tailored pathways by sector and organisation type.

A coherent evidence base, approach and objective for how this technological transition could unfold can address these structural inhibitors and enable more segments of the workforce, not just early adopters, to participate in and shape a deliberate, and diverse, transition. It can also ensure that this is appropriately supported by policy targeted at managing the challenges of the transition, including where adopting technology is particularly complex and for people in occupations where displacement is more likely to occur.

This is why national stewardship is needed.

National stewardship in the Gen AI context would be the deliberate act of convening, aligning and coordinating across the labour market, economy and society so that the digital and AI transition is nationally coherent, strategic and future-focused. It is neither a bias towards regulation nor passive facilitation—governments and social partners play a key role in shaping major transitions by aligning efforts, reducing risks, and maximising public value. This approach recognises that no single actor can control how broad-based technological change unfolds.

In this section, we consider three related, critical aspects of national stewardship:

- a commitment to stewardship and its principles (Recommendation 1)
- a mechanism to enact stewardship (Recommendation 2)

- a central, coordinated and independent capacity or institution to enable stewardship (Recommendation 3)

A commitment to principle-based national stewardship

To bring tangible coherence to the transformative potential of Gen AI, a coordinated national approach to supporting the digital and AI transition should begin now.

Given the pivotal moment in our shift to a Gen AI-enabled economy, committing to national stewardship now will ensure that Australia can strategically manage this transition, leveraging its history of successful structural reform and mobilising labour market actors to support industries and workers. With a shared sense of urgency and purpose, Australia can lead an adaptive, inclusive, and forward-looking digital and AI transformation.

Clear and agreed guiding principles would provide a common compass for the transitions in tasks, job design, and skill demand. They could lift ambition beyond minimum compliance or safety, prevent a stop-and-start approach, and set expectations for progress that apply to all labour market actors.

Principles in policy provide both clarity and adaptability, helping to translate uncertainty into coordinated action across the labour market, and creating the permission, pressure, and support needed for growth across sectors and regions. They also enable a sustained cultural shift in favour of technological change, and the opportunities that it presents, without prescribing the exact form that change must take.

The principles proposed by JSA for the digital and AI transition also elevate voluntary, industry-led standards. Australia's Voluntary AI Safety Standard offers practical guardrails on governance, testing, transparency, documentation, and human oversight. Framed by national principles, such standards move from safety in the firm to outcomes in the labour market over the medium term, and they do so in a technology-neutral way. The standard was developed with industry and labour market input, and national principles should reinforce and improve the robustness of those processes. This is how trust and confidence, both critical to adoption, are earned across the population and the economy.

Four principles – of equity, productivity, proportionality, and technological neutrality – should anchor further consultation, focused on the labour market and skills implications of AI.

JSA also recommends that these principles should guide the digital and AI transition to lift the capabilities of all labour market actors, acknowledging there is a broad spectrum of capabilities.[30]

National stewardship should apply the core principles to focus on priority functions that will strengthen adaptive capacity across all labour market actors to drive the digital and AI transition forward. These functions should clarify shared objectives and roles, laying the groundwork for strategically integrating technological change with investments in digital and AI capabilities across workforce and skills systems. Advice for policymakers to this end accompanies the recommendations.

[30] The capability spectrum JSA has applied to considering transitional objectives focuses on individuals, firms and sectors. The spectrum applies three levels of individual-focused Digital and AI capabilities: Foundations, Competence and Fluency; and firm or sector-capabilities: Adoption, Integration and Maturity (see Finding 15).

Recommendation 1: Committing now to stewarding the transition

The Australian Government should take a leadership role in stewarding the medium-term transition to a Gen AI-enabled labour market and economy. This stewardship should leverage the Government's convening power to engage labour market actors, acting with urgency and dynamism proportionate to the scale of both the opportunities and challenges ahead.

Stewardship of this digital and AI transition should be guided by the following principles:

- Equity: Ensure all Australians can participate in, benefit from, and contribute to the digital and AI transition.
- Productivity: Drive economic dynamism and resilience, job quality and better service outcomes, through productivity gains.
- Proportionality: Ensure investments and other actions are based on maturity, risk, and systemic importance, avoiding creating issues when addressing critical needs.
- Technology Neutrality: Remain adaptable to diverse and evolving technologies.

Advice for policymakers in considering Recommendation 1

- All Australian governments should establish **objectives for stewarding the transition**, such as:
  - Achieving an inclusive and fair transition that ultimately benefits the economy, workforce, and all sections of Australian society.
  - Uplifting the skills and capabilities across the economy, workforce and community to meet the opportunities and challenges of Gen AI and other digital and AI technologies.
  - Prioritising a medium-term transition towards digital and AI technologies as a key driver of productivity, economic growth, and better job and skills outcomes.
  - Phasing a medium-term transition that recognises that each industry will mature differently along the *capability spectrum*.
- The Australian Government has a stewardship role in **setting the terms of engagement across all labour market actors**. It could, *as soon as practicable*, consider the frameworks, functions and activities for stewardship, including:
  - That Australian governments are aligned on their *medium-term objectives and commitments*, based on *shared principles*.
  - Setting the *roles and responsibilities* of key labour market actors in contributing to the digital and AI transition.
  - That functions and activities for stewarding the medium-term transition are scoped and phased proportionally, regarding importance, timeliness, materiality and feasibility.
  - Connections between technology investments, the labour market and skills systems to ensure the skills and capabilities are developed at the pace needed during the digital and AI transition.
  - Where objectives and commitments should be either Gen AI-specific or technology neutral.

7.2 A mechanism for stewardship

In recognising the need for stewardship and coordination, it is also important to have regard for the mechanism – or mechanisms – that would provide a practical way to enact them. Among the range of potential mechanisms, it will be important to consider what is needed to most effectively support the digital and AI transition.

In this context, a “National Compact” would be a whole-of-system-level way to reflect a shared commitment by Australian governments and other labour market actors to collaborate on the digital and AI transition – particularly on labour market and skills opportunities and challenges. It would involve fostering shared understanding, agreeing on common principles, and working together to maximise opportunities while minimising challenges during this transition.

Australia faces a transition that includes a technology investments challenge and a skills planning challenge. For this reason, the national approach proposed in this Study would ideally go beyond traditional skills strategies. This would allow investments in people, organisational practices, shared data, connectivity, and computing power to cohere so different sectors can progress at their own speed.

A National Compact would scaffold joint responsibility across governments, industry, unions and the skills system would inform not only what skills are needed but the technologies that shape the workforce and how they are applied.

A national approach should target strategic capacity across the economy, embedding digital and AI capability outcomes through sectoral partnerships as well as across states and territories, with a focus on resource-constrained or critical service sectors.

