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# Artificial intelligence in communications and media

## Occasional paper

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# Executive summary

Artificial intelligence (AI) is increasingly a part of our lives. In the years ahead, AI technologies are expected to further transform industries, boosting efficiency and increasing the quality of services through faster and more accurate decision-making. AI has also been hailed as a tool to accelerate scientific discovery, tackle social problems, and support new digital products and services that entertain, inform, make us safer, and improve our environment.

**Alongside recognition of AI’s potential to change things for the better, there has been an increased focus on the role of regulation in supporting the delivery of these benefits.**

Regulation plays a key role in contributing to an environment where the benefits of AI can be realised and delivered within communities. This includes ensuring adequate safeguards are in place. A range of existing regulation, including human rights and privacy law, consumer protection, and product safety and liability rules, shapes the regulatory environment for AI technologies. However, the features of some AI technologies—in particular, the use of large data sets, the ability to learn and adapt, and the complexity and opaqueness of its operation—has raised questions about potential new risks and how they will be managed.

There are a range of domestic and international regulatory developments that will guide AI development and use. Change to privacy regulation will likely impact data governance systems and processes.<sup>1</sup> Ethics principles and frameworks for AI could evolve into, or inform, sector-specific approaches.<sup>2</sup> Standards for AI are being considered and developed.<sup>3</sup> Explorations of the impacts of AI on human rights may inform the policy and regulatory agenda.<sup>4</sup> Internationally, the European Commission has begun considering additional regulatory requirements targeting ‘high-risk’ AI.<sup>5</sup> These types of developments support the growth and use of AI that benefits individuals and communities by defining standards and expectations, mitigating risks, providing greater certainty to industry and building consumer confidence in these technologies.

**It is important that the ACMA, as the communications and media regulator, has a clear understanding of how AI will be used and its impacts on industry and consumers.**

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<sup>1</sup> The Australian Government committed to a review of the *Privacy Act 1988* in December 2019. See the [Government Response and Implementation Roadmap for the Digital Platforms Inquiry](#).

<sup>2</sup> Department of Industry, Science, Energy and Resources, [AI Ethics Framework](#), accessed 1 June 2020.

<sup>3</sup> Standards Australia, [Artificial Intelligence Standards Roadmap: Making Australia’s Voice Heard](#), 12 March 2020.

<sup>4</sup> Australian Human Rights Commission, [Human Rights & Technology](#), accessed 1 June 2020.

<sup>5</sup> European Commission, [White Paper on Artificial Intelligence: a European approach to excellence and trust](#), 19 February 2020.

As outlined in our corporate plan, the ACMA monitors the market and regulatory environment. This work is key to ensuring we remain an informed and responsive regulator and advocate for appropriate, fit-for-purpose regulatory settings and safeguards.

In line with this work, this paper explores AI technologies within the communications and media markets and how these may affect the delivery of public policy objectives. This paper examines:

- > the implementation of ethical principles in communications and media markets
- > potential risks to consumers in interacting with automated customer service agents
- > the challenge of misinformation
- > risks associated with online 'filter bubbles' and content personalisation, including to diversity in individuals' news consumption
- > how AI may be used in unsolicited communications and by scammers
- > developments in technical standardisation
- > how AI could change the spectrum environment

**The ACMA has identified an initial path forward for monitoring the challenges of AI and enabling our responsiveness to these challenges.**

This paper provides information about the challenges raised by AI in communications and media markets and the ACMA's activities to address these.

We already have in place, or are developing, measures to respond to challenges within communications and media markets where AI plays a role. This includes monitoring technological solutions to reduce the severity of scams, overseeing the development of voluntary industry code(s) addressing the issue of misinformation on digital platforms, and research into consumers' experience. Engagement with our industry, consumer, and government stakeholders is an essential part of this work.

The policy and regulatory environment for AI at a national level, however, is still maturing. To ensure we are well-placed to support beneficial outcomes of AI, we will conduct the following activities:



**Research**

We will conduct further research into how AI is being used, and can be expected to be used, across the communications and media sectors in the years ahead. This enables us to be responsive to potential risks associated with AI technologies.



**Consultation**

Following the Department of Industry, Science, Energy and Resources' piloting of the AI Ethics Principles with industry, we will explore with our stakeholders whether there is a role for the ACMA to further support their implementation and the mechanisms this could involve.



**Monitoring**

We will continue to monitor advancements in AI, as well as international regulatory responses and domestic regulatory approaches.

We welcome feedback from readers about researching and monitoring AI. This will help us to address challenges relating to AI. Please email [regfutures@acma.gov.au](mailto:regfutures@acma.gov.au).

# About the research

This research aims to identify how AI will be deployed across the communications and media markets and potential challenges this may raise for the delivery of public policy objectives.

This paper was informed by desktop research and targeted consultations with a range of stakeholders, including government agencies, industry, and the ACMA's Consumer Consultative Forum.

## researchacma

Our [research program](#)—researchacma—underpins our work and decisions as an evidence-informed regulator. It contributes to our strategic policy development, regulatory reviews and investigations, and provides a regulatory framework that anticipates change in dynamic communications and media markets.

The research referenced in this report contributes to the 'Regulatory best practice and development' research theme. More details can be found in the [ACMA research program](#).

# Key terms

The following are some key terms associated with AI technologies.

## Algorithm

A process or set of rules in calculations or other problem-solving operations.<sup>6</sup> Algorithms are at the core of AI systems.

## Artificial intelligence

A collection of interrelated technologies used to solve problems autonomously and perform tasks to achieve defined objectives without explicit guidance from a human being.<sup>7</sup>

## Deep learning

The process of machine learning using deep neural networks.<sup>8</sup> See also *Neural network* or ‘artificial neural network’.

## Machine learning

A subset of AI, machine learning is the ability for a computer to perform tasks without being given explicit instructions on how. Instead, the machine ‘learns’ how to perform those tasks by finding patterns and making inferences.<sup>9</sup>

There are different methods for training machine learning technologies, including supervised learning, unsupervised learning, semi-supervised learning and reinforcement learning.<sup>10</sup> Machine learning systems also differ in terms of the performance criteria they optimise for, and the way each model’s parameters are adjusted.<sup>11</sup>

## Model

The part of a machine learning system that learns how to perform tasks by making predictions or decisions.<sup>12</sup>

## Neural network or ‘artificial neural network’

This describes a common way of performing machine learning, which is inspired by the neural network of the brain. A neural network is made up of sets of algorithms, called ‘neurons’. Each of these neurons helps perform a part of a larger task. Neurons have connections to other neurons (called ‘edges’) with varying strengths (called ‘weights’) that adjust as learning takes place.<sup>13</sup>

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<sup>6</sup> Lexico, [algorithm](#), accessed 18 September 2019.

<sup>7</sup> Dawson D and Schleiger E, Horton J, McLaughlin J, Robinson C, Quezada G, Scowcroft J, and Hajkowicz S, [Artificial Intelligence: Australia’s Ethics Framework](#), Data61 CSIRO, 2019, p. 14.

<sup>8</sup> Office of the Victorian Information Commissioner, [Closer to the machine: Technical, social, and legal aspects of AI](#), August 2019, p. 5.

<sup>9</sup> *ibid.*, p. 3.

<sup>10</sup> *ibid.*, p. 4.

<sup>11</sup> Ignatidou S, [AI-driven personalization in Digital Media: Political and Societal Implications](#), Chatham House, 2 December 2019, p. 7.

<sup>12</sup> Office of the Victorian Information Commissioner, [Closer to the machine: Technical, social, and legal aspects of AI](#), August 2019, p. 3.

<sup>13</sup> *ibid.*, p. 4.



A 'deep neural network' has multiple layers of neurons. The results of the first layer feed into the second layer, and so on.<sup>14</sup>

**Training data**

The data used to train and develop AI technologies.<sup>15</sup>

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<sup>14</sup> *ibid.*, p. 5.

<sup>15</sup> *ibid.*, p. 3.

# Part 1: Introduction

## Overview

AI is already embedded in many of our lives. It enables smartphones and smart devices to answer our questions, brings up relevant search results and recommendations, and supports network management. In the next few years, investments in AI are anticipated to increase the variety and quality of AI technologies available across the economy.<sup>16</sup> This promises a range of benefits—AI could help solve complex problems, improve efficiency across a range of industries, and enable new or improved products and services.<sup>17</sup>

However, there are also challenges raised by AI that need to be addressed and managed. There has been a trend to frame these as ‘ethical’ challenges or issues.<sup>18</sup> Some of those most commonly discussed include providing transparency around how AI reaches a decision or prediction, ensuring that the outcomes of AI are fair, ensuring a human is accountable for the outcomes of AI, and for the protection of privacy.

Policymakers and regulators are working to address the challenges of AI to support public trust and guide AI development and use towards beneficial outcomes. The ACMA has a role to play in facilitating and supporting these efforts at a sectoral level.

## Scope of this paper

This paper provides information on AI within the communications and media markets and the challenges these may raise for the delivery of public policy objectives.

The regulatory framework administered by the ACMA works alongside a range of other regulatory arrangements, including consumer safeguards, competition and privacy laws. Because of the intersection between these regulatory regimes and public policies, this paper includes discussion of issues that are also relevant to regulators across these areas.

However, because we are focused on our regulatory framework, we have not included in-depth discussion of some prominent issues relating to AI that sit outside of our remit. These include:

- > **Privacy, data protection and governance**—domestic and international privacy laws and data protection laws play a central role in managing risks in AI, given AI technologies are built on data. Parts of the ACMA’s regulatory framework intertwine with Australia’s [Privacy Act 1988](#) (Privacy Act), which is administered by Australia’s privacy regulator. We have not included detailed discussion of the range of issues AI raises for privacy. For further information on these, please refer to relevant work

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<sup>16</sup> Hajkowicz SA, Karimi S, Wark T, Chen C, Evans M, Rens N, Dawson D, Charlton A, Brennan T, Moffatt C, Srikumar S, Tong KJ, [Artificial intelligence: Solving problems, growing the economy and improving our quality of life](#), CSIRO Data61, 2019; Walsh, T., Levy, N., Bell, G., Elliott, A., Maclaurin, J., Mareels, I.M.Y., Wood, F.M., [The effective and ethical development of artificial intelligence: An opportunity to improve our wellbeing](#), the Australian Council of Learned Academies, 2019.

<sup>17</sup> Hajkowicz SA, Karimi S, Wark T, Chen C, Evans M, Rens N, Dawson D, Charlton A, Brennan T, Moffatt C, Srikumar S, Tong KJ, [Artificial intelligence: Solving problems, growing the economy and improving our quality of life](#), CSIRO Data61, 2019, p. 7.

<sup>18</sup> Farthing S, Howell J, Lecchi K, Paleologos Z, Saintilan P, Santow E, [Human Rights and Technology Discussion Paper](#), Australian Human Rights Commission, 2019, p. 47.

published by the Office of the Australian Information Commissioner (OAIC)<sup>19</sup>, state privacy regulators<sup>20</sup> and the Australian Human Rights Commission (AHRC).<sup>21</sup>

- > **Security**—AI technologies may have security vulnerabilities that need to be resolved. AI could also potentially be used to conduct cyberattacks. There are laws in place around cybersecurity (for example, the [Criminal Code Act 1995](#)) and privacy laws that set requirements for the protection of personal information (for example, the Privacy Act).
- > **Competition**—concerns have been raised about the behaviour of digital platforms in the supply of advertising or content online, where AI plays a role in display and distribution. Relevantly, the Australian Competition and Consumer Commission (ACCC) is conducting inquiries into the markets for the supply of digital platform services<sup>22</sup>, digital advertising technology services and digital advertising agency services.<sup>23</sup> The ACCC is also developing a mandatory code of conduct to address bargaining power imbalances between Australian news media businesses and each of Google and Facebook.<sup>24</sup>
- > **Product safety and liability**—product safety regulation (for example, Australian consumer law<sup>25</sup>) that may be relevant to AI-enabled products sits outside of the ACMA's remit.

Other sector-specific regulatory regimes relevant to particular industry uses of AI, such as health or transport regulation, are also not covered in this paper.

## What is AI?

The term 'AI' describes an area of research focused on developing machines that could simulate intelligence.<sup>26</sup> Today, AI is a multifaceted field that has developed machines capable of imitating various cognitive tasks, including learning, reasoning, problem-solving, understanding language and recognising patterns.

The Australian Government provides the following definition, where AI is<sup>27</sup>:

... a collection of interrelated technologies used to solve problems autonomously and perform tasks to achieve defined objectives without explicit guidance from a human being.

This is a broad definition covering a range of technologies. It encompasses AI that is developed using neural networks and deep learning, and less sophisticated technologies such as automated decision systems.<sup>28</sup> While broad, this definition is useful to focus on the range of technologies capable of automating or informing decision-making processes across communications and media markets.

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<sup>19</sup> Office of the Australian Information Commissioner, <https://www.oaic.gov.au/>.

<sup>20</sup> Office of the Australian Information Commissioner, [Privacy in your state](#), accessed 1 June 2020.

<sup>21</sup> Australian Human Rights Commission, [Human Rights & Technology](#), accessed 1 June 2020.

<sup>22</sup> Australian Competition and Consumer Commission, [Digital platform services inquiry 2020-2025](#), February 2020.

<sup>23</sup> Australian Competition and Consumer Commission, [Digital advertising services inquiry](#), February 2020.

<sup>24</sup> Australian Competition and Consumer Commission, [News media bargaining code](#), May 2020.

<sup>25</sup> Australian Competition and Consumer Commission, [Consumer rights & guarantees](#), accessed 2 June 2020.

<sup>26</sup> McCarthy J, Minsky M, Rochester N, Shannon C, *A proposal for the Dartmouth Summer Research Project on Artificial Intelligence, August 31 1955*, [AI Magazine](#), Vol 27 No.4: Winter 2006, Association for the Advancement of Artificial Intelligence, December 2006, p. 12.

<sup>27</sup> Dawson D and Schleiger E, Horton J, McLaughlin J, Robinson C, Quezada G, Scowcroft J, and Hajkowicz S, [Artificial Intelligence: Australia's Ethics Framework](#), Data61 CSIRO, 2019, p. 14.

<sup>28</sup> Automated decision systems may rely on traditional statistical techniques, for example regression analysis.

## Categories of AI

Broadly, AI technologies can be viewed as belonging to either of two conceptual groups<sup>29</sup>:

1. 'narrow' or 'weak' AI, or;
2. 'general' or 'strong' AI.

The AI technologies in use today are considered 'narrow' because they can only be used to solve or complete specific problems or tasks. There is a wide range of AI applications that fall within this category, some of which appear more complex than others in their operation. For example, email spam filters and self-driving cars (also known as 'automated vehicles') both involve narrow AI. Machine learning is a subset of narrow AI that describes technologies that improve over time by recognising patterns in datasets without being explicitly programmed.<sup>30</sup>

General AI has yet to be developed and is not anticipated for several decades. If it did, it would be capable of general decision-making and automation outside of narrow specialties and perform as well as, or better than, humans. Ray Kurzweil, futurist and director of engineering at Google, has predicted computers passing human levels of intelligence around 2045, while other experts have predicted this occurring decades later.<sup>31</sup>

This paper focuses on narrow AI technologies within the communications and media sector. These technologies are anticipated to become increasingly a part of communications and media products and services in the coming decade.

## AI in the communications and media sector

Figure 1 illustrates the breadth of AI applications across the communications and media sectors. This is based on a conceptual model developed by the ACMA, which describes the communications and media sectors as involving a four-layered stack of services and activities. This model reflects the areas where regulation may be targeted to achieve public policy objectives.<sup>32</sup>

The four layers of this 'communications stack' are<sup>33</sup>:

- > **Applications/content layer**—this includes content delivered on subscription and free-to-air digital television or applications (such as Netflix and iView). This layer also includes software applications or platforms that support additional functions, such as the ability to make voice and video calls (for example, Skype or Facebook Messenger).
- > **Devices layer**—devices that enable access to communications networks. Examples include televisions, radios, mobile phone and tablets.
- > **Transport layer**—this layer provides the intelligence needed to support applications and functionality over the network. Technical standards also enable interoperability and any-to-any connectivity between different networks.

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<sup>29</sup> Future Today Institute, [2018 Tech Trends Report](#), 2018, p. 48; Centre for Public Impact, [Destination unknown: Exploring the impact of Artificial Intelligence on Government Working Paper](#), 2017, p. 5.

<sup>30</sup> Office of the Victorian Information Commissioner, [Closer to the machine: Technical, social, and legal aspects of AI](#), August 2019, p. 5.

