

# Trade Digitalisation: TradeTrust

Transform the way you trade

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Digital Utilities Cluster

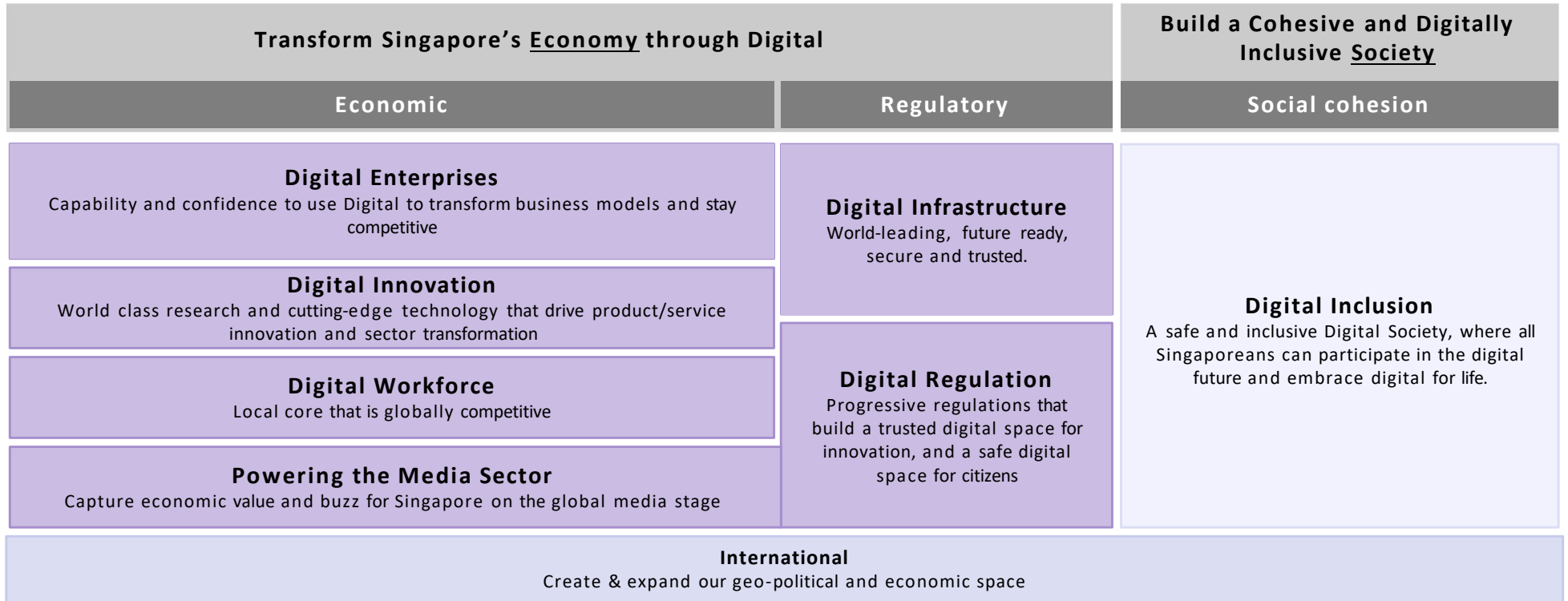


Asia-Pacific Trade Facilitation  
Conference 2025:  
Building Trust and Transparency  
5 Mar 2025



## IMDA as ARCHITECTS OF SINGAPORE DIGITAL FUTURE

**Vision:** To build a dynamic digital economy and a cohesive digital society that is driven by an exceptional infocomm and media ecosystem



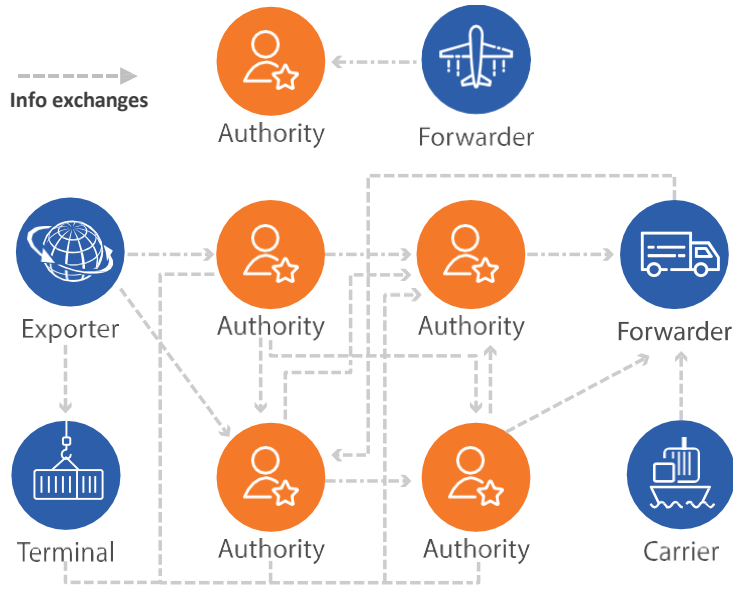
**Kicking Off an Era of Interoperable Electronic Bills  
of Lading for Documentary Trade Finance**