Technology and workforce capabilities go hand in hand

Sector- or jurisdiction-focused workforce planning would ideally consider the enabling technology investments workers, workplaces and sectors need to activate and scale a successful transition. While skills strategies identify capability gaps, technology investments frame these. Technology, skills and workforce investments are interdependent, and each can accelerate or constrain adoption.

Skills policy, on its own, cannot determine how AI is procured, how workflows evolve, or how new opportunities are harnessed and new forms of risk managed. A focus solely on the supply of training or qualifications risks misdiagnosing the nature of the transition and how extensive the change could potentially be.

Critically, the evidence from this Study shows that adoption is as much about enabling technologies, institutional readiness, perceived risk, and monitoring how work changes as it is about formal skills. In practice, this means a national mechanism needs to do more than coordinate funding or develop education and training packages. It must:

- **Incentivise adoption pathways**, including those led from within workplaces and adapted to service or organisational goals
- **Coordinate infrastructure and capability investments**, particularly in sectors with high public value and uneven digital maturity
- **Broker trust and safety standards**, so that AI use in care, education, and governance can proceed without undermining public confidence
- **Align workforce, data, and service systems**, ensuring that digital tools are not introduced in isolation but embedded in broader reforms.

Several international examples reinforce this distinction. Canada's Pan-Canadian AI Strategy (Phase II) aligns workforce capability with research and deployment, while Germany's Industrie 4.0 platform links skills, adoption, and procurement under one evolving coordination mechanism. In both cases, labour market actors play a central role not only in shaping education and training requirements but in defining how AI is introduced into existing institutions.

Leveraging current systems for national capability planning

Australia's digital and AI transition requires a coordinated approach to capability planning that leverages existing institutions and mechanisms.

Industry stewards, like JSCs, are well-placed to lead sector-specific transitions, adapting their approaches to industry structure and readiness. Strengthening their role in AI workforce planning allows for tailored support across sectors, recognising that each JSC and industry is at a different stage of capability and urgency. A central coordinating function can connect JSCs with governments and regulators, ensuring sector insights inform national decisions and enable phased adoption in non-market settings.

Interjurisdictional arrangements, such as national agreements, offer a structured way to sequence public investments in digital infrastructure, training, and evaluation capacity. Incorporating the transition principles into these agreements would enable across jurisdictions (1) mid-term leverage, with rolling adjustments and clearer outcomes, (2) assurance and accountability to align with the digital and AI transition, and (3) adaptive scope with a principles-based approach applied to establish institutional architecture.

Recommendation 2: Establishing a mechanism for stewardship and coordination

The Australian Government should collaborate with labour market actors to create a stewardship mechanism for guiding the digital and AI transition, with a focus on both immediate and medium-term needs. This mechanism should define clear principles, roles, and commitments to effectively manage this transition.

A National Compact would be the recommended framework to foster shared understanding and secure commitments from labour market actors during this critical transition period.

Advice for policymakers in considering Recommendation 2

While a National Compact is the recommended mechanism, there are other useful mechanism(s) for stewardship and coordination that could be alternatives or additions to a National Compact. These include:

- A national strategy for technology, workforce and skills investments for the digital and AI transition (and noting that some stakeholders have indicated this should have a particularly strong focus on skills).
- Embedding stewardship and coordination within existing capability-planning institutions. A shared commitment could be reflected in interjurisdictional arrangements, regulatory and legislative settings as well as through explicit mechanisms to establish shared understandings (such as memoranda of understanding) with labour market actors.
- A coordinated whole-of-government approach. A coordinated whole-of-government approach would support stewarding the medium-term transition with business and unions. Both the Australian Government and state and territory governments could demonstrate a whole-of-government approach.

In developing the mechanism, the Australian Government should ensure its stewardship and coordination includes clear principles-aligned functions (aligned with those under Recommendation 1).

A focused capacity or institution to enable stewardship

To support the stewardship and coordination activity outlined in Recommendation 1, Australia should consider establishing a centralised, coordinated and independent whole-of-government capacity – or an independent national institution – to anchor national stewardship of the digital and AI transition.

This kind of design has precedent. The Australian Government has used catalytic arrangements before to provide strategic direction, coherence, and accountability across complex systems and transitions.[31] The underlying design principle is maturity over

[31] Examples include regulation reform taskforces, which have consolidated stewardship functions before transitioning responsibilities; as well as interjurisdictional arrangements, which support cross-jurisdictional accountability before returning functions to line departments.

permanence – building capability and alignment early, then evolving the role as systems mature.

A range of enabling functions exist to varying extents in part across institutions, programs, and jurisdictions. In the immediate term, there is a strong rationale for coordinating the core functions into a central capacity or institution to support an effective national approach.

Reflecting on the complexity, interconnectedness and dynamism required to support the digital and AI transition, a centralised and coordinated capacity or institution would bring focus and coherence during this critical period. Its functions and activities could include:

1. **Informing design and lifting systemic capability and capacity**, including to:
    a. Serve as a hub for piloting mechanisms in complex systems (e.g. healthcare, aged care, education).
    b. Enable research into the skills people need to work well with AI and help build and improve AI and digital technologies together.
    c. Establish data and reporting to monitor and advise on the pace, scale, and scope of AI and related technologies' adoption and their evolving impacts over time.
    d. Identify effective whole-of-government approaches, to support Australian governments in their mobilising.
2. **Activating technology and workforce capability planning and industry stewardship**, including to:
    a. Collaborate with all actors to support aligning workforce planning and medium-term investments in technology.
    b. Work with Australian governments to leverage intergovernmental arrangements (such as national agreements) as strategic opportunities for medium-term technology and workforce capability planning as required.
    c. Ensure Jobs and Skills Councils (JSCs) undertake technology and workforce capability planning in their sectors with an appropriate focus on the phasing of the digital and AI transition.
    d. Ensure technology and workforce capability planning captures and helps collaborate on cross-cutting enablers and dynamics, such as critical data or digital divides, AI adaptations, as well as opportunities for experimentation.
3. **Helping to lift the capabilities all labour market actors**, including:
    a. *For individuals' capabilities*, monitor existing arrangements for delivery of high-quality training for all who need contemporary foundational digital skills including basic *digital/AI literacy* (for example, through the National Skills Agreement, National Foundations Skills Strategy, etc).
    b. *For firms' capabilities*, support federated learning (local data, shared updates) between industries with advanced AI maturity and those lagging. This should recognise the challenges that the diverse small and medium sized businesses face.
    c. For *Australians' access to enabling digital infrastructure*, review universal service frameworks (including the Universal Service Guarantee and Universal Services Obligation) to align with the digital and AI transition principles and objectives.
4. **Facilitating business and technology sector liaison**, including to:

a. Activate business and the technology sector's commitment to the medium-term transition, aligning light-touch tools (such as memoranda of understanding and voluntary codes) with any targeted legislative reform as required.

b. Develop a shared and explicit understanding (for example, through a memorandum of understanding) with market-leading and large AI firms to embed principles of the digital and AI transition into their Australian operations.

c. Brokering deep and safe adoption into non-market sectors and its human services.

