



24 August 2018

ACS submission to the Australian Public Service review

To whom it may concern,

Thank you for the opportunity to contribute to this discussion.

The ACS is the professional association for Australia's information and communications technology (ICT) sector. We are passionate about the ICT profession being recognised as a driver of innovation and business – able to deliver real, tangible outcomes.

Our vision is for Australia to be a world leader in technology talent that fosters innovation and creates new forms of value. We have over 42,000 members and seek to influence positive change within industry and in the area of public policy via publications that leverage the knowledge capital of ACS members¹.

The fourth industrial revolution is transforming the nature of work. We are seeing an unprecedented rate of automation and digitisation across global economies in response to citizen demand for mobility and access to services anywhere and anytime. This trend requires a workforce augmentation strategy that optimises infrastructure to capture large volumes of data, enables automated analysis and response (machine learning), and frees our human capital to focus on higher value functions where there is greater variability and social interaction.

In a digital economy, it is not possible to outsource risk and accountability. Australia has already seen a number of false-starts with government systems failing, and as a result, observing an erosion of citizen trust. That said, the mega trends are clear, and continued automation and digitisation is an inevitability. The problem to solve then is how to embrace large volume data capture, availability and use where appropriate, while protecting privacy and improving the cyber security posture of government departments and agencies.

As part of this solution and as a key outcome from the APS review, ACS would encourage ongoing investment in high level skills in enterprise and solutions architecture, systems integration, technology governance, project management, business analysis and cyber security. APS employees have unique and powerful insights into citizen needs, which is essential for effective UX design. Having in-house skills to take ownership of the product and service roadmap and enhance the cyber security posture are areas that can be amplified in the current operating context.

In **Australia's Digital Pulse 2017**, four of the thirteen policy priorities we identified are directly relevant to the Australian Public Service (APS) Review:

- **Strengthen Australia's cyber security capabilities.** It's important for the government to collaborate with industry and academia to address cyber security threats; better detect and respond to vulnerabilities and attacks; and build Australia's cyber skills and capabilities.
- **Accelerate efforts towards open data.** Work must continue towards making more government data publicly available, and considering how best to analyse data to improve our national welfare.
- **Support digital transformation in government.** Efforts must continue towards the digital transformation of government transactions and services, and learning from recent challenges associated with this digitisation process.
- **Respond to technology-related workforce disruption.** Planning and investing in necessary technology, innovation and education policies will ensure Australia can fully realise the benefits from new jobs and industries that emerge as the digital economy grows.

With increased use of technology, APS employees will be required to have digital capabilities even if they are not employed in technology specific occupations. Australian forecasts suggest that heavy users of ICT in the workplace will increase by 1.6% per year to 2,794,000 by 2023, a projected gain of 252,900 jobs over this period.

Skills shortages mean that over 50% of Australian workers in technology related occupations do not hold degree level technology-related qualifications. ACS Australia's Digital Pulse 2018 contains a range of statistics that demonstrate major issues in relation to skills shortages, particularly in new and emerging technology areas:

- Demand for ICT workers is set to grow with the Australian economy, requiring an additional 100,000 workers (to 758,700) by 2023.
- Becoming an international leader in digital skills and employment would involve an extra 100,000 ICT jobs – in addition to the 100,000 already forecast over the next 5 years.
- Employer demand for AI-related jobs in Australia has doubled since 2015 and was 50% higher in January 2018 compared to a year earlier (Indeed Job Search Website).
- Australia will need almost 38,000 more data science workers in the next five years.
- Australia will need 11,000 more cyber workers over the next decade (AustCyber, 2017).
- Demand for blockchain development skills was recently identified as the fastest-growing skill on the online platform Upwork (Mearian, 2018).
- Over the 15 years to 2030, the productivity gains resulting from increased automation could boost the Australian economy by \$2.2 trillion, and reduce the amount of manual work performed by the average Australian by 2 hours per week (AlphaBeta, 2017).

There are almost two million people employed across three levels of government in Australia, meaning that 16 per cent of our nation's 12.5 million-strong workforce is employed in the public sector. This represents a strategic opportunity for enabling knowledge and skills transfer across the broader Australian economy.

Through the APS review process, we would encourage:

- 1) That the APS human capital is recognised and treated as a strategic asset:
 - Recruitment investment occur now to prepare for emerging technology areas such as artificial intelligence, machine learning, Internet of Things and edge computing, data science, cyber security, blockchain and distributed ledger technologies.
 - Rapid upskilling and retraining for emerging technology areas; recognising some skills within the APS may be more readily transferrable to these emerging areas than others.
- 2) Recognition that the risk assessment, risk management, and technology governance accountabilities cannot be outsourced.
- 3) Support development of privacy preserving data sharing frameworks.

We would be please to provide further input during the review process.

Yours sincerely



Andrew Johnson
Chief Executive Officer

ⁱ Relevant reports:

[ACS' Australia's Digital Pulse 2018](#); an investigation into Australia's international ICT competitiveness performance and game changing ideas to unlock new sources of economic growth.

[Australia's Cyber Security Strategy: Execution & Evolution](#); this policy brief seeks to further clarify the nature of Australia's offensive cyber capability, recommending improved communications, using innovative staff recruitment and retention options, deepening industry engagement and reviewing classification levels in some areas.

[Data Sharing Frameworks](#); A technical white paper outlining the challenges and potential solutions to open data sharing while maintaining individual privacy, for business and government alike.

[ACS' Australia's Digital Pulse 2017](#); thirteen policy priorities to fuel Australia's digital workforce boom.

[Tomorrow's Digitally Enabled Workforce](#): Megatrends and scenarios for jobs and employment in Australia over the coming twenty years.