<https://youtu.be/vbZMPAnQRhM>

# TRADE DIGITALISATION TO ADDRESS DIFFICULTIES WITH PAPER IN CROSS BORDER TRADE

## Complexity of Cross-Border Trade



Just 1 shipment involves

- Many parties across different sectors
- Many exchanges of information
- Many silo systems
- Up to 50 sheets of paper, exchanged up to 30 different stakeholders<sup>^</sup>

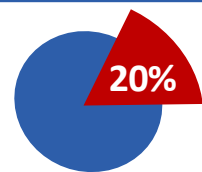
### Inefficient

- Manual handling
- Vulnerable to fraud

### Fragmented Systems

- Costly connections
- No interoperability

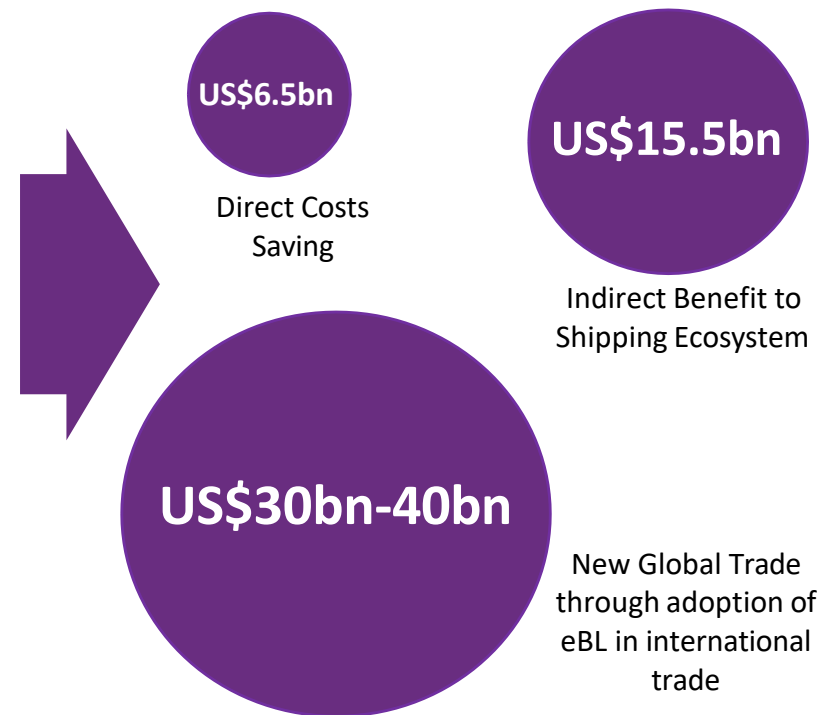
### Shipping Cost



Cost of documentation is 20%\* of cost of shipping

This inefficiency is costly

## Benefits of Digitalisation<sup>^</sup>



\*Maersk and IBM's Paper Trail Research in 2014

<sup>^</sup>McKinsey Study in 2022



## WHY HASN'T TRADE DIGITALISATION TAKEN OFF?

### Existential Symptoms and Issues to Digitalisation



#### Trust Deficit

- Transactions between companies with limited touchpoints
- Companies forced to adopt paper as the most interoperable medium but **struggle with** determining **authenticity** and **source** of documents



#### Digital Maturity Varies across Ecosystem

- The entire ecosystem is at **various stages of development**
- If one part of the chain is paper, all other documents revert to paper



#### Siloed Ecosystems

- Existing technology solutions and platforms are generally **not interoperable**
- Fractured ecosystem. Parties forced to choose one or multiple systems



