

Skills Industry Plan Roundtable

Discussion paper Technology industry

December 2022



ACT
Government



Background

Skilled to Succeed is the ACT Government's skills and workforce agenda that seeks to ensure Canberrans have the right skills for in-demand jobs now and into the future. Our priorities are to deliver a skills and workforce agenda which is:

- inclusive and provides Canberrans with a foundation for lifelong learning
- responsive, flexible and future-focused
- proactive in helping employers build, attract and retain the right workforce
- built on strong and sustainable skills sector foundations.

To deliver this agenda, the ACT Government will develop Industry Plans for the Care, Technology, Building and Construction, Experience, and Renewables and Sustainability industries. The purpose of these Plans is to identify actions to develop a fit-for-purpose vocational education and training sector that supports our future workforce.

To support the development of these Plans, the ACT Government is hosting roundtables with stakeholders from each industry. This discussion paper is intended to support and inform discussion at the Technology industry roundtable on 8 December 2022.

Scope

The purpose of this discussion paper is to provide stakeholders with key data and insights on the Technology industry to stimulate thinking on the role of **Vocational Education and Training (VET)** in shaping the future of jobs and skills in the industry.

The questions in this paper will guide discussion at the roundtable and focus on:

- Qualification types and content
- Delivery of qualifications
- Quality and fit-for-purpose of courses
- Level of consultation/engagement with industry
- Skilled migration pathways
- Accessibility and equity

Discussion questions

- 1 What skills do workers need to be 'job-ready' and what skills do you expect to train on the job?
- 2 Think about the training your staff attend now. How suitable is this training for your business needs?
- 3 With the increased focus on technology and sustainability, what additional skills do workers need now and into the future?
- 4 How can the vocational education sector support greater diversity in the workforce (e.g. older workers and women entering this workforce) and upskilling of existing workforce?
- 5 What works well with the current training market? What would you like to see more of, and what changes need to take place?
- 6 What are the barriers to completion? How can these barriers be addressed?

Collective actions to consider

- 1 Develop courses that are fit-for-purpose and reflect current and future needs of the industry, including micro-credentials
- 2 Embed non-technical components into courses
- 3 Develop courses that are complementary to globally certified courses to support learners in areas of need
- 4 Explore with industry, opportunities to improve workforce attraction and retention
- 5 Explore options to expedite student entry into the workforce, including reviewing barriers to entry
- 6 Identify population cohorts that can be up-skilled/re-skilled in order to fill the growing workforce needs of the Technology sector

Industry Overview

17,503

Total number employed in the technology industry in 2021

Growth in Employment

37% Last 10yrs **40%** Last 5yrs **22%** Avg 5yrs (All industries)

