Digital Economy Council of Australia

DECA TRADE DIGITALISATION PROACTIVE POLICY ADVISEMENT TO AUSTRALIAN PARLIAMENT

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1. Introduction

Australia finds itself at a critical juncture in the evolution of global commerce. In recent years, the trade and finance sectors worldwide have experienced sweeping legislative and technological changes, marking a significant shift from past patterns - and methods of human progress.

As our trading partners shift toward a more digital economy—quickly adopting digital documents and processes, coordinating government and industry efforts more effectively, and embracing technology-driven solutions—Australia must truly modernise all aspects of its approach to trade infrastructure, and potentially its entire economy, to remain competitive and ensure future relevance and inclusion.

Today, international trade is still heavily burdened by paper-based processes[1] – an estimated 25 billion paper documents circulate in global trade transactions at any given time, leading to delays, costs, and fraud vulnerabilities, along with an enormous environmental footprint.

This Policy Advisement outlines a bold but pragmatic agenda to digitalise Australian trade, leveraging emerging technologies and legal reforms to make trade faster, cheaper, and more secure. In fact, we advise a broader embrace of digitalisation throughout all nuances of trade and into all other sectors - and an embrace that also supports the continuous assessment and implementation of Web3.0 technologies and emerging developments further beyond.

The Parliamentary Friends of Blockchain (PFOB) can play a crucial role in championing this transformation at this crucial moment in time, providing non-partisan leadership and coordination. The Digital Economy Council of Australia appreciates the support and engagement of the PFOB, and hopes that this Policy Advisement travels deep and wide to the heart of our nation's goals and ambitions.

[1] Paperless trade powers developing countries' access to global supply chains, Kati Suominen, Hinrich Foundation, Published 24 September 2024.

1.1 Overview

In a world where trade still drowns in paper and red tape, the push for digital efficiency has never been more urgent - and the WTO's Trade Facilitation Agreement (TFA), including Article 10's bold call to slash formalities, is lighting the fuse. From UN recommendations for public-private collaboration to cutting-edge standards by UN/CEFACT, and the ICC's Digital Standards Initiative, a global revolution is underway to streamline customs, digitise documents, and turbocharge interoperability. Australia's trade future hinges on this: embracing these frameworks to slash costs, boost transparency, and lead the charge in a digital-first economy, because in 2025, inefficiency isn't just a delay, it's a death knell.

Dive deeper, and the stakes get clearer: TFA's Article 10 isn't just about tidying up paperwork, it's a blueprint for dismantling trade barriers with tools like an interoperable approach to approximating a "Single Window" and raising global standards. All the while, UN bodies like UNCITRAL pave the way for legally binding e-records that sync with AI, DLT Blockchain, and Cloud tech. Australia's National Trade Facilitation Committee (NTFC) is under scrutiny - missing voices from insurance, finance, and Web3 could derail its TFA promises.

Australia's trade strategy draws heavily on the many international treaties, catalogued in the Australian Treaties Database (managed by the Department of Foreign Affairs and Trade), in which Australia is a signatory. The ICC's Digital Standards Initiative complements these signed treaties by pushing for a harmonised digital trade environment, bridging gaps in a fragmented global system. Though in the UK, Europe, and UAE these principles are actively showcased, the emphasis here rests on the treaties' transformative potential, offering Australia a foundation to build a seamless, technology-driven trade ecosystem aligned with an established, worldwide momentum.

Global trade is being transformed by digital innovation and interoperability through initiatives like the UK's Centre for Digital Trade and Innovation (C4DTI), DigitalTrade4.EU, and the WEF TradeTech Regulatory Sandbox in Abu Dhabi. C4DTI, hosted at Teesside University, advances UK trade digitalisation by supporting laws that enable digital trade documents and running pilot projects with nations like Singapore to help SMEs. DigitalTrade4.EU brings together European stakeholders to streamline trade finance, pushing for legal harmonisation and technical standards to boost digital trade.

The WEF TradeTech Regulatory Sandbox in Abu Dhabi tests innovations like AI-driven trade finance and blockchain-based traceability to make trade more efficient and inclusive. Industry bodies like the World Customs Organisation (WCO), Digital Container Shipping Association (DCSA), and International Trade and Forfaiting Association (ITFA) support these efforts with interoperable standards and DLT, aligning with frameworks like MLETR to enhance transparency and sustainability, helping Australia strengthen its trade system in the digital economy.

We are already wiring trade for a future where Distributed Ledger Technology (DLT) and interoperability aren't buzzwords, but lifelines. This isn't theory—it's the machinery of tomorrow's trade, and Australia's either on board or left behind.

Digitalising trade means enabling all trade-related documents and processes to occur electronically with the same legal validity as their paper counterparts. This includes electronic Bills of Lading (eBLs), invoices, permits, letters of credit, and so on. Web3.0 Blockchain and distributed ledger technologies (DLT) - in collaboration with traditional Web2.0 Cloud technologies - offer a ready platform for this shift by providing tamper-proof record-keeping, real-time verification, and decentralised trust.

- **What is Digitalisation?**
  Moving from exclusively physical processes to a secure digital representation or a fully "digital" presence is the key driver in this stage of our 4th Industrial Revolution. These three terms below must be understood to gain the best of the opportunity available:

  - "Digital" is tech-agnostic and can vary in robustness, depending on the chosen mix of platforms or technology utilised.

  - Web3.0 is elegantly programmable[2], decentralised, and therefore typically more robust and energy-efficient, internet system than conventional cloud systems - though not always achieving the same scalability - yet can be held to extremely high security and cryptographic standards.

  - Distributed Ledger Technologies (DLT) include an array of platforms some utilising Blockchain, some using Directed Acyclic Graph. Of these, some are more decentralised than others and arrays of network-level governance being incorporated and executed. DLTs are fundamentally different to Cloud SaaS.

[2] Google adds Blockchain Tech to Wallet, Shaurya Malwa, Coindesk, May 2025.

1.2 Why Bother with Trade Digitalisation?

By pursuing the recommendations outlined in this proactive policy advisement, Australia can secure an economic "digital trade dividend" .

The analysis of the Australian Time Release Study (2017–2021)[3] reveals specific metrics that demonstrate the cost benefits of digitalising trade processes, including processing time reductions (e.g., sea cargo cleared 1.8 days prior to arrival in 2021, air cargo from 13.4 hours to 2.1 hours between 2017 and 2021) and early reporting improvements. These metrics suggest significant cost savings by reducing holding times and logistics expenses. Broader industry insights confirm that digitalisation can reduce cross-border trade costs by up to 81% and significantly decrease processing times.

For Australian exporters and importers, especially smaller businesses, the burden of paper-based trade is a significant barrier to entry. The COVID-19 pandemic further exposed the fragility of paper-reliant supply chains, where closed borders and disrupted logistics made obtaining ink signatures and original documents a nightmare scenario.

In 2020, Australia's own National Blockchain Roadmap - and, further, the DoHA Technology Strategy both identified supply chains and trade facilitation as priority areas for technological innovation and application.

The benefits of moving to digital trade are enormous and well-documented. Now is the time to translate that vision into concrete action through policy.

Main drivers for change

- **Efficiency:** Simpler data-augmented workflows and approvals - processing of all trade and supply chain events, executed digitally. Improved workforce utility through the entire supply chain, leading to productivity gains by combined platform operations.
- **Economic Benefits:** Quicker settlements, enhanced cash flow, instant payments for better capital management. Evolving tokenisation opportunities, including provision for cheaper trade finance and derivatisation of this novel emerging asset class.
- **Better Social Outcomes:** Fraud mitigation, reduction in illicit black market trade while disincentivising economic black spots. More accessibility and opportunity to service SMEs; opportunity for trade-based derivative trading for all classes of investors.

[3] Time Release Study (2017-2021), Australian Border Force, Commonwealth of Australia, 2024.

- **Better Environmental Outcomes:** Replacing Paper with Data and reducing the overburden on forests to supply pulp for paper production. Reducing reliance on energy-consumptive cloud tech by supplementing Web3 solutions.

1.3 From Paper to Digital; Forms to Data

The global trade ecosystem is rapidly evolving, moving beyond the elimination of paper-based processes to a more transformative shift: replacing static forms - whether paper or digital - with a data-centric approach. The ICC Digital Standards Initiative (DSI) and UN/CEFACT are at the forefront of this change, with the DSI's Key Trade Document and Data Elements (KTDDE)[4] initiative standardising core data elements across essential trade documents to enable seamless, interoperable data exchange.

This aligns with UN Trade and Development's push for paperless and cross-border paperless trade, focusing on machine-readable data formats like JSON-LD vocabularies that prioritise real-time transparency, reduced fraud, and streamlined compliance over digital replicas of paper forms. Global trade is transitioning to a future where secure, tamper-proof data flows - rather than static documents - serve as the foundation, fostering a more efficient, transparent, and inclusive trade environment.

However, typical episodic, incremental and user-initiated custody-chain and trade participation requirements mean that "forms", in a sense, still play a role - but will be evolving into secured and notarised engagements, underpinned by interoperable streams of data rather than a dispirate trail of docs, ensuring trust and traceability in a modernised trade environment that is more efficient, transparent, and inclusive.

However, there is a balanced two-stream approach - when looking at Imports and Exports; a transition leveraging the "modular" approach, leading to a more workable cross-regional Single Window, might prove the most organic and holistically integrative starting point for our local digitalisation momentum.

With that foundation of cross-regional interoperability established, it is recommended that the focus on data-focused, live streaming, and internally framing national systems be prioritised for sourcing, development, and implementation.

[4] ICC Digital Standards Initiative launches complete framework for supply chain digitalisation, International Chamber of Commerce DSI, 2024.

2. Key Benefits of Trade Digitalisation

Australia's trade ecosystem stands at a pivotal moment where digital transformation, driven by distributed ledger technology (DLT), cloud computing, and artificial intelligence (AI), promises to enhance transparency, efficiency, and scalability across international and domestic markets.

DLT enables real-time traceability and fraud mitigation by tracking goods from origin to destination, reducing illicit trading (e.g., of tobacco), and ensuring ESG compliance through immutable ledgers and verifiable credentials like the Verifiable Legal Entity Identifier (vLEI) while Digital Product Passports (DPPs) embed sustainability data to align with global standards, such as the EU's DPP initiative.

These advancements can modernise compliance checks (KYB, KYC, KYT) and eliminate single points of failure, fostering trust and regulatory adherence in trade operations.

A combination approach of centralised cloud services, decentralised DLT, and AI can be used together to boost productivity, predictability, and financial fluidity. Cloud infrastructure offers scalable, accessible platforms for trade document management, while Blockchain (& Graph) DLT's facilitate tamper-proof data. Further, distributed ledger technologies provide smart contracts to streamline reconciliation, auditing, and automation - enhancing operational agility.

For cash flow, real-time settlement (RTGS) via DLT accelerates transactions - and tokenisation bridges the trade finance gap by unlocking cheaper capital, additionally providing secondary markets for trade finance derivatives to emerge, due to their customary low default rates.

Together, these technologies have received appropriate scalability assessments by diverse technical experts in each field, so as to ensure they meet the practical demands of modern trade, positioning Australia as a leader in efficient, sustainable, and inclusive global commerce.

2.1 Provenance, Real-Time Traceability, Auditability, and Fraud Mitigation

In an era of complex global supply chains, Distributed Ledger Technology (DLT) and enterprise-grade blockchain solutions are transforming international trade by delivering

unmatched real-time transparency, robust security, and streamlined efficiency, ensuring goods are tracked, verified, and trusted from their origin to their final destination.

In a world grappling with illicit trade and complex supply chains, verifiable credentials like the Verifiable Legal Entity Identifier (vLEI) and Digital Product Passports (DPPs) are revolutionising global commerce. Powered by blockchain and AI, these tools enhance transparency, ensure compliance, and combat counterfeits, fostering trust and sustainability across industries.

- **Real-Time Transparency and Auditability:** Track goods from origin to destination, reducing forgeries and fakes via real-time facilitation by DLT technology. Allows comprehensive and high-confidence audit trails, date-stamped into tamper-proof enterprise-grade blockchain.

- **Implementing Immutable Ledger:** Enterprise-grade DLT and blockchain implementations have no single point of failure, ensuring security for paperwork and automated workflows; No back doors and cryptographically hashed. Every RTGS transaction on the DLT is timestamped and auditable in real-time with confidence grounded on the ledger's immutability.

    - **Exporters:** Transparency sets Australian goods apart, providing real-time verification for international buyers.
    - **Importers:** Faster, secure verification at entry points cuts customs delays and prevents costly counterfeit issues.

By adopting Distributed Ledger Technology and verifiable credentials, Australia can transform its trade ecosystem, reducing regulatory costs by $4.3 billion, streamlining 43-hour border compliance processes, minimising 80% of transaction costs, and curbing illicit trade while ensuring ESG compliance.

- **Impact:** *Documentary and Border Compliance Delays:* According to the World Bank, completing documentary and border compliance processes for a typical Australian sea shipment takes an average of 43 hours[5].

- **Impact:** *Regulatory Costs:* Efforts to simplify Australia's trade system aim to save approximately $4.3 billion in regulatory costs, indicating substantial expenses associated with current processes[6].

- **Impact:** *Fragmented ICT Systems:* A study found that Australia's 145 cross-border trade ICT systems are duplicative, outdated, and fragmented, leading to inefficiencies and increased costs[7].

[5] STS Public Consultation Paper June 2023
[6] Trade Simplification aims to save 4.3 billion in Regulatory Costs, Tom Burton, AFR, September 9, 2022.
[7] STS Progress and Opportunities, Austrade, Commonwealth of Australia, August 2023.

- **Impact:** *Trade Transaction Costs:* Indirect costs, including delays from administrative procedures, can account for about 80% of total trade transaction costs[8].

- **Impact:** *Reduction in Illicit Trading:* e.g. human trafficking, forced labour, tobacco.

    - **Compliance checks:** Know-Your-Business, Know-Your-Client, and Know-Your-Transaction. KYB, KYT, and KYC work together to verify the legitimacy of businesses, monitor transaction integrity, and confirm customer identities, ensuring trust and regulatory adherence in digital trade.
    - **Verifiable Credentials and Digital Product Passports:** Where practical, Zero-Knowledge proof DLT approach (SSI) over centralised, *Legal Entity Identification* registry models. Encouraged by the emergence of the Verifiable LEI product (vLEI).
    - **ESG Compliance:** Alignment with ethical and environmental benchmarks, potential avoidance of goods going straight to landfill or becoming unsellable goods at ports.

Verifiable Credentials and Digital Product Passports (DPPs)

The *Global Legal Entity Identifier Foundation* (Financial Stability Board in 2014 Switzerland) is tasked with rolling out the Legal Entity Identifier (LEI) system globally. Its mission is to boost trust and clarity in financial markets by working with partners to deliver open, reliable LEI data, making it easier and cheaper for everyone to figure out who they're dealing with, while also helping tackle financial crime[9].

LEI data is collected by local issuers and aggregated into a publicly accessible Global LEI Index, hosted online by GLEIF, likely using cloud technology. Whilst the information is not sensitive in itself - the openness could be exploited through aggregation risk and metadata exposure.

More recent advancements include the evolution of the ***Verifiable LEI*** (vLEI,2020), which is a digitally verifiable credential tied to an LEI, issued and managed through a blockchain-based ecosystem called the GLEIF Trust Chain (powered by the KERI—Key Event Receipt Infrastructure—protocol). Unlike the standard LEI, which is a static identifier stored in a federated system of Local Operating Units (LOUs), the vLEI is a dynamic, cryptographically signed credential that entities can hold in digital wallets and

[8] Chapter 3: Trade Facilitation, Parliament of Australia.
[9] Australian Payments Network, David O'Mahony, Business Analyst, AusPayNet (LEI Blog November 2023).

use to prove their identity instantly and securely, without always relying on centralized databases.

Verifiable credentials (Legal Entity Identifiers; LEIs) & Digital Product Passports (DPPs) allow exporters and importers to provide verifiable compliance data, speeding up customs clearance and proving sustainability claims. Australia is embracing digital product passports to enhance transparency and sustainability across industries, such as agriculture, manufacturing, and mining.

DPPs embed detailed information about a product's materials, manufacturing processes, and the United Nation's Environmental, Social, and Governance (ESG) footprint. Initiatives are underway to align Australian practices with global frameworks like the EU's Digital Product Passport initiative.

Digital Trade can be seen as a tool against bad-faith actors, criminal entities and illicit and counterfeit trade as Australia faces massive losses and risks across multiple industries due to a flawed trading system.

Estimates of the costs of illicit trade include:

- Illicit Tobacco $2.7 billion lost in duty evasion (ATO 2023)
- Software Piracy US$428 million loss to manufacturers (A-CAPP MSU)
- Textiles, Clothing, Footwear $300 million annual losses (Australian Institute of Criminology)
- Counterfeit Toys $40 million worth seized in 2023 (Australian Border Force)
- Pharmaceuticals (global impact) $30–$80 billion annually (PharmOut)
  Counterfeit Electronics (global) $7.5 billion lost annually (Trenton Systems)

Together, AI and blockchain DLT - orchestrating verifiable credentials and product passports - protect supply chains against criminal entities, fake goods, illegal components, and unsafe products. Digital trade tools help importers and exporters prove product authenticity, while protecting consumers, and ensuring best practices.

