



Senate Select Committee on Adopting Artificial Intelligence (AI)

Productivity Commission submission

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The Productivity Commission

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Introduction

The Productivity Commission welcomes the opportunity to make a submission to the Senate Select Committee on Adopting Artificial Intelligence (AI).

This submission makes three key points in relation to opportunities to adopt AI in ways that will benefit economic growth (paragraph 1(d) in the Terms of Reference), drawing from the Commission's recent research.¹

- **AI has significant productive potential:** The Commission is of the view that AI will have a substantial impact on productivity and could help to overcome some of Australia's longstanding productivity challenges. While much AI uptake is likely to occur without government intervention, the foundations for digitisation will be important for widespread adoption and government needs to continue to enable both the rollout of digital infrastructure and uplifting of digital skills.
- **Regulation should enable AI adoption, not stifle it:** The Commission has outlined a framework for regulating AI, which focusses on using existing regulation and regulators to manage risks from AI applications wherever possible. The Commission has identified health as an area where strengthening existing regulatory guardrails may assist in managing AI risks and bolstering confidence in its use.
- **Getting data access right will facilitate quality AI use:** The Commission has made recommendations to improve data sharing, including extending data sharing arrangements to trusted private entities under the *Data Availability and Transparency Act 2022* (Cth) (the DAT Act) and developing a national strategy for data to facilitate sharing within the public sector, and challenging data excludability in the private sector.

The remainder of this submission sets out these points in further detail.

AI has significant productive potential

The contribution AI could make to the Australian economy is likely to be sizeable. It is difficult to make a robust forward-looking estimate of the productivity gains on offer from AI as trends in uptake are still forming and AI technologies are rapidly evolving, with frequently expanding technical capabilities and real-world applications.² One estimate suggested generative AI could add up to \$115 billion in productivity gains to the Australian economy by 2030 (a 5% uplift in GDP) (Microsoft Australia and Tech Council of Australia 2023).

In particular, AI has the potential to address some of Australia's most enduring productivity challenges – namely skill and labour gaps, and slow service sector productivity growth.

AI adoption involves both augmenting and automating³ work tasks, which increases labour productivity and frees up workers' time. One study estimated up to 62% of Australians work time could be automated, although this varies by occupation (Bradley et al. 2024). AI can substitute for workers' specific tasks, potentially improving the quality of work for employees. But more typically, AI is expected to enable more efficient use of the existing workforce, particularly in areas where there are skill and labour gaps.

¹ The Productivity Commission released a series of three papers relating to AI in January 2024 (2024c, 2024b, 2024d). The Commission has also examined AI specifically in the healthcare sector in a May 2024 research paper (2024a, chap. 5).

² From 2019 to 2023 the estimated work time of Australians that could be automated by the technology of the time grew from 44% to 62% (Bradley et al. 2024).

³ Current AI use typically involves AI-assisted human decision-making where the AI augments labour inputs. Automation (where the AI does the decision-making itself, albeit with a human in the loop) will likely increase as the capabilities and reliability of AI technologies evolve. This may take some time where uses of AI technologies are high-risk (such as AI making diagnoses).

Generative AI technologies have great potential for application in the services sector⁴ which makes up about 80% of production and 90% of employment in Australia (PC 2021). In the health sector, there is scope for greater AI use that would improve aspects such as routine record keeping and clinical coding, medication alerts and treatment adherence, management of hospital bed capacity and identification of patients at risk of deterioration to improve prioritisation of resources. Many similar examples exist across other parts of the services sector.⁵

Much AI uptake will occur without government intervention. Passive adoption (such as AI integration through updates to third party software) is already well underway in the Australian economy. More deliberate integrations of AI into businesses are occurring as they weigh up the benefits and costs. Adoption could be rapid owing to the significant benefits on the table for businesses who adopt AI technologies and the low cost of adoption in many cases.⁶ Competitive pressures are also likely to spur on AI adoption (Andrews et al. 2022).

Ensuring Australian businesses are ready and able to adopt emerging AI technologies requires a wide-ranging policy response, with the priority being getting the right balance in regulatory settings and ensuring access to data (discussed below). The Commission's *Advancing Prosperity* report highlights the ways in which government can continue to build the foundations for digitisation that meaningfully affect the adoption of new technologies (2023). Those crucial to AI adoption include:

- **Investing in digital infrastructure** – digital infrastructure and a firm's digital capabilities have been found to play a critical role in the productivity premia from adopting AI (Calvino and Fontanelli 2023). Australia compares poorly to other countries on IT maturity (Statista 2022) with internet speeds in particular being slow⁷ and adoption of digital technologies low (ABS 2023). Faster and more reliable internet access, for example through the government-owned NBN and by supporting the elimination of access blackspots, remains a priority for ensuring productivity growth and AI uptake.
- **Bolstering digital and data skills** – ICT skills are fundamental both to adopting AI and achieving productivity gains from AI (Calvino and Fontanelli 2023) but Australia ranks poorly internationally on ICT skill advancement (Statista 2022). In 2022, insufficient staff skills/capability was the most commonly reported factor limiting the use of ICTs in Australia (ABS 2023). Allowing for more flexible, on-the-job training options and better targeting skilled migration programs are two policy levers the government should be using to uplift digital and data skills.