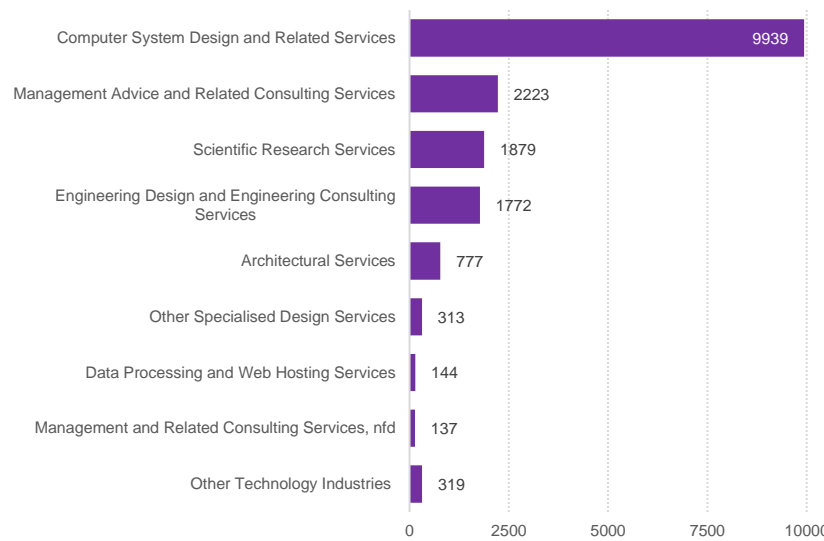
Largest Growing Occupations



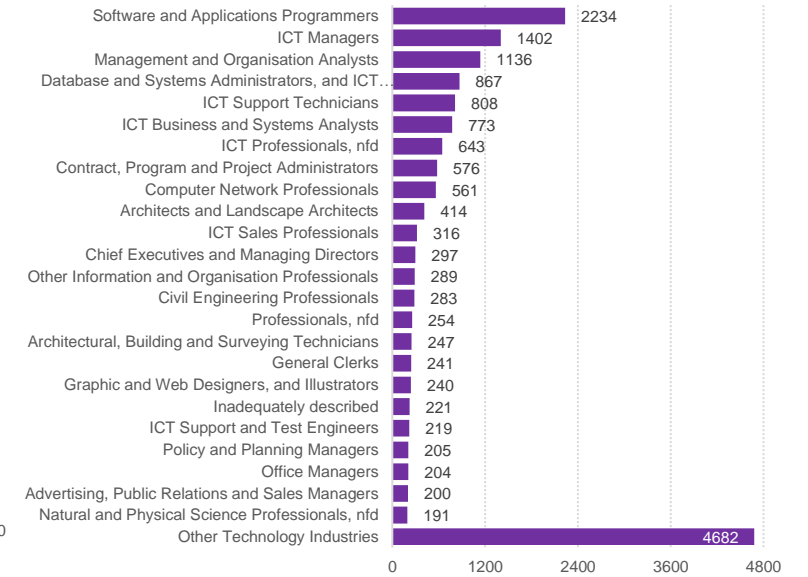
Source: ABS census 2021

Technology Industries - Employment Snapshot (2021 census)

