

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 3, Issue 1, July 2023

Blockchain Technology and its Implications for Information System Development

Crispin P. Noguerra, Jr.

Faculty, College of Engineering and Information Technology, Surigao del Norte State University, Surigao City, Philippines

Abstract: The potential transformation brought by blockchain technology in information system development is gaining momentum. This research explores the intricate consequences of integrating blockchain into information system development, drawing insights from a group of 30 professionals representing various sectors. Utilizing a mixed-methods approach that combines qualitative interviews and quantitative surveys, the study investigates participants' viewpoints on the advantages, challenges, and recommendations for adopting blockchain. The outcomes reveal substantial recognition (83.3%) of heightened data security and data integrity (76.7%) as primary benefits. Concerns revolve around scalability (70%) and the complexities of system integration (60%). Remarkably, participants envision enhanced operational efficiency (73.3%) and amplified transparency (63.3%) as potential outcomes. Regulatory considerations elicit diverse responses (50%), highlighting the dynamic nature of legal frameworks. Recommendations (80%) include implementing comprehensive training programs and initiating pilot projects (63.3%) to facilitate effective integration. The results enhance the understanding of blockchain's role in information system development, offering guidance to practitioners and organizations for well-informed decision-making amidst a constantly evolving technological landscape.

Keywords: Blockchain technology, information system development, integration

REFERENCES

- [1]. KHAN, A., QASIM, M., WASIF, M., & SHAH, I. (2023). EXPLORING THE EFFICACY OF FAMILY DYNAMICS IN MITIGATING VIOLENT EXTREMISM: A PROMISING PATH FOR FUTURE INTERVENTIONS. *Russian Law Journal*, *11*(2).
- [2]. Jackson, B. W. (2018). Artificial intelligence and the fog of innovation: A deep-dive on governance and the liability of autonomous systems. *Santa Clara High Tech. LJ*, *35*, 35.
- [3]. Tiran, R., Tabun, D. S. N., Benyamin, R., & Keon, Y. F. (2023). Women in the Political Landscape: A Study on the Roles of Female Legislators in East Nusa Tenggara Province, Indonesia. *Journal of Government and Political Issues*, *3*(1), 25-33.
- [4]. Pandey, V., & Bansal, M. (2011). Diaspora and Identity in Indo-English Fiction: A Comparative Study. *International journal of economic perspectives*, 5(1), 40-45.
- [5]. Singh, M., & Kim, S. (2018). Branch based blockchain technology in intelligent vehicle. Computer Networks, 145, 219-231.
- [6]. Gordon, W. J., &Catalini, C. (2018). Blockchain technology for healthcare: facilitating the transition to patient-driven interoperability. *Computational and structural biotechnology journal*, *16*, 224-230.
- [7]. Engelhardt, M. A. (2017). Hitching healthcare to the chain: An introduction to blockchain technology in the healthcare sector. *Technology Innovation Management Review*, 7(10).
- [8]. Chen, Y., &Volz, U. (2021). Scaling up sustainable investment through blockchain-based project bonds. *ADB-IGF Special Working Paper Series "Fintech to Enable Development, Investment, Financial Inclusion, and Sustainability.*
- [9]. Batubara, F. R., Ubacht, J., & Janssen, M. (2018, May). Challenges of blockchain technology adoption for egovernment: a systematic literature review. In *Proceedings of the 19th annual international conference on digital government research: governance in the data age* (pp. 1-9).

Copyright to IJARSCT www.ijarsct.co.in DOI: 10.48175/IJARSCT-12379



831

IJARSCT



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 3, Issue 1, July 2023

- [10]. Mazlan, A. A., Daud, S. M., Sam, S. M., Abas, H., Rasid, S. Z. A., &Yusof, M. F. (2020). Scalability challenges in healthcare blockchain system—a systematic review. *IEEE access*, *8*, 23663-23673.
- [11]. Atzori, M. (2015). Blockchain technology and decentralized governance: Is the state still necessary?. *Available at SSRN 2709713*.
- [12]. Jacobetty, P., & Orton-Johnson, K. (2023). Blockchain imaginaries and their metaphors: Organising principles in decentralised digital technologies. *Social Epistemology*, *37*(1), 1-14.
- [13]. Andoni, M., Robu, V., Flynn, D., Abram, S., Geach, D., Jenkins, D., ... & Peacock, A. (2019). Blockchain technology in the energy sector: A systematic review of challenges and opportunities. *Renewable and sustainable energy reviews*, 100, 143-174.
- [14]. Di Vaio, A., &Varriale, L. (2020). Blockchain technology in supply chain management for sustainable performance: Evidence from the airport industry. *International Journal of Information Management*, 52, 102014.
- [15]. Kamble, S. S., Gunasekaran, A., Subramanian, N., Ghadge, A., Belhadi, A., &Venkatesh, M. (2023). Blockchain technology's impact on supply chain integration and sustainable supply chain performance: Evidence from the automotive industry. *Annals of Operations Research*, 327(1), 575-600.
- [16]. Baharmand, H., Maghsoudi, A., &Coppi, G. (2021). Exploring the application of blockchain to humanitarian supply chains: insights from Humanitarian Supply Blockchain pilot project. *International Journal of Operations & Production Management*, 41(9), 1522-1543.
- [17]. Rashideh, W. (2020). Blockchain technology framework: Current and future perspectives for the tourism industry. *Tourism Management*, 80, 104125.
- [18]. Karamitsos, I., Papadaki, M., & Al Barghuthi, N. B. (2018). Design of the blockchain smart contract: A use case for real estate. *Journal of Information Security*, 9(3), 177-190.
- [19]. Wright, C., & Serguieva, A. (2017, December). Sustainable blockchain-enabled services: Smart contracts. In 2017 IEEE International Conference on Big Data (Big Data) (pp. 4255-4264). IEEE.
- [20]. Peters, G. W., & Panayi, E. (2016). Understanding modern banking ledgers through blockchain technologies: Future of transaction processing and smart contracts on the internet of money (pp. 239-278). Springer International Publishing.

