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PORTFOLIO COMMITTEE NO. 1

Artificial intelligence in New South Wales

Report 63

1

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Artificial intelligence in New South Wales

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Artificial intelligence in New South Wales

"July 2024"

Chair: Hon Jeremy Buckingham MLC

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Terms of reference

1. That Portfolio Committee No. 1 - Premier and Finance inquire into and report on artificial intelligence (AI) in New South Wales, and in particular:
   (a) the current and future extent, nature and impact of AI in New South Wales
   (b) the social, economic and technical opportunities, risks and challenges presented by AI to the New South Wales community, government, economy and environment
   (c) current community and industry use of AI and the potential implications for delivery of government services
   (d) the current and future extent, nature and impact of AI on the New South Wales labour market including potential changes in:
      (i) earnings
      (ii) job security
      (iii) employment type
      (iv) employment status
      (v) working patterns
      (vi) skills and capabilities for the current and future workforce
   (e) the current and future extent, nature and impact of AI on social inclusion, equity, accessibility, cohesion and the disadvantaged
   (f) the current and future extent, nature and impact of AI on customer service and frontline service delivery in New South Wales
   (g) the current and future extent, nature and impact of AI on human rights and democratic institutions and processes in New South Wales
   (h) the effectiveness and enforcement of Commonwealth and New South Wales laws and regulations regarding AI
   (i) whether current laws regarding AI in New South Wales that regulate privacy, data security, surveillance, anti-discrimination, consumer, intellectual property and workplace protections, amongst others are fit for purpose
   (j) the effectiveness of the NSW Government's policy response to AI including the Artificial Intelligence Strategy, Ethics Policy and Assurance Framework
   (k) the measures other jurisdictions, both international and domestic, are adopting in regard to the adaption to and regulation of AI
   (l) the successes and positive precedents experienced by other jurisdictions, both international and domestic, to better understand best practice
   (m) recommendations to manage the risks, seize the opportunities, and guide the potential use of AI by government, and
   (n) any other related matter.

Committee details

Committee members

Hon Jeremy Buckingham MLC	Legalise Cannabis Party	*Chair*
Hon Robert Borsak, MLC	Shooters, Fishers and Farmers Party	*Deputy Chair*
Ms Abigail Boyd MLC*	The Greens	
Hon Dr Sarah Kaine MLC	Australian Labor Party	
Hon Stephen Lawrence MLC	Australian Labor Party	
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Hon Cameron Murphy MLC***	Australian Labor Party	
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** The Hon Jacqui Munro MLC substituted for the Hon Damien Tudehope MLC from 8 September 2023 for the duration of the inquiry.

*** The Hon Cameron Murphy MLC substituted for the Hon Bob Nanva MLC from 24 August 2023 for the duration of the inquiry.

Secretariat

Talina Drabsch, Principal Council Officer
Faith Aghahowa, Administration Officer
Rhia Victorino, Director

Chair's foreword

We appear to be in the midst of a digital revolution, as numerous technologies advance at an exponential pace. While artificial intelligence has been around for some time, it was the launch of a form of generative artificial intelligence, ChatGPT, in November 2022 that thrust AI into the centre of public attention and debate.

The possibilities associated with artificial intelligence are exciting, including potential productivity gains and economic growth, improving the accessibility of government services for those previously limited by reason of location or disability, and advances in medical science that enable the better detection and treatment of disease. However, there are also many risks and concerns associated with the irresponsible use of artificial intelligence as well as the unknown limits of machine learning. These risks and the possible disruptions to the economy and society that could result are a cause of unease for many.

This inquiry explored what we know about artificial intelligence so far, what it can do, and how it already features in many aspects of our lives, as well as the way it is being used by businesses and the government. The committee received a great deal of evidence about the various risks, opportunities and challenges presented by artificial intelligence, with various suggestions as to how these are best balanced and managed. We also heard how current policy and legal frameworks are already able to respond to some of the issues raised by artificial intelligence, while identifying gaps that may require regulatory action.

It is clear that the adoption of AI technologies will have a substantial impact on the economy and labour force, with some predicting that it could contribute between $45 billion and $115 billion in annual economic value for Australia by 2030. The associated productivity gains and economic growth is particularly relevant for New South Wales, due to it having the largest tech workforce in Australia as well as being home for a number of university and research institutes that focus on artificial intelligence. While the opportunities of artificial intelligence should not be squandered or unduly restricted, its adoption by businesses and government must be done mindfully and responsibly to ensure that its use is ethical. The continuing rapid development and application of artificial intelligence will require ongoing consideration and oversight to ensure that an appropriate balance continues to be struck. Care is needed to ensure that the transition and adjustment of industries occurs with as minimal disruption as possible.

New South Wales has in many respects led the way in Australia, having been the first jurisdiction to have a whole of government AI ethics policy. This was implemented in September 2020 along with the NSW Artificial Intelligence Strategy. An AI Assurance Framework followed in March 2022, again the first of its kind in Australia. Our recommendations to the NSW Government are to ensure that New South Wales continues to proactively respond to artificial intelligence from a position of knowledge and strength.

The committee is enormously grateful to all who participated in the inquiry, including those who gave of their time and expertise in providing briefings to members, prepared submissions, as well as those who appeared as witnesses at the hearings. Your consideration of the various issues involved and particular insights and perspectives were invaluable. The committee is also thankful for the opportunity to have visited Data61, CSIRO at Eveleigh and the UNSW AI Institute at the University of New South Wales, and for their staff who gave generously of their time and expertise, to deepen the committee's understanding of artificial intelligence, where it is currently, and where it is heading.

I would also like to thank the members of the committee for their thoughtful and respectful participation throughout the inquiry, and for their collaborative approach to engaging with the issues.

The Hon Jeremy Buckingham MLC,
Committee Chair

Recommendations

- working across all government departments and offices, including with the Information and Privacy Commissioner, Chief Scientist and Chief Data Officer, to assist the responsible uptake and regulation of AI technology by Government
- providing ongoing strategic advice to the Government about trends, opportunities and risks of AI use in NSW government departments
- leading public education initiatives.

Recommendation 11 **85**

That the Government investigate creating a NSW Office of AI with the resources and expertise to ensure the state's service delivery is protected and enhanced through the responsible use of AI technology, including:

- working across government departments to assist the uptake of AI technology to enhance service delivery, including procurement and internal development
- updating the NSW AI Assurance Framework and other AI guidelines periodically, to maintain relevance, legality, national and global alignment and appropriateness for use in NSW
- undertaking public safety campaigns. For example, to raise awareness about deepfake content, misinformation and disinformation online.

Recommendation 12 **85**

That the Government extend partnerships with industry academics, experts and professionals to ensure New South Wales is at the forefront of trends that enhance and protect the state's interests related to AI technology, including:

a) providing public reports on matters, such as:

i) new technologies relevant to state service delivery,

ii) the landscape of AI regulatory frameworks, and

iii) trends, risks and opportunities for the state associated with artificial intelligence. For example, the impact of artificial intelligence on NSW labour markets,

b) providing ongoing strategic advice to the Government about trends, opportunities and risks of AI use in New South Wales,

c) testing AI models to provide public advice on their use in New South Wales. For example, plain language explanations of Large Language Models and the operation of social media algorithms,

d) providing advice on educational requirements to enhance the state's AI capability, including through primary, secondary, vocational and tertiary education,

e) partnering with private enterprise to undertake projects that align with the state's public interest while upskilling the technology industry through a dedicated AI Engineers apprenticeship program,

f) collaborating with the Federal Government's AI Safety Institute to enhance the country's capability and alignment, provide security to the public, attract global talent in the AI industry and offer certainty to business and investors.

Conduct of inquiry

The terms of reference for the inquiry were self-referred by the committee on 27 June 2023.

The committee received 50 submissions and one supplementary submission.

The committee held two public hearings at Parliament House in Sydney.

On 7 September 2023, Professor Toby Walsh, Chief Scientist, UNSW AI Institute, and Dr Ian Oppermann, then Chief Data Scientist, Department of Customer Service, provided a private expert briefing on the technical and governance aspects of artificial intelligence.

The committee also conducted a site visit to Data61, CSIRO, Eveleigh and the UNSW AI Institute, University of New South Wales, Kensington on 16 October 2023.

Inquiry related documents are available on the committee's website, including submissions, hearing transcripts, tabled documents and answers to questions on notice.

Chapter 1 Background

This chapter provides a brief overview of the main events in relation to artificial intelligence in New South Wales, and describes how we are in the midst of a digital revolution. It explains some of the main terminology before outlining how artificial intelligence is already being used in New South Wales. Finally, the approach of the NSW Government to guiding the use of artificial intelligence through various policies is discussed.

The emergence of artificial intelligence

1.1 The term 'artificial intelligence' (AI) was first coined in 1956 as part of a Dartmouth summer research project. While advancements had progressed over the decades since, it was the release of ChatGPT, a large scale language model, on 30 November 2022 that planted artificial intelligence firmly in the public sphere. It was the first time a form of generative artificial intelligence had been made widely accessible to the public.

1.2 Throughout the inquiry, the committee learned how a digital revolution is occurring, as a result of the number and significance of developments in digital technologies, as well as the speed at which change has unfolded.

1.3 For example, Distinguished Professor Jason Potts, Co-director, RMIT Blockchain Innovation Hub, described the various computing innovations that have contributed to the digital revolution 'happening on our watch':

> The connection here is, in the past decade or so, we've had this super cluster of compute innovation. It's distributed computing and blockchain; it's deep-learning computing and AI; it's spatial computing and VR; it's Oracles and cloud computing. When you put all this together, what we have is essentially a digital revolution … happening on our watch, in terms of just fundamental new technologies that aren't just one technology; it's a bunch of them all happening together.[1]

1.4 While acknowledging the significance of these innovations, Professor Potts added that this digital revolution is resulting in a number of widespread 'disruptions', particularly to the economy:

> What this is doing is this is fundamentally disrupting the economy. That disruption is occurring in businesses, it's occurring in jobs, it's occurring in tasks, it's occurring in organisations, it's occurring in the public sector and in the private sector. It's a global economic disruption that is coming through this stack of technologies.[2]

1.5 Mr Peter Derbyshire, Director, Policy and International Affairs, Australian Academy of Technological Sciences and Engineering, explained to the committee that while artificial intelligence is not new, its accessibility and the rate of present change is distinct:

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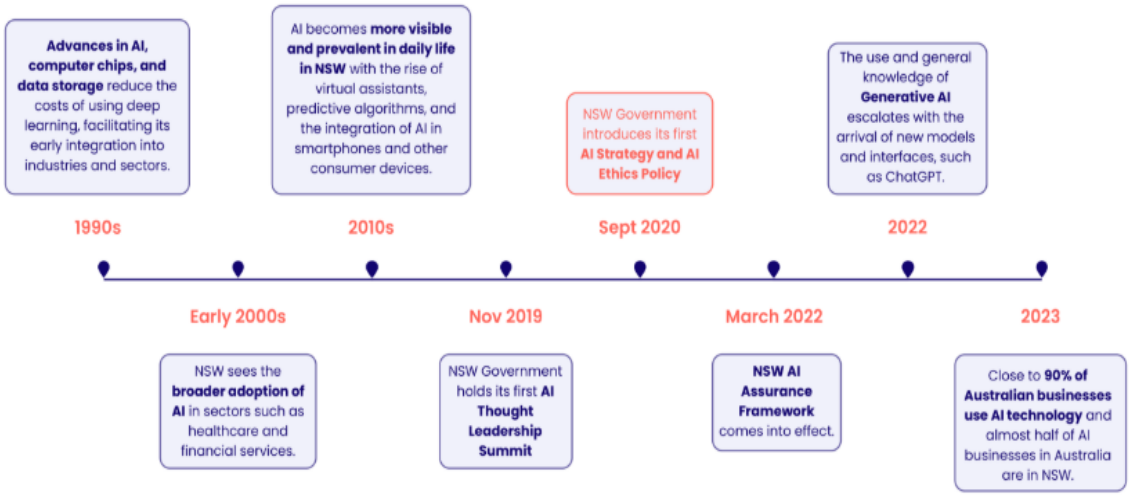
1 Evidence, Distinguished Professor Jason Potts, Co-director, RMIT Blockchain Innovation Hub, 11 March 2024, p 11.

2 Evidence, Distinguished Professor Potts, 11 March 2024, p 11.

> Google's maps and search results, TikTok's content algorithm and even your email spam filters are all forms of AI. But what is new is the rapid pace of change in generative AI and automated decision-making systems, and the increased accessibility of these technologies.[3]

1.6 The timeline in Figure 1 below shows how the use, knowledge and governance of artificial intelligence has progressed in New South Wales since the 1990s.

Figure 1 A timeline of AI developments in New South Wales



Source: James Martin Institute, Leadership for responsible AI: A constructive agenda for NSW – At a glance, December 2023, *p 6.*

1.7 Alongside this rapid pace of change has been a growing awareness of the need to ensure that artificial intelligence is developed and used in a responsible and ethical way. In November 2023, the United Kingdom hosted an AI Safety Summit at Bletchley Park which focused on the safe development and use of frontier AI technology. Australia joined the European Union and 27 countries in signing the Bletchley Declaration. This declaration represented a commitment to international collaboration on AI safety testing and the building of risk-based frameworks across countries to ensure AI safety and transparency.[4]

1.8 In January 2024, the Australian Government released its interim response to the consultation it had undertaken on safe and responsible artificial intelligence in Australia.[5] Its response outlined the following actions for the Australian Government:

- Consider and consult on new mandatory guardrails for organisations developing and deploying AI systems in high-risk settings
- The National AI Centre to work with industry to develop an AI safety standard to provide industry with a practical, voluntary, best-practice toolkit

3 Evidence, Mr Peter Derbyshire, Director, Policy and International Affairs, Australian Academy of Technological Sciences and Engineering, 8 March 2024, p 19.

4 Australian Government, Department of Industry, Science and Resources, *Safe and responsible AI in Australia consultation: Australian Government's interim response*, 17 January 2024, p 5.

5 Department of Industry, Science and Resources, *Safe and responsible AI in Australia consultation: Australian Government's interim response.*

- Work with industry, including developers and deployers, on the merits of voluntary labelling and watermarking of AI-generated material in high-risk settings
- Consider opportunities to strengthen existing laws to address risks and harms from artificial intelligence
- Take forward the commitments made in the Bletchley Declaration, including supporting the development of a 'State of the Science' report
- Engage internationally to help shape global AI governance
- Engage with international partners to understand their own domestic responses to the risks posed by artificial intelligence
- Consider opportunities to ensure that Australia can maximise the benefits of automation technologies like artificial intelligence and robotics.[6]

1.9 In many ways, New South Wales has been seen as the leader within Australia in the realm of artificial intelligence, having released its AI Strategy in 2020.[7] New South Wales was the first Australian jurisdiction to implement a whole-of-government AI Ethics Policy and AI Assurance Framework (discussed in para 1.36 onwards).[8] Professor Edward Santow, Co-Director, Human Technology Institute, described how New South Wales has helped Australia lead in digital government:

> Australia was ranked number five in the recent OECD Digital Government Index, an achievement that drew heavily on New South Wales's approach. That approach recognises that digital government rests both on strong technology but also on strong legal and policy guardrails.[9]

1.10 The way in which the NSW Government has sought to respond to artificial intelligence through the development of appropriate policy is discussed later in this chapter.

Key terms

1.11 This section describes rather than defines some of the key terms used in relation to artificial intelligence, noting that many of the terms in this area 'lack clear, generally accepted meanings'.[10] The key terms outlined below include artificial intelligence, generative artificial intelligence, machine learning, large language models, and automated decision making.

6 Department of Industry, Science and Resources, *Safe and responsible AI in Australia consultation: Australian Government's interim response*, pp 21-22 and 25.

7 Evidence, Mr Derbyshire, 8 March 2024, p 19.

8 Submission 37, NSW Government, pp 14 and 16.

9 Evidence, Professor Edward Santow, Co-Director, Human Technology Institute, 11 March 2024, p 10.

10 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments: Executive report*, March 2024, p 31.

Artificial intelligence

1.12 'Artificial intelligence' is broadly considered difficult to define. In many ways, it reflects the complexities in attempts to define 'intelligence' more generally. A sample of the definitions presented to the committee throughout the inquiry follow.

1.13 In its submission, the NSW Government clarified that artificial intelligence is 'not one thing', but 'encompasses intelligent technology, programs and the use of advanced computing algorithms that can augment decision making by identifying meaningful patterns in data'.[11] Ms Laura Christie, Deputy Secretary, Digital.NSW and Government Chief Information and Digital Officer, NSW Department of Customer Service, described artificial intelligence as 'a transformative technology that uses and learns from data to make predictions that can solve complex problems and inform decision-making'.[12]

1.14 The Information and Privacy Commission and NSW Bar Association referred to the definition adopted by the European Union:

> 'Artificial intelligence system' (AI system) means a system that is designed to operate with a certain level of autonomy and that, based on machine and/or human-provided data and inputs, infers how to achieve a given set of human-defined objectives using machine learning and/or logic- and knowledge based approaches, and produces system-generated outputs such as content (generative AI systems), predictions, recommendations or decisions, influencing the environments with which the AI system interacts.[13]

1.15 Definitions of 'artificial intelligence' may also be shaped by their intended use. The UNSW Allens Hub for Technology, Law and Innovation observed that there is 'no single or optimal definition of artificial intelligence' but that the appropriateness of any definition 'depends on the purpose and context of the definition exercise'.[14] They went on to note that 'defining artificial intelligence in government means asking whether there are particular risks and harms associated with a particular kind of system and, if so, how that kind of system ought to be described for the purposes of legal and regulatory instruments'.[15]

1.16 Meta encouraged the use of 'definitions that strike the right balance between precision and flexibility and consistent with international definitions'[16] such as the following which was adopted by the OECD Expert Group on AI:

> An AI system is a machine-based system that is capable of influencing the environment by making recommendations, predictions or decisions for a given set of objectives. It does so by using machine and/or human-based inputs/data to: i) perceive real and/or

11 Submission 37, NSW Government, p 6.

12 Evidence, Ms Laura Christie, Deputy Secretary, Digital.NSW and Government Chief Information and Digital Officer, NSW Department of Customer Service, 11 March 2024, p 47.

13 Submission 32, Information and Privacy Commission NSW, p 2; Submission 39, NSW Bar Association, p 23.

14 Submission 25, UNSW Allens Hub for Technology, Law and Innovation, p 2.

15 Submission 25, UNSW Allens Hub for Technology, Law and Innovation, p 2.

16 Submission 49, Meta, p 5.

virtual environments; ii) abstract such perceptions into models manually or automatically; and iii) use model interpretations to formulate options for outcomes.[17]

Machine learning

1.17 Discussions about 'artificial intelligence' frequently include references to 'machine learning'. This involves the use of 'computer programs that learn from data and can then generate information or predictions'.[18] Examples of the use of machine learning include the personalisation of content feeds and targeted advertising on social media platforms.[19]

Generative artificial intelligence

1.18 Generative AI models 'generate novel content such as text, images, audio and code in response to prompts'.[20] It is generative artificial intelligence, such as ChatGPT and DALL-E, that have been at the forefront of public discussions about artificial intelligence since the end of 2022.

Large language model

1.19 Another commonly used term is 'large language model' which has been defined as 'a form of generative AI, that have been trained on vast amounts of data to create an output'.[21] For example, text-based generative AI utilises 'sophisticated machine learning algorithms to predict… the patterns and connections between words and phrases which enables it to generate new text or other outputs'.[22] Examples of large language models include Meta's Llama 2, Google Gemini, and Open AI's ChatGPT. Yale and EPFL's Lab for Intelligent Global Health Technologies used Llama 2 to build Meditron, another open source large language model, designed to guide clinical decision-making in the medical field.[23]

Automated decision making

1.20 'Automated decision making' is frequently discussed in relation to the use of artificial intelligence by governments. The ARC Centre of Excellence for Automated Decision-Making and Society defines an automated decision-making (ADM) system as 'a fully or partially automated technical system, used by a NSW government organisation (state government department or agency, or

17 Submission 49, Meta, p 24.

18 Submission 37, NSW Government, p 6.

19 Submission 49, Meta, p 3.

20 Australian Government, Department of Industry, Science and Resources, *Safe and responsible AI in Australia: Discussion paper*, June 2023, p 5.

21 Submission 37, NSW Government, p 7.

22 Submission 37, NSW Government, p 7.

23 Submission 49, Meta, p 4.

local council), in administrative decision-making, and that affects people'.[24] The committee learned that 'government use of ADM systems and AI is extensive, and increasing'.[25]

1.21 An ADM system may or may not comprise aspects of artificial intelligence. Its abilities may include:

- making a final decision
- making a recommendation to a decision-maker
- guiding a human decision-maker through a decision-making process
- providing decision support
- providing preliminary assessments, and/or
- automating aspects of the fact-finding process and influencing an interim decision or the final decision.[26]

The use of artificial intelligence in New South Wales

1.22 Artificial intelligence is used in a myriad of ways within the general community, as well as by businesses and government agencies.

1.23 Table 1 below provides examples of some of the types of artificial intelligence in use, as well as technologies that are continually developing. In constructing the table, the Productivity Commission categorised emerging technologies into four types that it believes will enhance productivity, namely, broad AI, narrow AI, reinforced AI, and programmed AI.

Table 1 Four types of emerging technologies that can enhance productivity

Technology category	Description	Technologies	Examples
Broad AI	AI that can operate with no human input. These technologies perform unstructured tasks and engage with their environment using perception and sensory	Conversation exchange Decision generation Dextrous robotics Sensory perception	Motion tracking Safety monitoring Automated medical diagnosis Chatbots

24 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments: Executive report*, March 2024, p 7.

25 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments: Executive report*, March 2024, p 32.

26 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments: Executive report*, March 2024, p 7.

Technology category	Description	Technologies	Examples
	processing of external input data.		Advanced manufacturing robots
Narrow AI	Semi-autonomous AI able to perform structured familiar tasks of a certain type when prompted.	Predictive analysis Recognition vision Suggestion provision Voice response	Database manipulation and visualisation Facial recognition Medical image recognition Search engines
Reinforced AI	AI that can learn from trial and error to perceive and complete new tasks. They can operate in unfamiliar environments by using reinforced learning.	Assistive robotics Collaborative robotics Creative origination Generative design Navigation robotics Solution discovery	Production robots Art generation software Design simulation Aged care robots
Programmed AI	Pre-programmed intelligence relying on human input. They perform repetitive tasks by employing rules-based logic, processes, instructions, and simple robotics.	Fixed robotics Mobile robotics Process automation	Robots assembling vehicle parts Autonomous warehouse picking robots Automatic HR and payroll processing

Source: Submission 42, NSW Productivity Commission, p 2.

1.24 There are numerous ways in which artificial intelligence is being used by the NSW Government. Ms Laura Christie, Deputy Secretary, Digital.NSW and Government Chief Information and Digital Officer, NSW Department of Customer Service informed the committee that there has been 'significant growth of investment in and organic adoption of AI solutions' throughout the NSW Government.[27]

1.25 In March 2024, the ARC Centre of Excellence for Automated Decision-Making and Society published its report, *Automated decision-making in NSW – Mapping and analysis of the use of ADM systems by state and local governments* (ADM+S Report).[28] This report, which was funded and supported by the NSW Ombudsman, analysed ADM use across NSW government departments and agencies. It found that 'use of ADM systems is widespread across NSW government

27 Evidence, Ms Christie, 11 March 2024, p 47.

28 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments*, March 2024.

departments, agencies and local councils, varied in function and technology, and actively expanding'.[29]

1.26 The ADM+S report noted that there is currently no obligation on NSW government departments or agencies or local council to report their use of ADM systems.[30] These systems include the use (and proposed use) of artificial intelligence in every NSW Government portfolio, with ADM systems used in low to high stakes contexts.[31] According to the ADM+S Report, one-third of the ADM systems 'were in development, being piloted or planned within the next three years'.[32]

1.27 The ADM+S Report noted that the data collected provided 'evidence of widespread interest across both the state government and local councils in the adoption of various forms of AI, including predictive analytics, natural language processing, and generative AI'.[33] Professor Kimberlee Weatherall, Chief Investigator and University of Sydney Node Leader of the ARC Centre of Excellence for Automated Decision-Making and Society, stressed that 'in an AI-everywhere world the incorporation of AI into some of these systems is sometimes only an upgrade away'.[34]

1.28 In its submission, the NSW Government provided many examples of the ways in which it is presently using artificial intelligence.[35] These include the following applications of artificial intelligence:

- NSW Data Analytics Centre has set up a NSW legislation 'twin', a 'public facing tool that provides enhanced visualisation and search capability for analysing NSW legislation'.
- NSW Data Analytics Centre uses natural language processing to identify the most frequent themes in customer feedback about the NSW Fuel Check app.
- Revenue NSW uses a range of indicators to identify and provide early support to people who may not be able to pay their fines.

29 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments: Executive report*, March 2024, p 9.

30 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments: Executive report*, March 2024, p 3.

31 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments: Executive report*, March 2024, p 3.

32 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments: Executive report*, March 2024, p 27.

33 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments: Executive report*, March 2024, p 27.

34 Evidence, Professor Kimberlee Weatherall, Chief Investigator and University of Sydney Node Leader of the ARC Centre of Excellence for Automated Decision-Making and Society, 8 March 2024, p 11.

35 For further information about each example see submission 37, NSW Government, pp 22-26.

- NSW Health use artificial intelligence in clinical and administrative settings, including the Proactive Sepsis Management Dashboard, wound care management, and within the Cancer Registry processes.
- The Department of Primary Industries employs artificial intelligence in fauna acoustics and camera trapping to categorise, track and identify native and feral fauna at a species and individual level.
- The Department of Primary Industries uses remote sensing and machine learning to improve forest health and biosecurity surveillance including water data and vegetation mapping
- Transport for NSW uses a number of AI object detection applications to plan loading dock allocations, detect vehicles violating bus lanes, detect unlawful entrance into rail tunnels, and to detect fare evasion at station gates.
- Transport for NSW also uses artificial intelligence to automatically review and detect potential offending drivers in its mobile phone detection camera program.
- The Intelligent Maintenance Program at Sydney Trains aims to transition rail maintenance practices from manual techniques to an integrated, predictive maintenance methodology to improve asset performance, enhance safety, and optimise maintenance.[36]

1.29 In addition, the NSW Government is undertaking a number of pilots or proofs of concepts that test the application of artificial intelligence to a range of functions, including road safety incident investigation cameras, and the BreastScreen NSW Machine Reading Evaluation Project that uses deep learning derived algorithms for the detection of cancers in mammograms.[37] The following projects have also been publicly announced.

- **Domestic Violence – Triage Risk Assessment Scale (DV-TRAS)** – an automated risk assessment tool that rapidly estimates the likelihood of domestic violence recidivism by domestic violence offenders in custody.
- **AI-based Remote Patient Monitoring System** – a local health district trialled facial recognition technology during telehealth appointments to remotely monitor the vital signs of patients. This included heart rate, blood pressure, oxygen, and pain and anxiety levels using light to measure blood flow changes under the skin of patients' faces.
- **Smarter, Cleaner Sydney Harbour initiative** – AI capabilities will be used to identify the types of litter moving along waterways and stormwater drains. This will inform cleaning schedules, community education and enforcement activities so as to reduce stormwater pollution before it enters Sydney Harbour.
- **Safety After Dark CCTV trial** – a system deployed at Wollongong Station to improve the safety of customers, particularly women, travelling on transport at night. It uses AI technologies to inform assessments of the likelihood of violence detected at Wollongong Station. Its accuracy is tested by cross-referencing incidents against the Sydney Trains record of incidents.

36 Further information about each of the above examples may be found in submission 37, NSW Government, pp 22-26.

37 An outline of the various pilots and proofs of concept are provided in submission 37, NSW Government, pp 27-30.

- **Photo Verification Technology** – individuals will soon be permitted to complete government transactions and services online by verifying their identity through live image capture.[38]

1.30 The committee learned that artificial intelligence is already widely used by many businesses in New South Wales, including in automated vehicles, the resources sector, manufacturing, the detection and protection against scams, and the development of new medicines and medical devices.[39] The CSIRO outlined how artificial intelligence had been adopted in the following areas:

- generative AI – software development, art, literacy
- responsible AI – impact investing, business membership associations, assurance
- autonomous driving and operations – automated mining, ports, logistics, and transportation
- computer vision – healthcare, security, agriculture and food
- chatbots – customer services, ChatGPT usage at work.[40]

1.31 The use of artificial intelligence by the business community, the farming and education sectors, as well as by creative industries is discussed in detail in Chapter 2.

The governance of artificial intelligence in New South Wales

1.32 The approach of the NSW Government to artificial intelligence has been 'to build public trust that AI technologies are being used and developed ethically and responsibly and with a clear focus on community outcomes'.[41] The NSW Government manages risks associated with artificial intelligence through a combination of its AI Strategy, AI Assurance Framework, AI Ethics Policy, and the AI Review Committee, all of which are discussed below.[42] Digital.NSW has had responsibility for the artificial intelligence program, policy, and governance work since late 2023.[43]

1.33 In addition to this policy framework, artificial intelligence is also subject to the requirements of the law generally. These laws are technology neutral and include the law governing data protection and privacy, the Australian Consumer Law, competition law, copyright law, corporations law, online safety, discrimination law, administrative law, criminal law, and the common law of tort and contract.[44] The application of these, together with a discussion as to their effectiveness in regulating artificial intelligence, is discussed in Chapter 4.