⁴ Where previous waves of automation have focused on manual labour, generative AI can automate knowledge work and in doing so, boost service sector productivity. The productive use of AI for knowledge work has been demonstrated in controlled trials in coding, professional writing tasks and customer service (Brynjolfsson et al. 2023; Kalliamvakou 2022; Noy and Zhang 2023).

⁵ In education, AI has been used to assist with personalised learning, administrative tasks and analysis of student data to provide insights on real-time educational outcomes (Liu et al. 2022; Rizvi et al. 2023). And in hospitality AI may be used to personalise service offerings and recommendations based on consumer preferences, past behaviours and demographics (Hollander 2023).

⁶ The cost of adopting AI will depend on how AI is integrated into a business. While developing you own AI solution can be costly (Reilly 2023), implementing existing 'off-the-shelf' AI tools can cost as little as \$33 per user/month (the current cost in AUD of Microsoft Copilot Pro).

⁷ In 2022 only 58% of CBD-based businesses and 44% of regional businesses reported sufficient internet performance.

Regulation should enable AI adoption, not stifle it

Regulation can help to establish the trustworthiness of AI

A lack of public trust has been noted as a significant barrier to businesses adopting AI technologies. And while the level of public trust in AI is low in Australia – only 34% report trusting AI (Gillespie et al. 2023, p. 14) – trust alone should not be pursued by governments as a policy goal.

Rational distrust of emerging AI technologies can be a healthy and useful market force in fostering positive AI adoption. Consumer distrust of AI technologies can prevent businesses from rushing to adopt AI without the appropriate controls in place or without a foundational understanding of its risks and potential harms. Consumers may also distrust AI technologies where the technologies themselves are lacking in safety and quality and in doing so, divert AI adoption away from unsafe or undesirable technologies or AI uses. For example, concerns about the risk of facial recognition technology being used for mass surveillance have led a number of companies to limit their use of the technology (Davis et al. 2022, p. 8). And while other focal points of distrust, such as that arising from consumers' lack of knowledge or familiarity with AI technologies, may pose some barrier to AI adoption, they will likely ease over time as exposure to AI technologies grows.

Governments should not seek to improve trust but rather the *trustworthiness* of AI technologies and uses. To some extent, trustworthiness will be lifted by the market as consumers and adopting businesses opt for safer and more reliable AI models and suppliers compete on quality. But both businesses and consumers may lack the digital literacy and necessary information to make judgements about the safety and quality of different models. And AI technologies evolve rapidly, with new products frequently entering the market. The right regulatory settings can aid AI adoption by creating guardrails around AI use and in doing so, ensure greater trustworthiness.

How and when governments choose to regulate AI matters

The newness of AI and its 'black box' way of operating have raised concerns. There is mounting pressure on governments internationally to respond quickly and comprehensively, but knee-jerk approaches to regulating AI threaten to stifle uptake and squander potential benefits. While there are clearly risks from AI adoption, government should take a considered approach to regulation that also keeps the benefits of AI in view.

The widespread adoption of AI will heighten the potential risk of certain harms (for example, by encouraging the collection and use of more personal data) and scale-up the impact of some harms (for example, by augmenting the potential for discrimination in more high-impact situations such as in mortgage applications (Martinez and Kirchner 2021), judicial decision-making processes (Liptak 2017) and family services interventions (Sleep and Henman 2022)). The Commission has proposed a stepped approach to regulating heightened or emerging risks from AI (2024d, p. 7).

- In the first instance, effective regulation of AI should be a matter of **assessing existing regulation** to see whether it is fit to manage heightened and emerging risks, and whether regulators are equipped with the resources and skills necessary to apply relevant regulation.
- If it is not sufficient to manage the risk arising from AI use, **existing regulation should be clarified or amended** to bridge these gaps. This can be done through amendments to existing legislation, but also through guidance provided by the regulator or through test cases.
- Where existing regulation is not sufficient and cannot be made sufficient, **new regulation should be risk-based, technology neutral and balance the risks arising from AI use with the benefits** of AI and real-world counterfactuals.

As use cases for AI are established, and risks begin to emerge, this framework should be applied to determine when and how regulation is clarified, changed or introduced. Some early emergent risks provide useful case studies for this framework being applied (box 1).

Box 1 – Revisiting regulatory guardrails in the healthcare sector for AI use

AI has been applied in healthcare in Australia for decades but mostly in research labs and tech firms – it has not yet been routinely incorporated into professionals' workflows, medical record systems or everyday healthcare delivery. The health sector is one of the least mature industries in terms of AI implementation in Australia and internationally (Fifth quadrant 2023; Maslej et al 2023).

