FutureNow.
Digital Technologies
Industry snapshot

FutureNow is an independent body that provides industry informed advice to influence skills development strategies across the Creative, Leisure and Technologies sectors. Our work assists Western Australia to be prepared with the new order skills required by the evolving economy and our changing society.

Continuing digital infrastructure investment buoys local industry despite global economic challenges

While rapidly shifting global economic sentiment and general uncertainty is impacting onshore in Australia,[1,2] most analysts still project increased spending on digital infrastructure here and internationally. Meanwhile a strong resources sector is continuing to shield Western Australia from the worst impacts of the current financial environment.[3,4,5,6] Governments and private industry continue to invest in software, cloud services, AI solutions, and ongoing servicing, and the Western Australian digital technologies sector is for the most part remaining resilient in this setting.

The global shift to remote working practices and large-scale projects instigated in the immediate wake of the pandemic, were behind the surge in demand for the services of the digital technology industry throughout 2020-22, and were primarily driven by investment by large companies and government. In many or most instances, this absorbed the capacity of Western Australian digital service providers. As a consequence, small-to-medium industry were not always able to source providers for intended digital infrastructure investment, and so these projects continue to filter through. Additionally, difficult economic conditions are driving renewed focus on productivity, automation, and competitive advantage, and in this sense digital investment is protected where other types of expenditure may face budget cuts.

Challenging labour gaps continue despite well-publicised redundancies

Industry recruiters report a labour market downturn for ICT professionals in other Australian states including Victoria and New South Wales. For the time being, Western Australian demand continues to grow, and redundancies are mostly limited to companies with international exposure. This includes multinational companies, that may make broad labour cuts without reference to local economic conditions, as well as Australian companies with reliance on international investors, many of whom have recently been looking to reduce their own exposure to volatile market forces- although there are indications that this trend may be slowing or reversing.[7,8,9,10]

Anecdotal industry advice suggests that redundancies to date have centred on non-technical roles within digital technologies employers such as HR, marketing, project management or research, and this may impact on the proportion of women in the industry, which is already concerningly low.[11]

Conversely, roles engaged in the project cycle, including project architects; business analysts; project managers; programming and development; testing and user experience; networking; service and maintenance staff, are projected to experience ongoing high demand and labour gaps. In particular, ongoing service arrangements borne of digital infrastructure implementation post-Covid, are predicted to drive a boom in Infrastructure-as-a-Service (IaaS), and Platform-as-a-Service (PaaS) spending, driving appetite for service roles. Additionally, workers with skills in cloud, data, cyber security, AI, and machine learning will continue to be in ever-increasing demand.

Escalating risk drives cyber security investment

As the world becomes increasingly interconnected and reliant on digital technologies, the threat landscape has expanded, leaving individuals, organisations, and governments vulnerable to cyber attack. Increasingly sophisticated cybercriminals

continually evolve their tactics, targeting critical infrastructure, sensitive data, and personal information, and the rise of interconnected devices and the Internet of Things (IoT) has further amplified the potential risks, creating a complex web of vulnerabilities.

This global escalation of risks has led to increased investment in cyber security solutions, with several factors driving the heightened focus on protecting digital assets and mitigating potential threats. The growth of cloud-based activity is necessitating robust security measures to safeguard sensitive data and systems. Concerns regarding data maintenance, storage, and handling practices have become critical, prompting organisations to invest in comprehensive security protocols and technologies. Additionally, legislative changes have increased fines, costs, and reputational impacts associated with data breaches, compelling businesses to prioritise cyber security as part of their compliance efforts. Corporate governance and ESG (Environmental, Social, and Governance) strategies now encompass cyber security as a crucial aspect of risk management. As organisations recognise the potential disruptions and financial losses that can result from cyber attacks, they are allocating resources to strengthen their cyber defences, proactively addressing vulnerabilities, and protecting their stakeholders' interests.[12]

Australia leading in start-up sector

Supported by a favourable business environment, government initiatives, and a strong entrepreneurial culture, startups have emerged as a driving force in the Australian economy. According to the Tech Council of Australia, 2.3% of the world's tech unicorns ($1Bn+ companies) have been founded in Australia, while our global share of GDP is 1.6%.[13] Australia›s startup ecosystem is characterised by its focus on technology, in sectors such as fintech, health-tech, agritech, and cybersecurity and in particular for Western Australia, resources tech.

