

Blockchain can help smoothen the supply chain network

EFFORTS of our government to tap into the exponential growth of the blockchain industry have started since 2015 with the Securities Commission (SC) and Bank Negara Malaysia (BNM) championing fintech development.

Other agencies such as Malaysian Industry-Government Group for High Technology (MIGHT), Malaysian Global Innovation and Creativity Centre (MaGIC) and Malaysia Digital Economy Corporation (MDEC) focus on blockchain technology for the 4th Industrial Revolution (IR4.0).

Blockchain initiative is in line with the digital economy for sustainable agriculture and rural development, which can be applied to agriculture supply chains, logistics, smart contracts and e-commerce.

Agrifood supply chains include production (planting/feeding), picking/slaughter, processing, warehousing, distribution and sales. Origin tracking of products will become a breeze if systematic documentation is implemented at every stage of the supply chain with real-time data provided by an integrated system of Internet-of-Things (IoT).

Hence, blockchain helps to



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facilitate transparency and security in the production cycle of fresh produce, catches and commodity crops for all supply chain participants, including farmers, traders, producers, financiers, regulators, and consumers.

The most obvious application of blockchain is perhaps data provenance with documentation of product origin. For example, IBM's Food Trust system was used by Walmart in the United States to track some of its products from the cultivation, treatment and field harvest to transportation, storage and quality control.

Customers can simply verify all the details tracked and made available on the blockchain system by QR code scanning. Blockchain allows retailers to isolate and recall a product that is not up to standards faster to minimise any damaging impact. This

builds trust with the consumers by ensuring food safety and preventing food frauds with easy tracking of food origin in case of any fake or contaminated food flow into the market.

Transparency in the supply chain can not only prevent illegal and unethical production/distribution, but also assists consumers in making informed decisions in choosing green products to protect the environment and vulnerable producers, such as rural smallholder farmers and fishermen.

Chaintope, a blockchain company in Malaysia, is using its in-house blockchain technology, Tapyrusta, for traceability in the Japanese fishing industry to detect the source of marine resources and to prevent illegal fishing. In this respect, blockchain can be used to empower the Malaysian palm oil industry with transparent, sustainable and responsible supply chains that adhere to the standards of Roundtable on Sustainable Palm Oil. The adoption of blockchain in the palm oil supply chain will increase the chance for export to international markets given undisputed compliance with international standards.

Furthermore, rich real-time da-

ta from plantations collected via blockchain apps and web interfaces can help with crop management and harvest, as well as tracking work conditions and plantation management in making farming smarter via the use of data-driven technologies.

Another blockchain application that Malaysia can champion is halal traceability certificates as a global hub to enforce end-to-end halal assurance based on specific market requirements. This means food can be traced back through all the locations of the halal supply chains that began with the original farm or livestock farm, including the identity of the farmers or livestock breeders.

The halal food supply chain can be further empowered with smart contracts, a type of distributed ledger technology intended to facilitate, verify or enforce the negotiation or performance of a contract. In this case, digitally prescribed processes and requirements according to halal standards, compliance verification and the enforcement of halal supply chain performance can be automated with credible transactions and timely payments between stakeholders without third parties.

Talents are needed to help develop blockchain solutions from

strategy to implementation while assisting to identify effective use cases for the maximum blockchain benefits and stay informed on the growing blockchain ecosystem, developments and the government regulatory landscape.

Currently, companies need to overcome issues of scalability, accountability and cost apart from the complex regulatory, tax, auditability, risk and compliance implications of employing blockchain technology. Hence, governmental support is vital for start-ups to thrive.

The right ecosystem and stakeholders are crucial to sustaining blockchain solution development with careful assessment of the existing challenges, including infrastructure, connectivity, digital literacy, acceptance and other issues, to avoid substantial budgets leading to miserable failure.

It is also important that these innovations are deployed equitably to benefit all stakeholders along the value chain.

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