5. **Strengthening education and training**, including to:

   a. Promote and disseminate best practice in design, development and delivery of AI-related education and training and applied learning.

   b. Act as a forum for digital and AI-related partnerships and collaboration between the technology industry – and industry more broadly – and the tertiary education system.

   c. Create and/or curate learning resources and programs for individuals and organisations to accelerate their digital and AI learning journeys.

6. **Ensuring appropriate focus on the not for profit sector**, including to:

   a. Enable/encourage planning for and phasing digital and AI investments in the sector as part of the transition (for example, through capability and infrastructure investment plans).

   b. Incentivise partnerships between NFP organisations and technology providers for low-friction, low-cost, open-access adoption of AI technologies.

   c. Supporting the development of digital and AI capabilities of the NFP workforce, along the capability spectrum.

   d. Collaborate with larger NFP organisations and philanthropic intermediaries to explore how to achieve scale in adoption, where appropriate.

7. **Ensuring an appropriate focus on empowering people in the labour market at greater risk of disadvantage from AI technology**, including to:

   a. For workforces, communities, cohorts undergoing long-term transformation, calibrate and sequence tech, education and training investments to enable capability, adaptability and dynamism

   b. For *First Nations*, Indigenous communities could co-design a large language model (LLM) with governments and system actors that respects data sovereignty protocols and the integrity of the data asset. The pilot could focus on testing the LLM's impact on digital employment in remote health, cultural heritage and land management roles.

   c. For *women's workforce dynamism*, women's organisations could work with governments and system actors to experiment with AI-based career navigation tools, auditing it for gender bias over the medium term and potential effects on labour market participation

   d. *Disability experts* could work with governments and labour market actors to develop and test Gen AI tools via continuous feedback loops as well as training programmes for workers with disability.

The Australian Government already operates a range of institutional arrangements that demonstrate effective independent and centralised coordination across policy domains. In considering implementation options, it will be important to assess the relative merits of any existing mechanisms extended or refined versus a new targeted institution.

Recommendation 3: Enacting stewardship and coordination through an appropriately centralised, coordinated and independent capacity or institution

In addition to a mechanism, the Australian Government should enact stewardship through a centralised, coordinated and independent whole-of-government capacity or institution.

Advice for policymakers in considering Recommendation 3

- This whole-of-government capacity or institution could involve leveraging or refining existing institutional arrangements or developing new institutional arrangements.
- The capacity of institution should be focused on enabling the Australian Government in a principle-based approach to stewardship and to meet the objectives for the digital and AI transition (as outlined in Recommendation 1).
- It should support the key functions and activities that support effective stewardship of the labour market and skills system, across the suite of recommendations in this report.

Governments ensuring principles are put into practice into the non-market sector

In public services, equity, proportionality, productivity and technology-neutrality have important implications. Equity focuses attention on access and service provision across regions and cohorts. Proportionality supports risk-tiered assurance so low-risk augmentation can proceed while higher-risk use cases meet stronger oversight. Productivity emphasises improved service quality and workforce capacity gains, as well as reduced cost to taxpayers. Technology-neutrality keeps pathways open as tools evolve, avoiding lock-in while insisting on common guardrails for safety, transparency and accountability.

Cross-cutting constraints to adoption common to non-market industries include constrained operating budgets, statutory obligations, heterogeneous legacy systems, and equity mandates. Recent Productivity Commission work underscores that benefits depend on complementary investment, organisational change and capability uplift.[32]

Specific constraints in some areas of the non-market sector include:

- **Health and aged care** face layered governance, clinical risk and interoperability requirements that slow uniform adoption, even where use-cases are clear. The National Digital Health Strategy 2023–2028 sets a five-year roadmap with priority areas and

[32] Productivity Commission 2023, *Advancing Prosperity, 5-year Productivity Inquiry*, Canberra

change enablers, while the Strategy Delivery Roadmap sequences actions across the period.

- The **Aged Care Data and Digital Strategy 2024–2029** and its Action Plan set staged uplift in data quality, infrastructure and provider readiness, reflecting funding constraints and duty-of-care obligations.
- Comparing the two, **Health** operates with more established governance, clinical risk management and interoperability plans, which channels change through formal roadmaps and staged delivery. In contrast, much of **aged care** is more fragmented, so digital depth and provider readiness are uneven.
- **Universities** illustrate how workforce composition, integrity requirements, and academic governance create a distinct path. The higher-education regulator TEQSA has assembled a Gen AI knowledge hub and issued emerging-practice guidance for teaching, assessment and research integrity, encouraging experimentation while protecting award standards. Updates in 2024 and 2025 demonstrate active stewardship and uneven uptake by discipline.

There is already a range of initiatives being explored in the non-market sector, and it will be important that emerging frameworks and guidelines effectively consider both the opportunities and challenges in the sector.

As an example, the National Framework for the Assurance of AI in Government has newly established government benchmarks, NSW's AI Assessment, Assurance Framework embeds governance and continuous improvement into lifecycles, and the Data and Digital Government Strategy positions public services as user-centred, secure and connected, providing a focus for medium term planning.

Phasing non-market adoption for sectors and jobs could include:

- Working with JSCs and non-market actors, all Australian governments could agree on adoption and capability phasing strategies that recognise the different paths to AI maturity. These strategies should be grounded in the principles of equity, productivity, technology neutrality and proportionality of AI adoption over the medium term.
- All Australian governments could identify the key areas within non-market sectors, applied to which Gen AI adoption will assist in unlocking greater workforce capacity and critical service outcomes over the medium term.
- All Australian governments could accordingly provide a series of technology and workforce capability investment options across the Digital and AI Capabilities Spectrum to graduate affected workers and sectors from AI foundations and adoption to AI fluency and maturity, and to also effectively participate in co-design.

The Australian Government could identify emerging practice in adoption within jurisdictions and facilitate experimentation, cross-learning and adaptations across jurisdictions. For example, co-design has become a recurring theme in Australian reform literature where implementation success depends on hybrid, frontline expertise and trust.

It is critical Australian governments also recognise data governance arrangements and digital infrastructure in their approaches as critical enablers of system-wide augmentation, adaptation and productivity over the medium term.

