atse.org.au

Submission to the Productivity Commission

ATSE submission on the 5 Year Productivity Inquiry: Australia's data and digital dividend

7 October 2022

ATSE
Australian Academy of Technology & Engineering

GPO Box 4776
Kingston, 2604
ACT, Australia
T + 61 2 6185 3240
F + 61 3 9864 0930
E info@atse.org.au

ATSE SUBMISSION ON THE 5 YEAR PRODUCTIVITY INQUIRY: AUSTRALIA'S DATA AND DIGITAL DIVIDEND

The Australian Academy of Technology and Engineering (ATSE) is a Learned Academy of around 900 independent, non-political experts helping Australians understand and use technology to solve complex problems. Bringing together Australia's leading thinkers in applied science, technology, and engineering, ATSE provides impartial, practical, and evidence-based advice on how to achieve sustainable solutions and advance prosperity.

ATSE welcomes the opportunity to respond to the Productivity Commissions 5 Year Productivity Inquiry: Australia's data and digital dividend.

SUBMISSION SUMMARY

Recommendation 1: The Australian Government should develop a regulatory framework which supports new digital technologies.

Recommendation 2: The Australian Government should provide clarification on data sharing regulation between States and the Commonwealth.

Recommendation 3: The Australian Government should develop a data sharing framework which supports robust anonymisation of data and in-turn facilitates sharing.

Recommendation 4: The Australian Government should develop a framework to provide research data sets to the Australian research community.

Recommendation 5: The Australian Government should engage research institutes to work with Government suppliers on adopting and maintaining cyber security technologies.

Recommendation 6: The Australian Government should develop a regulatory framework which supports victims of data breaches.

Recommendation 7: The Australian Government should develop regulations to govern the ethical design and development of data systems and tools.

Recommendation 8: The Australian Government should develop a regulatory framework on Indigenous Data Sovereignty.

Recommendation 9: The Australian Government should consider the requirements of digital infrastructure beyond a 5-year period when developing regulation on minimum level of access to telecommunications services.

Recommendation 10: The Australian Government should consider existing relevant international and Australian digital and data standards as part of any project initiation.

Recommendation 11: The Australian Government should recognise data as an asset.

Recommendation 12: The Australian Government should bring spatial data under one standard and release it as open source.

Coordinating the policy and regulatory environment

A New Regulatory Framework

It is difficult to foresee the long-term impact of the new technologies being released into the market. Technology is evolving so rapidly that it's hard to categorise according to traditional regulatory frameworks. The Australian Government should provide regulation to mandate fair dealing, which would help consumers understand risk, and minimise severe adverse outcomes. Peer-to-peer lending, crowd sourced funding and other new, technology-driven business models are examples where regulators should work closely with developing industry players to support innovation whilst protecting the public from unscrupulous players or adverse risk. Regulators can work collaboratively with industry and consumer groups to evolve codes of practice and regulation which allow innovation to flourish at the same time as protecting consumers. This requires new, agile thinking from regulators. Regulators can learn from international experience and iteratively develop codes of practice and regulation.

Recommendation 1: The Australian Government should develop a regulatory framework which supports new digital technologies.

Creating New Data Sharing and Integration Opportunities

Provide Regulatory Clarification

The benefits of sharing data in a way which preserves individual privacy have been consistently identified by professional bodies (Australian Computer Society, 2021). The Federal and State Governments are some of the greatest curators and consumers of data in Australia. The regulatory complexity which governs data sharing between states and commonwealth highlights the challenges associated with greater sharing of government data. Clarifying regulations associated with the release and use of government data will help encourage different Government agencies to open up and share data. Efforts have been made at both Federal and State levels, however adoption of a more proactively open data policy framed within the scope of existing legislation would provide the necessary clarity many agencies need to open up data sets.

Recommendation 2: The Australian Government should provide clarification on data sharing regulation between States and the Commonwealth.

