

# National workshop on cross-border paperless trade facilitation and emerging technologies

## TradeTech: Challenges and Opportunities

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## TradeTech



How should policy-makers and companies react and plan in this rapidly changing landscape while ensuring technologies advance equality and inclusion in international trade?

With the rise of Fourth Industrial Revolution (4IR) technologies, the means to facilitate international trade are growing. Digitalization and advanced technologies have the potential to significantly reduce processing times and the cost of cross-border movements of goods, and further facilitate trade in services. Yet, as emerging technologies shape trade flows faster than trade policies can adapt, disruptions are expected to accelerate in the coming decades.

## Related Reports



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This publication identifies the building blocks for TradeTech policy adoption: the 5 Gs of TradeTech. Trade agreements and plurilateral initiatives are exploring the interplay between tec...



TRADE AND INVESTMENT

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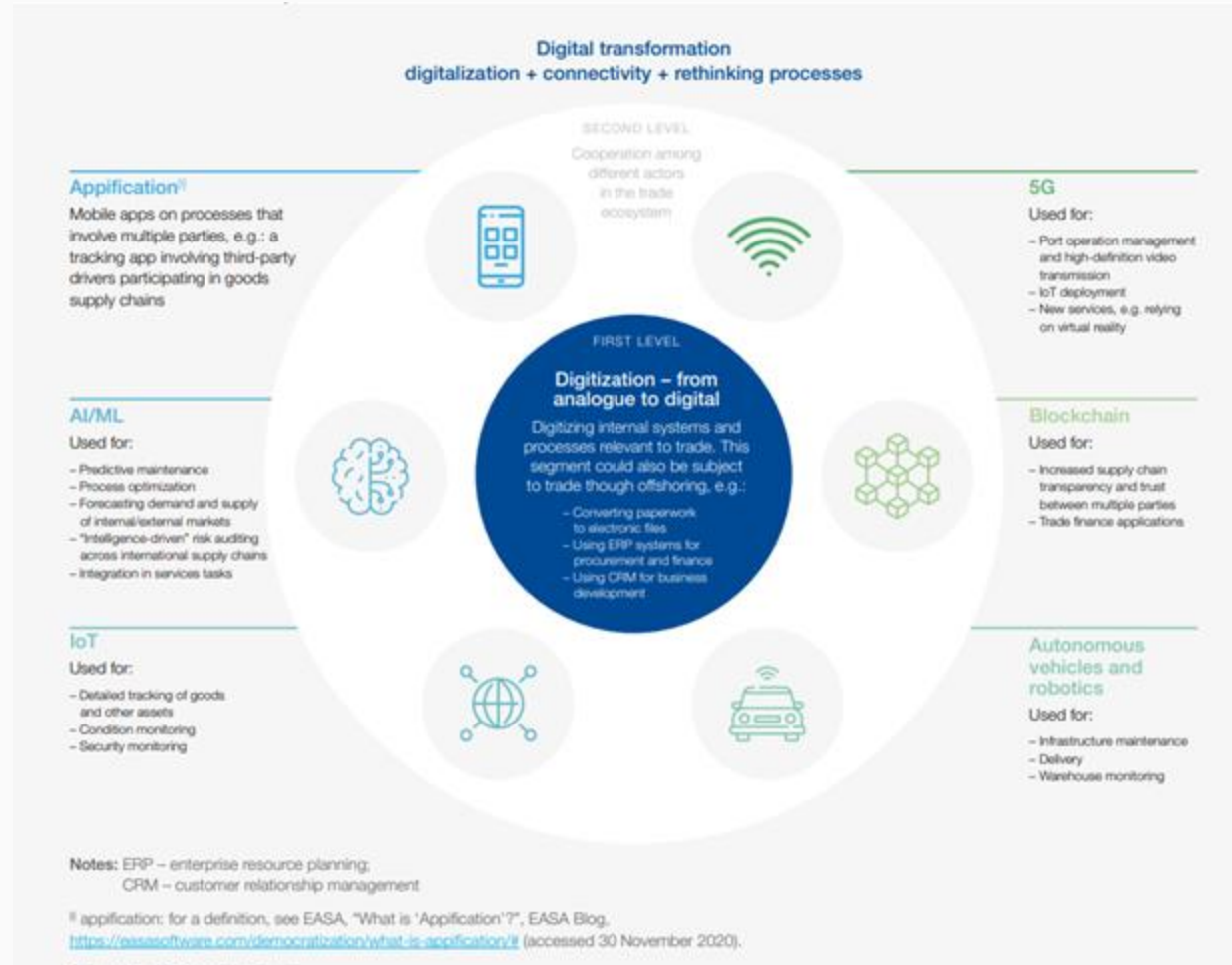
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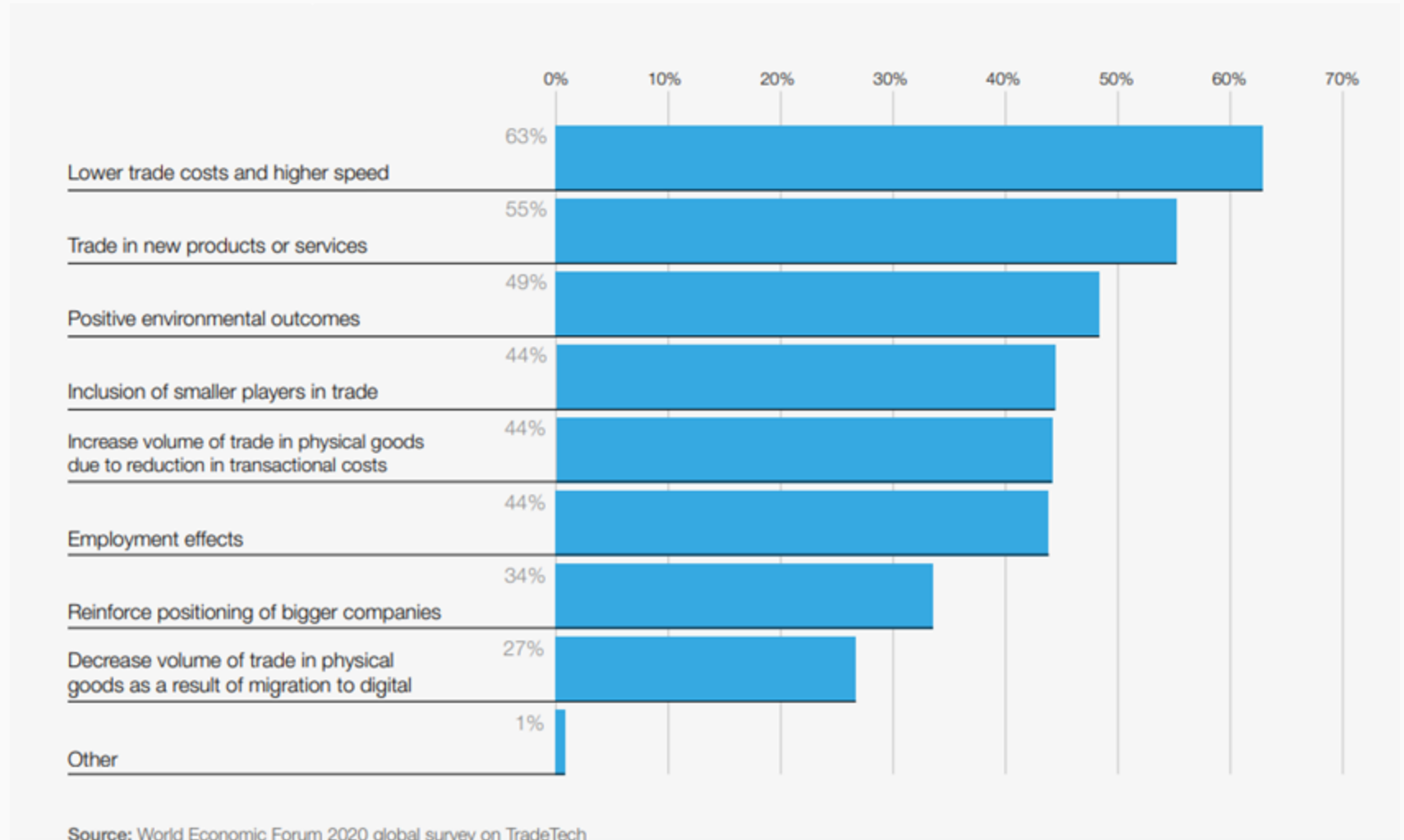


