FutureNow

Creative and Leisure Industries Training Council

Information & Communications Technology

Industry Coverage: Software Publishing, Internet Service Providers and Web Search Portals, Data Processing, Web Hosting and Electronic Information Storage Services, Computer System Design and Related Services.

Industry Overview

Digital technologies continue to grow in Australia and are outpacing many projected growth forecasts – total contribution is currently predicted to grow from $79 billion in 2014 to $139 billion in 2020.[1] A significant milestone was passed in early 2017, with more than half of the world's population now using the internet.[2]

The WA Office of the Government Chief Information Officer launched Digital WA: Western Australian Government ICT Strategy 2016-2020[3] in May 2016 and in November the first WA Innovation Strategy[4] was launched. The strategy was "designed to ignite innovation and position Western Australia as a launching pad for the entire Asian region". Both papers align with the national Innovation Agenda and point to an increased awareness of the potential of STEM industries including information communication technologies. The WA Labor Party released its Plan for Jobs ahead of the March 2017 election, also with a focus on STEM industries and a commitment to establishing an Innovation and ICT Office in WA.[5] It is understood this work will fall under the newly established Department of Jobs, Tourism, Science and Innovation.

Games development, connected devices (the internet of things, or IoT), data storage, network design and data analytics continue to be areas of significant growth. The Australian video game industry generated nearly $3B in 2016 and is growing at 10% p.a. Despite being a fledgling industry, it is valued at US$96B p.a. globally, putting it on a par with the Film industry.[6] The IoT is expanding at such a rate that the number of connected devices globally is estimated to have grown over 30% in a year, to $8.4B.[7]

It is however cybersecurity which is emerging as the area of primary focus for local industry with regards to potential skills and labour gaps, with the growing number of connected devices being employed in the resources sector amongst leading concerns. Cybersecurity is the particular field which industry perceives is not always appropriately sourced with migrant labour and as such they want to see the occupation suitably supported with qualification offerings and awareness raising initiatives locally. As well as a need for highly skilled ICT security experts, there is a requirement that the broader workforce has an appropriate level of understanding with regards to cybersecurity in order to minimise 'weak links' and risks to the broader economy. Industry suggests ICT security should be embedded across a broad set of qualifications, in a similar way to workplace health and safety.

2017 sees the launch of WA's first P-Tech (Pathways in Technology) as Cecil Andrews SHS launches its collaboration with industry representatives including Datacom, Deloitte and Civmec. The program provides students with an industry supported pathway to a science, technology, engineering or mathematics (STEM) related diploma, advanced diploma or associate degree.[8]

The number of ICT graduates continues to be lower than industry requirements and is currently less than half of what it was at its 2002 peak, with new graduates representing only 1% of the total workforce each year.[9] Remuneration has stagnated in this time and is considered to be a significant factor in the decline, as is job security. The cost of gaining a qualification may also be a contributing factor, with high contact hours contributing to a comparatively high cost for some Certificate IV and above ICT qualifications. Industry concerns centre around vulnerability to global economic conditions, with the need to grow a local workforce high on the agenda. In the interim, industry reliance on migrant labour remains high and there is concern, especially in the start-up space, around changes to skilled visa rules. Some sections of industry are concerned that the new rules make Australia a less attractive option for industry talent – problematic because skills shortages in some areas are on a global scale.

Current and future labour market conditions

- In 2015, there were around 628,000 ICT workers in Australia, with 53% of this these embedded as ICT workers in other industries, such as banking.

- Australia's ICT workforce is expected to increase to around 695,000 ICT workers by 2020, representing an average annual growth rate of 2%, versus a 1.4% national average.

- Industry feedback chimes with Deloitte research which suggests demand is growing for software engineers and developers and in cloud computing and cyber security. Demand is also high for occupations that integrate ICT systems and processes with broader business, such as business development managers and business analysts.[10]

Industry development issues:

- Digital technologies are expanding rapidly and there is still concern in some quarters around whether the National Broadband Network will provide adequate infrastructural support to Australian industry.

- Australia performs poorly in measures around the level of collaboration between universities and industry; however the national Innovation Agenda has introduced a number of incentives to support research collaboration.

- Similarly the national agenda seeks to incentivise a start-up culture with a number of financial supports and concessions being made available.

