

Adoption of Blockchain Technology to Enhance Public Healthcare Supply Chain in South Africa: A Systems Thinking Approach

TREO Talk Paper

Patrick Ndayizigamiye
University of Johannesburg
ndayizigamiyep@uj.ac.za

Nurudeen Ajayi
University of KwaZulu-Natal
ajayi@ukzn.ac.za

Abstract

South African healthcare facilities are constantly faced with shortage of supplies as a result of the inefficiencies within the supply chain (Katuwal, Pandey, Hennessey, & Lamichhane, 2018). Causes of these inefficiencies ranges from the lack of transparency within the supply chain processes, trust issues and inadequacies of the middlemen. According to Katuwal et al. (2018), minimising the effect of middlemen is one of the means of managing the challenges facing the healthcare's supply chain. Also, the provision of better visibility and the transparency of supply chain transactions can help manage the challenges facing the healthcare's supply chain (Kamble, Gunasekaran, & Arha, 2018). According to Saberi, Kouhizadeh, Sarkis, & Shen (2018), blockchain is increasingly being considered as a technology solution that can ease some of the global supply chain management problems. This is because, blockchain can help with the provision of transparency of the supply chain's transactions and with the provision of trust within the supply chain network. It can also help manage the effect of middlemen or intermediaries within the supply chain network (Korpela, Hallikas, & Dahlberg, 2017). Using the Systems Thinking Approach, this study seeks to depict how block chain technology can help address some of the inefficiencies within the South African healthcare supply chain. Firstly, the study demonstrates the interactions among stakeholders within the South African healthcare supply chain system using causal loop diagrams. Then the study presents how blockchain can enhance trust relationships amongst the various stakeholders, that is, between nodes of the loop diagrams. Furthermore, the study presents how blockchain can be useful in eliminating intermediaries within the South African healthcare supply system and hence reducing the cost of healthcare provision. It is anticipated that this paper will shed light on how emerging technologies can assist in solving wicked problems within the context of developing countries.

References

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