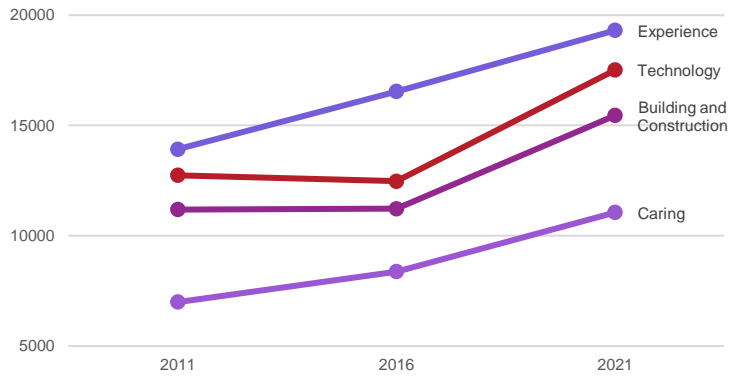
Employment by industry



Employment by occupation

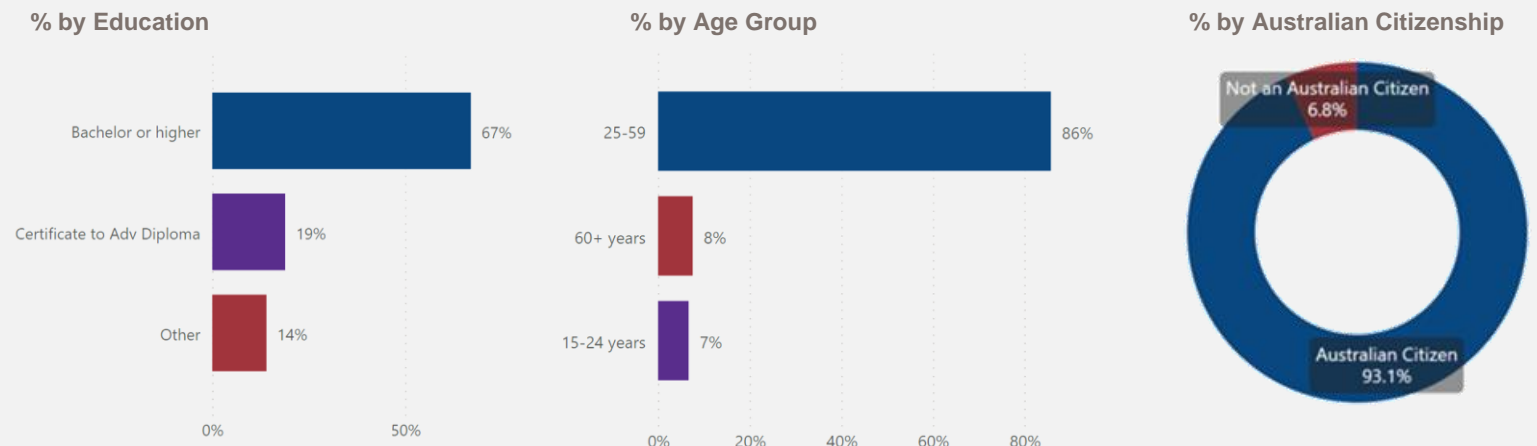


Employment by Industry in the ACT

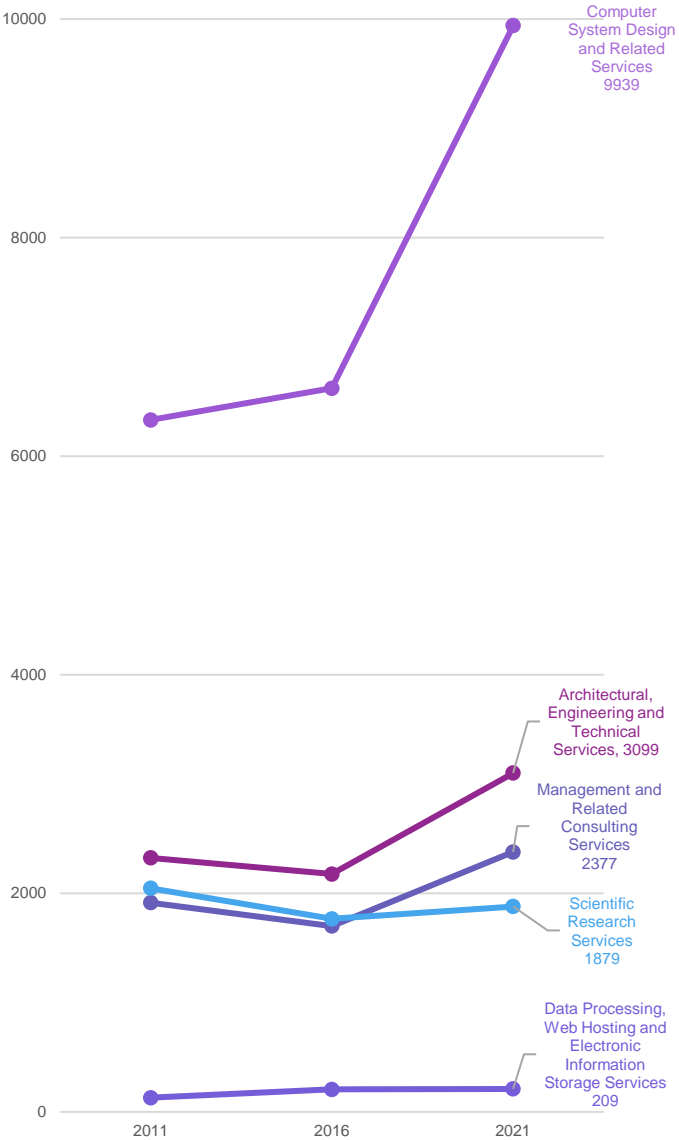


Source: ABS, Labour Force, Detailed, August 2022 data (seasonally adjusted by the National Skills Commission).