- Industry recognises small business and start-ups face challenges when scaling product

- It could be argued that the most significant development issue facing Australian ICT industries is workforce skills related, with local talent being rapidly drawn away to digital hubs such as San Francisco.

- Sectors of industry see the new skilled visa rules as exacerbating this issue since they no longer provide a permanent migration pathway and thus could be less attractive.

- This can leave local industry without the high-level strategic and innovative workforce capable of developing and delivering scalable product.

Workforce challenges and issues:

- Enrolments and completions at VET and higher level study have been in steady decline for some time and currently stand at less than half of what they were ten years ago.

- There were 347 completions at undergraduate level and above in WA in 2015, versus a peak of 809 in 2002.[11]

- Between 2011-2015, ICT VET enrolments fell from 4112 to 2679 in WA.[12]

- There is considerable industry concern around how to meet the projected uplift in demand for ICT skills when enrolments are dropping.

- Industry work around content mapping of overseas qualifications has raised concern in some areas and contributes to industry's preference to source labour locally where possible, making initiatives to address falling enrolments and completions vital.

- There is a significant shortage of skilled ICT Security Specialists as well as a skills gap in this area across the broader ICT workforce.

- The number of primary 457 visa applications granted in WA in the Information, Media and Telecommunications sector fell by 12.2% between 2014-15 and 2015-16. Industry expects that new skilled visa rules will lead to a further decline in the coming year.[13]

- Industry recognizes the need to improve the skills base locally and that it is left vulnerable to changing market conditions

globally by relying on Western Australia remaining an attractive option for skilled migrants.

- Some low-to-medium level vocationally-oriented ICT roles will continue to be replaced by the technology itself, as others shift overseas. This leaves a pathway gap with fewer entry level roles available for graduates to "cut their teeth" in.

- The pace of change possible with regards to training and education content is not always adequately able to meet the pace of change within industry. This issue has been recognised by the ICT Industry Reference Committee (IRC) and PwC, the Skills Service Organisation. A new ICT Training Package was released in 2016 with a view to keep content at a level general enough to accommodate industry developments where possible.

Current Training Council areas of focus:

- Advocating for the benefits of accredited training and facilitating closer links between providers and industry in order to improve the flow of detailed information about industry needs.

- Supporting industry in avoiding labour shortages through providing current industry information to the Department through contributing to the State Priority Occupation List

- Providing qualifications and pathways information to stakeholders through contributing to the VET in Schools Register.

- Continual development of the FutureNow ICT Industry Advisory Group which to date includes senior representatives of industry peak bodies the Australian Computer Society and the Australian Information Industry Association, and of the national IRC, WA Police, broader industry and RTOs.

Attachments

- Digital WA: Western Australian Government ICT Strategy 2016-2020

- Western Australian Innovation Strategy

- National Innovation and Science Agenda

- WA Labor Plan for Jobs

- Deloitte: Australia's Digital Pulse 2016

- Parliamentary Report on the Video Game Development Industry

References

1. https://www2.deloitte.com/au/en/pages/economics/articles/australias-digital-pulse.html Accessed 8.2.17
2. http://wearesocial.com/blog/2017/01/digital-in-2017-global-overview Accessed 10.2.17
3. http://gcio.wa.gov.au/initiatives/digital-wa-state-ict-strategy/ Accessed 13.2.17
4. http://gcio.wa.gov.au/initiatives/wa-innovation-strategy/ Accessed 13.2.17
5. https://www.markmcgowan.com.au/files/Jobs_policy/WA_Labors_Plan_for_Jobs.pdf Accessed 10.2.17
6. http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Video_game_industry/Report Accessed 24.5.17
7. http://www.gartner.com/newsroom/id/3598917 Accessed 23.5.17
8. http://cecilandrewsshs.wa.edu.au/p-tech-pilot-school/ Accessed 13.2.17
9. https://www2.deloitte.com/au/en/pages/economics/articles/australias-digital-pulse.html Accessed 8.2.17
10. https://www2.deloitte.com/au/en/pages/economics/articles/australias-digital-pulse.html Accessed 8.2.17
11. Department of Education uCube data. Accessed 8.2.17
12. DTWD Cognos VESU data cube. Accessed 13.2.17
13. https://www.border.gov.au/ReportsandPublications/Documents/statistics/457-quarterly-report-2015-12-31.pdf Accessed 8.2.17