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Public Policy
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21st Century Democracy? Artificial Intelligence and Public Policy

Thomas Clarke
Occasional Policy Paper 3

IPPG Occasional Policy Paper Series

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May 2024

Published by University of Technology Sydney,
PO Box 123 Broadway NSW 2007 Australia
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ISBN 978-1-7635824-0-8

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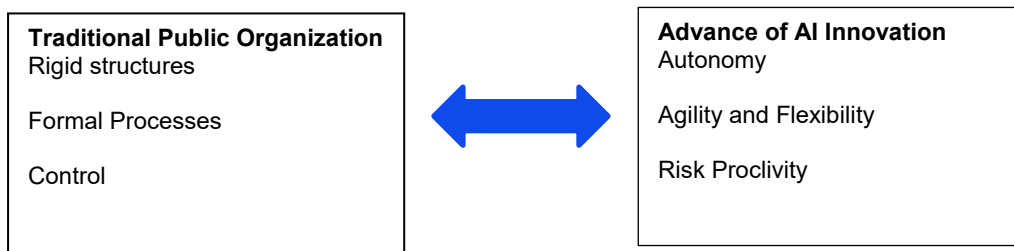
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Introduction: The Promise and the Threat of AI for Democracy

Generative Artificial Intelligence that can instantly create new text, images or other media out of the vast mass of existing digital data is potentially the most disruptive technology of this century. Artificial Intelligence (AI) is the new *wunderkind* of Silicon Valley. Ready to transform our lives, economies and societies, perhaps even more dramatically than the experience of the personal computer, Internet, smart phone, or Cloud. AI goes *deep* impacting upon our individual intellectual and creative capacity, and *wide* transforming how businesses, institutions and whole economies and societies will operate (McKinsey 2024).

AI has profound implications for democracy. It is not yet clear whether AI will serve primarily a liberating function informing the masses with access to intelligence that was once the privilege of the few, or on the contrary, be a principal tool of undermining democratic participation and reinforcing the power of entrenched autocracies. What future for democracy in the era of Artificial Intelligence? Undoubtedly the rapid advance of AI will have just as profound an impact upon public policy and administration as it will on the market sector. What needs to be worked through is *how* AI will be adopted in the public sector, what the barriers will there be to integration, and the impact on existing processes and routines (Selten and Klievink 2024). Already the rigid controls, formal processes and central control of public administration have changed under the impact of digital technologies, but the potential of AI for transformation of the public sector is far greater (Figure 1)

Figure 1: Tensions Between Public Administration and Artificial Intelligence



(Source: Adapted from Selten and Klievink 2024)

The pace and extent of AI induced organisational change in the public sector are elucidated by Selton and Klievink (2024:2):

- AI technologies are characterized by constant evolution and improvement of technologies, ensuring a constant development of AI systems capabilities and functionalities.
- AI's advances – particularly in the field of machine learning – are creating opportunities for the application of AI systems to many tasks within public organizations and to complex public decision-making processes.
- AI's ability to partly automate human decision-making and reduce human agency can change the legitimacy, transparency and accountability of public organizations and raise legal and ethical issues.

The Potential of AI to Radically Disrupt Democratic Institutions

More immediately AI has present and serious implications for the practices of democratic institutions. A Symposium in the *Journal of Democracy* on Artificial Intelligence and Democracy (2023), set out the profound issues posed by the rapid advance of AI, and the urgent need:

“To explore the challenges that artificial intelligence poses for humanity, and how democratic institutions can be marshalled to help meet those challenges. Will AI shower wealth on everyone, or will it merely deepen the inequalities that everywhere undermine democracy? Will it provide citizens in autocracies with new tools in the fight for democracy, or will it just give autocrats new ways to fend off democratic challengers? If AI becomes smarter than we are, will it put an end to mankind, merely put us out of work, or enable humanity to flourish as never before? And can democracy make the more benign outcomes more likely than the malign ones, or is the rule of the people ill-suited to a world in which earth-shattering technologies can be unleashed at breakneck speed with only the dimmest awareness and understanding on the part of citizens and their representatives? These are hard questions, but they are fast becoming the questions of our time” (Symposium 2023:109).

