



THE FUTURE OF AUSTRALIA'S TRADE: A DIGITAL VISION FOR 2025



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This paper presents the combined vision of the Export Council of Australia (ECA), KPMG Australia and the Australian Digital Commerce Association (ADCA) for a digitally-facilitated international trade value chain by 2025.

Our shared vision is of simpler, lower-cost international trading system, enabled by the trust and confidence that comes from a secure digital platform.

This paper highlights the possible benefits to all participants in the international trade value chain based on a digital trading platform. It identifies some of the steps needed to make it happen, and outlines why the planning should be based on blockchain as the technology behind this platform.

THE VISION

Unlike today, where paper is the foundation for international trade processes, we believe that by 2025 Australia's international trade value chain can be both digital and secure. Data will flow between nations, but privacy will be maintained and commercially sensitive information will be secure.

Truly digital international trade would increase trade and stimulate the world economy. It would significantly lower costs and trade frictions, simplify existing processes and enable innovation. It would boost certainty for consumers, guaranteeing the quality, provenance and ethical standards of the goods they buy. It would provide greater certainty for importers and exporters, but guaranteeing processes, standards and supply chain reliability.

The benefits of a digital platform would be transformative:

- Simpler processes will mean more businesses are able to engage in international trade
- Value chains will operate more efficiently and with greater certainty
- Inefficiencies and challenges caused by inconsistent regulations as goods cross multiple jurisdictions will be reduced significantly
- Working capital requirements will be reduced as processing times (especially at customs, ports etc) are reduced compared to the handling of manual documents
- Waste (especially for dairy and other perishable products) will be reduced as goods transfer faster through ports to the end consumer/user, and
- Innovative new products and services will emerge around tracking, financing and insuring goods in most efficient and real time manner.

But the benefits will not be spread evenly. Digital trade will be the next frontier of trade diplomacy.

The first countries to link international trade platforms will enjoy major competitive advantages. Their trade processes will be lower cost, faster and more reliable. Their brands will be strengthened due to enhanced confidence in the provenance and quality of the goods. Their consumers will enjoy lower costs and have greater trust in the products they buy.

Now is the time for Australian government and industry to come together to plan for a digital trading future. Singapore, Hong Kong and private supply chains are already putting in place digital platforms. If we do not act now, Australia will miss the first mover advantages and, with it, the opportunity to shape the global system in a way that benefits Australian consumers and businesses.

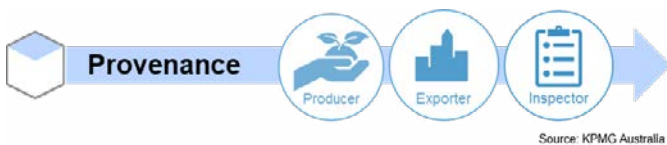
THE BENEFITS OF A DIGITAL PLATFORM

The scenario we outline below focuses on the benefits to international trade value chain participants in the exporting process. However, the benefits for participants in the import process, including consumers, will be just as significant. In both directions, international trade will be quicker, less costly, and less burdensome.

The Australian seller will have a digital profile establishing its credentials as an exporter.

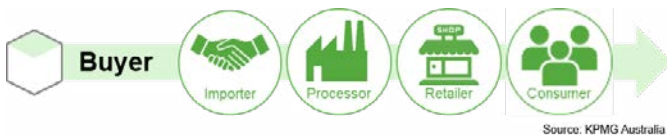
The profile will give key information about the business, and the specifications of the its goods or services—including the technical details, the price, and the volume available.

It will show the provenance of goods: the region a wine grape was grown, or the farm where a cow grazed.



It will show the seller's track record of previous orders—whether they were on time and to the required standards. It will contain the business's accreditations, licences and certificates (for example: ISO 9001, halal certification, Trusted Trader status, health certificates and many more), added by independent, authenticated, third parties.

