15 August 2019

RE: Discussion Paper June 2019
Developing Standards for Artificial Intelligence: Hearing Australia's Voice
Standards Australia

ELECTRONIC SUBMISSION

To whom it may concern,

The Australian Payments Network (**AusPayNet**), the industry association and self-regulatory body for the Australian payments industry, welcomes the opportunity to respond to Standards Australia's discussion paper, *Developing Standards for AI: Hearing Australia's Voice* (**the Discussion Paper**).

Artificial Intelligence (***AI***) is a key transformation pillar for the payments industry. AusPayNet values the inclusion of a payments related case study in the Discussion Paper regarding fraud detection and prevention. AusPayNet supports the adoption of standards at both the international and domestic level. Standards assist in delivering consistent consumer outcomes, providing interoperability and security to a system. AusPayNet has addressed the specified questions in the Discussion Paper from the perspective of the payments industry.

1. Where do you see the greatest examples, needs and opportunities for the adoption of AI?

AI presents unique opportunities for the payments industry to streamline customer experiences, tailor service offerings and develop new service models. The 2018 World Payments report by Capgemini and BNP Paribas outlines use cases for the adoption of AI within payments. These include:[1]

- Conversational Commerce;
- Digital Identity;
- Customer retention;
- Commercial payments and collections; and
- Analytics and Machine Learning.

2. How could Australians use or apply AI now and, in the future, (for example at home and at work)?

There are a number of ways AI is being incorporated into the lives of Australians. These include:

- **Authentication Practices.** Facial recognition and voice are examples of AI applications currently used to authenticate payments. These applications provide a seamless customer experience that automates the purchasing process, and as such provide an example of successful adoption of AI by customers.
- **Fraud Detection.** Per the example in the Discussion Paper, AI is an effective tool in fraud detection and prevention. AI can reduce the number of false positives in fraud protection, therefore increasing conversion rates without adding friction to the payment.

[1] Table from World Payments Report 2018 by Capgemini and BNP Paribas

- **Data Insights.** There are a number of ways payments data can be used to provide insights into customer behaviour. Firms can generate insights into consumer purchasing behaviours, or more broadly gain an understanding of emerging macroeconomic trends.
- **Credit Decisioning.** AI can enable the more flexible and immediate provisioning of credit.

3. How can Australia best lead on AI and what do you consider Australia's competitive advantage to be?

The Gradient Institute is a great example of Australia's ability to have a competitive advantage. The Gradient Institute is a not-for-profit research institute whose purpose "is to progress the research, design, development and adoption of ethical AI systems." The Gradient Institute collaborates across universities, government and the private sector to research, provide services and educate people in ethical AI.

Australians have a track record of being early adopters of new technology. We have seen this trend in the payments industry, with Australians being the highest users of contactless payment cards in the world.[2] Despite this apparent trend in payments, the Deloitte Report *State of AI in the Enterprise*[3] states that "Fifty percent of Australian early adopters reported that AI helps them 'catch up' or 'keep up' with competitors, the highest rate of any country." The report also comments that the top two concerns are AI cybersecurity vulnerabilities [security] and making the wrong decisions based on AI recommendations [trust]. Therefore, standards would perform a valuable role in addressing these concerns.

Australia needs to develop a national strategy and frameworks to manage security and build trust in order to realise the social and economic benefits of AI. We note the report of the Australian Council of Learned Academies (***ACOLA***), which states that: "The safe, responsible and strategic implementation of AI will require a clear national framework or strategy that examines the range of ethical, legal and social barriers to, and risks associated with AI"[4].

4. What extent, if at all, should standards play in providing a practical solution for the implementation of AI? What do you think the anticipated benefits and costs will be?

Standards in AI can help build trust, and define safety and security requirements in order for Australians to continue to embrace AI innovation. Additionally, standards allow the interoperability of AI systems both domestically and internationally. The benefit of well-implemented, appropriate standards is greater security, certainty and confidence for all consumers of AI across the value chain.

Using credit decisioning as an example, ensuring decisioning frameworks are transparent and free from bias is critical to ongoing consumer trust. Standards can ensure both the interoperability and auditability over algorithms used to perform credit decisions.

