AI Action Plan for Australia

Input from IAPA (the Institute of Analytics Professionals of Australia)

Thank you for the opportunity to provide feedback and views for consideration for the AI Action Plan.

IAPA (the Institute of Analytics Professionals of Australia), as the only analytics association in Australia, is the peak body supporting those working in the analytics industry, including roles from data engineer, data analyst, data scientist and fields of expertise from descriptive analytics, predictive analytics, machine learning, neural nets and artificial intelligence. We provide these responses from input from those in the analytics community. It should also be noted that IAPA is part of the Australian Computer Society.

We would welcome further discussion on these topics as you progress the AI Action Plan.
Thank you,

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IAPA framework for this input

From its position within Australian industry, IAPA recognises that within the analytics maturity continuum, AI is part of advanced analytics, at the most mature, developed and sophisticated end of the continuum. While AI, as advanced analytics, can deliver exciting and ground-breaking insights and results, IAPA also recognises that a majority of organisations in Australia are not at this level of analytics sophistication and will need to build expertise, experience and technologies as part of moving along the maturity continuum towards AI. This recognition also highlights the path to AI involves preparatory activities and establishment of building blocks to enable the realisation of AI for more Australian organisations.

This journey towards AI has a two-fold benefit for business and Australia. Not only does it create the environment suitable for AI at some future time, it also delivers value and insights today and tomorrow from better use of increasingly sophisticated analytics.

At this stage we should also acknowledge some organisation's drive for AI comes from 'shiny object syndrome', however the real-world benefits of the journey towards AI will deliver competitive advantage in terms of better analytics – even if attaining AI takes time. As such, government support for increasing sophistication of analytics approaches (towards AI but perhaps as a precursor of AI) should not be discounted.

National Agenda:	IAPA response:
What is the role for government to support the uptake and use of AI technologies in Australia?	The Government's role is to ensure the raw ingredients for AI use are plentiful and accessible. Key to this is data skilled and data knowledgeable workers, access to funding, access to best practice in governance and ethics and an informed citizenry. Australia, in line with much of the world, currently has a skills gap for analytics professionals (eg. data engineers, data analysts, data scientists) and analytics savvy managers. Current skills gap projections shows that while data scientists and data analysts are in high demand and Australia faces a shortage of 14,000 over the next five years, what sometimes goes unnoticed is the 100,000 skills gap in the manager or worker level – those able to use data (and data analysis) to make better decisions. Tertiary institutions are unable to fill this gap quickly so other options of skills migration and reskilling workers will be needed. Government support for tertiary education, skills migration and reskilling programs creates the human capital required to activate the AI potential in Australian business. Specifically, government support of education programs at all levels is needed to drive a data driven and capable workforce of the future. With small business the largest employment sector (44% of total workforce), urgent consideration needs to be given to SME education. While the number of analytics and AI type courses at tertiary level has increased, there is still opportunity to enhance the quality and breadth of tertiary programs. The modern wave of innovation is heavily reliant on AI or data centric solutions. Government has a role to enable access to funding, information on governance, talent and speed-to-market expertise. Finally, government has a role with consumers and AI. Public campaigns and easily consumable information and education needs to be made available to enable consumers the opportunity to

	maximise individual value through the provision of their data and also understand the risks and trade offs from being a participant in any exchange of information. Additionally, a balance is needed between consumer protections and business compliance requirements so as to engender consumer trust without retarding innovation and ability to develop, access and use AI technologies in business.
What can be done to reduce barriers to AI adoption in Australia?	Barriers to AI adoption in business include awareness, capability, access to data and lack of relatable case studies. As discussed above, promoting the journey to more sophisticated analytics use not only delivers benefits to the business today but will also help to boost awareness of the potential and possible use cases of AI in the future. Again above, we outlined options to address capability barriers that incorporate support for tertiary institutions, skills migration, SME education and general business education. The development and use of AI is reliant on relevant datasets, data quality and scalable data access as raw ingredients. Government initiatives to improve access to government datasets, as well as creating frameworks for data sharing, do assist to remove barriers and should be continued.
Do we have the right vision for AI in Australia?	The vision "Australia develops and uses AI technologies responsibly to address national problems, build competitive businesses, and increase our collective wellbeing." implies an active AI sector but not a leading one on a global scale. With the mobility of talent and the compounding nature of AI advancement, there may be an argument that this vision is not ambitious enough to ensure that Australia is competitive in terms of economy and innovation on the global stage.