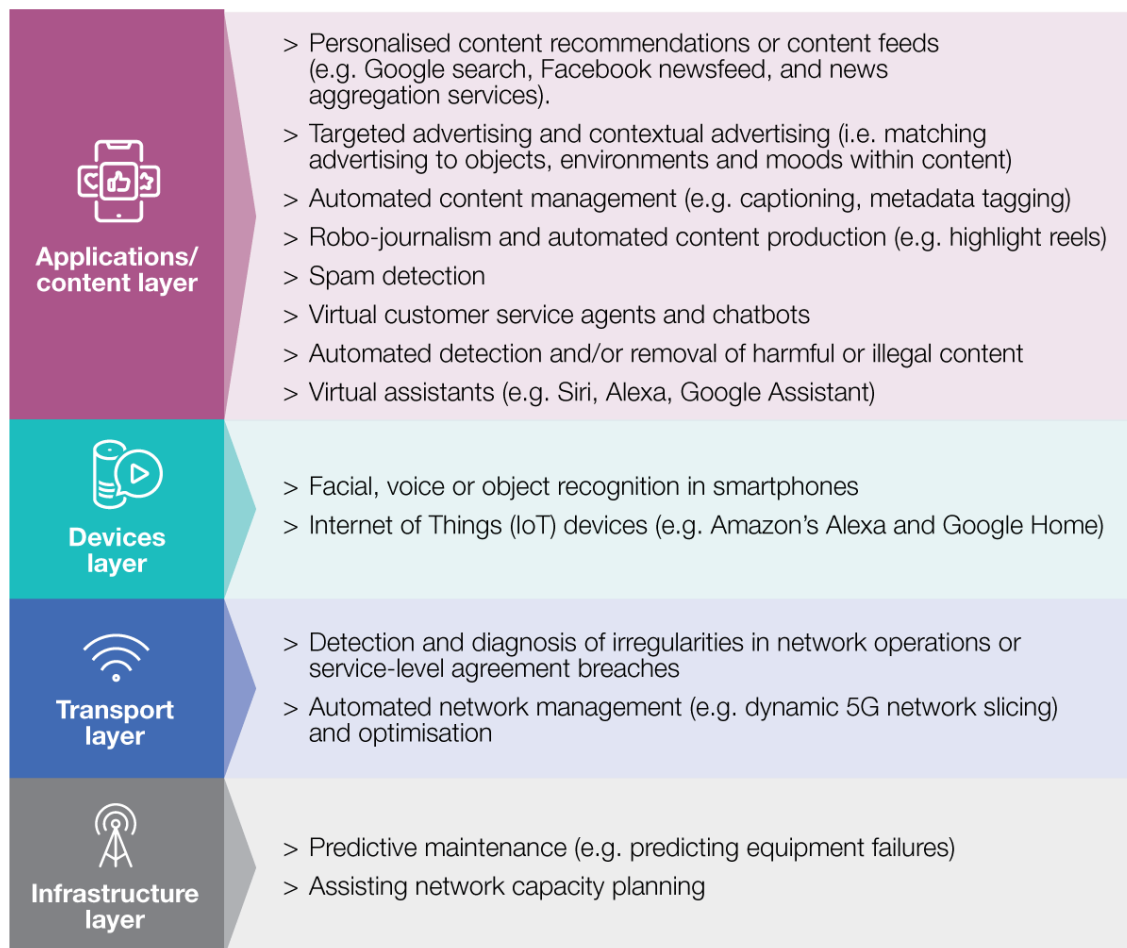
<sup>31</sup> *ibid.*, p. 16.

<sup>32</sup> The 2016 *Review of the Australian Communications and Media Authority* identified eight 'enduring policy concepts', which are public policy objectives that are likely to remain relevant to the communications sector regardless of future changes in the market, society and technology and where regulation is likely to have an ongoing role. Department of Communications and the Arts, [Review of the Australian Communications and Media Authority Final Report](#), 2016, p. 86.

<sup>33</sup> *ibid.*, p. 8.

- > **Infrastructure layer**—includes physical network infrastructure, such as wires and towers, as well as the electromagnetic waves that allow for data to be transmitted wirelessly.

**Figure 1: Examples of AI within communications and media**



Within this model, each layer in the stack depends on the layers below it. These conceptual layers are deeply interconnected and, as a result, some services and activities blur the boundaries between layers. For example, smart speakers are an IoT device and can provide a virtual assistant service that would be categorised as an application.

Available research suggests there are varying degrees of AI use across the Australian communications and media market. Global technology companies, primarily those based in the US and China, lead in the development and application of AI technologies.<sup>34</sup> While some Australian businesses have looked to develop in-house AI applications, there are also examples of businesses partnering with global technology companies on AI. For example, Seven West Media has announced its partnership with Amazon Web Services to bring an AI-powered contextual ad placement service called 7CAP to its broadcast network.<sup>35</sup> Through 7CAP, AI is used to identify objects, environments and moods within the content, which enables brands to align

<sup>34</sup> Australian Computer Society, *Artificial Intelligence: A Starter Guide to the Future of Business*, 2018, p. 44.

<sup>35</sup> Seven West Media, *Seven Delivers for Partners in 2020*, 23 October 2019, p. 5.

themselves with moments that are relevant to them.<sup>36</sup> Commercial Radio Australia (CRA) has also described how it worked to enable Australian radio on smart speakers:

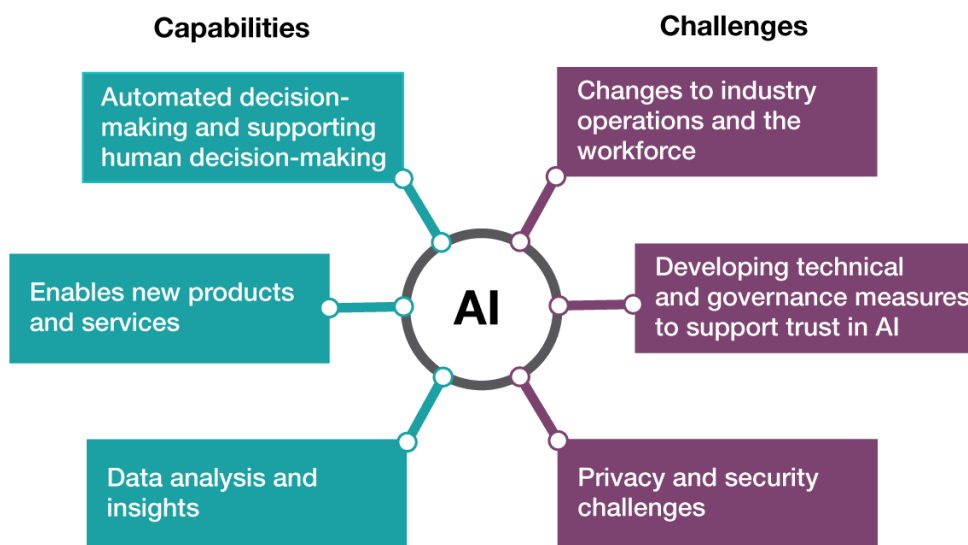
CRA is working with global technology companies including Amazon Alexa to enable Australian radio to work effectively with voice technology on smart speakers. CRA launched RadioApp skills for Amazon Alexa in October 2018, which effectively made RadioApp the default radio player in Australia for Alexa enabled devices. This allows listeners to ask Alexa to play stations on RadioApp using their voice... CRA is continuing to work with other players, including Google and Apple, to ensure that Australian radio is easily discoverable on smart speakers.<sup>37</sup>

There are a wide range of benefits to be gained from AI across industries, including greater efficiency in existing business operations, improvements to products and services, and technology innovation. The general benefits of AI, and examples from the communications and media sector, are explored below alongside the challenges associated with these technologies.

## The benefits and challenges of AI

As with previous technological developments, there are a wide range of benefits to using AI technologies, but there are also challenges that need to be managed to ensure the impacts of these technologies are positive.

Figure 2: Overview of AI capabilities and areas where challenges may arise



<sup>36</sup> *ibid.*

<sup>37</sup> Commercial Radio Australia, *ACMA Discussion Paper Artificial Intelligence in Communications and Media Submission by Commercial Radio Australia*, November 2019, p. 3.

## Benefits

Already, there are a range of examples of AI providing benefits to consumers. This is illustrated below through examples from the communications and media markets.

### Accessibility



AI-powered devices that use voice commands, such as Amazon Echo, Google Home and Google Assistant technology are being used by people with limited sight or mobility. AI can also be used to automatically generate captions for photos and video content.

### Spam detection



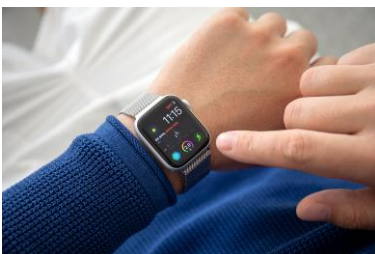
In 2019, Google began using TensorFlow, a machine learning framework Google had developed to block spam, phishing and malware from reaching Gmail inboxes. The company reports that with TensorFlow, they are now blocking 100 million additional spam messages per day.

### Harmful and illegal content detection



AI plays an important role in scanning online content quickly and at a huge scale to identify harmful content. YouTube reports that during 2019, about 72% of videos flagged through automated flagging were removed before they received a single view. Facebook reported that on average, during each quarter of 2019, 99.3% of child nudity and sexual exploitation content, 99.15% of violent and graphic content, and 98.85% of terrorist content was flagged before users reported it.

### Internet of Things



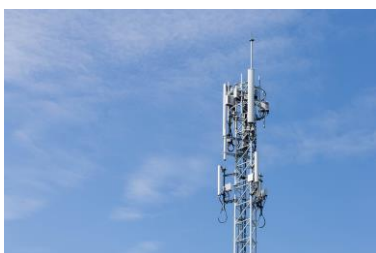
It is estimated that 16 million IoT devices are installed in Australia today. Types of IoT devices include smart door locks, smart thermostats, connected kitchens, smart security devices and smart Bluetooth trackers. IoT in the workplace is improving efficiency and productivity. Office buildings are becoming smart buildings with smart lights, motion sensors and smart desks.

## News production



News agencies that have used AI to automatically produce stories include *the BBC*, *The Guardian*, Bloomberg and *The Wall Street Journal*. Reporters and Data and Robots (RADAR), a partnership between the UK Press Association and the tech-driven start up Urbs Media, uses natural language generation (NLG) technology to help UK reporters produce thousands of localised news stories from open data sets.

## Improving networks



AI can be used to model demand on the network, optimise network operations, and predict equipment maintenance issues. In 2019, Ericsson Research reported it was developing methods to improve video-based radio tower inspections by incorporating computer vision to detect issues with radio tower installations in real time.

In the future, AI has the potential to transform and improve sectors across the economy, which has led to parallels being drawn between AI and the invention of electricity.<sup>38</sup>

AI could enable productivity and efficiency gains across industries by automating tasks (including repetitive or dangerous activities), helping us make better-informed and quicker decisions, and driving technological innovation. To highlight a few examples, there has been widespread recognition of the potential for AI to improve healthcare by making diagnosis more precise and supporting the development of new treatments.<sup>39</sup> AI could also increase agricultural productivity, improve energy efficiency and make driving safer. The data analysis capabilities of AI could also be instrumental in developing solutions to challenges being faced around the world, such as climate change and pandemics.<sup>40</sup>

As outlined in the *Artificial Intelligence: Solving problems, growing the economy and improving our quality of life* report, 'AI represents a significant new opportunity to boost productivity and enhance our national economy'.<sup>41</sup> There have been estimates that digital technologies could contribute \$140 to \$250 billion to Australia's GDP by 2025,

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<sup>38</sup> Organisation for Economic Co-operation and Development, [Artificial Intelligence in Society](#), 2019, p. 35; Hajkowicz SA, Karimi S, Wark T, Chen C, Evans M, Rens N, Dawson D, Charlton A, Brennan T, Moffatt C, Srikumar S, Tong KJ, [Artificial intelligence: Solving problems, growing the economy and improving our quality of life](#), CSIRO Data61, 2019, p. 7.

<sup>39</sup> For example, AI is driving advances in the diagnosis of vision impairment conditions and the development of new technologies to restore or improve sight. As described in the [Artificial intelligence: Solving problems, growing the economy and improving our quality of life](#) report, one example is the bionic eye, an Australian technology that can restore the sense of vision to people with retinitis pigmentosa and other sight-related conditions. Hajkowicz SA, Karimi S, Wark T, Chen C, Evans M, Rens N, Dawson D, Charlton A, Brennan T, Moffatt C, Srikumar S, Tong KJ, [Artificial intelligence: Solving problems, growing the economy and improving our quality of life](#), CSIRO Data61, 2019, p. 10.

<sup>40</sup> *ibid.*, p. 7.

<sup>41</sup> *ibid.*, p. 19.



with automation technologies (including those enabled by AI) comprising \$30 to \$60 billion for Australia over this period.<sup>42</sup>

The potential benefits of AI have driven increased investment in research and development. In October 2019, the Australian Government announced \$31.8 million in funding for the Australian Research Council (ARC) Centre of Excellence for Automated Decision-Making and Society, which aims to formulate policy and practice as well as train researchers and practitioners.<sup>43</sup> Australia's national science agency, CSIRO, also announced a \$19 million initiative on AI and machine learning.<sup>44</sup> States and territories are investing in AI, as are multiple universities and research organisations.<sup>45</sup>

## Challenges

Policymakers and regulators around the world have been considering how AI could transform industries and the implications of these changes, including potential risks to individuals.

Some identified challenges with AI are associated with their technical make-up (for example, ensuring security), while others relate to how AI is used and the changes this will drive in businesses and to society.

The potentially broad use of AI technologies and their role in decision-making, which can impact individuals in a variety of ways, has led to a focus on ethical challenges or issues.<sup>46</sup> This is reflected in a range of AI ethics principles and frameworks, including Australia's AI Ethics Principles (see Figure 3 under Part 2).

Some of the most commonly discussed challenges for AI systems include ensuring that:

- > AI is fair (free from bias)
- > there is an appropriate level of transparency in how decisions or predictions are made
- > individual privacy is protected
- > a human is accountable for the outcomes of AI.

However, some of the technical features of AI raise practical difficulties across these areas:

- > **Bias**—AI has the potential to reproduce biases reflected in its training data, which can be incomplete, non-representative or skewed due to ingrained human biases and stereotypes.<sup>47</sup> This bias can result in AI discriminating against individuals or groups in its decision-making, raising concerns that AI could perpetuate social injustices against vulnerable or underrepresented groups. AI technologies could

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<sup>42</sup> McKinsey and Company, [Digital Australia: Seizing the opportunity from the Fourth Industrial Revolution](#), May 2017, pp. 1–15.

<sup>43</sup> Australian Research Council, [2020 ARC Centre of Excellence for Automated Decision-Making and Society](#), accessed 2 June 2020.

<sup>44</sup> CSIRO, [AI for health, infrastructure and natural resources key to Australia's future prosperity](#), 18 November 2020.

<sup>45</sup> Hajkowicz SA, Karimi S, Wark T, Chen C, Evans M, Rens N, Dawson D, Charlton A, Brennan T, Moffatt C, Srikumar S, Tong KJ, [Artificial intelligence: Solving problems, growing the economy and improving our quality of life](#), CSIRO Data61, 2019, p. 24.

<sup>46</sup> Farthing S, Howell J, Lecchi K, Paleologos Z, Saintilan P, Santow E, [Human Rights and Technology Discussion Paper](#), Australian Human Rights Commission, 2019, p. 47.

<sup>47</sup> Campolo A, Sanfilippo M, Whittaker M, Crawford K, [AI Now 2017 Report](#), AI Now, 2017, p. 14.

also cause ‘representational harm’ by reproducing and amplifying harmful stereotypes.<sup>48</sup>

- > **Transparency and explainable decision-making**—the technical complexity and adaptive nature of some AI technologies raise challenges to providing transparency in how they operate and their potential impacts on individuals. In some instances, it is not possible to analyse how AI has reached a conclusion, which has led to some AI technologies being called ‘black boxes’.<sup>49</sup> The proprietary nature of AI may also present challenges to transparency.
- > **Privacy**—AI has the capability to predict and infer granular information about individuals, including potentially sensitive information, from the large datasets it consumes.<sup>50</sup> Further, there is a challenge to providing meaningful transparency around how AI uses personal information, which complicates notifying individuals about how information is collected and used and gaining their consent.<sup>51</sup>
- > **Accountability and liability**—machine learning systems may change in their operation over time, leading to outcomes that could not have been anticipated or predicted in the design phase. The unpredictability of AI and its opacity can make it difficult to trace the decisions made by AI back to an individual responsible for the system’s design and operation. This may have consequences for individuals’ ability to seek redress when they experience harm.