The Australian Government could also test how funding mechanisms across systems and jurisdictions coordinate scalable technology and workforce transformation in non-market

services. For example, through the Federal Financial Relations architecture, Australian governments could sequence changes to national agreements to embed the principles and objectives of the digital and AI transition, based on the expected cadence of negotiations.

The Australian Government's centralised, coordinated and independent capacity on AI capability and workforce transformation could enable these activities within its national stewardship and liaison functions.

Recommendation 4: Australian governments ensuring principles are put into practice in the non-market sector to lead by example

All Australian governments should work towards being exemplars for principles-based implementation of digital and AI technologies in government and human services over the medium term.

Advice for policymakers in considering Recommendation 4:

Australian governments could embed AI transition principles, objectives and capabilities (for example, through a National Compact) early in the design of technological transformations in non-market sectors.

- For *technology neutrality over the medium term across jurisdictions*, Australian governments should work towards ensuring intergovernmental arrangements, including future iterations of national agreements, formally embed AI transition-aligned stewardship principles, frameworks and functions into joint commitments.
- For *stewardship through policy design*, this should be supported by cross-cutting institutional mechanisms and formalised guidance.
- For *non-market sector-specific AI transformations that are productive and proportionate*, this should be reinforced by piloting, sandboxing and co-design processes that effectively leverage expertise and build adaptive capacity in complex service settings.
- The Australian Government's *centralised, coordinated and independent capacity or institution* on AI capability and workforce transformation could enable these activities within its *national stewardship* and *liaison* functions.

7.3 A system-wide response to skills for the Gen AI era

The emergence of Gen AI poses significant implications for the skills system and the achievements of its desired outcomes in relation to productivity, equity and inclusion, and adaptive capacity and resilience. Moreover, the significance of Gen AI is likely to increase as the technology diffuses throughout the labour market across occupations and industries typically served by the higher education and VET sectors.

Seizing the productivity opportunity of AI without leaving segments of the population behind will require a whole-of-population digital and AI capability uplift. This uplift will not be achieved through the efforts of any single actor within the skills system, or through a one-size-fits-all approach. A whole-of-system effort is required. This effort should target uplift

from foundations to fluency according to the needs and aspirations of learners and the purpose of the education and training.

Aligning AI and digital capability uplift efforts of key skills system actors could begin with public statements from ministers across Australian governments that digital and AI capability uplift is a national priority. Such statements would send an important signal to skills system and labour market actors about the urgency and direction of change.

Additional mechanisms to give effect to this prioritisation through important skills system actors could include:

- Relevant regulators: Relevant Ministers could communicate expectations to relevant regulators – ASQA and TEQSA – that they consider how their regulatory approach and activities can help create an environment which enables flexibility, agility and experimentation in integrating AI into tertiary education while preserving quality outcomes.
- Australian Tertiary Education Commission (ATEC): In negotiating enhanced mission-based compacts with higher education providers, ATEC could ensure that consideration is given to how publicly-funded higher education providers will contribute to the national priority of digital and AI capability uplift.
- Engagement with industry, including Jobs and Skills Councils: Engaging with industry (employers and unions), including through the Jobs and Skills Councils, to sequence the uplift and to identify barriers to uplift within the skills system. The annual declaration of priorities from the Minister to each Jobs and Skills Council, and their response, could be one option for ensuring alignment on the prioritisation of digital and AI capability uplift.

Recommendation 5: Mobilising the entire skills system to prioritise whole-of-population digital and AI capability uplift

Australian governments should commit to digital and AI capability uplift across the skills system as a priority. Whole-of-system efforts should target uplift across the population, in line with the spectrum of needs and aspirations of learners and industry.

Advice for policymakers in considering Recommendation 5:

- Public statements issued by relevant Ministers.
- Communicating expectations to relevant regulators, ASQA and TEQSA.
- ATEC negotiating enhanced mission-based compacts with higher education providers, with specific references to these priorities.
- Engage with industry (employers and unions), including through the Jobs and Skills Councils, to sequence the uplift and to identify barriers to uplift within the skills system.

Supporting digital and AI foundations

The National Foundation Skills Strategy 2025-2035 sets a shared direction for Commonwealth and state and territory governments on adult foundation skills. The vision articulated by the Skills and Workforce Ministerial Council (2024) in this strategy is that:

> *"By 2035, all adult learners in Australia are supported to access quality foundation skills training to develop the foundation skills they need to participate confidently and fully in work, education and training, and the broader community."*

The foundation skills needed to participate confidently and fully in work, study and the community today and into the future include a baseline level of digital and AI capability alongside language, literacy, numeracy and employability skills. Given the centrality of natural language in prompting Gen AI and understanding outputs, Gen AI is also likely to raise the importance of all foundational skills including language and literacy.

Through the National Skills Agreement, Commonwealth and state and territory governments have committed to provide no- or low-fee access to foundation skills training in their VET and adult and community education systems. In the context of increasingly ubiquitous AI, governments should review actions undertaken under the National Skills Agreement and National Foundation Skills Strategy to ensure these activities are delivering high-quality training for all who need it in contemporary foundational digital skills including basic AI literacy.

In addition, supporting digital and AI foundations should be a focus across the recommendations of this study where appropriate. This includes embedding contemporary foundational digital and AI skills in foundation skills qualifications (Recommendation 7) and

uplifting the digital and AI capability of the foundation skills workforce (including across VET and Adult and Community Education (ACE) sectors (Recommendation 9).

Recommendation 6: Supporting digital and AI foundations

Australian governments should ensure foundational digital skills and AI literacy are included in foundation skills initiatives, while acknowledging that Gen AI will raise the importance of all foundational skills including literacy and numeracy.

Advice for policymakers in considering Recommendation 6:

Australian governments should consider ways to bolster current efforts to delivering foundational skills and ensure that they include AI literacy. They should consider reviewing current activities supporting the commitment under the National Skills Agreement to provide low or no-fee access to foundation skills training to ensure these activities enable access to high-quality training in contemporary foundational digital skills including basic AI literacy.

Embedding contemporary data, digital and AI skills in qualifications

Embedding contemporary data, digital and AI skills into the design and delivery of qualifications is one of the primary ways in which capability uplift can occur at scale. In 2023 – the most recent year for which full data is available – there were over 900,000 completions in nationally recognised VET programs and over 376,000 award course completions in the higher education system.[33] The process of embedding contemporary data, digital and AI skills across qualifications will not happen overnight. The analysis of Gen AI exposure and tertiary education pathways undertaken for this study – alongside ongoing workforce planning and evidence of adoption – may provide a useful guide for prioritisation to those with responsibilities for qualification design and delivery.

