FUTURE SKILLS ORGANISATION

Workforce Plan 2025

Pathways to Impact:

Technology Industry Report

Future Skills Organisation

PO Box 16194, Collins Street West, Melbourne VIC 8007

Contact Us

Future Skills Organisation is a Jobs and Skills Council funded by the Australian Government Department of Employment and Workplace Relations.

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Acknowledgement of Country

We acknowledge the traditional custodians of the land on which we work and pay our respects to elders past and present.

Australia's Technology Workforce

Growth, Evolving Skill Demands, Migration's Role and an Opportunity to Enhance Domestic Talent

This Workforce Plan builds upon the strong foundation established by the Initial Workforce Plan (IWP) and the 2024 Workforce Plan: Agenda for Action (WFP24), both of which were based on ABS 2021 Census data. WFP24 marked a significant shift by transitioning from an occupation-based approach to an industry-centred perspective, setting the stage for our current update.

In this Plan, Future Skills Organisation (FSO) integrates both industry and occupational lenses to provide a more comprehensive view of Australia's technology workforce (Figure 1). This is critical as the FSO supports one of the most horizontally structured workforces across industries, with many technology workers employed outside the direct technology industry.

An industry lens encompasses a range of job roles facilitating business operations across Publishing (excluding Internet and Music Publishing), Telecommunications Services, Internet Service Providers, Web Search Portals and Data Processing Services, Library and Other Information Services, Computer System Design and Related Services, when considering workforce trends and projections. However, businesses that primarily deliver 'technology services' also employ workers from other areas, such as finance and business professionals.

As such, this Plan considers an occupational lens, which refers to the workforce of people across the economy working primarily in job roles defined as technology occupations, including, for example, Software and Applications Programmers, Information and Communication Technology (ICT) Managers, and ICT Support Technicians. Adopting both an industry and an occupational lens enables the FSO to develop a deeper view of the technology workforce, trends, and projections.

Industry versus Occupational Lens of Finance, Technology, and Business Workforces

Industry Lens

Direct Finance Industries	Direct Tech Industries	Direct Business Industries	Non-FTB Industries
• Finance (including Banking) • Insurance and Superannuation Funds • Auxiliary Finance and Insurance Services • Accounting • Credit Reporting and Debt Collection	• Publishing (excluding Internet and Music Publishing) • Telecommunications Services • Internet Service Providers, Web Search Portals and Data Processing Services • Library and Other Information Services • Computer System Design and Related Services	• Professional, Scientific and Technical Services • Administrative and Support Services	All other industries across the economy. For example: • Agriculture and Forestry • Manufacturing • Health Care and Social Assistance
▶ Finance Occupations	▶ Tech Occupations	▶ Business Occupations	▶ FTB Occupations within Non-FTB Industries
▶ Non-Finance Occupations	▶ Non-Tech Occupations	▶ Non-Business Occupations	

Occupation Lens

Figure 1: Industry versus Occupational View of Finance, Technology and Business

Working in close collaboration with Jobs and Skills Australia (JSA), we have developed a methodology that aligns the 2021 ABS Census data with more recent figures from the ABS Labour Force Survey. This approach enables us to project insights from the ABS 2021 Census data through to 2024 and articulate the evolving landscape of employment, skills, and industry growth in the technology sector.

Key elements of this updated plan include:

Data Driven

- The updated methodology incorporates recent ABS Labour Force Survey data to extend our analysis through 2024.
- This year, we launched the FSO WFP Dashboard, a dynamic tool offering additional data and insights that extend beyond the content of this document.

Dual-Perspective Analysis

- We blend both industry and occupational approaches, offering a nuanced understanding of the sector.
- This integrated view illustrates changes in key areas such as computer system design growth, the decline in wired telecommunications, and the increased reliance on skilled workforce migration.

Expanded Focus on Emerging Trends

- New analysis now covers migration trends, detailed learner journeys within the Vocational Education and Training (VET) system and university supply feeding into critical technology occupations.
- FSO collaboration with Oxford Economics has provided predictive analysis forecasting workforce and skills requirements out to 2030.

Key Challenges and Opportunities

- **Significant industry growth concentrated in emerging tech sectors**: The expansion of the tech workforce is primarily driven by the Computer System Design and Related Services sector, while traditional sectors such as Wired Telecommunications are experiencing a decline.
- **Increased reliance on migration amid domestic supply constraints:** Migrants now constitute 41% of the technology workforce.[1] Temporary-to-permanent visa pathways are essential for filling skill gaps, particularly in high-demand occupations like software programming and cybersecurity.
- **Persistent workforce equity gaps limiting talent supply:** Women, First Nations people, and persons with disabilities remain underrepresented in both industry and occupation-based technology workforces. Pay and progression gaps continue to exist.
- **Education and training systems are not keeping pace with industry demand:** Although enrolments in Vocational Education and Training (VET) and university IT programs have rebounded, completion rates remain low.
- **Critical need for reskilling, labour mobility, and alternative pathways:** Projected shortages of approximately 131,000 tech workers by 2030[2] cannot be addressed through education alone. Upskilling existing workers and creating accessible transition pathways into tech occupations are essential.
- **Opportunities for VET to play a greater role in building the domestic pipeline:** Beyond initial qualifications, VET is well-positioned to support continuous upskilling, mid-career transitions, and the development of digital capabilities across broader sectors to meet the growing demand for tech skills.

The technology workforce in Australia is experiencing increasing growth. However, without substantial system-level changes, particularly in education-to-employment pathways, labour mobility, and domestic upskilling, there is a risk of ongoing workforce shortages and an over-reliance on migration to meet critical technology needs.

Throughout this Plan, you will find links to the work we are currently undertaking to address the findings and gaps identified in previous Workforce Plans, as well as a preview of the questions guiding our preparation for WFP 2026.

1. Oxford Economics Australia. (2025). OEA-FSO - FTB Migration analysis - Draft report. Future Skills Organisation.
2. Ibid.

Industry Overview

What has changed since 2021?

The technology industry continues to grow, with a 10%[3] increase in total employment between 2021 and 2024, despite publicised layoffs and the closure of several tech startups.[4] In 2024, the industry constituted 471,900 jobs or 3% of the total national workforce - a 0.5% increase since 2021[5]. This growth, driven by the net increase of 41,000 jobs[6], demonstrates the continued expansion of this industry and its growing role in the economy. During that same period, the industry also experienced an increase in its median wages of 11% to $1,815 per week.[7] This section updates our baseline data from 2021, as used in previous plans, with the most recent data from 2024.

Australia's Technology Industry: A Strategic Economic Powerhouse

Critical technologies are essential to Australia's economic prosperity and security. For critical technologies to realise their full potential, they require support from a strong and secure wider technology ecosystem, including a skilled and adaptable workforce capable of leveraging new tools and systems, strong research pathways and infrastructure, and cohesive policy and regulatory approaches among government and industry.[8]

The 10% growth in this industry's workforce has largely been concentrated in the Computer System Design and Related Services sector, which added 51,500 jobs since 2021.[9] This industry focuses on providing Information Technology (IT) expertise such as developing, testing, supporting, and designing integrated computer systems.[10] Between 2019 and 2024, this sector has grown by an average of 3.1% per year,[11] driven by rising demand for technological innovations, automation, and enhanced digital capabilities across industries. Companies are investing heavily in digital transformation particularly in AI, cybersecurity, and cloud-based solutions.[12] However, 40% of Australian businesses are struggling to keep pace with global adoption and innovation rates of AI.[13]

In contrast, other sectors have remained stable or declined, with the Wired Telecommunications Network Operations workforce reducing by around 50%.[14] This decline is primarily due to reduced demand for fixed-line services as consumers shift to mobile-only connectivity, accelerated by rapid technological advancements, automation, offshoring, and industry restructuring. With the winding down of major projects like the NBN and the shift toward utilising and maintaining existing infrastructure, the demand for a wired workforce has decreased, prompting companies to embrace efficiency through new technology and outsourcing to maintain profitability.[15]

The tech industry represents a diverse range of companies, from start-ups and Small to Medium Enterprises (SMEs) to multinational corporations in telecommunications, cloud computing, cybersecurity, and professional services.

3. ABS. (2024). Labour Force Survey, seasonally adjusted data.
4. Tech Council of Australia (TCA). (2023). TechCouncil tech jobs update: May 2023.
5. ABS Labour Force Survey, seasonally adjusted data.
6. Ibid.
7. ABS. Characteristics of Employment, 2014 to 2024, ABS Data builder.
8. Department of Industry, Science and Resources. (2023, May 19). Critical Technologies Statement. Australian Government.
9. ABS. (2024). Labour Force Survey, Detailed, November 2024, Jobs and Skills Australia (JSA) trend data with FSO methodology applied.
10. ABS. (2006). Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006 Revision 2.0.
11. IBISWorld. (2024). Computer system design services in Australia (Industry Report 558). IBISWorld. https://www.ibisworld.com/australia/industry/computer-system-design-services/558/
12. Williams, T. (2024, October 22). One million workers could be reskilled for tech. Information Age.
13. Accenture. (2024). Reinventing with a digital core.
14. Ibid..
15. Australian Communications and Media Authority. (2024, December). Trends and developments in telecommunications 2023–24; Australian Communications and Media Authority. (2022). Communications report 2021–22.

$124 billion to the Australian economy (2022 - 2023)[16] through technology production and service delivery.

400% increase in exports over the past decade to reach $8 billion in 2022–23.[17]

- Major export markets include the United States, United Kingdom, and Asia-Pacific economies.
- Export growth primarily driven by software development and telecommunications services.

R&D expenditure increased by 40%

from 2011-2012, reaching $8 billion in 2021 -2022.[18]

Regulatory requirements vary. Cybersecurity and telecommunications are more regulated areas of the industry which include oversight by the:

- Australian Communications and Media Authority (ACMA)
- Telecommunications Act 1977
- Australian Cybersecurity Centre (ACSC - operated by Australian Signals Directorate (ASD))
- Office of the Australian Information Commissioner (OAIC)

Taking Aussie Cybersecurity Talent to the World

READ MORE

16. Ibid.
17. Deloitte Access Economics and Australian Computer Society (ACS). (2024). Australia's Digital Pulse 2024: A decade of digital leadership.
18. Ibid.

Technology Industry Overview (2024)[19]

471,900 total employed, up 10% since 2021.[20]

$1,815 median weekly earnings.[21]

25% part time.[22]

3% of total national workforce.[23]

151,000 active businesses.[24]

90% employment location - major cities (2021).[25]

10% employment location - regional (2021).[26]

59,030 VET qualification commencements.[27]

35,621 IT bachelor commencements.