Addressing these challenges is essential to avoid negative outcomes. The involvement of AI across decision-making processes ordinarily filled by humans carries different and varying degrees of risk, depending on the context. For example, AI could be involved in determining whether someone is eligible for a product or service. Internationally, AI has already been used to predict whether a criminal will reoffend, in order to inform a judge’s decision-making.<sup>52</sup> Case studies of AI failing to meet expectations, such as by perpetuating discriminatory biases, have illustrated the potential negative outcomes of AI in such scenarios.<sup>53</sup>

Various governance and technical measures are being explored as potential solutions to ethical challenges. This includes discussion of algorithmic impact assessments and risk assessments to identify bias in AI, and ‘explainable AI’ (XAI) techniques designed to provide insight into how AI has come to a conclusion, without revealing the underlying algorithms.<sup>54</sup>

There are also a variety of mechanisms, including regulation, already in place to protect individuals from harm, including harms resulting from inaccurate or unfair decision-making processes. These need to be considered and potentially recalibrated for an AI environment to build trust in the use of these technologies. How domestic and international policymakers and regulators are responding to these issues is described in Part 2.

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<sup>48</sup> Crawford K, [The Trouble with Bias](#), YouTube, accessed 2 May 2019.

<sup>49</sup> Bathaee Y, [The Artificial Intelligence Black Box and the Failure of Intent and Causation](#), Harvard Journal of Law & Technology, Vol 31, No.2 Spring 2018.

<sup>50</sup> Campolo A, Sanfilippo M, Whittaker M, Crawford K, [AI Now 2017 Report](#), AI Now, 2017, p. 29.

<sup>51</sup> Office of the Victorian Information Commissioner, [Artificial intelligence and privacy Issues paper](#), June 2018, p. 11.

<sup>52</sup> Hao K, [AI is sending people to jail – and getting it wrong](#), 21 January 2019, MIT Technology Review.

<sup>53</sup> For example, in 2016, Microsoft’s chatbot ‘Tay’ learned to be racist from tweets and direct messages on Twitter (Metz R, [Why Microsoft Accidentally Unleashed a Neo-Nazi Sexbot](#), MIT Technology Review, 24 March 2016). Similarly, Amazon discontinued an experimental hiring tool that used AI to review resumes after the tool was found to be biased towards men (Dastin J, [Amazon scraps secret AI recruiting tool that showed bias against women](#), Reuters, 10 October 2018).

<sup>54</sup> Accenture, [Explainable AI: The next stage of human-machine collaboration](#), August 2018, accessed 2 May 2019.

## Part 2: Regulatory responses

Policymakers, regulators, industry and academia have all been engaged in identifying how to build trust and assurance in AI technologies. Regulation plays a key role in contributing to an environment that enables AI innovation and use, while ensuring there are adequate protections in place.

We are continuing to monitor regulatory responses to AI to identify if, and how, sectoral regulatory arrangements could come under pressure.

### International developments

As mentioned in Part 1, regulatory challenges relating to AI have often been framed as ethical challenges, particularly when there is a risk of harm to humans. This reflects the role AI plays—making or informing decisions that can affect human beings—and the range of policy areas AI will cut across as it becomes used across the economy.

To guide AI towards beneficial outcomes, a number of countries have developed AI ethics frameworks or principles. This includes China<sup>55</sup>, Japan<sup>56</sup>, Singapore<sup>57</sup>, Canada<sup>58</sup>, United Kingdom<sup>59</sup>, as well as Australia (see Figure 3).<sup>60</sup> Ethics principles have also been published by multilateral fora, including the OECD<sup>61</sup> and G20.<sup>62</sup> There are symmetries between the ethics principles that have been released. For example, there appears to be broad agreement that AI should be developed and applied in a way that respects the widely held values for fairness, privacy and autonomy.<sup>63</sup>

The AI ethics frameworks and principles released to date are generally voluntary and inform industry practices in developing and using AI technologies. They can support industry use of AI and complement existing regulatory requirements, such as laws for privacy, human rights, consumer safeguards, product safety and liability, as well as applicable sector-specific regulation.

Regulation and regulatory reform targeting AI technologies is being explored internationally. The European Commission provides an example of steps towards increased regulation of AI technologies, after launching a consultation on a future regulatory framework for AI. In addition to outlining how the existing EU legislative framework could be adjusted to address AI risks, it suggests that new regulatory requirements could be introduced for ‘high-risk’ AI applications.<sup>64</sup> These requirements

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<sup>55</sup> Beijing Academy of Artificial Intelligence, [Beijing AI Principles](#), 28 May 2019.

<sup>56</sup> Japanese Society for Artificial Intelligence, [About the Japanese Society for Artificial Intelligence Ethics Guidelines](#), 28 February 2017.

<sup>57</sup> Infocomm Media Development Authority and Personal Data Protection Commission Singapore, [A Proposed Model AI Governance Framework](#), 29 June 2019.

<sup>58</sup> Government of Canada, [Responsible use of artificial intelligence \(AI\)](#), accessed 18 September 2019.

<sup>59</sup> GOV.UK, [Centre for Data Ethics and Innovation](#), accessed 28 October 2019.

<sup>60</sup> Department of Industry, Science, Energy and Resources, [AI Ethics Framework](#), accessed 2 June 2020.

<sup>61</sup> Organisation for Economic Co-operation and Development, [Recommendation of the Council on Artificial Intelligence](#), 22 May 2019.

<sup>62</sup> G20, [G20 Osaka Leaders' Declaration](#), Ministry of Foreign Affairs of Japan, 2019.

<sup>63</sup> Whittlestone J, Nyrop R, Alexandrova A, Dihal K, Cave S, [Ethical and societal implications of algorithms, data, and artificial intelligence: a roadmap for research](#), 2019, Leverhulme Centre for the Future of Intelligence, University of Cambridge, p. 11; Hagendorff T, [The Ethics of AI Ethics: An Evaluation of Guidelines](#), *Mind and Machines* Vol.30, Issue 1, March 2020, Springer, p. 103.

<https://link.springer.com/content/pdf/10.1007/s11023-020-09517-8.pdf> (The Ethics of AI Ethics: An Evaluation of Guidelines Thilo Hagendorff).

<sup>64</sup> European Commission, [White Paper on Artificial Intelligence: a European approach to excellence and trust](#), 19 February 2020, p. 12.

could include obligations relating to training data, record-keeping, transparency and provision of information, robustness and accuracy of the AI system, and human oversight.

Developments in international regulatory frameworks are important to monitor due to the global nature of the AI market. Australian businesses are anticipated to use AI developed overseas, as well as look to export AI services or AI-enabled products internationally. Globally-operating businesses in the Australian communications and media sectors, such as Google and Facebook, would also be impacted by regulatory developments in other jurisdictions.

Reflecting the global market for AI, there are also initiatives to enable international partnership and collaboration on AI. Australia has an active role in the development of international standards on AI through the work of Standards Australia.<sup>65</sup> In June 2020, Australia also became a founding member of the Global Partnership on Artificial Intelligence (GPAI), a multilateral forum that, in line with the OECD's AI Principles, focuses on supporting responsible development and use of AI.<sup>66</sup> GPAI will 'look to bridge the gap between theory and practice on AI by supporting cutting-edge research and applied activities on AI-related priorities'.<sup>67</sup> International, multi-stakeholder initiatives such as GPAI can support efforts to align AI development and use with shared priorities and expectations.

## Domestic developments

There are variety of initiatives shaping the environment for AI development and use in Australia in the near term. Below is an overview of some of the key initiatives relevant across industries.

### Privacy reform

Given AI's reliance on data, reform to privacy law may have an impact on businesses that use or create these technologies.

The ACCC's 2019 Digital Platforms Inquiry Final Report highlighted concerns about the data practices of digital platforms and the impacts on individual's privacy. In response to the Inquiry, the government announced that it would commence a review of the Privacy Act to 'ensure it empowers consumer, protects their data and best serves the Australian economy'.<sup>68</sup> This review is to be completed in 2021.

The government announced in March 2019 that it will consult on draft legislation to amend the Privacy Act to increase maximum civil penalties and to require the development of a binding privacy code that applies to social media platforms and other online platforms that trade in personal information. In its response to the Digital Platforms Inquiry, the government announced this process will also seek input on:

- > amending the definition of 'personal information' in the Privacy Act to capture technical data and other online identifiers
- > strengthening existing notice and consent requirements to ensure entities meet best practice standards

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<sup>65</sup> Standards Australia, [An Artificial Intelligence Standards Roadmap: Making Australia's Voice Heard Final Report](#), March 2020.

<sup>66</sup> The Hon Karen Andrews MP, [Australia joins global partnership on artificial intelligence](#), 16 June 2020; The Organisation for Economic Co-operation and Development, [OECD to host Secretariat of new Global Partnership on Artificial Intelligence](#), accessed 19 June 2020.

<sup>67</sup> Government of Canada, [Joint Statement from founding members of the Global Partnership on Artificial Intelligence](#), 15 June 2020.

<sup>68</sup> Australian Government, [Government Response and Implementation Roadmap for the Digital Platforms Inquiry](#), December 2019, p. 6.

- > introducing a direct right of action for individuals to bring actions in court to seek compensation for an interference with their privacy under the Privacy Act.<sup>69</sup>

### **Data sharing and use reforms**

In 2017, the Productivity Commission made a series of recommendations to unlock the value of public and private sector data for individuals and organisations.<sup>70</sup> The government's response committed to reforming the national data system. Key features of this reform include a Consumer Data Right that will give consumers greater access to and control over their data held by the private sector<sup>71</sup>, and new legislation to support better use and reuse of public sector data and strengthen data safeguards.<sup>72</sup> This new legislation would streamline the sharing of government data so that it can be analysed and used to inform better service delivery, policy and programs, research and development.<sup>73</sup>

The Office of the National Data Commissioner was established to support best practice data management and use across the Australian Public Service, including through the implementation and regulation of the new legislation.<sup>74</sup>

### **Human rights and AI**

The AHRC is progressing the Human Rights and Technology Project, which considers how law, policy, incentives and other measures can promote and protect human rights in respect of new technologies.<sup>75</sup>

The AHRC released a discussion paper as a part of this project in December 2019. This paper outlined various proposals that aim to address challenges relating to AI. This includes proposals targeting explainability (methods to understand the results of AI decisions) and accountability in AI-informed decision-making.

The AHRC will produce a final report in 2020.

### **AI Technology Roadmap**

The AI Technology Roadmap<sup>76</sup> is intended to help guide future investment in AI and start a national dialogue on the ways AI could drive new economic and societal outcomes for Australia. The AI Technology Roadmap identifies key areas of AI specialisation that represent opportunities for Australia. These are based on existing capabilities and areas of comparative advantage, opportunities to solve big problems in Australia, and opportunities to export Australian solutions worldwide.

These key areas are:

- > natural resources and environment
- > health, ageing and disability
- > cities, towns and infrastructure.

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<sup>69</sup> *ibid.*

<sup>70</sup> Productivity Commission, [Data Availability and Use Inquiry Report](#), No.82, 31 March 2017.

<sup>71</sup> Australian Competition and Consumer Commission, [Consumer data right \(CDR\)](#), accessed 2 July 2020.

<sup>72</sup> Office of the National Data Commissioner, [Background](#), accessed 2 July 2020.

<sup>73</sup> Office of the National Data Commissioner, [New legislation](#), accessed 2 July 2020.

<sup>74</sup> *ibid.*

<sup>75</sup> Australian Human Rights Commission, [Human Rights & Technology](#), accessed 22 June 2020.

<sup>76</sup> Hajkowicz SA, Karimi S, Wark T, Chen C, Evans M, Rens N, Dawson D, Charlton A, Brennan T, Moffatt C, Srikumar S, Tong KJ, [Artificial intelligence: Solving problems, growing the economy and improving our quality of life](#), CSIRO Data61, 2019.

The AI Technology Roadmap identifies a range of activities to build a foundation for realising the benefits of AI. This includes ensuring effective data governance and access, building trust in AI by ensuring high standards and transparency, and the development of systems and standards to ensure safe, quality-assured, interoperable, and ethical AI.

### **AI Standards Roadmap**

Australia's national standards body, Standards Australia, released the *Artificial Intelligence Standards Roadmap: Making Australia's Voice Heard* in March 2020.<sup>77</sup> The AI Standards Roadmap includes a series of recommendations to achieve the following goals:

- > ensure Australia can effectively influence AI standards development globally
- > increase Australian business' international competitiveness in relation to responsible AI and streamline requirements in areas like privacy risk management
- > ensure AI-related standards are developed in a way that takes into account diversity and inclusion, ensures fairness, and builds social trust
- > grow Australia's capacity to develop and share best practice in the design, deployment and evaluation of AI systems.

The steps outlined by Standards Australia are designed to enable Australia to influence the trajectory of AI technologies in ways that align with our economic interests as well as our social and political interests, such as human rights and security considerations.<sup>78</sup>

### **AI Ethics Framework**

Australia is developing an AI Ethics Framework to support the development and implementation of AI.<sup>79</sup> The first component of Australia's AI Ethics Framework, the AI Ethics Principles, was released at the end of 2019.<sup>80</sup> These principles, summarised in Figure 3, are voluntary and intended to be applicable across the economy. They do not replace existing requirements contained in legislation or in co- or self-regulatory schemes. Rather, they are designed to guide organisations that are designing, developing or implementing AI and in doing so, support public trust in these technologies.

The principles are being piloted by the Department of Industry, Science, Energy and Resources (DISER) with organisations from a range of industry sectors.<sup>81</sup> Supporting guidance on the practical implementation of the principles across industry is expected.

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<sup>77</sup> Standards Australia, [Artificial Intelligence Standards Roadmap: Making Australia's Voice Heard](#), March 2020.

<sup>78</sup> *ibid.*, p. 13.

<sup>79</sup> Department of Industry, Science, Energy and Resources, [AI Ethics Framework](#), accessed 2 June 2020.

<sup>80</sup> Department of Industry, Science, Energy and Resources, [AI Ethics Principles](#), accessed 2 June 2020.

<sup>81</sup> Department of Industry, Science, Energy and Resources, [Artificial intelligence](#), accessed 2 June 2020.

**Figure 3: Overview of the AI Ethics Principles<sup>82</sup>**



**Human, social and environmental wellbeing**

Throughout their lifecycle, AI systems should benefit individuals, society and the environment.



**Reliability and safety**

Throughout their lifecycle, AI systems should reliably operate in accordance with their intended purpose.



**Human-centred values**

Throughout their lifecycle, AI systems should respect human rights, diversity, and the autonomy of individuals.



**Transparency and explainability**

There should be transparency and responsible disclosure to ensure people know when they are being significantly impacted by an AI system, and can find out when an AI system is engaging with them.



**Fairness**

Throughout their lifecycle, AI systems should be inclusive and accessible, and should not involve or result in unfair discrimination against individuals, communities or groups.



**Contestability**

When an AI system significantly impacts a person, community, group or environment, there should be a timely process to allow people to challenge the use or output of the AI system.



**Privacy protection and security**

Throughout their lifecycle, AI systems should respect and uphold privacy rights and data protection and ensure the security of data.



**Accountability**

Those responsible for the different phases of the AI system lifecycle should be identifiable and accountable for the outcomes of the AI systems, and human oversight of AI systems should be enabled.

While the principles are relevant across industries, the types and degree of risks associated with not meeting these principles will vary depending on the context in which AI is deployed. For example, 'black box' AI that is difficult or impossible to interrogate would pose more significant risks when it is involved in decisions that could impact on individuals' wellbeing or rights (such as deciding on a medical diagnosis or eligibility for a product or service), than in less risky activities, such as scheduling appointments.

<sup>82</sup> For further information on the AI Ethics Principles, visit the [Department of Industry, Science, Energy and Resources website](#).

Different combinations of governance processes, technical measures and organisational practices will be needed to manage the risks of different AI applications and meet ethical expectations.

***The AI Ethics Principles in communications and media markets***

The AI Ethics Principles will intersect with AI applications in communications and media markets in multiple ways.

To illustrate this, below are several hypothetical scenarios based in the communications and media sectors. These scenarios are only loosely based on AI that already exists. In some instances, we assume a technical capability or use case that hasn't been demonstrated yet.

Each scenario includes a brief discussion to prompt consideration of some of the ethical issues it raises. The issues raised are not solely relevant to the ACMA's regulatory remit but intersect with the regulatory spheres of other regulators, including Australia's competition and privacy regulators.

This discussion is not intended to be comprehensive.