38 Submission 40, NSW Ombudsman, p 5.

39 Evidence, Ms Wendy Black, Head of Policy, Business Council of Australia, 8 March 2024, p 30.

40 Submission 41, CSIRO, p 1.

41 Evidence, Ms Christie, 11 March 2024, p 47.

42 Submission 37, NSW Government, p 14.

43 Evidence, Ms Christie, 11 March 2024, p 47.

44 Submission 49, Meta, p 21.

NSW Artificial Intelligence Strategy

1.34 In September 2020, the NSW Artificial Intelligence Strategy (AI Strategy) was released. It is 'an overarching statement of intent to build maturity in the use of AI in NSW and to support the delivery of high-quality services'.[45] It incorporates five themes:

- building public trust
- digital uplift
- building data capability
- innovation and collaboration
- procurement.[46]

1.35 According to the NSW Government, more than 80 per cent of the action items under the AI Strategy are complete, with the rest progressing as planned.[47] Key achievements include:

- developing an assurance mechanism for AI projects
- establishing Australia's first AI Review Committee
- publishing case studies on the NSW Government's use of AI
- developing a data governance toolkit
- including AI skills in the 'Skills Framework for the Information Age' – defines what skills are required by the ICT workforce
- creating a platform for the NSW Government to engage with the public on AI.[48]

NSW AI Ethics Policy

1.36 New South Wales was the first jurisdiction in Australia to have a whole-of-government AI ethics policy, having implemented one in September 2020.[49] All government agencies that use artificial intelligence must comply with the NSW AI Ethics Policy.[50]

1.37 The purpose of the NSW AI Ethics Policy is to:

- demystify artificial intelligence for NSW Government project managers

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45 Submission 37, NSW Government, p 13.

46 Submission 37, NSW Government, p 14.

47 Submission 37, NSW Government, p 14.

48 NSW Government, Digital.NSW, 'Strategy overview', https://www.digital.nsw.gov.au/policy/artificial-intelligence/artificial-intelligence-strategy/strategy-overview.

49 Submission 37, NSW Government, p 14.

50 Department of Customer Service, *DCS-2022-01 Use of artificial intelligence by NSW Government agencies*, 31 March 2022, https://arp.nsw.gov.au/dcs-2022-01-use-of-artificial-intelligence-by-nsw-government-agencies/.

- authorise the use of artificial intelligence while providing guidance on best practice and risks
- encourage innovative approaches to service delivery and decision-making
- build understanding and capability across government.[51]

1.38 The NSW AI Ethics Policy provides five ethics principles that are embedded in the AI Assurance Framework (discussed below). These mandatory principles are designed to ensure best practice use of AI, and they must be considered and applied when designing, implementing or running an AI system:[52]

- **community benefit** – AI should deliver the best outcome for the citizen, and key insights into decision-making
- **fairness** – use of AI will include safeguards to manage data bias or data quality risks, following best practice and Australian Standards
- **privacy and security** – AI will include the highest levels of assurance and projects will adhere to the *Privacy and Personal Information Protection Act 1998*
- **transparency** – review mechanisms will ensure citizens can question and challenge AI-based outcomes, and projects will adhere to the *Government Information Public Access Act 2009*
- **accountability** – decision-making remains the responsibility of organisations and responsible officers.[53]

AI Review Committee

1.39 The AI Review Committee reviews medium-high risk AI project plans to ensure they are consistent with the AI Ethics Policy.[54] The committee provides expert advice on the ethical use of artificial intelligence in decision-making and service delivery. It consists of experts from government, industry and academia and its key functions are to:

- review AI projects
- provide endorsement on AI projects that are taken to have adequately addressed the considerations within the AI Assurance Framework
- provide recommendations on risk management and other considerations for AI projects
- contribute to the safe and ethical implementation of AI across NSW Government.[55]

51 Submission 37, NSW Government, p 14.

52 Submission 37, NSW Government, p 6; NSW Government, *Artificial intelligence assurance framework*, p 15.

53 NSW Government, *Artificial intelligence assurance framework*, p 15.

54 Submission 37, NSW Government, p 15.

55 Submission 37, NSW Government, p 18.

NSW AI Assurance Framework

1.40 The NSW AI Assurance Framework (AI Framework) came into effect in March 2022 and was the first of its kind in Australia.[56] The AI Framework operates as a self-assessment tool that is supported by the expert AI Review Committee.[57] It is designed to:

- identify and mitigate risks associated with artificial intelligence
- ensure the use of artificial intelligence is consistent with the values and principles of the NSW Government
- build public trust in the use of artificial intelligence by the NSW Government.[58]

1.41 In doing so, the framework provides practical guidance on how to design, build and use AI technology appropriately.[59] Its use is mandatory for all NSW government agencies and it serves as an umbrella framework so as to promote consistent AI risk management within government.[60] The AI Framework enables AI risks to be factored into 'the decision-making matrices of project assessments and investment decisions made by government and ensure that these risks are being treated in a cohesive way'.[61]

1.42 The Framework is to be used by:

- project teams who are using AI systems in their solutions
- operational teams who are managing AI systems
- senior officers who are responsible for approving the design and use of AI systems in projects
- internal assessors who conduct agency self-assessments.[62]

1.43 All AI projects that have a total cost of more than $5 million or that are funded by the Digital Restart Fund must submit a completed AI Assurance Framework Assessment to an AI review body for endorsement.[63]

56 Submission 37, NSW Government, p 16.

57 Submission 37, NSW Government, p 5.

58 Submission 37, NSW Government, p 16.

59 NSW Department of Customer Service, *DCS-2022-01 Use of artificial intelligence by NSW Government agencies*, https://arp.nsw.gov.au/dcs-2022-01-use-of-artificial-intelligence-by-nsw-government-agencies/.

60 Submission 37, NSW Government, p 5; Evidence, Ms Christie, 11 March 2024, p 47.

61 Evidence, Ms Laura, 11 March 2024, p 47.

62 Submission 37, NSW Government, p 17.

63 NSW Department of Customer Service, *DCS-2022-01 Use of artificial intelligence by NSW Government agencies*, https://arp.nsw.gov.au/dcs-2022-01-use-of-artificial-intelligence-by-nsw-government-agencies/.

1.44 The AI Assurance Framework is currently being reviewed and updated by the NSW Government to account for the advent of generative AI.[64] It is anticipated that the updated AI Framework will be released in mid 2024.[65]

1.45 The NSW Government is also currently working on a guideline to support the Framework to make it easier for agencies to adopt the self-assessment framework into their governance, risk and compliance frameworks.[66] Digital.NSW has also released AI guidance notes and is developing procurement guidance for New South Wales agencies considering the procurement of generative AI. The procurement guidance is due mid-2024.[67]

Committee comment

1.46 The committee acknowledges that New South Wales has played a leading role in Australia in relation to artificial intelligence. It released its AI Strategy in 2020 and was the first jurisdiction in Australia to implement an AI Ethics Policy and AI Assurance Framework.

1.47 It is clear that artificial intelligence is already used in many ways by the community, as well as by businesses, and within government. Many other potential applications of AI technology have also been identified.

1.48 The economic benefits, risks and opportunities presented by artificial intelligence, and what regulatory response may be required, are explored in the remaining chapters of this report.

64 Evidence, Ms Christie, 11 March 2024, p 48.
65 Evidence, Ms Christie, 11 March 2024, p 47.
66 Evidence, Ms Christie, 11 March 2024, p 48.
67 Evidence, Ms Christie, 11 March 2024, p 48.

Chapter 2 Impact on the economy, labour force and certain sectors

This chapter highlights some of the projected productivity gains expected to accompany the adoption of various digital technologies, including artificial intelligence (AI), by business and government. It then identifies potential economic opportunities for New South Wales. A discussion regarding how harnessing the benefits of artificial intelligence will require strategic decisions and responsible use then follows. The possible impacts on business and the labour force are then outlined. To conclude, this chapter considers the specific impacts of artificial intelligence on the education and arts and culture sectors.

Productivity gains

2.1 There was much discussion about the economic impact of the 'digital revolution'. Distinguished Professor Jason Potts, Co-director, RMIT Blockchain Innovation Hub, described the various elements of the 'economic disruption' that are occurring due to the emergence of a number of digital technologies, before stressing that adaptation is necessary in order for society to harness the potential gains:

> But a fundamental view is this is steam, this is electricity, this is an epoch-shaping economic revolution that is coming. Our job is to adapt to it as effectively and quickly as possible in order to get the benefits from that.[68]

2.2 Multiple stakeholders emphasised the sizeable productivity gains that have been projected as a result of the advent of artificial intelligence. Dr Darcy W.E. Allen, Professor Chris Berg, and Dr Aaron M. Lane noted that while the estimates are predictive, 'the early results suggest staggering productivity gains and improvements'.[69]

2.3 The Tech Council of Australia forecast that generative AI could contribute between $45 billion and $115 billion in annual economic value for Australia by 2030.[70] It explained that the increased economic value was due to the way in which artificial intelligence would improve productivity in existing industries, including health care, retail, manufacturing and professional services, as well as in the creation of new jobs and businesses.[71] The increased economic value due to generative AI is comprised of the following:

- 70 per cent from enhanced productivity – it is anticipated that the partial automation of repetitive tasks within a job will free workers to focus on the more complex, creative and higher-value parts of their jobs
- 20 per cent from improved quality of outputs by using generative AI as a 'co-pilot' to augment workers

68 Evidence, Distinguished Professor Jason Potts, Co-director, RMIT Blockchain Innovation Hub, 11 March 2024, p 11.

69 Submission 48, Dr Darcy W.E. Allen, Professor Chris Berg, Dr Aaron M. Lane, p 4.

70 Evidence, Mr Ben Rice, Head of Policy Advocacy, Tech Council of Australia, 8 March 2024, p 19.

71 Evidence, Mr Rice, 8 March 2024, p 19.

- 10 per cent from new products and services that will create jobs and businesses not previously possible.[72]

2.4 Artificial intelligence could also have a substantial impact on the productivity growth rate and Gross State Product in New South Wales. Should the emerging technologies be widely adopted, modelling by the NSW Productivity Commission and NSW Innovation and Productivity Council suggested that by 2034-35:

- the productivity growth rate in New South Wales could increase to two per cent a year
- the growth rate of real Gross State Product could lift to three per cent a year
- Gross State Product could increase by 11.8 per cent – equal to an extra $11,600 per person or $27,400 per household (in real 2021-22 dollars)
- NSW government's own-source revenues could increase by as much as $4.5 billion relative to baseline projections presented in the *2021-22 NSW Intergenerational Report*.[73]

2.5 Ms Louise McGrath, Head of Industry Development and Policy, Australian Industry Group, described the potential for artificial intelligence to improve the productivity of Australian businesses noting it will help unlock human capital and make their supply chains more robust and able to soften shocks:

> In our conversations with our members around artificial intelligence, or AI, it's clear that AI will improve productivity, unlock human capital and lift our international competitiveness. It will bolster resilience in our supply chains, providing cushioning in the face of potential geostrategic shocks. Where traditional supply chains plan and react to disruptions, digitalised supply chains predict and prescribe actions to take.[74]

Economic opportunities for New South Wales

2.6 A number of stakeholders referred to the specific economic opportunities for New South Wales, due to the presence of a large 'tech workforce' and 'tech clusters' in the state. Mr Ben Rice, Head of Policy Advocacy, Tech Council of Australia, described New South Wales as having 'strong foundations to be a leader in AI'.[75] Some of the strengths of New South Wales, as identified by the Tech Council of Australia, are listed below:

- New South Wales has the largest tech workforce in Australia, with more than 330,000 tech workers[76]
- a number of Australia's 'most innovative and globally successful tech companies', including Atlassian, Canva, Afterpay, Airtasker, Employment Hero, and WiseTech Global were launched from New South Wales[77]

72 Submission 26, Tech Council of Australia, p 5.

73 Submission 42, NSW Productivity Commission, p 3.

74 Evidence, Ms Louise McGrath, Head of Industry Development and Policy, Australian Industry Group, 8 March 2024**,** p 36.

75 Evidence, Mr Rice, 8 March 2024, p 19.

76 Evidence, Mr Rice, 8 March 2024, p 19; Submission 26, Tech Council of Australia, p 6.

77 Submission 26, Tech Council of Australia, p 6.

- New South Wales has a 'vibrant venture capital sector' and innovative tech clusters and precincts, including the Sydney Start-Up Hub, Tech Central, and Western Sydney Startup Hub[78]
- Google, Microsoft, AWS and IBM have Australian headquarters in Sydney[79]
- New South Wales was ranked by Startup Genome as one of the top 20 technology and innovation ecosystems in the world[80]
- the tech ecosystem in New South Wales is valued at US$78 billion, twice the global average.[81]

2.7 In addition, a number of university and research institutes that focus on artificial intelligence are based in New South Wales, including:

- National AI Centre – CSIRO
- Artificial Intelligence Institute – University of Technology Sydney
- UNSW AI Institute – University of New South Wales
- Centre for Field Robotics (one of the world's largest robotics institutes) – University of Sydney
- the Allens Hub for Technology and Law – University of New South Wales
- the Gradient Institute – University of Sydney
- Human Technology Institute – University of Technology Sydney.[82]

2.8 The CSIRO similarly viewed New South Wales as having 'a leading role in Australia's technology and AI innovations', due to it being the location for a large proportion of AI businesses and universities within Australia:

> NSW accounts for 38 per cent of Australian software developers and application programmers, and 45 per cent of Australian AI businesses. This indicates that related industries in NSW will likely benefit from the continued and rapid advancement of AI, and potentially lead the AI-induced transformations of industries. NSW is also on a strong trajectory for AI research, with three of the seven world leading AI universities based there.[83]

2.9 Dr Stefan Hajkowicz, Chief Research Consultant – Technology Strategy, Policy and Foresight, CSIRO, Data61, described how Sydney is a global hotspot in terms of digital technology:

> We created maps to work out where our Silicon Valley is, where we find a massive concentration of capability. We called it the "Sydney arc". It starts in Redfern, Eveleigh; it goes up through North Sydney. But we found an enormous concentration in

78 Submission 26, Tech Council of Australia, p 2.

79 Submission 26, Tech Council of Australia, p 6.

80 Submission 26, Tech Council of Australia, p 3.

81 Submission 26, Tech Council of Australia, p 6.

82 Submission 26, Tech Council of Australia, p 6.

83 Submission 41, CSIRO, p 5.

> capability per square metre of skilled workers and skilled researchers in all things digital and a lot of AI as well. This is a global hotspot.[84]

2.10 However, Dr Hajkowicz highlighted that, despite the above, commercial products are not emerging as the AI foundation models are being built outside of Australia.[85] He further warned that the knowledge economy in New South Wales could be vulnerable due to generative AI:

> Our analysis suggests that Australia is falling into a pattern of being a downstream user of AI built elsewhere. This is great in that we're getting all these powerful tools at our fingertips that can do wonderful stuff. You can see it in the form of ChatGPT, Microsoft Copilot and Google Gemini. The capability of those tools is impressive, but I think what Uber did to taxis could start to play out in the knowledge economy and, absolutely, your question is on target in terms of wanting to think about things. Generative AI might change how things work. It could expose the knowledge economy, and a huge amount of New South Wales workers are in the knowledge sector. We are seeing really significant productivity uplift associated with these tools.[86]

2.11 Mr Rice argued that realisation of this 'major opportunity' in New South Wales would require 'a clear strategy, integrated policy choices, targeted investment in skills, assets, adoption, and the growth of new companies and industries'.[87]

2.12 Action may also be needed to ensure that companies and businesses invest in New South Wales. The Business Council of Australia stressed the importance of ensuring regulatory settings were clarified and stable or else risk businesses moving elsewhere:

> Already, businesses are deciding against developing, investing in, or offering new products and services in jurisdictions where the regulatory environment is unclear. The government must not make it unnecessarily difficult for Australians to access the services and information they want, rely on, and need. The BCA believes now is not the time to deliberately put unnecessary barriers in the way of Australia's ability to seamlessly become a top five digital economy.[88]

2.13 However, other stakeholders were more cautious about the benefits of artificial intelligence and the potential power of technology companies. The Campaign for AI Safety warned that the widespread use of artificial intelligence could enable AI developers to have 'broad influence over the economy and our lives and livelihoods', with significant implications should they misuse their market power.[89]

2.14 Some businesses also appear sceptical about the relevance of artificial intelligence. The *Business Conditions Survey 2023 Q2* conducted by Business NSW found that 58.6 per cent of businesses in NSW are 'receptive' or 'somewhat receptive' to adopting AI in their operations. However, nearly 18.4 per cent businesses were completely unreceptive to AI. Business NSW suggested

84 Evidence, Dr Stefan Hajkowicz, Chief Research Consultant – Technology Strategy, Policy and Foresight, CSIRO, Data61, 8 March 2024, p 7.

85 Evidence, Dr Hajkowicz, 8 March 2024, p 7.

86 Evidence, Dr Hajkowicz, 8 March 2024, p 3.

87 Evidence, Mr Rice, 8 March 2024, p 19; Submission 26, Tech Council of Australia, p 2.

88 Submission 47, Business Council of Australia, p 2.

89 Submission 1a, Campaign for AI Safety, p 22.

that this could be due to a lack of knowledge about the benefits and risks associated with this type of technology, cost and complexity.[90]

Harnessing the benefits of artificial intelligence for businesses

2.15 Mr Rice from the Tech Council of Australia noted that artificial intelligence is 'already being actively and widely deployed in a range of industries and settings from finance to transport and manufacturing'.[91]

2.16 Ms Wendy Black, Head of Policy, Business Council of Australia, similarly observed that artificial intelligence is already used by many of the businesses that are its members.[92]

2.17 Ms Louise McGrath, Head of Industry Development and Policy, Australian Industry Group, explained how artificial intelligence tends to form a general part of business solutions:

> Our members are making strong investments in both technology and staff training this year, but it's important to remember that businesses don't actually buy AI. Instead, they buy a solution to their problem that simply happens, potentially, to have AI in it alongside other digital technologies and hardware.[93]

2.18 Dr Stefan Hajkowicz, Chief Research Consultant – Technology Strategy, Policy and Foresight, CSIRO, Data61, was of the view that 'there's no turning off this AI technology development pathway. It's going to increase; it's going to get better'.[94] He argued that AI strategy involves adoption and adaption, namely, that companies need to work out the right AI tools to adopt and how to apply them, but it may also require things to be done differently.[95] Dr Hajkowicz noted that he is working with the National Artificial Intelligence Centre to develop a framework for AI adoption and adaptation to be used by Australian companies, with a focus on small and medium businesses.[96] He also described how a website is being built that uses generative AI to inform company owners about different types of AI projects that could help improve their productivity according to their industry.[97]

2.19 Dr Hajkowicz further explained how experimentation is a necessary part of adapting to the use of artificial intelligence noting that businesses need to experiment with artificial intelligence in order to benefit from it:

> AI becomes useful when you accept experimentation. The companies that I work with that get benefit from AI, they are willing to try it once—it fails. They try it again—it fails. Three, four, and then it starts to work, and then they start to understand it. Over one project it's risky, but a portfolio of projects—you're almost guaranteed to see things get better. Where I see it fail for some companies is where they buy a product off the

90 Submission 19, Business NSW, p 1.

91 Evidence, Mr Rice, 8 March 2024, p 19.

92 Evidence, Ms Wendy Black, Head of Policy, Business Council of Australia, 8 March 2024, p 30.

93 Evidence, Ms McGrath, 8 March 2024**,** p 36.

94 Evidence, Dr Hajkowicz, 8 March 2024, p 4.

95 Evidence, Dr Hajkowicz, 8 March 2024, p 4.

96 Evidence, Dr Hajkowicz, 8 March 2024, p 7.

97 Evidence, Dr Hajkowicz, 8 March 2024, p 8.

> shelf and plug it in and hope it's going to do what it's supposed to do. It doesn't work the first time, and then they give up. That's not really the AI journey. AI is about experimentation.[98]

2.20 Dr Hajkowicz then outlined how artificial intelligence has the potential to transform the efficiency and quality of NSW government services, as long as there was acceptance that experimentation is part of the journey:

> It will look like a lot of experimentation, and you'll have to accept a portfolio of a lot of things not working for quite a while, some things starting to work, and then you really start to learn how it works. In another 10 years time, you have transformed the efficiency and quality of New South Wales government services with it.[99]

2.21 During the inquiry, the committee heard of various ways in which artificial intelligence is being used within certain industries. The case study below explores how the use of artificial intelligence has benefited the farming sector.

Case study – The potential applications of artificial intelligence within the agricultural sector[100]

NSW Farmers advised that agriculture in New South Wales is already using digital technologies such as blockchain, artificial intelligence, big data and the Internet of Things to increase agricultural productivity. These technologies enable water level measurement, the remote monitoring and management of livestock, crops and soil, and precision chemical and fertilizer application. In addition, some farms are taking advantage of predictive analytics, the automation of machinery and robotics, supply chain optimisation, various farm management software, and weather prediction technologies.

Mr Adrian Roles, Executive Councillor, NSW Farmers, described how digital technology had created 'the potential for us as an industry to not start looking at our management zones by flock or herd or rows of trees or rows of vines, but actually start treating it by individual plant management'. Nonetheless, NSW Farmers believe that Australia has a 'relatively immature presence' in the global agtech ecosystem.

Automation and artificial intelligence has also been able to assist with combatting some of the impact of the skills shortage in the agricultural sector, e.g. the use of robotics in packing sheds and automatic tractors.

Further, digital technologies could help lessen the environmental impact of farming. For example, the use of data could enable a more precise application of the farming principles of 'right place, right time, right way, right directive, right product'.

Should digital agriculture be fully adopted, estimates predict that the GVP of Australian agriculture could increase by 25 per cent or 20.3 billion dollars. However, for the benefits of artificial intelligence to be fully realised, regional connectivity will need to improve to remove barriers to the development, growth and uptake of agtech. While NSW Farmers described the value of NSW government programs such as the Regional Digital Connectivity Program, Farms of the Future, and Future Ready Regions Strategy, they cautioned that they 'do not operate at the scale or speed required to tackle the problem'.

98 Evidence, Dr Hajkowicz, 8 March 2024, p 7.

99 Evidence, Dr Hajkowicz, 8 March 2024, p 7.

100 Evidence, Mr Ashley Cooper, Policy Director – Agricultural Industries, NSW Farmers, 8 March 2024, p 39; Evidence, Mr Adrian Roles, Executive Councillor, NSW Farmers, 8 March 2024, pp 35, 37-39, 41-43; Submission 44, NSW Farmers.

Education and upskilling will also be required to ensure farmers have the 'skills, knowledge and confidence to adopt new digital technologies that meet the needs of their business'.

There was optimism that more people may consider working in the agricultural sector in future. Mr Adrian Roles, Executive Councillor, NSW Farmers, described how artificial intelligence may lead to agriculture being considered as a career path by people who would have otherwise never considered it, due to the need for data scientists and data engineers within the sector.

2.22 Ms Louise McGrath, Head of Industry Development and Policy, Australian Industry Group, stressed that 'fundamental to maximising take-up of AI will be lifting the capability of leaders and managers to develop and execute new business strategies that ensure Australian businesses are equal to, if not exceeding, their international peers'.[101] Ms McGrath outlined how the Australian Industry Group was encouraging businesses to adopt AI but in a way that minimised its potential to be disruptive:

> In terms of how we help companies and our members in particular take up this technology, because it has the potential to be disruptive as well as beneficial our recommendation to them is that they should use it for the first time—if they're not already using it in a lot of robotics and other tools; as I said, it's an old technology— in terms of generative AI, they should use it not in a production environment straight off. So to many of our members, our recommendation is to use it in safety. We've been holding sessions for safety officers to practise with real tools that are available—it's not in theory; it's using augmented reality, the metaverse and sensors—so that the safety officers can have some confidence.[102]

Encouraging the responsible use of artificial intelligence

2.23 A number of stakeholders suggested ways in which the Government could encourage the responsible use of artificial intelligence by businesses. The Business Council of Australia recommended that governments 'work with businesses on positive measures to encourage pro-innovation, safe, and responsible development and use of AI', including through the use of regulatory sandboxes.[103]

2.24 The Productivity Commission set out the following principles as a guide for seizing the opportunities of artificial intelligence and emerging technologies:

- favour policies to support technology adoption and adaptation – build trust with strong public sector governance, embrace technology to improve public services, and support private sector technology uptake through outcomes-focused, technology-neutral regulation that is regularly reviewed
- attract and foster the tech-adoption workforce – create a pro-entrepreneurship environment, foster technology professionals by working with schools, higher education, and industry groups, and entice the best and brightest from across the world by using strategic migration policies

101 Evidence, Ms McGrath, 8 March 2024**,** p 36.

102 Evidence, Ms McGrath, 8 March 2024**,** p 38.

103 Submission 47, Business Council of Australia, p 6.

- intervene to support emerging industries only when there is a strong business case.[104]

2.25 Business NSW asserted that the Government could act to demystify artificial intelligence, promote digital literacy, develop regulatory frameworks, and lead in the adoption of artificial intelligence, by taking the following actions:

- raising awareness of the various forms of artificial intelligence, clarifying or demonstrating their appropriate use, and showcasing their potential benefits for business
- providing training platforms (such as embedding digital literacy into education and training syllabus) to allow the current and future workforce to build the necessary level of digital literacy to work with artificial intelligence or drive its development
- developing regulatory frameworks – developing or amending regulations affecting artificial intelligence at a national level to ensure consistency across Australian jurisdictions. These regulations should ensure ethical and secure use of technology without hampering innovation
- driving the adoption of artificial intelligence in areas such as planning, provision of infrastructure, and managing natural disasters.[105]

2.26 The committee also heard how the NSW procurement framework could be used to encourage the responsible use of artificial intelligence. Mr Brett McGrath, President, Law Society of New South Wales, supported consideration of the proposal in the James Martin Institute report that the procurement framework be used to 'shape the market towards ethical and responsible products and socially beneficial outcomes'.[106] He suggested integrating the AI Assurance Framework into the NSW Government Procurement Policy Framework. In addition, elements of the NSW AI Ethics Policy could be included in the Supplier Code of Conduct for suppliers to the NSW Government.[107]

Impact on labour force

2.27 Many stakeholders acknowledged that artificial intelligence would have an impact on the labour force and on particular jobs. Business NSW advised that some roles will be automated and displaced, others may have their roles and responsibilities redefined, and new roles may also emerge.[108]

2.28 According to the CSIRO, AI productivity gains were not assured, but 'depend on developing and adopting the right technologies in the right ways':

> They also depend upon intelligent harmonisation of human individual and organisational decision making with automated systems. Many companies face a

104 Submission 42, NSW Productivity Commission, p 6.

105 Submission 19, Business NSW, p 2.

106 Evidence, Mr Brett McGrath, President, Law Society of New South Wales, 11 March 2024, p 26.

107 Evidence, Mr McGrath, 11 March 2024, p 26.

108 Submission 19, Business NSW, p 2.

> considerable adjustment phase as they become familiar in working with AI systems. During this time of adjustment, companies might not see productivity gains.[109]

2.29 However, Dr Hajkowicz emphasised that there was nonetheless an 'adaptation imperative'. He warned of the vulnerability of Australia workers and companies to capabilities that can be delivered from offshore, 'effectively delivered through an internet connection via highly advanced AI and generative AI capabilities that can do what they're doing'.[110]

2.30 Many stakeholders viewed artificial intelligence as having a greater impact on tasks rather than jobs. Mr Ben Rice, Head of Policy Advocacy, Tech Council of Australia, stressed that 'I think what we see is AI being really good at augmenting jobs but not as good at completely replacing jobs'.[111]

2.31 Dr Darcy W.E. Allen, Professor Chris Berg, and Dr Aaron M. Lane were similarly of the view that tasks would be replaced rather than jobs, as in many cases generative AI requires a human to remain part of the process:

> Just because generative AI increases worker productivity does not mean that robots will take our jobs en masse. Unlike technologies that purely automate, generative AI applications typically require a process between a prompting-human and the technology. Generative AI is applied as a process of co-production. Human expertise is needed to craft effective prompts, and to identify valuable problems and applications that generative AI models might help with. Furthermore, effective co-production with generative AI typically involves feedback loops and responses from human prompters, including an almost-entrepreneurial process of making judgements over outputs and adapting to them.[112]

2.32 While the CSIRO also viewed artificial intelligence as impacting tasks more than jobs, they recognised that 'the rate of AI adoption and the economic impact that AI has on different industry sectors will be highly uneven'.[113] The services sector, which employs 86 per cent of workers in NSW and includes sub-sectors such as administrative services, retail, banking, finance, tourism, and professional/scientific services, would be particularly impacted by generative AI tools.[114]

2.33 The NSW Productivity Commission acknowledged that emerging technologies would reduce demand for certain occupations (e.g. sales assistants, bank workers, truck drivers). However, it stressed that the decrease would be 'more than offset by the increasing demand associated with a growing economy and new jobs created to support emerging technologies—like software application developers and data engineers'.[115]

2.34 The NSW Productivity Commissioner, Mr Peter Achterstraat AM, took a positive view, noting that, historically, there is not a lot of evidence that wholesale job losses accompany new

109 Submission 41, CSIRO, p 7.

110 Evidence, Dr Hajkowicz, 8 March 2024, p 3.

111 Evidence, Mr Rice, 8 March 2024, p 22.

112 Submission 48, Dr Darcy W.E. Allen, Professor Chris Berg, Dr Aaron M. Lane, p 5.

113 Submission 41, CSIRO, pp 5 and 9.

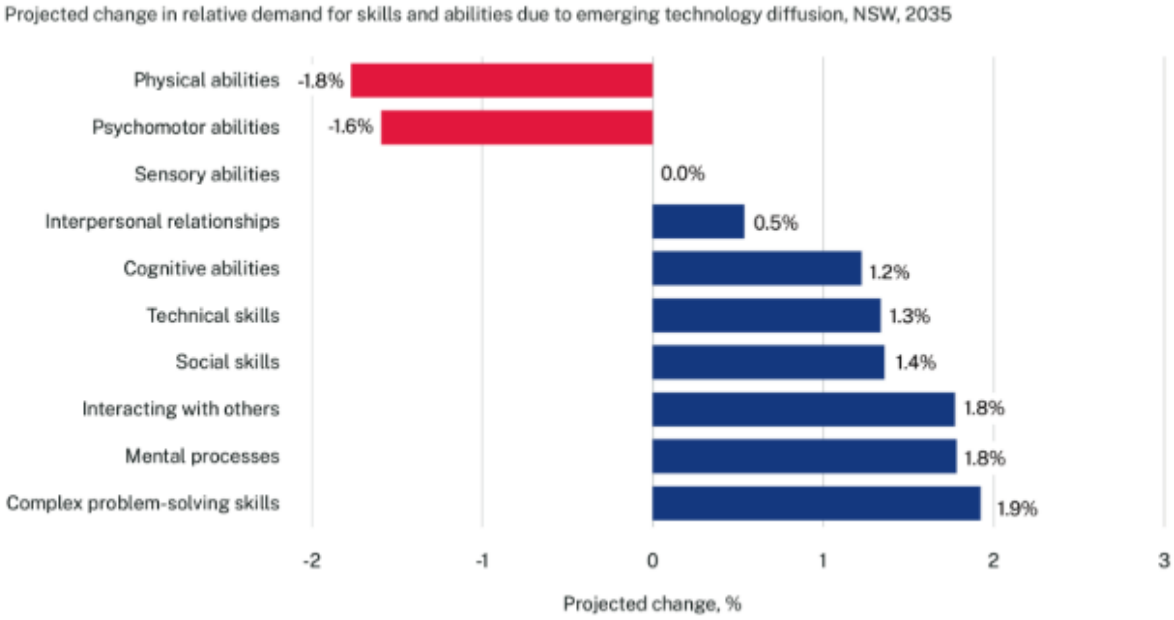
114 Submission 41, CSIRO, p 9.