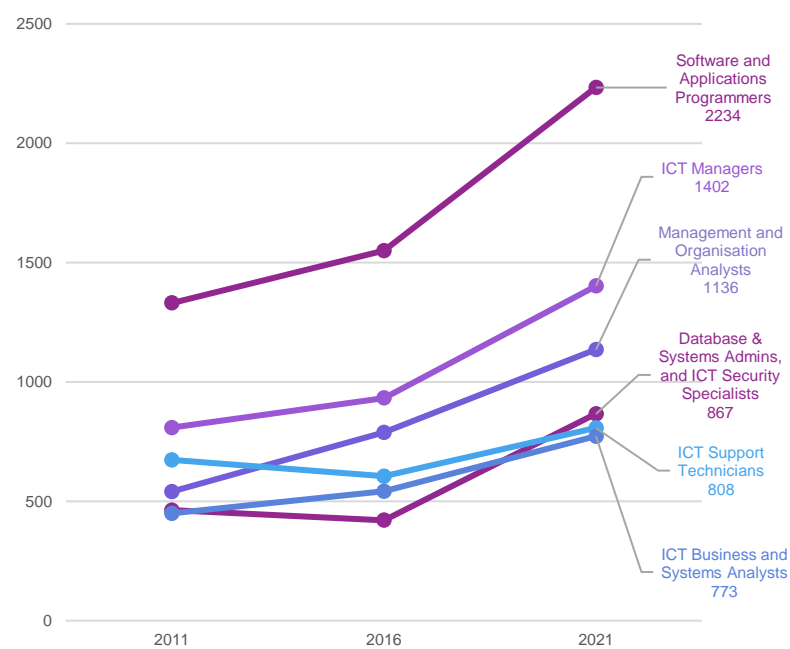
Employment by Occupation



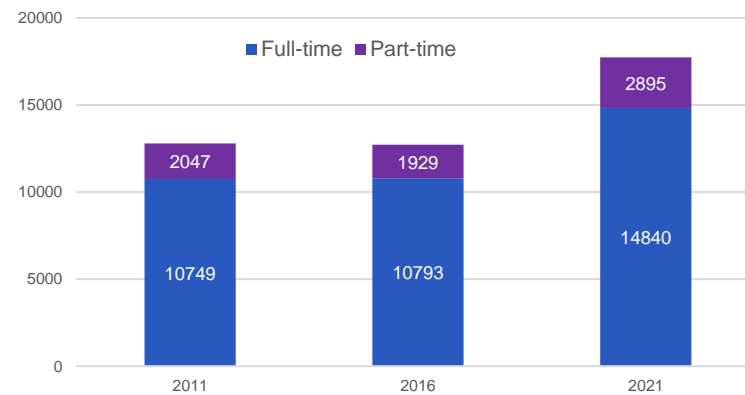
Employment by top sub-industries



Employment by top occupations



Employment by type



Industry snapshot

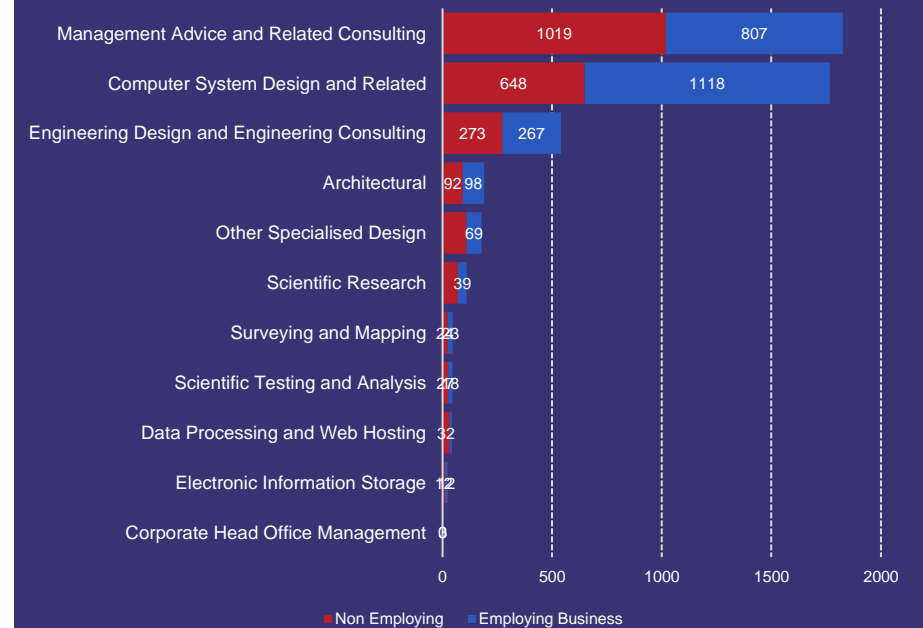
4,773

Total number of businesses in the technology industry in 2021, 2,465 of which are employing businesses

Contribution to ACT economy

6.9% of total employment

Number of business by sub-industry



Source: ABS census 2021

Source: ABS 2021

Online Vacancies

September 2022

1,808

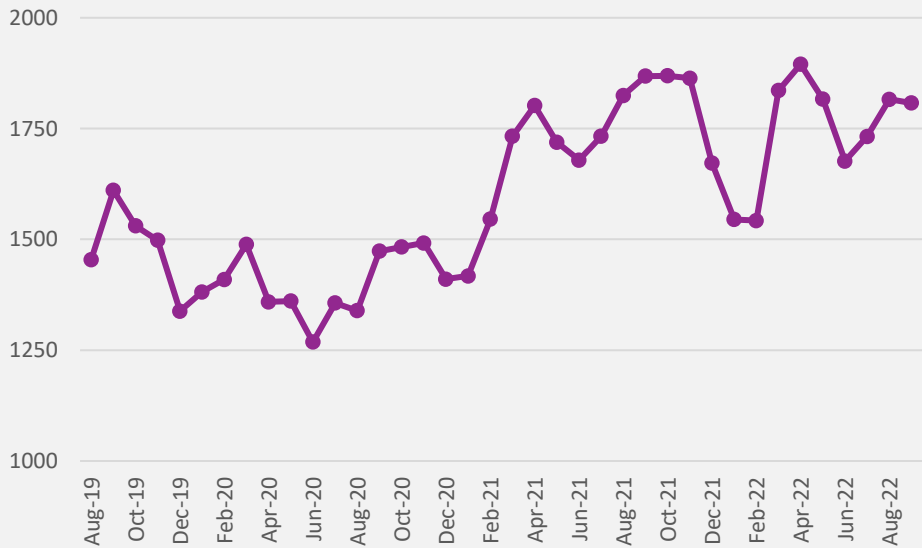
Online job vacancies in occupations related to the technology industry

