Introduction to Blockchain Cases and Innovations

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Blockchain technology progresses at a fast pace and its evolution includes five stages: (a) cryptocurrencies, (b) smart contracts, (c) decentralized applications, (d) scalability and interoperability and (e) CBDCs and NFTs evolution stages [1]. This minitrack, aims to spread the takeoff of blockchain technology by presenting, discussing, and analyzing state of the art blockchain innovation and assisting in better study its evolution and future stages. In this 5th edition of the minitrack, 23 articles were submitted and 11 of them were accepted.

The first paper investigates the level of decentralized governance in DeFi and was written by Tom Barbereau, Reilly Smethurst, Orestis Papageorgiou, Alexander Rieger and Gilbert Fridgen. The authors reveal that DeFi is not that decentralized.

The second paper also investigates the area of DeFi and was authored by Martin Brennecke, Tobias Guggenberger, Benjamin Schellinger and Nils Urbach. The article assesses and classifies MakerDAO and provides 9 areas for future research.

In the next paper, Roman Schmid, Rafael Ziolkowski and Gerhard Schwabe attempt to identify blockchain stakeholders and to understand their interests and underlying motives. In doing so, they come out with a novel tool that can assist blockchain governance.

The fourth article was edited by Manuel Knott, Anne-Sophie Mayer, Franz Strich and Marina Fiedler and investigates user engagement on blockchain applications. The authors use design science research to study this topic and propose seven recommendations for developing persuasive blockchain applications for end-users.

The work of Jiangbo Huangfu, Robert Pinsker and Hanbing Xing, examines blockchain adoption and business strategy. The authors investigate the connection between business strategy and blockchain adoption. Their findings demonstrate that the alignment between business strategy and blockchain characteristics increases blockchain adoption.

The sixth paper, was written by Peter Hamm and

introduces a taxonomy of features for digital currencies. Data were collected from a sample of 500 participants who reported that data confidentiality and cost-effectiveness are important factors.

The next article presents the research of Leonardo Maria De Rossi, Michel Avital and Rob Gleasure. The article focuses on the proliferation of end users as a success metric for digital currencies. The authors propose that the number of active digital wallet addresses is an alternative metric to measure the success of bitcoin.

The article written by Marios Touloupou, Klitos Christodoulou, Antonis Inglezakis, Elias Iosif, Marinos Themistocleous investigates the XRP ledger and proposes an architecture for a blockchain benchmarking framework. The framework deploys and evaluates multiple protocols, and it also introduces a set of modules for testing.

Ezazul Islam, Madhu Chetty, Suryani Lim, Mehmood Chadhar, and Syed Islam article focuses on the application of blockchain in energy. In doing so, the authors introduce a smart auction mechanism for peer to peer energy trading.

The second last paper was written by Tinhinane Chikhi, Luis Antonio De Santa-Eulalia, Elaine Mosconi, Lucas Antonio Risso, Moacir Godinho Filho and Gilberto Miller Devós Ganga. The paper is based on a systematic literature review on blockchain and supply chain sustainability and identifies three levels of blockchain benefits occur namely: macro-level, meso-level and micro-level.

The last article Fabian Schar, Katrin Schuler and Tobias Wagner introduces an autonomous vending machine that is governed by smart contracts and blockchain technology.

References

- [1] Cunha, P. R., Soja, P., Themistocleous, M., 2021, "Blockchain for development: a guiding framework", *Information Technology for Development*, 27(3): 417-438