115 Submission 42, NSW Productivity Commission, p 7.

technologies. He referred to work by the Productivity Commission that had found that 'while a few per cent of traditional jobs may change, some existing traditional jobs will grow and there'll be new jobs coming up'.[116] The Productivity Commission noted that economists 'have found little evidence that technology causes long-term structural unemployment… because emerging technologies and automation tends to gradually change the work tasks within occupations rather than erase occupations entirely'.[117]

2.35 According to the Productivity Commission the advent of artificial intelligence is likely be accompanied by a change in the skills required of the general workforce. Emerging technology was seen as accelerating the shift from physical to cognitive skills, as illustrated by Figure 2 below:

Figure 2 Projected change in relative demand for skills and abilities due to emerging technology diffusion, NSW, 2035



Source: Submission 42, NSW Productivity Commission, p 10.

2.36 A number of stakeholders highlighted the benefits of technology-based jobs. The Tech Council described them as 'amongst the fastest-growing, best-paid and most flexible jobs in the economy'.[118]

2.37 The NSW Productivity Commission posited that 'careful investment in emerging technologies and high-growth industries could increase employment in existing tech roles and create new high-skill, high-pay technology jobs in engineering, programming, data analytics and technical jobs to develop, maintain and administer technology'.[119]

116 Evidence, Mr Peter Achterstraat AM, NSW Productivity Commissioner, NSW Productivity Commission, 8 March 2024, p 55.

117 Submission 42, NSW Productivity Commission, p 7.

118 Submission 26, Tech Council of Australia, p 5.

119 Submission 42, NSW Productivity Commission, p 6.

2.38 However, other stakeholders were less optimistic. The Campaign for AI Safety questioned 'whether AI can drive prosperity in NSW'.[120] They argued that the benefits would flow to those workers not being replaced by artificial intelligence:

> NSW workers who perform tasks that use AI and are hard to replace (inelastic labour supply) will likely benefit more from the adoption of these technologies than those in the opposite scenario (those working in tasks that can be performed by AI). It is likely that the number of NSW workers in the favourable scenario are few as they are likely to be very highly skilled, globally sought after workers. There is a chance increased adoption of AI and automation could lead to greater economic inequality (job loss and lower wages for workers and monopoly rents and profits for owners of AI technology which are Microsoft, Google, OpenAI, and Meta).[121]

2.39 Ms Wendy Black, Head of Policy, Business Council of Australia, accepted that artificial intelligence will impact the nature of some jobs. Nonetheless she highlighted that all jobs change over time irrespective of artificial intelligence.[122] She then stressed that the key is ensuring workers are prepared through reskilling and training for the changes that will occur, concluding that 'We know the change is coming; what we need to do is help businesses and workers prepare for this'.[123] How to prepare the future workforce is discussed in the following section.

2.40 The Business Council of Australia urged governments to resist the call to protect jobs by restricting the use of artificial intelligence in particular areas. It argued that 'Rather than driving unemployment, AI will instead change the nature of the individual tasks undertaken by workers. Indeed, it may augment some jobs, enhancing innovation and creativity'.[124]

2.41 Some evidence indicated that there may be ways to minimise the negative effects of the disruption to the labour force. The NSW Productivity Commission suggested that application of the following principles would help ensure that technology adoption and adaptation is inclusive:

- ensure active and orderly industry transitions by identifying and proactively managing those industries where there will be a reduced demand for workers
- diversify the regions as regional areas that rely heavily on one or a few industries for employment are at greater risk of technological disruption
- use technology to broaden workforce participation so that people with limited mobility (due to age, disability, caring commitments, or geographical locations) can participate in the workforce
- expand access and close the digital divide
- distribute the benefits of technology widely
- ensure appropriate protections for workers.[125]

120 Submission 1a, Campaign for AI Safety, p 21.

121 Submission 1a, Campaign for AI Safety, p 21.

122 Evidence, Ms Black, 8 March 2024, p 30.

123 Evidence, Ms Black, 8 March 2024, p 30.

124 Submission 47, Business Council of Australia, p 9.

125 Submission 42, NSW Productivity Commission, pp 11-12.

Preparing the workforce

2.42 The need to adequately prepare the workforce, both current and future, for the responsible use of artificial intelligence, emerged as an issue during the inquiry. Stakeholders raised the need for 'an AI-capable workforce',[126] with workers that are digitally literate.[127]

2.43 Business size may influence the ability of a business to adapt to the use of artificial intelligence. Business NSW noted that large businesses are more likely to have the necessary resources for upskilling existing staff, whereas the adoption of artificial intelligence by small and medium enterprises is more likely dependent on the availability of trained workers.[128] The Business Council of Australia observed that some businesses were employing dedicated AI experts, while others preferred to upskill their existing workforce.[129]

2.44 Concerns were raised about the existence of a skills gap.[130] Ms Louise McGrath, Head of Industry Development and Policy, Australian Industry Group, described how the successful implementation of artificial intelligence would require two distinct skills bases (technical and operational):

> One is the technical skills involved in the design, implementation and integration of digital industry technologies, and the second is operational skills required in workforces that make use of the tech, which will enable its safe and efficient utilisation.[131]

2.45 The Tech Council of Australia warned of current shortages in the Australian tech workforce, forecasting that another 600,000 people would be needed to reach the goal of 1.2 million technology workers by 2030.[132] Mr Peter Derbyshire, Director, Policy and International Affairs, Australian Academy of Technological Sciences and Engineering, stressed the importance of all people entering the workforce having a basic understanding of artificial intelligence:

> Some of the discussions we've had today about what's needed in the public service really boils down to not needing huge numbers of experts but making sure that everyone in the public service has an understanding or a basic understanding of how this technology, how AI works and how it is used and how it uses data and how to use data effectively. It's a combination of not just needing the 600,000 people that the Tech Council has called for across Australia but also making sure that we have a baseline understanding for all people coming through into the workforce of how this technology works, and making sure that we are providing schools and teachers the opportunities to be able to effectively teach these technologies.[133]

2.46 The Tech Council of Australia stressed the key role of state and territory governments in fostering the right education and training settings:

126 Submission 26, Tech Council of Australia, p 5.

127 Submission 19, Business NSW, p 2.

128 Submission 19, Business NSW, p 2.

129 Evidence, Ms Black, 8 March 2024, p 33.

130 Evidence, Ms Black, 8 March 2024, p 33.

131 Evidence, Ms McGrath, 8 March 2024**,** p 36.

132 Submission 26, Tech Council of Australia, p 5.

133 Evidence, Mr Peter Derbyshire, Director, Policy and International Affairs, Australian Academy of Technological Sciences and Engineering, 8 March 2024, p 28.

> Achieving this goal will require a multifaceted approach that encourages AI use in the education system, supports reskilling and lifelong learning initiatives, establishes new training pathways such as digital apprenticeships, better recognises industry training initiatives, and involves collaboration with the federal Government to improve our migration system.[134]

2.47 A number of inquiry participants referenced the NSW vocational education and training system as a means of upskilling workers.[135] Mr Ben Rice, Head of Policy Advocacy, Tech Council of Australia, described the New South Wales Institute of Applied Technology as a great example of 'an institution that is really cognisant of the need to quickly upskill workers with the right skills and competencies that industry needs'.[136]

2.48 Dr Stefan Hajkowicz, Chief Research Consultant – Technology Strategy, Policy and Foresight, CSIRO, Data61, suggested that short training courses may suffice in some cases:

> I think one of the tricks around it is not trying to get everyone through a software engineering degree, but creating those mini flash courses where there might be something in your job that you need to pick up that lets you wield these powerful AI tools at your fingertips, lets you figure out what that is, and then you take a couple of days off or you work a couple of extra hours a day to get that training and capability and then you can do the task.[137]

2.49 According to the NSW Productivity Commission, the following strategies will assist the workforce to adapt:

- ensure workers are equipped with the skills of the future (foundational literacy, maths and science, general digital literacy, and soft skills)
- use data and industry insights to keep training relevant and responsive
- lower barriers to entry by combatting credentialism, i.e. avoid training and qualifications requirements becoming unnecessarily onerous, expensive or lengthy
- create a system for continuous upskilling, including through the NSW vocational education and training system[138]
- create smooth and flexible pathways for multiple career transitions
- give individuals the right incentives and information
- make sure employers have incentives to train workers
- develop workforce strategies for growth sectors facing skills shortages.[139]

134 Submission 26, Tech Council of Australia, p 5.

135 Submission 42, NSW Productivity Commission, p 11; Evidence, Mr Rice, 8 March 2024, p 28; Submission 44, NSW Farmers, p 7.

136 Evidence, Mr Rice, 8 March 2024, p 29.

137 Evidence, Dr Hajkowicz, 8 March 2024, p 10.

138 The NSW Productivity Commission noted that a comprehensive NSW vocational education and training system review has been established to provide insights and recommendations: Submission 42, NSW Productivity Commission, p 11.

139 Submission 42, NSW Productivity Commission, pp 10-11.

2.50 There is also a need to adequately educate and prepare students for a rapidly changing workforce, to ensure they have the necessary skills. Mr Peter Derbyshire, Director, Policy and International Affairs, Australian Academy of Technological Sciences and Engineering, stressed the importance of making sure the future workforce has the necessary skills, as it is predicted that by 2030 workers will spend 60 per cent more time using technological skills. He viewed the New South Wales Government's trial of a specially built educational AI system as a positive step, highlighting that 'Our students are already exposed to AI, so we must teach them how to use it responsibly'.[140]

2.51 Mr Ben Rice, Head of Policy Advocacy, Tech Council of Australia, was also positive about the NSW Department of Education pilot of NSWEduChat in public schools and the steps taken to empower the next generation of the workforce:

> Enabling trusted and responsible AI innovation requires more than just regulation. We need to continue building our tech talent pipeline and upskilling our workforce; increase investment in AI research, development and commercialisation; provide organisations with the right AI tools and assurance frameworks; and build digital literacy across the community.[141]

2.52 The intersection of artificial intelligence and education is discussed in the following section.

Artificial intelligence and the education sector

2.53 There was much discussion throughout the inquiry about the impact of artificial intelligence on the education sector and the need to ensure that artificial intelligence is used in a way that is beneficial to students and equips them for the future workforce, while appropriately managing the risks associated with it.

2.54 The University of Sydney stressed the importance of ensuring that students were adequately prepared for the future so they could be effective and discerning users of artificial intelligence, and able to engage in lifelong learning:

> In the near future, all Australian students will need to leave school with a deep understanding, not only of how to use Gen-AI, but of how it works, as part of their foundational skills needed if they are to be critical, creative users of AI, and to participate fully in an AI-augmented society and economy. Strong foundational skills are critical to an individual's ability to engage successfully in tertiary-level studies and life-long learning, to avoid obsolescence and find new occupations, if necessary, that require retraining or upskilling. Foundational skills also underpin an individual's capacity for critical analysis and to discern truthful and accurate information from the intentionally fake or otherwise erroneous information that increasingly sophisticated Gen-AI models will be able to produce.[142]

140 Evidence, Mr Derbyshire, 8 March 2024, p 19.

141 Evidence, Mr Rice, 8 March 2024, p 20.

142 Submission 33, The University of Sydney, p 7.

2.55 Artificial intelligence is currently used in schools and higher education, including the use of augmented reality in science and maths, extended reality in literacy and text creation.[143] While ChatGPT is banned in public schools, the Department of Education has piloted an EduChat app, its own generative AI tool, across sixteen public schools in the first half of 2024.[144] According to Mr Martin Graham, Deputy Secretary, Teaching, Learning and Student Wellbeing, NSW Department of Education, EduChat provides a safe environment for students to use generative AI, ensures that data is maintained within the Department of Education, is specifically relevant to the location of students and teachers in New South Wales, and provides answers that align with the department's values, as it directs the learning process.[145]

2.56 Specific guidelines have also been developed for the use of artificial intelligence within education. Mr Martin Graham, Deputy Secretary, Teaching, Learning and Student Wellbeing, NSW Department of Education, explained how the Department not only comes under the NSW Government AI Assurance Framework but also the National Australian Framework for Generative AI in Schools. The national framework is more specific to the issues around artificial intelligence in education, namely privacy issues, ethical issues, and, the use of artificial intelligence as a tool for teachers.[146]

2.57 The University of Sydney highlighted some of the benefits of generative AI for both educators and students, reproduced in Table 2 below.

Table 2 Examples of the beneficial use of generative AI by educators and students

For educators	For students
Improving understanding of the technology, its limitations and appropriate use by students	Conducting research using Gen-AI to gather examples and pointers for deeper investigation
Stimulating open class discussions using Gen-AI	Learning by teaching the Gen-AI about new concepts and receiving feedback from the tools
Critiquing Gen-AI responses with students	Asking the Gen-AI questions and critiquing its responses
Helping students research	Overcoming writer's block
Personalising teaching and assessment	Brainstorming ideas to receive feedback
Composing exemplars for critique with students	Developing structure for essays and other forms of communication
Generating discussion prompts	Harnessing Gen-AI film and image production tools to extend creative ideas
Drafting lesson plans	Helping to create new code, images, music

143 Submission 27, Australian Catholic University – Institute for Learning Sciences and Teacher Education, p 2.

144 Evidence, Ms Amber Flohm, Deputy President, NSW Teachers Federation, 11 March 2024, p 3.

145 Evidence, Mr Martin Graham, Deputy Secretary, Teaching, Learning and Student Wellbeing, NSW Department of Education, 11 March 2024, p 49.

146 Evidence, Mr Graham, 11 March 2024, p 49.

For educators	For students
Drafting quiz questions	Exploring diverse perspectives on a topic
Designing draft marking rubrics	Analysing texts with a research assistant

Source: Submission 33, The University of Sydney, p 5.

2.58 Nonetheless, the University of Sydney recognised that the use of artificial intelligence was accompanied by a number of challenges, including ensuring that generative AI was used safely by both educators and students. Further, they acknowledged that levels of awareness around the strengths, limitations and risks of generative AI would need to increase. They stressed the importance of students neither fearing artificial intelligence nor developing an over-reliance on it.[147]

2.59 The impact of artificial intelligence on teaching as a profession and the experience of education as a student is likely to be substantial. This is due to its possible role as one of the tools used when teaching or studying, its bearing on the way in which students will need to be assessed, and ensuring fair access to these technologies, as well as the privacy and security issues involved. These issues are discussed below.

Nature of assessment

2.60 Professor Adam Bridgeman, Pro Vice-Chancellor Educational Innovation, University of Sydney, explained that the first step in upskilling academics to effectively respond to the challenges of artificial intelligence in relation to student assessment has been to expose them to the possibilities of what artificial intelligence can do and demonstrate that many of their assessments can be completed using artificial intelligence.[148]

2.61 However, Professor Danny Liu, Senior Academic Developer, University of Sydney, observed that the 'the research coming out of the various places around the world is indicating that the propensity for students to use AI to cheat is probably not as bad as we thought it was going to be'.[149]

2.62 Nonetheless, Professor Bridgeman noted that the nature of assessments would need to change:

> I think ideally our assessments in two or three years will be authentic and authentic to the new world, the changed world, so that it will be what we refer to as our lane two assessments. It's the assessment where AI, the copilot, is there naturally, just as it would be in the workplace.[150]

2.63 Professor Liu further explained the two-lane approach to assessments adopted by the University of Sydney:

147 Submission 33, The University of Sydney, p 6.

148 Evidence, Professor Adam Bridgeman, Pro Vice-Chancellor Educational Innovation, University of Sydney, 11 March 2024, p 3.

149 Evidence, Professor Danny Liu, Senior Academic Developer, University of Sydney, 11 March 2024, p 3.

150 Evidence, Professor Bridgeman, 11 March 2024, p 4.

> We have what we call a two-lane approach to assessment which is saying that in a program we'll need some highly secured assessments—there might be sit-down exams or oral examinations where we know it's the student—and then, for the most part, we want to have assessments which are authentically engaging students with AI by saying, "These are the tools out there. We know you're going to use them anyway, even if we say don't use it, and so we want to help you, as an institution, to be able engage with these in a smart way." We are encouraging staff to think about both kinds of assessments not just lane two assessment, because then you won't know students know what they know, and not just lane one, because that would be very boring for students. We want to encourage those two approaches.[151]

Digital divide

2.64 The implications of unequal access to technology due to socio-economic differences, a lack of connectivity, and resourcing disparities between schools, was a particular concern to stakeholders.[152] The NSW Teachers Federation warned of the potential exacerbation of the digital divide:

> Some of our communities have very high use of AI by the students in certain parts of New South Wales. Others have not only no use of AI; they actually don't have the digital technology or the connectivity. So, in the public school system, it's quite distinct. You have to address those variables to ensure we don't entrench disadvantage across the system.[153]

Data security and privacy issues

2.65 Additional concerns voiced by stakeholders were around data security and privacy.[154] The Australian Education Union – NSW Teachers Federation Branch were wary of 'edu-businesses' which have incentives to collect and use data for purposes beyond the classroom.[155] They emphasised that 'teachers, students and parents must understand what data is being collected and how this data is being used' whether in applications or AI tools.[156]

2.66 As well as highlighting 'ethical risks' around privacy and data security, the Australian Catholic University – Institute for Learning Sciences and Teacher Education noted the potential 'perpetuation of biases and discrimination connected with gender, culture, ableism; and a normative view of intelligence and of emotion'.[157]

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151 Evidence, Professor Liu, 11 March 2024, p 3.

152 Submission 27, Australian Catholic University – Institute for Learning Sciences and Teacher Education, p 3; Submission 33, The University of Sydney, p 7.

153 Evidence, Ms Flohm, 11 March 2024, p 4.

154 Evidence, Ms Flohm, 11 March 2024, p 5; Submission 27, Australian Catholic University – Institute for Learning Sciences and Teacher Education, p 3.

155 Submission 23, Australian Education Union – NSW Teachers Federation Branch, p7.

156 Submission 23, Australian Education Union – NSW Teachers Federation Branch, p 7.

157 Submission 27, Australian Catholic University – Institute for Learning Sciences and Teacher Education, p 3.

Professional development

2.67 The need for proper professional development for teachers in relation to artificial intelligence was also raised. The Australian Education Union – NSW Teachers Federation Branch stressed the importance of professional learning in preparing teachers, further emphasising that there must be an evidence base for the use of artificial intelligence and its pedagogical value in education. It argued that 'deep and ongoing engagement with the profession' must occur, underscoring that 'Teachers must learn about AI, before any teaching about and/or with AI occurs.[158] In addition, Ms Amber Flohm, Deputy President, NSW Teachers Federation, argued that 'AI must be recognised for what it is—a tool to be used in accordance with a teacher's professional judgement for the purposes of enhancing educational outcomes'.[159]

The impact of artificial intelligence on creative industries

2.68 Like other industries, generative AI is already being used by those in the arts and culture sector. Artificial intelligence is being used by 'creators, participants and audiences in arts, culture and creativity' in the following areas:

- creation of arts and culture
- discovery of content via search engines
- preservation of language and heritage
- automated content recommendation and moderation on digital platforms
- automated speech recognition, captioning and transcription
- machine translation of text and speech
- classification ratings in video and games.[160]

2.69 The potential impact of artificial intelligence on arts and culture, and the associated creative industries, was the cause of much discussion during the inquiry. There were varying views as to whether the risks of artificial intelligence outweighed the benefits. The arts and culture think tank, A New Approach, described how the extent to which creators embraced AI varied, noting that 'Some do this with caution, and others with zeal'.[161]

2.70 Figure 3 was included in the submission from A New Approach and summarises the various opportunities and risks presented by AI to arts, culture, and creativity.

158 Submission 23, Australian Education Union – NSW Teachers Federation Branch, p 4.

159 Evidence, Ms Flohm, 11 March 2024, p 2.

160 Submission 12, A New Approach, pp 4 and 7-11.

161 Submission 12, A New Approach, p 4.

Figure 3 Applications of AI in arts, culture and creativity

Application of AI	Potential opportunities	Potential risks
Generative AI (including chatbots) to generate creative works (eg. painting, music, poem) or assist with their generation	Improve the productivity of human creators and create opportunities for new forms of art and culture	Generative AI can displace arts and cultural workers from incentives to create. It can disrupt connections between human creators and creative works, including poor attribution and poor information about who made creative works.
Automated decision making - online content moderation	More efficient regulation of copyright, abhorrent content, misinformation, classification ratings	Blocking and other overregulation of lawful content poses risks to freedom to expression[8] and to content creators' livelihoods and businesses.
Automated decision making - classification of video and games	More efficient classification and therefore more timely availability of film, television, other video and games	Underclassification risks young Australians accessing unsuitable material. Overclassification denies access to young Australians (for classified material) or all Australians (for refused classification material). Misclassification affects audience understanding of what ratings mean.
Automated captioning	More films, television and other video accessible to Australians with hearing disabilities, of schooling age and from migrant or other CALD backgrounds	Low accuracy captioning can exclude, misinform or mislead these people.
Large language model - machine translation of languages	More films, television and other video content accessible to migrants, other CALD background people and Australians with hearing disabilities	Low accuracy translation can misrepresent creators and exclude, misinform or mislead audiences.

Source: Submission 12, A New Approach, p 28.

2.71 Interactive Games and Entertainment Association described the video games industry as 'a pioneer in the development and application of AI', noting that it is often the first place where emerging technology is used.[162] They adopted a positive view of artificial intelligence, noting that video games were one of the earlier cases of the use of artificial intelligence.[163]

2.72 The Interactive Games and Entertainment Association further described how video games and learning modules use artificial intelligence not only for entertainment but also for training purposes or in 'serious games'. Artificial intelligence is used in fields as diverse as education, health care, defence, business, and community sectors to provide real-world simulations, such as for counsellors or doctors, where the AI represents a client or patient for training purposes.[164]

162 Submission 45, Interactive Games and Entertainment Association, p 3.

163 Evidence, Mr Charles Hoang, Director of Public Policy and Government Relations, Interactive Games and Entertainment Association, 8 March 2024, p 36.

164 Evidence, Mr Ron Curry, Chief Executive Officer, Interactive Games and Entertainment Association, 8 March 2024, p 39; Submission 45, Interactive Games and Entertainment Association, p 2.

They also noted the use of artificial intelligence in tourism, where augmented reality is used to show what something may have looked like in the past.[165]

2.73 Mr Nicholas Pickard, Executive Director, Public Affairs and Government Relations, APRA AMCOS, specifically suggested that 'The New South Wales Government should develop a definition of "transparency" in AI that benchmarks how AI developers and users provide sufficient information in respect of the original creative works that have been used to generate AI content', highlighting that creators and publishers of content would benefit from clear standards.[166]

2.74 While the Australian Writers' Guild recognised that artificial intelligence has 'many exciting possibilities for efficiency and assisting non-creative decision making in our industry', they warned that 'it also has the potential to be an existential threat to the Australian creative sector, our audiences and the communities we build'.[167] One of the major concerns to be raised in relation to the arts and culture sector, was in relation to the copyright and intellectual property issues around artificial intelligence. A number of stakeholders highlighted the lack of transparency around the training of generative AI, which has not acknowledged 'the content which has been scraped, mined, listened to, trained on or, to use another word, copied in order to create their outputs'.[168] This was presented to the committee as the 'theft of someone's intellectual property'.[169]

2.75 Ms Eileen Camilleri, Chief Executive Officer, Australian Copyright Council, questioned 'Are we going to stand by and allow for the wholesale stealing of work?'[170] Ms Camilleri voiced concern about the potential impact of the misuse of artificial intelligence on creators:

> The potential for AI technology misuse cannot be understated for creators, including for First Nations creatives, whose cultural and intellectual property is particularly vulnerable and not appropriately protected. The large-scale use of copyright material without transparency and permission denies all creators the right to choose if, where and when their copyright material is used and receive remuneration for use of that work.[171]

2.76 Ms Claire Pullen, Group Chief Executive Officer, Australian Writer's Guild, similarly voiced concern about the threat posed by generative AI platforms to 'First Nations cultural assets and community custodianship models of story'.[172]

2.77 The Australian Writers' Guild argued that safe and responsible artificial intelligence would:

165 Evidence, Mr Curry, 8 March 2024, p 39.

166 Evidence, Mr Nicholas Pickard, Executive Director, Public Affairs and Government Relations, APRA AMCOS, 8 March 2024, p 46.

167 Submission 20, Australian Writers' Guild, p 2.

168 Evidence, Mr Pickard, 8 March 2024, p 46.

169 Evidence, Ms Claire Pullen, Group Chief Executive Officer, Australian Writer's Guild, 8 March 2024, p 45.

170 Evidence, Ms Eileen Camilleri, Chief Executive Officer, Australian Copyright Council, 8 March 2024, p 48.

171 Evidence, Ms Camilleri, 8 March 2024, p 45.

172 Evidence, Ms Pullen, 8 March 2024, p 46.

- ensure creative products do not harm or exploit consumers
- facilitate and assist creative workers, rather than replicating them or their practice
- ensure artists can continue to derive a fair income from their creative works
- protect and strengthen copyright frameworks designed to deliver good outcomes for Australian artists and creative workers.[173]

2.78 However, UNSW Allens Hub for Technology, Law and Innovation recognised the various competing interests of creators, innovators, and users within consideration of intellectual property issues, and the need to balance the rights of creators while fostering innovation:

> This is a particularly difficult area, as competing interests do need to be finely balanced, in incentivising innovation by providing economic and moral rights to creators, without unduly discouraging innovation by downstream innovators or productivity gains by users. While some are rightly concerned about the livelihood of creative authors and artists being displaced, as well as a degeneration of our cultural footprint, others have highlighted the dangers of market concentration of LLM productivity tools in the hands of large digital platforms, or effects on research, search engines and interoperability of old and new technology.[174]

2.79 They concluded that law reform in this area may be required:

> Ultimately, both Australian creators and Australian users may be detrimentally affected in ways that do not suit government policy goals and community expectations, and therefore we would recommend the NSW government to urge significant consultation on necessary Commonwealth law reform in this area.[175]

2.80 While intellectual property and copyright is predominantly a federal issue, a number of stakeholders highlighted the role that could nonetheless be played by the NSW Government. Ms Claire Pullen, Group Chief Executive Officer, Australian Writer's Guild, explained how the NSW Government still had leverage in this area:

> But for screen and certainly for a number of the creative products that my members are engaged on, whether or not government money is put towards the project, whether it's through an incentive or a grant or through development funding, can often be the difference between whether the thing is made or not. That's where the New South Wales Government can exercise leverage with a relative degree of ease, simply by saying, "We will not give you this grant, you will not be funded to do this development, we will not give you this offset if you have used generative AI in this process. You must warrant that you haven't done it, and we may, down the track, if we become aware that you've done it, ask you for the money back.[176]

2.81 Ms Pullen also warned that the NSW Government needed to be mindful of its potential exposure to secondary liability:

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173 Submission 20, Australian Writers' Guild, p 2.

174 Submission 25, UNSW Allens Hub for Technology, Law and Innovation, p 12.

175 Submission 25, UNSW Allens Hub for Technology, Law and Innovation, p 12.

176 Evidence, Ms Pullen, 8 March 2024, p 49.

> Create NSW funds various offsets, incentives and programs for the development and production of screen and arts in New South Wales, including games. Wherever the New South Wales Government's money is in play where a creative project utilises generative AI, the New South Wales Government is potentially exposed to that risk, as are any downstream businesses in that transaction chain. This runs directly counter to the aspirations of our creative industries expressed by the New South Wales Government in our cultural communities plan.[177]

2.82 The potential for the NSW Government to address issues of 'cultural risk' in its policy framework was also noted. Mr Nicholas Pickard, Executive Director, Public Affairs and Government Relations, APRA AMCOS, argued that, in its current form, the AI Assurance Framework does not adequately incorporate the concerns of artists, creators and copyright owners, nor does the AI Ethics Policy includes issues of cultural impact or transparency around the use of copyright material.[178]

Committee comment

2.83 It is clear that artificial intelligence is having, and will continue to have, a major impact on the economy in New South Wales. The productivity gains are predicted to be sizeable. Numerous stakeholders were of the view that artificial intelligence would contribute significantly to growing the economy. The committee was encouraged by the evidence of the NSW Productivity Commission that artificial intelligence is likely to have a positive impact on both the productivity growth rate as well as Gross State Product in New South Wales.

2.84 The committee heard that Sydney is considered a global 'hotspot' by some, due to its large technology workforce and the value of the technology sector. In addition, a number of university and research institutes that focus on artificial intelligence are located in New South Wales. Clearly there is considerable potential for New South Wales to be a leader in this area, both within Australia and globally.

2.85 Care should be taken to ensure this prospect is not squandered. People, businesses and industries within New South Wales need to be well equipped to seize these opportunities and take full advantage of the associated benefits. However, this will involve minimising risks as appropriate so the adoption of artificial intelligence occurs in a considered and sensible way.