2.2 Productivity and Predictability

- **Centralised Cloud Services:** With Trade-related operations - such as document management and data storage - on the cloud, businesses can access information from anywhere, anytime, boosting operational agility.
- **Distributed Ledger Technology (DLT):** Trusted, immutable, tamper-proof data that streamlines real-time reconciliation and auditing - instantly verifiable by all parties; smart contracts programmability gives power to the automation.
- **AI and DLT Automation:** Improves responsiveness, forecasting, and operational "dovetailing" via maximising resource efficiency. Makes for a

more productive and effective workforce freeing people for higher-value tasks, and creating new job opportunities rather than eliminating.

Cloud services and DLT create a powerful synergy for increasing efficiencies and productivity. The cloud can provide the infrastructure to host and scale DLT networks, while DLT ensures the integrity and traceability of the data flowing through them. In practice, this might look like a cloud-based trade platform where exporters upload digital documents to a blockchain, importers verify them in real time, and banks process payments—all without the many drawbacks of paper-based systems.

The scalability of the technologies and tech-enhanced platforms should be carefully evaluated for each system and process need. Similarly, all other functional attributes seen as practical essentials for modernising trade practices should be thoroughly assessed by a deep and diverse assembly of technical experts.

2.3 Faster Settlements and Cash Flow

The DLT approach facilitates innovative blockchain solutions driving faster trade settlements and enhanced cash flow. Further, it is revolutionising trade finance by leveraging real-time processing, lending tokenisation - subsequently providing secondary market opportunities to address and support global financial inefficiencies across developing economies.

- **Real-Time Settlement (RTGS):** Speeding up transactions liberates working capital. DLT Programmability and IoT integrations allow for Just-in-Time Insurance options.
- **Tokenisation of Trade Finance:** Closing the 2.5+ trillion US dollar “Trade Finance Gap” by creating disintermediated, aggregated finance options on Blockchain DLT - bringing more access to cheaper capital to those most in need (see the International Trade & Forfaiting Association’s Trade Finance Distribution initiative since 2022).
- **Secondary Markets:** Trade finance is historically low default, allowing potential derivative products to flourish in secondary markets. Securitisation of markets on Blockchain DLT, can be driven by regulatory compliant tokenisation market places.

2.3 Supply Chain Readiness: The Foundation for Digital Productivity

To unlock the full value of AI, cloud, and digital platforms, businesses must first understand their current supply chain capability. A national Supply Chain Maturity

Assessments (SCMAs) program will help organisations evaluate readiness and identify areas for improvement before adopting advanced technologies.

Why it matters: Companies must assess their current state before investing in digital systems. Without a clear picture of current-state capability—such as data quality, collaboration, and process maturity—technology investments risk underperformance or failure. Maturity assessments ensure government funding is targeted, measurable, and scalable.

DMS Pty LTd Statement: "We've worked with Australian businesses across key industries.
One thing is clear, real transformation begins with understanding. That's why we believe every digital journey must start with a supply chain maturity assessment—because if you can't measure where you are, you can't plan where you're going".

Government Recommendation:

- **Fund** *SCMAs* (e.g. up to $20,000) for SMEs and mid-sized firms. **Link** *SCMAs* to eligibility for technology implementation support.

Supported by:

- AI Adopt Program. Funding for Artificial Intelligence (AI) Centres to help SMEs adopt AI technologies[10].
- Modern Manufacturing Strategy[11].
- Case study: CR Mining's journey illustrates the importance of starting with a structured maturity assessment. With DMS's support, CR identified fragmented systems and transitioned to a centralised planning ecosystem, improving forecast accuracy and achieving 95% DIFOT. When scaled appropriately, these are the transformation outcomes government-funded SCMAs can enable for smaller businesses.

[10] https://business.gov.au/grants-and-programs/artificial-intelligence-ai-adopt-program
[11] https://www.industry.gov.au/publications/make-it-happen-australian-governments-modern-manufacturing-strategy

3. Tech Implementation: Right tool for the right job

Australia's trade ecosystem is increasingly requiring digital transformation; fostering interoperability between fragmented systems—spanning identity management, trade documentation, payments, and logistics—is vital for efficiency and inclusivity.

It is DECA's position that a collection of infrastructure, platforms and approaches is likely to be the practical landscape that this Digital journey takes us on - therefore an openness to interoperability and organic evolution might best serve the overall process.

It is certainly noted that an over-reliance on a centralised cloud system approach could be seen as a cul-de-sac of opportunity with limited de-risking facility.

Silo Interoperability and the Case for a Patchwork Integration Approach: We outline various cloud, blockchain and distributed ledger technology (DLT) approaches, including permissioned/permissionless networks, public/private networks, hybrid platforms with subnet functionality, and interoperability mechanisms such as cross-network bridges and Layer 0 protocols, providing a foundation for more thoughtful selection of the Tech available - and more meaningful legislative reform, especially with respect towards the Digital Asset sector - to enable our nation to implement scalable, globally compatible trade systems whilst aligning with global standards and best fit for our country's needs.

- **Permissioned v Permissionless Networks:** At the risk of encouraging siloed and censored centralised networks, permissioned networks create gate-keeper level security in a closed loop of participants, enforcing trust. Permissionless networks represent far less "locked-in" approaches to networking but require more compliance checks to ensure verifications and trust to be established by other members of such a network.

- **Public v Private Networks:** Public networks, often built on DLT like Ethereum Virtual Machine protocols, excel in transparency, enabling blockchain-based tracking of paperless trade documents to reduce export fraud. Whilst they can still permit privacy, confidentiality and anonymity within programmed parameters (if set up with that intent), private networks, using DLT such as Quorum or Hyperledger Besu, excel at that aspect and ensure confidentiality and sensitive trade data, crucial for financial security. Cloud supports scalability, and AI boosts processing and fraud detection.

- **Hybrid DLT Platforms:** Hybrid platforms blend the strengths of permissioned and permissionless, public and private networks, offering flexibility to address diverse trade needs. Technologies like the XDC Network exemplify this model, with its Subnet functionality allowing users to create private, customisable blockchain networks within the public XDC ecosystem, offering enhanced privacy and control. Other DLTs, such as Corda and Hyperledger Fabric, also fit this hybrid paradigm, offering modular private channels for sensitive operations while connecting to public networks for market visibility.

- **Bridges, Layer 0s, Omnichains for Interoperability:** Achieving interoperability across trade silos—whether for identities, credentials, documents, or payments—requires advanced mechanisms like bridges, Layer 0 protocols (specific tools like Quant's Overledger APIs), or OmniChains (like LayerZero). Bridges connect disparate systems, enabling, for example, a verifiable credential issued on a permissioned identity network to be recognised on a public paperless trade platform, streamlining cross-border verification. OmniChains, exemplified by protocols like *LayerZero*, envision unified ecosystems where assets, data, and identities move seamlessly across all network types, potentially revolutionising trade facilitation by linking Australia's domestic systems with global markets.

A Question of Scalability: When considering scalability and network implementation for the high-volume international and domestic trade sector, selecting appropriate architectures is critical to ensure efficiency and adaptability.

Permissioned networks, such as Hyperledger Fabric, provide controlled scalability for regulated, high-throughput transactions like RTGS payments, emphasising security and compliance. They tend to inflict higher costs to clients and prone to creating censorship-vulnerable silos.

Permissionless networks, like the Lightning Network and standard Ethereum Virtual Machines, scale broadly via open access, supporting extensive systems for verifiable credentials or trade document tracking - though some of these may struggle with peak loads (that said, networks that have EVM subnet functionality, or the acyclic graph protocols, typically excel in terms of scalability).

Public networks enhance visibility - lower costs and broader participation - for trade ledgers, while hybrid DLT networks, including that of XDC Network's *subnets*, offer secure, customisable scalability for sensitive operations like supply chain management and identity.

Interoperability tools—bridges for system connections, Layer 0 protocols for multi-chain integration, and OmniChains for unified flows—boost scalability by distributing volume

across networks. Additionally, high-volume systems increasingly rely on centralised cloud infrastructure for elastic scaling and other non-blockchain DLT like Directed Acyclic Graph (DAG) protocols, which include Hedera Hashgraph and IOTA, which process transactions concurrently to handle all forms of required transactions highly efficiently.

Special note on Data Interoperability: Further, on the subject of interoperability - especially in terms of data sharing across industries - the Department of Agriculture, Fisheries and Forestry has publicly consulted[12] on these matters. More clarity needs to be shed on this matter of tech platforms to shoulder the load, considering the enormous recent advancements in DLT cross-network talk. Any barriers to taking advantage of blockchain's obvious strength, in ensuring data integrity and provenance, might yet be surpassable.

The United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) is making efforts to delineate best practices[13] on the interoperability of verifiable credentials and protocol based systems. Among the deliverables of this project is recommendation No. 49, which will offer policy guidance on the implementation of traceability and transparency at scale through digital instruments, namely the United Nations Transparency Protocol (UNTP) for Digital Product Passports (DPPs).

These instruments aim to ensure interoperability, to meet disclosure requirements and to carry conformity credentials, sustainability information and other data about goods exchanged in value chain transactions - though for completeness, should be viewed in tandem with actual industry implementations already occurring all across the world, independently.

In summary:

Legislation must support this entire ecosystem of tools and approaches, leveraging centralised Cloud for capacity, AI for workflow optimisation, and blockchain DLT for ease of programmability and increased network resilience, customary to Web3.

This legislation can be technologically agnostic and require some informed interpretation, as many presently applicable Commonwealth statutes do - but only to a point. Where the agnostic approach leads to uncertainty which passes a certain threshold, that stifles and discourages innovation and adoption, including by making it too risky or expensive (or both) for businesses and government alike to utilise technology in circumstances where they cannot be sure how the law will treat it.

[12] Enabling Agricultural Traceability through Data Interoperability, DAFF, Commonwealth of Australia, 2024.
[13] Transparency at scale – digital solutions for trust, resilience and sustainability: verifiable credentials in supply chains, United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT), 2024.

A good analogy is the current opaque application of financial services regulation to cryptocurrency and other blockchain digital assets - the Australian digital asset industry has been plagued for years by the negative effects of uncertain law (and consequential regulation by enforcement, and changing regulator opinion).

The recommendation is not to create prescriptive legislation - it is to pay heed to the above points when assessing what legislation may or may not be required or beneficial.

DLT networks enable tokenisation of all aspects of trade, tamper-proof, auditable trade documentation plus much improved finance facilitation: invoices, bills of lading, customs declarations - instant payments, trade finance, factoring, and further derivatisation.

A broad and inclusive net must be cast for a combined tech approach - and DLT must be included in the digitalisation pathway for Australia to ensure operational success.

4. Adjustments to the Infrastructure? The Electronic Data Interchange (EDI)

Cloud, AI, Blockchain, and other DLTs, already integrate with EDI, and there are compelling reasons to maintain this pathway rather than completely supplanting EDI with its distinct and established "rails." The choice depends on goals - enhancing efficiency, security, and trust within existing systems versus building a new paradigm from scratch. Both approaches are viable, but integration often makes more practical sense given EDI's entrenched prevalence and the complementary strengths of DLT.

It should be acknowledged that UNCEFACT has already developed deep machine-to-machine JSOB-LD core component libraries for trade related data exchange. Data needs to become the real star in this developing story of Digitalisation. Rather than endlessly circling the previous paradigm of Document transfers at every step, the evolution of Trade will be built on the foundation of secured Data transfer; in some cases, for added security and functionality, this may be cryptographic tokenised data on DLT Blockchain.

It has become very evident that Quantum computing - and therefore, Quantum security - will have a large say in how our nascent Digitalising Systems (and their data) are utilised and protected. We believe that a balance of present and future concerns should continue to be discussed to future-proof and smooth the lifecycle of adoption and implementation.

Identification of EDI Limitations:

From the perspective of the UN/CEFACT Project Traceability[14], the limitations of Electronic Data Interchange (EDI) and its centralised Value-Added Network (VAN) architecture further underscores the urgent need for interoperable, decentralised solutions in global supply chains. The project's focus on implementing JSON-LD vocabularies for garment traceability aligns with a call for hybrid systems that bridge EDI's legacy constraints - such as data tampering risks, limited real-time transparency, and poor interoperability - with Distributed Ledger Technology (DLT)'s tamper-proof, transparent capabilities. By leveraging standards like GS1 EPCIS and W3C Verifiable Credentials, the project enables seamless integration of EDI-based systems with DLT platforms, ensuring secure, real-time data exchange and ESG compliance. This approach not only addresses EDI's centralised vulnerabilities but also fosters sustainable, inclusive trade ecosystems.

UN/CEFACT's efforts include contributing to develop standards that bridge EDI with digital credentials like Digital Product Passports (DPPs), reinforcing the idea that EDI

[14] https://github.com/uncefact/project-traceability

can evolve to support digitalisation. It positions EDI's limitations as challenges that can be addressed through technological augmentation. For instance, it does not necessarily suggest that EDI's centralised nature inherently obstructs progress but rather that it tends to lack the advanced features (e.g., immutability, real-time verification) offered by DLT.

Similarly sentiments follow from private industry; The Data Interchange article, The Future of EDI: Looking Beyond 2025[15], critically examines the limitations of EDI and its centralised Value-Added Network (VAN) architecture, which hampers real-time transparency and interoperability with decentralised systems like DLT. The article highlights EDI's vulnerabilities, such as data tampering risks due to single points of control and inefficiencies in dynamic supply chains, contrasting these with DLT's tamper-proof, transparent ledger that enables peer-to-peer transactions and seamless integration. It advocates for moderate hybrid solutions to bridge EDI with blockchain, aligning with the modernising trade infrastructure to reduce costs, enhance security, and foster inclusivity.

The Atlantic Council report, Standards and Interoperability: The Future of the Global Financial System[16], addresses the limitations of Electronic Data Interchange (EDI), particularly its reliance on centralized Value-Added Networks (VANs), and contrasting these with the tamper-proof, decentralised capabilities of DLT.

The Atlantic Council's paper provides a powerful case for a radical overhaul of Electronic Data Interchange (EDI), exposing its centralised architecture as a bottleneck that invites data tampering, stifles real-time transparency, and hampers interoperability with modern decentralised systems.

In contrast, DLT emerges as a transformative alternative, offering a tamper-proof, transparent ledger that supports instantaneous, peer-to-peer transactions, revolutionising payments and trade digitalisation. The report's vision of DLT enabling secure, real-time cross-border financial flows - free from the inefficiencies of EDI's batch processing and VAN intermediaries - supports a bold proposition to reimagine trade and payment systems beyond the EDI framework. By advocating for interoperable standards to integrate legacy systems with DLT's decentralised infrastructure, the Atlantic Council illuminates a path to a more resilient, inclusive global financial ecosystem, driving efficiency and trust in digital trade and payments.

4.1 Electronic Data Interchange (EDI) in Parallel with Emerging Technologies

- **EDI's Established Role:** continues to allow standardised exchange of data in supply chains (invoices, purchase orders).

[15] The Future of EDI: Looking Beyond 2025, Data Interchange, July 2021 (updated 2023).
[16] Standards and Interoperability: The Future of the Global Financial System, Atlantic Council, 2024.

- **Limitations of Legacy EDI:** Centralised networks (VANs), risk of data tampering, and lack of real-time transparency.
- **Blockchain & DLT Added Value:** Immutability, decentralisation, trust, smart-contract capability.

4.2 Integration of EDI and DLT

- **Smart Contracts and EDI Data:** EDI triggers on-chain contracts (e.g., purchase orders that automatically settle payments).
- **Immutable Audit Trails:** Hashing EDI messages on a ledger for authenticity and dispute resolution.
- **Interoperability via Standards:** E.g., GS1's exploration of blockchain or the Digital Trade Standards Initiative (DTSI).

4.3 A Possible Transition?

- **Two Routes:**
    - **Incremental Integration:** Retain EDI backbone, overlaying DLT and blockchain for security. Allows for hybrid potentiality.
    - **Full Replacement:** Build a DLT-native paradigm, adopting tokenised payments, peer-to-peer transparency, and fully decentralised rails over time.

Infrastructure Investment Opportunity: National Digital Trade Platform

- No fully integrated national Digital Trade Infrastructure exists (yet) connecting crime management, customs, ports, logistics, banks, insurance, and businesses via cloud/blockchain/AI.
- Other countries (e.g., Singapore's Networked Trade Platform, NTP) are miles ahead in integrating customs, logistics, and finance - web3 digitally.

Suggestion:

Create a National Digital Trade Platform (NDTP) or *Digital Single Trade Window initiative* that supports. This could build on Austrade's "Simplified Trade System" reforms, but go much further with underpinnings and integrations for Web 3.0 technologies.

