

Adoption of Blockchain Technology to Improve Integrity of Halal Supply Chain Management

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INTRODUCTION – “EVOLUTION OF BLOCKCHAIN TECHNOLOGY”

Blockchain technology was invented by Satoshi Nakamoto along with a few others which still remains a mystery (Kersten, Blecker, Ringle, Hackius, & Petersen, 2017). This technology can help company protect assets, initiate transactions and maintain records between parties in verified chronological events without being hacked or tampered. Blockchain has the potential to change any nation into a cashless entity. A verifiable distributed ledger that records transactions are one of the major concepts of blockchain phenomena (Iansiti, Lakhani, & Mohamed, 2017).

The Blockchain is a chain of orphaned divergent blocks to bring equilibrium inside any digital system (Biais, Bisiere, Bouvard, & Casamatta, 2018). Much focus is now being paid to electronic agreements. Public blockchains applications are constructed into a full digital framework for converting acts and registries. Many governments, personal and economic sector industries are now exploring the possibilities of smart contracts depending on blockchain (Bocek & Stiller, 2018). The success and failure of a key party to handle inter-agency business transactions are no longer necessary. In companies that request safe economic operations, Blockchains are now beginning to affect business management procedures (Mendling et al., 2018).

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Blockchain Based Smart Contracts

Smart contracts based on Blockchain offer a decentralized consensus and conduct algorithms that cannot be readily altered. The manner in which any organization functions is entirely reorganized by incredible quintessence and helps create and build better platforms for records and databases with advanced features (Cong & He, 2018). The installation of blockchain-based tracking improves supply chain provenance. The ability to trace and trace the vanity amount of any products can be seen. Counterfeiting and manipulation in global supply chains have now become very simple (Kim & Laskowski, 2018).

Blockchain's backbone with respect to any smart contracts financial transactions is cryptocurrencies. Pseudonymous payments can be made online using cryptocurrency. They can be used to exchange currencies through a smart contract but somehow exhibit few drawbacks regarding throughput and latency (Eyal et al., 2016). Cryptocurrencies are decentralized currencies which can be used to design and develop a smart property over an internet platform without human interventions. Self-administrating regulations if established could deploy law-abiding self-executing smart contracts. Government and multinational corporates could find it difficult to regulate activities through old means. Hence, there is great need to still refine and fine-tune this cryptocurrency technology (Wright & De Filippi, 2015). Social world can be mediated by decentralized technologies that has the capability to completely transform bureaucratic government models (Reijers & Coeckelbergh, 2018). Cryptocurrency is an irreversible virtual currency that has become more flexible, private and less amenable when compared to other transaction procedures (Böhme, Christin, Edelman, & Moore, 2015).

Background of Study - Halal Supply Chain Management

Conventional supply chain management (SCM) focusses on the integration of the business process from the original suppliers that provide products, services, and information until it reaches the end-user. According to Halal Industry Development Corporation (HDC), Halal SCM, on the other hand, makes the conventional SCM becoming more meaningful by addressing the details of supply chain management which has to comply with the Islamic law (Syariah Law) by addressing few details as follows:

- Does not contain any parts or products of non-halal animals or animal products that are not slaughtered under Islamic law,
- Does not contain any material that Najs according to Sharia law,
- Safe and harmless
- Not prepared, processed or manufactured using equipment contaminated with Najs matter (dirt or impurities) in accordance with Sharia law,
- The food or ingredients used do not contain any portion or derivative of human beings which is not permitted by Shariah law, and
- And during preparation, processing, packaging, storage or transportation, meals are physically separated from other foods that do not qualify as aforementioned or any other matter that has been designated as Najs by Shari 'ah Law (Halal Industry Development Corporation - Halalan Toyyiban).

The word halal comes from Arabic words which are halla, yahillu, hillan, wahalalan which mean allowed or permitted according to Islamic Law. It covers the entire processes from the method of preparation (including the equipment), processing, storage, packaging and environmental areas that must be free

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