2.86 It is important that businesses are encouraged to use artificial intelligence responsibly. The committee is mindful that while innovation should not be hampered unnecessarily, safeguarding the ethical use of artificial intelligence is critical. There is an opportunity for government agencies to provide examples of best practice in this area, in the development and application of policy, as well as in thoughtful engagement with AI technologies in their daily business. This will include making certain that relevant considerations around the risks of artificial intelligence are central to procurement practices. To this end, the committee recommends that NSW Government investigate how the AI Assurance Framework could be effectively integrated into the Procurement Policy Framework.

[177] Evidence, Ms Pullen, 8 March 2024, p 46.

[178] Evidence, Mr Pickard, 8 March 2024, p 46.

Recommendation 1

That the Government investigate how the Artificial Intelligence Assurance Framework could be effectively integrated into the Procurement Policy Framework.

2.87 While there are many benefits and opportunities associated with artificial intelligence, the committee acknowledges that it will impact the labour force, with an associated shift in what are seen to be desirable skills and abilities in workers. Some sectors are likely to be more affected than others. The transition and adjustment of industries will need to be managed carefully to minimise disruption. Nonetheless, it is encouraging that a number of stakeholders, including the CSIRO, anticipate that artificial intelligence will likely have a greater impact on tasks more than jobs.

2.88 The committee encourages the Government to utilise these new and emerging technologies where possible to expand access to the workforce. In particular, the committee would like to see access expanded to those whose participation may have been more limited in the past due to reasons of disability, caring responsibilities, or location in rural or remote areas.

2.89 It is apparent that artificial intelligence is already actively and widely used in New South Wales. In order to ensure that businesses and industry are able to adapt to the advent of artificial intelligence, the committee encourages the Government to assist businesses and industry in this adjustment. Thought needs to be given as to how best to upskill workers, both present and future. The workforce needs to be digitally literate and skills gaps need to be closed where they exist.

2.90 The committee is pleased to learn of the EduChat app that is being piloted in public schools in New South Wales, and its attempt to harness the benefits of generative AI while ensuring that its use is safe, appropriate and relevant. It will be important for the Government to maintain an open dialogue with students and educators in relation to artificial intelligence, and ensure that the use and adoption of artificial intelligence in schools is evidence-based and of pedagogical value. In addition, educators will need to be provided with professional learning and development opportunities in relation to the effective and ethical use of artificial intelligence in teaching. The committee accordingly recommends that the NSW Department of Education prioritise the provision of specific guidance and training for all teachers on the ethical and effective use of artificial intelligence within education.

Recommendation 2

That the Department of Education prioritise the provision of specific guidance and training for all teachers on the ethical and effective use of artificial intelligence within education.

2.91 The committee acknowledges the significant concerns of those within the creative industries around the inappropriate use of their work for training large language models. The threat this poses to the livelihood of those working in these areas is acknowledged. The committee accordingly recommends that the NSW Government advocate to the Australian Government

for greater protection of the copyright and intellectual property of those working in creative industries in light of the challenges presented by generative artificial intelligence.

Recommendation 3

That the NSW Government advocate to the Australian Government for greater protection of the copyright and intellectual property of those working in creative industries in light of the challenges presented by generative artificial intelligence.

Chapter 3 Risks, opportunities and challenges

The potential benefits of artificial intelligence are many, as are the risks associated with it should appropriate safeguards not be put in place. The previous chapter discussed the prospect of significant productivity gains and benefits to the economy and specific industries should the benefits of artificial intelligence be harnessed. However, these are not the only opportunities associated with artificial intelligence. This chapter includes an overview of some of the additional benefits, including the ability for government agencies and independent organisations to process large amounts of information otherwise beyond their capacity. It also notes the possibility of improving the accessibility of the justice system.

Nonetheless, there are risks that must be managed. This includes the inappropriate automation of decision-making within governments, discrimination due to algorithmic bias, the impact of hallucinations (plausible but inherently false information), the spread of misinformation and disinformation, privacy concerns, exacerbation of the digital divide, as well as the impact of these technologies on the environment.

Finally, this chapter considers how the risks, opportunities, and challenges presented by artificial intelligence may be balanced.

The opportunities of artificial intelligence

3.1 Many stakeholders throughout the inquiry identified the numerous opportunities and social benefits presented by artificial intelligence (AI), including the automation of mundane or hazardous tasks. Some of the ways in which artificial intelligence is already being used by NSW Government, as well as its proposed uses, were outlined in Chapter 1. In addition, many of the productivity gains and economic benefits associated with artificial intelligence were detailed in Chapter 2.

3.2 However, there are many other benefits to those discussed in previous chapters. The CSIRO described how artificial intelligence is 'playing a transformative role in advancing the natural sciences, physical sciences, life sciences, social sciences and the arts and humanities. Artificial intelligence is enhancing human comprehension of phenomena across all disciplines and wide-ranging spatial and temporal scales'.[179]

3.3 In a similar vein, the Tech Council of Australia highlighted how artificial intelligence is used in areas as diverse as emergency services and finance. They noted that it enables early warning systems to 'monitor and predict bushfire exposure areas to efficiently organise the deployment of emergency personnel and resources'.[180] Artificial intelligence also can detect fraudulent activities within finance.[181] They further outlined how it is impacting scientific research and healthcare:

> Just last year, AI models accelerated scientific progress to aid the process of hydrogen fusion to transform energy. Astronomers are using AI to run simulations of dark matter

[179] Submission 41, CSIRO, p 4.

[180] Submission 26, Tech Council of Australia, p 4.

[181] Submission 26, Tech Council of Australia, p 4.

> and dark energy to better understand our universe. AI has helped solve one of the biggest problems in biological research by increasing the visibility over the structure of human proteins to accelerate future drug discovery. Based in Haymarket, Sydney-grown Harrison.ai, a clinician-founded medical and healthcare start-up founded in Sydney, is helping revolutionise medical diagnostics and treatment to enable faster and more accurate detection of diseases and early intervention for patients – with their product already in use by around one third of radiologists in Australia.[182]

3.4 Other benefits include the ability of artificial intelligence to process and scrutinise the enormous amounts of information received by some government departments and agencies, as well as independent statutory organisations. Further, it is clear that artificial intelligence can be used to improve the accessibility of the justice system, both for general users as well as specific benefits for those who experience particular difficulties as a result of their disability or a language barrier. The ways in which artificial intelligence could assist in both of these areas is discussed in greater detail below.

Processing large amounts of data

3.5 A number of inquiry participants drew attention to the potential for artificial intelligence to assist with processing the large amounts of information received by a government agency or independent organisation. The Hon Paul Lakatos SC, Commissioner, Independent Commission Against Corruption (ICAC), explained how 90 per cent of the property or evidence received by ICAC is in the form of digital data. He described how artificial intelligence may assist ICAC with scrutinising the huge volume of data it receives that is otherwise beyond their current capacity:

> That has varied from 18 terabytes in the year 2014 up to 62 to 48 terabytes in the periods 2018-2019 and 2022-2023. Just so there is some handle on this for the people not so acquainted with computer technology and its capacity, 1 terabyte equates to 83 million pages of data. For every terabyte of data, commission staff have performed between 80,000 to 90,000 searches of that data. The quantity and size of the data acquired and requiring scrutiny is simply outside the capacity of the staff of an organisation such as ours to be able to deal with efficiently.[183]

3.6 Artificial intelligence is already being used for anti-corruption purposes in Brazil and the United States of America. ICAC outlined how a governance risk assessment system identifies potential fraud in public procurement processes in Brazil.[184] Artificial intelligence is also being used to detect claims fraud in the United States Centres for Medicare and Medicaid Services.[185]

3.7 Commissioner Lakatos explained how artificial intelligence could potentially benefit the processes at ICAC. He outlined how ICAC receives 2,000 to 3,000 complaints each year, 'a labour-intensive task which requires triaging, summarising and analysis of complaints to

182 Submission 26, Tech Council of Australia, p 4.

183 Evidence, The Hon Paul Lakatos SC, Commissioner, Independent Commission Against Corruption, 11 March 2024, p 34.

184 Submission 36, NSW Independent Commission Against Corruption, p 4.

185 Submission 36, NSW Independent Commission Against Corruption, p 4.

determine whether the matter should be pursued and, if so, how'.[186] As a result, ICAC believes there could be a role for artificial intelligence to assist in the management of complaints.

3.8 The NSW Ombudsman had a similar view of the potential ways in which artificial intelligence could assist the Ombudsman's Office. Mr Paul Miller PSM, NSW Ombudsman, described how the Ombudsman's Office has 'a very voluminous frontline service offering, so there's a lot of potential for AI in terms of better customer service and better customer experience in terms of tracking complaints, redirecting complaints et cetera'.[187]

Increasing accessibility within the justice system

3.9 One of the opportunities presented by artificial intelligence is its potential to improve the affordability and accessibility of the justice system, especially for people with disability. The NSW Bar Association was of the view that the Department of Communities and Justice should review the use of artificial intelligence in the court process and identify additional areas where it could be used to enhance access to justice by those with disabilities.[188]

3.10 The NSW Bar Association provided the following examples of how artificial intelligence could improve accessibility:

- real-time captioning/translation programs and lip-reading recognition programs for use in virtual court hearings
- AI-based image/facial recognition technologies to assist those with visual impairments to read documents, identify people and surroundings, and convert image into text alternatives
- the use of such technologies as ChatGPT to summarise large amounts of text to assist those with cognitive differences.[189]

3.11 There were also suggestions as to how artificial intelligence could improve the accessibility of the justice system more generally. Maurice Blackburn proposed a number of ways in which artificial intelligence could potentially help improve the operation of courts and tribunals, provided appropriate safeguards were in place, including:

- the categorisation of issues, providing potential litigants with information about their rights and entitlement, and options for resolving the dispute
- the determination of a suggested compensation payment based on specific circumstances, scheme guidelines, and legal precedents
- by identifying patterns and trends in witness testimony, documents, and expert reports so as to 'reduce the bias and improve the productivity of human judges'.[190]

186 Evidence, The Hon Paul Lakatos SC, 11 March 2024, p 34.

187 Evidence, Mr Paul Miller PSM, NSW Ombudsman, NSW Ombudsman's Office, 11 March 2024, p 45.

188 Evidence, Dr Benjamin Kremer SC, Co-Chair, Media and Information Law and Technology Committee, NSW Bar Association, 11 March 2024, p 27; Submission 39, NSW Bar Association, p 6.

189 Submission 39, NSW Bar Association, p 27.

190 Submission 38, Maurice Blackburn Lawyers, pp 2-3.

3.12 A number of overseas jurisdictions have incorporated the use of artificial intelligence in their justice system. The NSW Bar Association provided the following examples of foreign jurisdictions that are using AI systems in this way.

- The Supreme Federal Tribunal in Brazil uses software to automate the examination of appeals and provide recommendations on legal precedents and possible courses of action.
- Saudi Arabia introduced virtual enforcement courts in March 2022 that operate without human intervention in the litigation process.
- The Abu Dhabi Judicial Department has used a smart court initiative since 2022 to enhance and expedite the adjudication process.
- Estonia explored the automation of small contract disputes but decided it has no plans to introduce automated courts.
- China is developing 'smart courts' which integrate AI in dispute resolution, and enable 'court users to commence actions, serve documents, present evidence and resolve disputes online'.[191]

3.13 Closer to home, the Bar Association noted that the Judicial Commission of NSW is developing 'bail assistant' software, which is a supervised machine learning system that may guide decision makers through the process established by the *Bail Act 2013*.[192]

3.14 Nonetheless, the Bar Association was extremely wary of the use of artificial intelligence in judicial decision-making. It advocated for the prohibition of 'the use of an AI system to replace or supplement judicial discretion, including in sentencing, and other evaluative decisions affecting individual liberties and freedoms'.[193]

Artificial intelligence and democracy

3.15 While much of the discussion involving artificial intelligence and democracy tends to focus on the threats it represents due to the spread of disinformation and the use of 'deep fakes' (see para 3.39 onwards), there are nonetheless some opportunities for artificial intelligence to improve the way in which citizens engage in the democratic process. Distinguished Professor Jason Potts, Co-Director, RMIT Blockchain Innovation Hub, highlighted a number of the positive uses of artificial intelligence in this space, including its creative use in campaign design and advertising. He then went on to explain how artificial intelligence could also be used by a voter to assess a much greater range of information via an AI agent to inform their vote:

> The use of an agent is to read all of the things. So I would say, "Agent, please go away and read all the things. Give me some people I should vote for and the reasons why." That kind of consumer use case for AI is a perfectly legitimate and effective use case. It enables a machine to do a thing that a human just wouldn't have time to do: to read all the literature and come up with arguments and use that. That's a perfectly legitimate use of AI in modern parliamentary democracy, without fundamentally changing the

191 Answers to questions on notice, NSW Bar Association, received 19 April 2024, pp 3-4.

192 Answers to questions on notice, NSW Bar Association, received 19 April 2024, p 4.

193 Submission 39, NSW Bar Association, p 14.

> underlying rules and the process. It's just adding more information and computing into it.[194]

The risks of artificial intelligence

3.16 The majority of stakeholders acknowledged that while artificial intelligence presents many opportunities and potential benefits there are nonetheless clear risks that will need to be managed. These include:

- impact on work and some job functions (discussed in Chapter 2)
- privacy and cyber security threats
- the potential of bias, reflecting the data on which the artificial intelligence is trained
- hallucinations
- accountability or transparency
- effect of generative AI on copyright laws (discussed in Chapter 2).[195]

3.17 Multiple inquiry participants voiced concerns about the risks associated with some aspects of artificial intelligence.[196] There was uneasiness about the potential for 'autonomous and rogue AIs' and the potential use of artificial intelligence by terrorists or to threaten biosecurity.[197]

3.18 Good Ancestors Policy cautioned that 'Today's AIs are on the cusp of being able to help a negligent or nefarious actor to design and release a novel pathogen that could be as consequential, or more consequential, than COVID-19'.[198] They also drew attention to the potential implications of artificial intelligence in relation to dual-use risks to election integrity, biosecurity and terrorism.[199]

3.19 However, Dr Stefan Hajkowicz, Chief Research Consultant – Technology Strategy, Policy and Foresight, CSIRO Data 61, cautioned that not taking advantage of artificial intelligence also presents its own risks:

> If I look at all the things that are going to wipe us out, AI is very low on the list. We've got the capability to do that ourselves. Humans are still way more risky than AI. I think a lot of the stuff that we see in the media about the end of humanity is just not founded in anything that we can really see. There are risks, and they are significant, and we need to manage them. There is also a risk of not using it—there is also a lost opportunity. There is also the risk that the economy won't grow and that people will be limited in careers; that New South Wales companies will be disrupted if we don't. I think, by all means, we need to acknowledge there are big unknowns and keep our eye on what is

194 Evidence, Distinguished Professor Jason Potts, Co-Director, RMIT Blockchain Innovation Hub, 11 March 2024, p 18.

195 For example see submission 37, NSW Government, pp 9-10; Submission 48, Dr Darcy W E Allen, Professor Chris Berg, and Dr Aaron M Lane, RMIT Blockchain Innovation Hub, p 2.

196 See, for example, Submission 16, Malin Kankanamge; Submission 6, Leosha Trushin.

197 Submission 18, Good Ancestors Policy, pp 3 and 5.

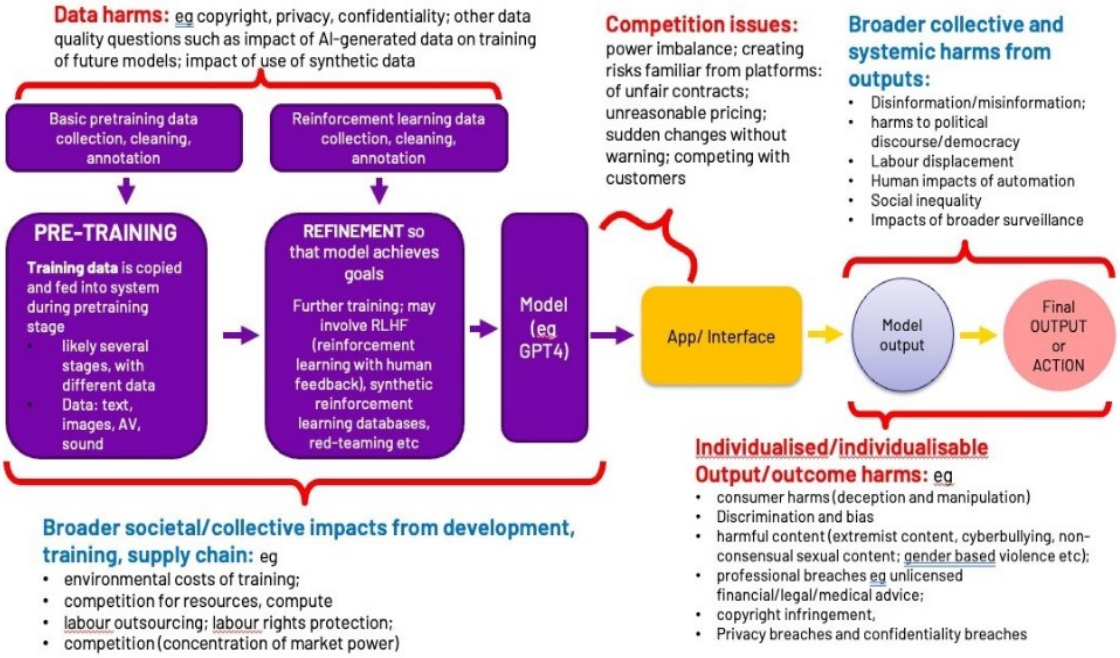
198 Submission 18, Good Ancestors Policy, p 5.

199 Submission 18, Good Ancestors Policy, p 5.

happening in the space of AI. But I think the end of humanity concerns are pretty low.[200]

3.20 Many of the potential impacts of artificial intelligence are depicted in figure 4 below, which was created by the ARC Centre of Excellence for Automated Decision-Making and Society. It illustrates the various impacts of artificial intelligence that arise at different stages of its use, including data harms, competition issues, social and individual impacts.

Figure 4 AI impacts



Source: Submission 46, ARC Centre of Excellence for Automated Decision-Making and Society, p 17.

3.21 Some inquiry participants were of the view that a number of the negative impacts of artificial intelligence are already being experienced in New South Wales. For example, in its submission, Campaign for AI Safety identified the following as already occurring:

- privacy violations
- the creation and spreading of disinformation e.g. videos of AEC vote counting staff to create false narratives about vote rigging
- compromising of cybersecurity e.g. Latitude Financial breach of NSW driver licence information
- the generation of biased decisions – e.g. Robodebt
- censorship – e.g. political party logos
- physical and mental harm caused by use of AI-generated deep fake pornography to bully others (including by adolescents)

[200] Evidence, Dr Stefan Hajkowicz, Chief Research Consultant – Technology Strategy, Policy and Foresight, CSIRO Data 61, 8 March 2024, p 9.

- threat to livelihood of those in the creative industries.[201]

Inappropriate automated decision-making

3.22 A number of inquiry participants provided evidence about automated decision-making (ADM) and the risks associated with its use.

3.23 The ARC Centre of Excellence for Automated Decision-Making and Society in its 2024 report, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments* (ADM+S Report), stated that the 'challenges typically arising from both AI and ADM are not associated with the specific technology, but from how it is used'.[202]

3.24 Meanwhile the Campaign for AI Safety referred to the 'robodebt scandal' as an example of the harms caused by its misuse:

> The Commonwealth's debt assessment and recovery program which wrongly recovered debt programs using automated decision making is an example of the misuse of AI and human oversight which led to irreparable physical and mental damage including lost lives.[203]

3.25 While the automation of some decisions by government departments and agencies may be effective and efficient, the ARC Centre of Excellence for Automated Decision-Making and Society identified the following as some of the risks that may remain in the use of AI systems:

- unauthorised administrative decisions
- potential bias
- a reduction in administrative openness and clarity
- privacy concerns.[204]

3.26 The ADM+S Report drew attention to barriers presented by the limited visibility of the ADM systems that are used by the NSW state and local governments.

- The public's understanding, and their ability to hold governments accountable for use of ADM systems, is hindered.
- There is a barrier to oversight by independent integrity agencies like the NSW Ombudsman's Office.

201 Submission 1a, Campaign for AI Safety, p 6.

202 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments*, March 2024, p 105.

203 Submission 1a, Campaign for AI Safety, p 10.

204 Submission 46, ARC Centre of Excellence for Automated Decision-Making and Society, p 13.

- Knowledge-sharing and capacity-building across government is limited, which could constrain the development of best practice, and discourage beneficial uses of new technologies.[205]

3.27 While there are principles of administrative law that are designed to protect members of the public against unfair decisions, the use of ADM systems may mask their applicability. Mr Paul Miller PSM, NSW Ombudsman, NSW Ombudsman's Office, voiced his concern that some ADM systems are incorrectly viewed as an IT project, rather than being subject to the legal frameworks that apply to administrative decisions, including ADM:

> The second concern was what seemed to us to be a broad lack of appreciation among government agencies and officials about the legal frameworks that already existed and how they controlled the use of ADM. It was almost as if there was a view that, because the technological tools were new or because they were not expressly prohibited or regulated, their use was unregulated unless and until new laws were made specifically to deal with them. Of particular concern was the risk of ADM projects being perceived, developed and run primarily through the lens of being an IT project, without proper consideration of the fact that they are first and foremost about the lawful performance of an administrative and usually statutory function.[206]

3.28 An emerging area of risk involved the automatic incorporation of AI features in updates to existing software. The ARC Centre of Excellence for Automated Decision-Making and Society described how this may result in government departments and agencies not realising they need to comply with the Government's policies on artificial intelligence (outlined in Chapter 1):

> There is also evidence that state government departments and agencies and local councils are considering making use of features (such as additional predictive analytics, or generative AI) offered in updates to existing software and platforms procured from commercial providers. This raises what we might call the 'flick the switch' dilemma in an 'AI everywhere' world. If a department or agency is offered the opportunity – or even simply told – that new versions of an already-acquired product or service now come either with 'AI-enabled by default', or as an additional feature available by simply flicking a switch, when does, and when should this trigger a renewed assessment using tools such as the *NSW AI Assurance Framework*?[207]

Algorithmic bias

3.29 There was much discussion during the inquiry about the implications of algorithmic bias. Ms Lorraine Finlay, Commissioner, Australian Human Rights Commission, described how AI systems could perpetuate discrimination:

> Another key concern that we've highlighted in previous work on the use of automated decision-making is the risk of entrenching unfairness and existing social disadvantages

205 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments: Executive report*, March 2024, p 3.

206 Evidence, Mr Miller, 11 March 2024, p 40.

207 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments: Executive report*, March 2024, p 29.

> instead of resolving them. This potential for algorithmic bias may even lead to unlawful discrimination.[208]

3.30 The NSW Bar Association voiced its concern about the use of computerised models where the algorithms on which they are based are kept secret. They described how Correctional Offender Management Profiling for Alternative Sanctions (COMPAS) software was used to inform bail decisions in courts in the United States by predicting the risk of recidivism.[209] They noted that COMPAS 'has been criticised for exhibiting a bias that under-predicts future recividism by white prisoners, and over predicts recividism by black prisoners'.[210] However, the NSW Bar Association argued that the concerns were even greater in relation to AI systems, as the algorithms tend to not be known or understood rather than kept secret:

> Given that the Association understands that AI tools are likely to be based upon the operation of models whose operation is not fully understood, or indeed understood at all, and where there is no single algorithm but a complex interaction within the AI software that may change over time, the concerns about 'closed-source', 'black-box' algorithms are heightened for AI systems.[211]

3.31 The NSW Ombudsman, Mr Paul Miller, highlighted that in administrative law there is a rule against bias, but it is less clear how 'that rule would apply to the kind of systemic algorithmic bias that we're talking about as potentially occurring in the context of an ADM'.[212]

3.32 Another issue complicating matters is that of data poisoning, where the training data is deliberately manipulated to degrade the overall accuracy of the AI model. The CSIRO described how this is one of the prevalent attacks on AI models.[213] They provided an example of a 'backdoor attack', where 'adversaries insert hidden associations or triggers to the deep learning models to override correct inference, such as classification, and make the system perform maliciously according to the attacker-chosen target while behaving normally without the trigger'.[214]

3.33 However, it is not simply a matter of removing the data that is biased or poisoned from the AI system. The CSIRO outlined how it is not possible to eliminate data after an AI model has been trained, noting that:

> …the data utilised for training AI models cannot be destroyed, primarily because an unlearning process does not exist to remove specific data instances selectively. This inability to eliminate data post-training presents a significant challenge in complying with the data security life cycle and privacy norms.[215]

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208 Evidence, Ms Lorraine Finlay, Commissioner, Australian Human Rights Commission, 11 March 2024, p 20.

209 Answers to questions on notice, NSW Bar Association, received 19 April 2024, p 3.

210 Answers to questions on notice, NSW Bar Association, received 19 April 2024, p 3.

211 Answers to questions on notice, NSW Bar Association, received 19 April 2024, p 3.

212 Evidence, Mr Miller, 11 March 2024, p 42.

213 Submission 41, CSIRO, p 15.

214 Submission 41, CSIRO, p 15.

215 Submission 41, CSIRO, p 15.

3.34 Researchers from the RMIT Blockchain Innovation Hub were of the view that the most fruitful way forward is for users to adapt the way they respond and interact with AI technology. They believe this will be more effective than assuming an unbiased generative AI model can be created:

> The critical question for users of generative AI is not whether bias exists, but rather what types of bias are acceptable in specific contexts (ie biased compared to what?). Users must consciously navigate the trade-offs between different sources of bias: the averaged biases of input data in large language models (LLMs), biases introduced through safety and human reinforcement interventions, biases inherent in individual or group perspectives, and so on. This role of humans in the loop of generative AI is essential, it dictates the level and type of bias users are willing to tolerate and correct for in their interactions with AI.[216]

3.35 Mr Stephen Blanks, Treasurer and Past President, NSW Council for Civil Liberties, similarly posited that attention may be better focused on the way in which artificial intelligence is used rather than attempting to eliminate all bias:

> Eliminating bias from the datasets may not actually be possible. It's certainly desirable, but I wonder whether it's not really useful to demand or to focus too much attention on eliminating bias from the datasets, rather than focusing on the process of decision-making based on the technologies and how the decision-making is potentially discriminatory, and direct the attention there.[217]

3.36 To counter the potential for bias, multiple stakeholders stressed the necessity of ensuring a human is involved in any decision-making process in which artificial intelligence is employed. Mr Peter Derbyshire, Director, Policy and International Affairs, Australian Academy of Technological Sciences and Engineering emphasised the need for any AI systems used by government agencies to have a human in the loop and for it to have been designed with a focus on human rights:

> AI systems are often described as a black box and we cannot always look inside to see how they arrive at their outputs. It is therefore up to the people to monitor the data that it is trained on or the outputs of the system to ensure that these systems do not inherit current societal biases or reinforce disadvantage. This means the public service needs to be trained on how to use AI systems ethically, and the public should have full transparency about how AI is used in decision-making that affects them.[218]

3.37 However, some stakeholders were of the view that the potential impact of bias in some AI systems was just too great. Both the Human Rights Commission and the NSW Council for Civil Liberties expressed that they had called for moratoriums on the use of facial recognition technology, especially within policing, due to the significant impact on individuals of any technologies containing bias and resulting in biased outcomes.[219]

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216 Submission 48, Dr Darcy W E Allen, Professor Chris Berg, Dr Aaron M Lane, p 4.

217 Evidence, Mr Stephen Blanks, Treasurer and Past President, NSW Council for Civil Liberties, 11 March 2024, p 25.

218 Evidence, Mr Peter Derbyshire, Director, Policy and International Affairs, Australian Academy of Technological Sciences and Engineering, 8 March 2024, p 19.