Business:	IAPA response:
How can we identify and unlock the value of uniquely Australian datasets?	Just as iron ore is less valuable than processed steel, the value of Australian datasets is realised when the data is processed into insights using the skill and expertise of analytics professionals. Extracting the insight from data and translating that into a format the business can use for decision making unlocks the value of the dataset. Additionally, c-suite, managers and business stakeholders need to understand data and it's role in decision making – data literacy – to appreciate the value derived from the data.
How can we lower the barriers to entry for businesses and government developing, piloting or assessing the value of AI while ensuring appropriate consumer safeguards?	Enabling access to technology that allows early prototyping and proof of concept exploration will help to reduce barriers to entry. Where lack of skills talent is a barrier, expanding the analytics professional talent pool to reduce the skills gap, scarcity and cost of talent will provide the expertise required for AI to more businesses, SMEs and government departments. Advice and guidelines for SMEs to fast-track their paths to utilisation of tools and access to data will also help in this important sector to the Australian economy.
How can government help ensure that AI research, including international collaboration, is undertaken safely, ethically and responsibly?	Universities have existing ethics frameworks, protocols and governance structures. There is an opportunity to collaborate with these organisations or even outsource to them to fast track Australia's maturity with regards to ethical and responsible approaches to data and its use.

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Research:	IAPA response:
What are the problems Australia is facing where the development and application of AI could provide long-term solutions and how could these be prioritised?	Australia compares poorly to the US (for example) with regards to linking research with commercial and/or government initiatives. Creating longer and deeper relationships between academic groups and external partners will fast-track knowledge sharing and provide focus on "issues that matter". As a country with a comparatively small and dispersed population, AI can help solve issues of distance as well as cost-effectively servicing smaller cohorts of consumers.
How can Australia best coordinate its national research effort around areas of national priority?	To address national priority areas, Australia needs to form collaborative working groups that include experts from healthcare, infrastructure and natural resources, along with analytics professionals and consumer representatives. These working groups are best placed to be able to prioritise effort to address the national areas.
How can we better support industry-researcher engagement?	Today, incentives are not strong enough for corporates to engage long term with researchers. Commercial incentives would ensure a longer term engagement and the best chance of research success.

People:	IAPA response:
What is the best way to ensure Australians have the skills and capabilities they will need for an AI enabled future?	The new literacy is data literacy. Real-world, industry-led education to cross-skill and upskill workers on data, how it can be used, and its role in decision making will give them the building blocks to better understand and operate within an AI enabled future. Upskilling in ethical use of data and AI including awareness of bias should be a part of this education.
What is the best way to ensure Australian businesses have access to the AI workforce they need for an AI enable future?	Australia, in line with much of the world, currently has a skills gap for analytics professionals (eg. data engineers, data analysts, data scientists) and analytics savvy managers. Tertiary institutions are unable to fill this gap quickly so other options of skills migration and reskilling workers will be needed. Government support for tertiary education, skills migration and reskilling programs creates the human capital required to activate the AI potential in Australian business. Reskilling programs will be vitally important as those displaced from roles due to advanced technologies like AI are unlikely to have the skills required for other roles (typically data literacy skills). Government support for data literacy programs, such as the one under development at IAPA, provide the worker with skills in using data and generated insights and then being able to communicate easily about the data and insights to the rest of the business. Some workers can then expand on these data literacy skills and gain elementary analytics skills to help fill the data-savvy talent gap, becoming "worker data analysts". Upskilling every staff member to a base level of data literacy raises the business's ability to mature their data and analytics capability quickly - taking advantage of data insights from analytics today, from advanced analytics tomorrow and creating a workforce ready for an AI enabled future.

Society:	IAPA response:
Is there more the government can do to support responsible and human centred development and use of AI in Australia?	Government can support human centred development and use of AI by fostering collaboration and understanding between all parties involved in AI. While we already understand the need to actively follow ethical guidelines and recognise and eliminate bias in the development of AI, we don't yet understand what societal implications future AI developments might surface. However developing a strong collaborative community between industry and government creates the foundation for working through implications to ensure Australia can take advantage of emerging technologies that propel the country, the business sector and economy forward in line with global counterparts, but in a way the respects the rights of citizens for fairness, transparency and ethical use of their data.
What approach should Australia take internationally to steward its values and commitment to the responsible and ethical use of the AI? How can Australia support its partners and neighbours in their efforts to make the most of AI?	Australia has an opportunity to lead by example. Supporting the local industry as outlined in this document – with funding, education, industry collaboration – helps to build our standing in AI. Developing our own capabilities in AI, the ability of our workforce to take advantage of AI and strong ethical principles provides the best and most credible platform to have a voice in global responsible AI programs and discussions – including when at the table at existing international organisations such as UN and conferences like Davos. Transparency, collaboration and cooperation with neighbours should be the hallmarks of our approach.
What security issues associated with AI systems should be considered?	There are other industry bodies and associations better placed to provide views on security.