### **Windows of Opportunity: Facilitating Trade with Blockchain Technology**

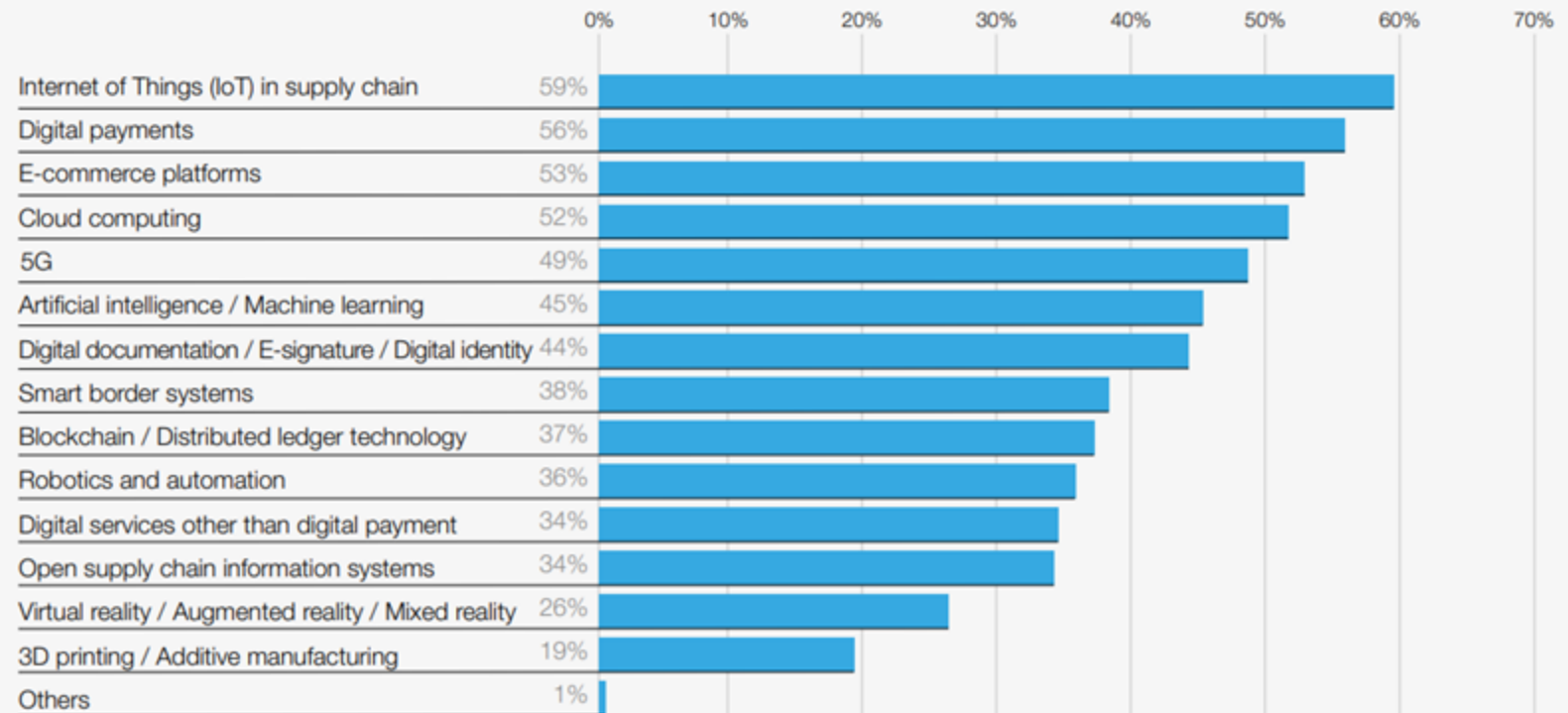
# What is TradeTech



# Impacts of TradeTech



# Most transformative TradeTech



Source: World Economic Forum 2020 global survey on TradeTech

## 5 Trends of TradeTech

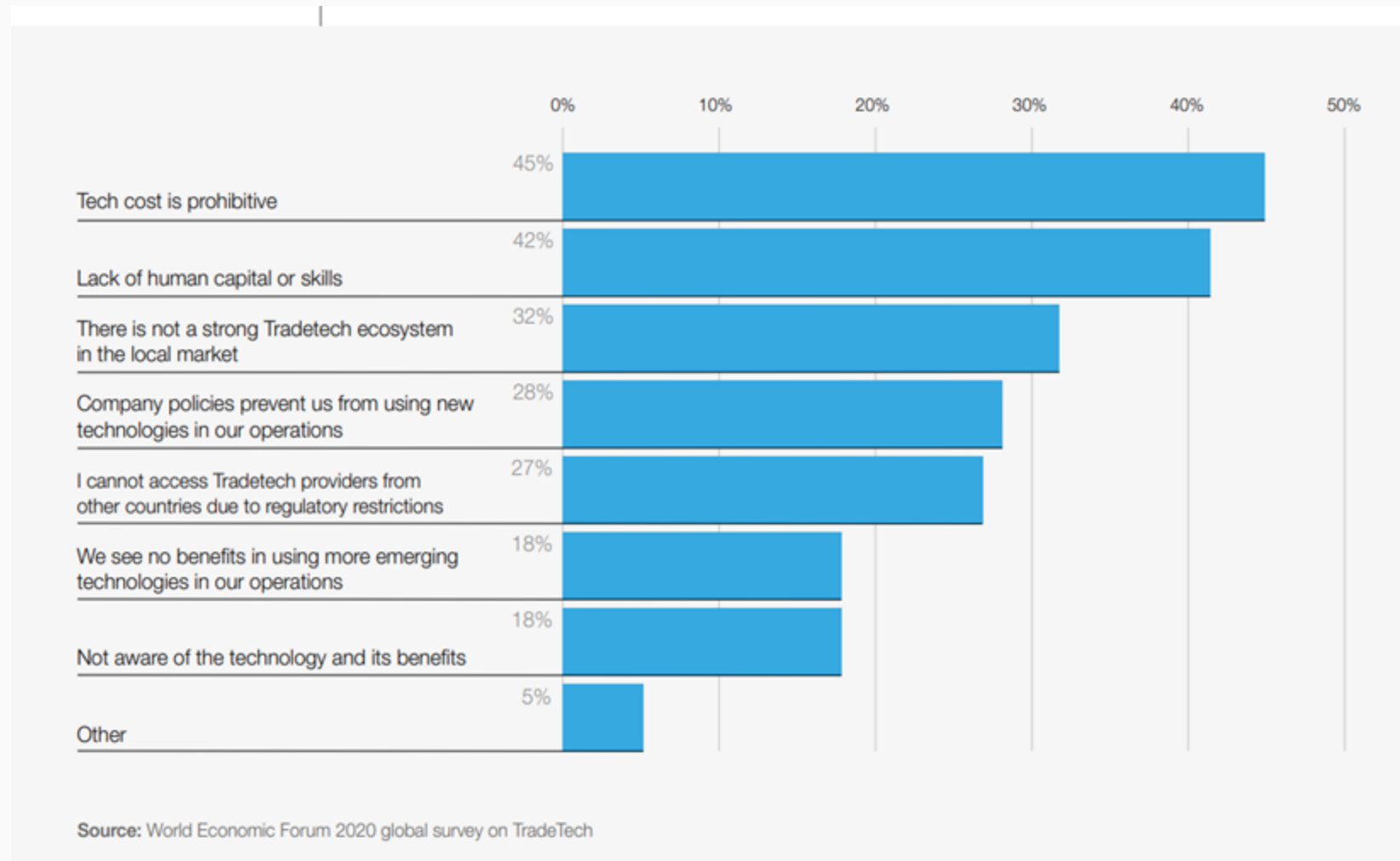
- TradeTech for supply chain resilience
- Emerging data sharing initiatives
- Effects on logistics intermediaries
- TradeTech for greener trade
- Emerging tech in trade finance



## 5 Key Elements of TradeTech

- Global data transmission and liability networks
- Legal recognition of e-documents
- Universal digital identity
- Universal interoperability
- Global trade rules access and computational law