219 Evidence, Ms Finlay, 11 March 2024, p 25; Evidence, Mr Blanks, 11 March 2024, p 25.

3.38 The NSW Bar Association similarly advocated for the prohibition of 'the sale or use of an AI system that employs or facilitates facial recognition and other biometric technology in decision-making that has a legal, or similarly significant, effect for individuals, or where there is a high risk to human rights, such as in policing and law enforcement'.[220]

Spread of misinformation and disinformation

3.39 Another issue presented by large language models is the potential for 'hallucinations'. The CSIRO advised that these are 'where the model generates erroneous, seemingly accurate, but inherently false information'.[221]

3.40 The RMIT Blockchain Innovation Hub stressed that the primary purpose of generative AI is to foster creativity rather than ensure accuracy. This may result in 'hallucinations', that is content that is potentially unique, creative and plausible, but not factual. They argued that users of generative AI must incorporate the potential for hallucinations in the way they approach its use, employing a healthy scepticism to outputs.[222]

3.41 A common concern raised throughout the inquiry was the use of artificial intelligence to spread misinformation and disinformation. The Independent Commission Against Corruption advised that this could potentially undermine public trust in government:

> It is well known that AI can accelerate the spread of rumour, conjecture, inadvertent misinformation and deliberate disinformation… The spread of mis- and disinformation about government can undermine the public's trust in government decision-making, its policies, administration and ultimately undermine public service.[223]

3.42 Ms Lorraine Finlay, Commissioner, Human Rights Commission explained how it is the 'widespread accessibility and user-friendly nature' of artificial intelligence that 'helps to facilitate potentially malicious applications of the technology, as evidenced by instances of deepfakes and the spread and increased impact of political misinformation'.[224]

3.43 The potential harm of 'deepfakes' was also raised, where AI technology is able to 'create authentic "deepfakes" of the appearance, voice and body language of an individual'.[225] The Independent Commission Against Corruption highlighted that while the impersonation or deception of others is not new in itself, artificial intelligence enables it to be done in more sophisticated forms than before:

> …the rapid improvements in AI technology appear to have created a novel threat because they can convincingly impersonate public figures. Deepfake images and videos may not leave forensic traces in edited digital media, making them difficult for humans or even machines to detect.[226]

220 Submission 39, NSW Bar Association, p 5.

221 Submission 41, CSIRO, p 15.

222 Submission 48, Dr Darcy W E Allen, Professor Chris Berg, Dr Aaron M Lane, p 3.

223 Submission 36, NSW Independent Commission Against Corruption, p 9.

224 Evidence, Ms Finlay, 11 March 2024, p 20.

225 Submission 36, NSW Independent Commission Against Corruption, p 5.

226 Submission 36, NSW Independent Commission Against Corruption, p 6.

3.44 As a result, ICAC were of the view that deepfakes could be used to 'adversely affect the operation of public agencies and democratic institutions'[227], warning of the difficulties in its detection and investigation:

> AI has the potential to increase the scale and reach of corruption, fraud and misinformation that could undermine confidence in the integrity of public institutions. It could also make it more difficult for such conduct to be detected, investigated and prosecuted by NSW public bodies… advanced technology can offer a dangerous combination of opacity, anonymity, psychological distance, speed and efficiency, and personalisation not seen before.[228]

3.45 The Hon Paul Lakatos SC, Commissioner, Independent Commission Against Corruption, noted that while ICAC has yet to deal with any allegations where artificial intelligence has been used to 'perpetrate serious corrupt conduct', ICAC believes 'with the significant steps in innovation being already taken, that will occur in the near or not-so-distant future'.[229]

3.46 Dr Stefan Hajkowicz, Chief Research Consultant – Technology Strategy, Policy and Foresight, CSIRO Data 61, suggested that the 'risk envelope' has changed as a result of generative AI:

> It has elevated because of the use of generative AI to mimic someone, to trick you, to make it look like you're talking to someone, seeing someone, looking at their language that's written exactly like them but it's not them, and the ability to do that and deceive people en masse or a targeted attack on an individual. So that is something that we have to grapple with. It increases the risk of manipulation from a foreign entity, potentially, to achieve those sorts of outcomes.[230]

3.47 However, Dr Hajkowicz noted that these tools were also available to Australian governments:

> But we use these tools at our end as well. The race is on for us to be able to use the same tools to protect Australia at the same time. I think that's the reality of the world we're moving into: The risk envelope is changing, the threat surface is changing, different attack modes are becoming possible.[231]

3.48 Various suggestions were made as to how the spread of misinformation and disinformation could be countered, including how to prepare people to receive and assess information in real time and consider whether or not it is true. Dr Stefan Hajkowicz, Chief Research Consultant – Technology Strategy, Policy and Foresight, CSIRO Data 61, noted that watermarks could be placed on an image or video that had been generated, as well as there being a role for 'education, awareness and training—we want people to know and understand that what they're seeing now on the intranet could be completely fake'. However, Dr Hajkowicz then went on to flag that 'A lot of what is gen AI created we cannot detect'.[232]

3.49 Professor Kimberlee Weatherall, Chief Investigator and University of Sydney Node Leader of the ARC Centre of Excellence for Automated Decision-Making and Society, similarly

227 Submission 36, NSW Independent Commission Against Corruption, p 6.

228 Submission 36, Independent Commission Against Corruption, pp 2-3.

229 Evidence, The Hon Paul Lakatos SC, 11 March 2024, p 34.

230 Evidence, Dr Hajkowicz, 8 March 2024, p 5.

231 Evidence, Dr Hajkowicz, 8 March 2024, p 5.

232 Evidence, Dr Hajkowicz, 8 March 2024, p 5.

highlighted how 'fakes are getting more convincing. And while there are research efforts strenuously underway to impose things like water marks and tracing of origin, the reality is this is going to become more challenging'.[233]

3.50 Some inquiry participants highlighted the role of technology in countering misinformation and disinformation. Distinguished Professor Jason Potts, Co-director, RMIT Blockchain Innovation Hub, commented on the problem of deepfakes by noting that it is 'A genuine and real problem that doesn't just exist in that; it exists across a whole lot of areas. It's a technological problem that will be solved with just better technologies of detection'.[234]

3.51 Meta identified ways it uses artificial intelligence to respond to the problem of hate speech. Meta noted that in a three month period in 2023, they were able to remove 9.6 million pieces of hate speech online, of which 94.8 per cent was proactively detected by artificial intelligence.[235] It also explained how it had implemented the use of labels, among other things, as part of its commitment to transparency and the responsible development of artificial intelligence:

- February 2024 – AI-generated images that are posted to Facebook, Instagram, and Threads are labelled as such when Meta can detect industry standard indicators that they are AI-generated. Meta may add a more prominent label if there is a particularly high risk of materially deceiving the public on a matter of importance.
- December 2023 – Purple Llama was launched – an umbrella project featuring open trust and safety tools and evaluations meant to level the playing field for developers to responsibly and safely deploy generative AI models and experiences.
- September 2023 – new AI features were rolled out across Meta's apps, including AI stickers. New AI is being rolled out slowly and contains built-in safeguards such as visible and invisible markers on Meta-AI generated images.[236]

3.52 However, some were cautious about the role to be played by technology companies. Ms Lorraine Finlay, Commissioner, Australian Human Rights Commission, stressed that 'while the technology companies have a really important role to play in this, it shouldn't be left to Google to decide what's misinformation and disinformation'.[237]

3.53 Another possibility raised was the use of pre-bunking technology, where the public is educated as to what misinformation could look like. In response to a question about whether 'pre-bunking technology' could assist, Ms Lorraine Finlay, Commissioner, Australian Human Rights Commission, explained that a multi-pronged approach is necessary:

> …the answer isn't a one-size-fits-all model. There are technologies that the technology companies are rolling out and developing that would be very helpful, but there also needs to be a response from government. There also needs to be a response that not only tackles misinformation once it's occurred but that works on primary prevention, effectively, by talking about education and giving individual citizens the tools they need

233 Evidence, Professor Kimberlee Weatherall, Chief Investigator and University of Sydney Node Leader of the ARC Centre of Excellence for Automated Decision-Making and Society, 8 March 2024, p 16.

234 Evidence, Distinguished Professor Potts, 11 March 2023, p 18.

235 Submission 49, Meta, p 8.

236 Submission 49, Meta, pp 4-5.

237 Evidence, Ms Finlay, 11 March 2024, p 21.

> to be able to ensure that they're aware of the information they're being presented too, and whether they can rely on it.[238]

3.54 However, Ms Finlay warned that it must be done in such a way that protects freedom of expression so that 'we don't start censoring different opinions and diluting the robust political discussion that we need to strengthen democracy in New South Wales and Australia'.[239]

3.55 Possible legislative and regulatory responses to countering misinformation and disinformation is discussed in Chapter 4.

Privacy concerns

3.56 The Australian Human Rights Commission was clear that there are enormous benefits associated with the use of artificial intelligence. However, Ms Lorraine Finlay, Commissioner, Australian Human Rights Commission, stressed the importance of 'human rights-centred design and deployment of new and emerging technologies'.[240] Ms Finlay particularly warned of the potential impact of artificial intelligence on privacy, which she described as 'a cornerstone human right', noting that 'the operation of AI may not only facilitate the invasion of privacy but potentially deepen these intrusions in new and concerning ways'.[241]

3.57 The Information and Privacy Commission NSW emphasised how the current form of artificial intelligence 'cannot exist in the absence of data' and 'this raw ingredient serves the function of AI'.[242] However, it is the use of data that is related to the privacy concerns voiced about artificial intelligence. The Information and Privacy Commission NSW warned that AI technologies present a number of privacy risks 'in which a lack of human oversight and poor system design and governance, which if left unmitigated, has the potential to lead to a range of adverse outcomes for human rights and democratic processes'.[243] In particular, it specified the following risks:

- the incidental collection of personal information
- unauthorised use of personal information for purposes not for which it was collected
- the risk of unauthorised access to personal information
- potential for increased risk of data breaches (and harms), as large volumes of data and insights are collected and retained
- inability to properly understand how personal information is being handled as a result of the complex nature of the technology systems deployed
- inaccurate or inappropriate decision-making.[244]

238 Evidence, Ms Finlay, 11 March 2024, p 21.
239 Evidence, Ms Finlay, 11 March 2024, p 21.
240 Evidence, Ms Finlay, 11 March 2024, p 20.
241 Evidence, Ms Finlay, 11 March 2024, p 20.
242 Submission 32, Information and Privacy Commission NSW, p 2.
243 Submission 32, Information and Privacy Commission NSW, p 15.
244 Submission 32, Information and Privacy Commission NSW, p 15.

3.58 The CSIRO spoke to the issue of inadvertent sharing of confidential data warning that 'users might unintentionally expose confidential information to unauthorised third parties through interactions with AI models'.[245] Professor Adam Bridgeman, Pro Vice-Chancellor Educational Innovation, University of Sydney, similarly explained how some students did not realise the implications when entering sensitive data into AI systems:

> We're here representing education, but we should acknowledge that people have already put research data into these and lost that research data, data that was protected commercial data or sensitive research data. It's really quite easy for people to make mistakes or not realise what they're doing. PhD students trying to get some help with rewriting a paragraph suddenly enter the medical data that they've collected into the system.[246]

3.59 Another concern was the ability of some AI systems to reidentify data that was previously de-identified or where a large language model may leak sensitive information about individuals whose data was used to build the model.[247]

3.60 The CSIRO also noted the impact of consent and information asymmetry, that is, where individuals or businesses that are the source of the data have not given explicit consent for their data to be used to train AI models. It referred to the difficulty of an individual retaining control over sensitive information when that information has been used to train AI models and the impact that may have on their right of correction and the 'right to be forgotten'.[248] The CSIRO concluded that there is 'an inherent tension between the development and operation of AI and the data protection principles captured in regulations'.[249]

3.61 Privacy concerns may also be raised by AI systems that utilise image detection and analysis. Salinger Privacy stressed that 'rapid advances in technologies, including artificial intelligence and facial recognition, mean that "not identifiable by name" is no longer an effective proxy for "will suffer not privacy harm"'.[250]

3.62 However, Professor Kimberlee Weatherall, Chief Investigator and University of Sydney Node Leader of the ARC Centre of Excellence for Automated Decision-Making and Society, emphasised the distinction between facial recognition and computer vision and image analysis. For example, she noted that while Transport for NSW uses systems to detect mobile phone use, it focuses on things rather than faces or identification.[251] Nonetheless, the ADM+S Report noted the need for explicit limits on the use of sensors, computer vision and analysis:

> We would draw attention, however, to the potential surveillance and privacy implications of these technologies, and the need for explicit, limits or precautions, or perhaps consistent guidance adapted to common use cases. It is particularly notable that local council use of such technologies is occurring in the absence of a specific, legislative

245 Submission 41, CSIRO, p 6.

246 Evidence, Professor Adam Bridgeman, Pro Vice-Chancellor Educational Innovation, University of Sydney, 11 March 2024, p 5.

247 Submission 11, Salinger Privacy, p 7; Submission 41, CSIRO, p 14.

248 Submission 41, CSIRO, p 14.

249 Submission 41, CSIRO, p 13.

250 Submission 11, Salinger Privacy, p 5.

251 Evidence, Professor Weatherall, 8 March 2024, p 12.

> framework, published strategies or guidance for the use of these potentially sensitive technologies. Such use is not subject to the *NSW AI Assurance Framework* which applies to state government uses.[252]

3.63 Ensuring that there is relevant oversight can help safeguard an individual's privacy. Ms Sonia Minutillo, Acting Privacy Commission, Information and Privacy Commission, described the benefits of the Information and Privacy Commission having advised in relation to a number of technologies that are part of the Digital Restart Fund:

> That has enabled us to understand the types of technology by virtue of the types of materials that are presented as part of those projects and the business cases. But, alongside of that, the undertaking of those privacy impact assessments—which really map out what the information holdings are, what personal information is in question, where it's flowing, who has got access—allow us to actually apply that lens, from a privacy perspective, to what has been occurring and intersecting with the technology.[253]

3.64 Another issue is the potential for 'digital consumer manipulation', namely 'the use of personalised consumer data collected, processed and/or disseminated by digital technologies, combined with insights from behavioural research, to exploit consumers' cognitive biases, emotions and/or individual vulnerabilities for commercial benefit'.[254]

3.65 The UNSW Allens Hub for Technology, Law and Innovation noted that this practice could include 'inducing disadvantageous purchases of products or services, extracting more personal information from consumers than is needed for the transaction, and engaging in unjustifiable price discrimination'.[255] The harms that may result include:

- impairing of consumer choice and autonomy
- the creation or exacerbation of information asymmetry
- consumers being unfairly disadvantaged
- privacy violation
- the compromising of consumer dignity
- the hindering or distortion of competition.[256]

3.66 The regulatory response to the privacy concerns presented by the use of artificial intelligence is discussed in Chapter 4.

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252 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW: Mapping and analysis of the use of ADM systems by state and local governments (Research report)*, March 2024, p 105.

253 Evidence, Ms Sonia Minutillo, Acting Privacy Commission, Information and Privacy Commission, 11 March 2024, p 46.

254 As quoted in submission 25, UNSW Allens Hub for Technology, Law and Innovation, p 9.

255 Submission 25, UNSW Allens Hub for Technology, Law and Innovation, p 9.

256 Submission 25, UNSW Allens Hub for Technology, Law and Innovation, p 10.

Digital divide

3.67 Some of the risks around artificial intelligence have little to do with the technology itself but are matters of inequitable access to it. While the use of artificial intelligence may be convenient and efficient for the younger population in general, the CSIRO flagged that it may prove challenging and discriminatory for some older people.[257]

3.68 The ARC Centre of Excellence for Automated Decision-Making and Society warned of the impact of digital exclusion on First Nations Australians. While 23.6 per cent of Australians face digital exclusion, First Nations Australians are more affected due to 'a 7.5 point disparity in digital inclusion compared to non-First Nations Australians'.[258]

3.69 In addition, rural and remote communities are more likely to have restricted access to digital technologies, especially Brewarrina, Central Darling, Coonamble, Walgett, and Tenterfield councils.[259] The CSIRO drew attention to the need to improve AI-related digital infrastructure:

> There is an ongoing need to improve the quality and reliability of internet connectivity. Many on-farm agricultural, environmental, and mining AI systems need access to data in order to operate. Limited connectivity in regional areas will likely hold back the ability of local industry to develop and adopt AI. Desired AI-related infrastructure also includes access to compute power to design and train machine learning models that are increasingly data hungry. This compute power will need to be both available and cost effective.[260]

Impact on the environment

3.70 Some inquiry participants observed that these new technologies have an environmental impact. Table 3 below outlines the environmental implications of artificial intelligence in terms of energy consumption, use of water, raw material and land, as well as undersea cables.

Table 3 Environmental implications of AI development and deployment

Energy consumption	Machine learning models, which are core to AI, can be energy-intensive. Only a fraction rely on low-carbon sources. Key factors affecting emission levels include the energy source's carbon intensity and the training duration.
Water use	Water is primarily used for cooling the vast computing facilities engaged in AI activities.
Raw material use	The production, maintenance, and operation of computational devices (like GPUs) demand various rare metals, adding to the environmental load.
Land use	From hosting computing facilities to establishing renewable energy structures like solar panels, land use is significant.

257 Submission 41, CSIRO, p 6.

258 Submission 46, ARC Centre of Excellence for Automated Decision-Making and Society, p 4.

259 Submission 46, ARC Centre of Excellence for Automated Decision-Making and Society, p 4.

260 Submission 41, CSIRO, p 8.

Energy consumption	Machine learning models, which are core to AI, can be energy-intensive. Only a fraction rely on low-carbon sources. Key factors affecting emission levels include the energy source's carbon intensity and the training duration.
Undersea cables	The installation and upkeep of undersea cables also contribute to the ecological footprint.

Source: Submission 46, ARC Centre of Excellence for Automated Decision-Making and Society, p 6.

3.71 Dr Stefan Hajkowicz, Chief Research Consultant – Technology Strategy, Policy and Foresight, CSIRO Data 61, encouraged the consideration of renewable energy as a power source for artificial intelligence:

> Training large language models uses heaps of electricity, which, if it's not off renewable, will generate heaps of carbon emissions. I think the community is becoming increasingly aware of this. Really, we are seeing some moves towards renewable energy cloud computing centres, and we should look more at that.[261]

Balancing the opportunities and risks of artificial intelligence

3.72 Many stakeholders provided evidence about the need to maximise the opportunities presented by artificial intelligence, while ensuring that there were appropriate safeguards in place to mitigate the risks, particularly in relation to existing social issues. However, there were a variety of views as to how this was best achieved, and where the balance should fall.

3.73 Mr Peter Derbyshire, Director, Policy and International Affairs, Australian Academy of Technological Sciences and Engineering, highlighted the opportunities artificial intelligence presents for New South Wales in the creation of new industries and jobs:

> Acting to ethically support AI will see whole new industries and jobs enter the New South Wales economy. New services will pop up to support the finance sector, surgeries will be supported by automated systems and AI-enabled manufacturing will see reductions in waste and the building of new greener production techniques. New South Wales is already the nation's leader in AI. Seizing this opportunity will see it become not just a national leader but an international one.[262]

3.74 Dr Stefan Hajkowicz, Chief Research Consultant – Technology Strategy, Policy and Foresight, CSIRO Data 61 stressed that there were huge gains to be had from artificial intelligence that should not be quashed by excessive caution:

> On one hand, you certainly don't want to let anything unethical happen but you don't want to dampen all of the productivity gains, the innovation and all of the good stuff that can happen with the technology as well.[263]

261 Evidence, Dr Hajkowicz, 8 March 2024, p 8.

262 Evidence, Mr Derbyshire, 8 March 2024, p 19.

263 Evidence, Dr Hajkowicz, 8 March 2024, p 3.

3.75 Dr Hajkowicz described the 'incredible opportunity around productivity uplift and doing things faster, better and cheaper and finding solutions'.[264]

3.76 However, the ARC Centre of Excellence for Automated Decision-Making and Society warned that 'for the average person, AI can appear as a rapidly evolving force that seems to know everything about them, possibly influencing their behaviour and making crucial decisions that affect their lives'.[265] They accordingly encouraged the inclusion of community engagement as a central part of the process:

> For genuine trust to develop, involving the people of NSW in AI discussions is essential. Engaging with communities, especially those most vulnerable to AI's potentially harmful impacts, aligns with the principle of 'nothing about us without us'. This engagement does not just foster trust, it can help mitigate risks associated with AI deployment.[266]

3.77 Education and awareness initiatives could have a role in ensuring that technology is used in a safe and responsible way. The Tech Council of Australia outlined how education campaigns could be used to inform and improve the understanding of both individuals and organisations in relation to issues around data privacy, informed consent, and cybersecurity.[267] Toolkits and guidelines could also be developed for this purpose.

3.78 A number of inquiry participants also stressed the need for perspective, noting that many of the concerns surrounding artificial intelligence are not new and can be applied to other areas as well. The UNSW Allens Hub for Technology, Law and Innovation observed that many of the risks and problems associated with artificial intelligence already exist entirely independent of the technology:

> Some of the problems commonly associated with "artificial intelligence" do not in fact depend on the use of "AI systems". Fake photographs, for example, are an old problem; so-called deep fakes are simply an example of creative technologies running ahead of detection tools. Misinformation and disinformation can be authored by humans and propagated through networks and, while artificial intelligence can accelerate generation and target propagation, it is not a necessary ingredient. Encouraging people to self-harm can be done at scale using explicit programming, say outputting "go kill yourself" whenever particular words are used in the input.[268]

3.79 They continued with other examples before stressing the importance of transparency for any complex systems:

> Inaccuracies can be propagated at scale with explicit programming as demonstrated by Robodebt. Bias is as evident in some statistical techniques as in some machine learning techniques. A badly programmed expert system can yield false answers just like Chat GPT. Those procuring any complex system need a degree of transparency as to how it operates; this problem is not unique to artificial intelligence and, even where

264 Evidence, Dr Hajkowicz, 8 March 2024, p 4.

265 Submission 46, ARC Centre of Excellence for Automated Decision-Making and Society, p 12.

266 Submission 46, ARC Centre of Excellence for Automated Decision-Making and Society, p 12.

267 Submission 26, Tech Council of Australia, p 14.

268 Submission 25, UNSW Allens Hub for Technology, Law and Innovation, p 3.

> information about a system could be communicated, most organisations choose to rely on trade secrets or commercial-in-confidence arrangements.[269]

3.80 Professor Ian Oppermann, ATSE Fellow and Industry Professor at UTS, argued that an understanding of artificial intelligence is a necessary part of government. He stressed the importance of upskilling those within government so as to ensure artificial intelligence is thoughtfully used:

> You can't be a twenty-first century government without an understanding of AI. It doesn't need to be expert, but it does need to be minimum viable understanding in order to effectively operate the business of government, the delivery of services, match expectations of citizens, and also make sure that government is upskilled enough to be an intelligent consumer of those same services.[270]

3.81 Professor Oppermann described how the policy framework in place in New South Wales could help ensure that the potential of artificial intelligence is harnessed in a positive way:

> I believe the potential is enormous. I believe the potential to do things well to increase productivity, to generate economic wealth and to improve the personalisation of services is almost unbounded. Potentially also so are the risks. The use of that assurance and the use of that responsible AI framework is essential to the future positive development of AI in New South Wales.[271]

3.82 To ensure the correct balance between the benefits and risks is achieved, Ms Lorraine Finlay, Commissioner, Human Rights Commission, stressed the importance of focusing on human rights throughout, as 'placing humanity at the heart and remaining focused on human impacts maximises the benefits of AI while also ensuring that it's being used responsibly and ethically'.[272] Ms Finlay warned that otherwise there was the potential for real harm to occur:

> While there are clear benefits to be gained from the appropriate use of AI, there are also significant human rights risks and challenges that may cause real harm to individuals and communities without adequate safeguards and human oversight.[273]

3.83 Ensuring that artificial intelligence is incorporated ethically and responsibly will require consideration of the relevant principles and policies at all stages. The ADM+S Report suggested that this commence with the initial phases of project development:

> Appropriate accountability for government use of ADM systems is best achieved from the beginnings of project inception and design. Designing accountability into ADM systems will necessarily require input from the perspectives of multiple professions,

269 Submission 25, UNSW Allens Hub for Technology, Law and Innovation, p 3.

270 Evidence, Professor Ian Oppermann, ATSE Fellow and Industry Professor at UTS, 8 March 2024, p 28.

271 Evidence, Professor Oppermann, 8 March 2024, p 20.

272 Evidence, Ms Finlay, 11 March 2024, p 20.

273 Evidence, Ms Finlay, 11 March 2024, p 20.

> including digital tech/computing, legal, managerial, customer focus, and front-line service delivery professionals.[274]

3.84 The ADM+S Report also highlighted the value of having a person or team who understands the artificial intelligence used within a government department or agency, noting that:

> …at present, there is no consistent, publicly designated, single individual or team with full knowledge of ADM/AI system usage in any given NSW government organisation. Designating such an individual or team will also be important in any future policy or law for the disclosure of ADM systems'.[275]

3.85 The CSIRO made a number of suggestions it believed would increase the adoption of responsible AI practices, and enable New South Wales to manage the risks of artificial intelligence while seizing the opportunities. It advised government to develop 'industry best practices, playbooks, guidelines, and case studies for Australia's priority industry sectors, especially targeting small and medium enterprises (SMEs) while considering Australia's unique context'.[276] In addition, it proposed that a national 'sandbox'[277] be set up to 'explore and experiment with responsible AI approaches in a safe environment'.[278]

3.86 Some stakeholders noted that AI developers were also responsible for ensuring artificial intelligence was developed in a safe, ethical and responsible way. The Campaign for AI Safety proposed that the Government require AI developers to:

- continually test their models for safety (pre and post deployment of every new version or upgrade)
- disclose the results of independent safety evaluations (e.g. malicious use of the model and unintended consequences of use)
- disclose training data source
- devote a significant part of resources to AI safety research.[279]

3.87 Further, the Campaign for AI Safety stressed the need for the completion of due diligence and ongoing monitoring:

> Safeguards should be in place to minimise potential risks such as misuse and malicious actors hacking into critical systems. The outcomes of automated decision systems need to be frequently monitored and verified to ensure they continue to meet their intended

274 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments: Executive report*, March 2024, p 29.

275 ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW – Mapping and analysis of the use of ADM systems by state and local governments: Executive report*, March 2024, p 31.

276 Submission 41, CSIRO, p 17.

277 The idea of a 'sandbox' was raised multiple times throughout the inquiry, including the notion of a 'regulatory sandbox'. For further context and explanation of a 'sandbox' see submission 42, NSW Productivity Commission, p 13.

278 Submission 41, CSIRO, p 17.

279 Submission 1a, Campaign for AI Safety, p 15.

> purpose, are robust, accurate and safe. Public servants need to be wary of claims of safety or 'safety washing', do due diligence and require companies to demonstrate with substantial evidence their technology is safe.[280]

3.88 Many inquiry participants provided evidence as to what legislative and regulatory changes may be necessary, including the proposed prohibition of certain AI technologies and practices. These are discussed in Chapter 4.

Committee comment

3.89 Throughout this inquiry it was evident that there are many social benefits associated with artificial intelligence, including its potential uses within healthcare and emergency services. It is clear that artificial intelligence may substantially reduce the administrative burden of organisations such as the Independent Commission Against Corruption and the NSW Ombudsman who receive enormous amounts of data from individuals and agencies. There is a clear potential benefit to such organisations being freed to focus on investigative and other work.

3.90 It was particularly encouraging to learn of the ways in which artificial intelligence may be able to increase the accessibility of the justice system. The justice system should be as widely accessible as possible and the removal of some of the current barriers, including those experienced by people with disability, is worth exploring. Nonetheless, like the NSW Bar Association, the committee is extremely wary of artificial intelligence replacing judicial discretion in any way. It is recommended that the Department of Communities and Justice examine the ways in which access to courts and the justice system could be expanded through the appropriate use of artificial intelligence, while ensuring that judicial discretion remains intact.

Recommendation 4

That the Department of Communities and Justice examine the ways in which access to courts and the justice system in New South Wales could be expanded through the appropriate use of artificial intelligence, while ensuring that judicial discretion remains intact.

3.91 Despite the above benefits, the committee is of the view that there are substantial risks associated with artificial intelligence that must be effectively managed. Automated decision-making systems within government must be treated appropriately and used responsibly. It is essential that a human be 'in the loop', so that outputs may be monitored, and any potential bias, disadvantage or discrimination in the system identified. This will enable outcomes to be properly reviewed as necessary. The committee shares the concerns of the NSW Ombudsman that automated decision-making systems should not be simply categorised as an IT project, and the Committee believes that the availability within and use of these systems by the Government and its agencies should be monitored. The committee therefore recommends that the Government consider maintaining a publicly available register of automated decision-making systems available within Government and its agencies and when they are applied.

[280] Submission 1a, Campaign for AI Safety, p 16.

Recommendation 5

That the Government consider maintaining a publicly available register of automated decision-making systems available within Government and its agencies and when they are applied.

3.92 The committee also holds significant concerns about the privacy risks associated with artificial intelligence. A number of inquiry participants raised strong concerns with the use of facial recognition technology which are shared by the committee.

3.93 In addition, it is troubling that artificial intelligence could potentially be used to rapidly spread misinformation and disinformation and threaten the democratic process.

3.94 Nonetheless, the committee also acknowledges that not taking proper advantage of some of the benefits of artificial intelligence comes with its own risks. For this reason, educating the community about artificial intelligence and how to engage with it in wise and discerning ways will be of the utmost importance. Members of the public need to be able to assess in real time whether what they see and hear is true. In addition, people need to be aware of the issues surrounding data security and privacy risks, to minimise the potential compromises that may arise from their own behaviour, whether privately or in the workplace.

3.95 For these reasons, the committee recommends that the Government deliver a community education campaign about artificial intelligence, so the public may be informed about its risks and to encourage safe and effective use.

Recommendation 6

That the Government deliver a community education campaign about artificial intelligence, that informs the public about its risks, and to encourage effective and safe use.

Chapter 4 The regulation of artificial intelligence

This chapter considers how current laws and policies already apply to artificial intelligence. It notes some of the challenges and weaknesses of the present framework, especially in relation to privacy and administrative law. A brief outline is provided of international developments, most notably the introduction of an *Artificial Intelligence Act* in the European Union. The benefits of a regulatory gap analysis are discussed. Finally, some options for New South Wales moving forward are considered, including specific areas requiring reform, as well as the need for industry consultation on any changes.

The applicability of current law and policies

4.1 Many stakeholders highlighted that many existing laws already apply to artificial intelligence.[281] Tables 4 and 5 list the various New South Wales and Commonwealth legislation and policies relevant to artificial intelligence, data, privacy and security, as identified by the Government. Some of these policies, namely the AI Strategy and AI Ethics Policy, were discussed in Chapter 1.

Table 4 Key legislation that applies to artificial intelligence in New South Wales

Privacy and Personal Information Protection Act 1998 (NSW)
Health Records and Information Privacy Act 2002 (NSW)
Government Information (Public Access) Act 2009 (NSW)
Government Information (Public Access) Regulation 2018 (NSW)
State Records Act 1998 (NSW)
Data Sharing (Government Sector) Act 2015 (NSW)
Copyright Act 1968 (Cth)
Competition and Consumer Act 2010 (Cth)
Patents Act 1990 (Cth)
Road Transport Act 2013 (NSW)
NSW Anti-Discrimination Act 1977 (NSW)
Disability Discrimination Act 1992 (Cth)
Workplace Surveillance Act 2005 (NSW)
Surveillance Devices Act 2007 (NSW)
Telecommunications (Interception and Access) Act 1979 (Cth)
Security of Critical Infrastructure Act 2018 (Cth)
Adoption Act 2000 (NSW)
Assisted Reproductive Technology Act 2007 (NSW)

[281] For example, Submission 47, Business Council of Australia; Submission 37, NSW Government; Evidence, Mr Ben Rice, Head of Policy Advocacy, Tech Council of Australia, 8 March 2024, p 25.

Criminal Code Act 1995 (Cth)
Crimes Act 1900 (NSW)
Crimes Act 1914 (Cth)
Crimes (Forensic Procedures) Act 2000 (NSW)
Criminal Records Act 1991 (NSW)
Police Act 1990 (NSW)
Civil Liability Act 2002 (NSW)
Fair Trading Act 1987 (NSW)

Source: Submission 37, NSW Government, pp 35-37.

