

# Blockchain technology: Business, strategy, the environment, and sustainability

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## 1 | INTRODUCTION

Blockchain technology, a disruptive innovation based on advances in information and computing, continues to experience rapidly increasing growth. This foundational—disruptive—technology does not utilize a central trusted agent for coordination but nonetheless permits a shared digital history and record updating between parties who might not necessarily trust each other. It has been defined to support a trustless relationship. From its roots in cryptocurrencies, blockchain's applications are expanding in scope and volume in disparate areas, including finance, law enforcement, education, health care, supply chains, and manufacturing (Queiroz & Wamba, 2019). The technology also made inroads outside “Western countries,” achieving the status of a national initiative in China (Lim, Wang, Ren, & Lo, 2019) and potential leapfrogging adoption of technology in developing nations (Kamath, 2018).

Blockchain's appeal derives from its ability to support transparent data sharing, optimization of business processes, reduction of operating costs, improvements in collaborative efficiency, and development of a system that does not need explicit incorporation of trust in its control, as in the case of supply chains, for instance (Francisco & Swanson, 2018). It also facilitates new means of green production, as well as monitoring and storing data-related activities responsible for pollution and environmental degradation, and real-time collection and analysis of green or low carbon data for timely decision making (Saber, Kouhizadeh, Sarkis, & Shen, 2019). These advancements offer considerable opportunities for advances in business and supply chain innovation and sustainable development (Bai & Sarkis, 2019).

Adopting organizations must typically deal not only with high development and implementation costs and risks but also with various technical, managerial, and ethical concerns (Bai & Sarkis, 2017). Some of these concerns are specifically related to environmental and sustainability dimensions, including, for example, the amount of energy required for key algorithms, processing, and computations within the blockchain (Truby, 2018; Saber, Kouhizadeh & Sarkis, 2018), and complex implementation issues, especially in implementation with wide scope, such as global supply chains. Other issues include the integration of blockchain technology with business processes at

different levels of design, planning, production, and marketing, and between the different supply chain partners, the fusion of multisource data, and transparent management in supply chains, and lack of an accepted standard definition (Kouhizadeh & Sarkis, 2018).

Ethical and governance concerns also arise. Many blockchain use applications have targeted tracing of sustainability in supply chains that can significantly influence development within environmentally sensitive regions. From a social perspective, the greater transparency and traceability afforded by the technology may well be a double-edged sword, simultaneously related to privacy and proprietary intellectual property concerns (Quarshie, Salmi, & Leuschner, 2016).

The main objective of this special issue is to advance knowledge and address existing gaps in our knowledge about blockchain development and use. It is intended to provide a forum for scholars and practitioners to critically study, evaluate, explore, and explain new models and forms that blockchain technology takes and the technology's relationship to organizations, supply chains, and their stakeholders. Theories that help explain the many business, strategy, environment, and sustainability implications of this disruptive technology are also of significant interest. These implications include, but are not limited to, those focused on drivers, performance, implementation, governance, and ethics.

The overriding goal is to further blockchain technology understanding both practically and theoretically, with a critical examination of the impact of the technology on sustainability, business strategy, and the natural environment. Both qualitative and quantitative analyses of various sorts are welcome, as are, especially, innovative methodological approaches.

We welcome and encourage submission of high-quality manuscripts based on studies in the following (nonexhaustive) list of potential topics:

- Studies on the impact of blockchain technology on business, natural environment, and sustainability strategies (BNES), operations, and supply chains, as well as other relevant areas.
- Blockchain applications focused on advancing sustainability in different cultural, regional, and industrial contexts.
- New governance models (a) for blockchains in different BNES settings and (b) that utilize blockchains in these settings.

- Blockchain technology and its role for environmental and social improvement, expanding beyond the business and supply chain to broader local and global networks.
- Integration of blockchain with other legacy and emergent Industry 4.0 technologies to solve BNES issues.
- Identification and addressing of tensions, risks, and challenges for blockchain introduction and management of BNES operations, strategies, and supply chain sustainable development.
- Strategic, ethical, and legal issues arising from the use of BNES applications utilizing blockchain technology.
- Structural, political, and legal dynamics of blockchain use in BNES applications.

## Submission Process and Deadlines

The deadline for submission of all manuscripts will be on September 30, 2020.

Authors should submit their manuscripts via email to the co-guest editor Chunguang April Bai (cbai@uestc.edu.cn). Interested authors are encouraged to communicate with any of the guest editors for feedback.

Manuscripts should be sent to co-guest editor Chunguang April Bai and should be prepared following the Business, Strategy, and the Environment author guidelines: <https://onlinelibrary.wiley.com/page/journal/10990836/homepage/forauthors.html>. Please DO NOT go through the manuscript central for the purpose of sending out the papers for review because the system is only open for regular papers.

All articles will be subjected to double-blind peer review and editorial process in accordance with the policies of Business, Strategy, and the Environment (<https://onlinelibrary.wiley.com/journal/10990836>).

## Special Issue Guest Editors

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