Artificial Intelligence inherently has the potential to both enhance and to disrupt democratic institutions and practices that have been patiently developed over the last two centuries. Whatever historical reversals and inadequacies democracy has experienced in different countries and regions of the world, including the devastating international rise of Fascism in the 1930s, democratic institutions have demonstrated a remarkable resilience and capacity for renewal over time. However, democracy has never faced a challenge as subtle and all-encompassing as Artificial Intelligence (*Foreign Affairs* January 2024). Generative AI will greatly amplify cybersecurity risks, and enhance immeasurably the capacity to flood any election in any country with misleading disinformation:

“Generative AI in the hands of adversaries could threaten each part of the electoral process, including the registration of voters, the casting of votes, and the reporting of results. In large part, responsibility for meeting this threat will fall to the country’s state and local election officials. For nearly 250 years, these officials have protected the electoral process from foreign adversaries, wars, natural disasters, pandemics, and disruptive technologies” (Easterly, Schwab and Conley 2024).

The technologies to generate synthetic text, speech, image and video have become increasingly accessible. We need better tools for identifying AI generated content, and better means of immediately dispelling this when required. There is a widespread fear of despotic foreign adversaries undermining the integrity of elections, not only at home, but in many other countries. In the US the Office of the Director of National Intelligence has stated that the scale of foreign activity targeting US elections is increasing: “The involvement of more foreign actors probably reflects shifting geopolitical risk calculus, perceptions that election influence activity has been normalized, and the low cost but potentially high rewards of such activities.” As the UK faces one of the most momentous general elections in recent history, the National Cyber Security Centre noted that “large language models will almost certainly be used to generate fabricated content, AI scripted hyper-reality bots will make the spread of disinformation easier, and the manipulation of media for use in deepfake campaigns will likely become more advanced” (Easterly, Schwab and Conley 2024).

The Erosion of Democratic Discourse

The fear of foreign interference in national elections is very real and has concentrated the minds of security and intelligence services internationally on how to limit this external threat. However human rights, democracy and freedom of speech are threatened also by the activities of autocrats *within* our countries. The potential of AI technology for the erosion of democratic discourse is very real. Generative AI has the capacity to flood the media, internet, and direct messages with misinformation, polarizing the population and undermining democratic institutions (Kreps and Kriner 2023). The pervasiveness and power of Artificial Intelligence suggests that it must be firmly embedded within the principles of democracy, the rule of law and human rights if it is to be accepted, and this democratic accountability begins at home:

“The principle of rule of law, democracy and human rights by design in AI is necessary because on the one hand the capabilities of AI, based on big data and combined with the pervasiveness of devices and sensors of the Internet of Things, will eventually govern core functions of society, reaching from education via health, science and business right into the sphere of law, security and defence, political discourse and democratic decision making. On the other hand, it is also high time to bind new technology to the basic constitutional

principles, as the absence of such framing for the Internet economy has already led to a widespread culture of disregard of the law and put democracy in danger.” (Nemitz 2018:2)

Kreps and Kriner (2023) highlight the main threats which Artificial Intelligence presents to the vital functioning of the democratic process:

- **Threats to Democratic Representation:** Elected officials rely on communications with their constituents to inform them concerning preferences towards policy choices. Generative AI electronic communications may allow malicious actors to produce vast amounts of false constituent sentiment, undermining the credibility of all written communications, and weakening the process of democracy, as policy making is increasingly entrusted to professional bureaucrats.
- **Threats to Democratic Accountability:** Holding elected government ministers accountable is a key part of democratic participation, but this depends upon timely and accurate information. The partisanship of the mass media is a long-standing problem in democratic societies, but generative AI poses a much greater threat to an informed citizenry and free and fair elections. AI can revolutionize disinformation campaigns, manipulating public perceptions of politicians, and undermining the democratic basis of elections.
- **Threats to Democratic Trust:** Misinformation micro-targeted to specific demographics may further erode the basis of understanding and trust in the democratic process. Confronted by increasing amounts of manipulating misinformation the whole basis of trust in democratically elected governments can be undermined. The social trust that holds society together is replaced by confusion and cynicism, which are fertile breeding grounds for authoritarian rulers. The Trump phenomenon in the United States is very much bound up in this political chaos.

The Potential and Limits of Generative AI Chatbots

The definition of what AI actually is can prove elusive because the technology has so much potential, and the unlimited uses of AI are only just beginning to be explored. The US Government offered a provisional basic definition of AI as:

“A machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations or decisions influencing real or virtual environments. Artificial intelligence systems use machine and human-based inputs to—(A) perceive real and virtual environments; (B) abstract such perceptions into models through analysis in an automated manner; and (C) use model inference to formulate options for information or action (GAO 2021:13).

There is now a hugely competitive race between the technology giants to capture the market with the most useful AI applications. The generative artificial intelligence chatbot, ChatGPT was launched by OpenAI in November 2022 and in just one month reached 100 million users, the fastest growing computer application in history. Facing widespread techno-euphoria Sam Altman (2023), CEO of OpenAI put things into perspective, tweeting on March 14, 2023, that GPT-4 “is more creative than previous models, it hallucinates significantly less, and it is less biased...[but] it still seems more impressive on first use than it does after you spend more time with it.”

While having profound potential, AI as with all human and technology systems is fallible and does have limits and weaknesses:

“At first, ChatGPT and the like inspired awe because they could perform tasks that previously only humans could do, such as coding, translating languages or writing poetry (James 2023). Moreover, they seemed human-like as they interacted with users. But they also inspired lawsuits, bans and public concern (Southern 2023; The Fashion Law 2024). These LLM chatbots are fallible — they frequently communicate incomplete, outdated, inaccurate or distorted information, as well as lies and disinformation (Pelk 2016; Sirimanne 2023). AI developers admit that they do not know yet how to fix this problem (hallucinations). Researchers attribute such hallucinations to problems in the underlying data sets and assumptions made by the models (Dziri et al. 2022; Khan and Hanna 2023)”. (Aaronson 2024:2)

The question on everyone’s mind is whether AI bots (short for robots) are cleverer than people? The adaptability, intuition and creativity of humans is greater than that of the algorithms that currently inform Artificial Intelligence. Children for example are exceptionally good and inventive adaptors (BBC 2023). For the present at least robots cannot replicate the full range of human intelligence, and many will argue AI could never replicate the quality of human emotional and aesthetic sensibility. (Which is why the striking Hollywood film scriptwriters in 2023 insisted they should still be in a job).

The Trajectory and Control of Technological Transformation

Artificial Intelligence has evolved over a 70-year trajectory of technological transformation involving many participants, from the early expert systems of last century, to robotics, and neural networks, towards the large-scale Big Tech dominated AI of today (OECD 2023; Clarke 2019; Lippoldt 2024). A cascade of innovation across diverse applications and sectors, inducing general-purpose technology, or “innovation of a method of innovation” acting as a catalyst to generate new innovations, building upon earlier knowledge. Essentially this is achieved by replacing routinised labour-intensive research, by research taking advantage of the interplay between large datasets and enhanced prediction algorithms (Cockburn, Henderson and Stern 2018).

But who controls this research process? Whittaker (2021) poses some worrying questions: “In considering how to tackle this onslaught of industrial AI, we must first recognize that the “advances” in AI celebrated over the past decade were not due to fundamental scientific breakthroughs in AI techniques. They were and are primarily the product of significantly concentrated data and computer resources that reside in the hands of a few large tech corporations. Modern AI is fundamentally dependent on corporate resources and business practices, and our increasing reliance on such AI cedes inordinate power over our lives and institutions to a handful of tech firms.”