It will show what the seller has done to secure its supply chain, including physical security, sourcing of inputs, and efforts to safeguard supply chains from slavery.



The buyer will also have a digital profile. Amongst other things, it will show authenticated information establishing its credentials as a trusted partner.

If the seller chooses to make its profile available, the buyer or consumer will be able to find it in searches of profiles of potential partners.

Both sides will be able to confirm market access, understand what certificates, permits or approvals are required for the international transaction to take place, and see the lowest applicable tariff (given the inputs to the goods).

If the seller's product meets the buyer's or consumer's needs, they will enter into a smart contract, where parties digitally commit to the terms and conditions of the sale.



The seller's bank will have access to the necessary information, including authenticated information about the buyer and seller. Based on this higher degree of trust in the parties to the transaction (and with less stringent due diligence needed), the bank could provide trade/supply chain finance at cheaper terms than would otherwise be the case, or provide finance where it previously couldn't.

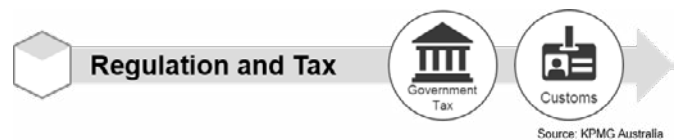


When the good is almost ready for export, the seller will be able to go to an online marketplace to identify a freight forwarder/customs broker that meets its needs. It will make this selection based on criteria such as the ability to maintain the goods in any conditions stipulated in the smart contract, as well as relevant accreditations (e.g. Trusted Trader, Known Consignor or DAWR registered export establishments).

The necessary information will be made available to the forwarder/customs broker and then logistics providers, giving them a far better understanding of the goods they will transport.

The goods will have a unique digital identification, such as radio-frequency identification (RFID), linked to a digital record with key information about the goods. The RFID, and internet-connected sensors in the container, would automatically track the goods throughout their journey, reporting back intermittently. They will report on any detours or tampering with the shipment, as well as on the conditions (humidity, temperature, etc.) the goods are in. Not only will this give the buyer and seller peace of mind, it will allow improved efficiency, reduce delays and manual intervention, and potentially lower costs.

The requirement for paper-based commercial trade documents, currently in use, will eventually become obsolete: packing lists, commercial invoices, bills of exchange, and many more. Instead, the supply chain participants will have digital access to the information they require.



Relevant Australian Government agencies will have digital access to the information they require, all drawn from data already in the system. The applicable agencies will know which sellers are sending what goods. They will see if the seller is a Trusted Trader or Known Consignor, and whether the appropriate permissions to export are in place. Border agencies will have far better information on which to assess risks.

As the goods reach a specified physical point, such as the port of loading ownership will transfer automatically in line with the smart contract.

(Depending on the type of good, the Incoterms, and other contractual terms, there may be monitoring to ensure goods have been maintained in specific conditions when this happens.) Payment will also happen automatically, taking away credit risk for the exporter.

When the goods reach the importing country and the port of discharge, that government will have access to the information it requires. It will see whether the seller holds the necessary certifications (health, free sale, etc.). It will see the certified amount of content that originated within the relevant trade zone, and automatically apply the lowest possible tariff rate. It will automatically see that the goods comply with the country's regulations, minimising non-tariff barriers.

Border agencies will know that the goods are the same ones that exited Australia, and recognising they have been through the adequate scrutiny in Australia, the goods will be processed with minimal intervention. There will be significantly less opportunity for inconsistent or corrupt border practices to delay the shipment.



When the goods reach the importer, the importer will know with certainty that the goods are the same that the exporter sent—they have not been tampered or replaced—and they have been kept in the appropriate conditions in transit. In case the conditions are not met, the pre-agreed insurance arrangements between the parties of specific to the goods will automatically be involved and applied. Having a temper resistant visibility of the movement of goods and their ownership, new and innovative type of insurance services could be implemented (real time insurance) to further optimise and reduce the cost of trade participant.