Both students undertaking qualifications and employers hiring graduates reasonably expect that a qualification will develop contextually relevant and up-to-date data, digital and AI skills and knowledge. In some contexts, this will involve qualification design and delivery promoting the development of strong digital and AI foundations for participation in life, work and further study. In other contexts, there will be an additional focus on developing generalist or specialist AI skills and knowledge that reflect current and emerging industry and professional practice.

Embedding contemporary data, digital and AI skills in qualifications will require coordinated action to increase agility and responsiveness while preserving quality across three elements:

- the initial qualification and course design
- the delivery of the qualification, and
- the review and updating of qualification and course content.

[33] These figures are drawn from the National Centre for Vocational Education Research's publication Total VET students and courses 2023 publication and the Department of Education's Higher Education Statistics, Award course completions pivot table respectively.

Mechanisms for embedding contemporary data, digital and AI skills in qualification design and delivery, including in response to fast-evolving skill requirements should be considered in VET and higher education. Specific mechanisms will likely differ across the two systems, noting the different starting points with respect to institutional architecture and existing processes.

This could involve activating efforts of various skills system actors to embed contemporary data, digital and AI skills in qualifications.

- A centralised capacity focused on AI capability and workforce transformation: The education and training functions of the centralised capacity which would support this objective could include:
  - Promoting and disseminating best practice in design, development and delivery of AI-related education and training, e.g. by sharing learning resources developed by relevant experts to accompany new or updating training products.
  - Providing a forum for industry and the education and training sector to collaborate on supporting responsive course delivery and ensuring access to high-quality work-integrated and work-based learning opportunities.
- ATEC: The inclusion of digital and AI capability uplift as a priority skills need through mission-based compacts negotiated between ATEC and higher education providers would help guide higher education course development and revision processes.
- Jobs and Skills Councils: Foregrounding digital and AI capability uplift as a priority skills need (e.g. through the annual declaration of priorities process) would help inform the training product development work of Jobs and Skills Councils. Expanding workforce planning to account for AI implications would help to operationalise this priority.

Additional mechanisms to enable qualification design and delivery to respond to fast-evolving digital and AI skill requirements could also be considered including:

- Expanded self-accreditation: Expanding self-accreditation of courses within a risk-based framework, particularly in relation to technology-intensive areas with fast-evolving digital and AI skill requirements. For example, the Australian Universities Accord Review Panel (2024) considered that 'assisting TAFEs to obtain self-accrediting status will enable the tertiary education sector to meet skills needs more rapidly, improve parity of esteem and allow comparably large and professional institutions to operate on an equal footing.'
- Innovative approaches to accelerate speed to market: Jobs and Skills Councils could be encouraged to pilot innovative approaches to accelerate speed to market of training products. Subject to the outcomes of the Digital Capability Training Product Trial being led by the FSO, this could include more draft training products being in the market in parallel with the TPOF process.
- Reduced specification in training products: Avoiding overspecification in training products can support greater agility in the delivery of up-to-date training and minimise the need for time and resource-intensive major updates through the TPOF process. Ensuring qualifications and units of competency are designed with an appropriate level of specificity is a principle of the recent VET Qualification Reform process.[34] The approach of including the minimum level of prescriptive detail in training products is likely be most

[34] Refer to Principle 7 of the Training Package Organising Framework that came into effect from 1 July 2025.

effective when paired with a centralised capacity disseminating best practice in design and delivery as well as strong industry currency from educators and trainers.

Recommendation 7: Embedding contemporary data, digital and AI skills in qualifications

Australian governments should prioritise efforts to embed contemporary data, digital and AI skills in the design and delivery of higher education and VET qualifications. This should include consideration of mechanisms to enable qualification design and delivery to respond to fast-evolving digital and AI skill requirements for different study and career pathways.

Advice for policymakers in considering Recommendation 7:

Governments should consider mechanisms to enable qualification design and delivery to respond to fast-evolving digital and AI skill requirements, including:

- Establishing a centralised capacity with a mandate to act as a forum for strategic industry-education partnerships and engagement, disseminate best practice, including in relation to design and delivery of digital and AI skills content in qualifications, and promote access to high-quality work-integrated and work-based learning opportunities.
- Negotiating mission-based compacts between ATEC and higher education providers.
- Accelerating course accreditation, including exploring risk-based self-accreditation, particularly in relation to technology-intensive areas with fast-evolving digital and AI skill requirements.
- Ensuring all Jobs and Skills Councils consider data, digital and AI learning outcomes in the design and review of every qualification. As part of qualification reform, JSCs should look to leverage the work of FSO, reducing duplicated effort on digital and AI learning in changes to qualifications.
- Supporting innovative approaches to accelerate speed to market of digital and AI skill content.
- Reducing the degree of specification in training products to ensure appropriate agility in responding to fast-evolving digital and AI skills.

Activating short-form training

Education and training products focused specifically on Gen AI skills have tended to be short-form. Many different forms of short-form training are already proving useful for the diverse needs of the workforce, including accredited and non-accredited training options. During consultation for this study we heard from skills system actors about a range of innovative efforts to respond to the pace of change and address skill gaps related to data, digital technologies and AI.

Short-form training may also play a valuable and distinct role in supporting rapid upskilling and reskilling as the composition of the labour market changes in response to AI integration. This may include providing opportunities to rapidly acquire either digital skills to participate in the AI transformation or skills to support occupation mobility into other growth areas such as the care economy.

Diversity of short-form training options is a strength in meeting the diverse needs and circumstances of learners. In many cases – such as where short-form training is primarily targeting firm-specific skills or the use of a specific technology stack – significant government participation may not be warranted. Nevertheless, in the context of an accelerated pace of change in the skill composition of occupations and the occupation composition of the labour market, short-form training presents opportunities for more regular, flexible and modular learning that governments cannot afford to ignore.

Future efforts of Australian governments in relation to short-form training could be directed through a more systematic approach to short-form training, encompassing consideration of key details including delivery models, funding, governance and quality assurance. In settling this approach, Australian governments could consider the recommendations of the Australian Universities Accord Final Report as well as lessons learned from proven domestic and international models such as the IAT Digital in New South Wales.

Government efforts should be prioritised in relation to high-impact gaps in the current short-form training ecosystem that relate to areas of national priority. This could include training targeting digital and AI capability uplift and training that provides skills for occupation mobility into high-growth roles (e.g. in clean energy or the care economy). A variety of models – including micro-skills, micro-credentials, accelerator programs and earn-while-you-learn models – should be considered.