The Concentrated Power of Big Tech

Examining the development of AI, what has occurred is a seizing of the potential of this technology by the hegemonic multi-trillion-dollar corporations that now dominate the world – the MAAAN (Microsoft, Apple, Amazon, Alphabet, Nvidia). We have come to know well the first four of the Big Tech corporations through recent decades as they have adapted their image, technology and mission to dominate increasingly large shares of global technology, data and revenues. Nvidia is the new kid on the block, the world’s leading developer and manufacturer of the most powerful graphics processing units (GPUs) used for professional AI applications, cryptocurrency and gaming and now used extensively in vehicles, robotics and all other advanced computing and networking (which includes AI). By 2023 NVIDEA held 80% of the global market for semiconductor chips (a market saturation even greater than the other MAAAN corporations). Nvidia is “reshaping how complex computing for diverse purposes gets done” (Reiff 2024).

Together these five giant corporations have determined the direction of the development of artificial intelligence:

“AI as we know it today is a creation of concentrated industry power. A small handful of firms not only control the resources needed to build AI systems—the cloud infrastructures, data, and labour needed to construct AI at scale—they have also set the trajectory for AI development by influencing AI research for over a decade (Ahmed et al 2023), increasingly defining the career incentives in AI research, metrics of prestige at leading conferences, and what counts as the leading edge for AI innovation. Today’s AI boom is driven at its core by the legacy of the surveillance business model, and its incentive structures are shaped by the existing infrastructural dominance of the small handful of firms who pioneered it (Zuboff 2019). This is what is driving the push to build AI at larger and larger scale, increasing the demand for resources that only Big Tech firms can provide and further cementing these companies’ considerable advantage” (West 2024).

The immense scale, economic activity and wealth of these trillion-dollar technological companies far exceeds the economies of all but the largest nation states (Table 1 & 2). The IMF estimated the total global economy at approximately \$105 trillion in 2023. Table 1 indicates that the Big Tech corporations are engaged in revenues of hundreds of billions of dollars and have market capitalisations in the trillions of dollars. By way of comparison in Table 2 the GDP of the economies of a selection of the medium sized advanced economies of the world is estimated at a few trillion dollars each, with government expenditure approximately 25% to 50% of this amount. These five economies are firmly in the largest 20 advanced economies of the world. There is no equivalence in this comparison of the relative scale of the giant tech corporations and government economic activity. However, it is a rough guide to the amount of economic resources the advanced governments have at their disposal relative to the giant corporations they face. The next 150 economies of course have far fewer economic resources. Is it surprising that national governments around the world may feel a little overwhelmed when confronting the task of regulating the financial and technological power of these giant corporations?

Table 1: The Financial Scale of the MAAAN Corporations 2024 (US\$)

MAAAN Corporations	Revenue	Net Income	Market Cap
1. Microsoft	\$218 billion	\$77 billion	\$3.08 trillion
2. Apple	\$383 billion	\$97 billion	\$2.77 trillion
3. Alphabet (Google)	\$296 billion	\$66 billion	\$1.95 trillion
4. Amazon	\$554 billion	\$20.8 billion	\$1.85 trillion
5. Nvidia	\$44.88 billion	\$18.9 billion	\$2.26 trillion

Source: Investopedia (March 2024)

Table 2: Gross Domestic Product (PPR) of Selected Advanced Economies 2023 and Government Expenditure per cent of GDP 2022

	GDP 2023	Government Expenditure % of GDP 2022
1. United Kingdom	\$3.87 trillion	44.30
2. France	\$3.86 trillion	58.34
3. South Korea	\$2.92 trillion	28.68
4. Canada	\$2.38 trillion	41.43
5. Australia	\$1.71 trillion	38.08