Scenario: AI in customer service	Ethics principles discussion
<p>Kim's telecommunications provider has recently introduced an AI system that manages inbound customer calls. The service is designed to answer customer enquiries about current services on offer, process changes to account information and log complaints about services. Unlike usual automated customer service systems, this AI system has advanced capabilities to sound like a human.</p> <p>Kim calls the provider because her internet keeps disconnecting. She tries to explain her problem, but the person that she believes she's talking to doesn't appear to understand her. Kim asks to speak to someone else but isn't put through to another person. Getting frustrated, Kim tries to explain her problem one last time before giving up and is surprised when she is quickly connected to another person. This person explains that Kim was previously talking to the provider's AI system, which is still learning, but can detect when a customer is getting frustrated and connects them to the next available customer service staff member.</p>	<p><i>Privacy protection and security</i></p> <p>The AI service could be collecting personal information. It would be important for the provider in this scenario to consider their privacy obligations and how they could minimise risk. Some relevant questions include 'how are customers notified about the personal information collected?', and 'is it necessary to collect the personal information?'</p> <p><i>Transparency and explainability</i></p> <p>People should have the ability to find out when they are engaging with an AI system. The provider in this scenario should aim to proactively disclose that an AI system is being used to manage customer calls, such as through a short introductory message.</p> <p><i>Accountability</i></p> <p>AI interacting with customers will need to be able to manage interactions with disadvantaged and vulnerable customers with unique needs. This includes, for example, people with poor English language skills or a disability. AI would need to be designed with these customers in mind.</p>



Scenario: AI in news	Ethics principles discussion
<p>A news organisation uses an AI system to help make more engaging news stories that increase the number of people clicking through onto their website.</p> <p>The AI system learns from trending stories on social media and other news stories to help optimise journalist's articles by suggesting headlines and revisions to the content of the story. It also generates social media posts to accompany the story.</p>	<p><i>Human, social and environmental wellbeing</i></p> <p>This principle aims to indicate that AI systems should be used for beneficial outcomes for individuals, society and the environment. News plays an important role in the lives of individuals and helps enable a well-functioning democracy. The news organisation in this scenario would have to consider the mechanisms it has in place to ensure that the AI system supports these functions. For example, if the AI system in this scenario optimises posts for indicators of consumer engagement (likes or reactions, comments, shares), the system could potentially begin generating incendiary or 'clickbait' posts if these are what people respond to the most.</p> <p><i>Fairness</i></p> <p>AI systems should not unfairly discriminate against individuals, communities and groups. It is well understood that AI can reflect biases in the data it is trained on or learns from over time. The news organisation in this scenario should build in mechanisms to monitor and prevent the AI from perpetuating biases against certain individuals or groups for example, groups relating to disability, sex, gender identity and sexual orientation.</p>

Scenario: AI-enabled consumer robots	Ethics principles discussion
<p>A new robot assistant is released to perform a range of tasks at home and connect all home Internet of Things (IoT) devices.</p> <p>Using voice commands, you can use it to play music or the radio, ask questions that it provides answers to via an internet search, manage your calendar, get notifications of important social media updates, and respond to messages and calls.</p> <p>The robot can also help you track and manage your health and fitness. It can remind you to exercise and when to take your medication. It can be connected to other smart devices containing health and fitness information (such as a smart watch). When its camera is enabled, it can also recognise potential medical emergency situations (for example, when someone faints or falls suddenly) and connect to a selected contact or 000, depending on setting selections.</p>	<p><i>Privacy protection and security</i></p> <p>A connected robot assistant could collect and infer a wide range of personal information about an individual. In this scenario, for example, the robot could gather health information. The developer would be required to comply with privacy laws, including for the security of personal information.</p> <p>The security of the robot is also a key priority area, given that it can be connected to a range of other devices in the home (such as security systems) and because it has the capability to see and navigate the space it is in. Security vulnerabilities could potentially enable malicious actors to get access to data from connected IoT devices and to access the camera on the robot.</p> <p><i>Reliability and safety</i></p> <p>If, as in this scenario, a consumer robot is advertised as being able to recognise health emergencies, it will be important that measures are put in place to ensure the robot is reliable in fulfilling this function and that individuals know the limitations of the robot.</p>

<p>The robot can be used to control and get updates on your other IoT devices, such as smart thermostats or security systems.</p>	
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Scenario: AI in sales	Ethics principles discussion
<p>A telecommunications provider looks to use AI to better target their available services to potential and existing customers.</p> <p>The AI system uses data on existing customers to build customer profiles based on their willingness and ability to pay for different products and services, and their reliability as a customer. Data included in these profiles includes purchase and billing histories, locations, age and gender.</p> <p>The AI system is used to inform the company's advertising strategy. It is also used to help inform decisions on whether a customer is eligible for certain products or services, such as post-paid services.</p>	<p><i>Fairness</i></p> <p>Detailed customer profiles could help ensure customers are provided with products and services that match their needs and circumstances. However, there is the potential risk of AI systems reflecting biases ingrained in the data used to train them. This could potentially result in discrimination against certain individuals or groups, who may not be able to access certain products or services because they are classed as an unprofitable or unreliable customer group.</p> <p><i>Contestability</i></p> <p>Customers should be able to challenge decisions made by AI if it is going to impact on their ability to access products or services. This means there should be clear information about how AI is building customer profiles, including what factors contribute to determining an individual's willingness to pay and their reliability, as well as how these profiles are used to inform decisions about whether someone is eligible for a product or service or not.</p>

Scenario: AI in regulatory compliance	Ethics principles discussion
<p>A business introduces an AI tool that is designed to help sales staff meet their requirements when selling products and services.</p> <p>The AI tool listens in to phone calls and monitors online chats between the sales staff and customers. While doing so, it prompts staff members about what information they need to provide the customer, whether or not it appears that the customer has understood the staff member, recommendations about how the staff member should describe products and services and prompts about whether the staff member sounds engaging or unclear (for example, if the staff member is speaking too fast).</p> <p>The AI system makes short reports about how each interaction with a customer went and notifies a manager if it believes the staff member did not comply with regulatory</p>	<p><i>Privacy protection and security</i></p> <p>This type of AI would increase the ability to monitor staff and could also enable an increase in the amount of data collected about customers or potential customers. Increasing the collection of data about customers should trigger a reassessment of privacy compliance arrangements.</p> <p><i>Human-centred values</i></p> <p>If staff know AI is monitoring them and reporting on how well they respond to the prompts it provides, this could incentivise them to follow the prompts regardless of whether they think the AI's guidance is right. This could potentially mean that staff rely on the AI rather than their own interpretation of a customer's circumstances and needs.</p> <p><i>Accountability</i></p> <p>If the AI system recommends an incorrect action to staff, who is ultimately responsible for potentially negative outcomes? Organisations will need to consider how to establish an appropriate level of</p>

requirements around appropriate sales practices.	human oversight for AI and its outcomes. It will also be important to consider how to enable external review of the outcomes of AI.
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Industry may find it challenging to put ethical principles into practice, for several reasons:

- > Ethical principles contain high-level value statements and the precise meaning of these in the context of specific AI applications may not be clearly defined.<sup>83</sup>
- > How ethical risks are managed will vary between industries, organisations and the AI application itself and may need to change over time.
- > At this point where the use of AI across industry is still at an early stage, norms for AI have not yet developed and there may be few opportunities to learn from the success of similar organisations in implementing 'ethical' AI.<sup>84</sup>

Industry guidance, standards and regulation can all play roles in defining how AI can be designed, deployed and evaluated to align with ethical expectations. The DISER is developing industry guidance to help organisations apply the AI Ethics Principles.<sup>85</sup>

It will be important to continue monitoring and analysing AI technologies to identify whether industry-specific guidance would be beneficial to industry or consumers. Industry-specific approaches could help establish best practice, providing greater certainty to organisations developing and using AI and building consumers' confidence in products and services. Guidance could, for example, focus on describing how industry can meet ethical expectations for different AI applications (such as customer service systems or consumer IoT products).

<sup>83</sup> Farthing S, Howell J, Lecchi K, Paleologos Z, Saintilan P, Santow E, [Human Rights and Technology Discussion Paper](#), Australian Human Rights Commission, 2019, p. 52.

<sup>84</sup> Mittelstadt B, [Principles alone cannot guarantee ethical AI](#), Nature Machine Intelligence, November 2019, pp. 501–7.

<sup>85</sup> Department of Industry, Science, Energy and Resources, [AI Ethics Framework](#), accessed 1 June 2020.

# Part 3: Challenges in communications and media markets

Ethical principles and frameworks identify some of the desired outcomes for how AI operates and is used across the economy. However, ethical principles and frameworks do not address the challenges and potential harms of AI on their own.<sup>86</sup> Regulation (including self-regulation, co-regulation, and direct regulation) provides rules to guide industry behaviour and support accountability. Examining the goals expressed in AI Ethics Principles alongside current regulatory settings and AI applications can help in identifying where AI could challenge regulation.

Below is an analysis of challenges posed by AI within the communications and media markets. This analysis is based on an understanding of current AI use cases. Novel and more enhanced AI can be expected to appear and become used within the communications and media markets in the future, which may result in new challenges or risks. The ACMA will continue to monitor AI developments and their outcomes in order to ensure our regulatory settings remain fit for purpose.

## Consumer protections for communications products and services

### Regulatory overview

The ACCC, the ACMA, and the Telecommunications Industry Ombudsman (TIO) all play a role in consumer safeguards and protections for the communications sector. The ACCC is responsible for general consumer protection under the Australian consumer law.<sup>87</sup> The ACMA administers legislation, codes and standards that provide specific protections for communications services and products. These protections include, for example, industry requirements applying to technical equipment, customer service, complaints handling, billing, and debt management.<sup>88</sup> The TIO provides a dispute resolution service for telecommunications consumers.<sup>89</sup>

### Discussion

We expect to see increases in the use of AI within customer service systems across the sector. Already, approximately two-thirds of Vodafone's customer contact in Italy has been automated using 'TOBi', a machine learning chatbot developed using IBM Watson technology.<sup>90</sup> In the next few years, businesses within the Australian market may look to similarly integrate AI into their customer service, both online and in call-centres, to increase efficiency and reduce costs.<sup>91</sup>

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<sup>86</sup> Farthing S, Howell J, Lecchi K, Paleologos Z, Saintilan P, Santow E, [Human Rights and Technology Discussion Paper](#), Australian Human Rights Commission, 2019, p. 47.

<sup>87</sup> Australian Competition and Consumer Commission, [About the ACCC](#), accessed 3 June 2020.

<sup>88</sup> For example, there are several codes and standards applying to telecommunications providers, including for example the [Telecommunications Consumer Protections Code](#), which is designed to ensure good service and fair outcomes for consumers of telecommunications products. In the broadcasting space, consumers are able to [complain to the ACMA](#) if broadcasters don't meet requirements in applicable codes and standards.

<sup>89</sup> Telecommunications Industry Ombudsman, [About us](#), accessed 3 June 2020.

<sup>90</sup> Vodafone, [Vodafone launches Artificial Intelligence framework](#), 11 June 2019.

<sup>91</sup> McKinsey & Company, [The executive's AI playbook](#), accessed 3 June 2020; Tractica, [The AI Opportunity for Communications Service Providers](#), Omdia, 2019.

There is the risk that consumers find it difficult to resolve an issue if their communications provider uses an AI customer service system that is not appropriately flexible. The TIO has already received complaints from consumers about being unable to reach a person after becoming 'stuck' in looping options from their provider's Interactive Voice Recording (IVR).<sup>92</sup> Not being able to reach a person for assistance could result in negative outcomes for consumers, such as delays in fault repairs, connections, fixing service interruptions, or receiving a payment extension.

The risk of experiencing these issues, and the potential harm that can result, could be more significant for disadvantaged or vulnerable consumers with unique needs. This includes, for example, consumers with irregular speech, with English as a second language, affected by a disability or experiencing financial hardship. While straightforward enquiries may be effectively handled by AI in the near term, some consumer problems and enquiries will continue to require human interpretation. Ensuring there are clear pathways for consumers to access a person will help achieve positive outcomes, as will having in place user feedback mechanisms.

A provider sent a consumer a letter saying their home phone would be cancelled unless they paid \$50 within five days. The consumer told us they were on a disability pension and could not pay the amount within the time the provider gave. The consumer called the provider to ask for more time to pay the money and to make sure the home phone was not cancelled. The call was directed to an IVR and the consumer was not able to navigate the options to request the extension or speak with a person. The consumer contacted us and asked if we could contact the provider to make a payment arrangement on their behalf.

*TIO, Submission to the ACMA – Artificial Intelligence in communications and media, December 2019.*<sup>93</sup>

AI systems involved in sales will also need to meet expectations for sales practices. This means it would need to be able to clearly explain key terms and conditions and be flexible enough to respond appropriately to consumers' needs, including the unique needs of disadvantaged or vulnerable consumers. For example, AI that processes sales of products and services may interact with consumers experiencing financial hardship. Consequently, the AI system would play a role in ensuring consumers can afford the products and services on offer.

AI used 'behind the scenes' to provide a consumer service should also be designed to take into account the unique or unexpected scenarios that could lead to complaints. The TIO, for example, has investigated complaints about multiple credit checks being done for consumers who had applied for a new service. An AI system was being used by the provider to periodically check connection applications and complete credit checks. The system was not designed to handle delayed connection requests any differently from new connection requests, resulting in multiple credit checks for some consumers whose application was delayed. This type of design flaw could disadvantage customers and lead to multiple complaints.

## Looking ahead

Service providers continue to have their responsibilities outlined in consumer protection regulation. The TIO, for example, has outlined that whether consumers raise a complaint with a telecommunications provider staff member or the provider's customer-facing AI application, the TIO will consider this contact to be an opportunity

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<sup>92</sup> Telecommunications Industry Ombudsman, TIO submission to the ACMA – Artificial Intelligence in communications and media, December 2019.

<sup>93</sup> *ibid.*, p. 8.

for the provider to consider the complaint.<sup>94</sup> This means that consumers can then contact the TIO about their complaint if they are not happy about the outcome, as long as the complaint falls within the TIO's Terms of Reference.<sup>95</sup>

In the future, there could be a need for guidance on the use or operation of consumer-facing AI systems, such as those involved in handling individuals' enquiries or complaints, within communications and media markets. This could help consumers understand when they are engaging with, or affected by, AI systems and can reach a person when needed. It may, for example, not be appropriate to use AI systems with vulnerable users, particularly where there is already a separate channel or point of contact available for these users. The ACMA would consider this further where there is an evidenced failure in the market or where AI intersects with established protections, such as the National Relay Service. At this point, the ACMA does not have substantial evidence to suggest additional regulatory intervention is necessary.

The ACMA and TIO have information-sharing arrangements in place to enable the ACMA's monitoring of industry compliance, complaint trends, emerging issues and its investigation of systemic issues.<sup>96</sup> These arrangements will continue to be utilised to ensure the regulatory framework delivers appropriate consumer protections including those for AI.

## Online misinformation

### Regulatory overview

Digital platforms, including social media sites, online news aggregators and search engines play a key role in the dissemination and consumption of news and information. Research has found that Australians are concerned about the accuracy and trustworthiness of news and information online. In 2020, research found that 48 per cent of Australians rely on online news or social media as their main sources of news, but 64 per cent remain concerned about what is real or fake on the internet.<sup>97</sup>

'Misinformation' describes potentially harmful false, misleading or deceptive information. A subset of misinformation is 'disinformation', which describes false or misleading information deliberately created to harm a person, social group, organisation or country.

To address the potential harms caused by the circulation of misinformation on digital platforms, the government has requested that major digital platforms develop a voluntary code (or codes) to address these issues.<sup>98</sup> The ACMA is overseeing the development of this code or codes and will report to the government in 2021 on the impacts of misinformation and the adequacy of platforms' measures to counter it. In June 2020, we released a position paper that outlines what we think the code(s) should cover to help guide digital platforms.<sup>99</sup>

Several other countries have introduced or are considering initiatives targeting the spread of false, misleading or deceptive information online. For example, the

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<sup>94</sup> *ibid.*, p. 4.

<sup>95</sup> Telecommunications Industry Ombudsman, [Terms of Reference and Company Constitution](#), accessed 3 June 2020.

<sup>96</sup> Australian Communications and Media Authority, [Memorandum of understanding for the ACMA and TIO](#), accessed 3 June 2020.

<sup>97</sup> S Park et al., *Digital News Report: Australia 2020*, News and Media Research Centre, University of Canberra, 2020, pp. 50, 77.

<sup>98</sup> Australian Government, [Government Response and Implementation Roadmap for the Digital Platforms Inquiry](#), December 2019.

<sup>99</sup> Australian Communications and Media Authority, [Misinformation and news quality on digital platforms in Australia](#), June 2020.

European Union has introduced a non-binding, voluntary Code of Practice on Disinformation.<sup>100</sup> The UK government's 2019 *Online Harms White Paper* also sets out a potential model to address disinformation.<sup>101</sup> In June 2020, the UK's Select Committee on Democracy and Digital Technologies further recommended that Ofcom, the UK communications regulator, produce a code of practice on misinformation.<sup>102</sup>

## Discussion

Online misinformation poses risks to both individuals and communities more broadly. Concerns have been raised about how the deliberate and coordinated spread of misinformation could influence how people vote or destabilise public discourse through the spread of contradictory messages. Several bodies have identified examples of information being manipulated to influence democratic processes including the United Kingdom House of Commons Select Committee<sup>103</sup> and a taskforce commissioned by the European Union that publishes examples of disinformation designed to affect elections in Europe.<sup>104</sup> There were reported instances of disinformation being spread on Facebook and WeChat in the lead-up to the 2019 Australian Federal Election.<sup>105</sup> Misinformation can also be focused on issues outside of politics,<sup>106</sup> technology<sup>107</sup>, and health issues<sup>108</sup>, which can impact individuals' decision-making and wellbeing.