Any effective approach to short-form training will require buy-in from relevant labour market actors and participants. This includes employers and learners alike recognising the value of short-form training. The value of short-form training can be signalled through initiatives such as the 20% Alternative Pathways Pledge. This pledge is a commitment from NSW Digital Skills and Workforce Compact Partners[35] that 20% of all digital entry-level hires will come from alternative pathways – including VET courses, traineeships, micro-credentials, earn-while-you-learn models, bootcamps, and vendor certifications – by 2030.

Beyond public signals of support for short-form training, practical actions from industry such as partnering with education and training providers on design and delivery of training content and providing access to high-quality work-integrated and work-based learning opportunities will also be important.

[35] NSW Digital Skills and Workforce Compact Partners encompass government, peak bodies, professional associations, large employers, and education and training providers.

Recommendation 8: Activating short-form training in digital and AI

Australian governments should consider options to promote relevant and accessible short-form training targeting digital and AI capability uplift and training that provides skills for occupation mobility into high-growth roles.

Advice for policymakers in considering Recommendation 8:

Governments should consider how to build on the burgeoning ecosystem of short-form training (noting that the diversity of offerings is a strength in meeting diverse needs). This could include:

- Developing an approach for dynamically evaluating short-form training, encompassing key details including delivery models, funding, governance and quality assurance.
- Identifying high-priority, high-impact gaps in the current short-form training ecosystem, including training targeting digital and AI capability uplift and training that provides skills for occupation mobility into high-growth roles. This may include models for VET and higher education that support accredited, modular AI-related microcredentials.
- Bringing key actors together to commit to recognising the value of short-form training and alternative pathways (and across roles and employers), including practical targets and actions such as industry-education partnerships to provide access to high-quality work-integrated and work-based learning opportunities.

Uplifting the digital and AI capability of the tertiary education workforce

One of the critical personas shaping whether the skills system will deliver the intended outcomes in an AI era is the persona of Gen AI educators. As the OECD (2025) recognised, train-the-trainer initiatives can form an important – and often overlooked – component of efforts to promote broad and inclusive capability development.

Continuing professional development to maintain currency with contemporary educational and industry practices is a familiar concept across VET and higher education. However, Gen AI introduces an additional reason to reinforce and strengthen mechanisms for targeted professional development. Namely, Gen AI amplifies the importance of maintaining both educational currency (how Gen AI affects teaching and assessment) and industry currency (current and emerging industry practice in the relevant field).

During periods of significant and widespread technological change it can be particularly valuable to bolster efforts towards targeted capability uplift. We heard that in many cases, individual educators and trainers themselves are taking it upon themselves to pursue their own training. Governments should work with the sector to ensure educators and trainers are supported in their ongoing training and development.

The capability uplift of educators and trainers could be supported in various ways. For educational currency, efforts should be led by the education and training sectors themselves, harnessing the expertise of education and training providers and other system actors such

as regulators on how Gen AI can enhance learning and teaching outcomes while preserving the integrity of learning and assessment. TEQSA's initial educative-led approach to capacity building in the higher education sector in response to the opportunities and challenges of Gen AI provides a useful example.

Governments could support this work to develop the digital and AI capability of the educator and trainer workforce through responses to opportunities and actions under the VET Workforce Blueprint (2024). The actions identified in the Blueprint provide opportunities for stakeholders, including governments, to implement measures to support the VET workforce in key areas including supporting targeted professional learning to address key industry and pedagogical priorities and reducing administrative and compliance burden where AI is likely to be relevant.

The inclusion of digital and AI capability uplift as a priority through negotiations between ATEC and higher education providers could also provide an important signal to institutions around the importance of supporting professional development in this area.

To improve industry currency, efforts to enhance and coordinate relationships between skills system actors, the technology industry, and industry more broadly will be required. A centralised capacity focused on AI capability and workforce transformation could play an important role in testing, coordinating and co-designing digital capability uplifts for educators and trainers, including through the dissemination of high-quality learning resources.

The potential of AI to increase productivity, reduce administration burden and/or improve the quality of services in the tertiary education sector expands beyond teaching and assessment. Australian governments and relevant regulators should consider how best to support effective AI experimentation, co-design and adoption in the tertiary education sector.

Recommendation 9: Uplifting the digital and AI capability of the tertiary education workforce

The Australian Government should consider options to support educators and trainers to acquire and maintain current skills and knowledge in the Gen AI era. This should include keeping up to date with the implications of AI for teaching, learning and assessment as well as for industry practice in the relevant field.

This should be accompanied by consideration of options for AI capability uplift the broader tertiary education workforce, especially in relation to roles where AI offers potential to increase productivity, reduce administration burden and/or improve the quality of services.

Advice for policymakers in considering Recommendation 9:

- Leveraging the VET Workforce Blueprint to develop the digital and AI capability of the VET workforce, including in relation to Action 11 (Implementing targeted professional learning to address key industry and pedagogical priorities) and Action 13 (related to reducing administrative and compliance burden).
- The establishment of a centralised capacity and greater coordination of partnerships between the technology industry and the tertiary education system could help to provide additional digital and AI training for tertiary educators.
- The development of mission-based compacts under ATEC between the Australian Government and universities could help to drive and support capability uplift.
- ASQA could take a greater role in providing advice, clear statements of regulatory expectations, toolkits and resources on vocational education practice in relation to Gen AI.
- AI capability uplift should also consider options to support the tertiary education workforce to address reduce administration burdens and improve their ability to focus on the quality of services.

Ensuring there is appropriate data and reporting during the Gen AI transition

Regular data collection and reporting is critical for providing policymakers, industry leaders and workforce planners with timely, targeted insights into how AI is being adopted across sectors, how it is reshaping business models, and how it is influencing workforce strategies, skills needs and employment patterns.

The focus of data collection and reporting could change over time, including:

- During the early stages of the AI transition, measurement should focus on the extent of adoption, how this differs across industries and types of businesses, and how this is reflected in augmentation, automation and adaptation. Data should also provide insights

into how businesses are responding to the opportunities and challenges, including changing workforce strategy, planning and skills requirements.

- Over time, regular data and reporting could potentially be incorporated into broader labour market, skills and economic data and reporting. The approach should also adapt to dynamic/emerging/evolving technological change.

Recommendation 10: Regular data and reporting to monitor and understand the digital and AI transition

The Australian Government should consider options to regularly collect, analyse and report data and insights on the AI transition as a priority area for measurement.