Tech Sectors[29]

- Publishing (excluding Internet and Music Publishing).
- Telecommunications Services.
- Internet Service Providers, Web Search Portals and Data Processing Services.
- Library and Other Information Services.
- Computer System Design and Related Services.

19. Please note that the figures used for 2021 and 2024 have been derived from the JSA trended data for these points in time and not from the 2021 Census data.
20. ABS. (2024). Labour Force Survey, Detailed, November 2024, Jobs and Skills Australia (JSA) trend data with FSO methodology applied.
21. ABS. (2024). Characteristics of Employment, Australia, August 2024.
22. ABS. (2021). Census - employment, income and education. 4-digit level INDP Industry of Employment by LFSP Labour Force Status. Counting: Person Records.
23. Ibid..
24. Count of Australian Business Numbers (ABN) of which the entity is either an 'Australian Public Company', 'Australian Private Company', or 'Individual/Sole Trader' and has been registered by the given date or prior, and has not been cancelled as of the given date taken from Job and Skills Atlas Pro for Jan 2025.
25. ABS. (2021). Census. ABS TableBuilder.
26. Ibid.
27. National Centre for Vocational Education Research (NCVER). (2024). Total VET students and courses 2023: program enrolments DataBuilder, Total, Training package by Year.
28. Department of Education, uCube (2010-2017) and Enrolment pivot table (2018-2023)
29. Derived from the ANZSIC 2006 Division of Information, Media and Telecommunications Industry and TCA definition of the Tech Industry.

Technology Industry Overview (2024)[19]

Largest 5 Occupations (2024)[30]

1. Software and Application Programmers
2. ICT Managers
3. ICT Support Managers
4. Database and System Administrators, and ICT Security Specialists
5. ICT Business and Systems Analysts

Demographics (2024)

- **Female Representation:** 30% of total industry workforce, down from 31% in 2021.[31]
- **Persons with Disability:** <1% of total industry workforce[32]
- **First Nations Workforce:** <1% of total industry workforce[33]
- **Age:** 15-24: 6%, 25-54: 80%, 55+: 14%[34]
- **Median Age[35]:** 39

State Based Growth[36]

(2024 with % changes since 2021)

State	Employment Total (2024)[37]	Female Employment Total[38]	First Nations Employment Total (2024)[39]	Persons with Disability[40] Employment Total (2024)[41]
ACT	17,250 (+17)	3,400 (-13%)	110 (+19%)	140 (+21%)
NSW	178,199 (+6%)	55,350 (+4%)	910 (+16%)	710 (+13%)
NT	2,720 (+16%)	370 (+45%)	70 (+13%)	10 (+18%)
QLD	68,350 (+12%)	22,670 (+36%)	610 (+14%)	480 (+15%)
SA	24,200 (+10%)	5,730 (-4%)	80 (+14%)	180 (+22%)
TAS	6,320 (+13%)	1,570 (+19%)	70 (+2%)	60 (+19%)
VIC	149,800 (+13%)	42,960 (-1%)	400 (+17%)	760 (+17%)
WA	34,200 (+24%)	11,510 (+7%)	140 (+15%)	170 (+14%)

30. Australia and New Zealand Standard Classification of Occupations (ANZSCO) and ABS. (2024). Labour Force Survey, Detailed, November 2024, Jobs and Skills Australia (JSA) trend data.

31. ABS. (2021). Census. INDP-4 Digit Level by Sex (SEXP) Counting Persons, Place of Usual Residence. TableBuilder.

32. ABS. (2021). Census. INDP-4 Digit Level and Core Activity Needs for Assistance (ASSNP) Counting Person, Place of Usual Residence. TableBuilder.

33. ABS. (2011). Census. INDP-4 Digit Level and Indigenous Status (INGP) Counting Person, Place of Usual Residence. TableBuilder.

34. ABS. Census. 2011, 2016, 2021, TableBuilder.

35.ABS. (2024). Labour Force Survey, four-quarter average data, customised report JSA.

36. ABS, Labour Force Survey, Detailed, November 2024, Jobs and Skills Australia (JSA) trend data with FSO methodology applied.

37. Ibid.

38. ABS. Census. 2011, 2016, 2021, TableBuilder.

39. ABS. (2021). Census. INDP-4 Digit Level and Main ASGS POW by INGP.

40. Where disability is defined by the Census category by Core Activity Need for Assistance.

41. ABS. (2021) Census. Employment, INDP-4 Digit Level and Main ASGS POW by ASSNP.

State and Territory Technology Workforces and Initiatives

Across Australia, state and territory skills plans are focusing on enhancing digital literacy and ICT training, integrating emerging technologies such as Artificial Intelligence (AI) and cybersecurity into workforce development, and promoting technology adoption to boost competitiveness.

State-based employment trends in the technology industry show growth in workforce numbers, alongside persistent diversity challenges. In 2024, employment in the technology sector exhibited an upward trend across all states and territories. Although the total number of females in the workforce has increased, their proportion of the overall workforce has decreased by 1%. Additionally, the industry saw a 4% increase in First Nations employment; however, this group still constitutes less than 1% of the total technology workforce.[42]

States and Territories Drive Digital Skills Development Through Targeted Initiatives. States and territories have launched initiatives to enhance digital capabilities across their populations. For example, NSW is prioritising broad digital literacy and ICT training as part of its overall skills and employment initiatives.[43] In Victoria, digital skills and emerging technologies—such as AI and cybersecurity—are integrated into workforce development programs to align the state's skills plan with industry needs and future economic growth.[44] Queensland is focusing on preparing workers for future industries through targeted technology training and modern digital skills programs,[45] while South Australia[46] and Western Australia[47] have implemented initiatives that promote collaboration between government, industry, and educational institutions to accelerate digital transformation in areas such as cybersecurity, data analytics, and cloud technologies. Tasmania[48], the Northern Territory[49], and the Australian Capital Territory[50] also incorporate tailored training programs and strategic partnerships to strengthen ICT capabilities in support of the tech sector.

Collectively, these strategies aim to close the skills gap in the tech industry, drive the adoption of emerging technologies, and ensure that Australia's workforce is equipped to meet the challenges of a rapidly evolving digital landscape.

42. ABS. (2024). Labour Force Survey, Detailed, November 2024, Jobs and Skills Australia (JSA) trend data with FSO methodology applied.
43. NSW Government. (2023). NSW Digital Skills and Workforce Compact 2023–30. Digital NSW.
44. Victorian Government. https://www.vic.gov.au/.
45. Queensland Government. https://www.qld.gov.au/education/skilling.
46. Government of South Australia. https://www.sa.gov.au/topics/jobs-and-workplace/skills-training.
47. WA Skills Commission. https://www.skills.wa.gov.au/.
48. Department of State Growth Tasmania. https://www.stategrowth.tas.gov.au/.
49 Northern Territory Government. https://business.nt.gov.au/.
50. ACT Government. https://www.act.gov.au/.

The Regional Tech Paradox

Despite high demand for tech talent in regional Australia, only 10% of workers are located outside cities with just 1% growth over a decade. This stark divide represents both a significant tech workforce challenge and an untapped growth opportunity. [51]

51. Deloitte Access Economics and Australian Computer Society (ACS). (2024). Australia's Digital Pulse 2024: A decade of digital leadership.

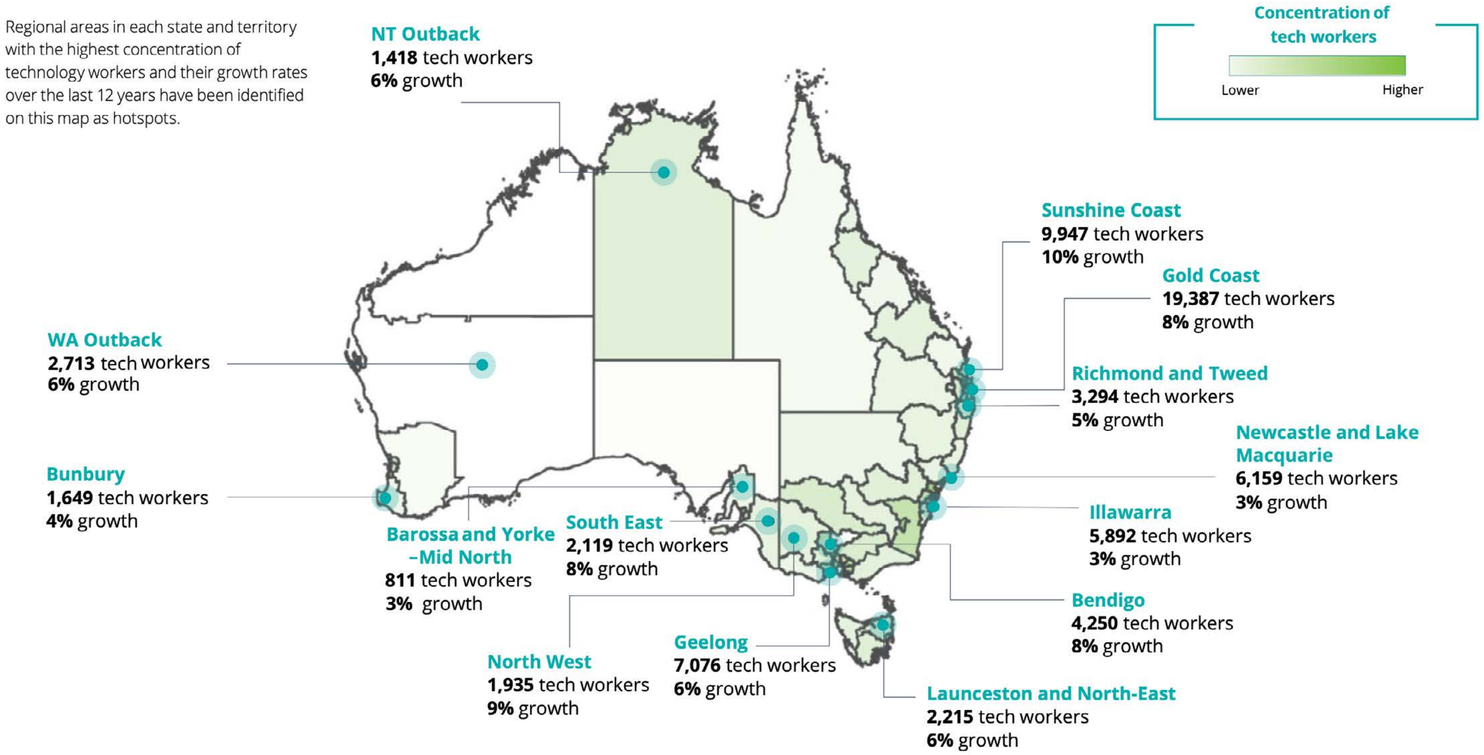

Figure 2: Regional Hubspots for Technology Workers

Source: Deloitte Access Economics and Australian Computer Society (ACS). (2024). Australia's Digital Pulse 2024: A decade of digital leadership.

