Review of: "A Proposed Secure Wearable Device Payment System Based on Blockchain Technology"

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Potential competing interests: No potential competing interests to declare.

The paper successfully underscores how blockchain technology can enhance the security of wearable payment systems. It highlights the critical role of blockchain in tackling significant security and traceability challenges, making the paper particularly relevant within the realm of financial transactions in the banking and FinTech industries.

The paper appropriately emphasizes blockchain's inherent characteristics, such as immutability, decentralization, and transparency, as crucial elements for bolstering data security. These aspects are effectively woven into the proposal and resonate with the security challenges faced by wearable payment devices.

The proposed architecture for a blockchain-based wearable payment system is clearly articulated. By dividing the system into layers—including the application layer (mobile banking interface), security layer (blockchain for immutability), network layer (communication protocols like WiFi and NFC), and physical layer (biometric sensors)—the proposal demonstrates a logical and organized approach. This structure ensures that each component is designed with both security and functionality as priorities.

Challenges and Limitations

Not addressed are the potential challenges and limitations associated with integrating blockchain into wearable payment systems. For instance, blockchain networks may experience scalability issues, leading to delays in transaction validation. Such factors could negatively impact the user experience, especially in high-frequency transaction settings. Addressing these trade-offs and exploring potential mitigation strategies would enhance the overall comprehensiveness of the paper.

The paper would be strengthened by including references to existing research on blockchain applications in IoT or wearable devices. A more thorough literature review would contextualize the study within the wider landscape of related research and innovations, helping readers grasp how this proposal contributes to advancing the current state of the art.

Although the paper presents the structure and layers of the wearable device architecture, it falls short in providing detailed technical information about the implementation of blockchain in this context. Including specifics about the chosen blockchain platform, consensus mechanisms (such as proof of work or proof of stake), and the management of

Evaluation Methods: The paper lacks a detailed plan for evaluating the proposed system after its development. While it suggests future studies, it would be beneficial to outline specific metrics or methods for assessing the system's effectiveness. This could include security testing, transaction throughput analysis, and user satisfaction surveys.

Conclusion: The paper offers a promising strategy for integrating blockchain technology into wearable payment systems, showcasing clear security advantages and potential for real-world applications. However, it would benefit from a more thorough exploration of the technical challenges, trade-offs, and usability issues in practical scenarios. Including these elements would provide a more comprehensive and balanced perspective, enabling readers to more effectively evaluate the feasibility and effectiveness of the proposed system.