8,155

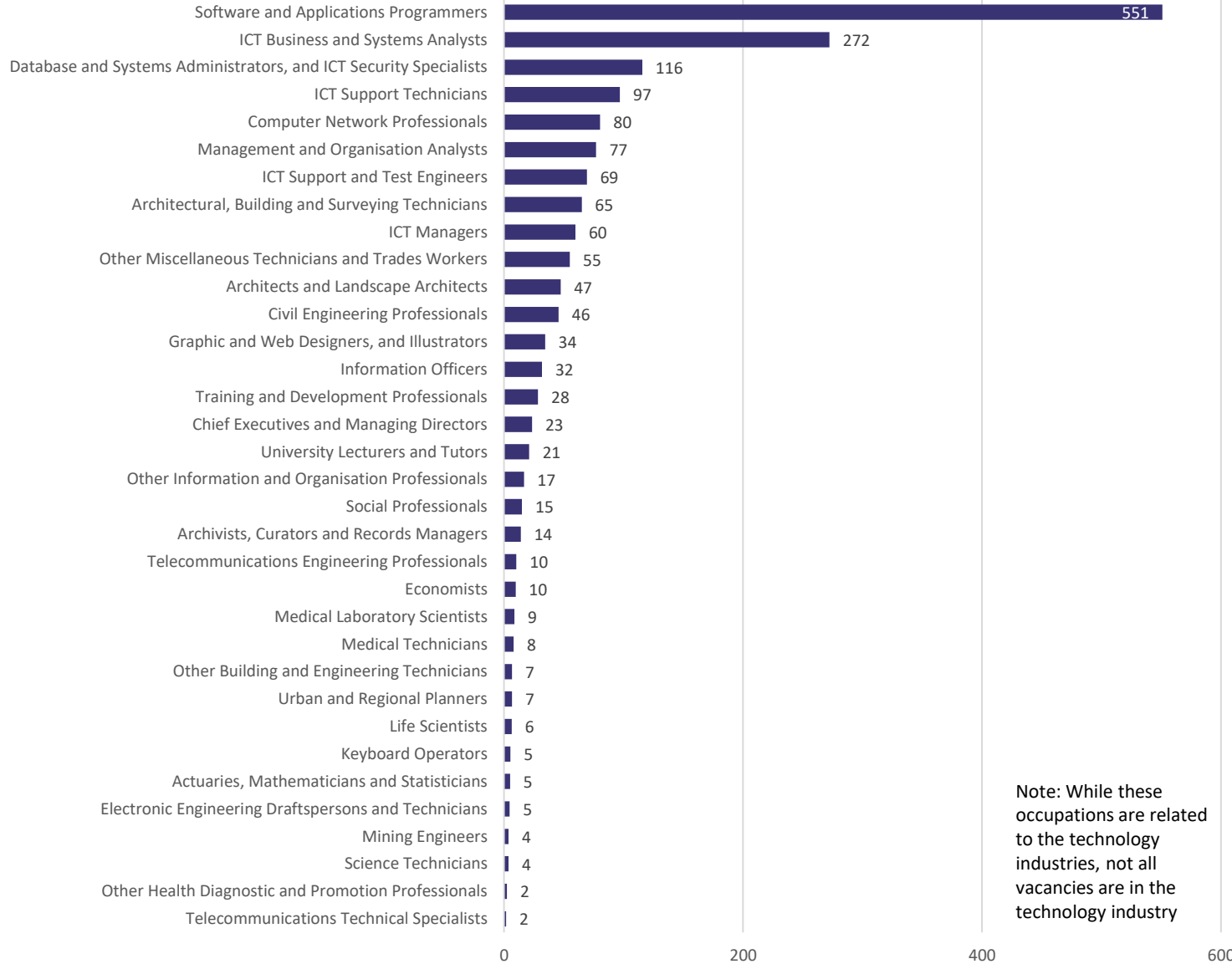
Total online job vacancies in all occupations in the ACT