Demand for tech workers has increased in many regional locations, including:

- **Gold Coast and Sunshine Coast** regions in Queensland – which have the highest concentration of technology workers in regional Australia
- **Pilbara and Goldfields** regions of Western Australia
- **Launceston and North-East Tasmania**
- **Newcastle and the Illawarra** in New South Wales (NSW)
- **Fleurieu Peninsula and Barossa** regions in South Australia
- **Bendigo** in Victoria.[52]

Proposed Question for Workforce Plan 2026

What barriers contribute to the low growth of tech talent in regional Australia, where only 10% of workers are located outside cities despite high demand?

52. Ibid.
53. Ibid.
54. Ibid.
55. Ibid.

Regional Workers[53]

10% of Tech Industry Workforce

Regional Growth[54]

1% in 10 years

Pay Gap for Regional Workers[55]

$15,400 per annum

The Future of the Tech Industry in 2030

Industry and Skills Projections

To address the rapidly changing skills landscape, Oxford Economics Australia was engaged by FSO to undertake workforce modelling. This aimed to understand workforce demand based on an industry growth basis, rather than relying on historic trends used in past workforce plans. The modelling framework provides an unconstrained view of demand, offering projections based on our current understanding[56] of workforce and skill set requirements through to 2030.

Current projections indicate that the technology industry will face a shortfall of 61,000[57] workers by 2030, based on current supply trends. While these projections account for the impact of migration and lower attrition rates due to a younger workforce, they still reveal a gap between the number of skilled workers and anticipated demand. This shortfall is primarily driven by the anticipated growth in the Computer System Design and Related Services sector, as well as the increased demand for digital and technology services across the economy.

Education, training, reskilling, and creating diverse entry points into tech occupations are essential to meeting future tech workforce demand, but current supply remains insufficient. To meet the projected, unconstrained demand in the technology industry, the training and development of new entrants and reskillers is increasingly crucial. Additionally, there is a need to diversify employment pathways into the sector, ensuring that training programs meet the needs of both learners and industry, and to increase workforce diversity. While the technology sector has the strongest supply outlook from an industry perspective across finance, technology and business industries, this is still insufficient to meet demand. The primary barriers to stronger supply growth are low additions from education and job movements.

56. Note: These projections are based on the latest data and reflect the current state of the industry. However, it is important to note that changes in government policies such as skilled migration, economic conditions, regulations, and other external factors may impact these projections in the future. As such, while the projections provide a valuable snapshot of anticipated trends, they may no longer be applicable if significant changes occur.

57. Oxford Economics. (2025). FTB workforce and skills report: Final report. Future Skills Organisation.

What is FSO doing?

ICT Needs and Gaps: Information and Communications Technology (ICT) Training Package

Superseded ICT Skill Sets Update

Entry Level Pathways

Qualification Design to Support Digital Capability

Digital Knowledge Exchange

Earn While You Learn (EWYL)

The Future of the Tech Industry - Projections

Overall Workforce Growth: Demand in the tech industry is projected to grow at an annual rate of 4.0%, **potentially exceeding 600,000 jobs by 2030.** This growth will increase the tech industry's share of the workforce from 3% to just over 4% by 2029.[58]

Sector-Specific Growth: Much of the growth forecast for the tech industry is due to expected growth in the Computer System Design and Related Services sector of 4.6% per annum, compared to ~2.5% for the rest of the industry.[59]

Labour Shortfall: Within this context, the tech industry is expected to face a **shortage of approximately 61,000 workers by year 2030,** with 80% of this shortfall due to the expected growth in the Computer System Design and Related Services sector.[60]

The five fastest growing industry sectors within the Finance, Technology and Business (FTB) industries are expected to be within the technology industry[61]:

- Computer System and Design Related Services (4.6% p.a.)
- Electronic Information and Storage Services (3.5% p.a.)
- Data Processing and Web Hosting Services (3.4% p.a.)
- Other Telecommunications Services (3.2% p.a.)
- Internet Service Providers & Web Search Portals (3.0% p.a.)

Migration: The tech industry is expected to gain **58,600 new workers in 2024-30 through migration.** For 2023-24, this figure represents 5.9% of total migration inflows, even though the tech industry accounts for only 3% of total employment. The Computer System Design and Related Services sector is expected to see a 13.3% workforce increase due to migration.[62]

Demographic factors: The technology industry has the lowest rate of natural attrition, when compared to Business and Finance, at 15.3% due to the younger age profile, with the bulk of its workforce below the age of 50 (77%).[63]

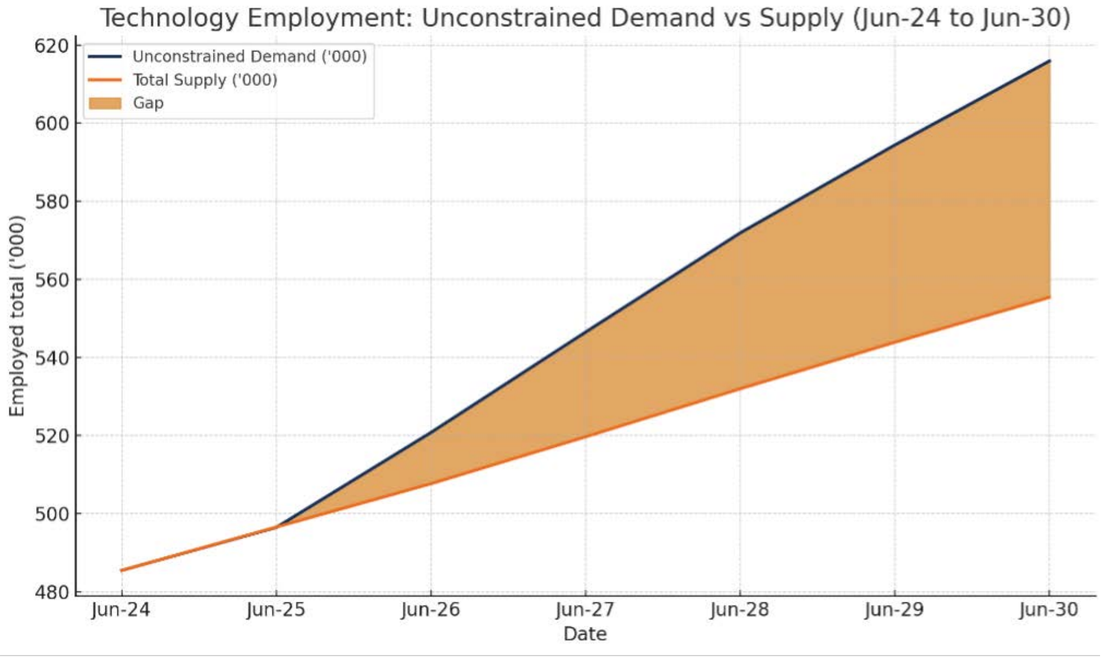

Figure 3: Technology Industry Workforce Gap

Source: Oxford Economics. (2025). FTB workforce and skills report: Final report. Future Skills Organisation.

58. Jobs and Skills Australia (JSA). (n.d.). Employment projections.
59. Oxford Economics. (2025). FTB workforce and skills report: Final report. Future Skills Organisation.
60. Oxford Economics. (2025). FTB workforce and skills report: Final report. Future Skills Organisation.
61. Ibid..
62. Ibid.
63. Ibid.

What are the Future Skills Needs?

In addition to shortage of workers there is significant skills gap as existing technology workers will also need to acquire new skills to keep pace with industry and technological changes.

Skills Gap Size: An estimated **154,000 workers**, or approximately 27.6% of the technology industry's workforce, **will need to acquire new skillsets.** This means that nearly one in four workers in this sector will require significant upskilling to meet the evolving demands of technology roles, particularly in Computer System Design and Related Services, by 2030.[64]

Computer System Design: The Computer System Design and Related Services sector **accounts for 93.5% of the talent supply requiring upskilling,** reflecting the high demand for the skills that are essential to support ongoing digital transformation and the rapid evolution of technology within this sector.[65]

These skills gaps occur for both generalist skills[66] and specialist skills[67].

For generalist skills, our projections indicate the largest skills gaps to be[68]:

- Planning and Organising
- Digital Engagement
- Initiative and Innovation
- Team Work
- Analytical and Problem Solving
- Emotional Intelligence
- Project Management

The Specialist skills anticipated to experience the most significant gaps by 2030 are[69]:

- Advanced Programming
- Cloud Computing
- AI Modelling
- Cybersecurity
- Algorithms
- System Architecture
- Data Structures
- Other Emerging technologies such as Quantum

A range of structural and perceptual barriers are contributing to ongoing skills shortages in the technology sector.

These include low diversity, negative perceptions about tech and STEM-based careers, poor awareness of the breadth of tech roles available, and the perceived cost and time required to retrain for tech roles.[70]

64. Ibid.
65. Ibid.
66. Generalist skills are common core skills and knowledge that have transferable application across a broad range of industries and occupations. Generalist skill examples are critical thinking, communication, digital capability and teamwork etc.
67. Specialist skills are specific technical abilities and knowledge required for specific occupations or industries. These skills are often developed through targeted training programs and are essential for performing specialised tasks. These include technical proficiency, industry-specific knowledge, advanced problem-solving, and practical skills.
68. Oxford Economics. (2025). FTB workforce and skills report: Final report. Future Skills Organisation.
69. Ibid.
70. Accenture Strategy. (n.d.). ICT industry landscape report: Prepared for the NSW Skills Board.

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Essential Skills for the Future of Tech

The New Tech Talent Equation

Tomorrow's professionals must blend AI capabilities, cybersecurity knowledge, and strategic skills, creating a new talent equation that crosses traditional boundaries. The most competitive organisations will be those that support flexible, continuous learning pathways in generalist and specialist skills, ideally contextualised to the business.

Digital literacy and technical competencies are becoming core priorities across the technology industry to maintain productivity and competitiveness. As the sector evolves, organisations are placing greater emphasis on a blend of technical expertise and soft skills to effectively use advanced digital tools.

