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Digital Manufacturing, Industry 4.0 and IOT

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Abstract

The Internet of Things (IoT) is a global network of smart devices that integrate physical and digital worlds. While the IoT is reported to be a foundation technology for the emerging Industry 4.0 era, empirical evidence related to IoT use in supply chain management is scant. This study, therefore, investigates the opportunities and challenges of IoT use in the supply chains using grounded theory-based interviews with managers from the Australian retail industry. The thematic analysis using NVivo reveals that IoT deployment improves visibility of goods movement, data capture, partner communication, and business intelligence. However, retailers face challenges due to the lack of top management initiative, new technology acquisition cost, stakeholders' reluctance to accept change, unwillingness to share data, and inadequate interoperability between partner systems. The study offers a proof-of-concept of IoT benefits that strengthen the IoT-related investment decision, sheds light on adoption challenges, and develops propositions for future research.

Keywords

Internet of Things, supply chain management, Industry 4.0, grounded theory, retail, IoT, Australia.