In early 2020, misinformation was produced about two extreme events: the Australian bushfires and the coronavirus (COVID-19) pandemic. There were instances of false information being spread about the cause of bushfires in Australia and conspiracy theories such as the fires having been purposely lit to make way for a Sydney to Melbourne train line. False information about the pandemic—such as how to prevent exposure, possible treatments, and the origins of the virus—have been shown to have real-world consequences including personal illness and damage to property.

On digital platforms, AI collates, filters and prioritises the content delivered to users. This function helps us navigate the huge amount of information available. However, these AI systems can also result in the spread and amplification of misinformation.

AI involved in content personalisation may promote misinformation to users as a result of the goals it is intended to achieve. For example, false or misleading content may generate significant user engagement calculated through views, click-through rate, comments or reactions, resulting in the content becoming 'viral' and more highly ranked within users' content feeds or recommendations. Some people have learned to game these AI systems for financial gain—producing incendiary misinformation that is

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<sup>100</sup> European Union [Code of Practice on Disinformation](#), September 2018.

<sup>101</sup> UK Department for Digital, Culture, Media & Sport, [Online Harms White Paper](#), April 2019.

<sup>102</sup> House of Lords Select Committee on Democracy and Digital Technologies, [Digital Technology and the Resurrection of Trust](#), 29 June 2020.

<sup>103</sup> UK Commons Select Committee, Digital, Culture, Media and Sports, [Disinformation and 'fake news': Final Report](#), February 2019, p. 70.

<sup>104</sup> East StratCom Task Force, [EUvsDisinfo](#), accessed 3 June 2020.

<sup>105</sup> Knaus C and Evershed N, [False election claims spark push for truth in political advertising laws](#), The Guardian Australia, 20 May 2019, accessed 29 May 2019; Cannane S, [Federal election 2019: Anti-Labor scare campaign targets Chinese Australians](#), ABC News, 3 May 2019, accessed 29 May 2019.

<sup>106</sup> Alba D, [Misinformation About George Floyd Protests Surges on Social Media](#), *The New York Times*, 1 June 2020.

<sup>107</sup> Taylor J, [Australian public's confidence in 5G 'shaken' by misinformation campaign](#), The Guardian, 13 May 2020.

<sup>108</sup> Bogle A, [Coronavirus misinformation and confusion plagues health workers](#), ABC News, 18 May 2020.

spread widely and captures users' attention, with the producer of the content benefiting through advertising, monetised links or other means.<sup>109</sup>

AI can also be used for highly targeted information campaigns delivered through online advertising platforms. These technologies can provide greater insight into users from the data they generate online (for example, data could provide information on individuals' mood, behaviour, location, interests, income and education<sup>110</sup>), enabling the design and delivery of targeted messaging designed to persuade or manipulate. This could result in more effective misinformation campaigns and greater spread of misinformation.

The risks of misinformation online are exacerbated by challenges individuals can face in recognising it. Online content is 'atomised', meaning that content is separated from its source.<sup>111</sup> It may not be immediately apparent to individuals whether content is from a reputable publication or not. Misinformation can also appear alongside professional news stories and other content in social media feeds. This impacts individuals' ability to discern the quality of news and make informed choices about the information they should trust.

There is also some evidence that AI-driven personalisation can result in individuals experiencing 'filter bubbles' or 'echo chambers' on digital platforms. These terms, as discussed in the *Digital Platforms Inquiry Final Report*, refer to individuals repeatedly being exposed to perspectives affirming their beliefs.<sup>112</sup> This could result from AI curating content based on user preferences or searches, or from the sharing behaviour of other users (which, as noted above, can also feed into AI-driven content recommendations such as 'trending' content). While echo chambers can be experienced offline through individuals' selection of information sources, individuals in online environments are exposed to a vast range of information and sources, the quality of which is not always clear, and they might not know how content has been curated to align with their interests.<sup>113</sup> It has been argued that echo chambers promote misinformation, as users are more likely to trust content in these environments and perceive a story as more widely believed than it really is.<sup>114</sup>

Digital platforms have taken steps to address the spread of misinformation. These include assessing and communicating the reliability of content through down-ranking content or sources, labelling content that may include false information, detecting fake user accounts and bots that spread misinformation, limiting the sharing of viral content<sup>115</sup>, and supplying tools for users to report suspicious, fake or spam accounts.<sup>116</sup>

AI plays a key role in digital platforms' efforts to combat the spread of misinformation, by automatically detecting and flagging content or accounts contributing to the issue.

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<sup>109</sup> Ryan C.D, Schaul A.J, Butner R, Swarhout J.T, [Monetizing disinformation in the attention economy: The case of genetically modified organisms \(GMOs\)](#), European Management Journal. Vol 38 Issue 1, February 2020, p.9.; EU DisinfoLab, [The Monetization of Disinformation through Amazon: La Verdadera Izquierda](#), May 2020.; Australian Competition and Consumer Commission, [Digital Platforms Inquiry—Final Report](#), June 2019, p. 358.

<sup>110</sup> Richmond B, [A Day in the Life of Data: Removing the opacity surrounding the data collection, sharing and use environment in Australia](#), Consumer Policy Research Centre, May 2019, p. 15.

<sup>111</sup> Australian Competition and Consumer Commission, [Digital Platforms Inquiry—Final Report](#), June 2019, p. 293.

<sup>112</sup> *ibid.*, p. 346.

<sup>113</sup> *ibid.*, p. 347.

<sup>114</sup> *ibid.*; UK Department for Digital, Culture, Media & Sport, [Online Harms White Paper](#), April 2019, p. 5.

<sup>115</sup> Newton C, [WhatsApp puts new limits on the forwarding of viral messages](#), 7 April 2020.

<sup>116</sup> Australian Competition and Consumer Commission, [Digital Platforms Inquiry—Final Report](#), June 2019, p. 359.



As an example, false information can be reported by Instagram users or automatically flagged on the platform. This content is reviewed by third-party fact-checkers and when content is rated as false or partly false, identical content is automatically labelled across the platform to help reduce the spread of misinformation.<sup>117</sup>

Separately, concerns have also been raised that AI could potentially be used to create more convincing misinformation, including fake videos or 'deepfakes', which are difficult for both algorithms and humans to detect.<sup>118</sup> Recent research has shown how AI can be used to create realistic videos of people speaking.<sup>119</sup> The researchers behind this technology outlined how it may be used in movie post-production and virtual reality, among other functions. However, similar technology could also be used to create fake videos designed to sway public opinion or defame an individual.<sup>120</sup> Similar concerns may apply to AI technologies designed to 'clone' individuals' voices, or which have been created to produce fake news stories.<sup>121</sup>

As with the issue of the spread of misinformation, while AI may be used to produce misinformation, it is also a part of the solution to detecting this content. The US Defense Advanced Research Projects Agency (DARPA) is developing AI tools to detect fake videos.<sup>122</sup> There have also been efforts to develop AI that detects fake written news.<sup>123</sup> These types of tools could help detect misinformation, complementing other efforts involving AI to identify and respond to fake user accounts and bots, as well as false, misleading or deceptive information.

News publishers that use AI to create news will have to consider the mechanisms they have in place to meet existing expectations and requirements for accuracy, fairness and impartiality.<sup>124</sup> News agencies including *the BBC*, *The Guardian*, *Bloomberg* and *The Wall Street Journal*, as well as 'RADAR'<sup>125</sup>, which uses AI to help generate local news in the UK, have demonstrated the potential for automating news production. AI that produces news could potentially, if its data input is questionable, develop inaccurate or misleading stories.<sup>126</sup> Existing processes may need to adapt to support journalistic standards for AI produced or assisted journalism.

AI could also play an increasingly significant role in efforts to monitor online misinformation by researchers, governments and others. The feasibility of using AI techniques may be a potential area for the ACMA to explore in any ongoing role that it

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<sup>117</sup> Instagram, [Combating Misinformation on Instagram](#), 16 December 2019; Facebook, [Combating Misinformation on Instagram](#), 16 December 2019.

<sup>118</sup> UK Department for Digital, Culture, Media & Sport, [Online Harms White Paper](#), April 2019, p. 23.

<sup>119</sup> Kim H, Garrido P, Tewai A, Xu W, Thies J, Niessner M, Pérez P, Richardt C, Zollhöfer M, Theobalt C, [Deep Video Portraits](#), ACM Transactions on Graphics, Vol 37, Issue 4, Article No. 163, July 2018.

<sup>120</sup> Schwartz O, [You thought fake news was bad? Deep fakes are where truth goes to die](#), The Guardian, November 2018, accessed 3 July 2019.

<sup>121</sup> Hern A, [New AI fake text generator may be too dangerous to release, say creators](#), The Guardian, 15 February 2019.

<sup>122</sup> Knight W, [The Defense Department has produced the first tools for catching deepfakes](#), MIT Technology Review, August 2018, accessed 2 May 2019; <https://www.darpa.mil/program/media-forensics>

<sup>123</sup> Allen Institute for Artificial Intelligence (AI2), [Grover – A State-of-the-Art Defense against Neural Fake News](#), accessed 18 September 2019.

<sup>124</sup> The ACMA oversees a number of co-regulatory codes applicable to broadcasters, which include requirements for accuracy, impartiality, to distinguish news from commentary and analysis, and to make reasonable efforts to correct or clarify significant and material errors of fact. Australian Communications and Media Authority, [Industry codes of practice](#), access 3 July 2020.

<sup>125</sup> RADAR, [RADAR News](#), accessed 3 July 2020.

<sup>126</sup> Hall S, [Can you tell if this was written by a robot? 7 challenges for AI in journalism](#), World Economic Forum, 15 January 2018.

may have in monitoring misinformation, including as part of its work to assess the effectiveness of the misinformation code(s).<sup>127</sup>

## Looking ahead

Misinformation can pose a risk of harm to Australians. As noted above, the ACMA is overseeing the development of a voluntary code (or codes) to address misinformation and has released a position paper to assist platforms in the development of their code(s).<sup>128</sup>

We will report to the government on the adequacy of the platforms' measures and the broader impacts of disinformation, with the first report due by June 2021. The government will assess the success of any code(s) and consider the need for any further reform at that time.

## News diversity

### Regulatory overview

Media diversity is recognised within the objects of Australia's [Broadcasting Services Act 1992](#) (Broadcasting Services Act), signalling the intent of Parliament to ensure that a diverse range of broadcast content is available. Australia's media diversity and ownership rules enact this by placing limits on who can control commercial television and radio broadcasting licences. Diversity requirements aimed at ensuring different perspectives are provided in news and current affairs content also feature in several broadcasting codes of practice. For example, public broadcasters are required to present a diversity of views and perspectives in their news coverage<sup>129</sup>, commercial radio stations must include alternative viewpoints when covering controversial issues in current affairs programs<sup>130</sup> and community radio should provide access to views not adequately represented by mainstream broadcasters.<sup>131</sup>

The rationale in seeking to protect and promote media diversity relates to the role media organisations, and news outlets in particular, play in society. These organisations inform citizens, report on the activities of institutions, support community cohesion and contribute to a well-functioning democracy. In the absence of regulatory intervention, theoretically the media market could become dominated by an individual or company that would then have excessive influence over the news agenda, the formulation of public opinion and political discourse.

The media market has changed dramatically since the Broadcasting Services Act was introduced. Digital platforms such as Google and Facebook now play a significant role in news distribution and consumption. The business models of traditional market players have been disrupted and challenged as audiences and advertising spend have moved online.<sup>132</sup> In Australia, there have been a variety of consolidations, cutbacks and local newsroom closures over the last decade, impacting unevenly across Australia.<sup>133</sup> During the 2020 COVID-19 pandemic, which has had a significant impact

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<sup>127</sup> Australian Communications and Media Authority, [Misinformation and news quality on digital platforms in Australia](#), June 2020, pp. 35–6.

<sup>128</sup> Australian Communications and Media Authority, [Misinformation and news quality on digital platforms in Australia](#), June 2020.

<sup>129</sup> [ABC Code of Practice \(2019\); SBS Codes of Practice \(2014\)](#).

<sup>130</sup> [Commercial Radio Code of Practice \(2017\)](#).

<sup>131</sup> [Community Radio Broadcasting Codes of Practice \(2008\)](#).

<sup>132</sup> Australian Competition and Consumer Commission, [Digital Platforms Inquiry – Final Report](#), 2019, pp. 294–6.

<sup>133</sup> Simons, M. & Dickson, G., [Availability of Local News and Information: 2019 State of the Regions Report](#), Public Interest Journalism Initiative, 2019.

on the Australian economy, BuzzFeed News closed its news operations in Australia<sup>134</sup> and News Corp announced a move to publish community and regional newspaper titles in a digital-only format and the merging of a number of papers.<sup>135</sup> In 2020, it was also announced that the Australian Associated Press (AAP) Newswire service, would potentially be closing.<sup>136</sup> It was later announced that the AAP Newswire service would be sold, with some journalist jobs lost.<sup>137</sup>

Changes to the news market were analysed in detail in the ACCC's *Digital Platforms Inquiry Final Report*.<sup>138</sup> In response to the Digital Platforms Inquiry, the government is implementing a variety of measures to support a sustainable media landscape in the digital age. This includes, for example, tasking the ACCC to develop a mandatory code of conduct to address bargaining power imbalances between Australian news media businesses and Google and Facebook.<sup>139</sup>

The government is also supporting public interest journalism delivered by media businesses across Australia. The \$50 million Public Interest News Gathering (PING) program aims to support the production of high-quality news in regional and remote areas of Australia through the provision of financial assistance to media outlets that publish or broadcast public interest journalism.<sup>140</sup> The implementation of the PING program responds to the ACCC's recommendation in the Digital Platforms Inquiry for a grants program targeted at supporting the production of local and regional journalism.<sup>141</sup> In addition to the PING program, the Regional and Small Publishers Innovation Fund, which began in 2018 and is administered by the ACMA, provides grants to regional and metropolitan publishers and content service providers of public interest journalism.<sup>142</sup> The Innovation Fund was one component of the government's Regional and Small Publishers Jobs and Innovation Package.<sup>143</sup> These measures aimed to assist the production of public interest journalism and improve publishers' capacity to operate sustainably.

## Discussion

Digital platforms play a key role in the news ecosystem. ACMA research has found that online and social media platforms are starting to rival television as the most popular way to consume news in Australia.<sup>144</sup> News aggregators, such as Google News and Apple News, are currently less popular, with seven per cent of online Australians reporting that this is their main pathway for accessing online news.<sup>145</sup> On

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<sup>134</sup> Sweney M, [BuzzFeed pulls plug on UK and Australian news operations](#), The Guardian, 14 May 2020.

<sup>135</sup> Doran M, [News Corp to cut jobs in restructure towards digital-only community and regional newspapers](#), ABC News, 28 May 2020.

<sup>136</sup> Doherty B, [AAP bidders likely to shed jobs at newswire service, if they can save it](#), The Guardian, 26 May 2020.

<sup>137</sup> AAP, [AAP newswire set to go on with new owners](#), AAP, 5 June 2020; Doran M, [AAP newswire expected to be sold, advertising closure](#), ABC News, 5 June 2020.

<sup>138</sup> Australian Competition and Consumer Commission, [Digital Platforms Inquiry Final Report](#), June 2019.

<sup>139</sup> Australian Competition and Consumer Commission, [News media bargaining code](#), May 2020.

<sup>140</sup> Department of Infrastructure, Transport, Regional Development and Communications, [Relief for Australian media during COVID-19—Frequently asked questions](#), accessed 12 June 2020.

<sup>141</sup> Department of Infrastructure, Transport, Regional Development and Communications, [Relief for Australian media during COVID-19](#), accessed 12 June 2020; Australian Competition and Consumer Commission, [Digital Platforms Inquiry Final Report](#), June 2019, p. 33.

<sup>142</sup> Australian Communications and Media Authority, [Regional and Small Publishers Innovation Fund](#), accessed 12 June 2020.

<sup>143</sup> Department of Infrastructure, Transport, Regional Development and Communications, [Regional and Small Publishers Jobs and Innovation Package](#), accessed 12 June 2020.

<sup>144</sup> Australian Communications and Media Authority, [Attitudes to news today—Impartiality and commercial influence: quantitative research](#), 2020, p. 7.