The growing influence of AI, cybersecurity, and data platforms is driving demand for specialised roles across multiple disciplines. Professionals are needed to build, deploy, manage, and scale AI systems across sectors. The expansion of digital platforms and increased data volumes is also heightening the need for robust cybersecurity strategies. Organisations require specialist skills to implement and manage security systems, and for their broader workforce to understand and mitigate cyber threats.[71]

Addressing these evolving skill requirements will depend on scalable and flexible training solutions that support both generalist and specialist learning at scale. Addressing these gaps will require a multifaceted approach, including formal education, but also flexible learning modules, and just-in-time training, to support sustainable economic growth. Within the technology industry, roles such as software developers, data scientists, and digital transformation specialists are expected to grow rapidly. These projected skill gaps underscore the need for continuous upskilling and agile training programs to help organisations innovate and adapt in an ever-changing digital landscape. Notably, the top skills required in this industry closely align with those in high demand across the finance and business sectors.

71. Hays. (2025). Prepare for the changing face of skills: The Hays 2025 Skills Report.

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Occupational Overview

What has changed since 2021?

Since the release of the Initial Workforce Plan (based on 2021 data), around 91,000[72] additional technology roles have been created (13% increase). Despite this growth and diversification across the Australian economy, significant gaps remain in representation and workforce equity.[73]

Participation remains limited among key population groups:

- **People with disabilities** and **First Nations people** represent **less than 1%** of tech workforce.[74]
- **Women's representation** in tech jobs increased from 21% in 2021 to 23% in 2024, but still lags behind the broader Australian workforce.[75]
- On average, **women in tech earn $12,600 less annually** than men, even when adjusted for seniority. [76] These gaps are linked to structural barriers, including:[77]
  - Occupational segregation
  - Entrenched biases in recruitment and promotion
  - Chronic undervaluation of roles traditionally held by women.

In addition to diversity challenges, occupation shortages still persist, with 30 technology occupations currently listed as being in shortage.[78] Twenty-four technology occupations are also considered critical for clean energy meaning they are essential for supporting, developing, and maintaining the infrastructure that enables the transition to renewable energy resources.[79]

Technology Occupation Based Workforce (2024)

Total Employment: 824,700 (up 13%)[80]

Median Weekly Earning: $1,420[81]

Part Time: 9%[82]

% of Total National Workforce: 6%[83]

72. ABS. (2024). Labour Force Survey, Detailed, November 2024, Jobs and Skills Australia (JSA) trend data with FSO methodology applied.
73. Future Skills Organisation. (2023). Initial workforce plan – Building a Skilled Workforce.
74. ABS. (2024). Labour Force Survey, Detailed, November 2024, Jobs and Skills Australia (JSA) trend data with FSO methodology applied.
75. Ibid..
76. Australian Computer Society. (2024). ACS Australia's Digital Pulse 2024: A decade of digital leadership (Deloitte Access Economics for ACS).
77. Ibid..
78. Jobs and Skills Australia (JSA). (2024). Occupation Shortage List 2024.
79. JSA. (2023). Towards a national jobs and skills roadmap.
80. ABS. (2024). Labour Force Survey, Detailed, November 2024, Jobs and Skills Australia (JSA) trend data with FSO methodology applied.
81. ABS. Characteristics of Employment, 2014 to 2024, ABS Data builder.
82. ABS. (2024). Labour Force Survey, Detailed, November 2024, Jobs and Skills Australia (JSA) trend data with FSO methodology applied.
83. 2021 Census - employment, income and education, LFSP Labour Force Status, Counting: Person Records

Technology Occupation Based Workforce (2024)

Occupations in Shortage[84]

- Engineering Manager
- Electrical Engineers
- Electronics Engineers
- Aeronautical Engineer
- Agricultural Engineer
- Biomedical Engineer
- Engineering Technologist
- Environmental Engineer
- Naval Architect
- Analyst Programmer
- Cybersecurity Engineer
- Developer Programmer
- Dev-ops Engineer
- Penetration Tester
- Software Engineer
- Software Tester
- Multimedia Specialist
- Cyber Governance Risk and Compliance Specialist
- Cybersecurity Advice and Assessment Specialist
- Cybersecurity Analyst
- Cybersecurity Architect
- Cybersecurity Operations Coordinator
- Network Analyst
- ICT Quality Assurance Engineer
- Electrical Engineering Draftsperson
- Electronic Equipment Trades Worker
- Electronic Equipment Trades Worker (Special Class)
- Telecommunications Cable Joiner
- Telecommunication Lines worker
- Telecommunications Technician

Core Skills Occupations[85]

(not already on the Occupation Shortage List)

- Chief Information Officer
- ICT Project Manager
- Illustrator
- Web Designer
- ICT Business Analyst
- Systems Analyst
- Multimedia Specialist
- Web Developer
- Database Administrator
- System Administrator
- Computer Network and Systems Engineer
- Network Administrator
- ICT Systems Test Engineer
- Telecommunications Network Engineer
- Electrical Engineering Draftsperson
- Electrical Engineering Technician
- Electronic Engineering Technician
- Hardware Technician
- ICT Customer Support Officer
- Web Administrator
- Telecommunications Field Engineer
- Telecommunications Network Planner
- Telecommunications Technical Officer or Technologist
- Business Machine Mechanic
- Actuary
- Mathematician
- Data Analyst
- Data Scientist
- Statistician

84. JSA. (2024). Occupation Shortage List 2024.
85. JSA. (2024). 2024 core skills occupations list key findings report.

Technology Occupation Based Workforce (2024)

Clean Energy Critical Occupations

- Engineering Managers
- Electrical Engineers
- Aeronautical Engineers
- Agricultural Engineers
- Biomedical Engineers
- Engineering Technologists
- Environmental Engineers
- Naval Architects
- Electrical Engineering Draftspersons
- Electrical Engineering Technicians
- Business Machine Mechanics
- Communications Operators
- Electronic Equipment Trades Workers
- Electronic Instrument Trade Workers (General)
- Electronic Instrument Trade Workers (Special Class)
- Cablers (Data and Telecommunications)
- Telecommunications Cable Jointers
- Telecommunications Linesworkers
- Telecommunications Technicians

Technology occupations are distributed across a wide range of industries, with the highest concentrations in:[86]

- Professional, Scientific, and Technical Services
- Information, Media, and Telecommunications
- Financial and Insurance Services

Demographics

- **Female Representation:** 23% of total occupation based workforce[87]
- **Person with Disability:** <1% of total occupation based workforce[88]
- **First Nations Workforce:** <1% of total occupation based workforce[89]
- **Age:** 15-24: 6%, 25-54: 81%, 55+: 13%[90]

86. Oxford Economics. (2025). FTB workforce and skills report: Final report. Future Skills Organisation.
87. ABS. (2021). Census. INDP-4 Digit Level by Sex (SEXP) Counting Persons, Place of Usual Residence, TableBuilder.
88. ABS. (2021). Census. INDP-4 Digit Level and Core Activity Needs for Assistance (ASSNP) Counting Person, Place of Usual Residence. TableBuilder.
89. ABS. (2021). Census. INDP-4 Digit Level and Indigenous Status (INGP) Counting Person, Place of Usual Residence. TableBuilder.
90. ABS. Census. 2011, 2016, 2021, TableBuilder.

State and Territory Based Occupation Workforce[91]

(2024 with % changes since 2021)

State	Employment Total (2024)[92]	Female Employment Total[93]	First Nations Employment Total (2024)[94]	Persons with Disability[95] Employment Total (2024)[96]
ACT	33,230 (+6%)	6,760 (-7%)	250 (+8%)	260 (+18%)
NSW	286,450 (+8%)	70,870(+1%)	1,490 (+9%)	1,140 (+15%)
NT	4,920 (+7%)	1,160 (+4%)	90 (+4%)	20 (+30%)
QLD	127,650 (+18%)	26,410 (+13%)	1,100 (+9%)	750 (+17%)
SA	40,720 (+6%)	6,830(0%)	190 (+6%)	270 (+18%)
TAS	10,580 (+9%)	2,030(-5%)	130 (+4%)	50 (+23%)
VIC	243,310 (+14%)	59,120 (+12%)	610 (+9%)	1,100 (+19%)
WA	69,460 (+20%)	14,700 (+47%)	340 (+6%)	3,010 (+19%)

91. ABS. (2024). Labour Force Survey, Detailed, November 2024, JSA trend data with FSO methodology applied.
92. Ibid.
93. ABS. Census. 2011, 2016, 2021, TableBuilder.
94. ABS. (2021). Census. Employment, INDP-4 Digit Level and Main ASGS POW by INGP.
95. Where disability is defined by the Census category by Core Activity Need for Assistance.
96. ABS. (2021). Census. Employment, INDP-4 Digit Level and Main ASGS POW by ASSNP.

Occupation Projections

What does the future look like?

Technology occupation demand is projected to grow from 830,000 to nearly 1.1 million by 2030, an annual growth rate of 4.5%.[97] The Australian Computer Society (ACS) estimates even greater growth, projecting that an additional 312,000 workers will be needed by 2030 to meet demand[98] and the Tech Council of Australia has projected that there could be 1.2 million tech jobs by 2030 (noting that this figure also includes non-tech occupations within the tech industry).[99]

Technology occupations are expected to grow across all industries, with their share of total demand in Finance, Technology and Business workforce rising from around 27% to nearly 31%. Projections indicate that technology occupations will remain concentrated in the Professional, Scientific and Technical Services industry industry (45.5%), Information, Media and Telecommunications industry and Financial and Insurance Services Industry.