#### Legal Validity of Electronic Documents

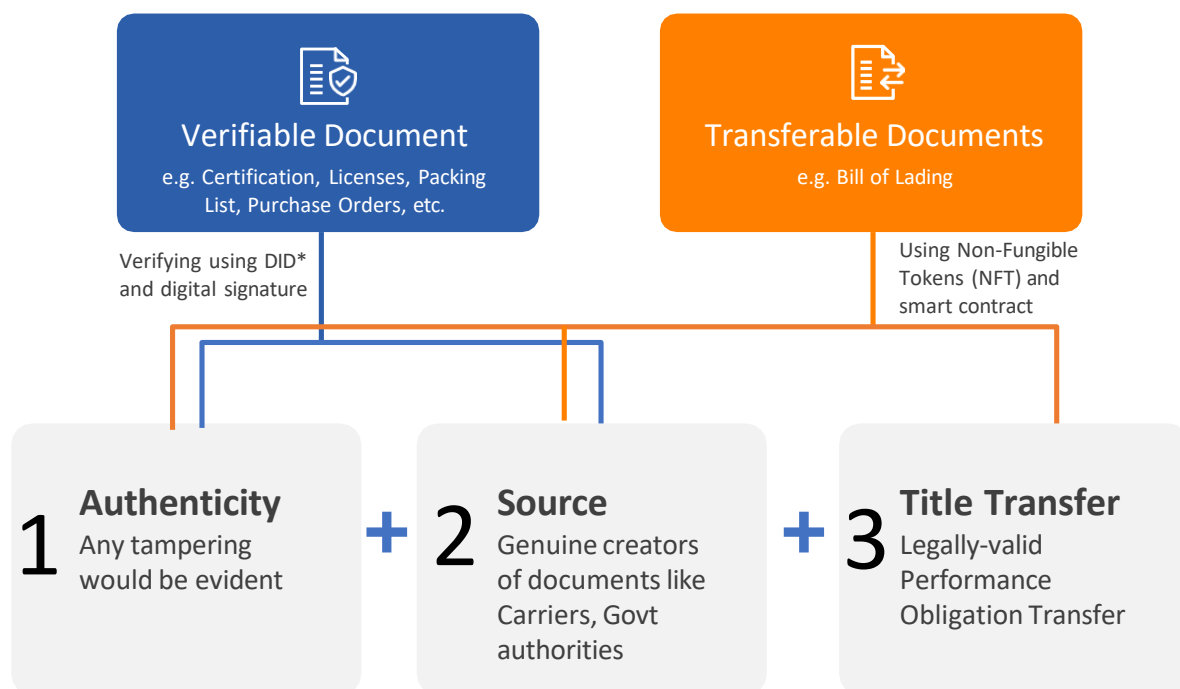
- Until recently<sup>^</sup>, **only paper Transferable Documents were legally valid** under statute law
- Therefore, transfers of title ownership via such documents could not be performed electronically



<sup>^</sup>Singapore's 2021 amendment of its Electronic Transactions Act (ETA), one of the first few internationally, enables the creation and use of ETRs such as electronic Bills of Lading (eBLs), empowering practitioners to reap the benefits of digitalisation more easily.

## TRADETRUST'S 3 KEY FUNCTIONALITIES: AUTHENTICITY, SOURCE & TITLE OWNERSHIP FOR TRADE DOCUMENTS

TradeTrust is a framework designed to provide industry the means to verify the **authenticity** and **source** of a document, as well as to create Electronic Transferable Records (ETRs) that are functionally equivalent<sup>^</sup> to their paper versions (e.g. able to **effect title transfers**).



### Core-Tech of TradeTrust

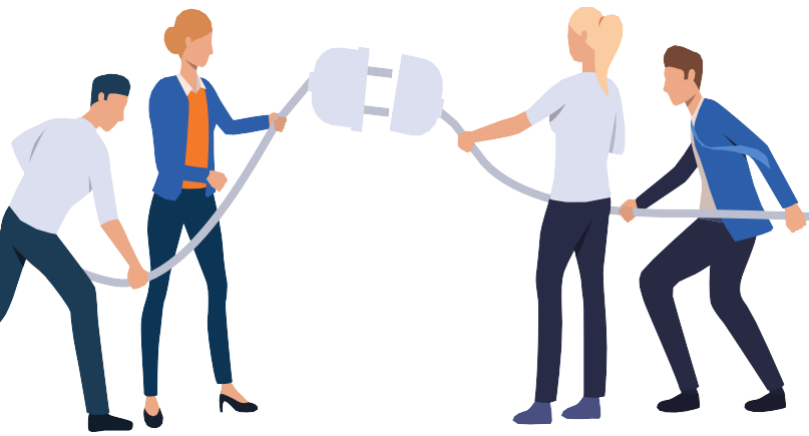
- Uses Verifiable Credentials, Decentralised Identifiers (DID), and digital signatures to verify the source and authenticity of documents.
- Uses Blockchain to create Non-Fungible Tokens (NFTs) to represent title ownership and enable transfers from one party to the next.


