Trade integration through digital infrastructure: Submission to House of Representatives Inquiry into Australian Agriculture in Southeast Asian Markets

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SUBMISSION:

We welcome the opportunity to submit to this important inquiry into Australian agriculture in Southeast Asian Markets. We are a team of academics at RMIT University, working on frontier technologies. Our research applies economics, law and public policy insights to the stack of frontier technologies including generative AI and blockchains. Collectively we have spent decades studying, using and building the technologies and business models of the digital economy.

The RMIT Blockchain Innovation Hub has a long track record in research and industry collaboration on the opportunities for frontier digital technology.[1] We have specifically produced a body of work on applications of frontier technologies in context of trade and supply chains, both in Australia and in the region. Much of this work is shaped by our deep industry collaboration. The breadth of our research informs our views on the role of frontier technologies acting as digital infrastructure for trade.

The core of our submission is to emphasise the importance of digital economic infrastructure (e.g. identity systems, payments, traceability) for trade and economic development. This digital infrastructure can not only lower costs to facilitate more trade, but

[1] See https://rmitblockchain.io/

also is a critical mechanism by which Australian agriculture can continue to develop a trusted premium market positioning in the region.

We structure our submission into two parts:

1. Opportunities through ASEAN digital trade agreement negotiations (including digital trade, authentication and payments)
2. Our industry and government research projects on digital trade infrastructure including in Victorian Native Foods and Botanicals, water markets and transportation infrastructure, and economic development.

1. Digital integration in ASEAN negotiations

The negotiation of a broad digital trade agreement through Association of South East Asian Nations' (ASEAN) Digital Economy Framework Agreement (DEFA) provides a significant opportunity for Australian integration in the region. Australia is a party to a number of digitally-focused free trade agreements in the region, including the Singapore-Australia Free Trade Agreement (which has a digital economy chapter signed in 2020).[2] DEFA negotiations are targeted to conclude by the end of 2025.

The majority of the proposed components of DEFA have significance for Australian agriculture's engagement with the region. These are: digital trade, cross-border e-commerce, payments and e-invoicing, digital ID and authentication, cross-border data flows and data protections, online safety and cybersecurity, cooperation in emerging topics (such as AI, blockchain, and quantum computing), and competition policy.[3] The intent behind DEFA is the development of a seamless trading bloc constructed through a deep regulatory and technical digital integration. Below we consider some of these.

- **Digital trade:** Australia should seek to ensure that ASEAN's work on seamless trade is consistent with and integrated to Australia's parallel ongoing work on seamless trade in the region. Likewise, should ASEAN nations establish multilateral approaches

[2] See the submission by the authors to the SAFTA Digital Economy chapter negotiation: Allen, Darcy W. E., Chris Berg, Sinclair Davidson, Aaron M. Lane, and Jason Potts. 'Submission to the Australia and Singapore Digital Cooperation Initiative Renegotiation of the Digital Economy Agreement of the Singapore-Australia Free Trade Agreement (SAFTA)', 22 September 2019.
[3] Boston Consulting Group. "Study on the ASEAN Digital Economy Framework Agreement," October 21, 2023. https://asean.org/wp-content/uploads/2023/10/ASEAN-Digital-Economy-Framework-Agreement-Public-Summary_Final-published-version-1.pdf.

to seamless trade, Australia should be prepared to adopt or join them even as non-ASEAN members.

- **Digital ID and authentication:** Digital identity systems are a critical component of digital supply chains. At their heart, any track and trace or provenance system needs to be built on an identity infrastructure; a set of mechanisms that link digital markers with material objects. Digital identity is often discussed as a question of standardisation, but cross-border identification faces additional challenges around verifiability and necessitates a broader set of innovations that use sensors (such as internet of things devices) to either stamp or detect changes in objects as they travel through supply chains. As the origin of many agricultural supply chains, Australian agricultural producers play an important role in the data that is captured into digital infrastructure, including the potential to play a leading role in standardisation and user experience for foreign consumers. Several of our research projects described in Section 2 below (e.g. Native Foods and Botanicals) have focused on the opportunities and remaining challenges here.
- **Payments and invoicing:** The rapid evolution of payments systems across the region and the globe has materially changed the environment for trade finance and settlement. Particular emphasis is being placed on real time international payments, digital asset tokenisation, and cooperation among central banks in developing shared integrations for central bank digital currencies (CBDCs). One priority in the payment system is interoperability. Interoperability describes the capability of discrete systems to communicate, share data, and interact.[4] Payment system interoperability is the critical barrier to efficient payments across borders. Such interoperability is both technical and regulatory; deeper integration in South East Asian agricultural markets will require policymakers to focus on regulatory barriers to financial exchange across borders (such as ensuring anti-money laundering and know-your-customer rules are able to interface with a plurality of banking systems) while technical interoperability may also need to be tackled at the central bank level. Furthermore, as Singapore's Project Guardian demonstrates, the opportunity for asset tokenisation across the region provides both new possibilities for financial integration between multiple markets but also new regulatory challenges.

