

Implementing Blockchain in Emerging Economies

Multiple Case Studies of Supply Chain Management from Indonesia and China

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Since the emergence of Bitcoin in 2008, blockchain is promised as enlightenment on how the future industry shaped. Nowadays, many emerging countries have been started to implement it in their Supply Chain. However, it must be noticed that utilizing Blockchain in Emerging Countries has many challenges, and organizations should be able to identify the drivers and address the challenges to achieve success in its implementation.

To simply understand what blockchain is, imagine that you have data, then you save it into a medium called "block". It will be held together in a specific order, forming a "chain". The data inside the block contains information about the transaction (time, date, amount), who is involving in a transaction (digital signature), and unique "hash" that will distinguish an individual block from other blocks. All data will be decentrally stored and encrypted by using a cryptographic algorithm. This technology will enable individuals and companies to do a transaction without any intermediaries. For instance, in the future, you can send money without using Bank (as an intermediary). By using blockchain, the money can be sent digitally, secured, and trusted.

Indonesia and China are known as emerging countries, which currently, has numerous industries and startups. Many industries in both countries have been started to digitize their processes. Some Chinese companies, such as Alibaba, SF, JD.com, are improving their operation by using Blockchain Technology. Interestingly, in Indonesia, some startups were initiated in around 2015, offering blockchain to be implemented widely in many industries, and its pioneered by two: Blocksphere.Id and Hara. Besides, an automobile manufacturing Industry also started to implement blockchain for optimizing their supply chain process. In general, mostly blockchain is

implemented in traceability, digitalization, trust and stakeholder management, transportation and distribution, and finance.

However, implementing blockchain in emerging countries is not a piece of cake. Companies should understand what drives them to apply this technology, and once implementing it, what are the challenges that they will face. Through this research, we found the main drivers and challenges that must be considered by companies in developing countries when deciding whether to implement blockchain or not.

In this research, we conducted interviews with six companies. After conducting within case and cross-case analysis, it yields that *trust, data integration, and information sharing, process automation, regulation* are the most influenced drivers in developing countries. The main reason for that is because some problems have commonly occurred in developing countries such as fraud, information forgery, low trust, imperfect regulation, and over-rely on the traditional process. Furthermore, *cooperation, information sharing, scalability, and integration* become the primary challenges in developing countries. Many companies are worried about the considerable risk of sharing their information since blockchain will provide transparency between the partners. Also, with the extensive amount of data, it will be challenging to integrate all data into one system. Besides, it will need substantial costs as the infrastructure must be capable of running this technology.

Thus, if the company success to implement BT, they will get some benefits such as improve information transparency and traceability, enhance trust and relationship between partners, improve data quality, information security, automation, customer satisfaction, and government supervision.

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