

## Distributed ledger technology, blockchain minitrack

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### 1. Introduction

Among other promising technologies, Distributed Ledger Technologies (DLTs), often referred to as Blockchain, promise to be one of the most disruptive technologies since the invention of the internet's TCP/IP protocol, yet this technology so far lacks scholarly attention and coverage in peer-reviewed literature. The combination of some DLT characteristics, e.g. accountability, pseudonymity or distributed network topology, as well as the first cryptocurrency Bitcoin, drew enormous attention given the ubiquitous amount of possibilities for which this technology can be used since its invention in 2008 by Satoshi Nakamoto. Whereas TCP/IP lowered the cost of transferring data between two parties dramatically, DLTs have the potential to reduce the cost of transactions (i.e. transfer of assets and value) dramatically. DLTs can enable the secure transfer of any asset worldwide with nearly instant accountability by specifically cutting out intermediary trust holders due to the capabilities of the network's proof-of-X trust-building-processes, e.g. the Bitcoin proof-of-work mining concept. More recent developments that build on top of DLTs, like smart contracts and Decentralized Autonomous Organizations (DAOs) take the possibilities of programmable secure transactions even further.

In this context, companies, governments, and whole industries are facing dramatic organizational change and transformation processes with regard to their value chains while adopting DLTs. This minitrack welcomes fundamental research regarding methods and techniques, issues, and key challenges, as well as organizational approaches for understanding the potential of DLTs for business models, value chains, emerging competitive landscapes and new start-ups employing this technology. Research may cover any industry or organizational form and may focus on the technology layer or strategic organizational challenges, opening this track both to the IT and economic/management science community to reflect their increasing

dependency on each other. Topics of interest include, but are not limited to:

- Current state of the art of blockchain technologies and smart contracts
- Applications of blockchain technology and their potential in different areas (finance, insurance, healthcare and pharmaceuticals, energy sector, manufacturing, transportation, automotive industry, provenance, government sector etc.)
- Blockchain and Internet of Things (machine-to-machine interaction, automated devices, blockchain for metered appliances, etc.)
- Impact on business models (change of existing business models, emergence of new business models, disruptive business models, etc.)
- Organizational transformation through blockchain technology (distributed autonomous organizations, etc.)
- Impact on the value chain (disintermediation, change of actors, advantages and disadvantages, etc.), the internet and the digital economy.
- Regulatory aspects of blockchain technology and implications for risk management
- Technical issues of blockchain technology (emergent protocols, consensus mechanisms, scalability, reliability, security, challenges of implementation, etc.)
- Philosophical issues on use of blockchain technology (governance of blockchain society, decentralization of society, building of community and collaboration)

Papers included in the minitrack address the following topics:

1. Exploring Preliminary Challenges and Emerging Best Practices in the Use of Enterprise Blockchains Applications

2. Exploring How Blockchain Impacts Loyalty Program Participation Behaviors: An Exploratory Case Study
3. How Sentiment Impacts the Success of Blockchain Startups – An Analysis of Social Media Data and Initial Coin Offerings
4. Overview of Licensing Platforms based on Distributed Ledger Technology
5. Understanding the Role of Actor Heterogeneity in Blockchain Splits: An Actor-Network Perspective of Bitcoin Forks
6. Preparing for Blockchain Technology in the Energy Industry: How Energy Sector Leaders Can Make Informed Decisions During the Blockchain Adoption Process
7. Towards a Distributed Ledger System for Supply Chains
8. The Symbiosis of Distributed Ledger and Machine Learning as a Relevance for Autonomy in the Internet of Things
9. Requirement-driven Taxonomy Development – A Classification of Blockchain Technologies for Securities Post-Trading
10. The Role of Blockchain in Enterprise Procurement
11. From Hype to Reality: A Taxonomy of Blockchain Applications
12. Towards a Decentralized Process for Scientific Publication and Peer Review using Blockchain and IPFS
13. Examining Gentle Rivalry: Decision-Making in Blockchain Systems
14. Towards a Comprehensive Blockchain Architecture Continuum
15. Blockchain Technology Application in the Sharing Economy: A Proposed Model of Effects on Trust and Intermediation