<sup>^</sup>Singapore's 2021 amendment of its Electronic Transactions Act (ETA), one of the first few internationally, enables the creation and use of ETRs such as electronic Bills of Lading (eBLs), empowering practitioners to reap the benefits of digitalisation more easily.

\*Decentralized Identifiers (DID) are a new type of unique cryptographically verifiable identifiers that are designed to be decoupled from centralized registries, identity providers and certificate authorities



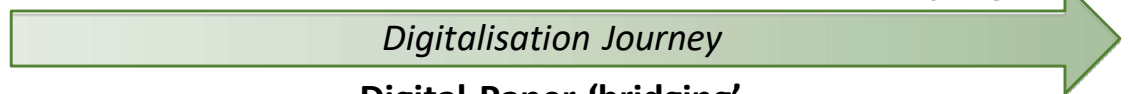
## START AT THE END STATE - INTEROPERABILITY IS THE KEY



3 aspects of Interoperability		What is our approach?
Technical	Semantic/Data	Users to choose from industry data standards like DCSA's and BIMCO's
	Protocols 	Making Verifiable Documents (VDs) and Electronic Transferable Records (ETRs) <b>portable and effective</b> across systems
Legal (for ETRs)		Current: Contractual Agreement
		Future: Statutory (Electronic Transactions Act (ETA))

Paper Medium

Fully Digital



**Digital-Paper 'bridging'**

(to facilitate change management)

It is imperative that any solution bridges the digital divide, allowing participants from all levels of digital maturity to participate equally.

## WHAT THE TRADETRUST FRAMEWORK OFFERS?



### Privacy & Control

Commercially sensitive data is contained in a file that is under the control of businesses and used through their own choice of solutions



### Authenticity

Assured through tamper-evident methods like hashing



### Provenance

Make use of modern cryptography techniques to ensure traceability



### Transferability

Satisfied MLETR's requirements of singularity, exclusive control, integrity, and reliable method/system

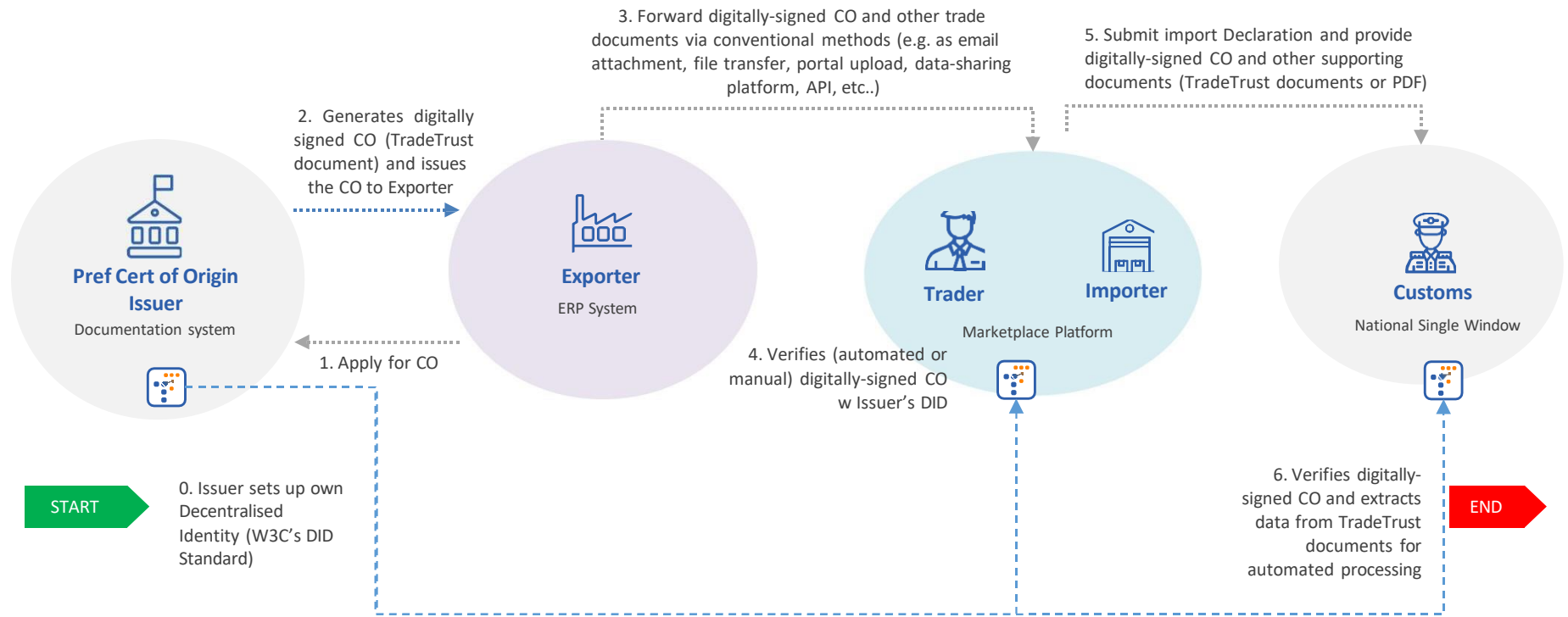
**Interoperability** Across Multiple Digital Systems!