Benefit: Reduces friction across borders and improves Australia's global competitiveness in trade and places Australia in a world leading position related to trade system modernisation.

Data Governance, Cybersecurity, and Privacy Regulations: Update the Gap

- Blockchain is public/transparent by default; EDI is closed/private. Bridging both systems raises data privacy and cybersecurity risks.
- Australia's Privacy Act 1988 is undergoing reforms, but it may not yet cover blockchain's unique properties (e.g., immutability conflicting with the right to erasure).

Suggestion:

Update cybersecurity and privacy frameworks to specifically address blockchain and integrated EDI systems, including permissioned (private) blockchain options and security-minded public blockchains with robust subnets.

Mandate strong encryption, identity management (e.g., verifiable credentials), and cross-border data sharing standards.

Benefit: Ensures that Australia's digital trade is trusted, safe, and compliant with evolving international norms (like GDPR equivalents).

Summary:

The integration of EDI with emerging technologies like Blockchain and other DLTs offers a transformative opportunity for global supply chains, addressing EDI's limitations such as centralised vulnerabilities, data tampering risks, and lack of real-time transparency.

UN/CEFACT's Project Traceability and initiatives like GS1 EPCIS highlight the potential of hybrid systems, merging EDI's established infrastructure with DLT's immutability and decentralisation to enable secure, transparent data exchange and ESG compliance. Reports from the Atlantic Council and Data Interchange advocate for interoperable standards and incremental integration, supporting a National Digital Trade Platform to modernise trade infrastructure, reduce cross-border friction, and enhance Australia's global competitiveness.

However, this evolution demands updated cybersecurity and privacy frameworks to balance blockchain's transparency with data protection needs, ensuring trust and compliance in an increasingly digital trade ecosystem. With these advancements, the future of trade digitalisation looks brighter than ever—paving the way for a more efficient, secure, and inclusive global economy that Australia can proudly lead!

5. Adoption Strategy for Australia: Legislation meets Technology

Australia's journey toward digitalising trade is not just a set of bureaucratic upgrades – it is a strategic national endeavour to secure our future prosperity. By shedding the analog skin of paper-based commerce, we step into a new era where efficiency and innovation propel our trade competitiveness.

There is also a competitive element: if Australia does not modernise, we risk trade diversion where business flows to more efficient hubs. For example, shipping lines could preferentially route through ports where e-docs are accepted to avoid delays, potentially bypassing Australian ports if we are seen as paper-bound, and when looking at Australia's adherence to refusal to adopt DNL customs procedures, this could be a 'final straw' situation.

The legislative actions recommended are thus not abstract legal exercises; they are the keystone for a resilient, future-proof trade system.

The evidence is overwhelming that the world is moving in this direction: the G7, the Commonwealth, and a growing list of forward-thinking nations are aligning into law and infrastructures to enable paperless trade and commerce.

This is an opportunity to create a holistic 'ecosystem' where every participant adheres to a minimum cybersecurity standard and meets a reliable benchmark for commercial platform operations.

Interestingly, there is a very early precedent for a digital platform designed to streamline cross-border trade by integrating customs and regulatory processes into a cloud-based system (Cloud Single Window[17]), albeit with underlying issues of high energy consumption, risks like data breaches and unequal access for smaller businesses. Such an advocate, Luciano Pugliatti, goes on to suggest highly robust security measures and inclusive policies—areas where Australian policymakers could prioritise investment and support.

Pugliatti might have been surprised by the ground AI and DLT has made since those early days of Trade "Digitalisation". Blockchain, in particular, with its less energy intensive operations, increasing scalability and cryptographic security - lest, Quantum resistance!

In summary, there is a balance between private and public that must be struck - with a call for cooperation, unity, and broader ecosystem perspectives to supplant any previous divisional paradigms - and tech biases - in the landscape. All levels of

[17] Cloud Single Window: Legal Implications of a new Model of Cross-border Single Window, Luciano Pugliatti, September 2011

government agencies, and private consortiums, must respect the authority of UN and WTO treaties and maintain accountability to ministerial oversight.

5.1 Recommendations: Lessons from Abroad

- **Start Locally, Align Globally:** Organic and phased approach - based on global standards, pilot within Australian borders, then mobilise and harmonise internationally. A “modular” approach leading to a more streamlined cross-regional Single Window, might prove the most organic and holistically integrative approach to digitalisation.

- **Exports, then Imports:** accept the timelines will be different - and that is a positive. Gives phased growth and adoption. Not via trials, but through focused transition.

- **Further**, our Aussie electronic Bills of Lading exports can already be digitised and received into MLETR legislated regions[18] (UAE ADGM, UK, Singapore, parts of USA, Belize, PNG - for example) - this would be an easy win. Trade Doc digitisation services are already mobilising (DLT and Cloud) for Exporters.

- **Three Tiered Tokenisation:** Focus the integrations into (1) Titles & Goods, (2) Payments & Finance, and (3) Derivatisation and Trading. Chunk it down and prioritise roll-out, and prioritise each of these aspects of Trade digitalisation journey.

- **Silent seduction:** Business processes are already highly digitalised. A data driven approach to working with digital documents and processes within feasible market segments and existing corridors (e.g. MLETR-compliant jurisdictions) means little if any disruption; the current *cacophony of efforts* is causing uncertainty for business and restricting investment.

5.2 Practical Steps

- **Outline an Approach:** a balance between big and little “G” Government. Must keep innovation and agility paramount, while adhering to safety and interoperability. A full supply chain compliance sandbox is required to holistically treat this challenge (not separate ones for finance and customs, etc).

[18] MLETR Tracker, https://www.digitalizetrade.org/mletr

- **Legacy Documents / "Document Steps" to Target:** A "modular" approach leading to a more streamlined cross-regional Single Window might prove the most organic and holistically integrative approach to digitalisation. Initial focus might be Letters of Credit, Bills of Lading. Integrate Digital Product Passports. Import priorities could start/continue with Certificates of Origin (e.g. with Singapore).

- **Data Not Paper - Tap into ICC Digital Standards Initiative (DSI):** Align with best practices on "reliable systems" for cross-border recognition of digital/web3 practices and progressively focus on Data Sets to streamlining our national Trade flow as a Data River. Bring ICC DSI's "Reliable Systems" framework standard into the local nascent and emerging applications to handle the complete Trade life-cycle.

Explore Viable Transferable Tokenisation Platforms:
Australia can harness a mix of both public and private platforms to enable secure, tokenised data exchange in trade. On the public side, Singapore's TradeTrust, developed by IMDA, stands out as a global leader - its middleware ensures trusted interoperability of electronic trade documents across digital platforms, making it a prime candidate for adoption. We can also leverage the Digital Container Shipping Association (DCSA) interoperable Bill of Lading (BoL), which offers a standards-based electronic BoL solution designed to facilitate seamless data exchange across platforms, as highlighted by their collaboration with the FIT Alliance (DCSA, BIMCO, FIATA, ICC, and SWIFT)[19] to unify legislative conditions and data standards globally.

For private-sector options, beyond the now-defunct TradeLens, we can turn to Scandinavian innovator Enigio, whose trace:original technology supports an open trade environment with secure, interoperable digital documents. Another strong contender is IBM's Blockchain Platform, widely used for supply chain solutions, offering robust smart contract capabilities for trade automation. Let's review these platforms in real-world trade scenarios- whether it's tokenising a DCSA interoperable BoL or streamlining trade finance with Enigio - ensuring they meet the ICC DSI's standards for harmonisation and adoption, to build a future-ready trade ecosystem.

5.3 Need for a *Team Australia* Approach

- **Harmonisation & Interoperability:** Government needs to work with, SMEs and large corporates alike to implement globally recognised standards.
- **Australia's History:** We have a vibrant developer community and a strong track record in global digital charters and cybersecurity initiatives—it's time to

[19] Join the eBL Movement, https://www.fit-alliance.org/

solidify the domestic frameworks into a complete digital supply chain model covering all of the compliance requirements for finance, trade and logistics.

A Matter of Cross communications (Border Force): Aligning with the spirit of increasing Interoperability and efficient Data Movement

The Digital Verification Platform[20], managed by the Australian Border Force, is a multi-tasked utility servicing various border-related functions. Integrating the Digital Verification Platform (DVP) of the Australian Border Force (ABF) with the Australian Taxation Office (ATO) could significantly enhance trade digitalisation by streamlining tax compliance and reducing administrative burdens. This integration would enable real-time verification of trade documents, such as import/export declarations, against ATO records, ensuring accurate Goods and Services Tax (GST) collection, customs duties, and tariff classifications. It would minimise errors, combat tax evasion, and expedite clearance processes for businesses, fostering a more efficient trade ecosystem.

Incorporating Legal Entity Identifiers (see section 2.1) into the DVP could further strengthen trade transparency by providing a globally recognised standard for identifying businesses, ensuring accurate counterparty verification in international transactions (meshing with ASIC).

Additionally, integrating the DVP with other systems, such as the Department of Agriculture, Fisheries and Forestry's biosecurity databases, could improve compliance with quarantine regulations by cross-referencing import permits. Linking with Austrade's trade promotion platforms could provide exporters with verified credentials, enhancing trust in international markets. Furthermore, connecting with Single Window initiatives (e.g., a national trade portal) or global trade platforms like the World Customs Organisation's frameworks could standardise data exchange, reduce paperwork, and align Australia with international trade digitalisation standards, boosting competitiveness and transparency.

Now we understand that this platform, whilst not utilising the best of web3 practices (eg ZK proofs, e.g.) and is a heavily centralised system, the principles outline here are salient.

A Matter of Basic Trade Practices (Customs): Aligning with the spirit of increasing Agility and Productivity as an adjuvant to Digitalisation

Adopting the U.S. and Europe's "Do Not Load" (DNL) approach in Australia could significantly strengthen its trade security and global alignment, addressing vulnerabilities in its current post-arrival customs framework while enhancing trust with

[20] The Digital Verication Platform, ABF.

key trading partners. By integrating pre-loading data submission requirements - akin to the U.S.'s Importer Security Filing (ISF) or Europe's Import Control System 2 (ICS2) - into the Integrated Cargo System (ICS), Australia could proactively screen shipments for security risks, illicit trade (e.g., trade-based money laundering), and compliance with international standards before they depart foreign ports, reducing the burden on domestic border resources like the Australian Border Force (ABF).

On the matter of the ICS, there are concerns, however, that the foundations of the ICS are buried too deeply in the past - irrespective of the attempts to reform[21].The Integrated Cargo System (ICS) is often likened to a "horse and carriage trying to keep up with the spaceships of modern trade digitalisation requirements" due to its outdated, centralised EDI-based architecture, which struggles to match the real-time transparency, interoperability, and data-centric demands of contemporary trade systems like Singapore's Networked Trade Platform (NTP) and platforms such as TradeTrust, as highlighted by the Simplified Trade System (STS) reforms' push for modernisation. Critics point to the ICS's inability to support emerging technologies like blockchain and smart contracts, its complex user interface that hinders SME accessibility, and its inflexibility in handling machine-readable data for compliance, such as Digital Product Passports, making it ill-equipped to compete with global leaders in trade digitalisation despite its historical role in facilitating customs processing.

Putting this ICS to one side, this DNL shift would align Australia with the stringent, risk-averse standards of the U.S. and EU, its major economic allies, facilitating smoother interoperability under treaties like the WTO Trade Facilitation Agreement (TFA) and UNCITRAL frameworks, potentially unlocking faster customs clearance through mutual recognition agreements. Furthermore, given rising global threats - such as terrorism financing and environmental non-compliance - a DNL approach leverages advanced data analytics and AI to preemptively block non-compliant goods, enhancing Australia's reputation as a secure trade hub and protecting its export-driven industries (e.g., agriculture, mining) from reputational risks.

While initial costs and complexity might challenge SMEs, phased implementation with support like the Authorised Economic Operator (AEO) program could mitigate these, making the case for a forward-looking, security-first trade system that positions Australia as a leader in the evolving global landscape.

The adoption of DNL is seen as a necessary facilitative step to further the country's Trade Digitalisation transition and practices.

5.4 "Digital Readiness" Initiatives: Co-Investment and Support for Supply Chain and Trade Technology Adoption

[21] Simplified trade reforms: Improving Australia's trade system, Australian Trade and Investment Commission.

To ensure capability-led transformation, we recommend a three-stage approach:

1. **Readiness Assessments**: Supply Chain/Export Maturity Assessments; Government-funded diagnosis of current business systems, data use, and team capability. Supporting local SMEs and Corporates, alike.
2. **50% Co-Funding or Tax Offset:** Supply Chain Innovation Tax Offset (SCITO) or similar Trade grants to support the adoption of forecasting, inventory, AI planning tools and Import/Export adoptions (eBL digitisations).
3. **SME Pilot/Sandbox Program:** Establish a 12–18 month nurturance initiative offering up to $100,000 in matched funding for eligible digital supply chain transformation projects. A structured evaluation matrix based on organisational scale, supply chain complexity, and digital maturity should be used to determine funding levels. This program aims to de-risk innovation and accelerate technology adoption among SMEs.

Recent Case Studies (by DMS Pty Ltd):

- *CR Mining* successfully leveraged digital planning tools, which enabled tangible efficiency gains, including time savings, smarter demand forecasts, and better supplier collaboration—all directly relevant for mid-sized and SME manufacturers.

- *Bondi Sands*, a globally recognised enterprise, demonstrates what's possible when digital tools are fully embraced. Their transformation—led by DMS and powered by AI planning—helped reduce inventory days by 37% and unify global supply flows. Their experience showcases the long-term value of end-to-end digital integration, which SME pilots can emulate at scaled-down levels.

- **Supply Chain Resilience Initiative** – Funding businesses to invest in capabilities to address supply chain vulnerabilities[22].

5.5 Industry Prioritisation: Strategic Sectors for Targeted Support

Certain sectors cut across all verticals, Banking and Tax, for instance. That being said, to align "Digital Readiness" funding with Australia's economic priorities, we recommend acknowledging the broad and nuanced array of sectors ripe for "digitialising", in particular, the following key industries:

Industry	Why It Matters
Advanced Manufacturing	Sovereign capability, reshoring, and skilled jobs

[22] https://business.gov.au/grants-and-programs/supply-chain-resilience-initiative

Critical Minerals & Resources	Clean energy transition, national security, export value
Agribusiness & Food	Food security, cold chain, traceability
Health & MedTech	Domestic production, supply resilience
Clean Energy & Circular Economy	ESG, net zero, sustainable supply chains
Defence & Sovereign Supply	Strategic security, logistics capability
Transport & Logistics	Backbone of national trade and supply chain flow
Construction & Infrastructure	Infrastructure pipeline, modular supply, housing targets

In Summary

The United Nations Conference on Trade and Development (UNCTAD) emphasises trade digitalisation as a transformative force in global commerce, utilising ICT and digital solutions to streamline trade processes[23]. **UNCTAD** advocates for cooperation, capacity-building, and infrastructure investment to bridge digital divides, aligning with the 2030 Agenda for Sustainable Development.

Technologies such as AI, blockchain, and Big Data improve efficiency, transparency, and risk management, reducing trade costs and strengthening supply chains. This transformation benefits small and medium-sized enterprises by lowering trading costs, promoting inclusivity.

In this UNCTAD finding, digitalisation includes "paperless trade" (electronic documentation within countries) and "cross-border paperless trade" (legal data exchange across borders). With respect to Data and the increasing paradigm shift or DataNotPaper (or DataNotForms), the International Chamber of Commerce's Digital Standards Initiative has been strongly advocating for a "core dataset" for documents, rather than disparate documents, and that these DataSets become the central unit of exchange. This dataset approach can be used across platforms, allowing a single piece of data (e.g., a standardised JSON-LD object representing a certificate of origin) to serve multiple purposes - essentially replacing the need for multiple document formats with a unified data structure. The DSI's push for interoperability and adoption of this core dataset aligns with modern systems that prioritise data fluidity over document silos.

[23] Advancing Digital Transformation: Global Insights into the Digitilization of Trade Procedures, Yann Duval, UNCTAD, 29 December 2023.

The UN Global Survey on Digital and Sustainable Trade Facilitation introduces the Trade Digitalisation Index (TDI), evaluating 16 key digital trade measures across over 160 countries. Leading nations include the Netherlands and New Zealand (96%), Singapore and South Korea (93%), and Brazil and Peru (91%).

From 2021 to 2023, they found significant progress was made, but disparities persist, especially in these developing nations. By extension, by only focusing on Trade - and ignoring Trade Finance - developing regions (including Australia/Oceania) are trailing behind even more, highlighting the need for more collaboration.

6. Regulatory & Legislative Environment

Transforming trade processes requires updating the legal foundations that govern commerce. Much of Australia's current legislation was drafted in a pre-digital era, assuming paper as the default medium for documents like bills of lading, promissory notes, or warehouse receipts.