The consumer, too, will be able to trace this supply chain all the way back to the source, confident in the quality, provenance and ethical standards of the goods.

Trust and transparency have become key qualities and selling points for trade industry participants, forcing participants to look at ways to establish the authenticity of their products. A Trade Platform that connects to other jurisdictions would bring benefits to the Australian economy by maintaining “brand Australian” reputation, increasing demand for our products and support our sustainability credentials with compliance with social, ethical and environmental ambitions.

THE WAY FORWARD

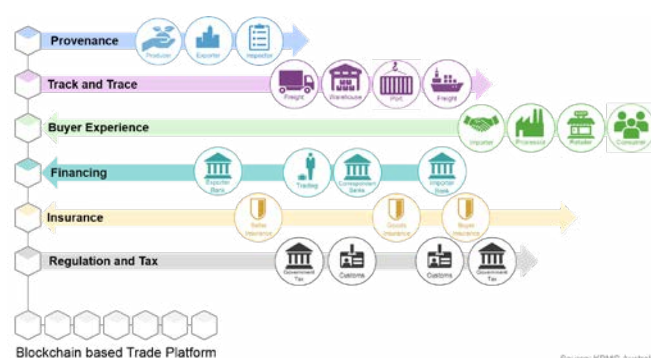
Some of Australia's major trading partners, including Hong Kong and Singapore, have already committed to digital platforms to enable trade. The UN Centre

for Trade Facilitation and Electronic Business is examining how blockchain could be used to facilitate trade and related business processes (see below for information on blockchain), as is the World Economic Forum.

By 2025, we anticipate that many of Australia's major trading partners will be using digital platforms for their international trade. If these trading partners can connect their trading platforms, the efficiencies generated will lead to major competitive advantages for their exporters. For countries not connected, their exporters will be at a disadvantage.

It is therefore prudent for Australia to start planning for a digital trading future. To do this properly will require extensive planning and consultation—both domestically and internationally.

Domestically, all trade participants—exporters, government, banks, forwarders, logistics, etc.—will need to agree a path forward. This will involve reimagining processes and ensuring all participants across the value chain can benefit.



Internationally, it is essential to ensure Australia does not do anything in isolation. It must seek to coordinate with likeminded countries, at early stages. And it must ensure its platform is interoperable with its trading partners.

All trade value chain participants must be partners in developing a digital trading platform. It must be a genuine collaboration between industry and government. But the Australian Government must play the leading role: its multiple agencies oversee complex regulations, and only the government can coordinate with trading partners.

INITIAL STEPS

A potential pathway forward is the Single Window for trade, which the Coalition committed to in the 2016 election. This Single Window could form the spine of a digital trading platform.

Since the government has not yet announced how it will proceed with a Single Window, it should use this as the basis for bringing together industry and government to agree a shared vision for a digital platform for Australia's trade.

The government should also seek information from major trading partners about their perspectives and plans for digital trade.

MEDIUM TERM

Government and industry should then develop a working group to flesh out the details of what a digital platform could look like. This would articulate the processes and roles of participants, and how they would benefit. It would consider the potential costs involved, and how such a platform would be funded.

Meanwhile, the Australian Government should start a dialogue about digitising trade with the governments of our major trading partners, as well as the WTO. This will ensure governments are aligned in their thinking and future platforms are interoperable.

International standards specific to connecting cross-border trading digital platforms should also be developed to ensure information assets can be shared, trusted and efficiently exchanged. Given its leading role in developing blockchain standards, Australia would be well placed to lead development of these standards.

LONGER TERM

It is only once these questions have been settled that Australia should decide on a particular technology to deploy. However, based on its benefits and the body of work currently underway, it is likely that blockchain will be the most suitable technology (see below). Any planning in the interim should be premised on blockchain.

Once questions around objectives, processes, roles, funding and technology are answered, Australia will be able to develop a digital platform that will enable low cost, frictionless international trade.

