

## Chapter 2

# Does Blockchain and Internet of Things (BCoT) Help in Managing Customer Data?

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### ABSTRACT

*The internet of things (IoT) is transforming the established sector into a smart sector with “data-driven decision making.” IoT’s inherent characteristics, however, provide a variety of difficulties, including decentralization, weak interoperability, privacy concerns, and security flaws. Blockchain technology offers possibilities for overcoming IoT issues. In the realm of the internet of things, the introduction of blockchain has recently sparked a lot of attention. The existing blockchain system, however, has a number of non-trivial issues that prohibit it from serving as a general foundation for extensive IoT services and applications. This study provides a comprehensive*

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### ***Does Blockchain and Internet of Things (BCoT) Help?***

*analysis of BCoT and explores the lessons learned from this novel paradigm. In particular, the authors first briefly describe the IoT and its difficulties. Then, they provide an introduction to blockchain technology. Next, they focused on describing the IoT and blockchain convergence and outlining the BCoT architecture proposal. They talk about BCoT's industrial uses and the problems of adopting "blockchain for 5G beyond IoT."*

## **1. INTRODUCTION**

In the age of digital transformation, the confluence of two revolutionary technologies, blockchain and the Internet of Things (IoT), has given rise to a new paradigm: blockchain and the Internet of Things (BCoT). As businesses grapple with the challenges of managing vast amounts of customer data, ensuring its security, authenticity, and accessibility become paramount. The traditional centralised systems, while efficient, often fall short in guaranteeing data integrity and protection against breaches. Enter BCoT, a synergy that promises not only enhanced security through decentralised ledgers but also real-time, transparent data exchanges through interconnected devices. But does this fusion truly offer a panacea for the challenges of customer data management? Blockchain and the Internet of Things (IoT) have the potential to work together to create a more customer experience-driven approach to business. The combination of these technologies can provide companies with a secure and transparent way to track and manage customer data, interactions, and transactions. One way this can be achieved is by using blockchain to secure the data generated by IoT devices. IoT devices generate vast amounts of data, often including sensitive customer information, which can be vulnerable to cyberattacks. By using blockchain, this data can be securely stored and accessed only by authorized parties, providing customers with greater confidence in the security of their information. Another way that blockchain and IoT can work together is by enabling more personalized customer experiences. Blockchain can be used to create secure and transparent records of customer interactions, such as purchases and service requests, which can then be used to personalize future interactions with that customer. For example, a smart home system could use blockchain to track a customer's preferences and habits, enabling it to automatically adjust settings to suit their preferences. Overall, the combination of blockchain and IoT has the potential to create a more customer-centric approach to business, with greater transparency, security, and personalization. However, the implementation of these technologies must be carefully managed to ensure customer privacy and data security are maintained.

Interestingly, both industry and academia have shown a lot of interest in the Internet of Things (IoT) (Chen et al., 2018). IoT, which uses ubiquitous connectivity, widely

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