<sup>145</sup> Fisher, C., Park, S., Lee, J., Fuller, G. and Sang, Y., [Digital News Report: Australia 2019](#), News & Media Research Centre, University of Canberra, 2019, p. 28.

digital platforms, machine learning has been applied to personalise user experience by filtering, classifying or prioritising content based on data about users' preferences or interests.

Internationally, legacy media are also testing and launching machine learning-enabled systems for content personalisation. Recommender systems that filter or rank content are key personalisation tools; however, content delivery, headlines, newsletters, interface layout, push notifications and social media posts can also be tailored.<sup>146</sup> Some examples of personalisation within news internationally include:

- > In 2018, *The New York Times* announced that the company would invest in AI and machine learning to support personalisation, to show people 'things that are more interesting to them'.<sup>147</sup>
- > UK-based *The Times* and the *Sunday Times* trialled JAMES, software that produced personalised newsletters, in 2018. It reportedly led to a 49 per cent drop in the number of digital subscription cancellations.<sup>148</sup>
- > Through its Horizon 2020 research and innovation program, the European Commission has invested in the Content Personalization Network (CPN), which aims to create a recommendation tool for digital content.<sup>149</sup>

Personalisation offers benefits to news organisations and consumers. It can be used to deliver news that is more relevant and engaging to individuals. AI can also be used to develop local news content from publicly available data and push this news to relevant audiences.<sup>150</sup> These applications of AI could help support a news environment that meets the information needs of individuals and potentially drive increases in advertising and subscription revenues for news outlets that, for the last few years, have experienced sustained declines in advertising revenues.<sup>151</sup>

These benefits would have to be reconciled with concerns that personalisation could reduce the overall diversity of news individuals consume. Some research has indicated that recommender systems, for example, can lead to 'filter bubbles' where individuals are not exposed to contrasting views.<sup>152</sup> A report from the UN Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression warned that personalisation could reinforce biases, while optimising for engagement may undermine users' ability to seek and find information.<sup>153</sup> This could have significant effects for the functioning of democracy and its capacity to reflect an informed citizenry. Reduced exposure to a range of viewpoints, such as minority voices, could also have an impact on social cohesion.

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<sup>146</sup> Ignatidou S, [AI-driven personalization in Digital Media: Political and Societal Implications](#), Chatham House, 2 December 2019, p. 15.

<sup>147</sup> Slefo G.P, [New York Times Plans to Invest Heavily in AI to Improve Personalization](#), AdAge, 3 December 2018; *The New York Times*, [The New York Times Introduces First Personalized Editorial Newsletter, "Your Weekly Edition"](#), 13 June 2018.

<sup>148</sup> Tobitt C, [Times titles halve digital subscriber churn with tailored emails from AI named 'James'](#), Press Gazette, 27 May 2019.

<sup>149</sup> Content Personalisation Network, <https://www.projectcpn.eu/>, accessed 4 June 2020.

<sup>150</sup> For example, Reporters and Data and Robots (RADAR), a partnership between the UK Press Association and the tech-driven start up Urbs Media, uses natural language generation (NLG) technology to help UK reporters produce thousands of localised news stories from open data sets. See: <https://pa.media/radar/>.

<sup>151</sup> Australian Competition and Consumer Commission, [Digital Platforms Inquiry—Final Report](#), June 2019, p. 294–6.

<sup>152</sup> Ignatidou S, [AI-driven personalization in Digital Media: Political and Societal Implications](#), Chatham House, 2 December 2019, p. 19.

<sup>153</sup> United Nations, [Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression](#), A/73/348, 29 August 2018, p. 7.

It should be noted that there is limited evidence or study of the effect of filter bubbles on Australians' online news consumption.<sup>154</sup> There has been research into methods that could counteract potential filter bubbles.<sup>155</sup> With the risk of filter bubbles in mind, machine-learning driven recommendation systems can be designed to enable serendipity in recommended content. This could potentially support citizens being exposed to a diverse range of subjects or viewpoints.

### Looking ahead

The news media market has undergone significant structural change and traditional business models have had to adapt in the face of technological development. We expect further change in the news market, including further digital transformation. The consumption of news online increases the amount of user data that news organisations can access and use to personalise news services to increase user engagement.

The ACMA will undertake additional research to build its understanding of AI applications within the communications and media markets. This will provide greater insight into how AI could impact business models and operations, and the implications for the delivery of regulatory objectives such as media diversity.

We will continue to monitor developments in the news media market. As an example, we recently commissioned several research pieces on aspects of news in Australia, which are available on our website.<sup>156</sup>

## Online targeting and community standards

### Regulatory overview

Personalisation of content (for example, the display of user posts, news and other articles and advertising) has become a key feature of online platforms. Machine learning is essential to filtering, classifying, prioritising and recommending online content based on predictions of what individual users are likely to find relevant and interesting.

Several regulatory schemes in Australia are relevant to the targeting of content online—addressing potential harms including risks to individual privacy and the spread of illegal or inappropriate online content through these mechanisms.

The OAIC is the independent national regulator for privacy. The Privacy Act includes requirements relating to the use of personal information for direct marketing.<sup>157</sup> The government has announced several developments in privacy regulation, including review of the Privacy Act over 2020–21.<sup>158</sup>

The eSafety Commissioner oversees regulation targeting illegal or inappropriate content distributed online.<sup>159</sup> The existing arrangements establish limits on the types of online content that can be provided or hosted by internet service providers and content service providers, and provide a mechanism for users to complain about prohibited or

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<sup>154</sup> Australian Competition and Consumer Commission, [Digital Platforms Inquiry—Final Report](#), June 2019, p. 349

<sup>155</sup> Ignatidou S, [AI-driven personalization in Digital Media: Political and Societal Implications](#), Chatham House, 2 December 2019, p. 19.

<sup>156</sup> Australian Communications and Media Authority, [Australians and news—Impartiality and commercial influence](#), 2020.

<sup>157</sup> Office of the Australian Information Commissioner, [Targeted advertising](#), accessed 5 June 2020.

<sup>158</sup> Australian Government, [Government Response and Implementation Roadmap for the Digital Platforms Inquiry](#), December 2019, p. 11.

<sup>159</sup> These arrangements are set out in Schedules 5 and 7 of the [Broadcasting Services Act 1992](#).

potential prohibited content, such as child sexual abuse material, extremist propaganda, or incitement to terrorism.<sup>160</sup>

In recent years, there has been growing recognition of the data gathered about users online, how this can be utilised for highly granular content targeting, and the potential impacts on consumers. The Digital Platforms Inquiry, for example, explored the risks to consumers of digital platforms data practices. This included discussion about the risks associated with the use of data for psychological profiling, which can inform highly targeted advertising and enable price discrimination (where identical or similar goods are priced differently based on estimations of consumers' willingness to pay).<sup>161</sup> Since the Inquiry, the ACCC has established a unit to monitor and report on the state of competition and consumer protection in digital platform markets and begun inquiries into the markets for the supply of digital platform services<sup>162</sup>, digital advertising technology services and digital advertising agency services.<sup>163</sup>

As outlined in the *Online misinformation* section of this paper, a risk associated with personalised content is that misinformation could spread at scale. Content personalisation systems can potentially promote misinformation within users' content feeds or recommendations. Targeted advertising could also be used to spread misinformation to users. The ACMA is overseeing the development of a voluntary code (or codes) to address the issue of misinformation.

In relation to the broadcasting industry, the ACMA oversees codes of practice designed to align content with a range of community expectations. We will only register a broadcasting code if we are satisfied that it provides appropriate community safeguards. This decision is informed by public consultation and any relevant research that we may have conducted. These codes currently include, for example, rules around program material that is not suitable for broadcast such as programs that are likely to incite hatred against, or serious contempt for or severe ridicule of a person or group because of age, ethnicity, nationality, race gender, sexual preferences, religion, or disability.<sup>164</sup> Codes of practice are reviewed periodically to ensure they continue to provide adequate protections for the community.

## Discussion

This paper has explored how content personalisation could impact the diversity of news that individuals consume (see the *News diversity* section) as well as result in the spread of misinformation, which can lead individuals to believe false or misleading information on various issues (see the *Online misinformation* section). Both of these challenges are linked to the broader issue of the potential influence or impacts online personalisation systems can have on individuals as a result of the content they are designed to promote and exclude.

There are a range of benefits to online personalisation. By organising content, these technologies increase the usability of websites. As highlighted by the UK Centre for Data Ethics and Innovation, personalisation 'makes it easier for people to navigate an

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<sup>160</sup> In 2019, the government consulted on a proposed new Online Safety Act, which would extend current schemes regulating cyberbullying and image-based abuse, spur the creation of new industry codes to address harmful online content, and strengthen the Commissioner's ability to address harmful content hosted overseas. Department of Communications and the Arts, [Online Safety Legislative Reform Discussion Paper](#), December 2019.

<sup>161</sup> Australian Competition and Consumer Commission, [Digital Platforms Inquiry—Final Report](#), June 2019, p. 445.

<sup>162</sup> Australian Competition and Consumer Commission, [Digital platform services inquiry 2020-2025](#), February 2020.

<sup>163</sup> Australian Competition and Consumer Commission, [Digital advertising services inquiry](#), February 2020.

<sup>164</sup> Australian Communications and Media Authority, [Industry codes of practice](#), accessed 4 June 2020.

online world that otherwise contains an overwhelming volume of information'.<sup>165</sup> Targeting can help increase the effectiveness of information campaigns designed to positively influence individuals' behaviour, as well as ensure advertising is relevant to individuals. Information gathered online can also be used to support vulnerable people. For example, machine learning can be used to help identify and deliver resources to at-risk individuals.

Facebook uses machine learning and a range of signals to identify posts from people who might be at risk of suicide, such as phrases in posts and concerned comments from friends and family, which involves a complex exercise in analysing human nuance, including analysis of the text in the post and the comments under the post. Once a cry for help is identified, Facebook may present the person with support options, including resources for help, help-line phone numbers, and ways to connect with loved ones.<sup>166</sup>

*Digital Industry Group Inc (DIGI), Submission to the ACMA – Artificial Intelligence in communications and media, December 2019, p. 4.*

However, these personalisation systems might also be used to influence individuals in negative ways, or in ways not in their interest. For instance, personalisation systems designed to increase user engagement on a platform could surface or recommend content that reinforces people's existing preferences (resulting in a 'filter bubble') or is highly provocative, emotive or extreme. For example, harmful content, such as content promoting self-harm, could be served to people because they have viewed similar material.<sup>167</sup> Informal studies of YouTube's algorithm from 2018 found that it tended to present increasingly extreme content to users, including progressively more extreme content relating to right and left political leanings.<sup>168</sup> These qualities could affect individual wellbeing as well as contribute to social polarisation.<sup>169</sup>

However, it should also be noted that personalisation systems can be adjusted to address these types of risks.

Over the past year, YouTube has made a number of improvements to these recommendations, including prioritising content from authoritative sources when people are coming to YouTube for news, as well as reducing recommendations of content that comes close to violating their policies or spreads harmful misinformation. In the US, these changes have resulted in a 50% decrease in the views of such content, and similar improvements are being tested in other markets including Australia.<sup>170</sup>

*DIGI, Submission to the ACMA – Artificial Intelligence in communications and media, December 2019, p. 5.*

Individuals' behaviour or beliefs may also be influenced through content personalisation.<sup>171</sup> As an example, by randomly selecting users and controlling the

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<sup>165</sup> Centre for Data Ethics and Innovation, [Review of online targeting: Final report and recommendations](#), February 2020, p. 5.

<sup>166</sup> Digital Industry Group Inc., *Submission to the ACMA – Artificial Intelligence in communications and media*, December 2019, p. 4.

<sup>167</sup> Centre for Data Ethics and Innovation, [Review of online targeting: Final report and recommendations](#), February 2020, p. 39.

<sup>168</sup> Australian Competition and Consumer Commission, [Digital Platforms Inquiry—Final Report](#), June 2019, p. 349.

<sup>169</sup> Centre for Data Ethics and Innovation, [Review of online targeting: Final report and recommendations](#), February 2020, p. 41.

<sup>170</sup> Digital Industry Group Inc., *Submission to the ACMA – Artificial Intelligence in communications and media*, December 2019, p. 5.

<sup>171</sup> Centre for Data Ethics and Innovation, [Review of online targeting: Final report and recommendations](#), February 2020, p. 38.

content they were shown, Facebook found it influenced the sentiment of these users' posts (which were either more positive or negative depending on the content they were shown).<sup>172</sup> The data collected about users can also build a detailed picture of individuals' interests, motivations, vulnerabilities, and how best to appeal to them. Concern about the influence of highly targeted advertising was notably raised in 2018 with the revelation that Cambridge Analytica, a data analytics consultancy, had used Facebook data for targeting political ads based on 'psychometric' traits (such as openness and neuroticism).<sup>173</sup>

In the years ahead, increased distribution and consumption of content online (such as on digital platforms and streaming services) and via connected IoT devices may increase concerns about how personalisation systems are used to influence individuals. Increased transparency around content personalisation practices, and what this is intended to achieve, can enable consumers to make informed choices. More broadly, awareness of personalisation online can enable consumers to engage with content critically. Ongoing monitoring of the potential harms of content personalisation is essential to identifying and managing these as they appear.

### Looking ahead

A range of risks associated with content personalisation—including the promotion of illegal and inappropriate content, misinformation and privacy risks—fall within existing or developing regulation. We believe it is important to continue monitoring the impacts of AI-driven content personalisation on consumers to understand consumer expectations around these practices as well as consider potential harms.

We recognise that the issues described above intersect with the remit of other regulators. Privacy regulation sets rules for how, and what, data can be collected and used by companies. It also provides a framework for providing transparency around the collection and use of data. Competition and consumer protection regulation also relevantly sets rules for business practices. There are ongoing developments in the regulation of online safety, privacy and media to enhance consumer protections and address risks.<sup>174</sup> The government's pursuit of a platform-neutral media framework, covering both online and offline content, will likely have implications on content delivery and the application of content safeguards across platforms. We will continue to monitor these developments and assess how these change the risk environment for communications and media consumers.

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<sup>172</sup> Meyer R, [Everything We Know About Facebook's Secret Mood Manipulation Experiment](#), The Atlantic, 28 June 2014; Kramer A, Guillory J and Hancock J, [Experimental evidence of massive-scale emotional contagion through social networks](#), Proceedings of the National Academy of Sciences, Vol 111, No. 24, 17 June 2014.

<sup>173</sup> Hern A, [Cambridge Analytica: how did it turn clicks into votes?](#), The Guardian, 6 May 2018.

<sup>174</sup> Australian Government, [Government Response and Implementation Roadmap for the Digital Platforms Inquiry](#), December 2019.



## Unsolicited communications and scams

### Regulatory overview

One of the ACMA's roles is regulating unsolicited communications. This involves overseeing regulation that establishes rules for telemarketing activities (including telemarketing calls involving a synthetic voice), and unwanted marketing messages or 'spam', including those sent via email, text or instant message.<sup>175</sup> These schemes aim to minimise the intrusion of unwanted communications on the privacy of individuals and to promote responsible industry practices.

'Scams' are a subset of unsolicited communications, which involve a person attempting to trick someone into giving them personal details or money.<sup>176</sup> There are several other agencies that play a role in disrupting scam activities. The ACCC monitors and enforces compliance with general consumer protection regulation and manages the Scamwatch website, which provides information to help people recognise, avoid and report scams.<sup>177</sup> The Australian Cyber Security Centre (ACSC) plays a role as the Australian Government's lead on national cyber security issues. Some scams may constitute fraud, which is regulated under various acts including state and territory criminal legislation and under Australia's common law.<sup>178</sup>

Government agencies that are often impersonated by scammers, such as the Australian Taxation Office and the Department of Human Services, provide consumers with important information and alerts about scams. Commercial entities including banks also have consumer-facing initiatives to warn consumers about scams relating to their goods and services.

The communications industry, including network operators and the providers of communications services, play key roles in disrupting scams. This includes blocking calls and emails where scam activity can be verified.

In response to the proliferation of scams and a request from the Minister for Communications and the Arts in 2019, the ACMA established a cross-agency Scam Technology Project with the ACCC and the ACSC to explore ways to reduce scam activity. Following extensive consultation, the ACMA has proposed a three-point action plan to:

1. Form a joint government-industry taskforce.
2. Develop new enforceable obligations for telecommunications providers, for example, requirements to share scam call data across industry; verify, trace and block scam calls; refer scam calls and/or perpetrators to authorities; implement and update SMS filtering technology.
3. Immediately trial new scam reduction initiatives.

For details, refer to the ACMA's *Combating scams* summary report.<sup>179</sup>

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<sup>175</sup> Under the [Do Not Call Register Act 2006](#) and [Spam Act 2003](#).

<sup>176</sup> Australian Communications and Media Authority, [Protect yourself from scams and fraud](#), accessed 4 June 2020.