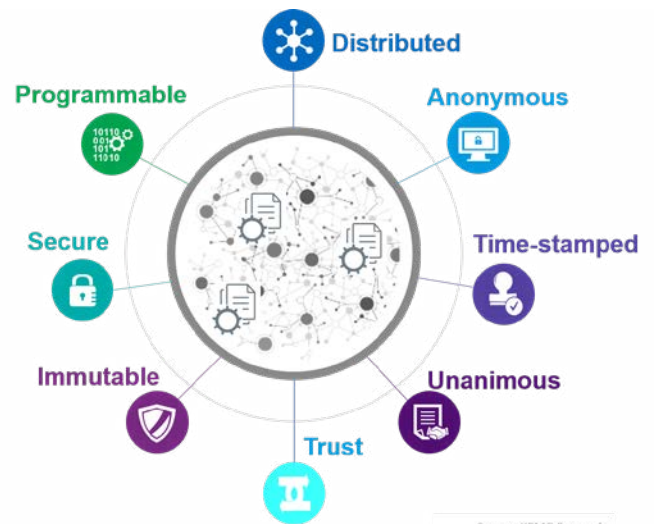
DELIVERING A DIGITAL TRADING PLATFORM

While a technology may emerge that eclipses the potential benefits of blockchain, there are no serious prospects on the horizon.

And given that Singapore, Hong Kong and the major global banks are going down a blockchain path—as well as the numerous start-ups that are already using blockchain for supply chain solutions—it is likely that blockchain will be the technology that underpins a digital trading platform.

WHY IS BLOCKCHAIN THE POTENTIAL SOLUTION?

A Trade Platform build on a secure distributed ledger (blockchain) provides a new level of transparency not available today, where authenticity and quality of asset is protected by encryption and a combination of additional features (time stamped for audit, temper resistant, unanimous and programmable).



Source: KPMG Research

Another of the major benefits of blockchain enabled Trade Platform is not having a need for a third-party intermediaries across the supply chain without losing users' trust. It creates a frictionless and faster business process environment, lowers costs and significantly reduces fraudulent interactions.

In essence, a blockchain is a shared, programmable, cryptographically secure and, therefore, trusted ledger which no single user controls and which can be inspected by anyone. Information can be added to the ledger, but not altered or deleted.

On blockchain, physical goods can be turned into digital assets, or "tokens", that is a proof of ownership. As "tokens" are exchanged through a value chain, additional data (such as the time they passed a certain point, or transfer of ownership) can be added. Through the shared ledger (blockchain), all parties have access to near real-time updates on movement of goods across the value chain.

The ledger is essentially temper resistant: any potential alteration will be fully visible to all authorised parties involved in the trade.

HOW BLOCKCHAIN WOULD ADDRESS THE TRADING PLATFORM INTEGRITY

As with all efficient and orderly markets, good governance of a blockchain enabled trade platform is paramount. Industry participants on such platform would have to adhere to certain rules, including on-boarding protocols, permissions, participant's rights, compliance with standards and legal and dispute resolution aspects.

Besides the industry participants involved in the trade activity, efficient trading platform would feature specialised participants whose role (utility) is to codify, distribute and manage the rules of the platform. The specialised participants would maintain their independence (not participating in any transactions or providing trade related services), support the platform compliance in a cross jurisdictional sense, help develop new industry standards specific to trade platform interactions and provide expertise in managing nation-wide and large scale industry initiatives.

Due to the inherent characteristics of blockchain, the trade platform ensures that participants can only see the information they are entitled to see. For example, the buyer and seller would have access to the bilateral transaction details; facilitators, like freight forwarders, could only see the information relevant to their roles; governments could only see the information they needed, but not information like the participant's bank accounts or detailed contractual terms. The government of the exporter would see minimal information about the importer, and likewise the importer's government would see minimal information about the exporter.

