Seminar Series:
Blockchain - What, Why and How?

17 June 2019

DukeNUS Medical School

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Acknowledgements

The views presented in this publication are those of individual contributors and do not represent formal consensus positions of the authors' organisations or CoRE.

We would like to thank our partners, participants and sponsors for supporting the inaugural patient engagement roundtable. We look forward to partnerships and collaborations going forward.

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CENTRE OF REGULATORY EXCELLENCE

BLOCKCHAIN IN HEALTHCARE - WHAT, WHY AND HOW?

Mr Lim Thiam Hwa

Healthcare Director
SAP Southeast Asia

First conceptualised in the early 1990s, blockchain has rapidly grown in significance over the recent years, with its first application in the finance industry about a decade ago. With immense potential to disrupt industries by changing the way people and enterprises interact and cooperate, the applications of blockchain technology are being extended to other areas including the healthcare and life sciences sectors.

To understand the place and potential of blockchain in healthcare, CoRE invited Mr Lim Thiam Hwa, Healthcare Director at SAP Southeast Asia, to share his experience and insights on blockchain solutions in healthcare and life sciences.

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Stakeholders
Attended the seminar

What is blockchain?

In brief, Mr Lim described blockchain as a “shareable record book” stored within a decentralised system. Multiple parties would each be able to access a copy of the book, which would record all transactions. Importantly, once transactions are recorded and subsequently validated by consensus, they cannot be altered. These are significant features of the blockchain technology that could help facilitate trusted and secure multi-party transactions and overcome the common challenges of data security and integrity in the digital age.

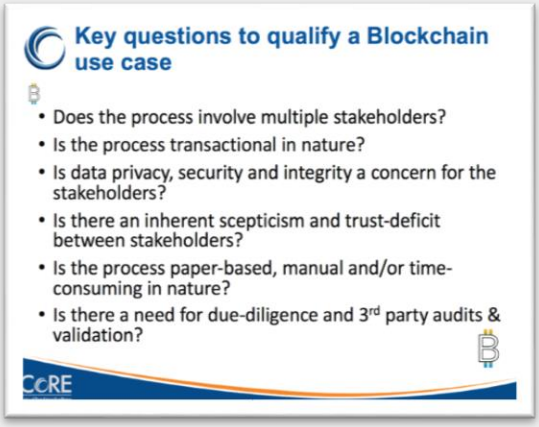
Why is blockchain important, especially for the healthcare sector?

Describing the overall landscape of blockchain, Mr Lim highlighted the growing prominence of the technology as more companies across the various sectors adopt or plan to adopt blockchain-based solutions in their businesses. He noted that, while the deployment of blockchain into the healthcare and life sciences sectors was still in its early stages, leaders in these industries have shown considerable interest in welcoming blockchain technology in the near future.

Mr Lim described the key value drivers of blockchain such as facilitating multi-party collaboration and transactions, reinforcing trust among stakeholders through transparency and auditability of information, and enhancing data security and integrity. Noting that stakeholders should not adopt 'technology for technology's sake', he stressed the need to appropriately consider the relevance of blockchain-based solutions for their enterprise needs (see slide excerpt).

In the healthcare context, the value of blockchain technology could be extended to the areas of personal management of patient health data, data-sharing among multiple healthcare stakeholders, governance and security of electronic medical records (EMR) systems, and process optimisation of medical billings and payments with real-time transparency.

Mr Lim highlighted the key value drivers of blockchain.



Slide excerpt from presentation: Suggested list of key questions to consider relevance of a blockchain-based solution.

How can blockchain solutions be employed in healthcare?

Examples of healthcare use cases of blockchain included personal health "digital wallets", secure and speedy digital-sharing of authenticated diagnostic reports among diagnostic clinic, patient, and specialists, secure storage of EMR systems on blockchains, and verification of authentic health products within the supply chain.

Elaborating on the latter example, Mr Lim highlighted healthcare stakeholders' concerns on the risk of counterfeit medicines entering the legitimate supply chain especially during the course of product recalls. He described how blockchain could be used, in addition to existing anti-counterfeiting measures, to enhance the track and trace model within the pharmaceutical supply chain by strengthening data security of product information and reliable verification of authentic health products.

Early days for blockchain in healthcare

The seminar ended with an engaging discussion with the audience.

Following the talk, the Q&A session featured wide-ranging questions from the audience, which was represented by multiple stakeholder groups including regulatory authority, industry, healthcare providers, research and academic institutions.

The dialogue spanned from technical queries on the blockchain technology to wider perspectives on the potential impact of the disruptive technology on various aspects of healthcare (i.e. ensuring pragmatic and effective implementation within healthcare systems, impact on public health epidemiological approaches, and implications of multiple blockchains existing within the healthcare system).

The seminar concluded with the appreciation of the potential benefits of blockchain in healthcare especially for health data security, while acknowledging that much more needed to be done to develop fit-for-purpose blockchain solutions for healthcare as well as pragmatic approaches to implement these solutions to the healthcare system in Singapore.

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