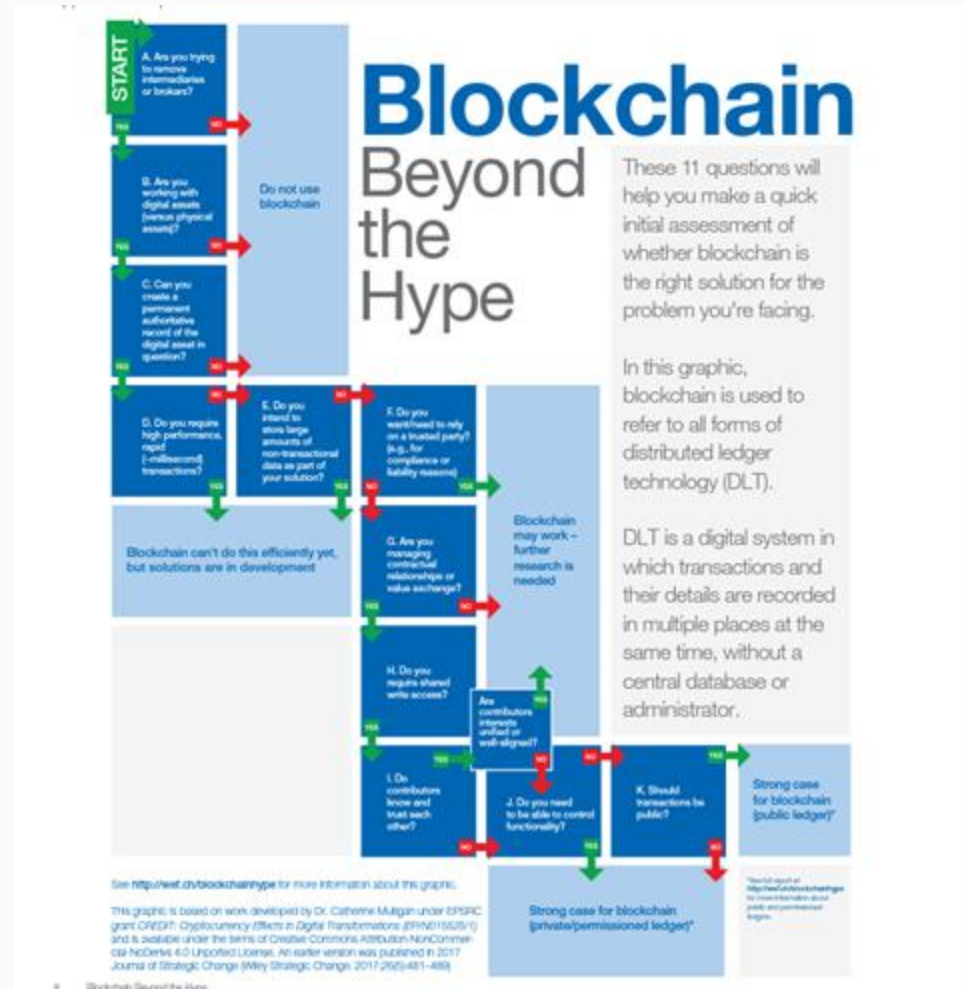
# Challenges for TradeTech Adoption



## Case Study – IoT


- IoT can solve three major trade problems:
  - Tracking assets
  - Condition monitoring
  - Security monitoring
  
- Policy challenges:
  - Security
  - Connectivity
  - Standardization/Classification

# Blockchain

















## Windows of Opportunity: Facilitating Trade with Blockchain Technology

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Trade costs – the costs of moving cargo from one country to another – are a leading constraint for companies wanting to engage in trade. The development of trade single windows, a one-stop electronic platform, has considerably improved this process. However, promises of increased efficiency are hindered by persistent challenges, such as lack of interoperability among stakeholders. This paper serves to introduce current developments in trade single windows, examine pertinent issues, and explore the potential use of blockchain technology in solving these challenges. This paper also presents a policy framework to help governments navigate the use of blockchain technology.