Research on Data Sharing Privacy

One of the major concerns of technology driven businesses is the potential for others, such as scammers, to identify individuals and gain access to personal or sensitive information by collating multiple data sources. This concern about privacy and security is limiting uptake of online services by members of the public and governments. Focused research is needed to develop robust methods of sharing data in a way which maintains privacy within an Australian regulatory context. The areas which have the greatest potential to drive productivity in Australia are also the areas which require access to the most sensitive and personal data sets, such as health, human services, and education. A focused effort on mechanisms which allow data to be anonymised and shared with industry and the research community will alleviate many of the biggest challenges facing Australia and open-up industry-led innovation and productivity.

Recommendation 3: The Australian Government should develop a data sharing framework which supports robust anonymisation of data, which would increase consumer confidence in online services.

Data Access for Researchers

Providing access to anonymised data can assist with developing a greater understanding of large scale, complex problems. For example, sharing multi-faceted data from a range of sources, in a precise and timely manner, is critical during disasters. This data sharing can provide benefits in disaster prevention and preparedness, as well as response and recovery operations. The most valuable data sets for researchers are however often the ones which are most sensitive. While the recommendation above seeks a means of sharing data widely, there is value in sharing data with research institutes to explore issues of subtlety and complexity for non-commercial purposes, if this is done with security and anonymity in mind. Providing a framework under which research organisations can gain access to anonymised versions of significant, national data sets is crucial to understanding some of the most significant national challenges including health, the implication of an aging population and national productivity.

Recommendation 4: The Australian Government should develop a framework to provide research data sets to the Australian research community.

Balancing Cyber Security and Growth

Incorporating Cyber Security into Technology Procurement

As a large purchaser of digital and data-related products, it important that the Australian Government encourages a greater focus on cyber resilience in procurement decisions. To encourage suppliers to invest in cyber resilience and response, the Australian Government should engage research institutions such as CSIRO and universities. These institutions could work with suppliers in adopting and maintaining cyber security technologies in their procurement strategies.

Recommendation 5: The Australian Government should engage research institutes to work with Government suppliers on adopting and maintaining cyber security technologies.

Supporting the Ethical use of Technology and Data

Developing a regulatory framework which supports victims of data breaches

The Australian Government should develop a regulatory framework and action plans to proactively handle cases of individual privacy violation, rather than attempt to find solutions after the violation has occurred. This would help build confidence in a world of increasingly digital services. Frameworks already exist for credit card and payments fraud, so the recommendation is to extend this to other forms of digital services.

Recommendation 6: The Australian Government should develop a regulatory framework which supports victims of data breaches.

Development of Ethical Design and Development Regulations and Policies

In addition to regulations on ethical use of digital technologies, regulations to govern ethical design and development of systems and tools based on emerging and disruptive digital technologies are equally important. This regulation should focus on ensuring data collection and use is gender equitable. Poorly designed systems can entrench inequality and the marginalisation of under-served communities. This first level of policy and regulation can mitigate undesirable effects in producing potential unethically designed and developed systems/tools for use by the general public.

Recommendation 7: The Australian Government should develop regulations to govern the ethical design and development of data systems and tools.

Develop a regulatory framework on Indigenous Data Sovereignty

Indigenous data sovereignty is a growing global movement aimed at ensuring Indigenous peoples can govern the creation, collection, ownership, and application of their data (AIATSIS, 2019). It is a movement which is outlined in the United Nations Declaration on the Rights of Indigenous Peoples which Australia supports. IP Australia has recently undertaken consultations on Indigenous Knowledge and 3 of the key issues raised during this process were (IP Australia, 2019):

- Misuse of Indigenous languages, words, and clan names.
- Misappropriation and misuse of Traditional Knowledge; and
- Use of Indigenous genetic resources and associated Traditional Knowledge.

Recommendation 8: The Australian Government should develop a regulatory framework on Indigenous Data Sovereignty.