Table 5 Key policies related to artificial intelligence, data, privacy and security in New South Wales

Smart Places Data Protection Policy
NSW Government Internet of Things Policy
NSW Government AI Strategy
NSW Government Artificial Intelligence Ethics Policy
NSW Government Infrastructure Data Management Framework
NSW Government's Smart Infrastructure Policy
NSW Government Cyber Security Policy
Mandatory Notification of Data Breach Scheme
NSW Government State Infrastructure Strategy
NSW Government Open Data Policy
NSW Government Cloud Policy
NSW Government Information Management Framework
NSW Data and Information Custodianship Policy
NSW Government Standard on Records Management
NSW Data Governance Toolkit
NSW Government Data Strategy
Fact sheet – Information Protection Principles for agencies
Fact sheet – The Health Privacy Principles guidance for agencies and organisations
Privacy Governance Framework
Fact sheet – Reasonably Ascertainable Identity
Digital Projects for Agencies
Digital Restart Fund: assessing information access and privacy impacts

Fact sheet – Consent and Bundled Consent

Source: Submission 37, NSW Government, pp 35-36.

The challenges within the current framework

4.2 A number of stakeholders acknowledged various shortcomings in the ability of the current law to adequately respond to some of the challenges presented by artificial intelligence. The UNSW Allens Hub for Technology, Law and Innovation expressed that the existing law did not fully capture some of the risks arising from artificial intelligence.[282] This was considered to be particularly true in the areas of privacy/data protection law, discrimination law, administrative law, consumer law, and intellectual property law.[283]

4.3 The ARC Centre of Excellence for Automated Decision-Making and Society included the following table which listed some of the challenges presented by artificial intelligence in specific areas of law. In addition, the table notes where jurisdictional responsibility for these laws rests, whether state or federal, or both.

Table 6 Challenges for existing legal regimes

Domain	Challenges	Jurisdiction
Harmful online content regulation	Challenges with current content flagging due to increased AI capacity	Cth
	Issues determining intent or awareness with generative AI e.g. can AI harass or defame?	Cth/NSW
Consumer protection	Defining 'misleading' or 'deceptive' in the context of AI content generation	Cth
	Need for ensuring fair dealings with AI-generated content	Cth/NSW
	Difficulties in comparing AI-generated products or prices	Cth
	Maintenance and regulation of databases for online ads	Cth/NSW
Administrative law	Determining if AI can make 'decisions'	Cth/NSW
	Identifying the 'decision-maker' in AI-driven decisions	Cth/NSW
	Mechanisms to challenge AI-made administrative decisions	Cth/NSW
Discrimination	Applying anti-discrimination laws to AI-induced harms	Cth/NSW

282 Submission 25, UNSW Allens Hub for Technology, Law and Innovation, p 3.

283 Submission 25, UNSW Allens Hub for Technology, Law and Innovation, pp 3-12.

Domain	Challenges	Jurisdiction
	Detecting AI discrimination in ephemeral content	Cth/NSW
	Addressing potential AI bias beyond existing laws	Cth/NSW
Copyright	Ownership of AI-generated outputs	Cth
	Liability issues for AI breaches	Cth
Data protection law	Implications of AI in conversations and prompts	Cth/NSW
	Privacy risks with AI's synthetic voice and image generation	Cth/NSW
	Privacy laws in relation to AI's data practices	Cth/NSW
Cybersecurity	Risks related to chatbot conversations and prompt manipulations.	Cth
Professional regulation (e.g. law, medicine)	Determining if AI chatbot outputs count as professional advice	Cth/NSW
	Applying duties of professional advisors in AI contexts	Cth/NSW
Political advertising and campaign laws	Laws to combat the ease of producing AI deepfakes	Cth/NSW
	New requirements for (at least) transparency in digital political advertising and targeting	Cth/NSW
Negligence and liability	Assigning fault when AI errors involve multiple actors	Cth/NSW
	Recognising duties for foundational AI providers	Cth/NSW
	Expanding the 'manufacturer' concept for AI product liability	Cth/NSW
Residential tenancy and other housing-related laws	Addressing the legitimacy of data acquisition and analysis for fair, transparent and ethical allocation of leases and housing	NSW

Source: Submission 46, ARC Centre of Excellence for Automated Decision-Making and Society, p 9.

4.4 Concerns have also been raised about some of the relevant policies. The NSW Ombudsman has 'an important role to play in oversighting public sector development, adoption and use of ADM and other uses of AI' as the use of artificial intelligence by public authorities may involve risks of maladministration.[284] The NSW Ombudsman, Mr Paul Miller PSM, viewed the AI Assurance Framework as 'a useful step forward'. However, he noted that it is only prospectively applied, yet there are many systems that existed prior to commencement of the AI Framework.

[284] Submission 40, NSW Ombudsman, p 3.

Mr Miller also highlighted that only 'a relatively small number of AI projects' come before the Assurance Review Board and that many of the ADM systems identified in the ADM+S report would most likely not fall within the technical definition of artificial intelligence.[285] He concluded that 'the current version of the assurance framework is of limited value in terms of being a comprehensive regulatory tool for controlling the use of AI in automated decision-making in government'.[286]

4.5 The Campaign for AI Safety similarly highlighted how the Ethics Policy, AI Strategy and Assurance Framework were developed prior to 'the largely unanticipated arrival of powerful generative AI'.[287] Further, the Campaign for AI Safety asserted that these policy tools predate the concerns expressed by leading AI industry experts about the 'emergent abilities' of large language models.[288]

Potential areas for reform

4.6 Various suggestions were made as to potential areas requiring reform. The Campaign for AI Safety noted that the Commonwealth has responsibility for most of the laws that regulate the use of artificial intelligence. Nonetheless, they proposed that the Government should act to strengthen consumer rights to redress and to also extend product safety regimes to AI technologies.[289]

4.7 One area viewed as of particular relevance for New South Wales was in relation to the issues surrounding automated decision-making within government agencies. Professor Kimberlee Weatherall, Chief Investigator and University of Sydney Node Leader of the ARC Centre of Excellence for Automated Decision-Making and Society, submitted that the NSW Parliament should prioritise the development of legislation that specifies when decisions can be delegated in this way.[290]

4.8 Mr Paul Miller PSM, NSW Ombudsman, similarly stressed that most government agencies are relying on what they have interpreted as an implied authority in the legislation regarding the delegation of decisions. Mr Miller suggested that there was a role for the NSW Parliament to clarify whether or not that authority exists in particular cases:

> I think there's a question for Parliament there, given that the authority ultimately comes from Parliament—whether it's express or implied, it's the authority given to agencies by Parliament—whether Parliament wants to, in some cases, make clear that that authority does not exist, so, whether there are use cases where Parliament says, "This is a use case we prohibit."[291]

285 Evidence, Mr Paul Miller PSM, NSW Ombudsman, NSW Ombudsman's Office, 11 March 2024, p 41.

286 Evidence, Mr Miller, 11 March 2024, p 42.

287 Submission 1a, Campaign for AI Safety, p 15.

288 Submission 1a, Campaign for AI Safety, p 15.

289 Submission 1a, Campaign for AI Safety, p 4.

290 Evidence, Professor Kimberlee Weatherall, Chief Investigator and University of Sydney Node Leader of the ARC Centre of Excellence for Automated Decision-Making and Society; Professor in the School of Law, University of Sydney, 8 March 2024, p 12.

291 Evidence, Mr Miller, 11 March 2024, p 43.

4.9 Mr Miller went on to outline how that would enable Parliament to determine whether safeguards around the use of certain technology are required (e.g. transparency levels, the need for audits and testing).[292] He concluded that, in relation to automated decision-making, 'there are clearly gaps and anomalies in the existing legal frameworks—whether it's in the privacy legislation or under administrative law, whether at common law or legislative—where those gaps need to be addressed'.[293]

4.10 Another area of concern was in relation to privacy law. Some stakeholders suggested areas where privacy law could be strengthened to account for the challenges presented by artificial intelligence. Salinger Privacy voiced concern that the current wording of the *Privacy and Personal Information Protection Act 1998 (NSW)* and *Health Records and Information Privacy Act 2002 (NSW)*, particularly the definition of 'personal information', were no longer fit for purpose in the digital age.[294] They highlighted how new digital technologies challenge fundamental concepts of privacy protection:

> …the increased sophistication and availability of technologies including algorithmic systems pose new challenges to many longstanding pillars of privacy protection, including data minimisation, purpose limitation, and transparency. For example, AI systems rely on repurposing massive amounts of data, function in a way that is opaque to most people (and sometimes even to those who developed them), and can result in generation of new meanings, information or outcomes not foreseeable at the time of the original data collection.[295]

4.11 Salinger Privacy subsequently recommended that:

- the NSW Government add a definition of consent to the *Privacy and Personal Information Protection Act 1998 (NSW)* and *Health Records and Information Privacy Act 2002 (NSW)* that specifies the necessary elements of a valid consent, akin to the proposed reforms to the federal *Privacy Act 1988 (Cth)*
- all NSW public sector agencies be required to conduct a Privacy Impact Statement for inherently 'high privacy risk' projects that are defined to include the use of artificial intelligence or automated decision-making
- reforms be made to the *Privacy and Personal Information Protection Act 1998 (NSW)* to empower the Privacy Commissioner to use algorithmic disgorgement orders and to provide a veto power over high privacy impact projects where the risks to privacy cannot be satisfactorily mitigated.[296]

4.12 The NSW Council for Civil Liberties expressed its support for the 'very sound recommendations' of Salinger Privacy in relation to reforms to the privacy legislation.[297]

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292 Evidence, Mr Miller, 11 March 2024, p 43.

293 Evidence, Mr Miller, 11 March 2024, p 45.

294 Submission 11, Salinger Privacy, p 4.

295 Submission 11, Salinger Privacy, p 6.

296 Submission 11, Salinger Privacy, pp 8-10.

297 Evidence, Mr Stephen Blanks, Treasurer and Past President, NSW Council of Civil Liberties, 11 March 2024, p 22.

4.13 However, the Information and Privacy Commission was of the view that the current framework was in many ways still relevant to artificial intelligence and urged that privacy laws remain technology neutral. It outlined how rights-based principles and risk mitigation strategies allows for a flexible response:

> The existing regulatory framework in NSW provides a robust system for privacy and personal information governance in the age of AI, with a range of policy frameworks also underpinning the above legislative frameworks. These policy frameworks do provide the basis for a more flexible and proactive response to the regulation of AI through the promotion of rights-based principles and risk mitigation strategies to reduce any privacy risks associated with AI.[298]

4.14 Nonetheless, the Information and Privacy Commission also made a number of 'legislative recommendations' in relation to various potential reforms to preserve information access and privacy rights.

- Ensure mandatory proactive disclosure of the use of artificial intelligence by agencies by inclusion as open access under the *Government Information (Public Access) Act 2009* (GIPA Act).
- Ensure that open access includes a statement of use, inputs and a description of the operation of the AI system.
- Expand information access rights under government contracted services to artificial intelligence used for decision making.
- Include the use of artificial intelligence as a factor in favour of disclosure of information under the GIPA Act to address the existing asymmetry that protects the business interests of agencies and third party providers.[299]

4.15 In addition, the Information and Privacy Commission outlined how the 'provision of government services and inputs to government decision-making have evolved radically since 2009' and changes may be needed to the provisions of the *GIPA Act* dealing with outsourcing arrangements.[300]

The response of international jurisdictions to artificial intelligence

4.16 Many jurisdictions throughout the world are currently considering how best to respond to the challenges and issues presented by artificial intelligence. A number of stakeholders discussed the need for New South Wales to be aware of international developments and ensure alignment in regulatory models where possible. The Law Society of New South Wales referred to the *Global AI Law and Policy Tracker* which has been developed by the International Association of Privacy Professionals AI Governance Center.[301] This resource outlines the legislative and policy developments regarding artificial intelligence in numerous international jurisdictions.

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298 Submission 32, Information and Privacy Commission, p 17.

299 Submission 32, Information and Privacy Commission, p 9.

300 Submission 32, Information and Privacy Commission, p 11.

301 Answers to questions on notice, Law Society of New South Wales, received 11 April 2024, p 3; International Association of Privacy Professionals, *Global AI Law and Policy Tracker*, January 2024.

4.17 Ms Wendy Black, Head of Policy, Business Council of Australia, suggested that New South Wales focus on using the laws already in place, and supplementing them with a view to what is happening internationally.[302]

4.18 Mr Ben Rice, Head of Policy Advocacy, Tech Council of Australia, stressed that many of the businesses that are members of the Tech Council operate in a global environment, 'from the relatively small Australian scale-up companies all the way through to some of the bigger multinational tech companies'.[303] Ms Erika Ly, Policy Manager, Tech Council of Australia, cautioned that a failure to harmonise with international laws could have a negative impact on the Australian industry:

> It's really crucial not just to align with international standards but also to be able to harmonise our laws internationally or else we might lose out in terms of our industry and not necessarily give the chance for our ecosystem here in Australia to really flourish. There's still a lot of work to be done in terms of figuring out the best practices and the best approaches that are happening globally. But I think it's important to also be engaged in those conversations as we start thinking about the technical standards, the approaches that we'll take for that, and also for Australia to have a voice in that standard-setting process in the international fora.[304]

4.19 The approach adopted by the European Union, United Kingdom, Canada and the United States of America are briefly considered below.

European Union

4.20 In April 2021, the European Commission proposed the first European Union (EU) regulatory framework for artificial intelligence. Under the framework, AI systems are to be analysed and classified according to levels of risk, with greater risk requiring more regulation. It was the priority of the European Parliament that AI systems in the European Union be safe, transparent, traceable, non-discriminatory, and environmentally-friendly.[305]

4.21 Throughout much of the inquiry, the *Artificial Intelligence Act (EU)* (the Act) was under consideration by the European Union, with many stakeholders referring to it as an example of a regulatory approach.[306] On 13 March 2024, the Act was approved by the European Parliament.

4.22 Under the Act, artificial intelligence is classified according to various categories of risk. Those AI systems considered to present an unacceptable risk are banned, high-risk applications are

302 Evidence, Ms Wendy Black, Head of Policy, Business Council of Australia, 8 March 2024, p 32.

303 Evidence, Mr Rice, 8 March 2024, p 24

304 Evidence, Ms Erika Ly, Policy Manager, Tech Council of Australia, 8 March 2024, p 22.

305 European Parliament, *EU AI Act: first regulation on artificial intelligence* (19 December 2023), https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence.

306 For example, Evidence, Dr Stefan Hajkowicz, Chief Research Consultant – Technology Strategy, Policy and Foresight, CSIRO Data 61, 8 March 2024, p 3.

subject to specific legal requirements, and those applications that are not banned or deemed high-risk are largely left unregulated.[307]

4.23 The NSW Government described the approach of the European Union to AI regulation as comprehensive and building on existing legislation such as the EU's General Data Protection Regulation and the new *Artificial Intelligence Act*.[308]

4.24 Nonetheless, the ARC Centre of Excellence for Automated Decision-Making and Society cautioned that there are some key differences between Australia and the European Union that would render adoption of the EU approach in Australia problematic because it lacks the same conformity ecosystem:

> For example, the EU AI Act and its risk-based approach depends on that region's conformity and assessment infrastructure. It has been designed with the European single market in mind, and promotes the evolution of private risk-assessment certification and assurance in line with the comprehensive network of standards that exists in that jurisdiction. In other words, the EU risk-based approach is effectively a product safety regime certified through networks of private actors ('notified bodies'). Australia does not have the same conformity ecosystem nor does it orient its product safety regime around trade and market harmonisation. The EU Risk-Based approach is intended to comprehensively guide the formation of a certification and conformity market and ecosystem.[309]

4.25 The Business Council of Australia was similarly wary of a 'cut and paste' approach to the EU legislation because of Australia's unique culture as well as concerns that the Act would reduce the competitiveness of the European Union:

> The EU's approach is grounded in specifically European cultural mores and priorities, distinct from Australia's unique culture and heritage. Moreover, the EU's approach to regulation of new technologies – including AI – has come at a steep, and likely disproportionate, cost. The introduction of the General Data Protection Regulation (GDPR) cut into innovation, competition, and jobs – disproportionately affecting smaller firms – while having only marginal or short-lived benefits to citizens. Expectations for the new AI Act in the EU are that the Act is similarly likely to reduce the competitiveness of the EU in AI, drive investment offshore, and cut into innovation in the EU. Indeed, major businesses have already decided against launching new products and services in the EU because of regulatory uncertainty. Australia should be wary of falling into this same trap.[310]

United Kingdom

4.26 In contrast, rather than regulate artificial intelligence via legislation, the United Kingdom has established an AI ethics framework.[311] In its submission, the NSW Government noted that a

307 European Parliamentary Research Service, *Artificial Intelligence Act*, March 2024, p 1. https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698792/EPRS_BRI(2021)698792_EN.pdf.

308 Submission 37, NSW Government, p 11.

309 Submission 46, ARC Centre of Excellence for Automated Decision-Making and Society, p 15.

310 Submission 47, Business Council of Australia, p 4.

311 Submission 37, NSW Government, p 12.

white paper was published in the United Kingdom in March 2023 that recommended a principles based regulatory framework that would proceed on a non-statutory basis in the first instance.[312] This framework would be based on five principles:

- safety, security and robustness
- transparency and explainability
- fairness
- accountability and governance
- contestability and redress.[313]

4.27 Like Australia, the United Kingdom has committed to the 'OECD AI Principles' as set out in Figure 5 below.[314]

Figure 5 OECD AI Principles

Source: OECD.AI, 'OECD AI Principles overview', https://oecd.ai/en/ai-principles

4.28 The United Kingdom has also adopted UNESCO's *Recommendation on the Ethics of AI* which aims 'to provide a basis to make AI systems work for the good of humanity, individuals, societies and the environment and ecosystems, and to prevent harm'.[315]

312 Submission 37, NSW Government, p 12.

313 Submission 37, NSW Government, p 12.

314 International Association of Privacy Professionals, *Global AI Law and Policy Tracker*, January 2024, p 25; OECD.AI, 'OECD AI Principles overview', https://oecd.ai/en/ai-principles.

315 International Association of Privacy Professionals, *Global AI Law and Policy Tracker*, January 2024, p 25; UNESCO, *Recommendation on the Ethics of Artificial Intelligence*, 2022, p 14.

Canada

4.29 The Government noted that Canada had adopted a similar approach to the European Union, having introduced a draft AI bill that takes a risk-based view to the regulation of artificial intelligence where only 'high impact AI systems' are regulated.[316] It is designed to:

- ensure high-impact AI systems meet existing safety and human rights expectations
- prohibit reckless and malicious uses of AI
- empower the Minister of Innovation, Science and Industry to enforce the Act.[317]

4.30 Like Canada, New South Wales distinguishes between the use of artificial intelligence in the public and private sectors.[318]

4.31 Professor Kimberlee Weatherall, Chief Investigator and University of Sydney Node Leader of the ARC Centre of Excellence for Automated Decision-Making and Society, encouraged the committee to look to Canada and the systems they have in place in relation to automated decision-making in government.[319]

United States of America

4.32 On 21 July 2023, President Biden announced that Amazon, Anthropic, Google, Inflection, Meta, Microsoft and OpenAI had voluntarily committed to the following as part of a move toward safe, secure and transparent development of AI technology:

- internal and external security testing of their AI systems before their release
- sharing information across the industry and with governments, civil society, and academia on managing AI risks
- investing in cybersecurity and insider threat safeguards to protect proprietary and unreleased model weights
- facilitating third-party discovery and reporting of vulnerabilities in their AI systems
- developing robust technical mechanisms to ensure users know when content is AI generated, such as a watermarking system
- publicly reporting their AI systems' capabilities, limitations, and areas of appropriate and inappropriate use
- prioritising research on the societal risks that AI systems can pose, including on avoiding harmful bias and discrimination, and protecting privacy

316 Submission 37, NSW Government, p 12.

317 International Association of Privacy Professionals, *Global AI Law and Policy Tracker*, January 2024, p 8.

318 Submission 46, ARC Centre of Excellence for Automated Decision-Making and Society, p 9.

319 Evidence, Professor Weatherall, 8 March 2024, p 12.

- developing and deploying advanced AI systems to help address society's greatest challenges.[320]

4.33 On 30 October 2023, President Biden subsequently issued an executive order directing various government agencies to develop guidelines for testing and using AI systems.[321]

4.34 The Global AI Law and Policy Tracker lists a number of instances where 'Congress has passed legislation to preserve US leadership in AI research and development, as well as control government use of AI'.[322]

4.35 The Law Society of New South Wales encouraged investigation of the particular approach of California, given it is the home of artificial intelligence.[323]

4.36 The Campaign for AI Safety referred to the Safety in Artificial Intelligence Act (SB 294) introduced in the California State Senate in September 2023 as an example of how New South Wales could influence the safe development of artificial intelligence. However, they noted that, unlike California, New South Wales is not home to leading AI developers that carry out 'large-scale model training runs'.[324]

Options for New South Wales

4.37 A number of stakeholders referred to the lack of a human rights statute in New South Wales, and how that differentiates the legislative response required in New South Wales compared to those Australian states and international jurisdictions that have one as their starting point. Mr Brett McGrath, President, Law Society of New South Wales, explained some of the implications of the Australian system of government in which parliament is supreme:

> When you look at jurisdictions such as the European Union or the United States, they have an individual rights-based framework which underpins their legal system. That frame of reference is restraint on government action, whereas Australia's system is parliamentary supremacy so it is incumbent upon Parliament to have to make these decisions and place its own limits on itself in that framework. That's why if there was a human rights Act that would provide that framework with which, universally, parliaments would apply.[325]

320 The White House, 'Fact sheet: Biden-Harris administration secures voluntary commitments from leading artificial intelligence companies to manage the risks posed by AI', 21 July 2023, https://www.whitehouse.gov/briefing-room/statements-releases/2023/07/21/fact-sheet-biden-harris-administration-secures-voluntary-commitments-from-leading-artificial-intelligence-companies-to-manage-the-risks-posed-by-ai/.

321 The White House, 'Fact Sheet: President Biden issues executive order on safe, secure and trustworthy artificial intelligence', 30 October 2023, https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/30/fact-sheet-president-biden-issues-executive-order-on-safe-secure-and-trustworthy-artificial-intelligence/.

322 International Association of Privacy Professionals, *Global AI Law and Policy Tracker*, January 2024, p 26.

323 Evidence, Mr Brett McGrath, President, Law Society of New South Wales, 11 March 2024, p 29.

324 Submission 1a, Campaign for AI Safety, p 17.

325 Evidence, Mr McGrath, President, Law Society of New South Wales, 11 March 2024, p 31.

4.38 Throughout the inquiry, there was discussion about the speed of technological development and the regulatory lag that inevitably results. The NSW Bar Association warned of the dangers in 'the frontier period' of artificial intelligence, when regulation does not keep pace with emerging technology. As an example, the NSW Bar Association referred to the intrusions into consumer privacy that had occurred in the last 20 years with the emergence of new technological platforms, such as social networks.[326] For this reason, they advocated that the NSW Government adopt a proactive approach when it comes to regulating artificial intelligence.[327]

4.39 The NSW Bar Association proposed a two-step process for regulation:

- identify any prohibited practices
- conduct a regulatory gap analysis.[328]

General prohibitions

4.40 The NSW Bar Association argued for the prohibition of certain AI systems, namely those that are 'either manipulative, exploitative or perform social scoring that leads to differential treatment; facial or biometric recognition in decision-making or legal contexts; and the use of AI to replace or supplement judicial discretion'.[329] They stressed both the importance and practicality of having generalised prohibitions in order to comprehensively address applications that detrimentally impact individuals and society:

> They form a core set of norms and rights that are to be protected, and can be expressed at a level of generality to best ensure they are effective. They can also be dealt with in relatively brief terms, allowing AI-specific regulation to be relatively short, and are located in one, central location rather than being addressed and likely repeated in many pieces of industry-, sector- or subject-specific legislation.[330]

4.41 Other stakeholders, including the Australian Human Rights Commission, also specifically voiced concerns around the use of facial recognition technology and proposed a moratorium on its use.[331]

Regulatory gap analysis

4.42 While most stakeholders viewed the current laws and regulatory framework as providing a solid base, there was nonetheless broad recognition that some reforms would be necessary. For this reason, a number of stakeholders, including the Australian Human Rights Commission and Law

326 Submission 39, NSW Bar Association, p 7.

327 Evidence, Dr Benjamin Kremer SC, Co-Chair, Media and Information Law and Technology Committee, NSW Bar Association, 11 March 2024, p 27.

328 Submission 39, NSW Bar Association, p 4.

329 Evidence, Dr Kremer, 11 March 2024, p 27.

330 Submission 39, NSW Bar Association, p 13.

331 Evidence, Ms Lorraine Finlay, Commissioner, Australian Human Rights Commission, 11 March 2024, p 25; Evidence, Dr Kremer, 11 March 2024, p 30.

Society of New South Wales, were in favour of a regulatory gap analysis, to take advantage of the laws already in place and avoid unnecessary duplication.[332]

4.43 The Tech Council of Australia similarly encouraged governments to build on existing laws:

> We do not need to rewrite the whole rule book for AI or other emerging technologies. Australia's model of core technology-neutral laws, industry-specific laws and standards, and expert regulators has worked well for decades.[333]

4.44 The NSW Bar Association stressed that a regulatory gap analysis should be conducted in consultation with industry, sector and subject matter experts to 'assess whether existing legislation is sufficient to address the foreseen, the hoped for or the feared impacts of AI' and to review and amend the legislation where gaps are identified.[334]

A risk-based approach founded on specific principles

4.45 The Australian Human Rights Commission stressed that a human rights-centred approach should be adopted when assessing how to best regulate technology.[335]

4.46 Professor Lyria Bennett Moses, Director, UNSW Allens Hub for Technology, Law and Innovation, argued that the most effective way for the law to address the harms associated with artificial intelligence is to start 'with the values that we're trying to protect and going from there'.[336]

4.47 Professor Edward Santow, Co-Director, Human Technology Institute, encouraged any law reform to be founded on 'the principles of accountability, transparency and testing'.[337]

4.48 A number of stakeholders were in favour of a risk-based approach to regulation.[338] The Government acknowledged that the regulation of artificial intelligence is in its early stages but that there has nevertheless been an emerging consensus that AI governance should adopt a risk-based approach.[339] They noted that the European Union, the United Kingdom and the United States have either adopted or foreshadowed such an approach, based on key principles such as trustworthy artificial intelligence and acknowledgment of the role of international standards.[340]

4.49 The NSW Council for Civil Liberties also advocated for an approach to legislation that is risk-based and founded on agreed principles, stressing that the legislative response to the challenges

332 Evidence, Ms Finlay, 11 March 2024, p 22; Evidence, Mr McGrath, 11 March 2024, p 29; Evidence, Mr Miller, 11 March 2024, p 45.

333 Evidence, Mr Rice, 8 March 2024, p 20.

334 Evidence, Dr Kremer, 11 March 2024, p 27.

335 Evidence, Ms Finlay, 11 March 2024, p 20.

336 Evidence, Professor Lyria Bennett Moses, Director, UNSW Allens Hub for Technology, Law and Innovation, 11 March 2024, p 11.

337 Evidence, Professor Edward Santow, Co-Director, Human Technology Institute, 11 March 2024, p 10.

338 For example, Evidence, Mr Rice, 8 March 2024, p 20.

339 Submission 37, NSW Government, p 11.

340 Submission 37, NSW Government, p 11.

of artificial intelligence cannot be too prescriptive.[341] Mr Stephen Blanks, Treasurer and Past President, NSW Council of Civil Liberties, described the necessary legislative response as two-fold. Firstly, it would need to respond 'at a general level'.[342] However, legislation focused on particular sectors would also be needed, such as responding to the use of artificial intelligence in education, transport, banking and finance.[343]

4.50 However, Distinguished Professor Jason Potts, Co-Director, RMIT Blockchain Innovation Hub, cautioned that there are limits as to what can actually be regulated in relation to artificial intelligence. He emphasised that the reasons for why AI models produce a particular outcome could never be fully understood:

> They are not actually source code; they're models. A trained model is a just massively large matrix. You ask it to do things and it'll do things and they will be useful or not useful dependent upon the user. That's all the explanation you will ever get. There is no way to penetrate into why it did the thing. The builders of the model don't know why it did the thing. They will never know why it did the thing. They are beyond that complexity. The idea that we need explanations at all—we need to regulate something so that we can understand why it did something—will never happen here.[344]

4.51 Distinguished Professor Potts also highlighted that artificial intelligence can be used for anything and the ensuing legal complexities that result:

> The reason AI is so powerful and useful is that that trained model is a general-purpose technology. You can use it for anything. You can inquire of it and it will do something. But this is also why it can escape and it can end up on devices. Lots of the open source models are now freely on people's devices. They're permissionless, in a sense. There's no firm or organisation that is granting permission to use them in a particular way, which is why the liability regimes are so complex and interesting here.[345]

The need for consultation

4.52 The importance of consulting with those with expertise in the area of artificial intelligence, prior to engaging in any reforms, was emphasised by some stakeholders. Mr Chris Louie, Director, Digital, Cyber and Future Industries, Business Council of Australia, stressed that industry consultation is essential for ensuring that regulation is fit for purpose:

> It really needs to be a conversation that is had with the businesses who are either developing it, applying it or are on the receiving end of it to understand how it is actually playing out in reality because the biggest risk would be to have laws or regulations or guidance that doesn't actually fit for how it's happening in the real world. Then you have businesses really not able to work within that context and be able to do the right thing.[346]

341 Evidence, Mr Blanks, 11 March 2024, p 20.

342 Evidence, Mr Blanks, 11 March 2024, p 21.

343 Evidence, Mr Blanks, 11 March 2024, p 21.

344 Evidence, Distinguished Professor Jason Potts, Co-Director, RMIT Blockchain Innovation Hub, 11 March 2024, p 16.

345 Evidence, Distinguished Professor Potts, 11 March 2024, p 16.

346 Evidence, Mr Chris Louie, Director, Digital, Cyber and Future Industries, Business Council of Australia, 8 March 2024, p 31.

