

Use cases of blockchain in Customs and other border regulatory processes

I. Customs declaration and regulatory submissions

Creation of Customs declaration documents is a very complex task, involving multifarious activities. There are challenges in collating (often manually) correct information from various documents and various stakeholders, such as sales data, product information, manufacturing details, as well as logistics information. Because of outsourced services and distributed data sources, this process is cumbersome and runs with a potential risk of non-compliance. In many cases, traders involve 3rd party providers to handle the Customs declaration process.

Blockchains can help collecting all the required information from ordering, preparing and shipping the products in a common ledger. Going a step further, Customs could automatically pull the required information for a Customs declaration from the primary sources, having improved data quality and immutability thereof.

The use of blockchain could help eliminate the requirement of supporting documents for goods / cargo declarations that are considered as burdensome. Additionally, blockchain environment that host diverse supply chain data can provide new data elements that may not traditionally be covered in typical Customs declaration on a real-time basis, which can enrich and enhance the quality and accuracy of Customs and other government agencies' data analysis, risk management, and targeting.

This will provide benefits on the trader side due to significantly reduced work to accurately assemble the required pieces of Customs information as well as on the Customs side by reducing their manual verification and resources required to validate declarations. This would lead to faster Customs declaration processing and reduced end to end lead time.

II. Exchange of advance electronic information – Inter-agency cooperation

There are several challenges in receiving advance electronic information and sharing it with other government agencies. There could be issues with data quality; data not being submitted in time; and potential inadvertent or deliberate mistakes in data due to its changing multiple hands.

Blockchains can help overcome some of these challenges. Data sharing through “permissioned” Blockchains (a distributed architecture) in a trusted and secure manner can help realize the vision of end-to-end “data pipeline”. Such a Blockchain can be operated by supply-chain consortia, accessed and updated by all participants. Customs and other government agencies can get accurate data, right from the source.

Given the global security environment and the renewed focus on trade facilitation with the WTO Agreement on Trade Facilitation (TFA) being implemented, there is a greater need for different government agencies to cooperate more effectively. The Blockchain may open up new possibilities for these different agencies, including Customs, to share information and resources by using a common distributed technical platform, especially in a Single Window environment and for cross-border data exchange.

In a growing digital economy, this technology can also support enhancing cooperation between Customs and Tax authorities and the exchange of information between them for a more harmonized approach on revenue collection, audit, risk management as well as on the issue of Customs valuation and transfer pricing.

III. Electronic certification/verification of regulatory requirements

Traders are required to comply with several requirements such as compliance with non-tariff requirements. There are increasing requirements for product certification in view of growing concerns about product quality and safety. Various licenses, permits, certificates, and other authorizations (LPCO) may be required for Customs clearance depending on the nature of goods and related national regulatory requirements.

Several pieces of data including for example data concerning the certification of inputs to products (e.g. IPR of Products, IPR of inputs/constituents) are needed. Furthermore, several associated activities are carried by various stakeholders like certifiers, laboratories, producers, regulators and consumers. But, often this information is not shared between all concerned, leading to an iterative process of collation of information and carrying out necessary certification and verification.

Blockchains can help overcome some of these challenges through a holistic product lifecycle data management. The community of producers, laboratories, logistics players, regulators, and consumers can all join hands on a Blockchain, providing a shared provenance, testing, certification, licensing, etc with all relevant actors having full access to all related information.

Furthermore, the Blockchain can enable the implementation of electronic certification of LPCO, such as e-Phyto certificate and e-Certificate of Origin (e-CoO) in a more efficient, secure and trusted manner. It could ensure that a certificate is appropriately issued, and properly and digitally signed by a valid regulatory/issuing agency, and at the same time could also prevent any alteration/manipulation of the content or misuse of an e-certificate by a third party.

The use of blockchain could also enable the implementation of self-certification, such as the self-certification of CoO that is traditionally required to be issued by an authorized entity.

