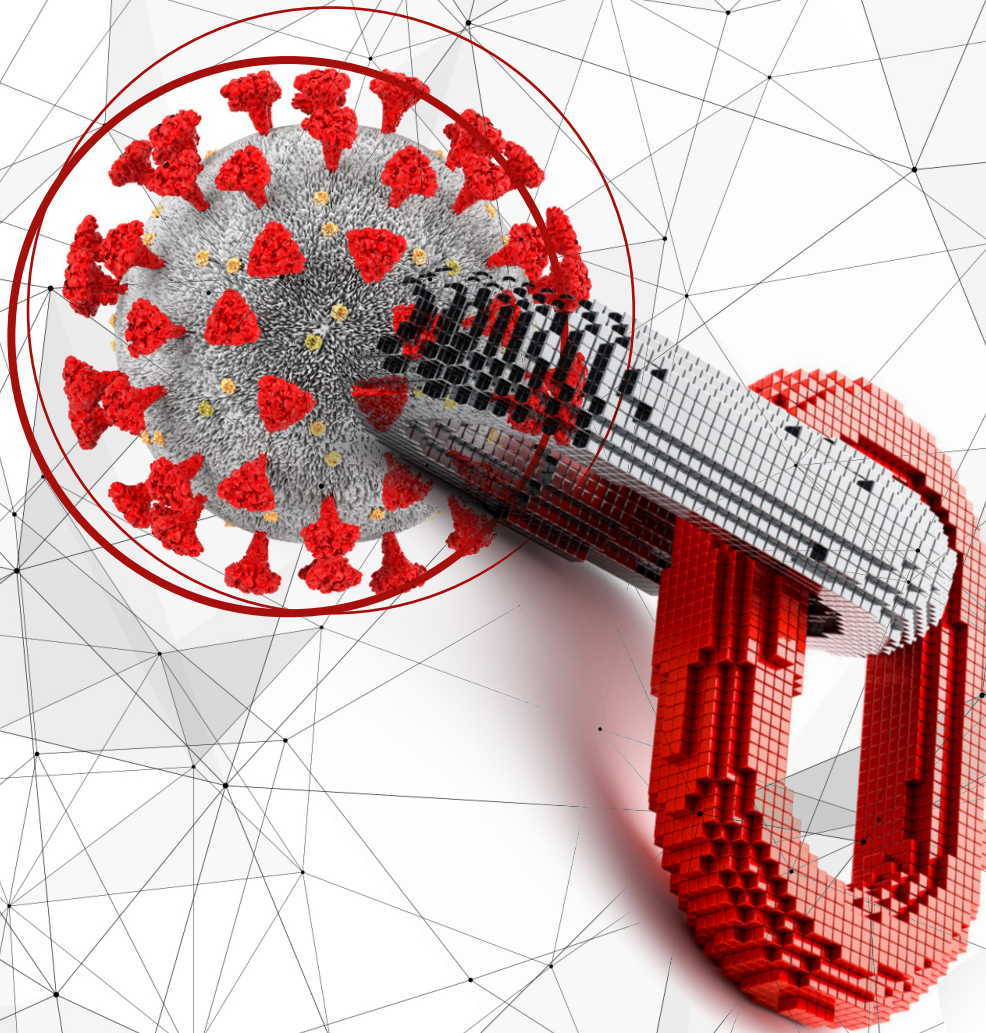


Blockchain technology in logistics industry | *Ways to boost global value chain and pandemic mitigation strategies*



EXECUTIVE SUMMARY

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Executive Summary

Over the last few years, the blockchain technology has gradually attracted a wide range of sectors. Blockchain is a peer-to-peer platform that is based on distributed networks and smart contracts as a business logic. This distributed ledger technology removes the need for intermediaries to undermine the ownership model. The logistics and supply chain management industry has also recognized its potential uses to promote transparency and efficient sharing of information.

The basic concept behind Supply Chain Management (SCM) is to handle the distribution of products, services and information in an efficient manner in order to achieve high efficiency and minimize risks. This is the promise that blockchain will present to the logistics industry. Just yet, this technology is also far from maturity, with several issues to address before it can be effectively applied on a scale in the logistics sector. It is likely that the greatest challenge would be to successfully achieve acceptance by the industry through collaboration and even co-operation between different supply chain partners with legacy processes and differing interests.

However, the early implementations of this new technology in the supply chain suggest that blockchain has a favorable chance to reach its maximum potential in the future. Blockchain technology would allow greater efficiency and new market strategies, including faster and stronger world trade logistics, excellent transparency and traceability in the supply chain, and improved integration of business processes in the logistics business.



In view of the current situation in the supply chain and logistics with the presence of Covid-19, this study will enable logistics companies to start collaborating with partners that are developing blockchain-based applications. Although blockchain may not be able to directly tackle the effect of the current health crisis, it may help with the visibility of the supply chain. The particular digital ledger can be used in supply chains to shape the economic recovery of post-Covid-19 and global supply chain stakeholders use it to trade safely during the pandemic.