<sup>177</sup> Australian Competition and Consumer Commission, [Scamwatch role](#), accessed 4 June 2020.

<sup>178</sup> *ibid.*

<sup>179</sup> Australian Communications and Media Authority, [Combating scams](#), November 2019.

## Discussion

Telemarketing is a concern to many Australians. More than 36,500 complaints about telemarketing and 6,333 complaints about spam were made to the ACMA in the 2018–19 financial year.<sup>180</sup>

Conversational AI systems could potentially be used to scale up unsolicited communications activities.<sup>181</sup> For example, AI systems might be used to make telemarketing calls (or ‘robocalls’) or send marketing messages via other channels. More advanced AI systems may sound convincingly human, in order to keep people engaged.<sup>182</sup> For example, there have been reports that voice bots that could flexibly respond to individual’s questions have been used in China to cold-call individuals.<sup>183</sup>

There have been concerns raised that AI could also be used by scammers. Scams are the largest category of complaint to the ACMA across its broad remit.<sup>184</sup> Scams already have a significant impact on Australians. Serious harms caused by scams include financial loss, emotional distress and an erosion of confidence in telecommunications networks and legitimate marketing practices. In 2019, the Scamwatch website reported more than \$142 million dollars in losses from scams, with close to \$61 million lost through scams perpetrated via phone and email.<sup>185</sup>

There are a variety of challenges faced in disrupting scam activity today. Scams are increasingly technologically sophisticated and hard to detect. They also usually originate offshore. These factors make it challenging for regulators and law enforcement agencies to identify scammers.

Enhancements in the development of AI that can mimic human voices has raised concerns about the potential use of technology to conduct scam phone calls. In 2019, these concerns were realised, with reports that criminals used AI to impersonate a chief executive’s voice and demand a fraudulent transfer of USD\$243,00.<sup>186</sup> AI that sounds human, or ‘deepfakes’ that look or sound like a particular individual, could potentially make scam calls harder for consumers to recognise.

While AI may be used to conduct scams, it is also a useful tool in combating them. For example, Microsoft has used AI to help track down scammers.<sup>187</sup> Google utilises machine learning to block phishing emails from reaching Gmail inboxes.<sup>188</sup> Facebook uses machine learning models to detect scammers.<sup>189</sup> Further advancement in AI could help reduce the scale and impact of scam activities.

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<sup>180</sup> Australian Communications and Media Authority, [Communications report 2018–19](#), p. 137.

<sup>181</sup> Australian Computer Society, [Artificial Intelligence: A Starter Guide to the Future of Business](#), December 2018, p. 39.

<sup>182</sup> Lomas N, [Dasha AI is calling so you don’t have to](#), TechCrunch, 2 August 2019.

<sup>183</sup> Yiwei W, [How AI-Powered Voice Bots Flooded China’s Telemarketing Industry](#), Medium, March 2019, accessed 2 May 2019.

<sup>184</sup> The Australian, [Combating scams: A discussion paper on technological solutions](#), March 2019, p. 1.

<sup>185</sup> Australian Competition and Consumer Commission, [Scam statistics](#), accessed 4 June 2020.

<sup>186</sup> Stupp C, [Fraudsters Used AI to Mimic CEO’s Voice in Unusual Cybercrime Case](#), The Wall Street Journal, 30 August 2019.

<sup>187</sup> Linn A, [How Microsoft used AI to help crack down on tech support scams worldwide](#), Microsoft, 15 June 2017.

<sup>188</sup> Kumaran N, [Spam does not bring us joy—riding Gmail of 100 million more spam messages with TensorFlow](#), Google Cloud, 7 February 2019.

<sup>189</sup> Dickens S, [Introducing New Machine Learning Techniques to Help Stop Scams](#), Facebook, 26 March 2018.

## Looking forward

As noted above, in November 2019 the ACMA released its *Combating scams* summary report, which outlines a three-point action plan for reducing scam activity over telecommunication networks.<sup>190</sup> Each of these actions has since progressed.

The ACMA has convened a joint government-industry taskforce to provide strategic oversight and coordination of telecommunications scam minimisation strategies. Members of the taskforce include the ACMA, ACCC, ACSC and the Department of Infrastructure, Transport, Regional Development and Communications.

Communications Alliance Ltd, as the industry peak body, is developing an industry code of practice that places new enforceable obligations on telecommunications providers in relation to reducing scam calls.<sup>191</sup> Importantly, this code will contain obligations to build confidence in the legitimate use of calling line identification, and support enforcement and blocking where it is used illegitimately. It is anticipated that the industry code will be submitted to the ACMA in 2020 for registration under Part 6 of the [Telecommunications Act 1997](#) (Telecommunications Act). Once registered by the ACMA, the code becomes enforceable.

Scam reduction initiatives, including implementation of a Do Not Originate (DNO) list to prevent spoofing of trusted government phone numbers, are being trialled by industry—early results are promising.

Scams are an international problem that challenge industry and regulators across the globe. The ACMA will continue to monitor offshore initiatives currently being developed or trialled that address various types of scams and which could be applied domestically. We also conduct ongoing research into the impacts of unsolicited communications and scams on Australian consumers.

## Technical standardisation

### Regulatory overview

Standards set out specifications, procedures and guidelines to ensure products, services and systems are safe, consistent and reliable. They can be developed at an international, regional or national level.<sup>192</sup> Standards are often mandated by legislation, regulation, or contracts, but may also be voluntary.

The ACMA establishes technical standards to regulate products that are associated with the [Telecommunications Act](#)<sup>193</sup>, [Radiocommunications Act 1992](#)<sup>194</sup> and the [Broadcasting Services Act](#).<sup>195</sup> These set mandatory minimum standards to ensure processes and products meet a certain level of product performance or safety, and avoid unnecessary risks for consumers. Examples of our technical standards include telecommunication standards for customer equipment and cabling, radiocommunication standards for transmitters and receivers, and the parental lock standard for televisions.<sup>196</sup>

The technical standards regulated by the ACMA generally refer to industry standards such as those set by Standards Australia and international standards from the

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<sup>190</sup> Australian Communications and Media Authority, [Combating scams](#), November 2019.

<sup>191</sup> Communications Alliance, [Draft:C661:2020 Reducing Scam Calls Industry Code](#), 24 March 2020.

<sup>192</sup> Standards Australia, [What is a Standard?](#), accessed 4 June 2020.

<sup>193</sup> [Telecommunications Act 1997](#), Volume 1, Part 21, Division 3, s376.

<sup>194</sup> [Radiocommunications Act 1992](#), Chapter 4, Part 4.1, Division 3, s162.

<sup>195</sup> [Broadcasting Services Act 1992](#), Part 9A, s338.

<sup>196</sup> Australian Communications and Media Authority, [Technical standards](#), accessed 4 June 2020.

International Electrotechnical Commission, European Telecommunications Standards Institute and the European Committee for Electrotechnical Standardization.

There is a range of work currently underway to develop standards that support the development and adoption of best practice in the design, deployment and evaluation of AI systems. Australia's national standards body, Standards Australia, released the *Artificial Intelligence Standards Roadmap: Making Australia's Voice Heard (AI Standards Roadmap)* in March 2020.<sup>197</sup> The AI Standards Roadmap includes a series of recommendations to enable Australia to influence the global AI standards environment, increase Australian business' international competitiveness and ensure AI-related standards build public trust and take into account privacy, inclusion and fairness, and safety and security.

The primary international committee on AI that Australia has an active role in is the International Organization for Standardization and International Electrotechnical Commission Joint Technical Committee 1 sub-committee 42 (ISO/IEC JTC 1/SC 42).<sup>198</sup> The major objectives of this committee are to serve as the focus and proponent for JTC 1's standardisation program on AI, and to provide guidance to JTC 1, IEC and ISO committee developing AI applications. To increase Australia's role and direct representation in JTC 1/SC 42, Standards Australia established an AI Mirror Committee (IT-043) in late 2018.

Examples of other international standards development activities include:

- > the work of the International Telecommunication Union (ITU) Focus Group on Machine Learning for Future Networks including 5G, which is analysing the need for standardised formats for machine learning in areas such as the training and exchange of machine learning algorithms, and to ensure algorithms correctly interact with each other and fulfil certain security and personal information protection requirements<sup>199</sup>
- > the Institute of Electrical and Electronics Engineers (IEEE) *Ethically Aligned Design* and related standards development<sup>200</sup>
- > the OECD's AI Principles<sup>201</sup>
- > other national initiatives, such as the National Institute of Standards and Technology (NIST) Roadmap in the United States.<sup>202</sup>

## Discussion

There is significant work underway to develop standards for AI.

The AI Standards Roadmap outlines how standards can help protect Australia's national and international interests. Participating in international standards-setting provides mechanisms for Australia to influence the trajectory of AI technologies in ways that align with our social and political interests, such as security and human rights objectives, and economic interests by facilitating access to the global market.

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<sup>197</sup> Standards Australia, [An Artificial Intelligence Standards Roadmap: Making Australia's Voice Heard Final Report](#), March 2020.

<sup>198</sup> International Organization for Standardization, [ISO/IEC JTC 1/SC 42 Artificial intelligence](#), accessed 4 June 2020.

<sup>199</sup> International Telecommunication Union, [Focus Group on Machine Learning for Future Networks including 5G](#), accessed 2 May 2019.

<sup>200</sup> IEEE, [The IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems](#), accessed 18 September 2019.

<sup>201</sup> Organisation for Economic Co-operation and Development, [Recommendation of the Council on Artificial Intelligence](#), 22 May 2019.

<sup>202</sup> National Institute of Standards and Technology, [US Leadership in AI: A Plan for Federal Engagement in Developing Technical Standards and Related Tools](#), US Department of Commerce, August 2019.

Australia is anticipated to purchase AI solutions ‘off-the-shelf’ from organisations originating offshore, as well as look to offer AI on the global market, making it important that Australia is involved in shaping the standards guiding AI applications.

International standards can support the development of AI systems that account for various risks and concerns (including ethical concerns) by defining best practice across a range of technical areas. This is reflected in the scope of the standards ISO/IEC JTC 1/SC 42 has developed and is currently developing. The standards currently published focus on big data, while standards in development focus on, for example:

- > concepts and terminology
- > risk management
- > bias
- > ethical and societal concerns
- > governance implications.

There are a variety of benefits that incentivise the development and adoption of AI standards by industry. These include the role played by standards in defining best practice and ensuring quality, which can support public trust in products and services. International standards enable harmonisation across markets and interoperability between technology platforms. The marketplace for AI technologies is global, and international standards can enable Australian businesses to export products and services overseas, as well as support confidence in the use of ‘off-the-shelf’ AI technologies developed in other jurisdictions.

### **Looking forward**

The ACMA anticipates that, similar to the introduction of new technologies in the past, the common interest among industry participants to cooperate in developing technical standards will mean that industry drives the creation of standards relating to AI. This will continue to be facilitated by standards bodies, in particular, Standards Australia.

The development and implementation of standards relating to AI is at an early stage, as is the adoption and integration of AI technologies across Australian industries. Standards development to date is also targeting issues relevant to AI applications across industries; for example, as noted above ISO/IEC JTC 1/SC 42 is developing standards on key issues including risk management and bias in AI systems, as well as foundational standards such as AI concepts and terminology.

At this point, there does not appear to be an AI-specific issue that would fall within the ACMA’s scope for making technical standards under the [Telecommunications Act](#), [Radiocommunications Act](#) and the [Broadcasting Services Act](#). However, we recognise the importance of monitoring uses of AI and the development of standards to address challenges and will continue to do so for the sectors we regulate. We will also continue collaborating with our stakeholders to ensure we are aware of technical issues that may prompt the development, implementation or adoption of standards within Australia’s communications and media markets.

## Spectrum management

### Regulatory overview

The ACMA is responsible for the management of the radiofrequency spectrum. In fulfilling this role, we have regard to the objects of the [Radiocommunications Act](#), which includes seeking to maximise the overall public benefit derived from spectrum and providing a responsive and flexible approach to meeting the needs of spectrum users. We also consider the rights of licensees and aim to provide a stable framework that encourages investment in services utilising the radiofrequency spectrum.

Spectrum sharing<sup>203</sup> is a fundamental component of effective spectrum management. Spectrum sharing can take different forms. Combinations of domestic and international planning frameworks, administrative and legislative regulatory tools and technologies enable shared access to spectrum on a day-to-day basis. A key characteristic of most of these 'traditional' sharing approaches is that arrangements are based on licensed use.<sup>204</sup>

Spectrum sharing techniques have continued to evolve with developments in technology and in response to increasing spectrum scarcity. A key concept in many new and emerging spectrum sharing approaches is that they are informed by actual spectrum use, rather than being facilitated by 'traditional' allocations or licensing arrangements. Devices and systems involved in these sharing approaches usually need to be aware of the surrounding radiofrequency environment and able to react to changes. These new sharing techniques are often collectively referred to as dynamic spectrum access (DSA)<sup>205</sup> techniques.

In 2019, the ACMA began consultation with industry and government stakeholders on new and emerging approaches to sharing spectrum and their potential suitability for the Australian environment. This process found that non-traditional approaches to spectrum sharing will not be appropriate in all circumstances. Stakeholders outlined several concerns, including concerns related to protection from interference, potential additional regulatory or administrative burdens and the erosion of current and future certainty of access. Further, international DSA deployments are immature, and the actual benefits and challenges are yet to be proven.

We have not received a detailed sharing proposal for consideration from industry and therefore, given the existing spectrum options available and limited interest in sharing, the ACMA does not intend to prioritise the development of a new, formal DSA regime at this time. However, we recognise there are potential avenues where non-traditional spectrum sharing approaches could be beneficial to industry and consumers. We will maintain a watching brief on related international developments and potential applications and implications of new sharing approaches in Australia. Further, we remain open to supporting local trials of DSA schemes. Further information is provided in our [New approaches to spectrum sharing—Next steps](#) document, published on the ACMA website.

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<sup>203</sup> A more complete reference to 'sharing' should be 'sharing and compatibility' to be consistent with established international (ITU) terminology. In that framework, 'sharing' refers to in-band coexistence while 'compatibility' refers to adjacent band coexistence. However, for readability, the term 'sharing' will be used in this document but should be read as referring to both in band and adjacent band considerations.

<sup>204</sup> 'Traditional' sharing generally takes the form of either uncoordinated access or coordination access. Examples of uncoordinated access include class-licensed access to industrial, scientific and medical (ISM) frequency bands (such as wi-fi, Bluetooth, drone control). Coordinated access involves the optimisation of licensing and assignment frameworks to accommodate multiple uses/users within a given frequency range, geographic space and/or time.

<sup>205</sup> Dynamic Spectrum Access has been referred to in other publications as Dynamic Spectrum Licensing Model and Dynamic Spectrum Licensing Management.

## Discussion

AI could be applied to help optimise network management and performance. For example, service providers could potentially implement AI for resource allocations in a 4G or 5G network. AI could also support more efficient utilisation of network capacity. AI can analyse vast amount of traffic data, make traffic predictions, and enable more autonomous operations to support the delivery of efficient, high-quality and reliable services to consumers.<sup>206</sup>

The potential for AI technologies to support new approaches to spectrum sharing, and therefore greater utilisation of spectrum, is also being explored.<sup>207</sup> As outlined above, traditional approaches to spectrum sharing are largely static, involving the establishment of coexistence arrangements defined through fixed geographic and spectral boundaries. AI may be applied to enable DSA approaches, which typically take advantage of time-based changes in spectrum use to enable multiple users to access spectrum.<sup>208</sup>

DSA requires a set of rules and decision-making process that can operate rapidly. While there are various implementations of DSA, each involves a framework that identifies a<sup>209</sup>:

- > hierarchy of spectrum users (and in some cases a mechanism to determine/allocate rights to be part of the various hierarchal layers)
- > set of rules articulating the rights and responsibilities of those users
- > mechanism(s) to determine actual spectrum use (that is, a way to understand the current spectrum environment)
- > dynamic feedback or control system to implement changes to spectrum use by users based on the rules and the current spectrum environment.

The rules of a DSA framework can be implemented through an automated system that includes a database to record system parameters (for example operating parameters) to manage interference between those seeking access to spectrum. The system manages spectrum through issuing commands to devices to operate in a certain way (such as switching off when required).<sup>210</sup>

To determine whether spectrum is being used, these systems may use a geolocation reporting system that provides location and use data. Some approaches might also use a 'sensing network' to detect spectrum use and inform decision-making. This involves devices or supporting infrastructure detecting which communications channels are in use in real time. Some sensing models have learning capabilities, enabled through AI, to determine which channels are more frequently available for a given location.<sup>211</sup> When free channels are identified, allocation can be done cooperatively through negotiation between devices (by either device-to-device or network interfaces, depending on the model used), or through a passive sense-and-avoid approach.<sup>212</sup> These techniques could enable a more responsive approach to spectrum use.