4.53 Dr Stefan Hajkowicz, Chief Research Consultant – Technology Strategy, Policy and Foresight, CSIRO Data 61 stressed the importance of a balanced approach to regulation so the productive and beneficial uses of artificial intelligence are not dampened, while ensuring AI remains safe and used appropriately.[347]

4.54 Dr Aaron M. Lane, Senior Lecturer in Law, RMIT Blockchain Innovation Hub, noted that AI regulation 'has to be functional rather than tech specific', to avoid getting 'regulatory capture where you then start either innovating around what the licence is, or what you have are existing players in the market lobbying to raise those regulatory barriers and prevent other innovative startups from coming into the market'.[348] This highlighted the need to consult with the startup and tech industries on regulatory developments.

4.55 The necessity of having the benefit of both technological and legal expertise was also raised. Professor Lyria Bennett Moses, Director, UNSW Allens Hub for Technology, Law and Innovation, acknowledged the role of law reform commissions in keeping the law up to date as new challenges arise. However, she cautioned that 'they're very focused on law and so they don't necessarily have the sort of expertise in the technology'.[349] Professor Bennett Moses accordingly proposed the creation of a body that combined both technical and legal expertise:

> Being able to put those things together, the technical expertise and the legal expertise, into ongoing processes to address the challenges, not just of artificial intelligence but indeed of technological change and its implications for law and policy as that comes up in different spheres—and blockchain would be another one, for example, but there are many more—would I think be really useful and creating a body that could do that and have that mission.[350]

4.56 Another suggestion was the creation of advisory bodies for this purpose. Ms Sophie Farthing, Head of the Policy Lab, Human Technology Institute, referred to the various strands of regulatory action at both the state and federal level, and advocated for an advisory body to support the various regulatory bodies, stressing the strategic benefits of such an approach:

> What we have been advocating for is bringing those together, strategically. Also, a really important part of that is an ongoing, permanent source of independent expertise. I think we've probably seen the first strand of that with the temporary advisory group that has been set up at the Federal level by the Department of Industry, Science and Resources. But we want that to be a permanent body. We think that will be beneficial, both at State level and certainly at Federal level as well.[351]

4.57 The benefits of sharing knowledge and insights was also highlighted during the inquiry. Distinguished Professor Jason Potts, Co-Director, RMIT Blockchain Innovation Hub, proposed a 'horizontal learning mechanism' to facilitate the sharing of information and experience:

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347 Evidence, Dr Hajkowicz, 8 March 2024, p 6.

348 Evidence, Dr Aaron Lane, Senior Lecturer in Law, RMIT Blockchain Innovation Hub, 11 March 2024, p 19.

349 Evidence, Professor Bennett Moses, 11 March 2024, p 12.

350 Evidence, Professor Bennett Moses, 11 March 2024, p 12.

351 Evidence, Ms Sophie Farthing, Head of the Policy Lab, Human Technology Institute, 11 March 2024, p 13.

> What we need basically is some sort of cross-departmental learning forum mechanism—whatever that is—to incentivise ideas and insights, including problems that have arisen in one thing to be shared quickly across the public sector in other things. The reason to do that is adaptation. You are wanting to deal with the disruption and learn quickly and adapt to it. A ministry is a long-term solution. What we need is fast, short-term abilities to move information and knowledge and experience as quickly and effectively as possible to where it needs to get to. That's a hard problem to solve. That is one where in every individual silo—"It's not my problem. It's someone else's issue to deal with." So some kind of horizontal learning mechanisms are what is required.[352]

4.58 Distinguished Professor Potts further proposed taking advantage of the resources and expertise within universities:

> We've got huge numbers of experts across the areas, who are willing and able and want to work on the projects. A possible mechanism could be through the ARC, through linkages. For instance, one would be where you could put together short-term projects with a department and university partner to explore how things would be done.[353]

4.59 Mr Stephen Blanks, Treasurer and Past President, NSW Council of Civil Liberties, saw a role for a statutory office that oversees AI developments both within the community and by NSW government agencies. In addition, he proposed that there be a commissioner similar to the Information Commissioner and Privacy Commissioner, that is empowered to oversee, regulate and investigate issues that arise from artificial intelligence.[354]

4.60 In a similar vein, the NSW Bar Association referred to a 2021 report by the Australian Human Rights Commission that recommended the creation of an AI Safety Commissioner to support regulators, policy makers, governments, and businesses.[355]

4.61 Professor Ian Oppermann, ATSE Fellow and Industry Professor at UTS noted the history of the development of a governance framework in NSW, explaining:

> What was abundantly clear is that AI is being used everywhere in government and, ultimately, having a centralised office or having a centralised activity means that it will be overwhelmed. If that was the requirement, everything would come through that office or that central part. So there needs to be a general upskilling of capability within government.[356]

4.62 Professor Oppermann also reflected on the impact of not having a dedicated Chief Data Scientist to assist the Government in policy making, saying:

> What has been lost, I think, is having a central expert group, and we really did have quite an extraordinary group of people. We had the former human rights commissioner; we had the chief technology officer of Microsoft Australia and Zealand; we had the head of the standards group, of doing the AI standards; we had distinguished professors in AI; and we had data ethicists. We had an incredible group of people who dedicated

352 Evidence, Distinguished Professor Potts, 11 March 2024, p 13.

353 Evidence, Distinguished Professor Potts, 11 March 2024, p 14.

354 Evidence, Mr Blanks, 11 March 2024, pp 20-21.

355 Submission 39, NSW Bar Association, p 9.

356 Evidence, Professor Ian Oppermann, ATSE Fellow and Industry Professor at UTS, 8 March 2024, p 25.

> quite substantial amounts of time to dig into really, really significant and subtle issues. We also had some leading legal voices around the table. So I think that has been lost. But, ultimately, what has to happen is the capability must be uplifted in all parts of government. The philosophy we had was we will make this extraordinary technology as ordinary as possible; we will remove the need for specialisation. But I think New South Wales has lost that small expert group who could deal with really complex and subtle cases.[357]

A local version of the Artificial Intelligence Act

4.63 There was much discussion throughout the inquiry as to whether or not a specific piece of legislation dedicated to artificial intelligence was necessary and/or desirable. Professor Lyria Bennett Moses, Director, UNSW Allens Hub for Technology, Law and Innovation, noted some of the foundational difficulties of such an approach, cautioning that artificial intelligence is 'an insufficiently well-defined concept or stable category to be a regulatory target in and of itself'.[358]

4.64 Dr Aaron Lane, Senior Lecturer in Law, RMIT Blockchain Innovation Hub, was firmly of the view that an 'AI Act' is not necessary, 'We don't need governments to build their own AI models. What we do need is to identify specific problems and address those specific functional problems that may or may not arise'.[359]

4.65 The Business Council of Australia similarly argued that a single AI Act was unlikely to be effective or efficient should new laws or regulations be required:

> The technologies and applications are diverse and different sectors have different motivations for using AI. Attempts to manage these with a single piece of legislation are unlikely to be successful and will only create more regulatory overlap resulting in conflicting, inconsistent, and confusing outcomes.[360]

4.66 The Business Council of Australia further stressed that focusing on specific technologies could entrench the legal system in such a way that 'will trap Australia in a regulatory posture unable to keep up as new applications and uses of AI fast evolve'.[361] It was their view that the focus should be on addressing possible harms, highlighting that 'If a harm is so bad that it requires legislative opprobrium, then the harm should be the focus, not just the AI version of it'.[362]

4.67 However, the NSW Bar Association was open to the use of AI-specific legislation where there are gaps that cannot be addressed by existing legislation.[363]

357 Evidence, Professor Oppermann, 8 March 2024, p 25.
358 Evidence, Professor Bennett Moses, 11 March 2024, p 10.
359 Evidence, Dr Lane, 11 March 2024, p 19.
360 Submission 47, Business Council of Australia, p 6.
361 Submission 47, Business Council of Australia, p 6.
362 Submission 47, Business Council of Australia, p 6.
363 Submission 39, NSW Bar Association, p 8.

Consistency between state and federal jurisdictions

4.68 Numerous stakeholders referred to the need for consistency in approach between all of the Australian jurisdictions. Dr Stefan Hajkowicz, Chief Research Consultant – Technology Strategy, Policy and Foresight, CSIRO Data 61, emphasised the need for coordination between the state and federal governments so as to avoid a complex regulatory environment for companies.[364]

4.69 Ms Olga Ganopolsky, Chair, Privacy and Data Law Committee, Law Society of New South Wales, stressed that harmonisation was 'not a nice to have' but 'an essential ingredient of a successful framework'.[365]

4.70 Ms Lorraine Finlay, Commissioner, Australian Human Rights Commission, also advocated for collaboration and consistency between the states and territories and the Federal Government to avoid unnecessary regulatory burden:

> Of course, the technology doesn't recognise the borders that we have within Australia, and so we need to take a very pragmatic approach and make sure that everything we do doesn't just create additional regulatory burdens on business or additional complexities for citizens but is something that can work in a practical sense, so that we can get the benefits of this technology—which are enormous—but guard against some of those risks.[366]

4.71 This need for consistency was also recognised by the NSW Government. Ms Laura Christie, Deputy Secretary, Digital.NSW, and Government Chief Information and Digital Officer, NSW Department of Customer Service, acknowledged that Digital.NSW was 'conscious that we need to, if not be led by the Commonwealth, be consistent with the Commonwealth in the direction that they're heading and understand where they're heading in the first instance as well'.[367]

4.72 Ms Wendy Black, Chief Executive Officer, Business Council of Australia, also explained that in the business community 'regulatory stability and certainty is key to getting investment decisions', which has a positive impact on worker safety, wage increases and labour productivity gains.[368]

4.73 A number of stakeholders noted that various inquiries and reviews were underway, during the inquiry, at the federal level and in other Australian jurisdictions.[369] These include the House Standing Committee on Employment, Education and Training inquiry into the use of generative artificial intelligence in the Australian education system and the Australian Department of Industry, Science and Resources consultation on safe and responsible artificial intelligence.[370]

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364 Evidence, Dr Hajkowicz, 8 March 2024, p 6.

365 Evidence, Ms Olga Ganopolsky, Chair, Privacy and Data Law Committee, Law Society of New South Wales, 11 March 2024, p 32.

366 Evidence, Ms Finlay, 11 March 2024, p 21.

367 Evidence, Ms Laura Christie, Deputy Secretary, Digital.NSW, and Government Chief Information and Digital Officer, NSW Department of Customer Service, 11 March 2024, p 50.

368 Evidence, Ms Black, 8 March 2024, p 33-34.

369 Submission 24, Australian Copyright Council, p 2; Submission 39, NSW Bar Association, p 10; Submission 30, Law Society of New South Wales, p 1.

370 Submission 24, Australian Copyright Council, p 2; Submission 33, University of Sydney, p 2..

4.74 Mr Brett McGrath, President, Law Society of New South Wales, voiced that 'the fragmentary approach of AI law and policy in Australia represents a fundamental challenge for this inquiry, both in evaluating the current state of the law and in developing policy initiatives to promote safe and responsible AI in New South Wales'.[371] Mr McGrath went on to note that key law reform initiatives at the Commonwealth level would have a significant impact on AI regulation in New South Wales.[372] These included the review of the *Privacy Act 1988* (Cth), the 2023-2030 Australian Cyber Security Strategy, and the safe and responsible AI consultation by the Commonwealth Department of Industry, Science and Resources.[373]

4.75 Further, a number of stakeholders encouraged an awareness of any recommendations or responses that arise from the safe and responsible AI consultation.[374]

4.76 In addition, some inquiry participants recommended that Australian jurisdictions should also be mindful of regulatory developments overseas.[375] The Law Society of New South Wales proposed that the regulatory approaches adopted by key international jurisdictions be considered, given 'the inherently borderless nature of data and cloud-based services, and the need to enable interoperability across regulations'.[376]

4.77 Mr Ben Rice, Head of Policy Advocacy, Tech Council of Australia, recommended the use of a 'hub and spoke' model to coordinate AI regulation and decision-making across government:

> That needs to be in line with both global standards—we really don't want to see Australia being an outlier compared to similar jurisdictions like the US and the UK—and that will also have a role in coordinating the various State-level work that's underway in AI as well. AI being this ubiquitous technology will certainly impact parts of the economy that are regulated at a Federal level but of course, as the Committee knows, there are a range of State-based issues that will be affected by AI. What we want to see is a coordinated model across the various levels of government.[377]

Committee comment

4.78 The committee recognises that there are many laws and policies in place that already apply to artificial intelligence, and regulate aspects of its use in a technologically neutral manner. The committee agrees that, where possible, duplication of existing laws should be avoided. However, throughout the inquiry it became clear that artificial intelligence raises some unique challenges that may require a specific regulatory response.

4.79 It is generally accepted that artificial intelligence does not recognise borders within Australia, as well as internationally. Many jurisdictions are in the preliminary stages of determining how best to respond to the particular issues presented by artificial intelligence. The committee is firmly of the view that the Government should, as much as possible, seek to ensure the harmonisation

371 Evidence, Mr McGrath, 11 March 2024, p 26.
372 Evidence, Mr McGrath, 11 March 2024, p 26.
373 Evidence, Mr McGrath, 11 March 2024, p 26.
374 Submission 39, NSW Bar Association, p 10; Evidence, Mr McGrath, 11 March 2024, p 26.
375 Submission 46, ARC Centre of Excellence for Automated Decision-Making and Society, p 15.
376 Submission 30, Law Society of New South Wales, p 3.
377 Evidence, Mr Rice, 8 March 2024, p 22.

of its laws and regulatory approach with those of other Australian jurisdictions, so the people, businesses, and industries located within New South Wales are not disadvantaged in any way. It is encouraging that New South Wales has in many ways already emerged as a leader in this area.

4.80 The committee urges the Government to continue to work with the other governments in Australia in developing an appropriate regulatory response to the opportunities and benefits of artificial intelligence, encouraging its safe and responsible use and ensuring adequate protection against inappropriate risks. The influence of artificial intelligence is widespread and not limited to particular government portfolios. The committee accordingly recommends that the NSW Government Ministers liaise with their state and federal counterparts to ensure a consistent approach in the governance of artificial intelligence.

Recommendation 7

That NSW Government Ministers liaise with their state and federal counterparts to ensure a consistent approach in the governance of artificial intelligence.

4.81 The committee is convinced of the necessity for a regulatory gap analysis to be conducted as a matter of priority. This will help avoid the unnecessary duplication of laws, and maximise the effectiveness of any legislative changes considered necessary. The committee is firmly of the view that as artificial intelligence is a rapidly evolving technology, consultation with industry, technical, and legal experts will be crucial for ensuring the legal and regulatory framework is beneficial and relevant. This will help cement an approach that is up to date and able to respond as proactively and flexibly as possible to emerging issues.

4.82 The committee accordingly recommends that the Government conduct a regulatory gap analysis, as soon as possible, in consultation with relevant industry, technical and legal experts, to:

- assess the relevance and application of existing law to artificial intelligence
- identify where changes to existing legislation may be required
- determine where new laws are needed.

Recommendation 8

That the Government conduct a regulatory gap analysis, as soon as possible, in consultation with relevant industry, technical and legal experts to:

- assess the relevance and application of existing law to artificial intelligence
- identify where changes to existing legislation may be required
- determine where new laws are needed.

4.83 The committee recognises that artificial intelligence is a rapidly evolving technology. Continued oversight of the challenges presented by artificial intelligence is of the utmost importance. This is necessary for maintaining the correct balance between harnessing the benefits and

opportunities of artificial intelligence, while adequately protecting against the risks. This balance may at times need to be adjusted as new challenges or unforeseen consequences emerge.

4.84 Much of the evidence suggested that legislative reform or a separate statute for artificial intelligence would be cumbersome and not keep pace with the rate and scale of change. A committee could provide continuous oversight and ensure that Parliament, its laws, and government policy respond to artificial intelligence and other emerging technologies in an iterative way. For this reason, the committee recommends that the Legislative Council pursue the establishment of a Joint Standing Committee on Technology and Innovation.

Recommendation 9

That the Legislative Council pursue the establishment of a Joint Standing Committee on Technology and Innovation to provide continuous oversight of artificial intelligence and other emerging technologies.

4.85 The committee also recommends that the Government appoint a NSW Chief AI Officer who is supported by Chief AI Officers in government departments and agencies to maximise the responsible use of artificial intelligence. It is also recommended that the Government investigate creating a NSW Office of AI to ensure the state's service delivery is protected and enhanced through the responsible use of AI technology. Finally, the committee recommends that the Government extend partnerships with industry academics, experts and professionals to ensure NSW is at the forefront of trends that enhance and protect the state's interests related to AI technology.

Recommendation 10

That the Government appoint a NSW Chief AI Officer, supported by Chief AI Officers in departments and agencies, to maximise the responsible use of artificial intelligence in a rapidly changing technology landscape, including:

- working across all government departments and offices, including with the Information and Privacy Commissioner, Chief Scientist and Chief Data Officer, to assist the responsible uptake and regulation of AI technology by Government
- providing ongoing strategic advice to the Government about trends, opportunities and risks of AI use in NSW government departments
- leading public education initiatives.

Recommendation 11

That the Government investigate creating a NSW Office of AI with the resources and expertise to ensure the state's service delivery is protected and enhanced through the responsible use of AI technology, including:

- working across government departments to assist the uptake of AI technology to enhance service delivery, including procurement and internal development
- updating the NSW AI Assurance Framework and other AI guidelines periodically, to maintain relevance, legality, national and global alignment and appropriateness for use in NSW
- undertaking public safety campaigns. For example, to raise awareness about deepfake content, misinformation and disinformation online.

Recommendation 12

That the Government extend partnerships with industry academics, experts and professionals to ensure New South Wales is at the forefront of trends that enhance and protect the state's interests related to AI technology, including:

a) providing public reports on matters, such as:
    i) new technologies relevant to state service delivery,
    ii) the landscape of AI regulatory frameworks, and
    iii) trends, risks and opportunities for the state associated with artificial intelligence. For example, the impact of artificial intelligence on NSW labour markets,

b) providing ongoing strategic advice to the Government about trends, opportunities and risks of AI use in New South Wales,

c) testing AI models to provide public advice on their use in New South Wales. For example, plain language explanations of Large Language Models and the operation of social media algorithms,

d) providing advice on educational requirements to enhance the state's AI capability, including through primary, secondary, vocational and tertiary education,

e) partnering with private enterprise to undertake projects that align with the state's public interest while upskilling the technology industry through a dedicated AI Engineers apprenticeship program,

f) collaborating with the Federal Government's AI Safety Institute to enhance the country's capability and alignment, provide security to the public, attract global talent in the AI industry and offer certainty to business and investors.

Appendix 1 Submissions

No.	Author
1	Campaign for AI Safety
1a	Campaign for AI Safety
2	Name suppressed
3	Confidential
4	Confidential
5	iOmniscient Pty Ltd
6	Mr Leosha Trushin
7	Mr Yanni Kyriacos
8	Mr Laeeque Jamdar
9	Mr Evan Hockings
10	Mr Wayne Craft
11	Salinger Privacy
12	A New Approach
13	Name suppressed
14	Mr Mitchell Laughlin
15	Ms Naomi Murn
16	Mr Malin Kankanamge
17	Mr Christopher Leong
18	Good Ancestors Policy
19	Business NSW
20	Australian Writers' Guild (AWG) and AWG Authorship Collecting Society
21	Australian Academy of Technological Sciences and Engineering (ATSE)
22	Name suppressed
23	Australian Education Union New South Wales Teachers Federation Branch
24	Australian Copyright Council
25	UNSW Allens Hub for Technology, Law & Innovation
26	Tech Council of Australia
27	Australian Catholic University, Institute for Learning Sciences and Teacher Education
28	APRA AMCOS
29	eSafety Commissioner
30	The Law Society of New South Wales
31	Twilio

No.	Author
32	Information and Privacy Commission NSW
33	The University of Sydney
34	Shop, Distributive and Allied Employees' Association NSW Branch
35	Australian Society of Authors
36	NSW Independent Commission Against Corruption
37	NSW Government
38	Maurice Blackburn Lawyers
39	NSW Bar Association
40	NSW Ombudsman
41	CSIRO
42	NSW Productivity Commission
43	Institute of Public Works Engineering Australasia NSW & ACT
44	NSW Farmers
45	Interactive Games & Entertainment Association (IGEA)
46	ARC Centre of Excellence for Automated Decision-Making and Society
47	Business Council of Australia
48	Dr Darcy W.E. Allen, Professor Chris Berg, Dr Aaron M. Lane
49	Meta
50	Copyright Advisory Group

Appendix 2 Witnesses at hearings

Date	Name	Position and Organisation
Friday 8 March 2024 **Macquarie Room** **Parliament House, Sydney**	Dr Stefan Hajkowicz	Chief Research Consultant – Technology Strategy, Policy and Foresight, CSIRO Data61
	Dr Paul Tyler	Data Privacy Team Leader, CSIRO Data61
	Professor Kimberlee Weatherall	Chief Investigator and University of Sydney Node Leader of the ARC Centre of Excellence for Automated Decision-Making and Society; Professor in the School of Law, University of Sydney
	Dr Jose-Miguel Bello y Villarino	Research Fellow, ARC Centre of Excellence for Automated Decision-Making and Society; Senior Research Fellow in the School of Law, University of Sydney
	Mr Peter Derbyshire	Director, Policy and International Affairs, Australian Academy of Technological Sciences and Engineering
	Professor Ian Oppermann	ATSE Fellow and Industry Professor at UTS
	Mr Ben Rice	Head of Policy Advocacy, Tech Council of Australia
	Ms Erika Ly	Policy Manager, Tech Council of Australia
	Ms Wendy Black	Head of Policy, Business Council of Australia
	Mr Chris Louie	Director, Digital, Cyber and Future Industries, Business Council of Australia
	Mr Ashley Cooper	Policy Director – Agricultural Industries, NSW Farmers

Date	Name	Position and Organisation
	Mr Adrian Roles	Executive Councillor, NSW Farmers
	Ms Louise McGrath *(via videoconference)*	Head of Industry Development and Policy, Australian Industry Group
	Mr Ron Curry *(via videoconference)*	Chief Executive Officer, Interactive Games and Entertainment Association
	Mr Charles Hoang *(via videoconference)*	Director of Public Policy and Government Relations, Interactive Games and Entertainment Association
	Ms Eileen Camilleri	Chief Executive Officer, Australian Copyright Council
	Mr Nicholas Pickard	Executive Director, Public Affairs and Government Relations, APRA AMCOS
	Ms Claire Pullen	Group Chief Executive Officer, Australian Writers' Guild
	Mr Peter Achterstraat AM	NSW Productivity Commissioner, NSW Productivity Commission
	Dr Matthew Costa	Director, Productivity Reform, NSW Treasury
Monday 11 March 2024 **Macquarie Room** **Parliament House, Sydney**	Professor Adam Bridgeman	Pro Vice-Chancellor Educational Innovation, University of Sydney
	Professor Danny Liu	Senior Academic Developer, University of Sydney
	Ms Amber Flohm	Deputy President, NSW Teachers Federation
	Professor Edward Santow	Co-Director, Human Technology Institute
	Ms Sophie Farthing	Head of the Policy Lab, Human Technology Institute
	Professor Lyria Bennett Moses	Director, UNSW Allens Hub for Technology, Law and Innovation

Date	Name	Position and Organisation
	Dr Kayleen Manwarring	Associate Professor, UNSW Faculty of Law and Justice
	Dr Aaron Lane	Senior Lecturer in Law, RMIT Blockchain Innovation Hub
	Distinguished Professor Jason Potts	Co-director, RMIT Blockchain Innovation Hub
	Mr Stephen Blanks	Treasurer and Past President, NSW Council for Civil Liberties
	Ms Lorraine Finlay *(via videoconference)*	Commissioner, Australian Human Rights Commission
	Dr Benjamin Kremer SC	Co-Chair of the Media and Information Law and Technology Committee, NSW Bar Association
	Mr Brett McGrath	President, Law Society of NSW
	Ms Olga Ganopolsky	Chair of the Privacy and Data Law Committee, Law Society of NSW
	His Hon Paul Lakatos SC	Commissioner, Independent Commission Against Corruption
	Mr Lewis Rangott	Executive Director, Corruption Prevention, Independent Commission Against Corruption
	Mr Paul Miller PSM	NSW Ombudsman, NSW Ombudsman's Office
	Mr Chris Clayton	Chief Operating Officer, NSW Ombudsman's Office
	Ms Rachel McCallum	CEO and Information Commissioner, Information and Privacy Commission
	Ms Sonia Minutillo	Acting Privacy Commissioner, Information and Privacy Commission
	Ms Laura Christie	Digital.NSW Government Chief Information and Digital Officer, NSW Department of Customer Service

Date	Name	Position and Organisation
	Mr Daniel Roelink	Digital.NSW Enterprise Architect, NSW Department of Customer Service
	Ms Jessica Ho	Digital.NSW Director of ICT Assurance, NSW Department of Customer Service
	Mr Martin Graham	Deputy Secretary, Teaching, Learning and Student Wellbeing, NSW Department of Education
	Dr Zoran Bolevich	Chief Executive, eHealth NSW and the Chief Information Officer, NSW Health
	Associate Professor Jean-Frederic Levesque	Deputy Secretary, Clinical Innovation and Research and Chief Executive, Agency for Clinical Innovation and NSW Health

Appendix 3 Minutes

Minutes no. 2
Tuesday 27 June 2023
Portfolio Committee No. 1 – Premier and Finance
McKell Room, Parliament House Sydney, 7.00 pm

1. Members present
Mr Buckingham *Chair*
Mr Borsak *Deputy Chair*
Dr Kaine
Mr Lawrence
Mr Nanva
Mr Rath
Mr Tudehope

2. Draft minutes
The Committee noted the publication of minutes No 1 were as per its previous resolution.

3. Correspondence
The Committee noted the following item of correspondence:

Received:

- 22 June 2023 – Letter from Mr Jeremy Buckingham MLC, Mr Robert Borsak MLC and Dr Sarah Kaine MLC requesting a meeting of Portfolio Committee No. 1 to consider a proposed self-reference into Artificial Intelligence in New South Wales.

4. Consideration of terms of reference
Resolved on the motion of Dr Kaine: That the committee adopt the terms of reference as amended.

1. That Portfolio Committee No. 1 - Premier and Finance inquire into and report on Artificial Intelligence (AI) in New South Wales, and in particular:
   (a) the current and future extent, nature and impact of AI in New South Wales
   (b) the social, economic and technical opportunities, risks and challenges presented by AI to the New South Wales community, government, economy and environment
   (c) current community and industry use of AI and the potential implications for delivery of government services
   (d) the current and future extent, nature and impact of AI on the New South Wales labour market including potential changes in:
      i. earnings
      ii. job security
      iii. employment type
      iv. employment status
      v. working patterns
      vi. skills and capabilities for the current and future workforce
   (e) the current and future extent, nature and impact of AI on social inclusion, equity, accessibility, cohesion and the disadvantaged
   (f) the current and future extent, nature and impact of AI on customer service and frontline service delivery in New South Wales
   (g) the current and future extent, nature and impact of AI on human rights and democratic institutions and processes in New South Wales

(h) the effectiveness and enforcement of Commonwealth and New South Wales laws and regulations regarding AI
(i) whether current laws regarding AI in New South Wales that regulate privacy, data security, surveillance, anti-discrimination, consumer, intellectual property and workplace protections, amongst others are fit for purpose
(j) the effectiveness of the NSW Government's policy response to AI including the Artificial Intelligence Strategy, Ethics Policy and Assurance Framework
(k) the measures other jurisdictions, both international and domestic, are adopting in regard to the adaption to and regulation of AI
(l) the successes and positive precedents experienced by other jurisdictions, both international and domestic, to better understand best practice
(m) recommendations to manage the risks, seize the opportunities, and guide the potential use of AI by government, and
(n) any other related matter

5. Conduct of the inquiry into artificial intelligence in New South Wales

5.1 Closing date for submissions
Resolved on the motion of Dr Kaine: That the closing date for submissions be 20 October 2023.

5.2 Stakeholder list
Resolved on the motion of Mr Nanva: That the secretariat circulate to members the Chairs' proposed list of stakeholders to provide them with the opportunity to amend the list or nominate additional stakeholders, and that the committee agree to the stakeholder list by email, unless a meeting of the committee is required to resolve any disagreement.

5.3 Approach to submissions
Resolved on the motion of Mr Rath: That, to enable significant efficiencies for members and the secretariat while maintaining the integrity of how submissions are treated, in the event that 200 or more individual submissions are received, the committee may adopt the following approach to processing short submissions:

- All submissions from individuals 250 words or less in length will:
  - have an individual submission number, and be published with the author's name or as name suppressed, or kept confidential, according to the author's request
  - be reviewed by the secretariat for adverse mention and sensitive/identifying information, in accordance with practice
  - be channelled into one single document to be published on the inquiry website
- All other submissions will be processed and published as normal.

5.4 Hearing dates
Resolved on the motion of Mr Tudehope: That the timeline for hearings be considered by the committee following the receipt of submissions. Further, that hearing dates be determined by the Chair after consultation with members regarding their availability.

6. Adjournment
The committee adjourned at 7.06 pm.

Beverly Duffy
Committee Clerk

Minutes no. 6
Thursday 7 September 2023
Portfolio Committee No. 1 – Premier and Cabinet
Room 814, Parliament House, Sydney at 2.48 pm

1. Members present

Mr Buckingham, *Chair*
Mr Borsak, *Deputy Chair* (until 4.28 pm)
Dr Kaine
Mr Lawrence
Mr Murphy
Mr Rath
Mr Tudehope
Ms Boyd (participating)
Ms Munro (participating)

2. Inquiry into artificial intelligence – Expert briefing

Record briefing for note taking purposes

Resolved, on the motion of Dr Kaine: That the secretariat record the private briefing for the purposes of assisting the secretariat's note taking, and that the recording be destroyed once the notes have been circulated to the committee.

Private briefing

Professor Toby Walsh, Chief Scientist, UNSW AI Institute, and Dr Ian Oppermann, Chief Data Scientist, Department of Customer Service, provided a private expert briefing on the technical and governance aspects of artificial intelligence.