To ensure electronic documents and records are recognised and admissible with the same force as paper, targeted legislative actions are needed. This section outlines the key reforms – notably adopting and *implementing* UNCITRAL's Model Law on Electronic Transferable Records (MLETR, 2017) and Model Law on the Use and Cross-border Recognition of Identity Management and Trust Services (MLIT, 2022) – and provides justifications drawn from global best practices and peer nations' experiences.

The legal and regulatory adjustments, while technical, serve a strategic purpose: they remove the remaining friction points in a fully digital trade environment. Laws that were written for the analog era often have implicit biases towards paper. By rooting these out and explicitly validating the digital alternatives, Australia sends a strong signal that we are "open for digital business". SCMAs and AI-readiness frameworks must be in place and ensure they are recognised as part of eligibility for future grants or offsets.

Getting our house in order: As a matter of urgency, all our commitments to international treaties and promises need to be passed as Law - as much as our own internal referencing to the swathe of civil *digital adjustments*.

For instance, the *Electronic Transactions Act 1999* (Cth) recognises smart contracts, tokenised documents, and blockchain-based records as legally enforceable, provided they meet traditional contract law and electronic record requirements. The *Corporations Act 2001* (Cth) imposes additional obligations for financial applications, while the *Personal Property Securities Act 2009* (Cth) provides limited clarity for tokenised assets, necessitating careful legal structuring. Ongoing regulatory developments support their growing acceptance, but businesses must ensure compliance with ASIC, AML/CTF, and tax regulations to fully leverage these technologies. All of the aforementioned Commonwealth legislation is technologically agnostic in its approach, too - which, whilst ideal to a point in our view (and as mentioned in section 3 of this document), goes too far so as to lead to uncertain and ambiguous application to radically new technologies, such as DLT or AI.

A legal footing must be given and implemented in a meaningful way, to give functional equivalency and practical execution in our emerging Digitalising Economy.

Harmonisation of national laws (Electronic Transactions Act, Corporations Act, PPSA) must be prioritised to recognise smart contracts, tokenised documents, and blockchain-based records as legally enforceable. Technological agnosticism should not get in the way of clarity and commercial application.

Equally important is to communicate these changes clearly to the private sector. An official Digital EconomyTransformation roadmap publication (including international cross border trade, finance and data sharing) must be made, once this agenda is settled, that explains in plain language what changes will occur and how businesses can prepare.

This could include timelines for when government departments achieve practical harmonisation, more acuity with what a 21st century "Single Window" is - and what a phase-in could actually look like, what is the scalability timeline, when do banks roll out new digital trade finance products, etc., all of which is giving the industry an appropriate planning horizon.

Additionally, and while not "legislation", adopting globally recognised standards (potentially through Standards Australia or industry bodies) for digital trade is important and government could endorse frameworks like the established ICC DSI, the nascent iC4DTI, or Singapore's IMDA ecosystem developments - like TradeTrust (a set of open standards ensuring interoperability of e-trade documents) - could be seen as vital measures.

6.1 International Conventions and Agreements (*UNCITRAL pending)

Australia is party to many existing international agreements, standards, and protocols, including:

- **WTO Trade Facilitation Agreement (TFA):** Simplifies and harmonises procedures, encourages digital submission and payments.
- **WTO Joint Statement Initiative on E-Commerce (JSI):** Cross-border data flows and consumer trust.
- **Regional trade agreements:** E-commerce provisions, privacy protections, minimal data localisation.
- **Bilateral Digital Economy Agreement (DEA):** Mutual recognition of digital identities, e-invoicing, and paperless trading.
- **APEC Cross-Border Privacy Rules (CBPR) System:** Certification for cross-border data handling, ensuring privacy.
- **UNCITRAL MLETR:** Recognises electronic transferable records (e.g., bills of lading) for secure cross-border trade.
- **UNCITRAL MLIT:** Framework for identity management and trust services.

- **Other UNCITRAL Model Laws: MLWR (& MLAC, e.g.):** Consider framework for modernising and harmonising laws related to warehouse receipts.

While these agreements are adopted via ratification processes through the Australian parliament, unless there are associated laws to administer, individual government agencies are not required to adhere and implement the agreement terms. Australia needs to develop supportive domestic laws that implement the terms of our international commitments.

6.2 Cybersecurity & AI Regulations

Australia does not have a comprehensive, standalone set of regulations specifically dedicated to cybersecurity that applies universally across all sectors, including AI-related cybersecurity.

Instead, cybersecurity is governed by a combination of existing laws, sector-specific regulations, and recently introduced legislation, with no broad AI-specific cybersecurity regulations yet in place. AI is regulated through a patchwork of existing laws and frameworks, supplemented by voluntary guidelines, with targeted mandatory rules still in development.

The Australian government has adopted a cautious, risk-based approach, prioritising consultation and voluntary measures before enacting broad AI-specific legislation, though some sector-specific regulations and proposals are emerging. We recommend a thorough assessment of all technological options and the mandating of robust guidelines for AI, including:

- ***Cyber Security Act 2024*** **(Cth):** Ransomware reporting, National Cyber Security Coordinator, no explicit AI focus yet.
- ***Privacy Act 1988*** **(Cth):** Protects personal information—applies to AI use of data.
- **Voluntary AI Safety Standard (VAISS):** Introduced in 2024, includes risk assessments, data governance, human oversight.

6.3 MLETR Adoption in Australia

Global studies estimate that full digitisation of trade documents (supported by MLETR) could unlock $30–40 billion AUD in trade growth and savings for the Australian economy over a decade (source: World Economic Forum, ICC Digital Standards Initiative). Australia's exports (especially in agriculture, mining,

energy) rely heavily on documentation like bills of lading — digitisation of titles will reduce trade transaction costs and accelerate export timelines by days, directly improving competitiveness.

The UNCITRAL Model Law on Electronic Transferable Records (MLETR), adopted and co-signed by Australia in 2017, is a framework that enables the legal use of electronic transferable records (ETRs) in international trade, replacing paper-based documents like bills of lading, bills of exchange, and warehouse receipts. It establishes functional equivalence between electronic and physical documents, ensuring legal certainty for digital transactions across borders.

MLETR is crucial in international trade and cross-border payments/trade finance due to its potential to digitise traditionally paper-heavy processes. By allowing secure, fast, and reliable electronic transfer of negotiable instruments, it reduces reliance on physical documents, cutting costs, speeding up transactions, and minimising fraud risks. For instance, it supports digital bills of lading, enabling shipping companies, banks, and traders to share and transfer documents electronically via platforms like SWIFT, enhancing efficiency in global supply chains.

In cross-border payments and trade finance, MLETR addresses key challenges such as high costs, low speed, and limited transparency. It facilitates seamless transactions by ensuring that electronic records are legally recognised, reducing intermediaries and streamlining processes. This is vital for businesses expanding globally, as it optimises cash flow, mitigates currency and political risks, and supports sustainable trade practices aligned with goals like the UN's 2030 SDGs.

Jurisdictions like Singapore, the UK, and Bahrain have adopted MLETR, with pilot projects (e.g., Singapore-Abu Dhabi digital trade financing) demonstrating its practical impact. However, challenges remain, including ensuring reliable technology, cross-government collaboration, and harmonising laws globally. MLETR's adoption is a game-changer, fostering a more efficient, secure, and inclusive international trade environment, but its success depends on widespread legal and technological alignment.

MLETR adoption is currently being assessed by the Attorney-General's department, despite it being a feature of a number of international treaties Australia has signed already. Current progress status is:

- **Current Status:** Under assessment by the Attorney-General's Department, but no timeline for adoption by the new Government
- **Potential Impact:** Replacing paper-based instruments with secure, legally recognised digital documents.
- **Challenges:** Harmonising laws and technology, ensuring wide adoption by institutions and SMEs.

While large corporations can already afford trade digitisation, MLETR would significantly benefit SMEs, reducing barriers to entry into global markets. Faster

payment cycles (no waiting for paper letters of credit or physical endorsements), lower documentation processing costs - and a greater ability to participate in digital cross-border platforms (e.g., blockchain trade corridors, e-invoicing hubs).

Policy incentive: Consider government or industry support programs to help SMEs onboard ETR platforms post-MLETR adoption.

6.4 MLIT Legislation in Australia

Model Law on the Use and Cross-border Recognition of Identity Management and Trust Services (MLIT, 2022) has not been directly enacted into domestic law, but it's highly relevant to ongoing digital trade reforms. Australia's existing framework—e.g., the *Electronic Transactions Act 1999* (Cth)—aligns with UNCITRAL's e-commerce principles and already supports electronic signatures and records. However, the MLIT's focus on identity management and cross-border trust services goes further, addressing gaps in interoperability and legal recognition of digital IDs. The Australian government's 2024 consultation on the Model Law on Electronic Transferable Records (MLETR) (closed October 28, 2024) signals intent to modernise trade laws, and the MLIT fits naturally into this push. No specific legislation adopting the MLIT has been tabled yet, but its principles could enhance systems like the Trusted Digital Identity Framework (TDIF) (over 3 million users via myGovID) and Peppol e-invoicing, which rely on verified identities. Experts suggest Australia might integrate MLIT elements into a broader digital economy strategy by 2026, especially given its trade ties with Asia-Pacific nations also exploring UNCITRAL frameworks.

The Law Council of Australia, supported by practitioners and academics, coordinates national input into UNCITRAL activities, often via an appointed UNCITRAL Coordinator (a role established in 2013). Working Group IV, which finalised the MLIT in 2021 for adoption in July 2022, included representatives from UNCITRAL's 60 member states, including Australia, alongside observer states and organisations. Australia's participation in these sessions—held in Vienna and New York, ensured it had a voice in shaping the MLIT's provisions on identity management and trust services.

Australia's interest in digital trade aligns with the MLIT's goals. Its domestic efforts, like the Trusted Digital Identity Framework (TDIF) and the 2024 consultation on the Model Law on Electronic Transferable Records (MLETR), reflect priorities that overlap with the MLIT's focus on secure, interoperable digital identity systems. Australian delegates, including legal experts and government representatives, have contributed insights from these initiatives, advocating for technology-neutral, trade-friendly provisions—consistent with UNCITRAL's principles of non-discrimination and functional equivalence, which Australia has long supported (e.g., via the *Electronic Transactions Act 1999 (Cth)*).

There is already strong allegiance, conformity and adoption to the Global Legal Entity Identifier Foundation and its mission to establish a verifiable Trading entity register.[24]

6.5 MLWR Legislation in Australia

The United Nations Commission on International Trade Law (UNCITRAL) UNIDROIT Model Law on Warehouse Receipts (2024)[25], offers a robust framework for modernising and harmonising laws related to warehouse receipts, which can significantly benefit the Australian Parliament if adopted as legislation. This model law provides a standardised legal structure for the issuance, transfer, and use of warehouse receipts—documents that prove ownership of goods stored in warehouses—facilitating smoother domestic and international trade. For Australia, a nation heavily reliant on agricultural exports and commodity trading, adopting the MLWR could streamline supply chain processes, enhance legal certainty for traders, and reduce transaction costs, thereby boosting economic efficiency and competitiveness in global markets.

Adopting the MLWR would also align Australia with international best practices, fostering greater trust and interoperability with trading partners. The model law supports both paper-based and electronic warehouse receipts, reflecting modern technological advancements and enabling Australia to leverage digital trade systems effectively. This adaptability is particularly advantageous for Australian businesses, as it ensures compatibility with emerging global standards, such as those for electronic commerce, while providing a secure and predictable legal environment. By integrating these provisions into national legislation, the Australian Parliament could attract foreign investment and strengthen its position as a reliable player in international trade networks.

Furthermore, the MLWR promotes financial inclusion and access to credit, which could have significant implications for Australia's rural and agricultural sectors. Warehouse receipts can be used as collateral for loans, allowing farmers and small businesses to unlock capital tied up in stored goods. This mechanism could stimulate economic growth in regional areas, addressing a key policy priority for the Australian government. By enacting legislation based on the MLWR, Parliament would not only modernise its commercial law framework but also demonstrate a commitment to supporting innovation, sustainability, and equitable economic development, aligning with broader national and international goals.

In Summary, these United Nations Commission on International Trade Law's efforts - in particular with Working group IV (Electronic Commerce)[26] - more

[24] Global Legal Entity Identifier Foundation, Switzerland.
[25] Model Law on Warehouse Receipts, United Nations Commission on International Trade Law (UNCITRAL).
[26] United Nations Commission on International Trade Law Fifty-eighth session Vienna, UNCITRAL 7–25 July 2025.

developments are occurring which will help legislators bring granularity to the space. For example, drafting is in progress on the Model Law on Automated Contracting, and we see the preemptive opportunity for our Government and industry to build in measures to rise with the coming tide and safeguard further global harmonisation as we adopt digitalisation.

Up Next: UNESCAP and the importance of Cross-Agency Collaboration

Effective cross-border paperless trade, as championed by initiatives like UNESCAP Paperless Trade Week[27] and supported by various aforementioned internationally recognised organisations, hinges on robust cross-agency collaboration to drive regulatory ratification and ecosystem-wide digital transformation.

The Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific (CPTA)[28], a UN treaty adopted by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) in 2016, aims to accelerate digital trade facilitation by enabling the electronic exchange and mutual recognition of trade-related data and documents.

Australia, an ESCAP and APEC member, has not yet ratified the CPTA but is engaged in its implementation through participation in Paperless Trade Week and related initiatives. Its high trade facilitation implementation rate (over 90%, per the 2017 UN Global Survey) positions it as a leader in digital trade, with agencies like the Australian Border Force, DFAT, and Treasury aligning with CPTA goals.

Beyond the Attorney-General's Department, a cohesive effort involving the Australian Border Force (Customs) for seamless border operations, the Department of Foreign Affairs and Trade for continuing international trade policy alignment, Treasury for innovative trade finance systems, the Australian Taxation Office for streamlined tax tracing, Austrade for SME engagement, and industry bodies like chambers of commerce, banks, and shipping companies is essential to create an interoperable, efficient, and inclusive digital trade environment that reduces costs and enhances global competitiveness.

- Customs & Australian Border Force
- Department of Foreign Affairs and Trade (DFAT) & World Trade Organisation (WTO)
- Treasury (for trade finance systems)
- Taxation (for streamlining and tracing)
- Austrade (SME engagement)

[27] Paperless Trade Week UNESCAP 2025 (Thailand), UNCC, Bangkok.
[28] Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific, UNESCAP.

- Industry bodies (chambers of commerce, banks, shipping companies)

The UNESCAP Paperless Trade Week and the CPTA are igniting a digital trade revolution, and Australia stands poised to lead, leveraging its 90%+ trade facilitation prowess.

A robust Digitalisation of Trade, including ISO 20022-compliant DLT blockchain are ready to slash trade costs and empower SMEs, but success demands action now. Beyond the Attorney-General's Department, the Australian Border Force, DFAT, Treasury, Australian Taxation Office, Austrade, and industry giants—chambers of commerce, banks, and shipping leaders—must unite in a bold, cross-agency push.

Regulatory ratifications and policy adoption requires coordination beyond just the Attorney-General's Department. Smooth digital trade is an ecosystem upgrade, not just a legal reform. By joining our neighbour's UNESCAP call, and ratifying the CPTA, we can set out to build an interoperable, inclusive trade ecosystem that catapults Australia and the Asia-Pacific to the forefront of global digital commerce.

7. Implementation Models & Global Comparisons

Across the globe, nations are embracing digital transformation to revolutionise trade, offering broad lessons for Australia's own ecosystem through diverse, innovative approaches.

Singapore and Hong Kong are deploying comprehensive digital platforms to simplify trade processes and eliminate paper-based inefficiencies, while the UAE pioneers regulatory frameworks to support cutting-edge technologies for seamless cross-border commerce. India is focusing on empowering smaller businesses with accessible finance solutions, Europe harnesses collaborative blockchain networks to enhance trust and compliance, and North America advances customs modernisation through streamlined digital interfaces.

These efforts collectively highlight a shift toward technology-driven trade facilitation—spanning portals, regulatory innovation, and financial tools—aimed at boosting efficiency, transparency, and inclusivity on a grand scale, presenting Australia with a spectrum of bold strategies to adapt and thrive in the global market.

It might be helpful to look at the discrete instruments and moving parts that are involved in Trade Facilitation - and the approaches taken to solve them across the globe. However, to understand a recent history of *Single Window* models and approaches, it would pay to acquaint with the 2018 paper, "Single Window Trade Facilitation: Regional Best Practices and Future Development"[29] to gain some context.

Bookmarking these developments it would also be of tremendous benefit to absorb The ICC DSI's "Key Trade Documents and Data Elements on the Frontlines"[30].

