



Executive Summary

Blockchain technology has a potential to revolutionize international trade². Blockchain is a distributed ledger technology (DLT) that can keep unchangeable records of transactions thereby create an environment of confidence, trust and transparency among stakeholders. Transactions on the blockchain are updated by consensus among parties in the network without the need for an intermediary. The mechanism makes it impossible to hack and therefore being considered as the method to maintain data integrity as well as makes it possible to create smart contracts with business terms that can be immutably stored, and later executed automatically in accordance with those business terms of the agreement. This reduces the risks of fraud or contractual disputes between the parties. Noticeably, several blockchain platforms have recently been piloted for facilitating finance for trade, and also facilitating international trade and freight operations with tangible benefits.

Normally, small and medium-sized enterprises (SMEs) tend to have financial liquidity problems of receiving none or low amount of loans because of trading risks. One of the risks is caused by the documents' unreliability, frauds and errors. Moreover, there are numerous documents needed for international trade, e.g. invoice, Certificate of Origin, export certificates and permits, delivery order (D/O) etc., and also complicated and time-consuming coordinating processes between all parties involved.

Blockchain has the potential to solve the above pain points by creating an environment to authenticate individual stakeholders, keep tracks of interactions and immutable transactions of each stakeholder thereby creating confident, trust and transparent interactions between business partners, e.g. between buyers (importers) and sellers (exporters), between corresponding banks, between logistics service providers, between regulatory agencies, and also between stakeholders across those groups. These stakeholders will be able not only to exchange electronic information for more efficient coordination, but also exchange assets electronically with trust, e.g. contractual documents or titles. All those transactions and events could be enforced automatically and without dispute according to the smart contracts or business terms that are agreed among those stakeholders. Therefore, commercial, financial, freight and regulatory transactions along the international trade supply chain could be carried out with transparency and efficiency while data privacy, like trade secret is also strictly enforced.

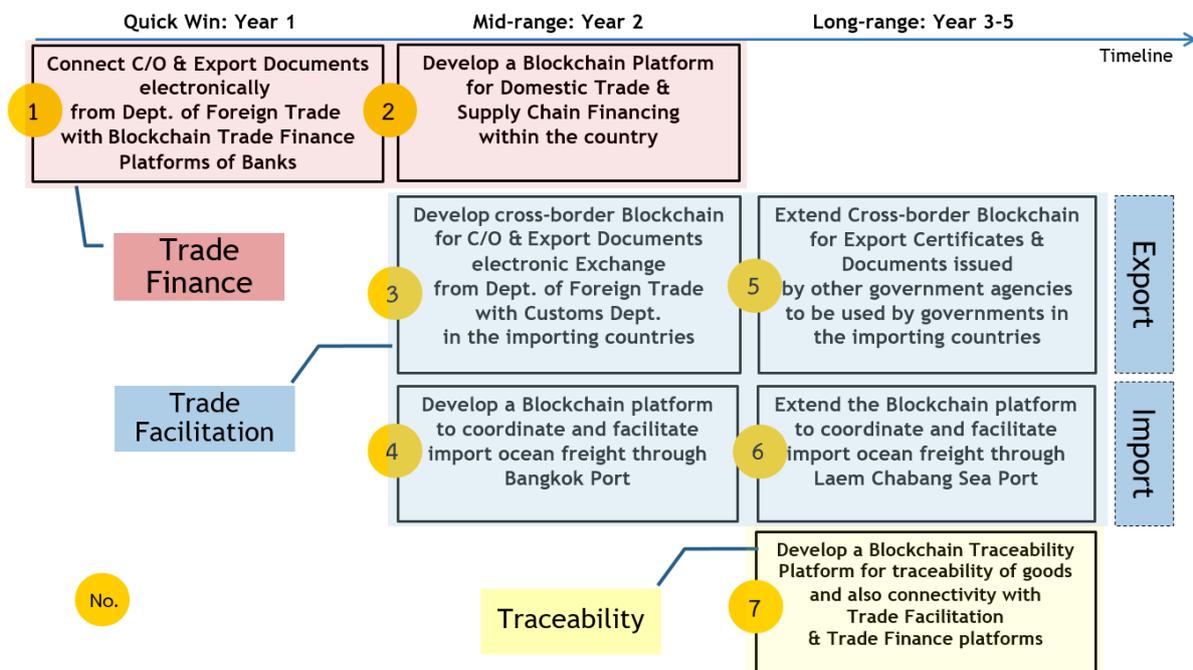
Blockchain platforms for facilitating trade finance and supply chain financing could assist traders especially SMEs to gain more trust and be able to receive higher loans from banks or financial institutes. SMEs would have more access to financial support for conducting their trade and business activities. The processes of Letter of Credit (L/C) approval and payment settlement, as well as financing services with open accounts are more efficient, faster and more trustworthy in the blockchain environment than the normal paper-based transactions.

² A WTO Report (November 2018) – “Can blockchain revolutionize international trade?”



However, benefits and success of blockchain is not relied upon the (blockchain) technology alone, but there are several critical success factors that need to be well managed. Especially, the awareness and understanding of policy decision makers and management of both relevant government agencies, and business sectors. The collaboration among key stakeholders is necessary to transform into such an innovative environment. Organizations that must take the hosting roles for different parts of development are crucial to achieve the expected benefits.

Feasible blockchain pilot projects are proposed here to revolutionize finance for both domestic and international trade, and to significantly improve international trade and freight operations. Seven proposed projects are classified into 3 phases, the Quick-Win (one project for the first year), the mid-range plan (3 projects in the second year), and the long-range plan (another 3 projects for the 3rd-5th years) as shown in the figure below.