3. Correspondence

The committee noted the following items of correspondence:

Received

- 23 August 2023 – Email from Professor Toby Walsh, Chief Scientist, AI UNSW, accepting invitation to expert briefing
- 24 August 2023 – Email from Mr Max Kennedy, Whip's Adviser, Office of the Hon Bob Nanva MLC to secretariat, advising of substitution of Mr Cameron Murphy for Mr Bob Nanva for duration of the inquiry into artificial intelligence.

Sent

- 23 August 2023 – Email from secretariat to Dr Ian Oppermann, Chief Data Scientist, Department of Customer Service, inviting him to expert briefing
- 23 August 2023 – Email from secretariat to Professor Toby Walsh, Chief Scientist, AI UNSW, inviting him to expert briefing.

4. Inquiry into artificial intelligence in New South Wales

Public submissions

Resolved, on the motion of Mr Tudehope: That the committee authorise the publication of submission no. 1.

Partially confidential submissions

Resolved, on the motion of Mr Murphy: That the committee authorise the publication of submission no. 2, with the exception of identifying information which is to remain confidential, as per the request of the author.

Confidential submissions

Resolved, on the motion of Mr Rath: That the committee keep submissions nos. 3 and 4 confidential, as per the request of the author.

Site visit

The committee noted that possible locations for the upcoming site visit on Monday 16 October 2023 would be determined via email.

5. Adjournment
The committee adjourned at 4.35 pm, *sine die*.

Talina Drabsch
Committee Clerk

Minutes no. 8
Monday 16 October 2023
Portfolio Committee No. 1 – Premier and Finance
Guardhouse, NSW Parliament, Macquarie Street, 9.00 am

1. Members present
Mr Buckingham, *Chair*
Dr Kaine
Mr Lawrence (until 2.13 pm)
Ms Munro (substituting for Mr Tudehope for the duration of the inquiry into AI)
Mr Murphy (until 2.13 pm)
Mr Rath (until 11.50 am)

2. Apologies
Mr Borsak, *Deputy Chair*
Ms Boyd

3. Inquiry into artificial intelligence in New South Wales

3.1 Site visit – Data61, CSIRO, Eveleigh
The committee attended Data61, CSIRO, Eveleigh and was met by:
- Dr Theirry Rakotoarivleo, Group Leader Data61, CSIRO
- Dr Sherry Xu, Senior Research Scientist, Data61, CSIRO.

The committee met with senior Data61 staff, including Colin Brown, Edwin Bonilla Pabon, Sarvnaz Karimi, Lina Yao, Ronnie Taib, Qinghua Lu, Thierry Rakotoarivelo, and Sharif Abuadbba, who gave presentations on the following: an overview of Data61, foundational machine learning, natural language processing, translational AI research, responsible AI engineering, AI and data privacy, AI and cybersecurity, and AI for advanced manufacturing at Boeing.

4. Previous minutes
Resolved, on the motion of Dr Kaine: That draft minutes no. 7 be confirmed.

5. Correspondence
The committee noted the following items of correspondence:

Received
- 8 September 2023 – Email from Deyi Wu, Whip's Adviser to secretariat, advising that Ms Munro will be substituting for Mr Tudehope for the duration of the inquiry.

Sent
- 11 October 2023 – Letter from Chair to Ms Jenny Leong, Member for Newtown, advising that the committee will be visiting the Newtown electorate on 16 October 2023
- 11 October 2023 – Letter from Chair to Dr Marjorie O'Neill, Member for Coogee, advising that the committee will be visiting the Coogee electorate on 16 October 2023.

6. Inquiry into artificial intelligence in New South Wales

6.1 Site visit – AI Institute, University of New South Wales, Kensington

The committee attended the AI Institute, University of New South Wales, Kensington, and was met by:

- Professor Toby Walsh, Chief Data Scientist, AI Institute, UNSW
- Associate Professor Haris Aziz, Director, AI Institute, UNSW.

Senior academics including Professor Toby Walsh, Associate Professor Haris Aziz, Professor Flora Salim, Professor Claude Sammut, Dr Francisco Cruz Naranjo, Dr Ali Darejeh, Dr Imran Razzak, Associate Professor Taha Rashidi, and Associate Professor Meead Saberi Kalaee presented and participated in discussions on a variety of topics including AI and transport, and the UNSW Data Science Hub. Other representatives from UNSW in attendance were Emily Zeng, Miranda Einstein and Charlie Jin.

The committee then visited the virtual reality, robotics and HRI labs accompanied by Associate Professor Aziz.

7. Adjournment

The committee adjourned at 4.02 pm, *sine die*.

Talina Drabsch
Committee Clerk

Minutes no. 21

Friday 8 March 2024
Portfolio Committee No. 1 – Premier and Finance
Macquarie Room, Parliament House, Sydney, 9.02 am

1. Members present

Mr Buckingham, *Chair*
Mr Borsak, *Deputy Chair* (until 12.30 pm)
Ms Kaine (via videoconference)(from 1.51 pm)
Mr Lawrence (from 9.05 am until 4.05 pm)
Ms Munro (via videoconference from 9.09 am)(in person from 11.00)
Mr Murphy
Mr Rath (from 11.57 am)
Ms Boyd (participating) (from 9.15 am until 3.47 pm)

2. Previous minutes

Resolved, on the motion of Mr Murphy: That draft minutes no. 8 be confirmed.

3. Correspondence

The committee noted the following items of correspondence:

Received

- 12 February 2024 – Email from Ms Bronwyn Lo, Public Policy Manager, Meta to secretariat, declining witness invitation
- 21 February 2024 – Email from Ms Meredith Grey, Executive Assistant, Committee for Economic Development of Australia to secretariat, advising that Ms Melinda Cilento no longer available for the hearing
- 23 February 2024 – Email from Mr Sam Moreton, General Manager, Government and Corporate Affairs, Business NSW to secretariat, declining witness invitation

- 29 February 2024 – Email from Professor Claire Wyatt-Smith, Director, Institute for Learning Sciences and Teacher Education, Australian Catholic University to secretariat, advising that she no longer available for the hearing.

4. Inquiry into artificial intelligence in New South Wales

Public submissions
The committee noted that the following submissions were published by the committee clerk under the authorisation of the resolution appointing the committee: submission nos. 1a, 5-12, 14-21, 23-48.

Partially confidential submissions
Resolved, on the motion of Mr Murphy: That the committee keep the following information confidential, as per the request of the author: names and/or identifying and sensitive information in submissions nos. 13 and 22.

Public hearing
Witnesses, the public and the media were admitted.

The Chair made an opening statement regarding the broadcasting of proceedings and other matters.

The following witnesses were sworn and examined:
- Dr Stefan Hajkowicz, Chief Research Consultant – Technology Strategy, Policy and Foresight, CSIRO Data61
- Dr Paul Tyler, Data Privacy Team Leader, CSIRO Data61.

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:
- Professor Kimberlee Weatherall, Chief Investigator and University of Sydney Node Leader of the ARC Centre of Excellence for Automated Decision-Making and Society; Professor in the School of Law, University of Sydney
- Dr Jose-Miguel Bello y Villarino, Research Fellow, ARC Centre of Excellence for Automated Decision-Making and Society; Senior Research Fellow in the School of Law, University of Sydney.

Dr Villarino tendered the following document:
- ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW: Mapping and analysis of the use of ADM systems by state and local governments*, Executive report, March 2024.

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:
- Mr Peter Derbyshire, Director, Policy and International Affairs, Australian Academy of Technological Sciences and Engineering
- Professor Ian Oppermann, ATSE Fellow and Industry Professor at UTS
- Mr Ben Rice, Head of Policy Advocacy, Tech Council of Australia
- Ms Erika Ly, Policy Manager, Tech Council of Australia.

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:
- Ms Wendy Black, Head of Policy, Business Council of Australia
- Mr Chris Louie, Director, Digital, Cyber and Future Industries, Business Council of Australia.

The evidence concluded and the witnesses withdrew.

Ms Boyd left the meeting.

The following witnesses were sworn and examined:

- Mr Ashley Cooper, Policy Director – Agricultural Industries, NSW Farmers
- Mr Adrian Roles, Executive Councillor, NSW Farmers
- Ms Louise McGrath, Head of Industry Development and Policy, Australian Industry Group (via videoconference)
- Mr Ron Curry, Chief Executive Officer, Interactive Games and Entertainment Association (via videoconference)
- Mr Charles Hoang, Director of Public Policy and Government Relations, Interactive Games and Entertainment Association (via videoconference).

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:

- Ms Eileen Camilleri, Chief Executive Officer, Australian Copyright Council
- Mr Nicholas Pickard, Executive Director, Public Affairs and Government Relations, APRA AMCOS
- Ms Claire Pullen, Group Chief Executive Officer, Australian Writers' Guild.

Mr Rath left the meeting.

Ms Boyd re-joined the meeting.

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:

- Mr Peter Achterstraat AM, NSW Productivity Commissioner, NSW Productivity Commission
- Dr Matthew Costa, Director, Productivity Reform, NSW Treasury.

Mr Rath re-joined the meeting.

The evidence concluded and the witnesses withdrew.

The public hearing concluded at 4.41 pm. The public and the media withdrew.

Resolved, on the motion of Mr Murphy: That the committee accept and publish the following document tendered during the public hearing:

- ARC Centre of Excellence for Automated Decision-Making and Society, *Automated Decision-Making in NSW: Mapping and analysis of the use of ADM systems by state and local governments, Executive report*, March 2024.

Other business
Resolved, on the motion of Mr Murphy: That the committee vacate the reserve hearing date of Friday 22 March 2024.

5. Adjournment

The committee adjourned at 4.43 pm until 9.15 am Monday 11 March 2024 (public hearing for inquiry into artificial intelligence in New South Wales).

Talina Drabsch
Committee Clerk

Minutes no. 22

Monday 11 March 2024
Portfolio Committee No. 1 – Premier and Finance
Macquarie Room, Parliament House, Sydney, 9.15 am

1. Members present

Mr Buckingham, *Chair*
Mr Borsak, *Deputy Chair*
Ms Kaine
Mr Lawrence
Ms Munro (from 9.27 am)
Mr Murphy (until 2.36 pm)
Mr Rath
Ms Boyd (participating) (from 10.24 am)

2. Inquiry into artificial intelligence in New South Wales – public hearing

Witnesses, the public and the media were admitted.

The Chair made an opening statement regarding the broadcasting of proceedings and other matters.

The following witnesses were sworn and examined:

- Professor Adam Bridgeman, Pro Vice-Chancellor Educational Innovation, University of Sydney
- Professor Danny Liu, Senior Academic Developer, University of Sydney
- Ms Amber Flohm, Deputy President, NSW Teachers Federation.

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:

- Professor Edward Santow, Co-Director, Human Technology Institute
- Ms Sophie Farthing, Head of the Policy Lab, Human Technology Institute
- Professor Lyria Bennett Moses, Director, UNSW Allens Hub for Technology, Law and Innovation
- Dr Kayleen Manwarring, Associate Professor, UNSW Faculty of Law and Justice
- Dr Aaron Lane, Senior Lecturer in Law, RMIT Blockchain Innovation Hub
- Distinguished Professor Jason Potts, Co-director, RMIT Blockchain Innovation Hub.

Ms Munro left the meeting.

Ms Munro re-joined the meeting.

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:

- Mr Stephen Blanks, Treasurer and Past President, NSW Council for Civil Liberties
- Ms Lorraine Finlay, Commissioner, Australian Human Rights Commission (via videoconference).

Mr Rath left the meeting.

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:
- Dr Benjamin Kremer SC, Co-Chair of the Media and Information Law and Technology Committee, NSW Bar Association
- Mr Brett McGrath, President, Law Society of NSW
- Ms Olga Ganopolsky, Chair of the Privacy and Data Law Committee, Law Society of NSW.

The evidence concluded and the witnesses withdrew.

Ms Munro and Ms Boyd left the meeting.

The following witnesses were sworn and examined:
- His Hon Paul Lakatos SC, Commissioner, Independent Commission Against Corruption
- Mr Lewis Rangott, Executive Director, Corruption Prevention, Independent Commission Against Corruption.

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:
- Mr Paul Miller PSM, NSW Ombudsman, NSW Ombudsman's Office
- Mr Chris Clayton, NSW Ombudsman's Office
- Ms Rachel McCallum, CEO and Information Commissioner, Information and Privacy Commission
- Ms Sonia Minutillo, Acting Privacy Commissioner, Information and Privacy Commission.

Ms Boyd re-joined the meeting.

The evidence concluded and the witnesses withdrew.

Ms Munro and Mr Rath re-joined the meeting.

The following witnesses were sworn and examined:
- Ms Laura Christie, Digital.NSW Government Chief Information and Digital Officer, NSW Department of Customer Service
- Mr Daniel Roelink, Digital.NSW Enterprise Architect, NSW Department of Customer Service
- Ms Jessica Ho, Digital.NSW Director of ICT Assurance, NSW Department of Customer Service
- Mr Martin Graham, Deputy Secretary, Teaching, Learning and Student Wellbeing, NSW Department of Education
- Dr Zoran Bolevich, Chief Executive, eHealth NSW and the Chief Information Officer, NSW Health
- Associate Professor Jean-Frederic Levesque, Deputy Secretary, Clinical Innovation and Research and Chief Executive, Agency for Clinical Innovation and NSW Health.

The evidence concluded and the witnesses withdrew.

The public hearing concluded at 4.32 pm. The public and the media withdrew.

3. Adjournment

The committee adjourned at 4.32 pm *sine die*.

Talina Drabsch
Committee Clerk

Minutes no. 26
Friday 5 July 2024
Portfolio Committee No. 1 – Premier and Finance
Room 1043, Parliament House, Sydney, 10.02 am

1. Members present
Mr Buckingham, *Chair*
Dr Kaine (*via videoconference*)
Mr Lawrence (*via videoconference*)
Ms Munro
Mr Murphy
Mr Rath

2. Apologies
Mr Borsak
Ms Boyd (participating)

3. Previous minutes
Resolved, on the motion of Mr Rath: That draft minutes nos. 21 and 22 be confirmed.

4. Correspondence
The committee noted the following items of correspondence:

Received

- 26 March 2024 – Letter from Mr Peter Achterstraat, NSW Productivity Commissioner and Dr Matthew Costa, Director, Productivity Reform, NSW Treasury to Chair, clarifying evidence given at hearing on 8 March 2024
- 10 April 2024 – Email from NSW Department of Customer Service to secretariat, clarifying evidence given at hearing on 11 March 2024.

5. Inquiry into artificial intelligence in New South Wales

5.1 Public submissions
The committee noted that submission nos. 49 and 50 were published by the committee clerk under the resolution appointing the committee.

5.2 Answers to questions on notice and supplementary questions
The following answers to questions on notice and supplementary questions were published by the committee clerk under the authorisation of the resolution appointing the committee:

- answers to questions on notice from Ms Erika Ly, Policy Manager, Tech Council, received 20 March 2024
- answers to questions on notice from Mr Stephen Blanks, Treasurer and Past President, NSW Council for Civil Liberties, received 25 March 2024
- answers to questions on notice from the Australian Writers Guild, received 2 April 2024
- answers to questions on notice from the NSW Independent Commission Against Corruption, received 9 April 2024
- answers to questions on notice from NSW Department of Customer Service, received 10 April 2024
- answers to questions on notice from NSW Ombudsman, received 11 April 2024
- answers to questions on notice from Law Society of New South Wales, received 11 April 2024
- answers to questions on notice and supplementary questions from UNSW Allens Hub for Technology, Law and Innovation, received 11 April 2024
- answers to questions on notice from NSW Bar Association, received 19 April 2024.

5.3 Transcript corrections

Resolved, on the motion of Mr Rath: That the committee authorise:

- the publication of correspondence from:
    - Mr Peter Achterstraat, NSW Productivity Commissioner and Dr Matthew Costa, Director, Productivity Reform, NSW Treasury, clarifying their evidence on 8 March 2024, received on 26 March 2024
    - Ms Laura Christie, Digital.NSW Government Chief Information and Digital Officer, NSW Department of Customer Service, clarifying her evidence on 11 March 2024, received on 10 April 2024

on the inquiry webpage

- the insertion of footnotes at the relevant points in the transcripts on 8 and 11 March 2024 noting that correspondence clarifying the evidence had been received and providing a hyperlink to the published correspondence.

5.4 Consideration of Chair's draft report

The Chair submitted his draft report entitled *Artificial intelligence in New South Wales*, which, having been previously circulated, was taken as being read.

Resolved, on the motion of Dr Kaine: That:

- paragraph 3.91 be amended by inserting 'and the Committee believes that the availability within and use of these systems by the Government and its agencies should be monitored. The committee therefore recommends that the Government consider maintaining a publicly available register of automated decision-making systems available within Government and its agencies and when they are applied' after 'should not be simply categorised as an IT project'.
- the following new recommendation be inserted after paragraph 3.91:

> **'Recommendation X**
> That the Government consider maintaining a publicly available register of automated decision-making systems available within Government and its agencies and when they are applied.'

Resolved, on the motion of Ms Munro: That the following new paragraph be inserted after paragraph 2.72:

'Mr Nicholas Pickard, Executive Director, Public Affairs and Government Relations, APRA AMCOS, specifically suggested that "The New South Wales Government should develop a definition of "transparency" in AI that benchmarks how AI developers and users provide sufficient information in respect of the original creative works that have been used to generate AI content', highlighting that creators and publishers of content would benefit from clear standards.'
[FOOTNOTE: Evidence, Mr Nicholas Pickard, Executive Director, Public Affairs and Government Relations, APRA AMCOS, 8 March 2024, p 46.]

Resolved, on the motion of Ms Munro: That the following new paragraph be inserted after paragraph 4.68:

'Ms Wendy Black, Chief Executive Officer, Business Council of Australia, also explained that in the business community 'regulatory stability and certainty is key to getting investment decisions', which has a positive impact on worker safety, wage increases and labour productivity gains.'
[FOOTNOTE: Evidence, Ms Wendy Black, Head of Policy, Business Council of Australia, 8 March 2024, p 33-34.]

Resolved, on the motion of Ms Munro: That the following new paragraph be inserted after paragraph 4.53:

'Dr Aaron M. Lane, Senior Lecturer in Law, RMIT Blockchain Innovation Hub, noted that AI regulation 'has to be functional rather than tech specific', to avoid getting 'regulatory capture where you then start either innovating around what the licence is, or what you have are existing players in the market lobbying

to raise those regulatory barriers and prevent other innovative startups from coming into the market'. This highlighted the need to consult with the startup and tech industries on regulatory developments.'
[FOOTNOTE: Evidence, Dr Aaron Lane, Senior Lecturer in Law, RMIT Blockchain Innovation Hub, 11 March 2024, p 19.]

Ms Munro moved: That the following new paragraphs be inserted after paragraph 1.33:

'Professor Ian Oppermann, ATSE Fellow and Industry Professor at UTS noted the history of the development of a governance framework in NSW, explaining:

> What was abundantly clear is that AI is being used everywhere in government and, ultimately, having a centralised office or having a centralised activity means that it will be overwhelmed. If that was the requirement, everything would come through that office or that central part. So there needs to be a general upskilling of capability within government.

Professor Oppermann also reflected on the impact of not having a dedicated Chief Data Scientist to assist the Government in policy making, saying:

> What has been lost, I think, is having a central expert group, and we really did have quite an extraordinary group of people. We had the former human rights commissioner; we had the chief technology officer of Microsoft Australia and Zealand; we had the head of the standards group, of doing the AI standards; we had distinguished professors in AI; and we had data ethicists. We had an incredible group of people who dedicated quite substantial amounts of time to dig into really, really significant and subtle issues. We also had some leading legal voices around the table. So I think that has been lost. But, ultimately, what has to happen is the capability must be uplifted in all parts of government. The philosophy we had was we will make this extraordinary technology as ordinary as possible; we will remove the need for specialisation. But I think New South Wales has lost that small expert group who could deal with really complex and subtle cases.'
> [FOOTNOTE: Evidence, Professor Ian Oppermann, ATSE Fellow and Industry Professor at UTS, 8 March 2024, p 25.]

Resolved, on the motion of Mr Murphy: That the committee adjourn for fifteen minutes.

The committee adjourned at 10.20 am.

The committee resumed at 10.33 am.

Mr Murphy moved: That the committee adjourn until a later date to be determined, after consultation with members regarding their availability.

Debate ensued.

Question put and passed.

6. Adjournment

The committee adjourned at 10.47 am, *sine die*.

Talina Drabsch
Committee Clerk

Draft minutes no. 27

Tuesday 16 July 2024
Portfolio Committee No. 1 – Premier and Finance
Room 1254, Parliament House, Sydney, 11.00 am

1. Members present

Mr Buckingham, Chair
Mr Lawrence (*via videoconference*)
Ms Munro
Mr Murphy
Ms Suvaal (substituting for Dr Kaine)

2. Apologies

Ms Boyd (participating)

3. Previous minutes

Resolved, on the motion of Mr Murphy: That draft minutes no. 26 be confirmed.

4. Inquiry into artificial intelligence in New South Wales

Consideration of Chair's draft report

The committee continued its consideration of the Chair's draft report entitled '*Artificial intelligence in New South Wales*'.

Resolved, on the motion of Ms Munro: That the following new paragraphs be inserted after paragraph 4.59:

'Professor Ian Oppermann, ATSE Fellow and Industry Professor at UTS noted the history of the development of a governance framework in NSW, explaining:

> What was abundantly clear is that AI is being used everywhere in government and, ultimately, having a centralised office or having a centralised activity means that it will be overwhelmed. If that was the requirement, everything would come through that office or that central part. So there needs to be a general upskilling of capability within government.

Professor Oppermann also reflected on the impact of not having a dedicated Chief Data Scientist to assist the Government in policy making, saying:

> What has been lost, I think, is having a central expert group, and we really did have quite an extraordinary group of people. We had the former human rights commissioner; we had the chief technology officer of Microsoft Australia and Zealand; we had the head of the standards group, of doing the AI standards; we had distinguished professors in AI; and we had data ethicists. We had an incredible group of people who dedicated quite substantial amounts of time to dig into really, really significant and subtle issues. We also had some leading legal voices around the table. So I think that has been lost. But, ultimately, what has to happen is the capability must be uplifted in all parts of government. The philosophy we had was we will make this extraordinary technology as ordinary as possible; we will remove the need for specialisation. But I think New South Wales has lost that small expert group who could deal with really complex and subtle cases.'

[FOOTNOTE: Evidence, Professor Ian Oppermann, ATSE Fellow and Industry Professor at UTS, 8 March 2024, p 25.]

Ms Munro moved: That paragraph 3.95 and recommendation 5 be omitted:

'For these reasons, the committee recommends that the Government deliver a community education campaign about artificial intelligence, so the public may be informed about its risks and to encourage safe and effective use.

Recommendation 5

That the Government deliver a community education campaign about artificial intelligence, that informs the public about its risks, and to encourage effective and safe use.'

Question put and negatived.

Ms Munro moved: That the following new recommendation be inserted after recommendation 8:

'Recommendation X

That the Government reinstate the role of the Chief Data Scientist to oversee, coordinate and innovate to manage the state's data governance responsibilities, in conjunction with the Minister for Digital Government.'

Question put.

The committee divided.

Ayes: Ms Munro.

Noes: Mr Buckingham, Mr Lawrence, Mr Murphy, Ms Suvaal.

Question resolved in the negative.

Ms Munro moved: That the following new recommendation be inserted after recommendation 8:

'Recommendation X

That the Government create the position of the NSW AI Commissioner to maximise the use of AI in a rapidly changing technology landscape, including:

a) Leading the creation of the NSW AI Commission and, once established, directing its activities

b) Working across all government departments and offices, including with the Information and Privacy Commissioner, Chief Scientist and Chief Data Scientist, to assist the responsible uptake and regulation of AI technology by Government

c) Providing ongoing strategic advice to the Government about trends, opportunities and risks of AI use in NSW Government Departments

d) Leading public awareness campaigns.'

Mr Murphy moved: That the motion of Ms Munro be amended by omitting:

'That the Government create the position of the NSW AI Commissioner to maximise the use of AI in a rapidly changing technology landscape, including:

a) Leading the creation of the NSW AI Commission and, once established, directing its activities

b) Working across all government departments and offices, including with the Information and Privacy Commissioner, Chief Scientist and Chief Data Scientist, to assist the responsible uptake and regulation of AI technology by Government

c) Providing ongoing strategic advice to the Government about trends, opportunities and risks of AI use in NSW Government Departments

d) Leading public awareness campaigns.'

and inserting instead:

'That the Government appoint a NSW Chief AI Officer, supported by Chief AI Officers in departments and agencies, to maximise the responsible use of AI in a rapidly changing technology landscape, including:

a) Working across all government departments and offices, including with the Information and Privacy Commissioner, Chief Scientist and Chief Data Officer, to assist the responsible uptake and regulation of AI technology by Government

b) Providing ongoing strategic advice to the Government about trends, opportunities and risks of AI use in NSW government departments

c) Leading public education initiatives.'

Amendment of Mr Murphy put and passed.

Original question of Ms Munro, as amended, put and passed.

Ms Munro moved: That the following new recommendation be inserted after recommendation 8:

'Recommendation X

That the Government create the AI Commission of NSW with the resources and expertise to ensure the state's service delivery is protected and enhanced through the responsible use of AI technology, including:

a) Working across government departments to assist the uptake of AI technology to enhance service delivery, including procurement and internal development

b) Updating the NSW AI Assurance Framework and other AI guidelines periodically, to maintain relevance, legality, national and global alignment and appropriateness for use in NSW

c) Undertaking public safety campaigns. For example, to raise awareness about the prevalence and nature of deepfake content, misinformation and disinformation on social media

d) Partnering with industry peak bodies to undertake awareness campaigns to encourage business uptake of AI tools to enhance productivity and protect against vulnerability to risks.'

Mr Murphy moved: That the motion of Ms Munro be amended by omitting:

'That the Government create the AI Commission of NSW with the resources and expertise to ensure the state's service delivery is protected and enhanced through the responsible use of AI technology, including:

a) Working across government departments to assist the uptake of AI technology to enhance service delivery, including procurement and internal development

b) Updating the NSW AI Assurance Framework and other AI guidelines periodically, to maintain relevance, legality, national and global alignment and appropriateness for use in NSW

c) Undertaking public safety campaigns. For example, to raise awareness about the prevalence and nature of deepfake content, misinformation and disinformation on social media

d) Partnering with industry peak bodies to undertake awareness campaigns to encourage business uptake of AI tools to enhance productivity and protect against vulnerability to risks.'

and inserting instead:

'That the Government investigate creating a NSW Office of AI with the resources and expertise to ensure the state's service delivery is protected and enhanced through the responsible use of AI technology, including:

a) Working across government departments to assist the uptake of AI technology to enhance service delivery, including procurement and internal development

b) Updating the NSW AI Assurance Framework and other AI guidelines periodically, to maintain relevance, legality, national and global alignment and appropriateness for use in NSW

c) Undertaking public safety campaigns. For example, to raise awareness about deepfake content, misinformation and disinformation online.'

Amendment of Mr Murphy put and passed.

Original question of Ms Munro, as amended, put and passed.

Ms Munro moved: That the following new recommendation be inserted after recommendation 8:

'Recommendation X

That the Government create an AI R&D Institute staffed by industry academics, experts and professionals to ensure NSW is at the forefront of trends that enhance and protect the state's interests related to AI technology, including:

a) Providing public reports on matters, such as:

i) new technologies relevant to state service delivery,

ii) the landscape of AI regulatory frameworks, and

iii) trends, risks and opportunities for the state associated with AI. For example, the impact of AI on NSW labour markets,

b) Providing ongoing strategic advice to the Government about trends, opportunities and risks of AI use in NSW

c) Testing AI models to provide public advice on their use in NSW. For example, Plain language explanations of Large Language Models and the operation of social media algorithms

d) Providing advice on educational requirements to enhance the state's AI capability, including through primary, secondary, vocational and tertiary education

e) Partnering with private enterprise to undertake projects that align with the state's public interest while upskilling the technology industry through a dedicated AI Engineers apprenticeship program

f) Collaborating with the Federal Government's AI Safety Institute to enhance the country's capability and alignment, provide security to the public, attract global talent in the AI industry and offer certainty to business and investors.'

Mr Murphy moved: That the motion of Ms Munro be amended by omitting 'create an AI R&D Institute staffed by' and inserting instead 'extend partnerships with'.

Amendment of Mr Murphy put and passed.

Original question of Ms Munro, as amended, put and passed.

Ms Munro moved: That the following new recommendation by inserted after paragraph 4.59:

'Recommendation X

That the Government reinstate the role of the Chief Data Scientist to oversee, coordinate and innovate to manage the state's data governance responsibilities, in conjunction with the Minister for Digital Government.'

Question put.

The committee divided:

Ayes: Ms Munro.

Noes: Mr Buckingham, Mr Lawrence, Mr Murphy, Ms Suvaal.

Question resolved in the negative.

Resolved, on the motion of Mr Murphy: That:

a) The draft report as amended be the report of the committee and that the committee present the report to the House;

b) The transcripts of evidence, tabled documents, submissions, correspondence, answers to questions taken on notice and supplementary questions relating to the inquiry be tabled in the House with the report;

c) Upon tabling, all unpublished attachments to submissions be kept confidential by the committee;

d) Upon tabling, all unpublished transcripts of evidence, tabled documents, submissions, correspondence, and answers to questions taken on notice and supplementary questions related to the inquiry be published by the committee, except for those documents kept confidential by resolution of the committee;

e) The committee secretariat correct any typographical, grammatical and formatting errors prior to tabling;

f) The committee secretariat be authorised to update any committee comments where necessary to reflect changes to recommendations or new recommendations resolved by the committee;

g) Dissenting statements be provided to the secretariat within 24 hours after receipt of the draft minutes of the meeting;

h) The secretariat is tabling the report on 25 July 2024;

i) The Chair to advise the secretariat and members if they intend to hold a press conference, and if so, the date and time.

5. Adjournment

The committee adjourned at 11.25 am until 1.15 pm Tuesday 16 July 2024 (meeting to consider Budget Estimates).

Talina Drabsch
Committee Clerk