



BLOCKCHAIN MAPPING NEW TRADE ROUTES TO TRUST

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The border is a national asset. To boost national competitiveness, facilitating legitimate cross-border trade must be high on every government's agenda. The World Trade Organization (WTO) estimates that ratification of the Trade Facilitation Agreement could boost global trade by up to 1 trillion US dollars and reduce total trade costs by 13% for upper-middle income countries. Put simply, making cross-border trade more efficient offers a sizeable pay-off for governments and citizens.

International trade is complex and typically plagued by inefficiency. Despite digital advances, most cross-border trade procedures remain largely paper-based and involve a multitude of stakeholders. The majority of trade transactions involve intermediaries: recent research indicates that 90% of declarations involve a broker and 75% of traders use third-party logistics providers.

Governments have a key role to play in reducing cross-border trade friction, yet government-to-government initiatives experience similar complexity. Bilateral and multilateral agreements take considerable time to negotiate. For example, the Comprehensive Economic and Trade Agreement between the European Union (EU) and Canada took almost 10 years. Adding to this complexity is the various government agencies with interests at the border. Today, clearing a single shipment across a border can involve on average 15 agencies and sometimes as many as 40!

IT ALL BOILS DOWN TO TRUST

At the heart of this complexity is an inherent lack of trust between buyers, sellers, supply chain participants, agencies and governments. That's where blockchain comes in as a potential 'game changer' for international trade. The technology's three key characteristics – distributed (shared dataset), consensus-based and secure – all build trust.

In short, if stakeholders can collectively use blockchain to overcome the fundamental lack of trust, the trade ecosystem will become more efficient, secure and adaptable for the future. That will be good news for traders, governments and citizens as it will drive revenue and boost trade.

BLOCKCHAIN: A NEW PERSPECTIVE FOR CROSS-BORDER TRADE

Two years ago, blockchain was still largely a buzzword. Today, it's high on the agenda of most leading Customs and trade organizations. Rather than asking whether blockchain should be applied, the question is when and where. With so much buzz about potential applications of blockchain technology, it's easy to see how Customs agencies may feel overwhelmed. The temptation is to lead with blockchain as the solution, and then go in search of a suitable problem.

The reality is that the opposite approach generates better outcomes. By creating a framework comprising four key areas affecting trade activities – proof of identity, asset transfer, pathfinder and border collaboration, Accenture is providing a new way to assess blockchain's potential based on the challenges that Customs agencies and traders need to foster greater

trust, reduce complexity, and secure economic growth. Essentially, this is about using the right technology in the right way to solve the inherent problem and create flexibility for the future. It is not about the widespread information technology (IT)-driven implementation of a single technology that will provide all the answers.

PROOF OF IDENTITY—WHAT YOU SEE IS WHAT YOU GET

The era of e-commerce has exposed many people to buying something from a person they have never met, nor are likely to meet. How can you trust that the person on the other end of the transaction is who they say they are? Once a purchase is made, goods may not arrive, they may not be as specified, or may be otherwise deficient in quality or safety standards. The seller looks legitimate, but there's no way of confirming this – trust is based on faith rather than any hard evidence. A digital identity based on blockchain technology could eradicate such misgivings for both large trading companies and individual consumers.

Such digital identities would be beneficial for traders, goods, containers or even documents as their 'identity' would need to be proven at various points along the supply chain. By using blockchain, relevant entities in a trade supply chain would have a secure and verifiable identity, parts of which could be shared where required, based upon the traditional handshake principle – ultimately guaranteeing veracity.

Blockchain technology can also help to bridge the trust gap that often arises between trading countries, and help to revolutionize multilateral trading agreements. A benefit of blockchain is that trading related documentation does not need to physically travel with the goods or be exchanged between parties, which decreases the paper-trail, reduces the opportunity for

trade fraud, and ultimately helps ease cross-border trade friction.

Blockchain can also play an important role in proving where goods have originated from. Establishing the origin of imported diamonds, for example, is essential to ensure that they are ethically sourced. In Dubai, an initiative named "Operation Kimberley" is using blockchain technology to enhance the verification process of diamond sources.

Tracing the origins or provenance of goods is also critical to addressing global health, disease and contamination challenges in a timely way. It took more than two months to identify the original farm source of contaminated papayas which caused a salmonella outbreak in the United States (US) during 2017.

ASSET TRANSFER

In essence, a cross-border trade transaction is the same as a simple transaction, such as buying a loaf of bread, which involves the seller handing over the bread and the buyer the currency – a change of ownership and risk is effected. But distance, time and a lack of trust make international trade far more complex. Goods change hands physically, but there's also a transfer of accountability and responsibility between multiple stakeholders. In the best-case scenario, the seller is paid immediately after the goods reach their destination. But it often takes much longer, and naturally trust plays an important role.

The key to solving this issue is to identify the 'triggers' – key events that should prompt follow-up actions. For example, the arrival of goods at their destination should ideally trigger payment. Blockchain enables this business logic to be built into 'smart contracts' that automatically and legitimately trigger the right action. As an illustration, look at the mandatory fines airlines operating in the EU are required to pay when delays exceed a certain number of hours. Building this logic into a blockchain could automatically trigger a payment, rather than requiring the passenger to file an often time-consuming and laborious claim.

Using blockchain to manage asset transfer would also help in combatting cross-border trade finance fraud. Trade finance, financial instruments developed to assist the flow of

goods between countries, is required notably to cover the risk and cost associated with goods being damaged, lost or stolen. The WTO estimates that 80 to 90% of global trade is reliant on it. But the risk of trade finance fraud is unfortunately quite significant. Tampering with documents remains the most common type of fraud; either to legitimize a fraudulent transaction or to use bogus information to raise funding.

