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Article

Editorial: Blockchain-driven business models

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Editorial: Blockchain-driven business models

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ABSTRACT

In this editorial, we introduce the Special Issue on Blockchain-Driven Business Models. Over the last decade, academics have proposed numerous ideas on how to integrate the unique properties of blockchain, such as immutability, traceability, and programmability, into existing business models or to utilize them for developing startups from scratch. Practitioners have tried out countless disruptive business ideas, some of which have failed, while others have already begun to transform entire industries. This Special Issue explores the concept of blockchain-based business models from various angles, offering different theoretical perspectives and paving the way for future research in this groundbreaking area.

1. Introduction

Blockchain has evolved from a niche financial experiment into a cornerstone technology reshaping business models across industries, geographies, and societal domains. Starting with the introduction of Bitcoin in 2008 (Nakamoto, 2008), it took several years to discover the economic potential of distributed ledgers for the industry (Swan, 2015; Tapscott & Tapscott, 2016). The subsequent blockchain hype, often characterized by exaggerated expectations, was followed by a so-called blockchain winter during which the economic value of blockchain-based business models was often questioned. As is regularly the case in hype cycles, this phase has been succeeded by a period of constructive discussions in which the value of distributed technologies for business models has been systematically assessed and evaluated (Morkunas, Paschen, & Boon, 2019; Rejeb, Keogh, Simske, Stafford, & Treiblmaier, 2021; Treiblmaier & Špan, 2022). This maturation process has recently culminated in significant regulatory developments, most notably the passage of the MiCA regulation by the European Commission in 2023, the GENIUS Act (the first comprehensive federal framework for stablecoins in the United States) in 2025, and the ongoing congressional consideration of the CLARITY Act, which will establish general blockchain-based digital asset market structure regulations. To exploit the full potential of blockchain, which consists of a bundle of technologies under constant development, it is not only crucial to dispel misconceptions about topics such as energy use (Treiblmaier, 2023) or the true nature of cryptocurrencies (Treiblmaier, 2022), but to understand how this technology can contribute to creating value for businesses, the economy, and society as a whole. In this regard, the eleven contributions in this Special Issue illustrate the breadth of this transformation, spanning healthcare, supply chains, energy, finance, mining, public policy, and the metaverse, while also grappling with the tension between innovation, governance, and sustainability. Together, these studies underscore the need for rigorous research that evaluates not only

blockchain's technical capacities but also its institutional, environmental, and ethical implications.

2. Overview of articles in the special issue

In this section, we introduce each of the eleven articles in the Special Issue and summarize their key findings to illustrate the wide variety of blockchain-based business models.

2.1. Blockchain-based business models in healthcare

In the article “*The development of a blockchain-based business model simulator with an application to civic medical data management*” by Cunningham et al. (2025), the authors introduce a simulation tool to assess blockchain-based business models in healthcare. By applying the simulator to the Civic Data Identity Partnership (CDIP), they demonstrate how architectural choices—public, private, or hybrid—significantly affect operational costs, scalability, and legal compliance. Their approach highlights blockchain's dual role as both a trust-enhancing infrastructure and a source of financial volatility, while offering organizations a method to assess long-term sustainability challenges.

2.2. Bitcoin's energy use

In the article “*Rethinking Bitcoin's energy use through sustainable digital business models and resources monetization: A multiple case study analysis*” by Dasaklis, Thomaidis, Giannopoulos, and Tsoulfas (2025), the authors reframe Bitcoin mining from an energy liability into a sustainability enabler. Through case studies and system modeling, they demonstrate how Bitcoin can monetize stranded and wasted energy, stabilize power grids, and incentivize renewable energy investment. They argue that Bitcoin's profitability can align with environmental goals, for example, by capturing methane that would otherwise be released through flaring.

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This reconceptualization positions Bitcoin as a potential ESG instrument, linking financial incentives with climate action.

2.3. Blockchain-enabled traceability in the organic food market

In the article “Blockchain-based food traceability system and pro-environmental consumption: A moderated mediation model of technology anxiety and trust in organic food product” by [Duong, Tran, Nguyen, Ngo, and Vu \(2024\)](#), the authors explore how blockchain-enabled traceability shapes consumer trust and purchase intentions in the organic food market. Based on a study of 5326 Vietnamese consumers, they find that blockchain transparency enhances trust, which mediates its positive effect on purchase intention. Yet, technology anxiety weakens these effects: anxious consumers struggle to trust blockchain and are less likely to purchase blockchain-verified products. The study advances trust theory by integrating psychological barriers and offers practical insights on designing user-friendly blockchain systems to foster sustainable consumption.