Source: Yahoo Finance (2024) IMF Datamapper (2022)

The global dominance of Big Tech firms involves technological and strategic attributes across three vital dimensions encompassing vast access to data, huge and phenomenally expensive technological infrastructure, and as strategic resources (Table 3):

Table 3: The Resources That Allow Big Tech Firms to Dominate AI

Data Advantage	By embedding themselves in the core infrastructure of a wide range of industries including government, health, education, consumer goods and financial services. This gives access to vast amounts of data on consumer behaviour. The forceful acquisition strategies of Big Tech companies have focussed upon expanding their access to data that gives them huge economic power.
Computing Power Advantage	Only the largest companies can run their own technological infrastructure, the Cloud and computing resources essential to building AI systems. AI start-ups must licence server infrastructure while they wait to be acquired by a big tech firm.
Geopolitical Advantage	AI systems and the companies that create them are increasingly becoming recast as strategic and security assets, conflating the continued dominance of Big Tech as synonymous with US economic prowess, ensuring the continuing accrual of resources and political capital to these companies.

Source: Adapted from AINOW 2023

The Regulation of Big Tech and AI

There are serious questions to ask in terms of building democratic practice into industry policy for AI. "Instead of naturalizing the idea that larger and larger scale AI is a self-evident public good, we must start by seeking a clear-eyed understanding of the ways that AI acts on our core social and economic institutions, and to whom AI's benefits and harms accrue. We need to look at which business models make

social benefit more—or less—likely, and what the impact is on workers, the environment, and democracy” (AINOW 2023)

We have to achieve the potential of AI to assist our economies and societies while simultaneously mitigating the existential threats that AI already poses for humanity:

“New technologies such as generative AI are poised to provide enormous benefits to society—economically, medically, and possibly even politically... But artificial intelligence also poses political perils. With proper awareness of the potential risks and the guardrails to mitigate against their adverse effects, however, we can preserve and perhaps even strengthen democratic societies” (Kreps and Kriner 2023:129)

International Policies on the Regulation of Artificial Intelligence

International policies on the regulation of Artificial Intelligence are developing, but remain in their infancy, and will take some years if ever they are to mature into effective restraint upon the more dangerous potential of AI technology. The European Union has proved the most pioneering and ambitious in regulatory intent in proposing the *EU AI Act* as a comprehensive artificial intelligence law. But initially this was aimed at high-risk rather than General Purpose AI. And as political debate has continued the need to future-proof the regulation beyond the concerns with contemporary technologies such as ChatGPT, Dall-E2, and Bard has become salient. A group of independent AI researchers laid out the wider terms of the debate, and the need for more expansive regulation:

- GPAI (General Purpose AI) must cover a wide spectrum of product development and not simply chatbots/LLMs (large language models that generate human language text).
- GPAI models carry inherent risks that need regulation at each stage of their development.
- GPAI must be regulated through the product cycle not just at the application layer.
- Developers of GPAI must not be allowed to relinquish responsibility, placing the onus on downstream actors who may not have the resources to mitigate risks.
- Regulation should avoid narrow evaluation of GPAI risk and should be subject to wide consultation with civil society (*Washington Post* 2023).

The *EU Artificial Intelligence Act* was finalized in December 2023.

In the US the regulatory process has commenced with an executive order and guidance from the Office of Management and Budget of the US Government, commencing an iterative process for the reform of AI governance. The focus is upon current harm rather than future risks, but the documents mandate hard accountability rather than voluntary standards, and commitments from companies, with the enforcement of civil rights protections to protect against algorithmic discrimination. The emphasis is upon guardrails to protect against the potential harm of systems such as hiring algorithms, criminal risk assessments, and medical AI devices. This is an iterative beginning, using government power to shape the market, and lay a framework for future legislation. But Congress must enact the legislation underpinning all this, which will be a complex and protracted process (Friedler et al 2023). In recent years Congress has attempted to hold the big tech companies to account, particularly with regard to the protection of children, but needs to achieve more than simply embarrassing the CEOs of the tech corporations. In the US a key consideration is the dominance of the US tech companies in the Nasdaq and NYSE, and how they have become bound up with conceptions of the prosperity of the American economy.