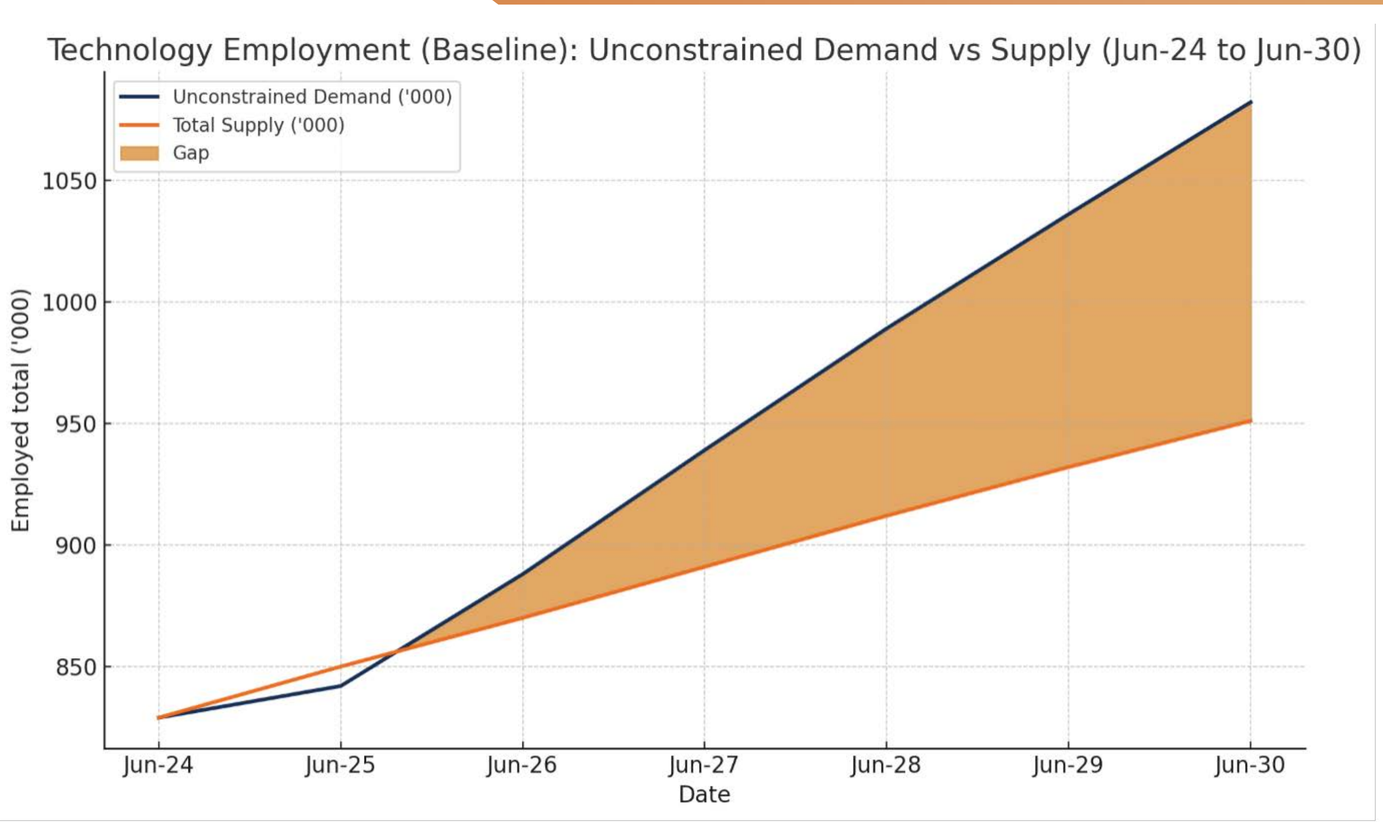

Figure 4: Technology Occupation Based Workforce Gap

Source: Oxford Economics. (2025). FTB workforce and skills report: Final report. Future Skills Organisation.

97. Oxford Economics. (2025). FTB workforce and skills report: Final report. Future Skills Organisation.
98. Ibid..
99. Tech Council of Australia. (2022). Getting to 1.2 million.

Demand for 25 of the 26 technology occupations groups[100] is expected to grow faster than the average for all finance, technology and business occupations. The fastest-growing tech occupations are projected to be:

- Actuaries, mathematicians, and statisticians (5.8% p.a.)
- ICT managers (5.1% p.a.)
- ICT support and test engineers (5.0% p.a.)
- Computer network professionals (5.0% p.a.)
- Database and systems administrators, and ICT security specialists (5.0% p.a.)[101]

Among the finance, technology, and business sectors, technology occupations are projected to experience three of the five largest increases in demand.[102]

Occupation	Projected Increase (FY24-FY30)
Software and Application Programmers	56,600
ICT Managers	33,500
Database and Security Specialists	21,600

Technology occupations supply is projected to grow at 2.3% per annum to 2030, with 16 tech roles growing faster than other finance, technology and business occupations. This growth is driven by low attrition rates and significant supply additions, especially through migration.

Technology occupations projected to decline include:[103]

- Product Quality Controllers (-3.5% per annum)
- Electronic Engineering Draftspersons and Technicians (-2.2% per annum)

Despite projected supply growth, technology occupations are expected to face a labour shortage of 131,000 workers by 2030. Most occupations are forecast to be in shortage by 2030. The largest projected deficit is anticipated to be in **Software and Application Programmers**, with a shortfall of **19,600 workers**, or **12.5% of that workforce.**[104]

Computer science is the most common skill set among technology occupations:[105]

- Software and Application Programmers (99%)
- ICT Support Technicians (92%)
- Database and Systems Administrators and ICT Security Specialists (85%)
- ICT Managers (88%)

100. Note: Occupations are represented as 6-digit ANZSCO codes, occupation groups are the 4-digit ANZSCO code.
101. Oxford Economics. (2025). FTB workforce and skills report: Final report. Future Skills Organisation.
102. Ibid.
103. Ibid.
104. Ibid.
105. Ibid.

Network of opportunity: How VET connected Joe to a tech career

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Technology occupations have the lowest projected attrition rate across Finance, Technology and Business roles, at 15.0%. This is largely attributed to the workforce age profile. However, there are areas of higher attrition, particularly within **electrical and electronic engineering occupations.**[106]

Occupation	Projected Attrition Rate (%)
Electronic Engineering Draftspersons and Technicians	25.9%
Electronic Engineers	25.0%
Electrical Engineering Draftspersons and Technicians	23.6%
Engineering Managers	22.1%

Technology occupations account for 5.8% of total employment in 2024 but are projected to receive 11.8% of total migration supply by 2030. Technology occupations are a key beneficiary of migration flows. Most technology occupations are expected to gain significantly from migration inflows, with engineering and technician professions experiencing the most significant supply.[107]

Education pathways and reskilling from other jobs are expected to supply 129,000 people into technology occupations by 2030. This constitutes the majority (64%) of supply over the next five years and emphasises the importance of attracting and skilling people into tech occupations.[108]

Education pathways and re-skilling from other jobs are critical to supplying people into technology occupations but need to be increased to meet demand.[109]

More than 1.1 million workers in non-tech occupations have similar skills and tasks to those required in tech, but systemic barriers are limiting transitions into the workforce. Research shows that while there is a large pool of potential talent, the proportion of people considering a move into technology occupations is slowing, and many lack the digital skills required to make the shift.[110] Limited access to upskilling and retraining opportunities further constrains these transitions.[111]

106. Ibid..
107. Ibid..
108. Ibid..
109. Ibid..
2024: A decade of digital leadership.
110. Deloitte Access Economics and Australian Computer Society (ACS). (2024). Australia's Digital Pulse 2024: A decade of digital leadership.
111. Oxford Economics. (2025). FTB workforce and skills report. Final report. Future Skills Organisation.

TAFE QLD empowers career changers with industry-driven approach

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The importance of Migration for tech workforce

Now and into the future

Migration is crucial for Australia's tech occupations, with migrants constituting 41% of the workforce, of whom 42% hold a skilled independent visa.[112]

Migrants with tech skills have high employment rates with over 90% being employed in tech occupations. [113]

Migration into the technology workforce is supported by a range of visa streams, which helps reduce risk associated with policy reforms. These streams include family, student, and skilled visas, and migration is less targeted at entry-level positions. While significant reforms to migration policy do present a risk to Australia's ability to fill technology occupations, this risk is mitigated by the varied migration pathways into tech jobs. For example, the increased coverage of the new Skills in Demand Visa priority occupation list is likely to support migrant supply into technology jobs, irrespective of other potential policy reforms.[114]

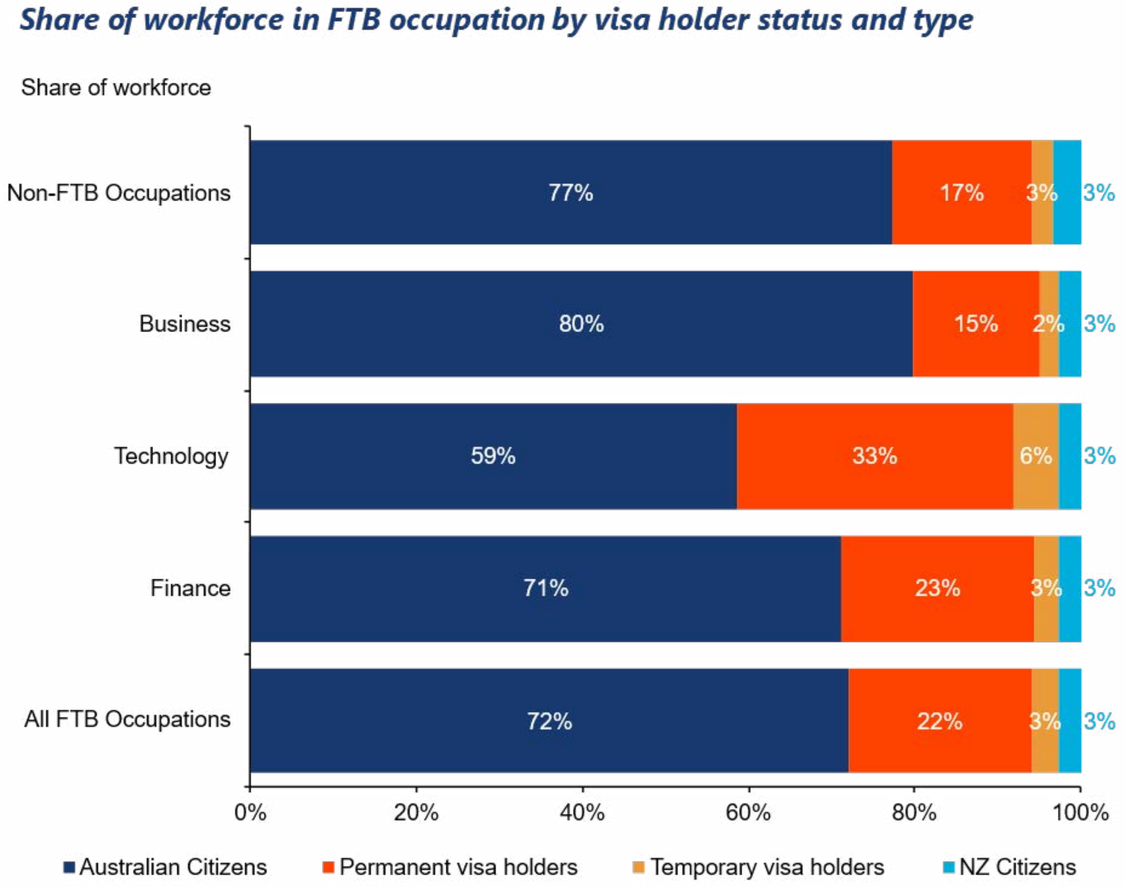

Figure 5: Share of workforce in FTB occupation by visa holder status and type

Source: Oxford Economics. (2025). FTB Migration analysis. Final report. Future Skills Organisation.