2.4. Supplier selection and order allocation

In the article “A blockchain-driven business model for supplier selection and order allocation leveraging smart contracts in supply chains” by [Emami, Seifbarghy, Abbas, Chattinnawat, and Aydin \(2025\)](#), blockchain is positioned as a solution for inefficiencies in supplier selection and order allocation (SSOA). Using Ethereum-based smart contracts, the authors automate contract execution, mitigating risks of centralization and ineffective contract enforcement. Specifically, they develop three core artifacts: (1) a mathematical description of SSOA; (2) a system model of actor interactions; and (3) SSOA-relevant algorithms. They use scenario analysis to show the feasibility of their approach, offering prescriptive knowledge for practitioners and advancing scholarly debate on blockchain's role in redesigning inter-organizational coordination.

2.5. Success in initial coin offerings

In the article “Determinants of success in initial coin offerings (ICOs): A systematic literature review” by [Moxoto, Soukiazis, and Melo \(2025\)](#), a literature review of 115 studies published between 2016 and 2024 reveals the multi-faceted drivers of ICO performance. The authors highlight the critical importance of human and social capital, technological characteristics, governance and legal aspects, and campaign finance details. They propose a broadened definition of success that extends beyond fundraising to include token valuation, project execution, and business sustainability. Their findings call for adaptive regulation that balances investor protection with innovation, offering a comprehensive framework for policymakers and entrepreneurs alike.

2.6. Blockchain business model for mining operators in Zambia

In the article “Blockchain-driven sustainable business model for artisanal and small-scale mining operators in Zambia” by [Owuor, Taylor, Simushi, and Mutondo \(2025\)](#), the potential application of blockchain is assessed for artisanal and small-scale mining in Zambia. Their findings, based on qualitative and quantitative survey data, reveal that miners face predatory loans, infrastructural deficits, and capture of value by intermediaries. The authors propose a Blockchain-enabled Sustainable Business Model (BSBM) that leverages smart contracts for compliance, traceability for premium pricing, and mobile interfaces to address literacy barriers. Early simulations indicate that blockchain can help to reduce transaction costs and create higher margins, positioning it as a tool for equitable value distribution and sustainable development in resource-constrained contexts.

2.7. Digital transformation in cross-industry settings

In the article “Best practices for blockchain-driven digital transformation in cross-industry settings” by [Saari, Sinclair, Leshinsky, and Junnila \(2025\)](#), the authors examine how blockchain initiatives can scale beyond pilots in traditional industries. Using a longitudinal case study of Finland's digital housing transaction system (2019–2023), they apply the technology–organization–environment (TOE) framework to identify enablers of successful cross-industry collaboration. Their findings highlight six best practices: a shared industry vision, formalized collaboration and public–private partnerships, strong governance with sustainable business models, complementary ecosystem roles and early champions, stakeholder training, and technological flexibility. Their results show that blockchain can play a catalytic role in aligning stakeholders and building trust, offering valuable lessons for digital transformation in regulated, multi-stakeholder industries.

2.8. Fear of missing out and initial coin offerings

In the article “FOMO and the ICO: The changing salience of quality signals” by [Schillebeeckx, Tazhibaeov, and Gartner \(2024\)](#), behavioral finance meets blockchain. Based on signaling theory, the authors demonstrate that investors with strong Fear of Missing Out (FOMO) exhibit predictable irrationality—overvaluing low-quality ICOs while dismissing credible signals such as financial responsibility or stakeholder recognition. Their findings challenge the assumption of a universal effectiveness of quality signals, illustrating how psychological traits mediate investor behavior in unregulated digital markets. This work expands our understanding of the behavioral dynamics shaping blockchain investment ecosystems.

2.9. Blockchain for central bank digital currencies

In the article “Examining the role of blockchain and public-private partnerships in design and deployment of blockchain-enabled CBDC” by [Shah and Raj \(2025\)](#), the focus is on the macroeconomic topic of central bank digital currencies (CBDCs). Drawing on survey data and literature review, the authors argue that blockchain enhances CBDC security, scalability, and programmability, while public-private partnerships (PPPs) are vital for overcoming regulatory, technological, and adoption challenges. Using the case of India, they show how blockchain-enabled CBDCs could promote financial inclusion in underserved regions. Their work reframes CBDCs as infrastructures that require collaborative governance between central banks and private actors.