The availability of funding options, including venture capital, angel investors, and government grants, has fuelled the growth of startups and provided them with the necessary resources to scale their operations, although current global economic conditions are presenting challenges on this front. With a supportive ecosystem and a growing market, the startup sector in Australia is poised for continued success and is contributing significantly to job creation, innovation, and economic growth. Sector success will be underpinned by access to talent, and so training and education policy models must consider the career trajectories and upskilling support needs of these workers if WA is to capitalise on their potential.

Convergence of technology solutions drive jobs evolution

The rapid pace of technological advancement within the digital technology industry has resulted in a constantly evolving skills needs profile for employers. Traditional job roles are being transformed, not only beyond the sector but also across it, and new job roles are emerging to meet the demands of the digital age.

For example, the increased reliance on AI and machine learning has created a demand for data scientists, AI engineers, and experts in algorithm development. The growing importance of data and analytics has in turn led to a need for data analysts and data engineers. Big data has spurred on the level of cyber security threats which have in turn have spurred the demand for cybersecurity specialists who can protect sensitive information and infrastructure. Blockchain technology has given rise to roles in blockchain development and smart contract management. IoT has opened doors for professionals skilled in connectivity, sensor technology, and data integration. Green technologies and sustainability efforts have created opportunities in renewable energy, energy efficiency, and environmental monitoring. More recently, the potential of quantum computing has sparked a need for quantum computing scientists and engineers.

Increasingly, each of these roles becomes at once more specialised and requires a broader generalist understanding of interacting technologies and their impacts, creating a challenging training and education landscape and a significant upskilling burden for workers.

Populating the digital workforce

According to the 2022 ACS Deloitte Digital Pulse report, Australia will need over 1.2 million IT workers by 2027.[14] The report argues that increasing diversity in the IT workforce can potentially create 14,000 new IT jobs per year on average for the next 20 years. Industry is aware that in order to reach its workforce targets, it must attract the broadest possible cohort

of talent to careers in digital technologies. With this in mind, initiatives exist to facilitate accessible pathways to industry for career transitioners, mature workers, Aboriginal and Torres Strait Islander peoples, women, neurodivergent people, regional and remote cohorts, people with disabilities, culturally and linguistically diverse and LGBTQIA+ people.[15,16,17,18,19,20]

Ensuring a diverse workforce in the IT industry in Australia is crucial for fostering innovation and maximising talent potential. By creating inclusive pathways, providing support, and recognising the unique perspectives and skills these cohorts bring, the digital technology industry can benefit from a greater pool of talent, diverse ideas, and enhanced problem-solving capabilities.

Training and education strategies

Key challenges remain for the training and education sector. The speed of skills evolution as well as constantly fluctuating levels of demand make planning delivery especially challenging for this sector. Additionally, challenges for trainers in staying abreast of current technology are ever increasing, worsened by periods of peak demand when many colleges lost teaching staff who rejoined industry, lured by rapidly expanding salary packages.

Vocational training, higher education, and private upskilling solutions have all been developed to provide a rigorous response to the exceptional upskilling needs of the technology sector. Western Australia gazetted the full suite of ICT Information Communications Technology vocational qualifications as traineeships in 2022, including the introduction of a school-based traineeship linked to the *Certificate III in Information Technology*.[21,22] Qualifications through to Advanced Diploma level are available free or half price, including new digital literacy skill sets, specialist cyber security courses, through to a range of specialisation pathways in areas including networking, programming, web dev, cloud engineering, game design, systems analysis and telecommunications.[23] Articulation arrangements are in place for a range of pathways, meaning that cohorts with no prior knowledge of technology can progress through from Certificate II level to post-graduate studies in a manageable, stepped manner.