7.1 Singapore

- **Networked Trade Platform (NTP)**: Launched in 2018 as the National Trade Platform, Singapore's NTP is a one-stop digital trade portal that integrates government and private-sector services, enabling electronic submission of trade documents (e.g., permits, certificates of origin) and reducing processing times, with over 70% of trade permits now processed digitally.
- **Global Trade Connectivity**: via the **IMDA** – demonstrates how a government-led framework can enable supply chain visibility, trust, and paperless trade through interoperable systems. Singapore drives digital trade

29 https://unescap.org/resources/single-window-trade-facilitation-regional-best-practices-and-future-development

30 https://www.dsi.iccwbo.org/_files/ugd/0b6be5_2f556e6fbb944cd7b7b31278b4ce9bb3.pdf

through initiatives like the Digital Economy Partnership Agreement (DEPA) and blockchain-based projects such as **TradeTrust**[31], which facilitates interoperable electronic trade documents, enhancing cross-border efficiency and trust with partners like Australia and UAE.

- **Proxtera (MAS/IMDA):** platform linking SMEs globally for streamlined finance, logistics, and marketing.

7.2 China

China is actively embracing trade digitalisation to streamline global commerce, leveraging advanced technologies like blockchain and electronic trade document systems to enhance efficiency and security. A landmark development in this effort is the collaboration between Swedish fintech Enigio and China-focused blockchain consortium TradeGo, which completed their first end-to-end digital trade transaction between Europe and China in October 2024. By integrating Enigio's trace:original software, which enables the creation and transfer of digital title documents, with TradeGo's electronic bill of lading (eBL) platform, the partnership facilitated a paperless export of goods from Sweden-based Global Forest Products to a Chinese importer in Jinan. This transaction, completed in just one business day compared to the traditional two-week process, demonstrates China's commitment to building a "digital silk road" that simplifies cross-border trade while aligning with global standards like the UNCITRAL Model Law for Electronic Transferable Records (MLETR)[32].

Beyond this specific collaboration, China's broader push for trade digitalisation is evident in initiatives like TradeGo's facilitation of fully paperless transactions for major state-owned enterprises, such as Sinopec's first electronic bill of lading-based trade for 5,000 tonnes of marine gas oil in 2024. TradeGo's DigiDocs platform, used in this deal, underscores the growing adoption of eBLs, particularly for short-duration shipments where traditional paper processes cause delays. By integrating digital solutions that comply with international frameworks like the Digital Container Shipping Association's (DCSA) standards, China is positioning itself as a leader in interoperable trade systems. These efforts not only reduce transaction times but also enhance transparency and sustainability, addressing longstanding inefficiencies in global supply chains.

China's embrace of trade digitalisation also reflects a strategic vision to equitise commerce and empower smaller players in global trade. The Enigio-TradeGo partnership, for instance, allows banks and traders to access multiple platforms seamlessly, reducing operational complexity and fostering inclusivity. This aligns with broader trends in fintech innovation, where China is leveraging AI and blockchain to

[31] https://www.imda.gov.sg/how-we-can-help/international-trade-and-logistics/tradetrust
[32] Enigio, TradeGo declare "digital silk road" open after Europe-China transaction, by John Basquill, GTR, 2024.

rewrite the rules of economic interaction, as seen in TradeGo's integration of advanced models like DeepSeek-R1 to enhance smart trading services[33]. By prioritising interoperability and scalability, China is not only modernising its trade infrastructure but also setting a global benchmark for digital trade corridors, with the Europe-China channel serving as a model for future expansions.

7.2 Hong Kong

Hong Kong is leading the charge in trade digitalisation, driving a transformative shift in global commerce through the development of the Trade Single Window (TSW), an innovative digital platform designed to streamline import and export processes. Launched by the Commerce and Economic Development Bureau (CEDB), the TSW enables traders to submit all required trade documents electronically to multiple government agencies via a single portal, replacing outdated paper-based systems. This initiative not only boosts efficiency and transparency but also strengthens Hong Kong's status as a global trade hub by aligning with international standards for digital trade, fostering seamless cross-border transactions, and supporting economic resilience in an increasingly interconnected world.

The TSW's phased rollout, scheduled to commence in late 2025, reflects a strategic and ambitious approach to modernising trade operations. Phase 1 will introduce electronic processing for 13 types of trade documents, such as agricultural permits, enabling faster and more secure submissions. By 2030, Phase 2 will expand the platform's capabilities to include an additional 28 document types, including certificates of origin, with the aim of completely eliminating paper-based processes. This gradual implementation ensures a smooth transition for businesses while addressing the diverse needs of Hong Kong's dynamic trade ecosystem, reducing operational delays, and enhancing compliance with global trade regulations.

Supported by robust legal and developmental frameworks, the TSW is built on years of careful planning and stakeholder engagement. The Import and Export (Electronic Cargo Information) Regulation, gazetted in July 2024, provides the legal foundation for the platform, ensuring its alignment with international digital trade standards. Public consultations since 2016 have shaped its evolution, incorporating feedback from traders, logistics providers, and government agencies to create a user-centric system. By leveraging advanced technologies and promoting interoperability, the TSW empowers businesses of all sizes, advances sustainability by reducing paper usage, and sets a global benchmark for trade digitalisation, reinforcing Hong Kong's role as a trailblazer in the digital trade landscape.

- **Purpose**: The Trade Single Window (TSW) is a digital platform by Hong Kong's Commerce and Economic Development Bureau (CEDB) to simplify

[33] TradeGo FinTech Limited Integrates the DeepSeek-R1 Model into the Service Platform, MarketScreener, Feb 2025.

trade by enabling electronic submission of import/export documents to multiple government agencies via one portal.

- **Phased Rollout**: Launching in late 2025, Phase 1 will handle 13 document types (e.g., agricultural permits), with Phase 2 expanding to 28 more (e.g., certificates of origin) by 2030, aiming to fully replace paper processes.
- **Legal and Development**: Backed by the Import and Export (Electronic Cargo Information) Regulation (gazetted July 2024), the initiative has evolved through public consultations since 2016.

7.3 UAE (Abu Dhabi Global Market) & MENA

Abu Dhabi Global Market (ADGM), the UAE's forward-thinking financial centre, is championing trade digitalisation by fostering an innovative ecosystem that integrates cutting-edge technologies and progressive regulatory frameworks. Established in 2013, ADGM has emerged as a global leader in paperless trade by adopting the UNCITRAL Model Law on Electronic Transferable Records (MLETR) in 2021, enabling legally recognised digital trade documents such as electronic bills of lading. Supported by its English common law framework, ADGM's initiatives enhance trade efficiency, transparency, and security, positioning Abu Dhabi as a pivotal hub for digital commerce and reinforcing the UAE's ambition to lead the global transition to seamless, technology-driven trade.

The World Economic Forum's TradeTech Regulatory Sandbox: In collaboration with the UAE Ministry of Economy and the Abu Dhabi Department of Economic Development (ADDED), several participants from Africa, Europe & Asia are involved in the first cohort, testing innovative trade technologies, including AI-driven trade finance, blockchain-based product traceability, and digital trade documentation. While the initiative is hosted in the UAE, it includes participants from various regions, not exclusively the Middle East and North Africa (MENA).

ADGM's commitment to trade digitalisation is amplified through strategic technology partnerships that harness AI and blockchain to transform trade processes. Collaborations with the World Economic Forum's TradeTech Sandbox and Chainlink, a leader in blockchain standards, have enabled ADGM to develop interoperable and secure digital trade solutions. These partnerships empower small and medium enterprises (SMEs) and larger corporations alike by providing access to transparent, scalable platforms that streamline cross-border transactions. By leveraging these technologies, ADGM is not only modernising trade but also setting a global benchmark for digital trade hubs, fostering economic inclusivity and resilience across the UAE and beyond.

Unlike single-portal systems, ADGM's ecosystem-driven approach prioritises regulatory sandboxes and frameworks that encourage private-sector innovation, ensuring agility

and responsiveness to evolving technological landscapes. This strategy allows for the rapid development and deployment of private-sector solutions tailored to the needs of traders, enhancing the quality of services provided. By fostering a collaborative environment where fintechs, logistics providers, and regulators co-create solutions, ADGM drives sustainable trade digitalisation. This dynamic model, underpinned by a commitment to interoperability and scalability, cements ADGM's role as a trailblazer in the UAE's digital trade revolution, setting a precedent for agile, technology-led trade ecosystems worldwide.

- **Regulatory Innovation**: ADGM, established in 2013, adopted the UNCITRAL Model Law on Electronic Transferable Records (MLETR) in 2021, enabling legally recognized digital trade documents like e-bills of lading, supported by its English common law framework to boost paperless trade efficiency.
- **Tech Partnerships**: Through collaborations like the WEF TradeTech Sandbox and Chainlink for blockchain standards, ADGM leverages AI and blockchain to enhance transparency and security, positioning Abu Dhabi as a global digital trade hub for SMEs and beyond.
- **Ecosystem-Driven:** Regulatory frameworks and sandboxes (rather than a single trade portal), encouraging private-sector solutions. Seen to be more agile and responsive to changing limits technology affecting quality of services provided.

7.4 India (TreDS): A case study in Government-facilitated Trade Finance

India's approach to trade digitalisation is distinguished by its emphasis on compliance and scalability, driven by RBI-licensed platforms that ensure regulatory adherence while fostering innovation. By integrating large corporates into the TReDS framework, India ensures a steady flow of trade receivables for discounting, creating a win-win scenario for buyers, sellers, and financiers. The system's agility and responsiveness to MSME needs, combined with its focus on reducing operational bottlenecks, enhance the overall quality of trade services. This strategic blend of regulatory oversight and private-sector innovation underscores India's commitment to building a resilient digital trade ecosystem, setting a global benchmark for inclusive and technology-driven trade financing.

The TReDS platform revolutionises trade financing by enabling MSMEs to convert invoices from large corporates, government departments, and public sector undertakings (PSUs) into immediate cash through competitive bidding by multiple financiers, including banks and non-banking financial companies (NBFCs). Platforms like Receivables Exchange of India Limited (RXIL), Invoicemart, and M1xchange have been pivotal in operationalising TReDS, providing user-friendly interfaces that reduce payment delays and enhance cash flow for MSMEs. This digital financing ecosystem

not only addresses liquidity challenges but also promotes financial inclusion by empowering smaller businesses to participate more effectively in domestic and international trade.

- **Public-Private Collaboration:** RBI-licensed platforms for invoice discounting, mandated participation by large corporates.
- **Digital Financing Platform**: Introduced by the Reserve Bank of India (RBI) in 2018, TReDS is an online electronic platform that facilitates the financing and discounting of trade receivables for Micro, Small, and Medium Enterprises (MSMEs), allowing them to convert invoices from large corporates, government departments, and PSUs into immediate cash through competitive bidding by multiple financiers like banks and NBFCs.
- **Enhanced Liquidity and Compliance**: With platforms like Receivables Exchange of India Limited (RXIL), Invoicemart, and M1xchange, TReDS improves MSME cash flow by reducing payment delays.

7.5 Europe & Scandinavia

Europe is pioneering trade digitalisation through the European Blockchain Services Infrastructure (EBSI), a pan-European blockchain initiative embraced by countries like Denmark, Sweden, Finland, and Norway (via EEA alignment). EBSI's focus on blockchain-based solutions for cross-border credentials, such as business licences and product certifications, streamlines trade compliance, enhancing efficiency and trust. Coupled with innovative platforms like Sweden-based Enigio's trace:original, which creates legally compliant digital trade documents, Europe is setting a global standard for secure, interoperable, and sustainable trade ecosystems.

- **Implementation:** EBSI is testing blockchain-based solutions for cross-border credentials, such as business licences and product certifications, to streamline trade compliance and reduce administrative burdens. These efforts align with broader European goals to digitise trade processes, ensuring efficiency, security, and regulatory adherence. Testing blockchain for cross-border credentials (e.g., business licenses, product certifications) that could streamline trade compliance.

- **Pilot Use of Blockchain:** Notable pilots include Norway's seafood provenance tracking, which ensures transparency in supply chains, and Nordea Bank's we.trade platform, which leverages blockchain for secure trade finance. These initiatives demonstrate the region's commitment to harnessing blockchain to address real-world trade challenges.

- **Interoperability and Global Impact; Enigio's Role in Digital Trade Transformation:** Based in Stockholm, Sweden, **Enigio**, a fintech founded in

2019, is a key player in advancing blockchain-based digital trade document solutions. Its flagship product, trace:original, creates legally compliant, freely transferable digital originals that replicate the functionality of paper documents while ensuring integrity, traceability, and security through distributed ledger technology (DLT). By enabling straight-through processing, trace:original reduces manual tasks by up to 82% and costs by 91%, cutting processing times from days to hours. It supports critical trade documents like bills of lading, promissory notes, and guarantees, aligning with UNCITRAL's Model Law on Electronic Transferable Records (MLETR) and the International Chamber of Commerce (ICC) Digital Standards.

- Enigio's solutions complement initiatives like the **Digital Container Shipping Association (DCSA)'s Electronic Bill of Lading (eBL) Interoperability Platform**, headquartered in Amsterdam, Netherlands. The DCSA platform fosters global adoption of standardised, secure digital trade documentation by enabling seamless eBL exchange across diverse systems using common data formats, secure APIs, and blockchain-based trust mechanisms. This interoperability reduces documentation time, costs, errors, and environmental impact while enhancing security and compliance. The DCSA aims for 100% eBL adoption by 2030, projecting annual savings of $6.5 billion and enabling $30–40 billion in global trade growth. Enigio's trace:original integrates with this vision by providing a robust framework for digital trade documents that can operate within such interoperable ecosystems.

- **Partnerships Driving Innovation:** Enigio collaborates with global leaders like Lloyds Bank, which uses trace:original for digital promissory notes and bills of exchange, and Finastra, integrating it with Fusion Trade Innovation. *Other partners include Oracle Financial Services, Surecomp, Mitigram, J.P. Morgan (for trade finance digitisation), Emirates NBD, DP World Trade Finance, and CargoX.* Enigio's work with industry bodies such as the International Trade and Forfaiting Association (ITFA) and ICC's Centre for Digital Trade and Innovation (C4DTI), along with approvals from the International Group of P&I Clubs (IG P&I) for its eBLs, underscores its commitment to an open, interoperable trade ecosystem.

- **Synergy with Verifiable Credentials and Digital Product Passports:** Enigio's solutions align with emerging standards like verifiable credentials (e.g., Verifiable Legal Entity Identifiers, vLEIs) and Digital Product Passports (DPPs), which embed data on product materials, manufacturing, and ESG compliance. By integrating with EBSI's cross-border credential pilots and global frameworks like the EU's DPP initiative, Enigio enhances transparency and sustainability in industries such as agriculture, manufacturing, and mining.

7.6 USA & Canada

The USA has implemented the International Trade Data System (ITDS) as part of the Automated Commercial Environment (ACE), managed by U.S. Customs and Border Protection (CBP). The ITDS serves as a single window for international trade, allowing traders to submit all required import and export data to CBP and other government agencies through a single electronic submission[34].

Fully implemented in early 2017, this system eliminates the need for redundant documentation across multiple agencies, significantly reducing complexity, time, and costs associated with trade. Industry reports, such as those from Purolator International [35], highlight that the ITDS replaces a previously multitentacled process marked by inefficiency and red tape, offering a streamlined border clearance process.

The ITDS aligns with international standards, such as UN/CEFACT Recommendation 33, and facilitates interoperability with regional systems like the ASEAN Single Window, enhancing global trade facilitation. This mature single window system provides a benchmark for other countries, including Australia, to consider in their trade modernisation efforts.

- **Single Window Initiative (SWI) & CARM:** Digitalisation of customs/import processes—progress, but not yet real-time settlement.

- **Canada's AI Strategy** – exemplifies how national AI initiatives can drive supply chain innovation[36]. The strategy enhances supply chain capabilities by integrating AI research with industry needs, promoting efficiency, resilience, and ethical practices. These models began with structured support to industries of national interest—a strategy Australia should replicate.

Implement a Fully Operational Single Window System: Drawing from Canada's SWI and the USA's ITDS, Australia could accelerate the development of a similar approach to single window system to streamline trade processes, however, the limitations of these highlight opportunities for DLT and blockchain to enhance trade systems, particularly in promoting interoperability between ICTs. By addressing real-time settlement, interoperability, security, efficiency, standardisation, and scalability - DLT can transform these systems into more robust, efficient, and globally connected trade ecosystems.

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[34] ACE Realizing Single Window, U.S. Border & Customs Protection, Nov 2022.
[35] https://www.purolatorinternational.com/the-abcs-of-cbps-single-window-initiative/
[36] https://ised-isde.canada.ca/site/global-innovation-clusters/en/canadas-ai-powered-supply-chains-cluster-scale-ai

Develop a Dedicated AI Cluster for Supply Chain Innovation: Australia should replicate Canada's Scale AI Cluster by establishing a national initiative focused on AI-driven supply chain innovation. This cluster could bring together key industries like retail, manufacturing, and logistics to collaboratively develop AI solutions for demand forecasting, logistics optimization, and risk management, enhancing supply chain resilience and competitiveness. Such an initiative would mirror Canada's structured support to industries of national interest, ensuring AI research aligns with industry needs.