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<sup>206</sup> Ericsson, [AI-powered radio access networks](#), accessed 1 July 2020.

<sup>207</sup> The Platforms for Advanced Wireless Research, [New \\$2.7M PAWR Project Funded by the U.S. Department of Defence](#), 27 May 2020.

<sup>208</sup> Seffers G, [AI Lays the Foundation for 5G Spectrum Sharing](#), SIGNAL, March 2019, accessed 2 May 2019.

<sup>209</sup> Australian Communications and Media Authority, [Spectrum sharing: Overview and new approaches](#), August 2019, p. 8.

<sup>210</sup> *ibid.*, p. 10.

<sup>211</sup> *ibid.*, p. 12.

<sup>212</sup> *ibid.*

## Looking forward

There have been very few large-scale implementations of DSA and as a result, regulatory frameworks have not been widely developed to facilitate DSA arrangements. The key international example of DSA implementation is the Citizens Broadband Radio Service (CBRS) model in the United States. This demonstrates a multi-tier automated spectrum-sharing approach involving a diverse group of stakeholders, technologies and licence structures.<sup>213</sup> The CBRS initial commercial deployment commenced in September 2019. The benefits and challenges of the CBRS model will become clearer in time.

There are a number of factors indicating that a cautious approach to DSA deployments in Australia is needed. These include the immaturity of international DSA deployments and an absence of strong interest in implementing these types of approaches. Noting this, our next steps in this space include monitoring international developments and being open to industry-led trials of non-traditional spectrum sharing arrangements.<sup>214</sup> We are not prioritising the development of a DSA regime, given the existing spectrum options available and the limited interest in new sharing approaches.

Further information on how the ACMA will manage spectrum now and into the future can be found in our five-year spectrum outlook (FYSO).<sup>215</sup> The FYSO looks at how technology and industry trends will affect the need for spectrum over the next five years and is updated annually with a detailed work plan and priorities for the coming year.

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<sup>213</sup> Australian Communications and Media Authority, [New approaches to spectrum sharing—Next steps](#), May 2020, p. 4.

<sup>214</sup> *ibid.*, p. 2.

<sup>215</sup> Australian Communications and Media Authority, [Five-year spectrum outlook](#), accessed 5 June 2020.



# Part 4: Implications for regulatory practice

The increasing ubiquity of AI in society raises important questions for regulators around how regulatory practice, including compliance and enforcement approaches, can be most effective.

AI technologies will drive accelerated change across the market, including the products and services used by citizens. The marketplace for AI is also global, with many of the advances in AI being led by businesses operating internationally. Australian businesses are also likely to use ‘off-the-shelf’ AI technologies developed in other jurisdictions.<sup>216</sup> These factors raise challenges for regulators in delivering regulatory outcomes that satisfy the needs of consumers, industry and government.

Below we explore key components to regulatory practice that are significant in enabling the benefits of AI applications.

## Global engagement

The market for AI products and services is global. This underscores the importance of building collaborative relationships between regulators across the world that are responding to challenges raised by AI. These relationships enable a more holistic view of the developing technological landscape, potential risks, and the scope and value of regulatory solutions to specific challenges. Further, they enable alignment in the requirements for technologies, which provides greater certainty for both industry and individuals.

The importance of engagement between jurisdictions on AI was highlighted on 22 May 2019, when 42 countries, including Australia, endorsed the OECD’s non-binding *Recommendation of the Council on Artificial Intelligence*.<sup>217</sup> OECD members and non-members adhering to the Recommendation signalled their shared commitment to promoting and implementing principles designed to support the ‘responsible stewardship of trustworthy AI’.<sup>218</sup>

We consider it important that we continue to foster our relationships with communications and media regulators around the world to identify and discuss the impacts of new technologies. By engaging with regulators with similar remits, we will have a better understanding of the global forces shaping AI within Australia’s communications and media markets. This can help us ensure our regulatory settings are fit for purpose to effectively manage risks and support public trust in AI.

## Industry and consumer engagement

AI is an evolving research area, with the potential to drive further change in market structures, business operations, products and services. Hearing from industry and consumers about their experiences with AI will expose regulators to issues as they appear. It is also important that a diverse range of voices within the Australian

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<sup>216</sup> Deloitte, [Technology, Media and Telecommunications Predictions 2019](#), 2019, p. 14.

<sup>217</sup> Organisation for Economic Co-operation and Development, [Recommendation of the Council on Artificial Intelligence](#), 22 May 2019.

<sup>218</sup> *ibid.*

community, including vulnerable groups, are heard and represented in discussions about the impact of AI and potential regulatory or governance mechanisms.

There are a variety of mechanisms the ACMA uses to engage with industry and consumers on new technologies and regulatory developments, including:

- > formal consultation through discussion papers or roundtables
- > collaboration with industry bodies and representatives through the process of developing industry codes and standards
- > conducting qualitative and quantitative research to better understand the communications and media markets and the issues that matter to consumers.<sup>219</sup>

Our publications, such as our compliance priorities<sup>220</sup> and the FYSO<sup>221</sup>, provide insight into our key areas of focus and how we aim to achieve our regulatory objectives.

We will look to use these mechanisms as appropriate to build our understanding of AI technologies being used across industry and the impacts these can have on consumers.

## Flexible and responsive regulation

AI technologies are among a range of technologies driving significant change across regulated industries. The pace of development in digital technologies has resulted in an increased focus on the potential application and value of more flexible regulatory approaches.

Technology-neutral regulatory arrangements provide a means of better ensuring regulatory protections and requirements continue to apply as the technologies used by regulated entities are updated. The value of technology-neutral or platform-neutral regulation was reflected in the outcomes of the Digital Platforms Inquiry, which highlighted imbalance in the regulatory treatment of content resulting from a sector-specific regulatory approach.<sup>222</sup> Following this Inquiry, the government announced that it would commence a staged process to reform media regulation towards an end state of a platform-neutral regulatory framework that covers both online and offline delivery of media content to Australians.<sup>223</sup>

Regulation that is focused on outcomes will play a valuable role within the suite of regulatory options available to deliver public policy objectives for new technologies. Outcomes-based regulation focuses on describing the outcomes or objectives that regulated entities must achieve, without prescribing the means of doing so. This provides regulated entities with greater flexibility in the processes or practices used to achieve compliance. Regulators can support regulated entities by providing guidance on how compliance obligations can be met. Outcomes-based regulation can form part of various regulatory approaches, including self-regulation, co-regulation and direct regulation, to enable a regulatory framework that can better accommodate technological change.

There has also been a focus on regulatory approaches that support technology innovation. An example is found in the concept of a 'regulatory sandbox', which

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<sup>219</sup> Australian Communications and Media Authority, [Research program](#), accessed 5 June 2020.

<sup>220</sup> Australian Communications and Media Authority, [Compliance priorities 2020–21](#), accessed 5 June 2020.

<sup>221</sup> Australian Communications and Media Authority, [Five-year spectrum outlook](#), accessed 5 June 2020.

<sup>222</sup> Australian Competition and Consumer Commission, [Digital Platforms Inquiry Final Report](#), June 2019, pp. 15, 349.

<sup>223</sup> Australian Government, [Government Response and Implementation Roadmap for the Digital Platforms Inquiry](#), December 2019.

provides a risk-controlled, time-limited environment where a business can test innovative products or business models, and regulators can test regulatory responses to market disruption. The Australian Securities and Investments Commission (ASIC) operates a financial technology ('fintech') regulatory sandbox, which allows eligible fintech companies to test certain products or services for up to 12 months without an Australian financial services licence or credit licence.<sup>224</sup> In the UK, the Information Commissioner's Office has launched the beta phase of its sandbox, which is designed to support organisations who are developing products and services that use personal data in innovative ways.<sup>225</sup> These regulatory sandboxes can provide opportunities to test new innovations and align new technologies and business models with regulation.

Ultimately, a mix of regulatory approaches can be anticipated to apply to AI applications. Which regulatory approaches are taken for any given circumstance must be informed by the context of their use and the risks they are intended to address.

## Compliance and enforcement

Compliance and enforcement approaches may need to adapt to ensure regulatory requirements relating to AI are met.

The European Commission, for example, has suggested that prior conformity assessments would be necessary to verify that high-risk AI applications meet proposed mandatory requirements (for example, requirements relating to training data for AI systems, such as that data is sufficiently representative to reduce the risk of discriminatory outcomes). This conformity assessment could include procedures for testing, inspection or certification, and checks of the algorithms and data sets used in developing AI.<sup>226</sup> National authorities' monitoring of compliance could be enabled by documentation requirements relating to AI applications and potentially by third parties that test AI applications.

In Australia, the AHRC's *Human Rights and Technology Discussion Paper* makes a range of proposals relating to AI.<sup>227</sup> This includes a proposal that the government establish a taskforce to develop the concept of 'human rights by design' in the context of AI-informed decision-making and examine how best to implement this in Australia. The Commission suggests 'a voluntary, or legally enforceable, certification scheme should be considered'.<sup>228</sup> Further, it is proposed that the government should develop a human rights impact assessment tool for AI-informed decision-making, and associated guidance for its use.<sup>229</sup> In 2019, Data61's discussion paper on Australia's AI Ethics Framework outlined various tools to put ethical principles into practice, including auditable impact assessments, specialised professional review of AI or its use, risk assessments, and standards and certification of AI systems.<sup>230</sup>

The ACMA is an evidenced-based regulator and while we do not have a direct role in relation to compliance and enforcement for AI technologies, we are already developing

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<sup>224</sup> Australian Securities & Investments Commission, [Fintech regulatory sandbox](#), accessed 18 September 2019.

<sup>225</sup> Information Commissioner's Office, [The Guide to the Sandbox \(beta phase\)](#), accessed 18 September 2019.

<sup>226</sup> European Commission, [White Paper on Artificial Intelligence: a European approach to excellence and trust](#), 19 February 2020, p. 23.

<sup>227</sup> Farthing S, Howell J, Lecchi K, Paleologos Z, Saintilan P, Santow E, [Human Rights and Technology Discussion Paper](#), Australian Human Rights Commission, 2019.

<sup>228</sup> *ibid.*, p. 191.

<sup>229</sup> *ibid.*

<sup>230</sup> Dawson D and Schleiger E, Horton J, McLaughlin J, Robinson C, Quezada G, Scowcroft J, and Hajkowicz S, [Artificial Intelligence: Australia's Ethics Framework](#), Data61 CSIRO, 2019, p. 58.

and implementing measures to effectively respond to some of the challenges in which AI plays a part.

The *Online misinformation* section of this paper outlines how AI plays a part in the spread of misinformation. The ACMA is overseeing the development of a voluntary code (or codes) to address this issue on digital platforms. One aspect of our approach has been to release a position paper to articulate our expectations of the objectives, outcomes and scope of the code(s).<sup>231</sup> Included in the position paper is discussion about the data and information we anticipate will be needed to assess the state of misinformation online.

The *Unsolicited communications and scams* section of this paper further discusses the progress of the ACMA's Scam Technology Project. This project examined available and potential technological solutions that could disrupt and reduce the level and severity of scams being perpetrated over telecommunications networks.<sup>232</sup> The report includes an action to monitor broader technological developments and international initiatives, recognising that scam disruption is 'an area ripe for further innovation'.<sup>233</sup> AI may help inform effective future scam reduction initiatives.

This paper is a part of the ACMA's work to consider how our regulatory framework and approach can remain fit for purpose. We will continue to adapt our approach where needed to enable the delivery of public policy objectives within our remit. The pace of technological development means that engagement with our industry and consumer stakeholders is an essential part of this process.

## Applications of artificial intelligence for regulators

The benefits of AI are not limited to the private sector. Government agencies around the world, including regulators, have been broadening explorations of where AI technologies can support regulatory compliance and enable more efficient and effective service delivery.

The successful deployment of AI within government depends on building a framework that enables public trust in the use of AI. This involves addressing the safety, security and reliability of AI, as well as ensuring AI development and use aligns with ethical expectations. Australia's AI Ethics Framework and standards relating to AI will play a role here, informing how AI is designed and used.

Recognising the potential benefits of AI, we will focus on laying the foundations for enhanced analytics and AI in our own operations. As outlined in our *Corporate plan 2019–20*, we are working on growing our data analytical capability.<sup>234</sup> We collect a diverse range of data and there is potential to use it in ways that will better inform our regulatory decisions and yield valuable insights into the changes occurring within the communications and media sectors.<sup>235</sup> As an integral part of growing our data capabilities, we are developing a range of processes to ensure the safe and appropriate use of our data, including through a governance framework.

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<sup>231</sup> Australian Communications and Media Authority, [Misinformation and news quality on digital platforms in Australia](#), June 2020.

<sup>232</sup> Australian Communications and Media Authority, [Combating scams](#), November 2019, p. 14.

<sup>233</sup> *ibid.*, p. 10.

<sup>234</sup> Australian Communications and Media Authority, [Corporate plan 2019–20](#), 2018, p. 8.

<sup>235</sup> *ibid.*

# Part 5: Our role

We will conduct a range of activities to help deliver the potential benefits of AI within the communications and media markets.

## Facilitating ethical AI

The ACMA provides advice and assists the industries we regulate on compliance with regulatory requirements. As AI becomes more widely used, we may support industry by articulating how current rules apply in the context of particular AI applications. This can help compliance with existing regulatory obligations as the technologies used by industry change. We also provide information to consumers, which could help build understanding of AI within communications and media markets and the rules that apply within our remit. Further, the ACMA reports to and advises the Minister on communications regulatory matters, including matters affecting consumers, which is a part of our work to support a fit-for-purpose regulatory framework.

The ACMA could potentially further assist with the practical implementation of the AI Ethics Principles by supporting the development of guidance tailored for AI use cases in the industries we regulate. For example, we could help in developing guidance on the practices and processes that demonstrate alignment with principles for transparency and explainability, and other principles, for different applications of AI.

We will continue to collaborate with the DISER and, following the testing of the AI Ethics Principles with industry, we will investigate whether industry identified any areas where sector-specific guidance or other support from the ACMA would be valuable. We will also look to increase our understanding of AI applications across the communications and media industries, which will enable a clearer view of potential risks.

In the future, as AI becomes more widely deployed across the communications and media sectors, it could become evident that further regulatory measures are required to support the implementation of the ethical principles within these sectors. This would be the case if there was evidence that AI deployed within the sector was causing harm, or resulted in a substantial risk of harm, to consumers. In this instance, we would consider how regulatory arrangements would need to be adapted to mitigate risk.

## Achieving the right regulatory mix

If new regulation, or changes to regulation, are required to target risks associated with AI or other rapidly developing technology fields, these would need to be sufficiently flexible. Specific rules for particular AI technologies could quickly become dated. It will also be important to consider the impact that regulatory requirements could have on AI development and use across industries, to avoid hampering innovation or creating unnecessary barriers to entry.

Within the range of approaches regulators have available, outcomes-based regulatory approaches play a valuable role in dealing with the risks associated with new and emerging technologies (see the above discussion on *Flexible and responsive regulation*). We will continue to explore regulatory approaches that can support innovation and their potential application within communications and media markets.

## Monitoring AI advancements

The ACMA conducts research to inform itself about how technologies are shaping the communications and media markets and the issues affecting consumers.

Ongoing monitoring and research into AI is needed to ensure we have a clear understanding of AI technologies and how they impact industry and consumers. This will prepare us to address regulatory gaps and risks.

## Next steps

To summarise the above, the ACMA will conduct the following activities to ensure it is well-placed to support beneficial outcomes of AI:

- > we will conduct research into how AI is being used, and can be expected to be used, across the communications and media sectors in the years ahead. This enables us to be responsive to potential risks associated with AI technologies.
- > we will explore with our stakeholders whether there is a role for the ACMA to further support the implementation of the AI Ethics Principles, and what mechanisms this could involve, after these have been piloted with industry.
- > we will continue to monitor advancements in AI, as well as international regulatory responses and domestic regulatory approaches to AI.

# Conclusion

AI presents wide-ranging opportunities, some of which Australians have already experienced through digital products and services. However, these technologies also present challenges that need to be managed to mitigate potential risks. There are challenges associated with the make-up of particular AI technologies (such as privacy and transparency concerns) and challenges relating to how AI is used and the changes this drives across industries and society (such as potential shifts in how information is distributed and consumed).

The regulatory environment is fast evolving. In Australia, the AI Ethics Framework, AI Standards Roadmap, the AHRC's Human Rights and Technology project and regulatory reform stemming from the Digital Platforms Inquiry are some of the key drivers of change.

The ACMA, as the regulator for communications and media services, will continue to be alert to how AI and related regulatory developments are reshaping industry and the impacts on consumers. This will ensure we are well-placed to respond to new risks or regulatory gaps as needed in the future.