The use of software (including that using AI) is regulated under the Therapeutic Goods Administration's (TGA) approval regime. Where an AI tool generates a recommendation for a clinician, but does not replace the judgement of the clinician, it is typically exempt from the TGA's approval regime.

Generative AI has expanded the capacity for AI-enabled clinical decision support software. Such software can save valuable time for clinicians by speeding up their decision-making processes, and reduce errors (Reddy et al. 2019). But using AI to advise on clinical decision making heightens the risks of automation bias and can create opacity around the decision.

There is some question as to whether the exemption for clinical decision support remains effective in managing the heightened risks associated with AI-enabled software. The Commission has suggested that government should revisit this exemption as a first step (2024a). If the risks are not adequately managed, providing further TGA guidance on the use of AI-enabled clinical decision support software or clarification of the scope of the exemption may bridge the gap. Where this is insufficient, amending the TGA's existing risk-based framework would be preferable to new regulation or technology-specific interventions.

Managing these risks effectively through the regulatory regime may assist in promoting safe uses of AI and developing a culture of acceptance amongst clinicians and patients without forgoing the substantial benefits of AI.

Source: Productivity Commission (2024a).

Getting data settings right will facilitate quality AI use

Getting the right settings and enablers around dataset maintenance and use is a necessary early step to realise the potential for substantial productivity gains from data intensive technologies such as AI. The Commission's past recommendations on data sharing and integration are of increased importance in the context of AI adoption.

Given that the vast majority of AI foundation models are developed overseas (Hajkowicz 2024), capturing productivity benefits from AI will not rely solely on Australian data access. But there are many instances where improved access to Australian data could improve the quality and relevance of AI models on the market. And there are areas where context specific data is critical to the accuracy of AI models, for example, in clinical applications in healthcare (Norori et al. 2021).

Australia ranks amongst the poorest performing countries in data availability, data accessibility and government support for data re-use despite having strong frameworks for safe data access (OECD 2023).

Private-sector data sharing is limited by prevailing concepts of ‘excludable ownership’ of data⁸ and a weak social license for sharing. Challenging this excludability where consumers might benefit from retaining some rights over their data could open up data sharing and enable more productive use of private-sector data as was intended, for example, with the Consumer Data Right (PC 2024b, p. 14). Establishing clear and consistent arrangements to allow text and data mining for the purposes of training AI models could be a major boost to AI development in Australia. In this regard, Australia has scope to learn from international copyright arrangements to improve accessibility of data for commercial and non-commercial uses, while protecting incentives in creative industries.

The frameworks around government-funded and collected data sharing are somewhat already in place (such as the DAT Act). However, the fragmented nature of public-sector data means sharing is still restricted by poor data management and curation, and limited coordination between jurisdictions.

At the Australian Government level, the DAT Act has led to new data sharing arrangements with additional safeguards and responsibilities for Australian Government held data. Recent progress on data management has also been made with the standards introduced by the National Archives of Australia in 2021 (National Archives of Australia nd). And the Office of the National Data Commissioner will continue to play a role in facilitating the management of public sector data and enabling greater sharing, such as through the recent Dataplace initiative which brings data custodians within the Australian Government and data users to the one platform (Australian Government nd). Further data sharing beyond the public sector could be enabled through the DAT Act, by extending data sharing arrangements to trusted private entities, individuals and unincorporated bodies and gradually allowing commercial use of the data.

Data sharing across all levels of government could be facilitated with a national strategy for data to align data principles across jurisdictions (PC 2024b, pp. 16–17). Where governments are able to safely and effectively share data for the public benefit, they act as an exemplar to the private sector and help to establish the necessary greater social license for their data sharing. Particularly in areas like health, where government is a major service provider and holder of data, the scope for public-sector data sharing to reap greater public benefit is significant.

Managing data risks is a vital part of ensuring sustainable data sharing. AI raises risks to privacy and the use or misuse of personal information. Failing to manage these risks would erode public confidence in data sharing, among other harms to society and individuals. Privacy law, consumer law and anti-discrimination laws (among others) provide a number of tools for government to manage data risks. Upskilling existing regulators to proactively assess the data risks and resulting harms from AI models as they eventuate will safeguard privacy and instil greater confidence in the public about emerging data practices. Risks that cannot be adequately mitigated by existing regulation should be managed in line with the stepped approach to regulation outlined in this submission.

Getting the regulatory settings right around data – both in bolstering access regimes and controlling misuse of data – will enable greater adoption of high-quality and relevant AI models.

⁸ Much private sector data is co-created by consumers and businesses and could be used to provide greater benefit to those consumers, but it is often exclusively controlled by the party collecting the data despite them having no legal basis for such control.

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