Invest in AI Research and Industry Integration: Building on its existing AI strategy, Australia should invest more specifically in AI research and development targeted at supply chain challenges. This includes supporting startups and SMEs, fostering collaboration between academia, industry, and government, and ensuring ethical AI practices, similar to Canada's approach with initiatives like Supply AI[37]. This would position Australia to address global supply chain challenges, such as those highlighted in recent reports on climate change and food insecurity, and enhance its global trade position.

7.7 The South Americas

Hybridising Cloud & DataServers with Blockchain DLT

The Brazil is harnessing artificial intelligence (AI) to revolutionise both its customs administration and government communication, as detailed in a research paper from the DGO2025 conference ("From Complexity to Clarity: Simplifying Government Texts with Generative AI" by Alves et al.) and an article[38] from WCO News Issue 3/2024 on Brazil's customs advancements.

In the realm of public administration, the DGO2025 paper highlights how Generative AI is being used to simplify complex government documents, which are often riddled with technical jargon and legalistic language that alienate citizens. By employing AI to rephrase and streamline these texts while preserving their core meaning, Brazil aims to enhance transparency, accessibility, and civic engagement, particularly in a country where bureaucratic complexity can hinder public participation.

The process includes rigorous validation to ensure accuracy, offering a scalable solution for policies, public notices, and other documents to foster trust and inclusivity in governance. Simultaneously, Brazil's customs administration is undergoing a digital transformation, as outlined in the WCO News article, through AI-driven systems like SISAM, ANIITA, and PATROA, which have been operational since 2014 and continue to evolve. SISAM uses machine learning to detect errors in import declarations, ANIITA integrates data to generate alerts for customs officers, and PATROA enables real-time monitoring of suspicious transactions, collectively boosting efficiency and trade security.

[37] https://www.marsdd.com/our-story/12-canadian-companies-solving-our-supply-chain-woes/, 2023.
[38] https://mag.wcoomd.org/magazine/wco-news-105-issue-3-2024/brazil-ai-and-other-technologies/, 2024

The recent Product Catalogue (PC) in SISCOMEX standardizes product descriptions to minimize errors, while CLASSIF leverages AI to suggest accurate NCM codes for goods classification, aiding importers and exporters.

Despite challenges in adapting these systems to new frameworks, Brazil's advancements in both customs and government communication demonstrate a commitment to leveraging AI to modernize public services, aligning with global trends in digital governance and trade facilitation, and making complex systems more accessible and efficient for citizens and businesses alike.

Blockchain's Role in Streamlining Cross-Border Trade and Payments

The research paper "The Potential of Blockchain Technology for Collaboration among Countries" by Jefferson Beca Charzank, Kerley Silva, and Marco Tulio da Silva Lima, published on 22 May 2025 in the DGO2025 conference proceedings, dives into how blockchain can boost international trade digitalisation. With its decentralised, transparent, and tamper-proof features, blockchain tackles inefficiencies, fraud, and trust issues in cross-border trade by streamlining processes and cutting out middlemen.

Specifically, blockchain platforms enable real-time tracking of goods, ensuring compliance with trade rules, improving customs processes, and building trust between trading partners through clear, shared transaction records. The paper also highlights blockchain's ability to revolutionise cross-border payments by tokenising assets, slashing costs, and speeding up financial transactions, thus fostering economic collaboration. Additionally, a proposed workshop aims to pinpoint trade challenges and align blockchain's strengths, like transparency and standardisation, with these issues using the PESTLE framework, encouraging interoperable systems for global trade digitalisation.

Brazil and Synergy with LATAM in Trade Digitalisation: Sepro

Serpro, established in 1964 under Brazil's Ministry of Economy, is a key player in modernising Brazil's public sector, managing over 90% of the country's federal IT systems, processing 33 billion transactions annually, and handling 30.4 petabytes of data. Its efforts in trade digitalisation include solutions like the Product Catalogue (PC) in SISCOMEX and CLASSIF, which use AI to standardise product descriptions and suggest accurate NCM codes, streamlining customs processes and reducing errors in cross-border trade.

Serpro's partnership with the the XDC Network and Cardano, both announced in in the last 12 months, is a landmark for blockchain adoption in Brazil's public sector, focusing on digital infrastructure, transparency, and fraud prevention. This collaboration positions Brazil as a leader in LATAM for blockchain-based trade solutions, potentially influencing regional standards for secure, decentralised data sharing. Additionally, Serpro's partnerships with global entities like the London Stock Exchange Group (LSEG) and REACT-OnID enhance identity verification for cross-border financial transactions,

integrating Brazil's CPF and CNPJ databases to support anti-money laundering (AML) and know-your-customer (KYC) processes across LATAM.

These efforts align with regional trends, as countries like Argentina and Chile advance their own digital identity and trade systems, suggesting potential for future LATAM-wide interoperability, though no formal regional single window exists yet - though rumoured to be in development. Serpro's innovations, rooted in Brazil's robust digital governance framework, foster synergy by offering scalable models for secure, efficient trade digitalisation that could inspire collaborative frameworks across Latin America

7.8 The United Kingdom

Background on UK's Trade Digitalisation Strategy

The UK, post-Brexit, has prioritised digital transformation to enhance its trade competitiveness, particularly through the development of a Single Trade Window (STW) and the adoption of advanced technologies. The STW is part of the UK's Border Strategy, aiming to create the most effective border in the world by simplifying processes for traders and leveraging technology to reduce friction and costs[39]. This strategy aligns with global trends towards digital trade facilitation, emphasising the need for efficient, secure, and interoperable systems.

Single Trade Window (STW) Initiatives

The UK government is developing a Single Trade Window (STW), defined by the World Customs Organization (WCO) as a facility allowing parties to lodge standardised information and documents through a single entry point to fulfill all import, export, and transit-related regulatory requirements[40]. The STW aims to transform how traders interact with border processes, providing a "tell us once, in one place" digital system that saves time and money, lowering barriers to international trade[41].

The UK government has recognised DLT's potential to transform public and private services, redefine data sharing, transparency, and trust, and contribute to its digital transformation plan[42]. It has announced plans to make the UK a global hub for cryptoasset technology, including exploring DLT for sovereign debt instruments and establishing a financial market infrastructure (FMI) "Sandbox". This sandbox, opened by the Bank of England and Financial Conduct Authority, provides a regulated environment for firms to experiment with DLT in creating, trading, and administering securities, fostering innovation while ensuring compliance.

DLT's tamper-proof and decentralised nature makes it useful for breaking silos in international trade, enhancing interoperability between ICTs. The World Trade

[39] UK Border Strategy,
[40] A Guide to Trade Digitalisation and the Single Trade Window,
[41] UK Single Trade Window Consultation,
[42] Here's how the government wants to use blockchain's distributed ledger technology,

Organization (WTO) has mapped numerous DLT projects related to trade finance, digitalization of trade documents, and standardisation for digital interoperability, with the UK participating in this global movement (WTO Blockchain and DLT in Trade). This aligns with the UK's focus on creating standardised digital systems that can integrate with global trade networks, reducing inefficiencies and enhancing security.

Supporting Programs: Made Smarter Innovation Program

The UK's Made Smarter Innovation Program complements its trade digitalization efforts by focusing on digitizing manufacturing supply chains. Through initiatives like the Digital Supply Chain Innovation Hub and targeted support for small and medium-sized enterprises (SMEs), the program fosters collaboration and innovation, leading to more resilient and efficient supply chains (Made Smarter Innovation Program). This program aligns with the government's broader goal of enhancing the UK's competitiveness in global trade through digital transformation, supporting the STW's objectives by improving supply chain visibility and efficiency.

- **UK's Made Smarter Innovation Program**[43] – exemplifies a comprehensive approach to digitising manufacturing supply chains. Through initiatives like the Digital Supply Chain Innovation Hub and targeted support for SMEs, the program fosters collaboration and innovation, leading to more resilient and efficient supply chains.
- **Private initiatives include: Traydstream** is a London-based fintech founded in 2015 by Uzair Bawany, Achille D'Antoni, Amrish Sehgal, and Gary Bhattacharjee. It offers an AI-powered, cloud-based platform that automates trade finance document processing, using machine learning, OCR, and natural language processing to digitize and validate documents against 300,000+ trade and compliance rules. The platform reduces document checking time from hours to minutes, cutting costs by 60-70% and improving efficiency for banks and corporates.

  Traydstream operates across Europe, Asia, North America, and Africa, with headquarters in London and a subsidiary in Mumbai, India. Key partners include Sumitomo Mitsui Banking Corporation (SMBC), collaborating in Singapore (since 2023) and London (since 2022) to streamline trade finance operations. SMBC Singapore uses Traydstream to boost efficiency, while SMBC Bank International in London processes live transactions. Other partners include Citi, Standard Bank, National Bank of Fujairah, Meezan Bank, Erste Group Bank, and Sonali UK. Traydstream also works with tech providers like Microsoft, SAS, and Lloyds.
- **Trade Finance in the UK:** TradeTeq’s Technological Innovations

[43] https://www.ukri.org/news/made-smarter-innovation-supports-sustainability-in-uk-manufacturing/, 2021.

Nurtured by the International Trade and Forfaiting Association (ITFA) via their various Fintech working groups, TradeTeq's platform is built on an AI-powered infrastructure that transforms revolving pools of illiquid short-term trade finance instruments into tradeable, medium to long-term investment products. This transformation is facilitated by its AI-driven credit scoring and advanced analytics, which provide investors with the tools to understand and assess risk, thereby democratising access to trade finance[44]. The platform's ability to bridge the gap between trade finance lenders and institutional investors is crucial, especially for small and medium-sized enterprises (SMEs).

TradeTeq's focus on technology extends to exploring emerging trends like blockchain and tokenisation, as evidenced by its partnership with XinFin (originators of the XDC Network) to launch trade finance tokens on the XDC Network, a public/private hybrid, decentralised blockchain[45]. This move aims to deliver significant liquidity to the trade finance space by securitising an asset class that has typically been illiquid, using fungible security tokens with concrete collateral (TRADA). This initiative extends access to the trade finance market to both retail and institutional investors, aligning with the broader trend of digitalising trade finance.

ING and TradeTeq: A partnership where TradeTeq distributes ING's commodity trade finance exposures to non-bank institutional investors, facilitating transactions like one with Federated Hermes, an American institutional investor giant. This collaboration signifies the bank's understanding of the shifting landscape of finance and the value of adopting technology, enabling banks to reduce risk exposures and tackle the US$1.5 trillion trade finance gap[46].

8. Recommendations on Government Structure

Australia's trade landscape is hindered by a fragmented framework (and this is not even considering the Finance sector's involvement) of over 30 agencies, 200+ pieces of legislation, and 145 disjointed digital systems, necessitating a bold, unified approach to digitalisation that extends beyond trade to encompass the entire economy.

A transformative strategy, including a centralised agency under the Prime Minister and Cabinet to drive accountability and innovation, legislative mandates like real-time gross settlement (RTGS) adoption, and a relocated and revitalised National Committee on

[44] Tradeteq | World Economic Forum,
[45] Tradeteq Taps XDC Network to Launch Trade Finance Tokens | PYMNTS.com,
[46] Four ways ING consolidates its position as a global leader | FinTech Magazine

Trade Facilitation (NCTF) to align government and private-sector efforts is what is strongly recommended.

We explored harmonising key departments, enhancing public-private collaboration, and leveraging initiatives like the Fintel Alliance to combat financial crime while supporting secure trade finance and compliance.

This sets the stage for a discussion on leadership, cooperation, and technological integration—highlighting the need for a cohesive ecosystem that bridges supply chains, payments, and regulatory frameworks to position Australia as a leader in digital trade and economic modernisation that reflects our existing commitments to a National Digital Economy Strategy, International Treaties on Trade Facilitation and Sustainability and Development Goals.

8.1 Leadership & Accountability

The following proposals would assist to overcome regulators fragmentation in Australia to trade modernisation:

- **Central Agency Under PM&C:** Oversee “Digitalising the Entire Economy” with strong ministerial and legislative authority. Make “Digital” inclusive of Web3 technological advancements.
- **Legislate:** Mandate Banking sector to adopt RTGS in payments, like much of our Asian neighbours - make the payments sector a priority for Australia. **MLETR** and **MLIT,** and **MLWR** put into action.
- **Reimagine or Reengineer:** The National Committee on Trade Facilitation needs to be re-assessed for relevancy to promote operational focus, continuity, coherency and stability.
- **Minimising Operational Silos:** More cooperation representing international trade supply chains including Treasury, Border Force, Tax, Foreign Affairs & Trade, ASIC, AUSTRAC, etc reflecting our Digital Transformation Agency and Digital Economy Strategy and including more diverse private sector representations.
- **Reporting & Monitoring:** Continuous transparency on milestones, budgets, and outcomes. Operate with more courage and follow-through.

8.2 National Committee on Trade Facilitation (NCTF)

- **Reassessment of NCTF:** Relocated to the Department of PrimeMinister and cabinet, it is essential to allow for the inclusion of the Finance, Insurance and Securitisation sectors, and more diverse voices in Technology. Broadening

scope allows for WTO TFA compliance and driving holistic digital transformation.

- **Public-Private Collaboration:** Ensure fuller representation in sectors like insurance, SMEs, finance, and digital technology.
- **Reimagine:** the NCTF (or something of a similar nature) becomes a body that actions the vision of Government via legislature that is accountable to Ministerial powers consistent with global trade digitalisation efforts.

8.3 Harmonising Government Efforts

- **Align Treasury, ATO, DFAT, DTA, DAFF, Defence and Home Affairs:** on MLETR & MLIT adoption, cross-border digital identity frameworks, verifiable credentials, and cybersecurity mandates.
- **Budgetary Support:** Secure funding to ensure the long-term viability of digital trade infrastructure as a national asset.

8.4 Harm Minimisation Private/Public Group (initiative like FinTel Alliance)

Australia experiences unacceptable levels of illicit trade in both import and export pathways. The Fintel Alliance targets financial crimes unrelated to goods movement, such as tax evasion and virtual asset misuse - as part of its broader mission to combat money laundering, terrorism financing, and other serious financial crimes - while paperless trade focuses on streamlining physical supply chains.

However, emerging technological applications, poised to enable instant RTGS payments in paperless Trade, are set to cross these paths and may warrant its attention.

Fintel's efforts to monitor suspicious financial flows might not directly address trade-based money laundering (TBML), where illicit funds are disguised through goods transactions—a gap paperless trade could help close with traceable digital records.

- **Facilitating Secure Trade Finance:** By strengthening Australia's financial system against money laundering and cybercrime, the Fintel Alliance builds trust in banks and payment platforms like RTGS, encouraging international partners to engage in trade finance with Australian businesses, reducing delays and costs in cross-border transactions.

- **Streamlining Compliance for Exports:** The Alliance's work on regulatory clarity and international cooperation helps align Australia's AML/KYC standards with global norms, simplifying compliance for exporters and making Australian goods more competitive in markets like Asia, where digital trade is accelerating.

However, Fintel's lack of a holistic supply chain focus means it might not fully leverage paperless trade's data, such as digitised bills of lading, to detect TBML, potentially leaving a blind spot in crime prevention.

Sharing this data also raises concerns about confidentiality and jurisdictional access, as Fintel's partners (e.g., law enforcement) might demand information that trade stakeholders (e.g., SMEs, exporters) are reluctant to disclose. Without clear protocols, this tension could undermine trust in both initiatives. FinTel is a step in the right direction - a more nuanced approach would likely provide better solutions.

Bridging the Ecosystem Gap - Digitalising the Economy

While various sandboxes exist, none currently encompass the entire supply chain, including goods movement and payment systems, as a unified ecosystem. We urge the Government to support and promote innovative approaches to the digital trade proposition. By fostering new strategies - particularly in trade - government can unlock the full potential of a connected, efficient, and modernised system.

Australia's trade digitalisation efforts can be significantly enhanced by integrating Tax Office operations, particularly Business Activity Statement (BAS) reporting, into a cohesive digital trade ecosystem. By aligning the Australian Taxation Office (ATO) with initiatives like the Trade Single Window and real-time gross settlement (RTGS) systems, BAS reporting can be streamlined through automated, interoperable platforms that pull trade data directly from digitised documents such as electronic bills of lading and invoices. This integration would reduce administrative burdens for businesses, especially SMEs, by enabling real-time, pre-filled BAS submissions based on verified trade transactions, ensuring compliance while minimising errors and manual input. Leveraging blockchain-based solutions, like those proposed under the UNCITRAL Model Law on Electronic Transferable Records (MLETR), would further enhance transparency and traceability, aligning tax reporting with Australia's broader digital economy goals.

Public-private collaboration is critical to achieving seamless BAS integration. By expanding the National Committee on Trade Facilitation (NCTF) to include ATO representation alongside Treasury, Border Force, and private-sector stakeholders like web3 fintechs and AI logistics providers, Australia can develop a unified platform that synchronises trade and tax data.

Initiatives like the Fintel Alliance could be adjusted and extended to ensure that digital trade records used for BAS reporting are secure and compliant with anti-money laundering (AML) and know-your-customer (KYC) regulations, fostering trust among international trade partners. This approach would also address trade-based money laundering (TBML) risks by cross-referencing trade and financial data, enhancing the ATO's ability to detect discrepancies in reported transactions.