Investing in Regional Digital Infrastructure

Minimum Service Levels

Regulations concerning the minimum level of access to telecommunications services in rural areas should consider the requirements of digital infrastructure beyond a 5-year period. This would be in anticipation of emerging digital services such as tele-health and tele-operated medical robotic systems, which allow for surgery to be completed at long distance. Such services can bring immense productivity benefits to regional and rural communities.

Recommendation 9: The Australian Government should consider the requirements of digital infrastructure beyond the 5-year period when developing regulation on minimum level of access to telecommunications services.

Safeguarding Data Standards

Increase the use of Standards

When a new digital initiative commences it is important to undertake a systematic review of existing standards. However, this does not always occur. This has been shown to be true of many examples including natural hazards reporting and digital driver's licenses in different jurisdictions. Application of existing standards will help minimise reinvention, and reduce differences in approach between jurisdictions, helping create nationally consistent approaches. There should be an identification of existing differences in approaches between jurisdictions, and an identification of areas where no standard (or nationally consistent approach) exists.

Recommendation 10: The Australian Government should consider existing relevant International and Australian digital and data standards as part of any project initiation

Recognising Data as an Asset

Increasingly organisations have stated that data is an asset in the digital economy. Data should be considered a primary factor of production. Unless the value of data can be estimated in an accounting sense, data will be undervalued as a factor of production in the Digital Economy. With more than 100 years of significant international contribution through Standards Australia, Australia has an internationally respected reputation as an authority in practical and relevant standards development. The recommendation is to commission a detailed, focused effort to develop a national accounting framework for data which goes beyond treating data as a footnote in intellectual property accounting.

Recommendation 11: The Australian Government should recognise data as an asset.

Supporting the Use of Spatial Data

Spatial data

Spatial data sets (which is any type of data that describes instances through space and time) arguably have some of the greatest potential for economic impact from improving transport and logistics to helping resolve property disputes. As more services have a spatial component, the number of cases for use of spatial data has grown substantially. Because all data 'happens' somewhere, the spatial component of data associated with services, vehicles, machines, buildings, infrastructure, livestock, weather, and people brings added richness to new service creation. For example, digital twins, which are highly advanced digital representations of the real world, have emerged in recent years as a powerful tool for better harnessing and integrating data to better understand our physical surroundings. Users can organise enormous volumes of data in one location, visualise the data in the form of 3D and 4D (3D plus time) models, and comprehend and analyse the data using advanced analytics when digital twins are created with supporting spatial data, which places digital twins relative to each other to mirror the real world. The utilisation of this framework would deliver a real-world context that enables more informed decision-making while saving costs and creating efficiencies (NSW Government, 2022 and ANZLIC, 2019).

Just as Governments once debated the need to develop a single standard railway gauge, the multiple frameworks for recording spatial data should be harmonised under one national standard. Further, data from the various Australian state and federal data sets should be shared under an open-source licence.

Recommendation 12: The Australian Government should bring spatial data under one standard and released it as open source.

References

Australian Computer Society. (2021). *Sharing Data in Trusted Frameworks*. https://www.acs.org.au/insightsandpublications/reports-publications/sharing-data-in-trusted-frameworks.html

Australian Institute of Aboriginal and Torres Strait Island Studies (AIATSIS). (2019). *Delivering Indigenous Data Sovereignty.* https://aiatsis.gov.au/publication/116530

ANZLIC. (2019). *Principles for Spatially Enabled Digital Twins of the Built and Natural Environment in Australia.* https://www.anzlic.gov.au/sites/default/files/files/principles_for_spatially_enabled_digital_twins_of_the_built_and_natural_.pdf

IP Australia. (2019). *Protection of Indigenous Knowledge in the Intellectual Property System.* IP Australia response to public consultation Template

New South Wales Government. (2022). *NSW Spatial Digital Twin.* https://www.spatial.nsw.gov.au/what_we_do/projects/digital_twin