= Makes for easier scaling up





## VERIFIABLE DOCUMENTS' INTEROPERABILITY



### LEGEND:

..... Non-TradeTrust activity

TradeTrust activity

TradeTrust Open Source software



### Key benefits of such a decentralized verifiable architecture are:

1. Removes the need for expensive data exchange infrastructure to be put in place in between exchanging parties.
2. Remove tight coupling and inter-dependencies between exchanging systems. This means exchanging parties can proceed to upgrade and make changes to their IT systems at their own pace according to their own priority.

# CROSS-BORDER COLLABORATION WITH AUSTRALIA



- Australia-Singapore Digital Economy Agreement
  - Australia Border Force, Singapore Customs and Infocomm Media Development Authority of Singapore
- Proof of Concepts:
  - Test Policy : Acceptance of digitally verifiable documents
  - Test Technology : Interoperability between SG TradeTrust and AU Intergovernmental Ledger
- Trial Scope
  - Certificates of Origin
- Participants
  - **Issuers:** Australian Chamber of Commerce and Industry and Australian Industry Group
  - **Commercial users:** Rio Tinto, ANZ Bank, DBS Bank and Standard Chartered Bank
  - **Regulatory Authority:** Singapore Customs
- Outcomes
  - Feedback were highly positive
  - Participants acknowledged value add to their business
  - Secured acceptance from regulatory authority (Singapore Customs) and commercial users