112. Oxford Economics. (2025). FTB Migration analysis. Final report. Future Skills Organisation.

113. Australian Computer Society. (2024). Skilled journeys: Navigating IT migration in Australia: Insights and findings from the ACS longitudinal study of ICT-skilled migrants. Australian Computer Society.

114. Oxford Economics. (2025). FTB Migration analysis. Final report. Future Skills Organisation.

Technology occupations with the highest share of Visa Holders are:[115]

- Software and Applications Programmers (59%)
- ICT Support and Test Engineers (53%)
- ICT Business and Systems Analysts (50%)
- Telecommunications Engineering Professionals (49%)
- Multimedia Specialists and Web Developers (47%)

Temporary to Permanent Visa Pathways

Temporary-to-permanent visa pathways remain a key route into technology occupations, with nearly 70% of skilled migrants applying onshore in 2020–21.[116] This figure dropped to around 60% post-COVID, but the onshore application pathway remains dominant.[117] Of the top 10 occupations that transitioned from temporary to permanent visas, nine are within technology. For example, 22% of Software and Applications Programmers initially entered Australia on a temporary visa before transferring to a permanent visa.[118]

Temporary to Permanent Visa Pathway Occupations

- Software and Applications Programmers (22%)
- ICT Support and Test Engineers (20%)
- ICT Business and System Analysts (19%)
- Electrical Engineers (19%)
- Telecommunications Engineering Professionals (21%)
- Multimedia Specialists and Web Developers (19%)
- ICT Managers (17%)
- Computer Network Professionals (16%)

Trends in Visa Grants

The temporary skilled visa pathway, and the ability for temporary migrants to transition to permanent visas, accounts for 17% of the tech workforce, double the rate in other occupations.[119]

Temporary skilled visa holders have decreased since 2018, with grants for Software and Applications Programmers and ICT Business and Systems Analysts down 23% and 24% respectively. This decline has been the primary driver of the overall reduction in temporary skilled visa holders.[120]

Onshore permanent skilled visa grants for the technology workforce have steadily increased since 2018, reaching a record high in 2024. Onshore visa grants are visas granted while the applicant is physically in Australia. This is common for individuals already on a temporary visa, such as a student or work visa, who are seeking to extend their stay or transition to permanent residency. The increase in onshore grants has likely contributed to the decline in offshore grants, where the applicant is physically overseas. Software and Applications Programmers accounted for 23% of all permanent skilled visa grants between 2018 and 2024, with 31% of applicants receiving visas while offshore.[121]

While overall permanent visa grants are similar to 2018 levels, the distribution across technology occupations has shifted. Visa grants to Engineering Professionals and ICT Business and Systems Analysts increased by 63% and 26%, respectively. Permanent visa grants to Software and Applications Programmers decreased by 26%, although this was offset by temporary skilled migrants, averaging nearly 28,700 grants per year from 2018 to 2024, most of which were offshore.[122]

115. Ibid..
116. Department of Home Affairs. (2021). Migration program report 2020–21.
117. Department of Home Affairs. (2023). Migration trends 2022–23.
118. Ibid.
119. Ibid.
120. Ibid..
121. Ibid..
122. Ibid.

Migration and Education

Student visas transitioning to permanent residency contribute 22% of permanent visa holders.[123]

The student visa pathway represents 7% of workers in tech occupations.[124]

The Technology workforce has the highest proportion of visa holders in both capital cities (43%) and regional areas (18%).[125]

Visa holders in the technology workforce have high levels of educational attainment, with 56% holding a Bachelor's degree and 46% having completed postgraduate studies.[126] Salary levels vary by cohort, with earlier cohorts typically earning higher salaries than those who arrived more recently. This suggests that as migrants spend more time in Australia, they progress into more senior and better-paid roles.[127] Research indicates that 79% of Temporary Skilled Migrants earn above $78,000 per annum, with 47% falling within the $91,000 to $181,999 per annum salary range.[128]

Migration is a crucial driver for the technology workforce, which has a higher proportion of visa holders than the finance and business sectors. The domestic supply of workers with the necessary skills is limited, as local educational and training pathways have not kept pace with the rapid growth in demand for digital and technical skills. Consequently, companies often struggle to fill positions with locally trained professionals. Temporary visa pathways play a vital role in this context, facilitating the transition from student and temporary visas to permanent residency. This mechanism not only attracts young, skilled workers but also ensures that the tech sector can meet the rapid growth in demand by addressing critical skill shortages. Robust migration flows are essential for maintaining a competitive and innovative tech workforce in Australia.[129]

Proposed Question for Workforce Plan 2026

While migration plays a crucial role in addressing the predicted gap in the tech workforce, how can we also increase the domestic supply?

What barriers are we missing, and what strategies have yet to be explored?

123. Ibid..
124. Ibid..
125. Ibid..
126. Australian Computer Society. (2024). Skilled journeys: Navigating IT migration in Australia: Insights and findings from the ACS longitudinal study of ICT-skilled migrants.
127. Ibid..
128. Oxford Economics. (2025). FTB Migration analysis. Final report. Future Skills Organisation.
129. Oxford Economics. (2025). FTB workforce and skills report. Final report. Future Skills Organisation.

Educational Outcomes in IT

Australia's Tech Education Paradox

Australia's IT education system shows a clear contrast: interest in qualifications is growing while completion challenges persist. VET and university enrolments have rebounded after previous declines, but both sectors experience higher attrition rates compared to other disciplines. Female students are well-represented at enrolment but complete qualifications at lower rates than males. Post-completion employment outcomes remain strong for those who graduate.

Vocational Education and Training (VET) Outcomes

Commencements and completions in the ICT Training Package declined between 2020 and 2022, but rebounded significantly in 2023. Commencements fell from 60,650 in 2020 to 46,680 in 2022, before rising to 59,030 in 2023. A similar trend was observed in completions, which declined from 19,285 in 2020 to 8,945 in 2022, then rose to 12,965 in 2023. This data suggests factors such as recent government initiatives, the ongoing demand for IT skills, and the attractiveness of VET as a pathway into tech occupations may be contributing to this recovery.[130]

The Certificate III in Information Technology (ICT30120) had the highest enrolments of any ICT qualification in 2023, with enrolments and completions both increasing since 2021. This qualification is designed to build essential skills in technical support, programming, networking, and general IT operations. Enrolments increased from 14,965 in 2021 to 17,555 in 2023, a 17% increase, while completions rose from 2,630 to 4,235, a 61% increase.[131]

To inform this Workforce Plan, we undertook a deeper analysis of learner journeys for students commencing this qualification between 2016 and 2018.

Year of Commencement	2016	2017	2018
Commencement Count	8,330	8,040	7,160
Completions[131]	37.8%	35.7%	38.3%
Direct Non- Completions[132]	62.2%	64.3%	61.7%

130. NCVER. (2024). Total VET students and courses 2023: program enrolments and completions DataBuilder, Total, Training package by Year. Note: The total number of students has been calculated using figures from both ICT30118 and ICT30120.

131. Ibid..

132. Person Level Integrated Data Asset (PLIDA). 2015-2022. Total VET Activity, ABS DataLab. Findings based on use of PLIDA data. Note: completions in any one year may not be related to commencements in that year.

The following shows the proportion of completers and non-completers who went on to further VET study in the first-year post training.

For example, students whose final year of training was 2016, 62.3% of completers were enrolled in further VET in 2017 and 50.0% of non-completers were enrolled in further VET in 2017.[134]

Final Year of Training	2016	2017	2018	2019	2020	2021
Completed	62.3%	57.3%	56.5%	48.1%	38.5%	33.3%
Non-Completion	50.0%	47.1%	48.7%	36.9%	33.3%	33.3%

While the proportion of students in the Certificate III in IT that go onto further study has decreased, there has been an increase in the proportion of students who were employed in the first financial year post training. **By 2020, 39% of completers enrolled in further VET, reduced from 62% in 2016, whereas 77% were employed, up from 56% in 2016.**

The proportion of completers and non-completers who were employed in the first financial year post-training increased.[135]

Final Year of Training - Employed in First Financial Year Post Training:

Final Year of Training	2016	2017	2018	2019	2020
Completed	55.5%	59.1%	58.0%	61.8%	76.9%
Non-Completion	48.3%	50.7%	49.3%	53.0%	55.6%

However, only a small percentage of these employed graduates secured roles in the occupation of ICT Support Technician, which is the intended employment outcome for students in this qualification.[136] Further research is required to identify which occupations students are entering post-study.

Final Year of Training	2016	2017	2018	2019	2020
Completed	5.7%	6.1%	7.3%	8.8%	20.0%
Non-Completion	2.4%	2.8%	2.7%	1.3%	N/A

Proposed Question for Workforce Plan 2026

What occupations are students entering post-study if they are not securing roles in their intended field? For students that go on to further training after the Certificate III in IT, what are the qualifications they enrol in?

133. Ibid..
134. Ibid..
135. Ibid..
136. Ibid..

Additional demographic analysis indicated that among the 2016–2018 cohort, international students, students with disabilities, First Nations students, and female students each had varying rates of commencement, completion, further VET engagement, and employment. For example, female students accounted for 37.3% of all students who commenced this qualification between 2016 and 2018 but only 16.7% of those who completed the qualification. Among the students who went onto further VET after commencement, 16.7% were female and among those employed after commencement, 16.6% were female. The comparatively poor outcomes for female students in the Certificate III in IT demand further interrogation.

Proposed Question for Workforce Plan 2026

What barriers contribute to low completion rates among diverse groups and how can we improve their student outcomes?

	Commencement[137]	Completers[138]	Further VET [139]	Employed[140]
Females	37.3%	16.7%	16.7%	16.6%
First Nations	3.8%	2.6%	3.8%	3.4%
People with a Disability	14.6%	13.7%	14.6%	8.8%
International Students	5.4%	8.6%	8.1%	5.9%

137. Person Level Integrated Data Asset (PLIDA). 2015-2022. Total VET Activity, ABS DataLab. Findings based on use of PLIDA data. Note: completions in any one year may not be related to commencements in that year.