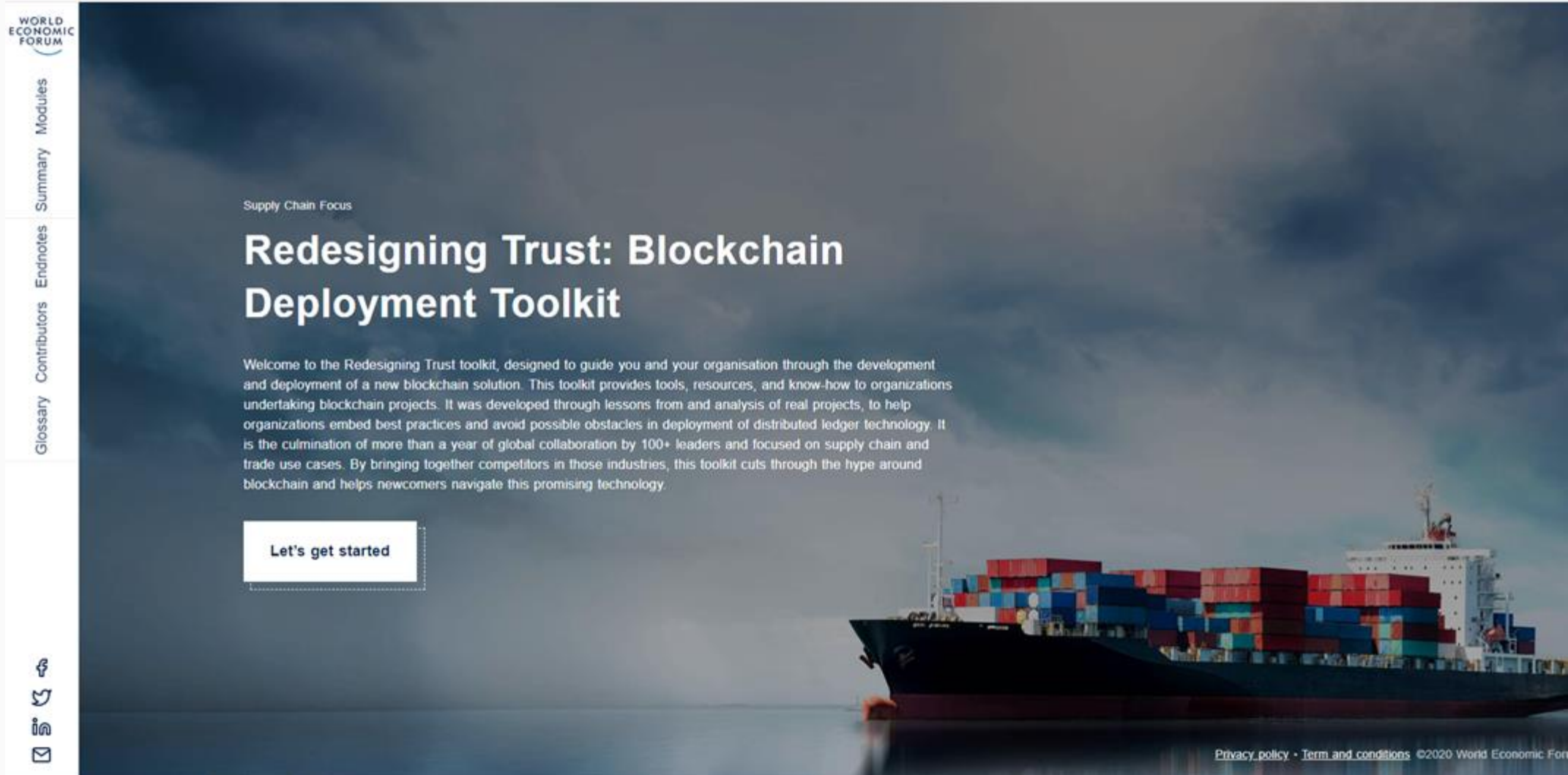
# Blockchain

Main pain point	Selected reasons	Use-case	Blockchain's potential	Alternative/ complementary technologies and actions
Limited interoperability	National single windows disconnected from each other	Interoperability and data share among two or more national single windows	Improve all national single windows' visibility into supply chains, ability to manage risks and recognize patterns and conduct pre-arrival processing; share data on Authorized Economic Operator certifications 	Big data and AI, harmonization of national documentation requirements, agreements to share data across borders
	Border agencies that form part of a single window operate in isolation	Interoperability and coordination of actions among agencies making up the single window	Improve all border agencies' ability to share data and coordinate actions, gain 360-degree visibility of transactions and manage risks, improve user experience 	Inter-agency collaboration and AI to share data, big data and AI
Limited traceability of shipments	Limited sharing of data across the trade network among border agencies and the private sector	End-to-end visibility into shipments and supply chains	Enable more complete data on shipments and supply chains and audit trails on traders by bringing together single windows and/or private-sector trade intermediaries on a common blockchain with immutable streams of data  	Internet of things applications; agreements to share data with private sector and across borders; machine learning to detect anomalous patterns in data
Inefficient manual processes	Inefficiencies in making and reconciling customs duty and fee payments	Automation of processes to make and reconcile duty and fee payments	Automate payments and their reconciliation; accelerate revenue collection  	Robotic process automation; deferred duty payments; information-rich electronic payments
Limited trustworthiness and portability of identities and data	Limited trustworthiness of data entered on single windows	Improved reliability of data entered on single windows	Make data entered into single windows immutable and unauthorized modification to the data traceable   	Data standards; data-security protocols; AI to detect fraudulent and erroneous data entries
	Companies are unable to access and use their identities and data included in single windows	Authentication of identities and portability of identities and data across service providers, including for commercial purposes (e.g. access trade finance)	Provide single window users with a unique identity and enable users to apportion relevant parts of their identities and transactional data to third-party service providers   	Development of a unique ID such as Global Trade Identity (GTID); government regulations to encourage or demand portability of data