Source: Internet Vacancy Index (NSC, October 2022)

Online job vacancies in occupations related to the technology industry – August 2019 to September 2022



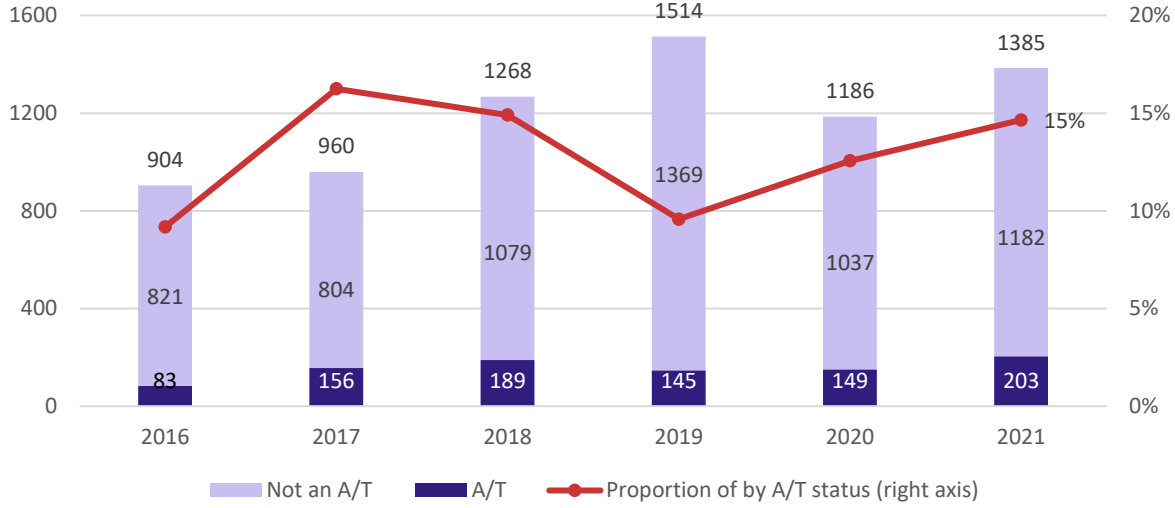
Online job vacancies by occupations related to the technology industry - September 2022



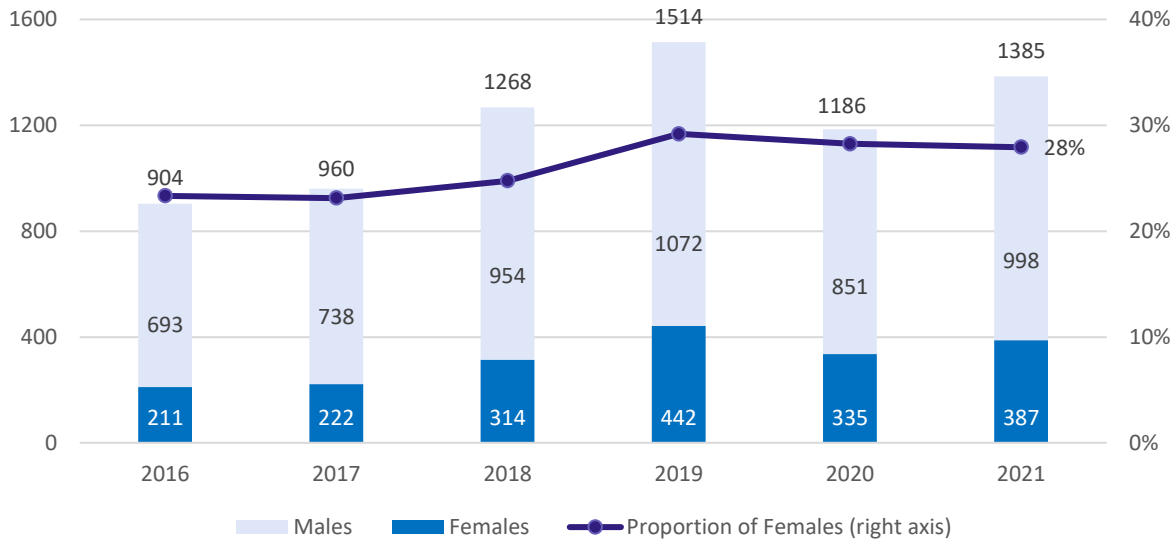
Note: While these occupations are related to the technology industries, not all vacancies are in the technology industry

The Internet Vacancy Index (IVI) is a monthly data series measuring online job advertisements, compiled by the National Skills Commission (NSC). IVI data count job advertisements newly lodged on the SEEK, CareerOne and Australian JobSearch online job boards during the reference month.