2.10. Blockchain for the metaverse

In the article “Sustainable innovation in the metaverse: Blockchain's role in new business models” by [Sze, Salo, and Tan \(2024\)](#), blockchain is examined as the foundational layer of sustainable innovation in the emerging metaverse. Through content analysis of thirty-two industry reports, the authors identify five attributes—creator economies, persistent virtual environments, decentralization, interoperability, and digital mindsets—that define blockchain-enabled metaverse ecosystems. Grounded in stakeholder capitalism theory, they argue that blockchain can ensure transparent governance, secure asset ownership, and equitable value distribution in hybrid digital-physical environments. They understand the metaverse as not just a technological frontier but also a sustainable business ecosystem.

2.11. Framework for blockchain business model research

In the article “Business models for the Blockchain: An empirical analysis” by [Nitin Upadhyay \(2024\)](#), the author addresses the underdeveloped state of blockchain business model research and proposes a comprehensive framework. Using a sequential exploratory research

design, the author first conducted interviews with 13 industry professionals to refine building blocks of blockchain-specific business models and then validated the initial findings with a survey of 69 respondents. The results highlight the central role of value propositions, including newness, performance, customization, accessibility, key resources, and revenue streams. The framework integrates these components, allowing organizations to answer the core questions of business innovation of “what” (value), “how” (activities, resources, partners), and “who” (customers, channels). By prioritizing critical building blocks, firms can design, evaluate, and refine their blockchain-enabled models.

3. Discussion

Across the growing body of scholarship on blockchain-enabled business models, one major development is the shift from technological determinism toward theoretically grounded explanations and explorations of how blockchain reconfigures organizational structures and processes, markets, and consumer behavior. Rather than treating distributed ledgers as inherently transformative, researchers increasingly understand blockchain as a contingent mechanism whose effects depend on institutional contexts, actor configurations, and psychological or behavioral mediators.

One stream of theory development emphasizes design and configuration. Here, blockchain is viewed less as an artifact and more as an enabling architecture that can be codified into building blocks, contractual rules (such as smart contracts), and system models. These studies contribute by translating blockchain's technical affordances into prescriptive frameworks that outline how value propositions, governance arrangements, and coordination mechanisms should be designed. In doing so, they extend existing design science and configurational theories of business models, making blockchain adoption less of an untested experiment in technology deployment and more a matter of systematic model design. A second stream highlights institutional and ecosystem dynamics. Blockchain initiatives often involve multiple stakeholders across sectors, raising issues of governance, legitimacy, and scaling. Theoretical insights also suggest that blockchain can serve as a catalyst for collaboration. This positions blockchain as a technology that can help to align visions, distribute trust, and create new forms of public–private or cross-industry cooperation. A third set of contributions advances behavioral and psychological perspectives from an end-user or consumer perspective. Here, blockchain's transparency, traceability, and automation are not assumed to translate directly into trust or adoption. Instead, consumer responses are mediated by factors such as technology anxiety or fear of missing out, which may amplify or negate the intended effect of blockchain signals. This underscores the importance of integrating behavioral theories into blockchain research, thereby bridging technological potential with actual user cognition and affect. Finally, sustainability emerges as a common concern. By embedding blockchain within debates on energy transitions, responsible sourcing, and decentralized governance of digital ecosystems, recent work redefines blockchain not only as a technological innovation but also as a potential vehicle for a broader socio-environmental change. This extends existing theories of sustainable business models by placing blockchain at the intersection of transparency, resource efficiency, and inclusive value distribution. Taken together, these theoretical contributions advance the field beyond mere technological disruption. They underscore that blockchain's relevance lies in the mechanisms it enables—design choices, governance structures, behavioral changes, and sustainability implications—rather than in the technology itself. This provides a more nuanced foundation for future research and practice, one that explores boundary conditions, trade-offs, and long-term implications for business model innovation.

4. Conclusion

The papers in this collection illustrate the diversity of blockchain's impact—from energy optimization to healthcare, supply chains, financial innovation, mining, and virtual economies. What unites them is a concern about sustainability, trust, and governance: blockchain is not simply a technical infrastructure but a socio-economic endeavor to rethink value creation and distribution. As the technology matures, the challenge for academics, practitioners, and policymakers is to ensure that blockchain-driven business models deliver not just efficiency or technical novelty, but also resilience, inclusion, and sustainability in increasingly digital economies.

Declaration of competing interest

None.

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