138. Ibid..

139. Ibid..

140. Ibid..

University Outcomes

University data shows a strong upward trend in technology -related degrees, aligning with growth in VET Information Technology enrolments. First preference applications in IT undergraduate qualifications increased from 7,742 in 2010 to 11,599 in 2021, nearly a 50% increase.[141]

Between 2021 and 2023, domestic and international enrolments in IT degrees increased significantly, with international students comprising 59% of the total cohort in 2023. Domestic student enrolments rose from 6,332 in 2021 to 14,488 in 2023—a 129% increase. Over the same period, international enrolments increased from 5,146 to 21,133, a 310% increase. By 2023, 28% of international students were enrolled offshore. [142]

141. Norton, A. (2025). Higher education students in IT, engineering and management and commerce. Future Skills Organisation. Monash Business School, Monash University.
142. Ibid.

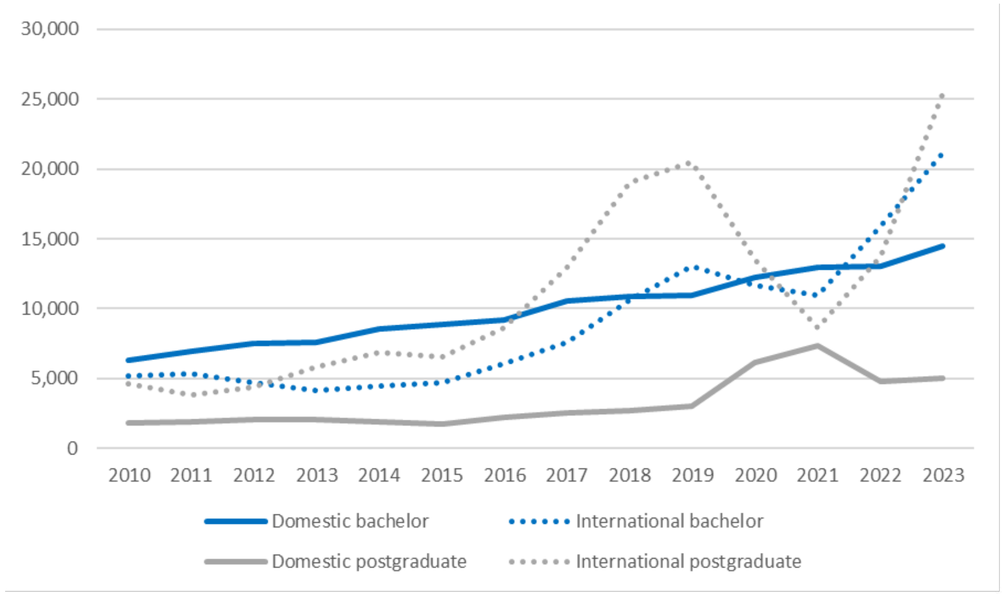

Figure 5: Commencing enrolments for information technology bachelor degrees and coursework postgraduate degrees

Source: Norton, A. (2025). Higher education students in IT, engineering and management and commerce. Future Skills Organisation. Monash Business School, Monash University.

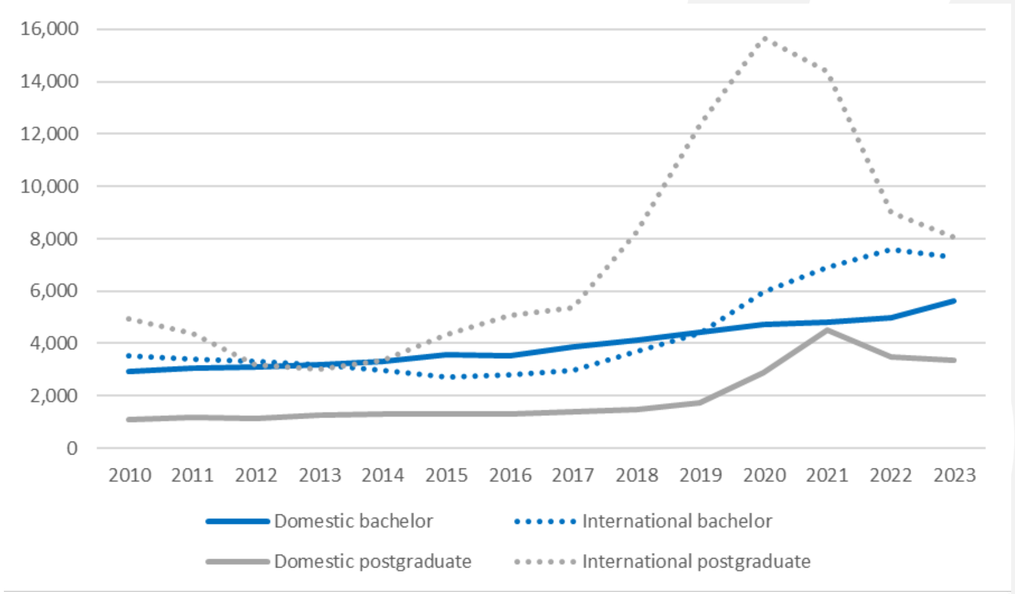

Figure 6: IT course completions, domestic and international, bachelor and postgraduate coursework

Source: Norton, A. (2025). Higher education students in IT, engineering and management and commerce. Future Skills Organisation. Monash Business School, Monash University.

Despite growth in domestic enrolments, international students constitute an increasing proportion of total enrolments in IT. In 2023, one factor driving this growth may have been the federal government's decision to extend the length of temporary graduate visas for two years for graduates in degrees linked to skills shortages. However, this program ceased as of 1 July 2024.[143]

Attrition from IT bachelor degrees remains consistently higher than the overall student population, with six or seven more IT students out of every 100 leaving higher education without completing any degree compared to students generally at the six-year mark. One reason for high IT student attrition is lower academic preparation, as indicated by the Australian Tertiary Admissions Rank (ATAR), which ranks students in their age cohort according to their school results. However, the proportion of IT students with an ATAR over 80 has increased since 2018, suggesting improved perceptions of IT study.[144]

Seventy-one per cent of information and technology professionals aged under 40 have a bachelor degree or higher, the second-lowest rate among the major professional occupation groupings. Additional factors associated with higher IT student attrition include part-time enrolment, mature age study, and male gender bias. While high attrition is a concern, one possible explanation is that employers of IT graduates may be more willing to hire staff without bachelor degrees for professional roles.[145]

Proposed Question for Workforce Plan 2026

Given the high attrition rates in IT courses and the fact that 71% of IT professionals under 40 have a bachelor degree or higher (low compared to other professional occupation groupings), does this indicate more opportunities for alternative pathways into IT professions?

In 2023, 74.4% of domestic and 52.1% of international computing and information systems graduates were employed full-time within four months of completion, highlighting strong employment outcomes, particularly for domestic students exclusively.[146]

Despite these findings, the future outlook is that additional efforts are required to attract and complete students and reskillers through the education and training system in order to meet unconstrained industry demands.

143. Ibid.
144. Ibid.
145. Ibid..

Tech Trek: How Charlotte engineered her IT pathway

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A Review of Training for Emerging Tech: Industry Findings

The ACS 2024 Accreditation Outcome Report highlights progress in cybersecurity integration across ICT courses, and a growing expectation for comprehensive AI coverage. Reviews from 16 institutions and over 500 accredited courses revealed that the proportion of courses demonstrating satisfactory cybersecurity practices increased from 13% in 2023 to 50% in 2024, although some courses still require additional measures. The rapid evolution of artificial intelligence has also prompted a shift in ICT curricula, with programs now expected to integrate AI comprehensively to foster application skills and address ethical considerations, limitations, and responsible usage.[147]

The ACS report noted that further development is needed in areas such as professional ethics, project management, and advanced IT coursework within ICT education programs.[148] Many programs offer limited coverage of professional ethics, underscoring the importance of sustained, context-driven training in this area. Project management—a core competency for technology professionals—can benefit from stronger integration of theoretical and practical, team-based learning experiences. Additionally, advanced IT subjects that rely on progressive, interconnected coursework remain an area where additional support and development may be beneficial for training providers.[149]

The 2024 AIIA Digital State of the Nation Member Survey identified ongoing workforce and skills challenges across the technology sector. Many industry leaders report that graduates from vocational and higher education institutions are not adequately job-ready, necessitating substantial reskilling efforts. In response, organisations are investing in training programs, but persistent skills shortages—particularly in foundational areas such as app development and coding—are prompting some companies to hire talent from overseas. Concurrently, business growth expectations are shifting, with many tech companies forecasting flat revenue growth amid broader economic uncertainties and government spending cuts.[150]

This survey also heard about increasing concerns that the tech industry's role in driving Australia's economic growth is not fully understood or acknowledged. As a result, AIIA is advocating for improved government leadership through more effective procurement practices, streamlined administrative processes, and enhanced upskilling and education to better align with industry standards.[151]

What is FSO doing?

ICT Needs and Gaps: Information and Communications Technology (ICT) Training Package

Superseded ICT Skill Sets Update

Generative AI Research and Content

Entry Level Pathways

Qualification Design to Support Digital Capability

Digital Knowledge Exchange

Earn While You Learn (EWYL)

146. Norton, A. (2025). Higher education students in IT, engineering and management and commerce. Future Skills Organisation. Monash Business School, Monash University.
147. Australian Computer Society. (2025). ACS 2024 Accreditation Outcomes Report.
148. Ibid..
149. Ibid..
150. Australian Information Industry Association (AIIA). (2024). Digital State of the Nation 2024: AIIA Member Survey.
151. Ibid..

Emerging Tech: Shaping the Future

Significant investments and advancements in technology are shaping Australia's economic landscape and workforce demands. The following section delves into the current trends and projections in technology investment, highlighting key areas such as artificial intelligence, quantum computing, and cybersecurity. These insights provide a comprehensive overview of how technological innovations are driving economic growth, transforming job markets, and skill shortages.

Technology investment is projected to grow strongly in 2025 with figures forecast to reach $147 billion, with major impacts from AI, cybersecurity, and cloud computing.