# Blockchain

**Table 4:** Guidelines for operationalizing blockchain use-cases in single windows

	Create vision and business case	Create governance structure, including for data, and implementation plan	Build technology architecture and integrate technology	Manage user identities and data	Measure impact and report on it	Iterate
<b>Actions</b>	<p>Ensure political support exists for trade facilitation</p> <p>Establish a "grand vision" for blockchain in the single window and a business case for stakeholders</p> <p>Adopt blockchain in pilots and iterating to improve outcomes</p> <p>Bring together a multidisciplinary team to pilot and apply blockchain</p> <p>Define how to cover costs and how to engage development banks and donors</p>	<p>Establish a governance structure with mandate, scope, responsibilities and data-share rules</p> <p>Standardize data entered on blockchain and data-security protocols</p> <p>Define reward systems for staff in agencies to implement blockchain</p> <p>Define data-storage needs</p> <p>Assess compatibility of blockchain with existing regulations; consider regulatory sandboxes to fuel blockchain's development</p>	<p>Develop the technology architecture, acquire blockchain technologies and integrate blockchain with existing databases and technologies</p> <p>Retrain agencies' IT staff and acquire new capabilities with technical knowledge of blockchain</p>	<p>Test a single, interoperable identity for single window users and enable them to make their data portable</p> <p>Possibly develop a new identity for blockchain users, e.g. GTID</p> <p>Communicate technology improvements to users</p>	<p>Develop and track KPIs, e.g. time release indicators; operational efficiency in border agencies; and trade facilitation and SME trade growth</p> <p>Reward agencies' staff for meeting targets defined in steps 1 and 2</p>	<p>Assess the pilot and consider ways to improve and scale it</p> <p>Consider blockchain's emerging capabilities and rethink its governance</p> <p>Assess governance structure built into step 2</p> <p>Consider range of applications in other niche areas in single windows</p>
<b>Who drives</b>	Head of state, agency heads, private-sector users, focus groups	Agency heads, IT leads and users; international experts	Agency IT leads, experts	Agency heads, IT leads	Agency front-line staff, report to head of state	Implementors, private-sector users
<b>Level of effort needed</b>	● ● ● ● ●	● ● ● ● ●	● ● ● ○ ○	● ● ● ○ ○	● ● ● ● ○	● ● ● ● ○
<b>Key questions to address</b>	<p>What is the outcome to be attained by using blockchain?</p> <p>What is in it for each stakeholder?</p> <p>How are costs covered?</p> <p>How could development banks and donors best support via technical advice and funding?</p>	<p>Where is blockchain managed from?</p> <p>What are the responsibilities of the different stakeholders and what are stakeholders rewarded for?</p> <p>How are data and document-sharing governed among stakeholders?</p> <p>How to define and differentiate access privileges?</p> <p>Which international data standards should be considered?</p>	<p>How does the new solution integrate with the current solutions (process and technology)?</p> <p>Can IT create a functional "digital twin" of a trade?</p> <p>Does blockchain provide a trusted interaction layer for sharing events and information/data?</p> <p>Does blockchain also need to account for and support wider supply chain business models?</p>	<p>Could users make their data portable and for what purposes, and how is off-chain data shown to outsiders certified as "real"?</p> <p>Are data-storage needs an issue?</p> <p>How to best communicate the benefits of blockchain to firms that use single windows?</p>	<p>What is the improvement from baseline and last measurement?</p> <p>What are the weakest links in implementation and why?</p> <p>How does my country compare to others that are also working on trade facilitation, before and after blockchain was adopted?</p>	<p>How to improve on the process and outcomes in steps 1-5?</p> <p>What new properties of blockchain technology and other technologies could be employed?</p> <p>What is the optimal governance structure if pilot is scaled or replicated?</p> <p>In which other areas of trade facilitation could blockchain be tested?</p>



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Summary Modules

Endnotes

Contributors

Glossary

Supply Chain Focus

## Redesigning Trust: Blockchain Deployment Toolkit

Welcome to the Redesigning Trust toolkit, designed to guide you and your organisation through the development and deployment of a new blockchain solution. This toolkit provides tools, resources, and know-how to organizations undertaking blockchain projects. It was developed through lessons from and analysis of real projects, to help organizations embed best practices and avoid possible obstacles in deployment of distributed ledger technology. It is the culmination of more than a year of global collaboration by 100+ leaders and focused on supply chain and trade use cases. By bringing together competitors in those industries, this toolkit cuts through the hype around blockchain and helps newcomers navigate this promising technology.