To operationalise this vision, a centralised agency under the Prime Minister and Cabinet should oversee the integration of BAS reporting into Australia's digital trade infrastructure, with legislative mandates to enforce adoption. Budgetary support and continuous monitoring, as recommended for broader trade digitalisation, will ensure long-term viability. By embedding BAS reporting within a harmonised ecosystem that bridges supply chains, payments, and regulatory frameworks, Australia can reduce compliance costs, improve cash flow for businesses, and position itself as a leader in digital trade. This integration not only supports the National Digital Economy Strategy but also aligns with global trade facilitation commitments, driving economic modernisation and competitiveness.

9. Transition Strategy: “Eat the Elephant One Bite at a Time”

A step-by-step plan to revolutionise Australia’s trade system through digitalisation, spearheaded by a Ministerial Digitalisation Committee to unite key departments, sectors, and regulators in support of the WTO’s Trade Facilitation Agreement and an Open Rules-Based Order.

This strategy then begins with a data-driven approach to digitalising export compliance documents for practical trade to MLETR regions. Ultimately, we need an agreed, truly purpose-fit approach with an integrated import/export digital vision, which along the way integrates digital and Web3 payments - and TradeFi to shrink the trade finance gap - and finally aims for trade asset tokenisation for secondary financial markets.

This process and systematic approach is all underpinned by robust project management, workforce upskilling, cybersecurity measures, and clear communication to ensure a seamless shift that preserves jobs and authority. It must be kept in mind that heavy government steering is good at first, but the long-term success of digital trade depends on industry ownership - this helps faster real-world adoption and ensures the infrastructure evolves with industry needs, not just regulatory compliance.

9.1 A Ministerial Digitalisation Committee (National Committee on Trade Facilitation)

The **Open Rules-Based Orde**r is a guiding principle for international trade and diplomacy, with the WTO and TFA as key components. It ensures a predictable and fair trading environment, supported by structures like the NCTF and active participation in WTO processes.

Led from the Department of Prime Minister and Cabinet, a revised NCTF should include representatives of trade, finance and technology providers:

- **Implementation:** Following the WTO Treaty to its full commitment shows we support an *Open Rules-based Order* and commitments made in international treaties.
- **Key Departments, Sectors & Regulators:** Representatives to maintain a continuity of execution of the Ministerial vision and legislative powers.
- **Mandates & Timelines:** More rigorously accountable project management approach from the current NCTF, with deliverables and accountability at each stage.

9.2 Phased Implementation

1. **Export Documents First:** eBills of Lading, Letters of Credit, Certificates of Origin; broad, industry-wide Supply Chain Maturity Assessments.
2. **Digital & Web3 Payments:** Integrate with existing banking infrastructure before moving then to tokenised finance to close the Trade Finance Gap.
3. **Investigate:** Models for Whole Trade, Data Rivers - and not just Single Window Models. Balance the dependence and tethering to Government as sole source of inspiration and motivation - Industry Pilots (where required).
4. **Tax and Customs integrations:** Whole-of-ecosystem approach.
5. **Tokenisation of Trade (as an asset class):** Scale up once legal and technical frameworks mature; potential for a world of derivatives and secondary markets.

9.3 Change Management

- **Phase 1:** Supply Chain Maturity Assessments
- **Phase 2:** Live and Simulated Trade Executions
- **Phase 3:** Tax Incentives & Full Program Launch
- **Phase 4:** National Expansion & Export Scaling

- **Upskilling & Communication:** Train civil service staff on the back of Digital Transformation Agency efforts. Educate the public and SMEs, keep all stakeholders informed.
- **Cybersecurity Requirements:** Minimum cyber standards for participants to maintain trust. DLT and Blockchain for high security augmentation layer.
- **No Loss of Jobs or Authority:** Emphasise synergy, new opportunities, and improved outcomes for all. Outline the phased approach with a clear Digital Road Map.

10. Suggested Next Steps

A concerted movement towards a Whole-of-Ecosystem Approach - and integrate tax, finance, and trade (including customs/biosecurity) into a single interoperable digital ecosystem - is our collective assertion.

Suggested Next Action Items

1. **Legislate:** based on a sound and comprehensive Digital Policy, make Trade a priority amongst the other verticals that “Digital” cuts through – and make it web3 augmented.
2. **Consolidate Stakeholders:** Identify all relevant agencies (ASIC, AUSTRAC, ATO, DFAT/BioSecurity, Home Affairs/Border Force) and industry players (including Finance, Insurance, Web3 & Fintech and SMEs) to form a steering committee that sits immediately under Ministerial accountability - while also reinvigrating the NCTF.
3. **Set Clear Timelines:** Define milestones for phased adoption (e.g., paperless eBoL pilot by Q4, expand to tokenised payments by Q2 next year). Make these moves public. Add a task during the "Initiation" phase e.g. launch diplomatic dialogues with UK, France, Singapore, Japan, smaller ASEAN countries, and others to pre-negotiate recognition frameworks based on MLETR principles.
4. **Move where we can, now:** Exports can go live already - to MLETR compliant regions. Then once we have MLETR passed here locally, we easily secure digital trading partners in reciprocality, accelerating real-world adoption and competitiveness.
5. **Secure Funding & Legislative Backing:** Ensure budget for holistic support - technology upgrades, training, and legislative amendments.
5. **Pilot & Scale:** Sandbox and expedite “digitalisation”. Kick off one to two pilot projects in Exports, measure success, and iterate to all facets of supply chain and international trade, within a specific “International Cross-border Supply Chain Sandbox” that crosses all economy verticals - covering goods, payments, and finance.
6. **Metrics and KPIs for Success:** Objectively measure progress by introducing Key Performance Indicators (KPIs) and Success Metrics under the revitalised NCTF with Ministerial Digitalisation Committee oversight. Clear metrics allow political and public accountability, keeping momentum alive. Chart and manage:

    - % of export/import transactions processed digitally

- Reduction in customs clearance times
- Reduction in documentary fraud cases
- SME participation rate in digital trade platforms
- Trade cost reduction achieved per shipment

Strategic Implementation Timeline and Milestones

Moving from policy to practice requires a clear implementation strategy. Below is a proposed timeline of actions and milestones over the next few years to realise a digitalised trade environment in Australia. This phased approach balances urgency with realism, ensuring that legal changes and infrastructure rollouts go hand-in-hand, and that stakeholders have time to adapt. The Ministerial Digitalisation Committee/revitalised NCTF would support these phases, coordinating between government, parliament, and industry.

This timeline is ambitious but achievable. It envisions that within two years, Australia will have the core legal bedrock in place and initial live digital Export trade operations underway. The pilot phase in 2026 is crucial – it will demonstrate the practical effectiveness of our reforms and allow any operational bottlenecks to be identified and resolved. For example, a pilot might reveal the need for more customs officer training on e-docs, or improvements in data standards for compatibility; these can then be scaled nationally.

Even within Australia, different ports, banks, logistics firms, and customs may adopt different DLT solutions, data standards, or APIs. Without an agreed national interoperability framework, systems could fragment, defeating the purpose. During Infrastructure phase, mandate development of a National Interoperability Framework for digital trade, aligned to global standards like the Digital Container Shipping Association (DCSA) standards, ICC's DSI architecture, and UNCITRAL recommendations.

We must ensure that every Australian participant (from Darwin to Hobart - Perth to Brisbane) can speak the same digital language — and connect seamlessly to overseas partners.

Finally, we must develop and mandate National Digital Trade Resilience Plans (including data redundancy, incident response, offline fail-safes). We must guarantee that if systems go down or are attacked, critical trade flows continue without collapse — strengthening national security and supply chain resilience.

Throughout implementation, leadership coordination is key

The Parliamentary Friends of Blockchain group should receive regular progress reports from the Steering Committee and use its platform in Parliament to keep attention on milestones (for instance, championing the bills during second reading debates or publicising the results of pilot projects). The PFOB can also serve as an intermediary to resolve any inter-agency issues – because trade digitalisation spans multiple portfolios (Trade, Industry, Infrastructure, Treasury, etc.), a politically neutral champion can help align priorities.

Phase	Timeline	Key Actions & Milestones
Initiation	**Q3–Q4 2025**	– Establish a dedicated **Digitalisation Steering Cmte** and *revitalised* NCTF (under Ministerial guidance), with key gov/industry representations. – Audit our domestic adherence to our international treaty obligations. Establish omnibus legislation that affirms MLETR / MLIT (& MLWR) adoption and that all prior references to paper / wet signatures, ID, etc shall now be accepted under the "functional equivalence" principle.
Legislative Reform	**Q4 2025 – Q2 2026**	– **Drafting and Introduction of Legislation:** Finalise the draft **Electronic Trade Documents Bill** (MLETR implementation) and complementary **Digital Identity Trust Services Bill** (MLIT implementation) by end of 2025. – PFOB Ministers incl owner of Steering cmte to sponsor or heavily endorse related Trade Digitalisation

bills, ensuring bipartisan co-sponsorship.

– Parliamentary debate and passage in early 2026, aiming for laws to receive Assent by mid-2026. In parallel, enact necessary regulatory changes (Customs Act regulations, etc.) through Ministerial powers or delegated legislation, timed with the main Acts.

Infrastructure 2026

– Make **Digital Trade Corridors** mainstream with willing partner countries: e.g. a pilot route for electronic bills of lading between Melbourne and Singapore, or Sydney and London. Work with States e.g. Trade & Investment Queensland initiatives in Web3 Ready Digital Exports/

Use real transactions to test legal acceptance and technical interoperability. Plenty already done in e-Phyto, however only low rates of implementation. The emphasis needs to be in “implementation”.

– Build upon the work with industry consortia (shipping companies, fintech, logistics providers) that conduct sandboxes or trial runs under the new legal regime.Call for a resolving of disparate sandboxes and implement an **international cross-border supply chain sandbox** covering both movement of goods and payments and the appropriate legal foundations.

Capacity Building	**2025 – 2027 (ongoing)**	– Roll out a **Digital Trade Education Program**: provide government-led seminars, online portals, supply chain maturity assessments and guides explaining how to adopt web3 and use electronic trade documents - ttargeted especially at SMEs. – Provide grants or *incentives* for SMEs to adopt e-commerce and digital trade software (e.g. vouchers for integrating electronic invoicing or buying blockchain-based trade document solutions). – **Ensure harmonisation across states:** through the national Cabinet or Attorneys-General council, align state laws (like evidence acts or any state-level transaction laws) with the federal reforms to avoid inconsistencies.

Review and Expansion	**2027 and beyond**	– Conduct a **formal review** of the implemented laws after one year of operation (2027) to address any teething issues and ensure they are keeping pace with technology (the digital world evolves quickly – the laws might need periodic tweaks). This might best fall on the duties of an Inspector General for Digital who can monitor progress. – **Support DFAT and expand digital trade agreements:** use the success of pilot corridors to negotiate permanent mutual recognition with more countries, embedding digital trade provisions in future FTAs or updating existing ones (e.g. adding protocols with ASEAN, or pushing for APEC-wide guidelines on e-documents). More emphasis on WTO JSI actioning. – **Support the WTO Joint Statement Initiative and encourage global adoption**. Continuously engage in international fora: PFOB and government reps to share Australia's journey in venues like UNCITRAL, WTO, G20, positioning us as a model nation and advocating for broader global adoption so that by, say, 2030 a majority of our trade volume is with partners who also operate paperlessly.

11. Closing Remarks on Digitalising the Economy

There are three good reasons to increase the rate of transition: improved efficiency, workforce utility, and financial payoffs all lead to better social and environmental outcomes.

1. Provenance, Realtime Traceability/RT Transparency, Fraud mitigation, Adherence to Compliance, AML, Cyber Security and FinCrime measures:

Better outcomes for societies via reduction in illicit trading (from Tobacco, drugs and firearms to all forms of Human and wildlife trafficking). Tracing and proving "true goods" (eliminating fakes and forgeries) with verifiable entities and products. Goods get to their intended destination with completed transactions, for example avoiding landfill via Slavery compliance - and ESG for Governmental benchmarks. Biosecurity risks can be better managed.

Also, quicker processes in bureaucratic gateways and supply chains– **forms** give way to **Data** streams – and transfer of process steps become locked into an immutable ledger (preferably, with no hacks and single points of network failure) that allows provenance and automation of a trusted, verifiable product.

2. Predictability and use of time/assets in a more productive fashion; Productivity assisted by implementing technological efficiencies at all points of the chain. Better use of resources and people power means more jobs with meaningful hands-on activity:

Additionally, AI can give high levels of predictability to create more responsiveness and dovetailing of processes; and Distributed Ledger Technology (e.g. blockchain) can assure reliable, non-tampered data.

*3. Faster settlements (transactions) – titles **and** payments = quickened goods flow and cash flow, liberating time (time previously spent idle) and increased working capital. RTGS Payment optionality compounded over the course of a financial year, saves millions; TradeFi set to increase SME access and narrow the Trade Finance Gap, including cheaper loans turbo-charging the economy from the bottom-up.*

All this means increased robustness of social fabric arising from the economy. Add in potential for tokenisation of trade finance and with this, a growing derivative market built on a growing asset class of private debt (tradefi/defi) - great for building secondary markets!

With the implementation of these above points, *and including the formative step of launching programs supporting supply chain technology adoption in Australia's most critical industries (as per section 5.5),* we create the foundations to delivering an even more robust economy.

We will see a smoothing out of corporate/SME expenses, reduction of consumer costs now giving more access to entrepreneurial activity and an expected rise in quality living. More contribution and competition is good for everyone – including the consumer and the tax man.

Moving from paper-based to digital processes will deliver:

- **Traceability & Confidence:** Reduced errors, less fraud, instant verification.
- **Speed & Robustness:** Real-time data flows, enabling immediate responses to issues like spoilage or disease outbreaks.
- **Tech & Standards:** Embracing standards (ICC DSI, UN/CEFACT, WTO TFA) ensures interoperability and global acceptance.
- **Leadership & Culture Change:** Commitment from top government tiers and the private sector is vital for a successful, long-term digital transformation.

Finally, two good reasons to temper Government intervention – maintain the balance of innovation and openness to the market

- **Bureaucratic Inflexibility**: Too much red-tape and government stagnation-points might inadvertently slow adaptation to evolving technology. Traders might face rigid processes that lag behind private-sector innovations, as government timelines and priorities—evident in our national decade-long consultation —are often seen to move listlessly and over-cautiously, compared to market-driven solutions.
- **Risk of Overreach or Dependency**: Heavy government involvement could lead to excessive oversight, such as mandatory data-sharing requirements that raise privacy concerns for businesses. Reliance on a single point of failure if technical issues arise in a system solely managed by the CEDB could also arise. This dependency might discourage private (and, sometimes, ‘better’ alternatives), stifling competition and innovation in our trade ecosystem.

Executive Summary

“Digitalising Australian Trade” is a nation-building project for the 21st century. It aligns with our national interests on multiple fronts: economically (boosting efficiencies and productivity, reducing fraud and promoting growth), politically (cementing our role as a regional leader and global standard-setter), and socially (making trade more inclusive for businesses of all sizes; better results for social fabric and resilience).

The timing is right – the technology is mature, international momentum is strong, and domestic stakeholders increasingly recognise the need for change. What is required now is the political will to see it through, and that is what this policy proposal seeks to galvanise.

Australia has always been a trading nation, adept at riding the waves of global change. Just as we transitioned from the age of sail to the era of air freight, we must now transition from the age of paper to the era of digital trade.

By endorsing and implementing the recommendations in this proposal, the Parliamentary Friends of Blockchain and the broader parliamentary community will help launch Australia into that future. The ships and planes carrying our goods may remain physical, but the cumbersome paper trails they once relied on will be replaced by seamless digital highways.

Let us seize this opportunity to future-proof Australian trade. With unity of purpose and clarity of action, we can ensure that Australia leads in the digital trade revolution, delivering lasting benefits for our economy, businesses, and standing worldwide.

The work begins in earnest now, and the rewards will be reaped for decades to come.

APPENDIX

Guide-Rails, Templates, and Helpful Reference Points

We cast a wide lens on the global shift toward digital trade, spotlighting international treaties and frameworks that could guide Australia's modernisation efforts, with a nod to practical innovations.

WTO & UN Resources

- **UN Recommendation 4:** National trade facilitation bodies with balanced public-private participation. Review and reform; place under Ministerial Authority.
- **WTO Trade Facilitation Agreement (TFA):** Legally binding simplification of customs processes, with a focus on transparency. Article 10
- **UNCITRAL MLETR, MLIT & MLWR:** The United Nations Commission on International Trade Law working group IV - E-commerce: Enabling laws for electronic transferable records, identity management, and warehouse receipts.