[4] Berg, Chris. "Interoperability." *Internet Policy Review* 13, no. 2 (April 4, 2024). https://policyreview.info/glossary/interoperability. See also Berg, Chris. "Interoperability as a Critical Design Choice for Central Bank Digital Currencies." SSRN, August 31, 2022. https://doi.org/10.2139/ssrn.4205405.

2. Projects on digital trade infrastructure

We have many years of experience working on industry-focused research around digital trade infrastructure. We would like to bring to the committee's attention four of these projects. These projects collectively demonstrate the opportunity for digital trade infrastructure in Australia and in the region:

- **Native Foods and Botanicals Trade Export Infrastructure.**[5] Funded by Agriculture Victoria in the Department of Energy, Environment and Climate Action (DEECA) we hosted a First Nations Native Food Blockchain Workshop with approximately 70 practitioners, including Traditional Owners and native food business practitioners. The collaborative workshop explored the ways that blockchain infrastructure can facilitate Indigenous economic empowerment through new mechanisms of data storage and a transparent system for tracking the authenticity of Native Foods and Botanicals. Digital infrastructure enables better trusted data about Native Foods and Botanicals including their production processes, ownership and characteristics. More broadly blockchains can be used as a way to provide trusted information about Australian agricultural products, including to achieve premium pricing and expand to new markets.[6] The final report from this project is forthcoming.
- **Domestic Institutional Infrastructure Supporting Agricultural Industries: Water Markets and Transport**. Australian agriculture and its potential to expand into the region is also constrained by domestic institutions and infrastructure. We have completed several projects on the use of blockchain technology in Australian water markets and transportation systems.
    - Through the Northern Australia Cooperative Research Centre (2020) we worked with Civic Ledger to research and pilot a blockchain-based system in Mareeba-Dimbulah Water Supply Scheme (MDWSS) on the Atherton Tablelands in Far North Queensland.[7] The project integrated business and

[5] See https://rmitblockchain.io/bih-blog/blockchain-opportunities-for-vic-aboriginal-native-food-businesses
[6] See Allen, D. W., Berg, A., & Markey-Towler, B. (2019). Blockchain and supply chains: V-form organisations, value redistributions, de-commoditisation and quality proxies. *The Journal of the British Blockchain Association,* 2(1), 1-8. https://jbba.scholasticahq.com/article/7556.pdf
See Allen, D. W., Berg, C., Davidson, S., Novak, M., & Potts, J. (2019). International policy coordination for blockchain supply chains. *Asia & the Pacific Policy Studies*, 6(3), 367-380. https://onlinelibrary.wiley.com/doi/pdf/10.1002/app5.281
[7] See https://crcna.com.au/resources/publications/improving-water-markets-and-trading-through-new-digital-technologies/

operating rules using blockchain technology to examine how digital infrastructure can reduce trading costs, improve the efficiency of water trade processes, and increase water market transparency.[8]

- Funded by the Department of Environment, Land Water and Planning (2018) we examined the potential for blockchain technology for the Victorian Water Register. An internal report examined the opportunities and risks of digital infrastructure for water markets including improved accessibility, quality and timeliness of data.
- Through several projects with the Sustainable Built Environment National Research Centre (SBENRC) we researched the potential for (1) near real-time data to be securely exchanged between freight operators and transport agencies; and (2) the potential for blockchains and artificial intelligence to be used in transportation systems.[9] Our domestic digital infrastructure is critical to support Australian agricultural industries exporting into the southeast asian markets.

- **Infrastructure for Economic Development**. Funded by the Department of Foreign Affairs and Trade through the APEC Study Centre, we produced a report on the potential for blockchain in economic development in the region.[10] In the report we examined the ways that blockchain might act as supply chain infrastructure and secure new types of digital property rights. This infrastructure is critical to agricultural industries both in Australia and across the region. In 2018 we presented the report in Papua New Guinea to some parliamentarians and policymakers. Our research examines how new digital infrastructure might propel a new process of economic development of layered and competitive institutions, enabling our institutional systems to progress and improve.[11]

The core of our submission is to emphasise the importance of digital infrastructure for supporting domestic and southeast asian agricultural industries. That digital infrastructure is necessary not only to lower trade barriers (i.e. the costs of trade across borders) and

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[8] See https://www.rmit.edu.au/content/dam/rmit/rmit-images/college-of-business-images/research-images/research-impact-case-studies/Case%20Study%20-%20Improving%20Water%20Markets%20using%20Blockchain.pdf

[9] See Hargroves, K., Stantic, B., Allen, D., James, B. (2021). Introducing the 'FreightSync Roadmap'. https://sbenrc.com.au/app/uploads/2022/01/SBE037_FinalIndustryReport_373_28pp_FA-screen.pdf

[10] See https://www.apec.org.au/blockchain-for-development

[11] See Allen, D. W., Berg, C., & Potts, J. (2019). Blockchain technology and the theory of economic development. Available at SSRN 3333568. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3333568

enhance productivity but perhaps more importantly to develop a trusted premium market in the region, where high standards of quality, traceability, and sustainability can be maintained and showcased.

We would be pleased to provide any further information or testimony to the Committee if the opportunity arises.

Sincerely,

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