While obstacles exist in delivering on the Trade Platform vision, the long term benefits of proving the authenticity of products, improving cross industry collaboration and optimising business processes along the supply chain already presented compelling argument for government globally to support the creation of such platform.

HOW A TRADING PLATFORM COULD LINK INTERNATIONALLY

Three key components could create the foundation of a new style of trade corridor:

- 1 | **Collaboration Platform:** this is the technology that would connect cross jurisdictional trade platforms in order to facilitate trade and value exchange (digital tokens)
- 2 | **Trade Enablers:** these are newly developed platform standards, governance models, and codified legislations (regtech) that would bring additional security (besides the one provided by the technology) to the platform
- 3 | **Asset digitisation and on-boarding:** in order to enable bi-lateral and international value exchange, trade participants would have to endorse globally recognised participants who can certify and on-board cleared assets (tokens)

Connecting these stakeholder in a cross-jurisdictional platform with full governance and trusted assets is where a blockchain enabled trade platform would support not only a fully integrated trade but would add another dimension to trade diplomacy.



The first countries to link international trade platforms will generate major competitive advantages. Not only would their country's exporters face significantly reduced trade costs, but supply would be faster, smoother and more dependable. Enhanced confidence in a seller's ability to deliver would be a major competitive advantage.

HOW THE ARCHITECTURE OF A TRADE PLATFORM COULD SIT TOGETHER

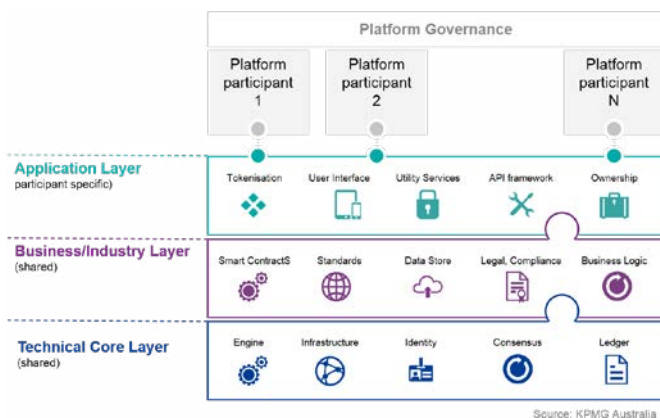
Creating a blockchain enabled trade platform will enable industry participants to enhance their asset visibility, optimize their operations and overall increase the speed of innovation. Organisation will be able to create new product and services by taking advantage of these new capabilities, like speed, accuracy and timeliness of information to all supply chain partners, faster finance flows, robust and cloud based commodity infrastructure, ability to scale and add new partners with no additional burden to reconcile information.

Such platform is scalable, distributed and well governed by solid standards and compliance rules. The architecture can be described along the following lines:

Core Technology layer: this is a shared architecture components across all industry participants (globally) with a permissioned distributed ledger and associated.

Business Process and Industry layer: this layer is a collection of business processes (via smart contracts), industry specific logic and legal/market specific rules to enforce an orderly market. Governance, standards, monitoring, audit and permissions are all considered here

Application layer: this participant specific layer comprises of system integration points and other utility services. Applications can be created by each participant or by third parties and on-boarded following the marketplace rules and standards. This layer enables participants to quickly create and deploy new business services or product without suffering diminishing returns as they scale.



EXAMPLES OF SUPPLY CHAINS ALREADY USING BLOCKCHAIN

While there are no major commercial supply chains built on blockchain yet, several start-ups are already delivering solutions to real-world problems based on blockchain, and major countries and industry players are closely looking at blockchain platforms.

Everledger has built a global, blockchain enabled solution that tracks and protects valuable assets, such as diamonds throughout their lifetime journey. It collects an asset's defining characteristics, history, and ownership to create a permanent record on a blockchain. This digital incarnation, or thumbprint, is used by various stakeholders across a supply chain pipeline to form provenance and verify authenticity.