- Gartner forecasts an 8.7% increase in Australian IT spending in 2025, reaching $146.85 billion. Software investments are expected to grow by 13.4%, driven by advancements in cybersecurity, generative AI (Gen AI), and cloud computing.[152] [153]
- A KPMG-AMCham report highlights the rise in economic partnerships and technology investments, particularly in AI, the digital economy, and quantum science.[154]
- The Australian Government has funded four AI Adopt Centres as part of the $17 million AI Adopt Program. The Centres are helping to upskill small to medium enterprises around Australia on how to adopt AI safely and efficiently to modernise their businesses and boost productivity.[155] [156]
- The Australian Computer Society estimates that 95% of workers will see at least 20% of their work time impacted by critical technologies, affecting over 11.2 million workers.[157]
- According to the Tech Council of Australia (TCA), AI is set to be the defining technological trend in 2025, contributing $115 billion to Australia's economy and creating 200,000 jobs by 2030. Cybersecurity and sustainability technologies are also gaining prominence, with significant investments in AI-powered, cloud-based software and cybersecurity solutions enhancing productivity and modernising operations across industries.[158]

Artificial Intelligence (AI)

Artificial intelligence has been identified as a key focus area for workforce development by FSO and the Australian Government. The Australian Government White Paper[159] highlights growing demand for these skills across various occupations.

Generative AI is expected to impact occupations requiring higher cognitive skills and disrupt training packages in Financial Services, ICT, and Business Services. FSO's research highlights particular effects in marketing, HR, and finance. Training packages in Financial Services, ICT, and Business Services are most susceptible to AI disruption. FSO plans to engage with workers to adapt skills training to evolving industry demands.

The Australian Government is supporting critical technologies, including AI, through national and international initiatives focused on safety and ethical use. Initiatives include the Artificial Intelligence in Government Taskforce (AIGT)[160], the Bletchley Declaration on AI Safety[161] and The Critical Technologies Statement[162] which outlines the government's commitment to safe, ethical, and responsible AI use. Further, it is developing a National AI Capability Plan[163] and a Generative AI Workforce Capacity Study.[164]

Read our generative AI research and content

Megatrends in AI

The advancement of AI is generating unprecedented job opportunities across both traditional tech occupations and non-tech occupations such as human resources, legal, and sales, leading to the creation of hundreds of thousands of new roles by 2030.[165] AI technologies are critical for economic growth, supporting national security, improving system efficiency, and stimulating research and development.[166] By focusing on these areas, Australia aims to foster an environment where both public and private sectors can harness AI to drive innovation and mitigate risks associated with emerging digital threats.[167]

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The rapid evolution of AI is driving the development of new occupations. Roles dedicated to designing, building, and operating AI systems, such as engineering, data science, cybersecurity, and product development, are at the forefront of the AI transformation. The rapid pace of skills evolution presents a challenge, necessitating expanded and diversified education and training pathways. Mid-career transitions and targeted skilled migration are essential strategies to bridge the skills gap.[168]

JSA has identified 10 emerging roles driven by rapid technological advancements, including AI and quantum computing, with notable roles such as AI Engineer and Quantum Computing Scientist experiencing significant growth, evidenced by a 300% increase in online job advertisements for AI Engineers between 2018 and 2022. Other roles, such as Automation Engineer, Cloud Developer, and Blockchain Engineer, highlight the dynamic nature of technological evolution and the need for continuous learning and adaptation of skills.[169] These roles provide critical insights into evolving skill needs and offer valuable guidance for job seekers, career advisors, and policymakers to ensure that education and training systems align with current and future market demands.[170]

Supporting the scaling of AI technologies across organisations requires roles in sales, marketing, finance, and human resources, which are crucial for integrating AI products into the broader business ecosystem, necessitating flexible training pathways and reforms in traditionally rigid skill structures to meet these demands.[171] Eighty-six per cent of employers anticipate that AI and information processing technologies will transform their business models by 2030. Rapid investment in generative AI technologies has spurred demand for specialised roles such as AI and machine learning specialists, Big Data analysts, and FinTech engineers. The expansion of AI-related roles is expected to significantly contribute to job creation, necessitating robust upskilling programs to meet new technical demands.[172]

Governing occupations are essential as AI becomes central to organisational operations. As AI becomes central to organisational operations, governance functions, including legal, policy, risk and compliance roles, are pivotal. These roles ensure responsible AI deployment in accordance with regulatory frameworks. Enhanced training opportunities and targeted migration initiatives are necessary to expand the pool of experts in this area.[173]

Managing occupations are crucial for effective leadership in integrating AI within organisations. Senior management and executive roles provide strategic direction and oversee AI initiatives. Developing leadership skills that combine traditional management expertise with an understanding of AI trends and market dynamics is essential. Upskilling existing leaders and recruiting experienced talent from global markets are critical to filling these roles.[174]

Quantum

Quantum computing presents significant economic opportunities for Australia, with long-term growth dependent on a highly skilled, specialised workforce. The CSIRO estimates that Australia's quantum computing industry could be worth **$5.9 billion by 2045**, contributing **$6.1 billion to GDP**, with spill-over benefits to sectors such as health, transport, space, mining, and defence—potentially adding another **$2.4 billion to GDP**. This growth will require expertise across quantum mechanics, hardware, linear algebra, precision manufacturing, computer science, and business skills.[175]

Australia is pursuing a leadership role in quantum computing through national initiatives and strategic investments, amid growing global interest. Significant global investment in quantum computing is coming from both governments and private investors. Australia's efforts include initiatives such as the **Centre for Quantum Growth** and support for companies like **PsiQuantum**.[176] Quantum and encryption technologies are expected to support **advanced computing and secure communications by 2030,** enhancing data protection and computing power for high-security applications.[177]

Targeted research, regulatory support, and collaboration are essential for accelerating Australia's quantum technology sector and securing national infrastructure. Strengthening domestic capabilities **through focused research and development investment** is key to accelerating commercialisation. Progress will depend on collaboration among government, industry, and training providers to keep pace with global innovation while protecting Australia's critical infrastructure and sensitive information. A comprehensive approach—combining **regulatory frameworks, public-private partnerships,** and focused policy initiatives—aims to drive economic growth, support **high-skilled job creation,** and enhance national security.[178]

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Cybersecurity

Cybersecurity is rapidly becoming one of the fastest-growing skill areas due to the exponential increase in data volumes and rising cyber threats. Employers are prioritising the recruitment of professionals with expertise in network security and cybersecurity to protect organisational data and maintain digital infrastructure integrity. This trend highlights the importance of targeted training and certification programs in cybersecurity as part of a broader digital transformation strategy.[179]

In Australia, 17% of leading tech executives identify cybersecurity as a key trend for 2025, reflecting heightened concerns about digital threats and data protection. However, there is a growing skills shortage in this sector.[180] Eighty-five percent of hiring managers are struggling to recruit qualified professionals, with the skills gap posing a significant challenge for businesses aiming to implement advanced technologies and maintain a competitive edge globally.[181]

The Australian cybersecurity workforce faces a critical shortfall, with current and projected demand far outpacing supply. Approximately 68,400 professionals are currently classified as a cyber occupation under ANZSCO. An additional 25,000 to 30,000 professionals will be needed over the next few years to keep pace with the rapidly evolving threat landscape, marked by a surge in cybercrime driven by ransomware and data theft extortion. This shortage poses significant economic and national security risks, as organizations report extremely low applicant rates, often averaging just five applications per role, with only one in four candidates demonstrating the requisite technical competencies. [182]

Workforce dynamics in the cybersecurity sector are further complicated by demographic and educational trends. While the number of students pursuing cybersecurity-related degrees and diplomas has grown, the pathways into entry level cybersecurity roles remain unclear.[183]

Sector-specific analysis reveals a marked shortage in technical positions and a notable gender imbalance in cybersecurity. The gender imbalance within the sector is also notable; women constitute only about 21% of cybersecurity professionals, far less than female participation in the tech workforce.[184]

Exponential Digital Growth/Digital Transformation

Rapid advancements in digital technology are driving exponential change, reshaping industries through computing power, connectivity, and data generation. Digitalisation, automation, and AI are key megatrends, enhancing productivity and creating a critical skills agenda. While some jobs will be lost, many will evolve, requiring a digitally literate workforce. Higher-level digital skills are in demand, and AI's power and risks are under scrutiny. Significant skill gaps exist, impacting education, training, and lifelong learning.[185]

The shift toward mobile and cloud-based technologies is transforming telecommunications infrastructure and user expectations. The expansion of 5G, mobile broadband, and technologies like low-Earth orbit (LEO) satellites are fuelling demand for faster, flexible wireless solutions as Australians consume more mobile data. Wired telecommunications are declining due to mobile and cloud-based services, the NBN fibre transition, and the increasing popularity of communication platforms.[186] Businesses and consumers are prioritising mobility, speed, and reliability, shaping the future of telecommunications.[187]

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181. Hays. (2025). The Hays 2025 skills report.
182. Per Capita for CyberCX. (2022). Upskilling and expanding the Australian Cybersecurity workforce.
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184. Ibid..
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187. Ibid..

Summary

The Australian technology industry has experienced notable shifts between 2021 and 2024, characterised by strong growth in computer system design, a sharp decline in traditional wired telecommunications, and evolving workforce demographics driven by migration and targeted visa pathways. While the sector continues to attract international talent and exhibits promising long-term growth projections, supply constraints from domestic education and job movements remain a key challenge. The parallel trends in university IT degrees and VET outcomes further underscore the increasing demand for technical skills and the need to align educational pathways with industry needs.

National and State Initiatives

To address workforce challenges including preparing Australia for a technology-driven future, Federal, State, and Territory Skills and Training Ministers have introduced the National Skills Plan. This initiative sets out governments' ambitions for enhancing digital and technological capabilities through vocational education and training (VET) as one of eight key national priorities. The plan is designed to support the evolving needs of industries by ensuring that the workforce is equipped with the necessary skills to meet future demands.[188]

FSO established the Digital Knowledge Exchange (DKX) to address the critical challenge of developing digital skills across Australia. While states and territories have made significant progress through their own initiatives, DKX aims to enhance these efforts by enabling collaboration and connection.

DKX serves as a platform that brings together state and federal governments, industry partners, and stakeholders to share knowledge and best practices, thereby supporting the scaling of effective workforce initiatives.

Central to this effort is the DKX Governance Group, which includes representatives from each state and territory. The Governance Group facilitates knowledge sharing through a series of Round Tables, while DKX Working Groups focus on key joint initiatives.

Through this collaborative approach, DKX aims to support the development of a stronger, more inclusive, and future-ready digital workforce across Australia.

188. Department of Employment and Workplace Relations. (2024). National Skills Plan: Building a skilled Australia through vocational education and training.

Find out more about the Digital Knowledge Exchange