Chapter 1
Cryptocurrencies and Blockchain Applications

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ABSTRACT

New technology and revolution in digital tools can be considered as the enablers to promote the performance of the global supply chain by integrating the actors. Among these technologies is the blockchain, first and foremost a technology for storing and transmitting information. This technology offers high standards of transparency and security in a decentralized environment. More concretely, the blockchain allows its users—connected in a network—to share data without an intermediary. The cryptocurrencies are new electronic currencies that use blockchain technology to transfer the ownership of cryptos between their different owners. The application of blockchains in cryptocurrency reduces the risk of sharing information and simplifies transaction processing thanks to the secured decentralized environment. The objective of this chapter is to provide a literature review that synthesizes the knowledge of using the blockchains in cryptocurrency. The results of the review can be used by academics and practitioners.

INTRODUCTION

The competitiveness of a company or a supply chain is its ability to withstand the competition and to maintain or increase its market share. It is his ability to face competition. Supply chains are evolving very fast. The supply chains need to be competitive to survive. In this context, the companies adapt the new technologies as the enablers to help them remain competitive. Among these technologies is the blockchain, developed recently is, first and foremost, a technology for storing and transmitting information. This technology offers high standards of transparency and security in a decentralized environment. More concretely, the blockchain allows its users - connected in a network - to share data without an intermediary. Blockchains can be coupled with other digital technologies or digital infrastructures such as artificial intelligence and big data (Hassani et al., 2018). The financial crisis showed that many previous securitization strategies are destructive if proper monitoring is not adapted (Castelluccio, 2018). In all these cases, the lack of comprehensive transparency between all actors in the securitization chain, is the main issue. New technologies were developed to play an important role in competitiveness, security and transparency. Among the business processes, asset management is traditionally managed by centralized organizations. With the evolution in using the new technologies such as blockchain, artificial intelligence, big data, and a variety of other technological tools, everything is changing. More especially, the blockchains offer a different business model to asset management and investment. On the other hand, asset tokenization as a securitization model involves the division of financiers, the appearance, and the ownership of the assets. So, financial organizations securitized trillions of dollars in mortgages without regard any potential risk, resulting in the 2008 financial crisis. That's why the blockchain is in this type of securitization, since security tokens, which are becoming increasingly popular in the form of STO "Secure Token Products", benefit from the lack of mediators. After appearance of Bitcoin, the blockchain was created to help users to exchange the same named cryptocurrency (Davidson et al., 2015). Different blockchains was created. The most recognized, Ethereum, is well known for its capacity to install and interact with smart contracts (Pustišek and Kos, 2018). A smart contract is software stocked in a digital space that keeps running when special circumstances are reached. That needs a blockchain, which is able to collect the information that ensures the contract's terms and conditions are met (Szabo, 1997). The smart contracts benefit from the blockchain's decentralization environment, transparency and lack of transaction repudiation, unlike the systems that use third parties. So, the blockchain is "a native digital medium for value, via which we might manage, store, and exchange different assets, peer-to-peer and securely" (Tapscott, 2016).

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