Australian  
**BORDER FORCE**



SINGAPORE CUSTOMS

# TRADETRUST IS A FRAMEWORK AND NOT AN APPLICATION/PLATFORM

**Application Layer**  
[Business-Led]



**TradeTrust**  
[Government-Led]



**Blockchain Layer**

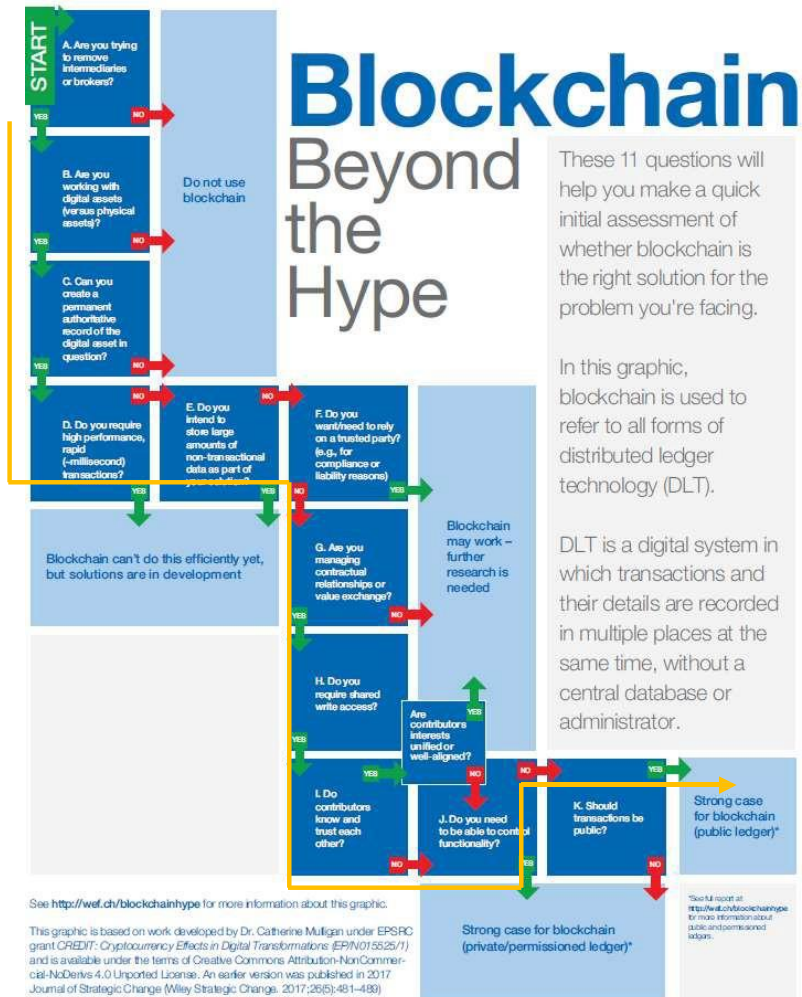


  
United Nations  
UNCITRAL  
**UNCITRAL Model Law**  
MLETR, MLEC, MLES  
Singapore ETA

  
UN/CEFACT  
**W3C**  
Standards Development

## APPLYING THE WORLD ECONOMIC FORUM BLOCKCHAIN DECISION TREE



What we are using Blockchain for	What we AREN'T using Blockchain for
Solve the Double-Spend problem (Singularity + Exclusive Control)	Data sharing



## USE CASES

### Use Case A Trade Finance



- **Improve operational efficiency** through faster transfers of title and other documents digitally and automate document validation
- **Reduce risk of trade finance fraud** and increase confidence in financing
- Who can benefit?  
**Financing Banks, Exporters, Importers, Carriers, Insurers, Surveyors**

### Use Case B Trade & Logistics



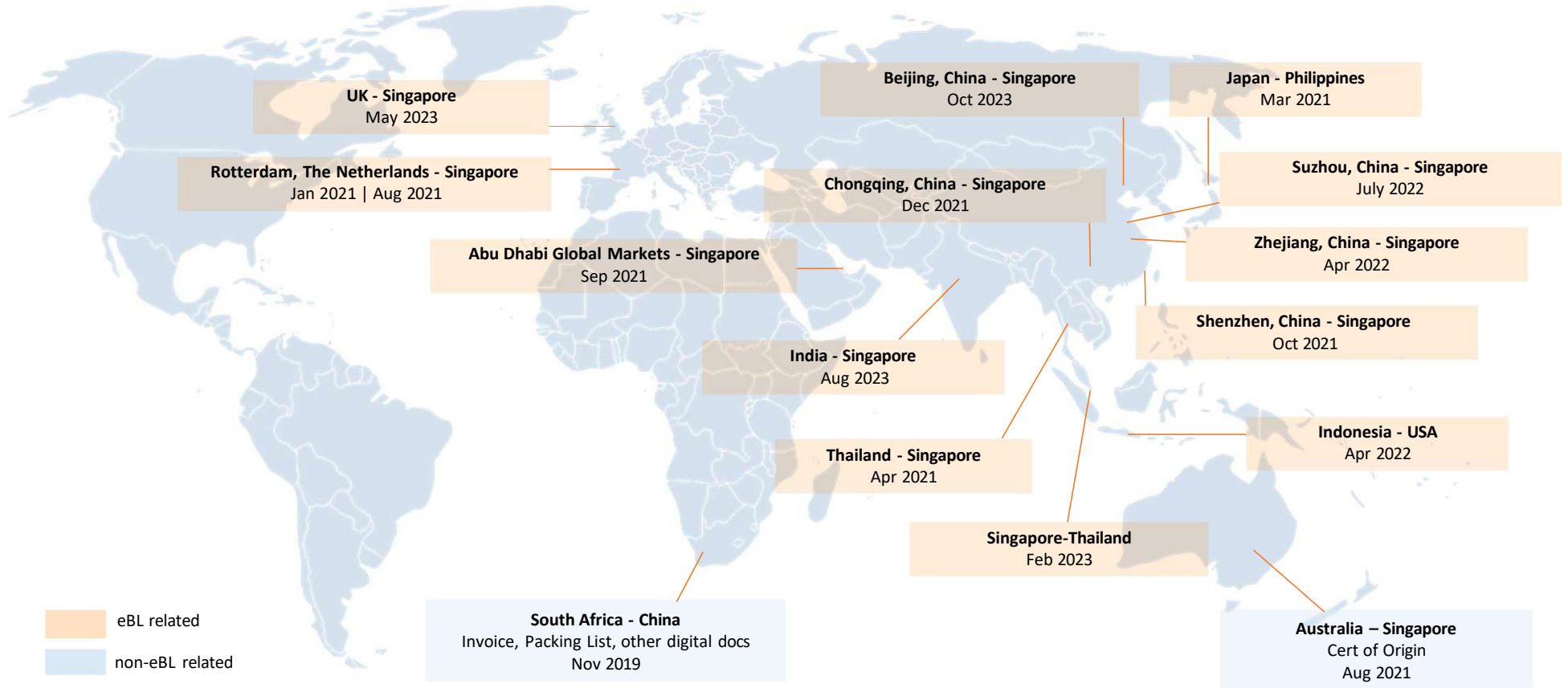
- **Increase productivity and optimise asset utilisation** through land logistics efficiency
- **Lower overhead cost of paper and reduce unnecessary demurrage and detention charges** of holding cargo due to delay in documentation
- Who can benefit?  
**Shippers, Consignees, Carriers, 3PL agents, Borders Control Authority, Port Operators, bunkering service providers**