IV. Implementation of Free Trade Agreements

The key requirements and associated challenges in an efficient implementation of FTAs are :

- » Fulfilment of requirements/criteria including value addition norms
- » Preferential certificate of origin
- » Exchange of information
- » Validation

Blockchain could potentially help with overcoming these problems as it will track goods from input stage, for example the cost of inputs, its HS classification, origin, processing cost and value addition, change of HS classification of the finished goods, etc. Since all the actors including Customs and other governments that will be on the blockchain platform will have full visibility, there may not even be a need for a certification of origin for preferential treatments under FTAs.

V. Implementation of AEO-MRA

Despite a growing number of MRAs, there are still some challenges that hinder their efficient implementation. These challenges primarily include :

- (i) secure exchange of AEO master data with MRA partner Customs administrations, including a real-time sharing of changes in the AEO status, and
- (ii) efficient identification of AEOs by MRA partner Customs administrations for the grant of mutually agreed benefits.

Blockchain can help overcome some of these challenges. Data sharing through a “permissioned” blockchain in a trusted and secure manner can assist with efficient and harmonized implementation of AEO-MRAs.

A blockchain could provide a distributed platform for the management of the AEO certification process and the implementation of MRAs, making it possible to record and share transactions, according to an agreed protocol among a group of Members and AEOs, with each transaction being secured and protected by an immutable audit trail.

The blockchain technology could also help with mutual recognition of controls.

VI. Transit

Currently, there are several issues with regard to transit : each country has its own IT system for Customs transit declarations; reconciliation required between the transit Entry declaration at Customs Entry office and the transit Exit declaration at Customs Exit office; reconciliation Exit-Entry is based on bilateral message exchange between national transit systems - basically a manual procedure:

- Requires Customs offices to send messages.
- Can take months before reconciliation is done.
- High Guarantee/Bank Loans costs for trade.

With Blockchain distributed ledger for national transit systems, transit reconciliation could be done automatically. Due to sharing of data of each ledger transit system through blockchain, sending transit messages between national Customs would no longer be needed, thus saving manual messaging efforts at Customs offices. It would save time; hence reduces high financial guarantee/security costs for trade.

VII. Identity Management

The Blockchain technology can be very useful in identity management of multiple stakeholders and customers in a supply chain (particularly in the E-Commerce environment), thus enhancing security and improving service delivery. It would eliminate the need for an intermediary to certify the identity of business or individuals and perhaps help in unifying several identities with multiple numbers to make it one unique identity (e.g., unique personal identity, unique trader identification number) which would be recognized across the whole government-business ecosystem, for example in a Single Window environment.

VIII. Revenue Collection

The Blockchain technology could enable any intermediary in the supply chain to collect revenue on behalf of governments, potentially allowing duties and taxes to be automatically transferred to respective authorities using smart contracts. This could be useful while implementing new models of revenue collection on low-value and small shipments (e.g., vendor collection or intermediary collection) in the E-Commerce environment.

Lack of transparency along the supply chain causes various concerns, including that the prices paid might be an inaccurate reflection of the true value having implication on revenue. The issue of under-valuation and mis-declaration can potentially be tackled in a more transparent manner in a Blockchain.

IX. Compliance Management

The Blockchain could provide provenance of data; reduce frauds; and enhance visibility in the supply chain, for example by accessing the commercial documents starting with the initial purchase order between the parties.

The Blockchain can help in mitigating and eliminating risks around food security, conflict minerals, counterfeit goods, forced and child labour, corruption and so forth. Furthermore, the Blockchain can assist in IPR management, providing transparent processes in the rights registration, associated authorizations, enforcement, and taxation issues.

X. Post Clearance Audit

Another potential use case of the Blockchain is in the audit of Customs declarations and associated transactions and documents, in particular system based holistic audit with an opportunity to look into each and every (as needed) transactional trails.