Blockchain technology provides basic components to ensure the transparency of trusted and secure data for trading partners and customers and to integrate processes through a mutually agreed set of rules especially after the disruption of the supply chain caused by the pandemic.



Key Findings

- Over the last few years, blockchain adoption has reached a turning point. Blockchain is one of the most disruptive technologies in 2020. Although fintech remains a pioneer in adopting the cryptographic ledger, the logistics sector is moving towards blockchain growth to provide a return on investment to justify the cost and effort of implementing blockchain solutions.
- Blockchain providing more diversity than in previous years with a growing diversification of possible use cases for blockchain. the digital ledger is gaining momentum and acceptance in logistics and the sector professionals are also positive about it and expect that it would have an impact on both communication efficiency and industry costs.
- Current logistics processes, mostly paper-based, are vulnerable to human error and lack of coordination, which, in turn, leads to uncertainty in the supply chain, that can cause extended delivery times. Affordable and efficient supply chain visibility is becoming increasingly necessary as the complexity of the supply chain network has increased orders of magnitude over the last decade. Supply Chain Visibility concerns the accurate and timely distribution of information to all stakeholders.
- Current logistics activities have a huge amount of data. Times, routes, shipping contents, fuel, warehouse contents, and warehouse size, are few of a never-ending list of details that only gets more convoluted as goods travel around the supply chain. Furthermore, the expectations of the consumer are growing considerably. Both individuals and companies expect goods to be delivered more efficiently, more flexibly and - in the case of consumers - at low or no delivery costs. In order to fulfill this duty, logistics management needs a complete overhaul. The appropriate solution could be the use of blockchain for logistics. ¹

1. Yafimava, D., (2019, February). Blockchain and Logistics: Reinventing an Outdated System. Openledger.

- According on a report by Statista on how an organization invests on blockchain, 55.3 percent of logistics service providers stating that they invested money on blockchain in that area, 21.3 percent on technology testing, 19.2 percent on technology implementation, and 17.7 percent on blockchain partnerships. ²

- Blockchain can have a huge impact on inter-business process automation when combined with other disruptive technologies such as the Internet of Things and Artificial Intelligence. For instance, with the use of labels in conjunction with IoT technology, each function of a shipment can be tracked. Blockchain logistics may make a major contribution to open and trackable communication between the parties concerned.

- The global market for blockchain technology is estimated to accumulate USD 20 billion in revenue by 2024. The market size is expected to grow at a CAGR rate of over 69 percent between 2019 to 2025. ³ MarketsandMarkets reports that the blockchain supply chain market is projected to rise from USD 145 million to USD 3.3 billion by 2023. ⁴



2. Mazareanu, E., (2020, March). How is your organization spending on blockchain? Statista

3. Petrov, Ch., (2020, July). 91+ Blockchain Statistics: Understand Blockchain in 2020. TechJury.

4. Blockchain supply chain market by application, provider, vertical, and region - Global forecast to 2023. MarketsandMarkets. (n.d.).

Study Scope

The blockchain technology is identified as a novel innovation with transformative potential in the existing supply chain, especially in the logistics industry. **Hence, the main research question is introduced:**

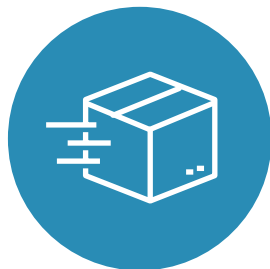


“What are the implications of the blockchain technology for the development of the global logistics industry?”



In order to address the main objective of this research, more general knowledge on the report's context needs to be explored about blockchain technology, how it works, what its features are and which should be implemented in supply chains.

It is essential that a deep understanding of this technology and the industry of interest are explicitly formulated and additional sub-questions are implemented:



“How can blockchain technology be used in the logistics industry?”





“What are the best practices and trends for blockchain technology today” ?

Furthermore, due to the unprecedented crisis that the world is facing, one additional sub-question is being implemented:



“What are the challenges and opportunities could blockchain technology deliver to the logistics operations in response to the coronavirus outbreak” ?

In view of the current situation in the supply chain and logistics industry with the existence of Covid-19, this study will allow logistics companies to start collaborating with vendors developing blockchain-based applications. Blockchain can enhance transparency, contribute to economic recovery through improving supply chain processes, and assure global supply chain stakeholders to securely use blockchain to trade during this health crisis.

The study will help logistics managers to better understand the various aspects of blockchain challenges, such as the level of collaboration and agreement that is desirable or even required. Success relies on all stakeholders working together to transform legacy processes and to collectively implement new ways of generating value for logistics. In the highly fragmented logistics sector, consortiums that put together decision makers would play a key role in achieving the potential of blockchain in the industry. Through joining together, all stakeholders will prepare the ideal foundation for the successful adoption of blockchain by the industry and eventually unlock new value in logistics.



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