Meanwhile private market solutions such as Microsoft or AWS digital badging remain highly trusted, recognised and suited to the project-based, fast-evolving digital technology industry, and are the ideal complement to the foundational skills that can be acquired through the completion of one or more full qualifications. Collectively, these solutions are now well developed, accessible, and robust, as well as being flexible enough to be adapted to the shifting skills demand landscape.

A skilled workforce stands as the bedrock of Western Australia›s thriving digital technology sector, igniting innovation and propelling economic growth. WA relies on the expertise of its digital technology workforce to safeguard against cyber threats, generate new intellectual properties that underpin economic diversification, and keep our most valuable and vital industries running. The importance of the digital technology industry›s contribution is poised to escalate. In this unfolding landscape, a genuinely inclusive Western Australian workforce stands as a beacon of potential, offering the best chance for the state to excel within the ever-changing global marketplaces that await.

We would like to hear from you

FutureNow continually seeks feedback from the digital technologies industries to facilitate workforce development, and the creation and delivery of responsive accredited training and skills sets to meet emerging sector needs. If you can contribute to this in any way or require further information, please contact:

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References

1. https://www.oecd.org/economy/global-economic-outlook-improving-albeit-to-a-low-growth-recovery.htm

2. https://www.deloitte.com/au/en/about/press-room/business-outlook.html

3. https://www.gartner.com/en/newsroom/press-releases/2023-04-06-gartner-forecasts-worldwide-it-spending-to-grow-5-percent-in-2023

4. https://www.governmentnews.com.au/government-it-spending-forecast-to-approach-17b/

5. https://www.gartner.com/en/newsroom/press-releases/2023-06-21-gartner-forecasts-worldwide-banking-and-investment-services-it-spending-to-reach-652-billion-in-2023

6. https://itwire.com/business-it-news/cloud/australian-organisations-to-spend-billions-on-public-cloud-services-report.html

7. https://www.sbs.com.au/news/article/end-of-an-era-what-the-tech-wreck-means-for-australian-workers/t9x0m2915

8. https://www.news.com.au/finance/business/technology/australian-company-atlassian-cuts-500-jobs-as-tech-wreck-worsens/news-story/19348fc31c4c368588b599c60e2b5374

9. https://www.afr.com/technology/the-fog-of-fear-lifting-as-venture-capital-splashes-810m-in-three-months-20230704-p5dll1

10. https://www.afr.com/technology/tech-party-is-over-as-canva-and-atlassian-get-tough-and-perks-dry-up-20230706-p5dm5r

11. https://www.abc.net.au/news/2023-03-07/atlassian-cuts-5-per-cent-of-work-force-tech-industry-layoffs/102062078

12. https://www.austrade.gov.au/news/insights/insight-australia-s-a-7-billion-cyber-security-opportunity

13. https://techcouncil.com.au/wp-content/uploads/2022/08/Turning-Australia-into-a-regional-tech-hub_Report-2022.pdf

14. https://www.acs.org.au/insightsandpublications/reports-publications/digital-pulse2022.html.html

15. https://www.witwa.org.au/initiatives/

16. https://research.curtin.edu.au/research-infrastructure/autism-academy/

17. https://wit.org.au/careers/supporting-women-from-culturally-and-linguistically-diverse-backgrounds/

18. https://www.qld.gov.au/jobs/career/digital-careers/digital-jobs/first-nations-digital-careers-program

19. https://primel.com.au/

20. https://www.thoughtworks.com/en-au/about-us/diversity-and-inclusion/lgbtqia-in-tech

21. https://training.gov.au/Training/Details/ICT

22. https://www.dtwd.wa.gov.au/classab

23. https://www.jobsandskills.wa.gov.au/sites/default/files/uploads/ecec-JRP/jswa-lower-fees-local-skills-list-2023-nov-v1.pdf