### Many Other Use Cases... Tech/Platform Service Providers



- **Improve service offerings** through the development of innovative digital products and services using TradeTrust open-source code
- **Increase new business and partnership opportunities** to drive a vibrant digital economy
- Who can benefit?  
**Platform providers in bunkering, trade compliance, FinTech, Digital Art, Supply Chain, Logistics Services, Certification and Licenses Issuance**

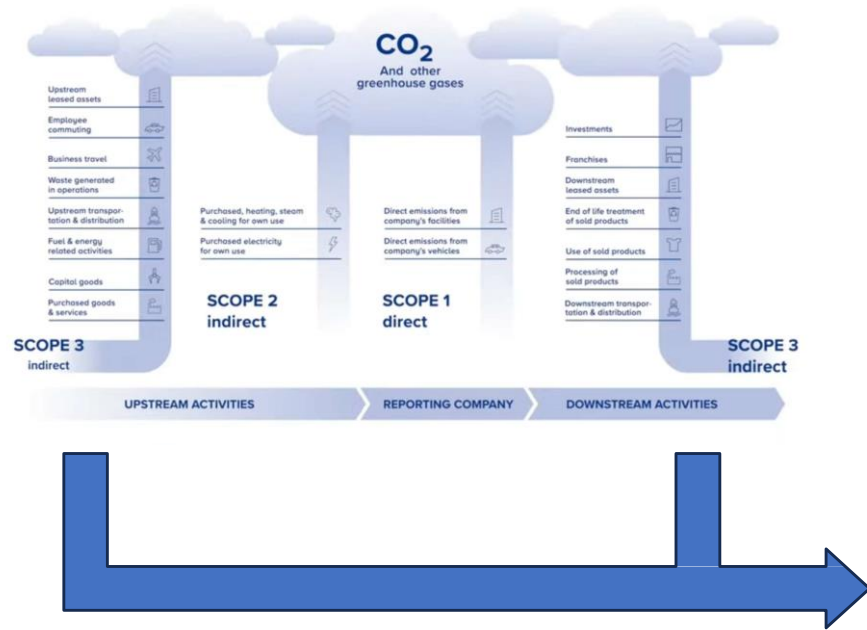
## 22 PILOTS WITH INDUSTRY PARTNERS AND OVERSEAS GOVERNMENTS



**MORE IMPORTANTLY ... WE WILL NEED A NEW APPROACH FOR ESG REPORTING**

**Scope 1 & 2 – Easy**

**Scope 3 – Traditional Centralized Approaches such as EDI, Document Hub, or Data Hub will not work!**



Sustainable and Digital Trade Facilitation Week  
 UN/CEFACT  
 8-12 July 2024  
 Palais des Nations Geneva  
 UN/CEFACT Plenary  
 UNECE Recommendation 49  
 United Nations Transparency Protocol (UNTP)