1. Connecting electronic Certificates of Origin (C/O) and other export-required documents as issued by the Department of Foreign Trade with the trade finance blockchain platforms used by banks – C/O, export certificates and other export-required documents as issued by the Department of Foreign Trade (DFT) are already in electronic forms. Those electronic documents should be connected and exchanged with the trade finance blockchain platforms already developed or to be developed for Banks. These systems will help reducing paper frauds and errors, and improving efficiency during trade finance services offered by banks for the benefits of traders. Banks will be able to provide loans for traders with fewer risks, better money-laundering protections, and operational efficiency. In this case, DFT may discuss collaboration in more details with the Thai Bankers' Association, commercial banks, and Bank of Thailand.



2. Developing a blockchain platform for domestic trade and supply chain financing – A national-level collaboration is recommended among banks who are members of Thailand Blockchain Community Initiative (BCI), Thai Bankers’ Association, and also Bank of Thailand as a regulator in providing a regulatory sandbox environment for blockchain innovation testing and production. All these stakeholders should work together to build a national blockchain ecosystem for facilitating domestic trade finance and supply chain financing. This blockchain platform should handle finance-related transactions and documentation electronically among business stakeholders with trust, efficiency and fewer risks on financiers, thereby, a higher amount of loans could be granted. Dealers, sponsors or the large business partners, and suppliers could interact with better confidence and legitimacy. All business stakeholders along the supply chain will reap more financial benefits in conducting their business activities with sufficient financial liquidity. This domestic trade finance blockchain platform is an important stepping stone for cross-border trade finance blockchain services in the next step of development.

3. Developing cross-border blockchain to exchange electronic C/O and other export-required documents as issued by Department of Foreign Trade with Customs and relevant regulatory agencies in the importing countries – Customs and relevant regulatory agencies in the importing countries will be able to access to certificates and export-required documents electronically for better clearance operations. This platform could help reducing paper fraud problems and make it faster and more efficient for clearance. CAT Telecom Public Co., Ltd. (CAT Telecom) is considering investing and developing this blockchain platform by establishing the blockchain node and digital services for government agencies. Referring to the Cabinet decree on 16th October 2018, CAT Telecom has the mandate to take the role as the next-generation National Single Window Operator (NSW Operator) for the country. This means CAT Telecom has the role to invest, develop and provide operational services as the central hub for facilitating import, export, and transit including logistics transactions for goods moving across the borders. Electronic coordination and documentation facilitated by a blockchain-based NSW platform could cover those cross-border regulatory processes, and also commercial, financial and freight-related processes.

4. Developing a blockchain platform to coordinate and facilitate import ocean freight operations through the Bangkok Port – This blockchain platform will coordinate operations among stakeholders along the import ocean freight chain going through the Bangkok Port. In the current environment, there are several transactions and a lot of paper-based documents to fulfill all regulatory processes, financial processes and transport processes. Many of those tasks are time-consuming and error prone even though some of those transactions are handled electronically, e.g. Customs declaration and clearance, however, several other tasks are still manual operations and not the straight-through paperless transactions yet. The blockchain platform developed in this project will facilitate with end-to-end electronic transactions to accelerate ocean import freight operations for better transport coordination, better compliance



and Customs clearance, reduced paper fraud, and reduced operational cost of regulatory agencies, transport service providers and traders. CAT Telecom, as the next-generation NSW operator, will engage in the development and operations of this platform since it would support electronic services along the international supply chain covering B2G, G2G and B2B trade and freight transactions through the Bangkok Port as well.

5. Extending the cross-border Blockchain within the next-generation NSW to electronically exchange export certificates and export-required documents from other regulatory agencies in Thailand with the regulatory agencies in the importing countries – this is the extension from Project No. 3 to cover other export-required documents other than from DFT, e.g. Phyto-Sanitary Certificates, Permits for exporting endangered flora as issued by Department of Agriculture, and export-required certificates issued by other government agencies, e.g. Department of Livestock Development, and Department of Fisheries. These export certificates and export-required documents issued by the regulatory agencies in Thailand but then must be submitted to be validated by Customs or designated regulatory agencies in the importing country. This blockchain platform has the potential for paper fraud reduction, better compliance and faster coordination among authorities across the borders.

6. Extending the blockchain platform to coordinate and facilitate import ocean freight through Laem Chabang Port – this is the extension from Project No. 4 above to coordinate and facilitate import ocean freight operations for the Laem Chabang Port. This blockchain platform will orchestrate operations with digital information and asset exchange among ocean carriers, terminal operators, in-land transport services, freight forwarders, Customs brokers, Customs department and other regulatory agencies at Laem Chabang Port. This blockchain platform provides digital services covering B2G, G2G and B2B information visibility, and streamlining regulatory, financial and transport-related transactions more efficiently than paper-based transactions.

7. Developing a blockchain platform for traceability of goods and also connectivity with trade facilitation and trade finance platforms – this is to develop an environment that allows consumers of goods, controlling agencies like health, environmental and security authorities to be able to trace goods, e.g. food and agriculture, from farms to packaging services, to market places and to consumers. This blockchain environment will provide traceability information about what and where raw materials of the goods are coming from, and what kinds of quality and standards they've achieved.

Each project proposal mentioned above should be forwarded to the host organization accordingly such that the execution of each project along with necessary collaboration would be carried out. The Trade Policy and Strategy Office (TPSO) should take a supporting role by providing necessary information and recommendations for the host organizations to start carrying out each of those projects. TPSO could also monitor the overall projects' progress, and continue disseminating awareness and knowledge about trade facilitation and blockchain technology to the public since the blockchain adaptation would facilitate better trade and enhance the country's competitiveness.