



Blockchain Applications for International Trade and Customs

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WCO Digital Customs Agenda

Standards
Development

Cooperation
Coordination

Capacity Building

Key Enablers

Digital strategy

Legal Basis

Governance Structure

ICT Infrastructure

Focus Areas

Increased Digital Uptake
Paperless Environment

Comprehensive Risk
Management

Digital Engagement
Connectivity
Interoperability

Digital Trust
Data Security

Communication and
Information Accessibility

ICT Driven Innovation

Key Tasks

Supporting WTO TFA
Implementation

Enhancing CBM and SW

Mainstreaming the WCO Data
Model and other related tools

Addressing
E-Commerce challenges

Analyzing Big Data

Promoting Exchange of
Information

Measuring Performance

Supporting Sustainable
Development Goals

Developing Capacity

Blockchain : The new IT Paradigm

○Blockchain

- » Digital, replicated, distributed, permissioned ledger
- » Consensus,
- » Provenance,
- » Immutability,
- » Trust



WCO's perspective

- Use of blockchain technology in Customs regulatory processes improving compliance, trade facilitation, and fraud detection,
- Regulatory challenges in the area of blockchain-based e-commerce, and
- Misuse of blockchains (including bitcoins) for illicit trade, money laundering, evasion of duties and taxes/VAT, IPR and financial crimes.
- Specific Customs Use cases
 - » Permissioned Blockchain for Supply Chain Management
 - » Inter-agency cooperation : exchange of information and electronic certification
 - » Single Window Environment
 - » Identity Management
 - » Compliance Management
 - » Revenue Collection
 - » Post Clearance Audit





Blockchains in Customs

○ Challenge of Customs Declarations

- » Creation of Customs declaration documents is a very complex task in a distributed supply chain.
- » Difficulties in pulling correct information from various documents - sales data, product information, manufacturing details, as well as logistics information.
- » Because of outsourced services and distributed data sources this process is highly manual and runs with a potential risk of non-compliance.
- » Traders often involve 3rd party providers to handle the Customs declaration process with Customs

○ Blockchains can overcome these challenges

- » Blockchain can help collecting and managing automated interactions with Customs authorities—collecting any required information from ordering, preparing and shipping the products in a common ledger
- » Customs or Customs brokers could automatically pull the required information from the sources with the benefit of transparency and immutability that nobody in the process changed any source data
- » Business case will provide benefits on the trader side due to the dramatically reduced work to assemble the required Customs information (plus the cost avoidance of customs penalties) as well as on the Customs side reducing their manual verification and resources required to validate declarations and identify mistakes/frauds
- » This would lead to faster Customs declaration processing and with that reduced end to end lead times



Blockchains in Customs

○ Challenge of Advance Information

- » Suffers due to poor data quality
- » Data not submitted by real sources of data
- » Data must change multiple hands
- » Layers of consolidation – nature of cargo industry

○ Blockchains can overcome these challenges

- » We can realise the “data pipeline” using Blockchains
- » Cloud-based, “permissioned” ledger
- » Can be operated by supply-chain consortia
- » Accessed and updated by all participants
- » Customs to get accurate data, right from the source



Blockchains in Customs

○ Challenge of Compliance

- » Compliance to non-tariff requirements
- » LPCO Data on products/ manufactured goods too voluminous
- » Product certification interests all – product quality and safety
- » Certifiers, labs, producers, regulators and consumers alike
- » Certification of inputs to products (iteratively) are of concern
 - e.g. IPR of Products, IPR of inputs/constituents
- » Certification linked to licensing/permitting, clearance and consumption
- » Not shared between all concerned

○ Blockchains can overcome these challenges

- Product lifecycle data can be managed on a blockchain
 - » Community of producers, logistics players, regulators & consumers
 - » Application include provenance & certification, licensing & permitting
 - » A new way to meet the LPCO challenges!



Blockchains in Customs

○ **Challenge of Payment and Settlement**

(Or challenge of Shipment Vs Consignment)

- » Commercial and Transport documents follow different tracks
- » Banks depend on multiple documents to make payments/settlements
- » Regulators find it difficult to track financial flows
- » Clearing and Settlement dominated by centralising institutions:
Central banks, Central Counterparty (CCPs) centralised collaterals

○ **Blockchains can overcome these challenges**

- » Bilateral peer-to-peer execution using smart contracts;
- » Customs, Central Banks/CCPs can get access to commercial data
- » Transporters can get access to documents
- » Complete, digitization of Bills of Lading, finally!
- » Low cost payment and settlement



Paperless Trade: Single Window

- Interconnectivity & Interoperability

- Globally Networked Customs

- » Exchange of information
- » Mutual Recognition of Control
- » AEO Mutual Recognition
- » Re-usable or Prepopulated Regulatory data (My Export as your Import)
- » Transit

- Interoperability of IT Systems – Single Windows

- » Legal Interoperability
- » Organizational and Process Interoperability
- » Semantic Interoperability
- » Technical Interoperability

Pilots

- Use of Blockchain in Supply chain
 - » Maersk and IBM
 - <http://www.ibtimes.co.uk/maersk-ibm-aim-get-10-million-shipping-containers-onto-global-supply-blockchain-by-year-end-1609778>
 - » DP World, DB Schenker and Hamburg Sud
 - <http://www.supplychaindive.com/news/blockchain-Hamburg-Sud-DBSchenker-logistics/444247/>
 - » Korean Port Authorities, Hyundai Merchant Marine (HMM), and IBM Korea
 - http://www.koreatimes.co.kr/www/tech/2017/06/133_230428.html
 - » IBM blockchain collaboration with food companies
 - <https://www.forbes.com/sites/rogeraitken/2017/08/22/ibm-forges-blockchain-collaboration-with-nestle-walmart-for-global-food-safety/>



Thank you

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