5. If standards are relevant, what should they focus on?

AusPayNet believes that there is a role for standards at both the national and international level. This has been broken down as follows:

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[2] https://www.abc.net.au/news/2016-08-01/australia-embraces-tap-and-go/7676816

[3] https://www2.deloitte.com/au/en/pages/technology/articles/how-countries-are-pursuing-ai-advantage.html

[4] 2019 Horizon Scanning Report, The effective and ethical development of Artificial intelligence, an opportunity to improve wellbeing, Australian Council of Learned Academies

a. A national focus based on Australian views (ie Australian Standards)?

CSIRO Data61's Discussion Paper, *Artificial Intelligence: Australia's Ethics Framework*[5] acknowledges that principles always have their limitations and trade-offs will be necessary. Therefore, it is "important for government and society to give consideration to the degree of flexibility that designers of AI systems should have when it comes to making trade-offs" [between core principles and other priorities].

The payments industry welcomes standards to ensure the reliability of AI systems, by articulating clear chains of accountability. This is relevant for AI manufacturers and also between users, as AI applications are likely to interact with each other. This is especially critical as AI product liability laws are in their infancy[6].

It is critical that these initiatives interact and shape a unified approach and domestic strategy to support the adoption of AI.

b. An International focus where Australians provide input through a voice and a vote (ie ISO/IEC standards)

AusPayNet notes the references in the Discussion Paper to a number of international initiatives underway in relation to AI. These initiatives include work being conducted by ISO, ITU, IEEE, OECD, the European Commission and the G20. AusPayNet welcomes participation in international advisory groups in order to shape best practice and share learnings. The key objective is to continuously refine and improve the Australian approach to AI as it continues to evolve.

AusPayNet also notes the importance of developing and setting globally accepted standards and norms for the use and application of AI, as outlined by *ACOLA* and the World Economic Forum in their reports[7].

c. Any other approach

AusPayNet recommends consideration for a sectoral approach to developing standards. For example, in the construction sector, programmable machines can now design houses that are compliant with relevant building standards. This approach would give the ability to leverage regulatory constructs that exist within each sector.

6. What do you think the focus of these standards should be?

There is a role for standards at the technical, management and governance level. Safety, security and interoperability should be key focus areas for Standards, as AusPayNet notes that:

- Maintaining the safety, security and interoperability of AI systems is paramount to their long-term resilience and trustworthiness, in the same manner as they are paramount to the payments system; and
- Standards that are partnered with enforcement have a proven track record for promoting safety, security and interoperability.

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[5] https://data61.csiro.au/en/Our-Work/AI-Framework

[6] Jones Day commentary March 2018, *Mitigating Product Liability for Artificial Intelligence* https://www.freshfields.com/en-gb/our-thinking/campaigns/digital/artificial-intelligence/product-liability-in-the-ai-age/

[7] Ibid. 6 and the 2017 World Economic Forum's Global Risk Report.

a. Technical (interoperability, common terminology, security etc)

Common Terminology:

The inconsistent use of terminology has been a challenge for both manufacturers and users of AI. The development of design methodologies or tools for the management and governance of AI systems has been hindered by the absence of a common lexicon. In particular, it has been noted that 'fairness', 'accountability', 'transparency', and 'interpretability' have many definitions. Sometimes (e.g. in the case of 'fairness') there are many statistical implementations that are not compatible and require informed decisions about trade-offs[8]".

Using payments as a case study, significant consideration was given at the international standards level to define common terminology. This includes terms such as the cardholder, Issuer, Acquirer. These definitions became particularly important as service providers took on multiple roles.

AusPayNet considers that common terminology in the field of AI is a valuable first step towards creating a common set of standards, tools and frameworks.

Interoperability:

Interoperability is key for payment systems, and the use of AI within the payments industry will also require a high degree of interoperability not only between AI systems but also across jurisdictions.

We agree with CSIRO's comment that "International coordination with partners overseas, including the International Standards Organisation (ISO), will be necessary to ensure AI products and software meet the required standards"[9], is consistent with AusPayNet recommendations.

AusPayNet would point to AS2805, *Electronic Funds Transfer requirements for Interfaces, part 14 - Secure Cryptographic Devices (Retail)*, as a good example of a standard adopted by Australia, derived from ISO13491 that successfully provides interoperability for Australian payments while also allowing for domestic customisation. An example is the requirement to ensure card data details are encrypted in transit (*AS2805 part 9 - Privacy of communications*), published in 2000. The analogous PCI SSC requirement, SRED, (Secure Read and Exchange of Data) did not appear in the PCI PIN Transaction Security documentation until 2010.

Safety and Security:

As mentioned above, safety and security are paramount to the payments system. AusPayNet sees this as particularly relevant with the increased use of AI for IoT.

