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Tangible and intangible outcomes of digital technology-supported information sharing: A supply chain perspective

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Tangible and intangible outcomes of digital technology-supported information sharing: A supply chain perspective

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When digitising supply chains as part of the Industry 4.0 idea, digital information sharing and collaboration across supply chains become increasingly vital (Hofmann and Rüsch 2017). Real-time horizontal and vertical interconnection across departments within an organisation and across supply chains using cyber-physical technologies. Data will thus be transmitted between suppliers and clients without difficulty, connecting people, equipment, and products in real time. Since traditional supply chain information sharing is limited, it cannot satisfy the demands of the contemporary environment. Digital technologies have appeared to improve the situation. Blockchain technology and cloud computing are some of the most promising applications. Blockchain technology will support node provenance in an effective manner, facilitating information sharing within the supply chain context and enhancing decision-making. Cloud computing is another digital technology that can help improve information sharing. Cloud computing is a dynamic, open, and reasonably priced information sharing platform that enables internet-enabled electronic supply chain management systems that instantly captures and transmits supply chain changes.

Existing literature suggests that blockchain technology and cloud computing can positively improve supply chain performance. It referred that pressure from trading partners and information sharing are key factors in these two technologies adoption, and that supply chain performance is greatly impacted by supply chain transparency. It also referred that partners in the supply chain will have more precise and timely demand estimates, lowering inventory costs and shortages of supplies when adopting these two technologies.

According to previous literature, few research put emphasis on classifying digital technologies based on their functions. We adopt supply chain perspective to investigate how information sharing of blockchain technology and cloud computing help reach tangible and intangible outcomes. Therefore, this study aims to adopt blockchain and cloud computing to reach supply chain transparency and supply chain agility as well as supply chain performance and risk management performance. We also adopt trust and security concerns as moderators in our model. Social exchange theory is used to analyse the relationship, which suggested that greater interorganisational trust will increase an organisation's capacity to deal with unpredictable events. Information sharing can be seen as a way of trust in the research. This study will contribute to IS literature by grouping digital technologies based on their functions.

References

Hofmann, E. and Rüsch, M. (2017) 'Industry 4.0 and the Current Status as Well as Future Prospects on Logistics'. Computers in Industry [online] 89, 23–34. available from <http://dx.doi.org/10.1016/j.compind.2017.04.002>