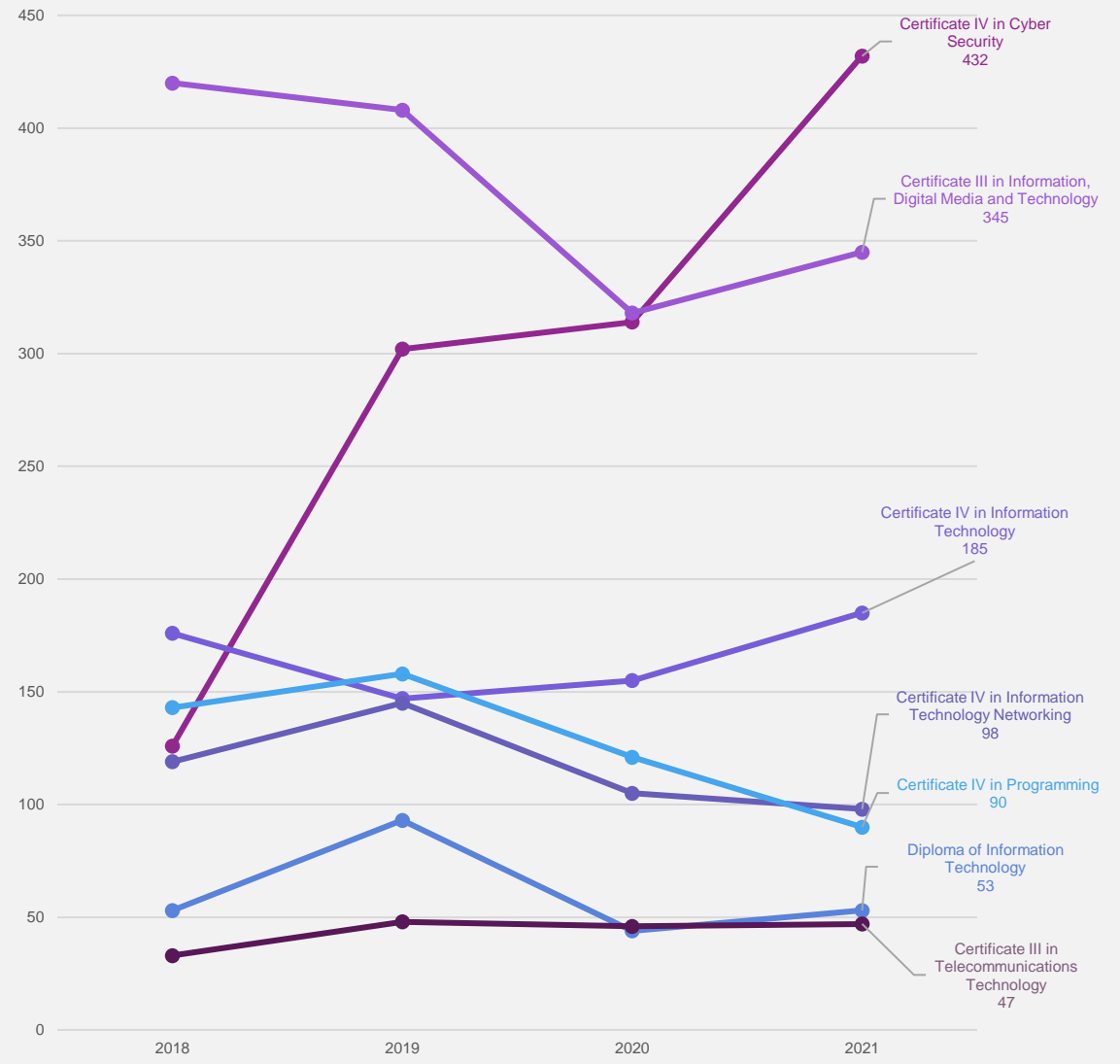
Government Funded Student Enrolment by apprentices and trainees (A/T) status



Government Funded Student Enrolment by gender



Student Commencement by top 10 qualifications



Source: VOCSTATS (NCVER, 2022)

