

Blockchain Could Be Key to Improving Sustainable Practices in the Supply Chain

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Blockchain could be an enabler for improving social sustainability, increasing transparency and eliminating risks, enabling companies to act in a more ethical manner, according to new research from Durham University Business School (<https://www.dur.ac.uk/business/>).

The study, conducted by Dr Atanu Chaudhuri (<https://www.durham.ac.uk/staff/business-staff/atanu-chaudhuri/>), investigates how the technology can be deployed to support companies in becoming more vigilant about how their practices impact the world around them, at every level, and reduce potential risks a company might face from unethical activities in the supply chain, which they are unaware of.

His research was conducted in partnership with Durham University Business School colleague Professor Kiran Fernandes (<https://www.dur.ac.uk/business/research/management/profile/index.php?mode=staff&id=11444>), and alongside experts at Coventry University, UK, Toulouse Business School in France and the Turkish German University.

Dr Chaudhuri says,

“Currently, global supply chains are subject to fraud, counterfeit products, child labour, and the risk of low quality. Blockchain technology has been touted as having the potential to alleviate the above challenges. Traceability using blockchain can ensure that fair practices are followed and minimise risks.”

To uncover their findings, interviews were conducted with the co-founders and CEOs of service providers providing blockchain solutions in diverse industries such as; coffee production, aviation spare parts, shipping fuel and recycled plastics for consumer goods industries. The interviews provided the researchers with a first-hand perspective of how blockchain implementation was improving social sustainability and reducing risk in the supply chain. To support these perspectives, the researchers also requested additional information and evidence from the companies involved.

Concerningly, in identifying service providers which had successfully implemented blockchain to interview, the researchers discovered that, the majority of service providers faced multiple challenges doing so.

Dr Chaudhuri and his colleagues put this down to a lack of understanding of the mechanisms needed for blockchain implementation to improve sustainability and risk management in supply chains. To tackle this, the study identifies a number of steps, blockchain service providers can take.

Developing user-friendly interfaces, customised secure digital payment systems, easily accessible technical support for suppliers are all suggested as vital steps for ensuring stakeholders across the supply chain can engage effectively. Furthermore, applying local-level knowledge and building

relationships facilitates smoother adoption of the technology.

Dr Chaudhuri points out that, with companies under pressure to adapt their practices to better contribute to the UN's Sustainable Development Goals, and to be accountable to governments, investors and consumers alike blockchain can be effective in highlighting problems in the chain, and keeping track of how this is being addressed. It also provides the opportunity for companies to continuously learn and improve their services.

Dr Chaudhuri says,

“By using blockchain, firms can mitigate supply chain risks at lower costs when compared to a traditional supply chain, in which firms tend to have higher stocks of inventory and excessive capacities due to expected disruptions. As blockchain enables businesses to track and trace the complete movement of raw materials and products throughout the supply chain, the technology can help identify any potential risks or questionable practices, and reduce risk.”

The research paper “Improving social sustainability and reducing supply chain risks through blockchain implementation: role of outcome and behavioural mechanisms” is available upon request.

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