Advice for policymakers in considering Recommendation 10:

- The regular collection, analysis and reporting of quantitative data would best be done by an appropriate agency, such as the Australian Bureau of Statistics, noting that:
  - This may be best addressed through funding an additional representative survey of Australian businesses, which prioritises more specific, timely and frequent insights on AI-related topics, at an appropriate frequency that does not place an unnecessary burden on businesses. Funding should also include integrating this data into the ABS Business Longitudinal Data Analytical Environment (BLADE), to extend the available insights.
  - This new technology, jobs and skills focused data collection should complement the existing AI survey module in the two-yearly ABS Business Characteristics Survey, which provides related high-level intersectional insights for AI adoption, across a broad range of other topics.
- Additionally, it would be useful to:
  - Fund regular qualitative data research and reporting to complement quantitative data and statistics. These can provide targeted insights and examples of how jobs and skills system actors are responding to the opportunities and challenges, to equip Australia with guidance around best practice.
  - Identify and include AI-related elements in any future skills-focused data collection and datasets, wherever possible.

8. How JSA conducted this Study

8.1 Scope and focus

Our study has focused on the effects of Gen AI on the Australian labour market in the medium term. To the extent possible, our analysis has been based on both the current state of available technology and emerging developments. At the time of publishing, one relevant example of emerging developments is Agentic AI, which is beginning to deliver a more customisable and autonomous incarnation of Gen AI tools.

It should be noted that there are several other technologies that will affect the labour market. This includes other forms of non-generative applications of AI, as well as complementary technologies. As progress occurs across all technologies, it will be necessary to revisit and update the analysis undertaken in this study. At the same time, understanding the implications of current Gen AI technologies – as well as policy and other responses – should help to inform responses to future changes in AI technology.

The focus of our study is on **how the use of Gen AI will affect the labour market and skills system**. This is a distinct set of issues to those related to AI regulation more broadly, which have been the subject of other reviews and processes – including the development of guardrails for high-risk uses of AI; the safe and responsible use of AI; privacy law and intellectual property rights; and environmental impacts. These areas of regulation have a significant bearing on the climate of certainty that workers and investors operate in, and as a consequence on how Gen AI affects workers and workplaces. But given the policy processes running in parallel, it is beyond the scope of this study to address these issues in depth.

This study focuses primarily on the implications of Gen AI for the labour market, how its players and settings interact and employment as well as skills policy (across the education and training system) in the immediate and medium term. In doing so, we acknowledge that a number of social and economic trends will drive change in the labour market alongside Gen AI. These include changes to ways of working (such as remote working and working from home) as well as changes to the labour force (such as through demographic changes in society).

Data limitations pose a significant challenge to exploring the implications of Gen AI (as with other new and evolving technologies). This is true on a global scale, as economies around the world are experiencing these changes at the same time. Moreover, important changes may not be captured or visible in standard data collections, with a risk of underestimating what is happening, or the costs or benefits. In this context, we have used a range of analytical methods and sought to capture diverse experiences and views.

8.2 Consultation

This study has been conducted under the guidance of a project steering group of experts and the JSA's Ministerial Advisory Board. We have undertaken extensive consultations, in accordance with our tripartite mandate. The study team consulted with **150+ participants**, including individuals (working and those not working), industry bodies, businesses, trade unions, government agencies, Jobs and Skills Councils, education and training providers, academic institutions, and non-government organisations. Consultations have covered a

broad range of labour market actors: workers, managers, skills system actors and business-owners.

The study has held **6 roundtable consultations**. These have focused on: intersectional perspectives; worker perspectives; business decision-maker perspectives; digital skills for inclusion and economic participation; implications for the skills system; as well as technology sector perspectives on emerging trends. In addition to the consultations, JSA commissioned ORIMA Research to conduct qualitative research on the use and adoption of Gen AI. This research included **7 focus groups and 30+ interviews**. Insights from consultations, focus-groups, and in-depth interviews have informed the development of deep-dive case studies. These have in turn formed a new body of evidence on the labour market effects of AI in Australia, aimed at addressing the paucity of data all stakeholders have pointed to in this space. The study was careful to manage potential stakeholder burnout by also reviewing in-scope submissions to other related review processes (**approx. 200 submissions**). It also received **12 written contributions** via the study's **online consultation hub** (closed on 16 May 2025).

8.3 Quantitative and qualitative analysis

This study used a mix of qualitative and quantitative analysis, including original data analysis and modelling. Our approach incorporated systematic desktop analysis of submissions and transcripts from other Government processes, including recent Senate and House Inquiries as well as work by DISR and the FSO, in order to manage potential stakeholder and consultation burnout as best we can.

We also developed novel approaches to whole-of-labour market modelling and tested these with Victoria University against the JSA 2024 employment projections. We also worked with Mandala Partners to define and analyse individual-level "skills clusters" and firm-level "capability clusters", as well as adapt measures of skills change to company and job profiles data. The original ILO authors also validated our exposure results and we also provided review of their updated work. We also worked with ORIMA Research early in the study to conduct focus groups and interviews with people from occupations or sectors of interest. We actively ensured that we analysed all the raw outputs from our analytical partners, determined the methodologies and ensured corrections where required.

Quantitative analysis

Exposure to Gen AI

We adapted the methodology used by the ILO (Gmyrek, Berg, & Bescond, 2023) to the Australian labour market. Exposure was calculated for each task within each ANZSCO occupation (example below). We also included an additional direct and ordinal measure of augmentation, as opposed to the residual binary measure the ILO applies. Our method therefore estimated two exposures for each task. The ILO's, in comparison, infers relative augmenting potential for an occupation from task-level automation exposure spreads alone. The JSA approach provides exposure scores more amenable to the framework of automation and augmentation from Acemoglu et. al. (2022) and more aligned to Australian data than previous literature. We also replicated the exposure index by Felten et. al. (2021).

Economy-wide modelling

Computable General Equilibrium (CGE) modelling was undertaken in conjunction with Victoria University. The Victoria University model was adapted to account for both the automation and augmentation effects of Gen AI. The approach itself aligns more closely with the automation, augmentation, adaptation framework this study has adopted from Acemoglu et. al. (2022) and makes use of our novel exposure estimates. This modelling was then be compared with the latest JSA employment projections, to provide illustrative scenarios of changes in the labour market.

Adaptation of occupations

Given the Gen AI transition is still in its early stage, the study presents a theoretical indication of occupational change related to it, using the ANZSCO unit code occupations and exposure estimates at the task level. Our method involved estimating similarity scores for pairs of occupations. Where tasks are highly exposed to automation, we estimate how, based on remaining tasks that are not automated, occupations may become more or less similar. We also considered the potential for augmentation of particular tasks to make occupations more or less similar.

Skills demand and supply

We analysed how sets of skills directly and indirectly related to Gen AI are observed in online job advertisements (using data from Lightcast) as well as worker profiles data (using data from Revelio and LinkedIn), working with Mandala Partners. We attempted to gauge how the demand and supply of different skills are changing and how occupations themselves are changing.