Blockchain has the potential to tighten the net on trade finance fraud, and potentially result in huge cost-savings for the private sector. Not surprisingly, most commercial banks are exploring the use of blockchain for payments. Hong Kong and Singapore are working on a cross-border blockchain solution to facilitate trade and combat trade finance fraud. Once up and running, the model can easily be scaled to more countries.

PATHFINDER— TAKING 'TRACK AND TRACE' TO A NEW LEVEL

As goods travel from origin to destination, they change hands frequently. This requires considerable processing and exchange of documents and data. A pathfinder ledger built on blockchain could act as a pipeline of goods information throughout their journey, building up an entire record of every supply chain movement of entities, goods, packages or containers. It would ensure accurate information about the condition of goods at every point in time, taking 'track and trace' to a whole new level.

Container integrity could be improved. Maintaining an accurate record of the goods in a container is crucial for addressing theft, which according to estimates from the Federal Bureau of Investigation (FBI) results in annual losses of approximately 30 billion US dollars in the US alone each year. In effect, these costs are passed on to consumers who pay a higher price for their goods. And addressing theft is a significant part of why the United Parcel Service (UPS) is investing in blockchain as a member of the Blockchain in Transport Alliance, a forum for

the development of blockchain technology standards and education for the freight sector.

By using blockchain in combination with Internet of Things (IoT) technologies, relevant data such as temperature, location or whether a container has been opened (and even for how long) can be recorded and maintained with complete integrity. For food or perishable goods, keeping track of conditions such as temperature or humidity is critical. Transport companies need to know when and why a container is opened to preserve

perishable goods and to ensure truck drivers do not transport illegal goods or people.

Data submission along the supply chain can be rationalized. For example, goods in transit today require the frequent and voluminous exchange of documents and data. These processes are duplicative and inefficient. By using blockchain, workflows and data can be truthfully and efficiently shared between stakeholders in the ecosystem. A proof-of-concept (PoC) undertaken by Accenture as part of a supply chain industry consortium found that up to 70% of shipping documents can be populated using existing data.

Take, for example, the bill of lading, the document issued by a carrier (or their agent) to acknowledge receipt of cargo for shipment. Today, this document is usually submitted by the carrier, who manually collates the data from others in the supply chain. This is enormously time-consuming, leads to poor data quality, and raises questions about accountability. Another example is the security declaration, provided in advance of the arrival of goods. The Union Customs Code (UCC) – the EU’s new Customs legislation – already allows for various stakeholders

along the shipping journey to provide a subset of data at different points in time (multiple filing of “Entry Summary Declaration” data), but a supply chain blockchain could facilitate this even more efficiently.

Given access to relevant blockchains, Customs agencies can see exactly what is in each container and whether anything has been added to or removed from it during its journey. This could help officials identify fraud and security threats early, and enable timely risk assessment and planning of controls. Such segmentation allows compliant shipments from trustworthy traders to pass the border smoothly, leaving border agencies to focus their resources, time and attention on questionable packages.

Legitimate traders are usually very willing to share data, especially if doing so reduces friction at the border. For EU trusted traders, the UCC caters for “Entry into Declarant’s Records” (EIDR), which means the data of the Customs declaration is at the disposal of Customs authorities in the declarant’s IT system. A pathfinder providing government access would offer an effective technical solution – and crucially without governments having to build their own solution.

CROSS-BORDER COLLABORATION

A much less explored, but no less important, area for blockchain is its potential to facilitate collaboration between governments or between government agencies. This technology could enable governments to share data and maintain accurate sight of the usage of certificates and licences, without revealing intelligence or sensitive information.

A Customs agency could flag a certain trader or case as malicious via the relevant blockchain, alerting other collaborating countries. Different government agencies perform risk analysis controls based on their own confidential risk rules. Using blockchain to share the control

decisions and results would benefit partners and contribute to a more holistic and accurate risk assessment. Various countries already have agreements in place in this area, such as the “Single Declaration” or the WCO’s “My Exit, Your Entry.”

The “Single Window” has been high on the agendas of border agencies for decades, with various degrees of success. The main obstacles are reluctance to share data, political sensitivities, and the inability of different agencies to agree on a governance model. Here, too, blockchain has a clear role to play. For example, take agricultural licences. These are usually granted by the Ministry of Agriculture and controlled by health authorities or veterinarians at points of entry. The corresponding import declaration is supervised by Customs, and its approval might require writing-off the permitted quantity specified by the certificate. Storing this information on a blockchain provides an integral view of usage, allowing for accurate write-off and avoiding double usage.

To facilitate cross-border trade and combat fraud, countries increasingly need to collaborate, either through bilateral/multilateral agreements, regional trade blocs, the WCO or the WTO. Today’s collaboration and data-sharing efforts are often expensive and inefficient. Political sensitivities mean that, in practice, countries deploy their own data and exchange messages via an agreed-upon protocol. One example is the temporary admission of goods, whereby goods, such as paintings for an exhibition, enter countries on a duty free basis regulated by multilateral agreements. Using a blockchain to track their movements and share information would eradicate the need for paper-based processes and costly data exchange.

CONCLUSION

Rather than taking a technology-first approach to blockchain adoption, Customs agencies and governments should identify specific problems that this technology can help them to solve, such as fraud or inefficiency. For many agencies a first-step may be the undertaking of a pilot project to gauge effectiveness and to better understand the potential costs of rolling-out the technology across their organization. Regardless of project size, by focusing on the four areas already outlined above, agencies can start to build a robust business case for blockchain’s use. Ultimately, it all comes down to trust. Blockchain could be the game changer to lower trust barriers for everyone involved in today’s complex cross-border trade ecosystem.

More information

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