[Let's get started](#)

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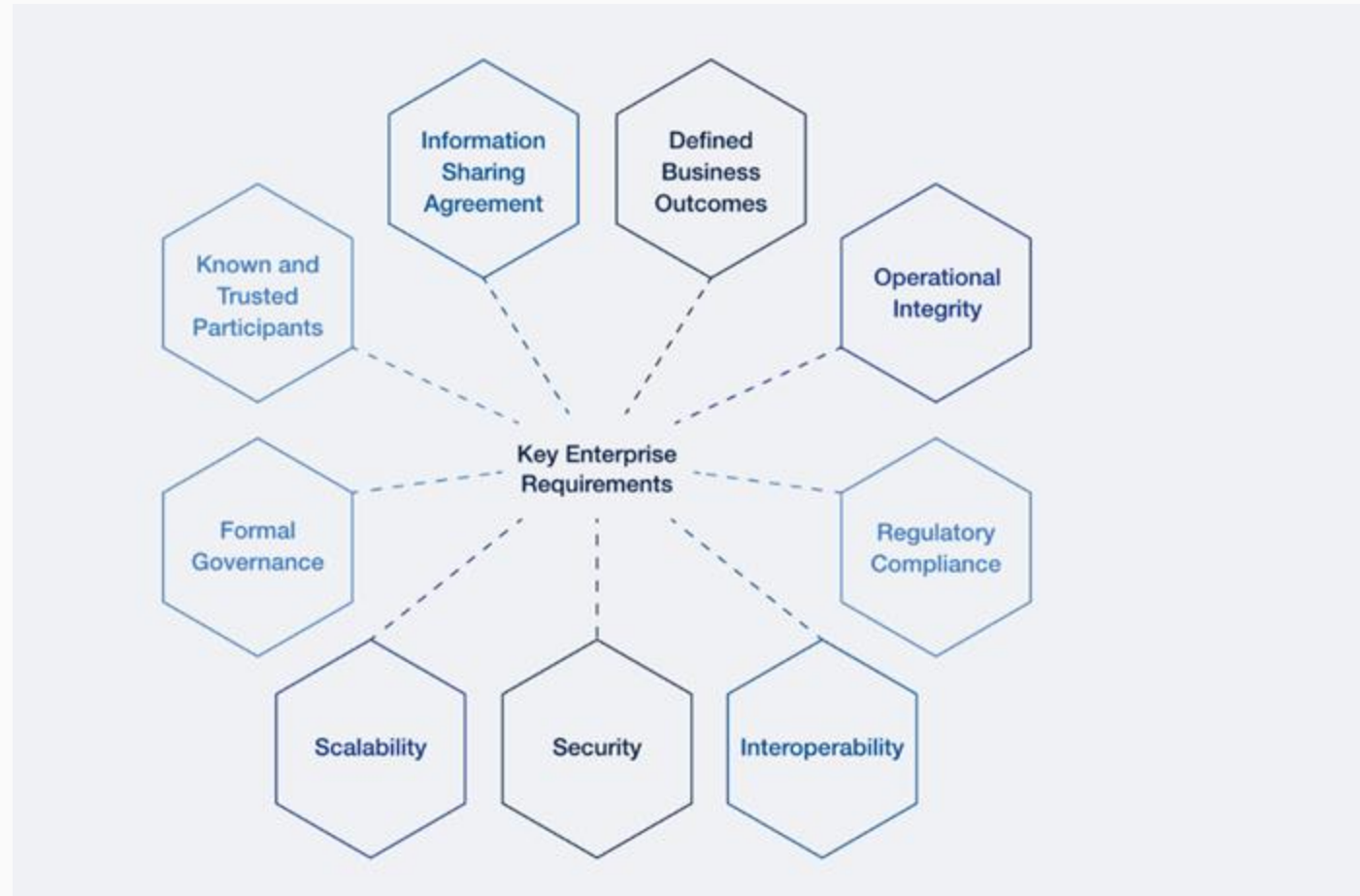
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# Blockchain



# Blockchain Takeaways

- Build a business case
- Governance
- Interoperability
- Leverage existing resources

# Thank you!



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