Labour mobility

We explored recent trends in labour market mobility in occupations with varying degrees of exposure to Gen AI, against historical trends.

Investment in AI and technology

We analysed published qualitative data as well as financial reports from ASX200 companies regarding investment patterns, descriptions and reasoning, working with Mandala Partners. Working again with Mandala Partners, we also analysed venture capital data regarding deals related to technology and AI (using data from Crunchbase).

Qualitative analysis

We used a mix of deductive and inductive approaches to the qualitative and thematic analysis in this study, to identify common themes and new issues raised by stakeholders.

Case studies

The study team conducted between 80 and 100 hours of in-depth interviews with participants for a series of targeted case studies, with a hybrid approach to design and thematic analysis. The case studies in this report respond to critical evidence gaps and test hypotheses raised during early consultations. Each case study explores how Gen AI is reshaping and could reshape work, skills, and institutions, and what this means for policy, practice, and people. Together, they offer a grounded view of how adoption is uniquely unfolding across sectors, and where more analysis or action should be undertaken.

Recruitment Experiences and Outlook Survey

We designed and applied a REOS survey module to collect structured responses from a range of businesses on Gen AI adoption for recruitment. It looked at what is driving or holding back the adoption of generative AI, including ethical concerns, costs, and workforce readiness. The survey was designed to reflect the diversity of Australian businesses.

Targeted focus groups and interviews

We conducted over 30 in-depth interviews and seven focus groups with workers across key industries and occupations. This was early in the study to have an early grounding on what experiences with Gen AI had been. The focus groups and interviews included public servants, healthcare professionals, engineers, educators, legal practitioners, and creative workers. Participants shared how Gen AI is already reshaping their roles, for example streamlining tasks, raising expectations, and shifting the skills they need.

Across sectors, workers expressed a strong appetite to engage with AI, but flagged gaps in training, unclear guidance, and concerns about job quality and wellbeing. These insights directly informed the case studies and reinforced the need for inclusive, worker-informed approaches to AI adoption.

"Have Your Say on Gen AI" Consultation Hub

We invited targeted input through the “Have Your Say on Gen AI” consultation hub to key parts of the study's scope. We received 12 expert responses from technical and clinical experts as well as industry bodies and individuals. Contributors shared practical experiences, offered ideas for optimising opportunities and raised concerns about the pace of Gen AI adoption, the risks of exclusion, and the need for clearer guidance and training. Many emphasised the importance of human oversight and inclusive access to AI tools.

Submissions to other government processes

We also reviewed over 200 formal submissions from other government processes, including the Select Committee on Adopting AI and the Inquiry into the Digital Transformation, focusing on submissions covering relevant ground and from relevant parties and noting the evidence base is moving rapidly in this space.

Targeted literature review

We targeted literature review to identify emerging trends, risks and gaps in Gen AI adoption across the labour market. Key sources included academic research, industry reports, and inquiry submissions. The review also informed the selection of quantitative methods, including exposure modelling, whole of economy modelling, as well as measures of skills and labour market dynamism.

Mixed and augmented methods

Gen AI use in this study

The study made use of Gen AI tools and natural language processing (NLP) to support analysis, always in combination with human oversight. Generative AI tools were used to help with various tasks, including in organising qualitative data; in aspects of quantitative analysis; as well as in editing.

Prompt-engineering, human and hybrid domain expertise

Prompt engineering emerged as a core skill throughout the study. The team compared how different AI platforms responded to similar queries and how analysts varied in their prompting approaches given their domain expertise. Critical analytical prompts were co-designed across multiple team members and our research collaborators, drawing on domain expertise in labour economics, data science, policy, and qualitative analysis. Human expertise was essential for interpreting and validating AI-generated outputs, with abductive reasoning and thematic analysis used to ensure relevance and rigour, and in many cases reverting to human-only processes. All prompts and outputs were manually reviewed to maintain analytical integrity and consistency across the study.

Research collaborators

We worked with a range of collaborators on discrete parts of our analysis.

The original ILO authors validated our exposure results, and we reviewed their updated work. Early in the study, we partnered with ORIMA Research to conduct focus groups and interviews with workers across key occupations and sectors. Throughout, we directly analysed raw outputs from all analytical partners, determined the methodologies, validated prompts and Gen AI use, and ensured corrections where needed.

We developed and tested novel approaches to whole-of-labour market modelling, including CGE scenario design and validation against JSA's 2024 employment projections with VU. We collaborated with Mandala to define and analyse individual-level "skills clusters" and firm-level "capability clusters," adapting measures of skills change to company and job profile data from ASX200 firms, Crunchbase and Revelio.

We were expertly guided by and collaborated with Future Skills Organisation (FSO) throughout the study, at our request, regarding critical issues in their sector and industry partners. Their contributions were critical to testing the scope and feasibility of the Study and bring a new team up to speed with industry actors.

These partnerships enabled us to refine assumptions and co-design novel methods.

Glossary of terms

Term	Definition
AI	Artificial intelligence refers to a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment.
Agentic AI	Agentic artificial intelligence refers to AI that is capable of accomplishing multi-step tasks in pursuit of a high-level goal with little or no human oversight.
Adaptation	Adaptation facilitates deeper, ongoing changes to how work is undertaken, as technology is further harnessed into new production processes *or* leads to labour being reinstated to new tasks. These actions result in new or additional outputs, representing an expansion of the conceptual “production possibility frontier”.
Augmentation	Augmentation refers to a situation where workers use technology to enhance their capabilities – typically to accomplish more, with greater accuracy and speed.
Automation	Automation refers to a situation where Gen AI acquits tasks or produces outputs. Automated processes produce outputs previously completed by humans.
Cultural load	Cultural load is the additional workload that Aboriginal and Torres Strait Islander people and other cultural minorities experience in the workplace.
DEWR	Department of Employment and Workplace Relations
DISR	Department of Industry, Science and Resources
Exposure scores	Estimates of exposure give an indication of how technologies could be applied, including the extent to which tasks could be either augmented or automated.
GAN	A Generative Adversarial Network is a deep learning architecture that trains two neural networks to compete against each other to generate more authentic data from a given training dataset.
Gen AI	Generative artificial intelligence is a subset of artificial intelligence, typically based on deep learning neural networks, which use generative models to produce text, images, videos, or other data.

ILO	International Labor Organisation
JSA	Jobs and Skills Australia
OECD	Organisation for Economic Co-operation and Development
PC	Productivity Commission
Transformers	A transformer model is a neural network derived from Vaswani et al, which tracks relationships in sequential data to learn context and meaning, in order to transform an input sequence into an output sequence.

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