Source: AVETARS

Active Apprentices & Trainees (A&Ts)
October 2022

Qualification	Number of A& T
Certificate III in Telecommunications Technology	124
Certificate IV in Information Technology	65
Certificate IV in Telecommunications Engineering Technology	37
Certificate III in Information Technology	15
Certificate IV in Cyber Security	13
Certificate II in Applied Digital Technologies	12
Certificate III in Information, Digital Media and Technology	2
Total	268

Source: AVETARS

Student Completion by top 5 qualifications

Qualifications	4 year completion rate*
Certificate IV in Cyber Security**	70%
Certificate III in Information, Digital Media and Technology	41%
Certificate IV in Information Technology	37%
Certificate IV in Information Technology Networking	33%
Certificate IV in Programming	23%

*students who successfully completed the course as a percentage of students that commenced in 2018

**the course was introduced in 2019, so data for students who commenced in 2019 was used

Short courses (JobTrainer Funded)

Capture and Present Big Data Skill Set
Manage Big Data Skill Set
Cyber Security Threat Assessment and Risk Management Skill Set
Cyber Security Awareness Skill Set
Digital Fundamentals Skill Set
Digital Colour Skill Set
Advanced Digital Colour Skill Set
Digital Printing Skill Set
Technician Hybrid Fibre Coaxial Skill Set
Network Technician HFC Skill Set
Cyber Incident Response Skill Set
Cyber Incident Threat Detection and Prevention Skill Set
Cyber Security Strategy and Governance Skill Set
Digital Skills for Small Business Skill Set
Understand The Use of Social Media for Business Purposes
Implement Social Media and Online Customer Engagement
Promotion and Marketing
Capture and Present Big Data Skill Set
Manage Big Data Skill Set
Cyber Security Threat Assessment and Risk Management Skill Set
Cyber Security Awareness Skill Set
Digital Fundamentals Skill Set
Digital Colour Skill Set
Advanced Digital Colour Skill Set
Digital Printing Skill Set
Technician Hybrid Fibre Coaxial Skill Set
Network Technician HFC Skill Set
Cyber Incident Response Skill Set

Source: AVETARS

Sector's highlights and key issues

Canberra has the **highest levels of security clearances** among the most educated cyber workforce in the country. By 2025, Australia aims to have one of the top 3 digital governments in the world. The Canberra-based Digital Transformation Agency is developing this strategy.

The city is a leading centre of research in information technology with key strengths in cyber security, analytics and machine learning.

The technology workforce had relatively higher levels of cultural and linguistic, and neurodiversity compared with professional services workers.

In the **VET Sector**, new courses are being introduced to upskill workers in the technology industry especially in the field of cyber security.

Nevertheless, in general, the industry is currently facing the following issues;

- **Skill shortages:** High level of technical proficiency and skills shortage and **difficulty in retention** of staff.
- **Gender imbalance** - low participation of Women.
- **Understaffing** at remote and regional areas.
- **Increased demand for IT professionals in the future** which requires specialised skill sets including transition opportunities and improving productivity of current employees.

Sources: ACS Australia's Digital Pulse Unlocking the tech sector: beyond the million 2022, www.cmtedd.act.gov.au/digital-strategy

Megatrends



Impactful technology

Technological advancement and automation are rapidly changing the lives around the globe. It promoting innovation, learning, and research to address the challenges of modern world. Digitalization and Artificial intelligence (AI) helping to perform more complex tasks to enhance quality of life. People are empowered through smart devices to communicate, learn, interact and manage their lives effectively.



Socio-demographic change

The World is experiencing rapid and massive socio-demographic change, such as an ageing population, which accelerating the demand for automation and more reliance on machines.



Climate change

The megatrend of climate change describe protection of livelihood, infrastructure and people's quality of life. The global objective towards more cleaner and greener approaches to use resources efficiently.



Datafication

This megatrend emphasises that datafication is transforming everything in our life into data which subsequently holds a value. This leads to high demand of IT professionals, data scientists and AI experts.



Demand for work-life balance

Work-life balance is of increasing importance to the workforce. Trends such as hybrid working has shifted the nature of work in the post-pandemic workplace. Flexibility in work for frontline workforce such as flexible rostering is an emerging trend.



Metaverse – extended reality

Technologies that simulate reality, from virtual reality and augmented reality - without any tangible presence is a significant trend. It is getting immense popularity among medical specialists and online gamers.