AgriDigital is a global leader in software platforms designed to assist in the transaction and settlement of agricultural commodities and to manage supply chain risk. Through applied blockchain technologies and smart contracts, AgriDigital provides software solutions to simplify commodity management, revolutionise supply chain finance and bring traceability to agribusiness stakeholders. (See case study below.)

CBA and Wells Fargo collaborated with a blockchain startup (Skuchain) to execute a trade finance transaction for a shipment of cotton between the US and China.

The **Singapore** and **Hong Kong** Governments have both signalled their intention to develop national trading platforms that will usher in an international trading environment similar to the one we envision above. While neither have made a final decision to use blockchain, they have indicated this in the technology they will most likely use.

RECOMMENDATION AND NEXT STEPS

International trade and investment will be crucial to securing our country's future economic potential.

With more overseas opportunities than ever before, the challenge for Australia is to maximise the benefits of international trade and investment. To meet this challenge, Australia needs more trade and investment-capable companies to engage with these opportunities and trade modernisation is going to be a key component to facilitating trade growth in Australia, particularly for Small to Medium enterprises. Maximising the benefits of international trade and investment is the shared responsibility of all levels of government, industry, the businesses directly involved in import and export, and the businesses that support them. Building this "trade ecosystem" that includes trade modernisations requires commitment and dedication from all parties.



1 | Collaborative Design Thinking Workshops

A design thinking process, facilitated by Data 61 and supported by ADCA, ECA and KPMG, with key government, industry and the private sector and key participants in the trade value chain to test concept feasibility. Outputs include a feasibility assessment, concept document, pilot use case proposal and execution roadmap. These outputs to guide thinking on next steps. Elapsed time 6 weeks.

2 | International Standards Organisation Initiative

Support the proposal by ADCA and endorsed by Standards Australia for the formation of a Trade Facilitation Study Group within the ISO TC307 Technical Committee on Blockchain and Distributed Ledger Standards. This recommendation will be put to the ISO TC307 meeting in Tokyo in November.

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CASE STUDY: AGRIDIGITAL

A game changer for the industry, AgriDigital is the first ever integrated platform for the global grains industry, seamlessly connecting the supply chain from farmers all the way through to consumers.

Using AgriDigital, growers, buyers and site operators can manage their commodity contracts (buy and sell), orders, deliveries, transfers, invoices and payments from a single platform.

Currently a process often rife with double handling and manual data entry, which consumes precious time, AgriDigital's state of the art commodity management platform is designed to do all the heavy lifting. Transactions are seamless, with grower and buyer contracts and deliveries created in just a few clicks. Instant SMS and email notifications mean no more back and forth with counterparties and everyone is kept in the loop. Machine integrations with weighbridge and key instrumentation such as quality testing equipment are a core part of the AgriDigital value proposition so as to reduce error rates and mitigate against the risk of supply chain fraud.



A cloud based solution, AgriDigital offers an extensive range of rich data reporting and analytics, with users able to gain insight into their operations in real time. AgriDigital also integrates easily into existing accounting systems, streamlining business processes and reducing inefficiencies.

In December 2016, AgriDigital successfully executed the world's first settlement of an agricultural commodity on a blockchain between a farmer and a grain buyer, enabling real-time payment on title transfer for Australian grain growers thereby eliminating the counter-party risk that is inherent in current business processes. AgriDigital continues to take the lead in the experimentation and use of blockchain in agriculture recently partnering with CBH Group to commercially pilot how digital title can be created and used within supply chains for tracking ownership and custody of agri-commodities and undertaking ground-breaking provenance proofing for organic oats from point of delivery by the farmer to the consumer.

Blockchain technologies in combination with digital platform technologies like AgriDigital can enable more efficient and secure payment for agricultural commodities and goods, improve supply chain liquidity and financing and create paddock to plate transparency.

Initially focused on the Australian grains industry, AgriDigital plans to expand to North America in 2018 as well as introduce new commodities such as cotton and livestock.