UNCEFACT Recommendation 4 and WTO Alignment:

The UNCEFACT National Trade Facilitation Recommendation 4[47] aligns closely with the WTO's Agreement on Trade Facilitation (TFA). The WTO TFA, adopted in 2014 and entered into force in 2017, encourages all member countries, including Australia, to establish or maintain National Trade Facilitation Committees (NTFCs) to coordinate and implement trade facilitation measures. Specifically, Article 23.2 of the WTO TFA mandates that each member "shall establish and/or maintain a national committee on trade facilitation or designate an existing mechanism to facilitate both domestic coordination and implementation of the provisions of this Agreement." This is directly in line with the UN recommendation which emphasises balanced public-private sector participation to improve trade efficiency and reduce costs.

The UN recommendation and WTO TFA share the goal of simplifying trade processes, reducing red tape, and enhancing collaboration between government and private sector stakeholders. The NFTC in Australia is Australia's response to this international guidance.

There was a significant meeting in 2024 (October 22-24) on the WTO Trade Facilitation Agreement, hosted by the Committee on Trade Facilitation. This meeting addressed

[47] UNECE National Trade Facilitation Bodies Recommendation No. 4, United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT)

key aspects of TFA implementation, digitalisation, and capacity building, reflecting the ongoing global effort to enhance trade efficiency. We find that the existence of the NFTC while missing key representations in Insurance, Finance, Payments, and Web3 Technologists is currently not in line with the WTO requirements nor our country's TFA commitments.

WTO Trade Facilitation Agreement and Article 10:

The WTO Trade Facilitation Agreement (TFA), adopted in 2013 and effective since 2017, aims to streamline global trade by reducing costs and delays through simplified customs procedures, with *Article 10* specifically targeting the minimisation of formalities for importation, exportation, and transit; it mandates periodic reviews of documentation to ensure necessity, encourages acceptance of document copies, adoption of international standards, and establishment of a "single window" (purposefully undefined?) system for centralised submissions, while also promoting simplified procedures for pre-shipment inspections, customs brokers, border coordination, rejected goods, temporary admissions, and transit, ultimately fostering efficiency and predictability in trade processes.

Article 10 aims to cut red tape, reduce bureaucratic hurdles, and align national practices with global best practices, making trade faster, cheaper, and more predictable. It balances flexibility for developing nations (via implementation timelines) with a push for modernisation, such as a single window approach - or otherwise.

International Advisory and Standards Bodies: UN/CEFACT and ICC Digital Standards Initiative (DSI)

Furthering and deepening Australia's trade digitalisation agenda is the critical role of the **United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT)**, an intergovernmental body renowned for its leadership in developing global standards and tools to simplify and harmonise international trade processes. Established in 1996 under the United Nations Economic Commission for Europe (UNECE), UN/CEFACT represents a worldwide network of experts and member states, delivering activities such as the creation of trade facilitation recommendations and electronic business standards like UN/EDIFACT, which have become foundational to digital trade ecosystems. Through its working groups, UN/CEFACT is advancing digital frameworks that integrate technologies such as Distributed Ledger Technology (DLT), promoting seamless data exchange and interoperability across borders. By fostering collaboration among governments, businesses, and international organisations, UN/CEFACT aligns its initiatives with Australia's trade facilitation objectives, reducing administrative burdens, enhancing transparency, and building trust in cross-border transactions, positioning it as a vital partner in modernising Australia's trade infrastructure.

To future-proof Australia's trade systems for seamless global integration, UN/CEFACT's contributions can be leveraged to enhance cross-border interoperability between DLT and other digital platforms. Its development of standards and frameworks for digital trade facilitation complements efforts by organisations like the World Customs Organization (WCO) and GS1, yet distinguishes itself with a focus on electronic business protocols, such as those supporting UNCITRAL's Model Law on Electronic Transferable Records (MLETR). By aligning with MLETR, UN/CEFACT ensures legal recognition of electronic trade documents across jurisdictions, a critical step for Australia's participation in global trade networks like RCEP and CPTPP. Prioritising interoperability protocols—such as API standards, messaging formats, and credential frameworks—Australia can harness UN/CEFACT's expertise to bridge DLT's decentralised capabilities with scalable digital solutions, enabling true plug-and-play integration with international partners, streamlining trade processes, and reinforcing Australia's leadership in next-generation trade facilitation within the digital economy.

The ICC Digital Standards Initiative (DSI), launched by the International Chamber of Commerce (ICC) in 2020, is a global effort to accelerate trade digitalisation by establishing a harmonised, interoperable digital trade environment. Headquartered in Singapore and supported by partners like the Asian Development Bank, Enterprise Singapore, the World Trade Organisation (WTO), and the World Customs Organisation (WCO), the DSI addresses the fragmentation caused by siloed digital platforms and outdated paper-based processes that dominate global trade—over 90% of which still relies on physical or PDF documents. Its mission is to make trade faster, cheaper, more secure, and inclusive, particularly for small and medium-sized enterprises (SMEs) and emerging markets, by driving the adoption of universal digital standards, legal reforms, and capacity building. Below is an outline of the DSI as it relates to trade digitalisation:

Purpose and Vision

The DSI positions itself as a neutral, industry-led coordinator, leveraging ICC's authority—underpinning trillions in annual cross-border transactions—to unify fragmented digital trade efforts. Rather than replacing systems like EDI outright, it seeks to integrate and evolve them, aligning with initiatives like Australia's MLETR consultations or global blockchain pilots, ensuring trade digitalisation is practical, scalable, and universally accessible.

Seeks to connect "digital islands" (isolated platforms) into a cohesive ecosystem, enhancing supply chain resilience, transparency, and efficiency while reducing fraud and costs.

- **Objective:** Harmonised electronic standards, aiming to digitise 60–80% of world trade by 2026.
- **Toolkit & Frameworks:**
    - **KTDDE Framework:** Aligning 36 key trade documents and real-world case-studies with existing standards.

- **Case Studies & Knowledge Sharing:** Demonstrating real-world digital tools in logistics and finance.

Advancing Global Trade Through Digital Innovation and Interoperability: A few select examples - C4DTI (UK), DigitalTrade4.EU & WEF TradeTech Regulatory Sandbox (MENA)

The **Centre for Digital Trade and Innovation (C4DTI)** is a UK-based, industry-led initiative spearheaded by ICC United Kingdom (the International Chamber of Commerce's UK branch) and hosted at Teesside University in the Tees Valley. Established in April 2022 with support from the Tees Valley Combined Authority, it's a public-private partnership aimed at accelerating the digitalisation of UK trade. Its mission is to create a modern, efficient, and sustainable trading system by shifting from paper-based processes to digital solutions, making trade cheaper, faster, simpler, and more accessible—especially for small and medium-sized enterprises (SMEs).

C4DTI works with a range of partners, including the ICC Digital Standards Initiative, foreign governments, businesses, and international organisations, to promote open, interoperable systems based on common standards. A key focus has been supporting the UK's **Electronic Trade Documents Act 2023 (a variation of the MLETR)**, which came into force in September 2023. This law allows critical trade documents—like bills of lading—to be handled digitally with full legal effect, a move that could unlock billions in trade growth by cutting inefficiencies tied to the estimated four billion paper documents circulating globally. The UK was among the first major economies to enact such legislation, positioning it as a leader in digital trade.

The Centre's activities include practical projects like pilot programs (e.g., testing digital trade corridors with Singapore and Thailand), research to identify barriers, and advocacy for global standards. It's also expanding internationally, with plans for an **iC4DTI** (international C4DTI) launching in December 2025 to support digital trade in markets worldwide, from hubs like Singapore to emerging economies. This reflects growing demand for its expertise, especially after the UK's legal reforms sparked interest from places like ASEAN and Commonwealth countries.

DigitalTrade4.EU is the online hub for a European initiative dedicated to advancing the digitalisation of trade finance and international commerce. It's a collaborative platform that brings together a diverse group of stakeholders—banks, logistics providers, shipping lines, insurers, technology innovators, trade associations, and regulatory authorities—to create a more efficient, secure, and interoperable digital trade ecosystem. The initiative focuses on moving away from outdated paper-based processes toward digital solutions that streamline cross-border trade, particularly benefiting small and medium-sized enterprises (SMEs) by reducing costs and improving access to finance.

The site highlights several key goals:

- **Legal Harmonisation**: Pushing for alignment with frameworks like the EU's eIDAS 2.0 regulation (for digital identity and trust services) and the UNCITRAL Model Law on Electronic Transferable Records (MLETR), which supports digital trade documents.
- **Technical Standards**: Advocating for clear, normative standards—like Payment Services Directive (PSD) and Payment Services Regulation (PSR)—to ensure secure and accessible digital trade tools.
- **Ecosystem Development**: Fostering a European TradeTech community to deploy mature digital solutions that enhance global supply chains.

A notable focus is on practical advancements, such as the use of the **EU Digital Identity Wallet**, which allows secure remote signing of trade documents with qualified electronic signatures. The site also covers cybersecurity concerns (e.g., referencing the ENISA Threat Landscape 2024 report) and policy updates, like the European Commission's Competitiveness Compass from January 2025, which ties digital trade to economic resilience.

World Economic Forum (WEF) Abu Dhabi TradeTech Regulatory Sandbox is a pioneering initiative launched by the World Economic Forum in collaboration with the UAE Ministry of Economy and the Abu Dhabi Department of Economic Development (ADDED). It's part of the broader **TradeTech Global Initiative**, which aims to revolutionise global trade by integrating advanced technologies like blockchain, AI, and digital identity systems into trade processes. The sandbox was first unveiled during the WEF's 54th Annual Meeting in Davos, Switzerland, in January 2024, through a memorandum of understanding signed by UAE Minister of State for Foreign Trade Dr. Thani bin Ahmed Al Zeyoudi, ADDED Chairman Ahmed Al Jasim Al Zaabi, and WEF's Sean Doherty.

The Abu Dhabi-based sandbox provides a controlled environment where startups and tech providers can test innovative trade solutions—think digital trade documentation, AI-driven trade finance, and blockchain-based product traceability—without the full weight of regulatory constraints. The goal is to de-risk innovation, accelerate adoption, and inform smarter, future-ready trade policies. It's supported by key UAE regulators like the Abu Dhabi Global Market, the Central Bank of the UAE, and the Dubai Financial Services Authority, ensuring a robust framework for experimentation.

In January 2025, NayaOne, a digital transformation platform, announced it was powering the sandbox, enabling collaboration between regulators, enterprises, and tech innovators. Eight startups were selected for pilot projects, with results set to be showcased at the **TradeTech Forum 2025** in Abu Dhabi on April 8, 2025, during the AIM Congress. This event, hosted at the Abu Dhabi National Exhibition Centre (ADNEC), will feature over 400 trade leaders discussing how these pilots can shape a more efficient, inclusive, and sustainable global trade ecosystem. A key output will be

regulatory recommendations to enhance interoperability and security in digital trade worldwide.

The UAE's role is central—Abu Dhabi positions itself as a hub for TradeTech innovation, building on its history as a trade facilitator and its push for digital supply chains. For example, the sandbox aligns with efforts like the UAE's $10 million commitment (via the IOTA Ecosystem DLT Foundation) to fund TradeTech startups, announced at the 2024 TradeTech Forum. It's all about making trade faster, cheaper, and more accessible, especially for SMEs, while tackling challenges like customs delays and paper-based inefficiencies.

Some Key Peak Industry Trade-related Associations

It is important to highlight the contributions of some key industry associations - and earmark them for future reference.

Central to enhancing Australia's trade digitalisation agenda is the **World Customs Organization (WCO)**, an intergovernmental body established in 1952 as the Customs Co-operation Council (CCC), representing 186 customs administrations that collectively manage over 98% of global trade. Headquartered in Brussels, Belgium, the WCO is the sole international organisation dedicated to harmonising customs procedures, developing global standards like the Harmonised System (HS) for commodity classification, and promoting tools such as the SAFE Framework of Standards to secure and facilitate trade. Through initiatives like the BACUDA project, which builds capacity in data analytics, and the WCO Trade Tools platform, it supports the adoption of digital technologies to modernise customs operations worldwide. By collaborating with member states, businesses, and international bodies like the WTO, the WCO aligns with Australia's objectives of streamlining trade processes, enhancing border security, and fostering economic growth, making it a cornerstone partner in advancing Australia's trade infrastructure.

To position Australia's trade systems for global interoperability, the WCO's expertise can be leveraged to integrate Distributed Ledger Technology (DLT) and other digital platforms into customs frameworks. Its work on standards complements efforts by organisations like UN/CEFACT, with a unique focus on customs-specific digitalisation, including support for UNCITRAL's Model Law on Electronic Transferable Records (MLETR) to ensure legal recognition of electronic trade documents across jurisdictions—crucial for Australia's engagement in trade agreements like RCEP and CPTPP. By prioritising interoperability protocols—such as API standards, messaging formats, and credential frameworks—the WCO enables Australia to bridge DLT's decentralised capabilities with scalable digital systems, facilitating seamless connectivity with international partners. This approach not only optimises customs efficiency but also supports broader goals like combating illicit trade and promoting

sustainability, reinforcing Australia's leadership in next-generation trade facilitation within the digital economy.

Helping advance the global trade digitalisation agenda is the instrumental role of the **Digital Container Shipping Association (DCSA)**, a neutral, non-profit organisation established in 2019 by nine of the world's largest container shipping companies, representing approximately 70% of global containerised trade. Headquartered in Amsterdam, the DCSA drives digital transformation by developing open-source, technology-agnostic standards to enhance interoperability, efficiency, and transparency across the container shipping industry. Through initiatives like its Track & Trace API, electronic Bill of Lading (eBL) standards, and Operational Vessel Schedules, the DCSA facilitates seamless data sharing among carriers, shippers, ports, and other stakeholders, aligning with Australia's goals to streamline trade processes and improve supply chain visibility. By collaborating with its member carriers—such as MSC, Maersk, and Hapag-Lloyd—and engaging broader industry ecosystems, the DCSA supports the shift toward a digitised trade landscape, reducing inefficiencies and fostering sustainable practices, making it a critical ally in modernising Australia's trade infrastructure.

To ensure Australia's trade systems are equipped for global integration, the DCSA's efforts can be harnessed to strengthen cross-border interoperability between Distributed Ledger Technology (DLT) and other digital platforms. Its standards complement the work of organisations like the World Customs Organisation (WCO), distinguishing itself by focusing on container shipping-specific digital solutions, such as those supporting UNCITRAL's Model Law on Electronic Transferable Records (MLETR). Alignment with MLETR enables legal recognition of electronic trade documents across jurisdictions, vital for Australia's engagement in trade agreements like RCEP and CPTPP. By prioritising interoperability protocols—such as API standards, messaging formats, and credential frameworks—Australia can leverage the DCSA's frameworks to integrate DLT's decentralised strengths with scalable digital systems, facilitating plug-and-play connectivity with international partners, optimising trade operations, and solidifying Australia's position as a leader in next-generation trade facilitation within the digital economy.

Pivotal to advancing Australia's trade digitalisation agenda is the **International Trade and Forfaiting Association (ITFA)**, a global trade body founded in 1999 in Switzerland, uniting over 350 members across 60+ countries, including banks, financial institutions, and intermediaries focused on trade finance and forfaiting. Based in Zurich, ITFA champions innovation through its Fintech Committee, established in 2018, which leads working groups like the Digital Negotiable Instruments (DNI) Initiative and the Trade Finance Distribution (TFD) Initiative. The DNI Initiative drives the digitisation of negotiable instruments (dDOCs)—such as bills of exchange and promissory notes—using DLT, while the TFD Initiative enhances trade asset distribution to institutional investors, both leveraging technology to streamline processes and expand

liquidity. By fostering collaboration with fintechs, ITFA supports the adoption of advanced solutions like tokenisation and smart contracts, aligning with Australia's aims to boost trade efficiency, transparency, and sustainability, positioning ITFA as a strategic partner in modernising Australia's trade ecosystem.

The ITFA's fintech working groups directly tie into UNCITRAL's Model Law on Electronic Transferable Records (MLETR) by promoting standards like the dDOC specifications, which ensure DLT-based electronic documents meet MLETR's legal requirements for cross-jurisdictional recognition, a key enabler for Australia's global trade networks like RCEP and CPTPP. Through tokenisation of trade finance assets—converting instruments into digital tokens on DLT platforms—these initiatives address the $1.7 trillion trade finance gap by unlocking capital for SMEs, a priority under UN ESG goals for inclusive economic growth. By prioritising interoperability protocols (e.g., APIs, messaging formats, credential frameworks), ITFA's efforts via DLT enhance traceability and reduce fraud, supporting ESG principles like transparency and sustainability, while catering to SMEs by providing faster, more accessible financing. This positions Australia to integrate DLT's decentralised strengths with scalable digital systems, fostering plug-and-play connectivity with international partners and reinforcing its leadership in next-generation trade facilitation within the digital economy.

Thank you to the Participating Attendees

And also: AUDD Digital, Australia and New Zealand Banking Group (ANZ), D2 Legal Tech, Novatti Payments, Ripple, and Sumitomo Mitsui Banking Corporation (SMBC).