The UK seized the high ground of international regulation by organizing the first global summit on AI safety in November 2023 at Bletchley Park, where the Enigma code was cracked during the Second World War. Attended by leading representatives of international governments including Kamala Harris Vice President of the United States, and Ursula von der Leyen President of the EU and chief executives of the technology industry (many of whom professed that they too had concerns about the potential harm AI could cause). The immediate dangers of AI concentrated minds, with the Bletchley Declaration (2023) signed by 28 countries and the EU emphasizing the urgency of the tasks ahead and the need for international collaboration (Burki 2024):

“Artificial Intelligence (AI) presents enormous global opportunities: it has the potential to transform and enhance human wellbeing, peace and prosperity. To realise this, we affirm that, for the good of all, AI should be designed, developed, deployed, and used, in a manner that is safe, in such a way as to be human-centric, trustworthy and responsible. We welcome the international community’s efforts so far to cooperate on AI to promote inclusive economic growth, sustainable development and innovation, to protect human rights and fundamental freedoms, and to foster public trust and confidence in AI systems to fully realise their potential....

Alongside these opportunities, AI also poses significant risks, including in those domains of daily life... There is potential for serious, even catastrophic, harm, either deliberate or unintentional, stemming from the most significant capabilities of these AI models. Given the rapid and uncertain rate of change of AI, and in the context of the acceleration of investment in technology, we affirm that deepening our understanding of these potential risks and of actions to address them is especially urgent."

Australia was a signatory to the *Bletchley Declaration* and has set out the principles of a regulatory response (Productivity Commission 2024).

Artificial Intelligence Accountability and Implementation in the Public Sector

AI is already being extensively applied internationally in the public sector, which raises immediate questions of accountability. The US Government Accountability Office (2021:1) insists:

"AI is evolving at a pace at which we cannot afford to be reactive to its complexities, risks, and societal consequences. It is necessary to lay down a framework for independent verification of AI systems even as the technology continues to advance. Auditors and the oversight community play a vital role in the trust but verify equation, and they need a toolkit to evaluate this changing technology. More importantly, organizations that build, purchase, and deploy AI need a framework to understand how AI systems will be evaluated."

AI is evolving rapidly in the public sector as its capabilities continue to grow, and increasingly AI will be a main driver of digital transformation in public sector organisation. Selten and Klievink (2024) examine the capabilities the public sector will build to manage this growing potential:

- Because AI requires highly specialized knowledge, more organizations are going to build separate data science teams;
- The processes and routines by which innovation and knowledge developed by these AI teams can be integrated into operational departments.
- As AI impacts upon primary processes it is valuable to consider how more hybrid approaches such as cross-organisational partnerships and matrix structures may allow the leverage of AI technologies.

Such approaches may be useful in adopting other emerging technologies impacting upon public sector organisations including the Internet of Things, Digital Platforms, and cloud computing that also have the potential to transform governance. Concepts of dynamic capabilities and organizational ambidexterity will increasingly inform public sector management organization and practices (Selten and Klievink 2024:13).

AI is here and cannot be ignored by public sector bodies, but nor should it be regarded as something transcendental that has to be accepted as a solution to all organisational problems in all circumstances (as tech companies always like to convey). Selective and appropriate applications of AI will be required to enhance public sector performance. Innovation silos, lack of organizational alignment, and lack of expertise will need to be remedied. A coherent vision of the potential of AI in public policy is necessary, with boundary spanning across technical and operational departments, and continuous integration of knowledge into operational capabilities (Selten and Klievink (2024). Everyone will benefit from a smarter and better-informed public sector.

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