For that reason, the Resilience (safety and security) and Adaptability, Accessibility and Efficiency (interoperability) of the payments system have always been and will remain critical requirements. These requirements must be embedded in the use of any new technology, including AI, within the payments system.

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[8] From What to How: An Overview of AI Ethics Tools, Methods and Research to Translate Principles into Practices, Jessica Morley , Luciano Floridi , Libby Kinsey , Anat Elhalal, https://www.academia.edu/39135750/From_What_to_How-_An_Overview_of_AI_Ethics_Tools_Methods_and_Research_to_Translate_Principles_into_Practices

[9] 2019 Artificial Intelligence: Australia's Ethics Framework (A Discussion Paper), Data61 CSIRO, Australia._

b. Management systems (assurance, safety competency etc.)

As outlined in the Discussion Paper, there has been a proliferation of AI principles and code of ethics. While these principles are useful, there is a growing need to understand how to practically address the risks that are inherent in AI [10].

AusPayNet welcomes a framework that would:

- allow better understanding of potential threats, vulnerabilities, and risks that are inherent to AI; and
- consider practical mechanisms for the assessment and mitigation of such risks; and
- define a common approach to assess and mitigate AI risks. Consideration needs to be given to how the risk assessment proposed by CSIRO[11] and the algorithmic impact assessments proposed by Canada[12] or the European Union's trustworthy AI assessment list[13] all relate to each other.

c. Governance (oversight, accountability etc)

For AI, we note that there are three key aspects of governance that have to be considered:

- Data governance standards, in particular "a framework for generating, sharing and using data that is accessible, secure, and trusted[14]";
- Oversight of AI systems, as CSIRO's report emphasises the need to keep human in the loop and society in the loop; and
- Accountability for AI systems, in particular standards to ensure the reliability of AI systems and that help articulate clear chains of accountability.

AusPayNet also notes the effective role that self-regulation can play in order for industry participants to move ahead of direct regulatory intervention. APRA chair Wayne Byres commented "The optimal model of financial regulation – lowest cost, best outcomes – therefore requires self-regulation to play its part."[15]

7. Does your organisation currently apply any de facto standards particular to your industry or sector?

As the payments self-regulator, AusPayNet has a track record of supporting the safe and equitable adoption of new technology across the payments system. Examples include:

- The protect your PIN campaign during the roll-out of chip cards;
- The co-ordination of EMV at ATMs;
- The work to help develop frameworks/standards for open loop transport; and
- Accessibility at POS.

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[10] Ibid 8
[11] Ibid 11
[12] https://canada-ca.github.io/aia-eia-js/
[13] https://ec.europa.eu/futurium/en/ai-alliance-consultation/guidelines/2
[14] Ibid 6
[15] https://www.bankingday.com/nl06_news_selected.php?selkey=25256&stream=90

AusPayNet defines a number of rules, regulations and guidelines to ensure the interoperability, resilience and security of the payment systems it manages. Additionally, AusPayNet represents the payments industry on a number of national and international advisory and working groups in order to shape best practice.

AusPayNet incorporates standards as part of its rules. ISO9564 which relates to PIN has been very successfully adopted by the Australian payments industry, enforced by AusPayNet and mandated by the card schemes. However, over time, AusPayNet has moved away from mandating parts of this standard. For example, changing a PIN online is prohibited under ISO9564. This is now allowed under the AusPayNet code set. The key consideration for this variation to the standard is the improvement in the security of payment cards, shifting to EMV from magstripe. With greater security in the card form factor, a relative adjustment to PIN security could be managed by the payments system.

8. What are the consequences of no action in regard to AI standardisation?

While AI presents a number of opportunities for the payments industry, there would be a number of drawbacks without appropriate standards and governance frameworks in place. The World Economic Forum paper *The New Physics of Financial Services*[16] highlights the following issue: "The complexity of todays fragmented payments networks means automation frameworks will be increasingly necessary to facilitate interoperability". A layered approach, similar to the one adopted in payments, incorporating both standards (at both the national and international level) and governance models is critical to the continued adoption and trust in AI systems.

9. Do you have any further comments?

Regulators and self-regulators who enforce standards, especially in relation to emerging technologies such as AI, must have a process to support change and innovation over time.

We are happy to further discuss any of the items raised in our submission.

Your sincerely,

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[16] http://www3.weforum.org/docs/WEF_New_Physics_of_Financial_Services.pdf