24 October 2024

Committee Secretary
Joint Committee of Public Accounts and Audit
PO Box 6021
Parliament House
Canberra ACT 2600

jcpaa@aph.gov.au

Submission to the inquiry into the use and governance of artificial intelligence systems by public sector entities

Infrastructure Victoria welcomes the opportunity to make a submission to the Joint Committee of Public Accounts and Audit *Inquiry into the use and governance of artificial intelligence systems by public sector entities*.

Infrastructure Victoria is an independent advisory body with 3 functions:

- preparing a 30-year infrastructure strategy for Victoria, which we review and update every 3 to 5 years
- providing advice to government on specific infrastructure matters
- publishing research on infrastructure-related issues.

Infrastructure Victoria focuses on infrastructure responses that address Victoria's economic, social and environmental needs.

In this submission we summarise findings from our commissioned report on *Digital technology and infrastructure productivity*. We also respond to elements of the terms of reference about future uses of artificial intelligence, its regulation and governance, and public sector capability.

Artificial intelligence can lift infrastructure productivity

In September 2024, Infrastructure Victoria released commissioned research exploring which digital technologies can lift the productivity of Victoria's infrastructure. We published this at www.infrastructurevictoria.com.au.

The *Digital technology and infrastructure productivity* report identified 25 technologies that could provide productivity benefits. It shortlisted 5 technologies that infrastructure managers could use by 2030. It used a specific application, or 'use case', for each of these technologies to quantify potential economic impacts.[1]

We found there are benefits from greater public sector use of digital technologies (see Table 1). This includes artificial intelligence. For example, machine learning and artificial intelligence can help the Victorian Government better design and build schools and kindergartens. This could provide Victoria

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[1] Arup, *Digital technologies and infrastructure productivity*, report to Infrastructure Victoria, 2024.

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with up to $20 million of benefits each year. Using artificial intelligence across the Victorian Government's entire infrastructure portfolio could provide $9 billion of benefits by 2055.[2]

Table 1: Potential benefits of digital technologies

Technology	Use case	Estimated impact ($2024)	
		Per annum	By 2055
Machine learning and artificial intelligence	Artificial intelligence and machine learning to support school and kindergarten construction	$20.6 million	$516.1 million
Robotics	Robotics for inspections and maintenance in the water sector	$140.2 million	$3.5 billion
Advanced Imaging	Ground penetrating radar and advanced image processing to reduce utility strikes	$44.4 million	$1.1 billion
Advanced data analytics	Building information modelling facilitating drawingless construction of public housing	$76.5 million	$1.9 billion
Geospatial technologies	Artificial intelligence enhanced geospatial hazard management for bushfires and floods	$45.9 million	$1.1 billion

Future uses of artificial intelligence

This inquiry will consider the purposes for which artificial intelligence is currently being used by the public sector and whether there are planned or likely future uses.

Our commissioned research noted that future uses of artificial intelligence by infrastructure managers could include automated procurement, design and project optioneering, and optimised asset management. This could reduce labour costs, increase efficiency, and reduce risk and contingency costs.[3]

Our commissioned research quantified the potential economic impact of 5 applications of digital technologies (see Table 1). Three of these 'use cases' involve artificial intelligence:

- Artificial intelligence and machine learning to support school and kindergarten construction.
- Ground penetrating radar and advanced image processing to reduce utility strikes.
- Artificial intelligence enhanced geospatial hazard management for bushfires and floods.

Legislative, regulatory and policy frameworks

This inquiry will consider the existing legislative, regulatory and policy frameworks that are relevant to the use of artificial intelligence and whether they are fit for purpose.

Our commissioned research notes that responsible use of artificial intelligence will depend on effective standards, regulation and governance. But these regulations should also encourage

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[2] Arup, *Digital technologies and infrastructure productivity*, report to Infrastructure Victoria, p 23, 2024.
[3] Arup, *Digital technologies and infrastructure productivity*, report to Infrastructure Victoria, p 21, 2024.

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investment and innovation. Effective regulation can help ensure that infrastructure designers and managers use artificial intelligence and other digital tools responsibly.[4]

Public sector capability to use artificial intelligence

This inquiry will consider whether the public sector has the internal capability to effectively adopt and utilise artificial intelligence into the future.

Our commissioned research notes many digital technologies require workers with specialist skills. For example, expert workers are needed to use artificial intelligence and geospatial technologies to detect flood and bushfire risks.[5]

Government employees that plan, design and procure infrastructure will need new skills to understand the opportunities of digital technologies. These skills will help them manage the use of digital technologies.

Infrastructure Victoria would like to thank you again for the opportunity to respond to the *Inquiry into the use and governance of artificial intelligence systems by public sector entities*. If you would like to discuss any of the information in Infrastructure Victoria's submission, please contact Eloise Modun, Director of Policy and Research, at ███████████████████████████████.

Yours faithfully

Dr Jonathan Spear
Chief Executive Officer

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[4] Arup, *Digital technologies and infrastructure productivity*, report to Infrastructure Victoria, p 24, 2024.
[5] Arup, *Digital technologies and infrastructure productivity*, report to Infrastructure Victoria, pp 39-40, 2024.