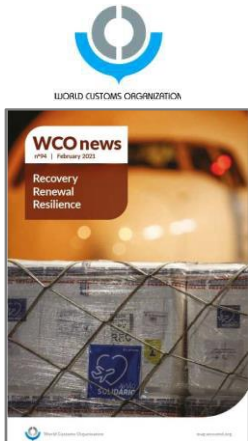
**Transparency is the sunlight that exposes greenwashing**  
 But it has to work AT SCALE to have any impact

Thousands of platforms, millions of value-chains, billions of products  
 Our goal  
 10 million UN DPPs per day

UNTP  
 Sustainable and Digital Trade Facilitation Week | 8-12 July 2024 | Geneva



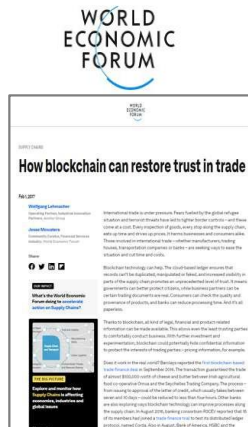
# INTEREST FROM NOTABLE INSTITUTIONS GLOBALLY



<https://mag.wcoomd.org/magazine/wco-news-94/tradetrust-accelerating-the-digitalization-of-international-trade>



[www.wto.org/english/etopublications/etoc/wcotec22\\_e.htm](http://www.wto.org/english/etopublications/etoc/wcotec22_e.htm)



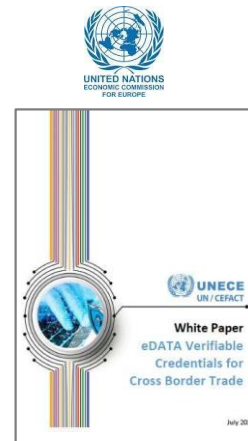
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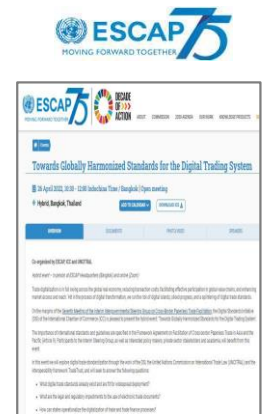
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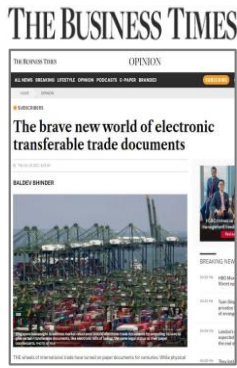
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[www.business-times.com.sg/opinion/singapore-at-the-helm-of-digital-trade](http://www.business-times.com.sg/opinion/singapore-at-the-helm-of-digital-trade)



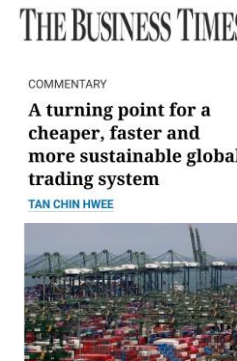
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[www.blackstonegold.com/the-brave-new-world-of-electronic-transferable-trade-documents](http://www.blackstonegold.com/the-brave-new-world-of-electronic-transferable-trade-documents)



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<https://www.undp.org/publications/accelerating-sdgs-through-digital-public-infrastructure-compound-potential-digital-public-infrastructure>



## CALL TO ACTION

### 1) Use TradeTrust to co-create

If you're from:

- Shipping lines
- Shippers/Consignees
- Logistics Service Providers
- Financial Institutions providing Trade Financing Service
- Govt Authorities involved in cross-border matters

### 2) Incorporate TradeTrust code into your Applications

If you're from:

- Tech Companies
- Business Solution/Platform Providers

#### Useful URLs:

Reference Implementation Website: <https://tradetrust.io/>

Docs: <https://docs.tradetrust.io/>

Source code: <https://github.com/TradeTrust>

For more info, contact us at: [tradetrust@imda.gov.sg](mailto:tradetrust@imda.gov.sg)



THANK YOU



INFOCOMM  
MEDIA  
DEVELOPMENT  
AUTHORITY

