Enterprise Blockchains minitrack

Helmut Krcmar
Technical University of Munich
krcmar@tum.de

Andreas Hein
Technical University of Munich
andreas.hein@tum.de

Gerhard Schwabe
University of Zurich
schwabe@ifi.uzh.ch

Liudmila Zavolokina
University of Zurich
zavolokina@ifi.uzh.ch

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. The combination of DLT characteristics such as 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 built on top of DLTs, like smart contracts and Decentralized Autonomous Organizations (DAOs), take the possibilities of programmable secure transactions even further.

However, during the peak of inflated expectations, most DLT applications remained on a conceptual level. Now, reaching the trough of disillusionment in the Gartner Hype Cycle, DLT applications need to put to the test to show the promised effects. Hence, this minitrack welcomed research regarding methods and techniques, issues and critical challenges, as well as organizational approaches for understanding the potential of DLTs for business models, value chains, organizations, governance mechanisms, emerging competitive landscapes, and new start-ups [1, 2]. Besides, submissions should address specific industry or organizational applications and focus on the technology layer, strategic organizational challenges, social implications about core values, and the socio-technical perspective on governing organizations that use DLT [3-5]. By opening this track to the IT, economic/management science, and IS community, we foster the interdisciplinarity needed to grasp the phenomenon from different perspectives.

In particular, we selected three manuscripts for publication in this minitrack:

(1) The first manuscript, "Blockchain out of the Box – Where is the Blockchain in Blockchain-as-a-Service?" by Alan Kernahan, Ulrik Bernskov, and Roman Beck, focuses on the concept of Blockchain-as-a-Service (BaaS), which is increasingly discussed as a way for companies to get started with Blockchain projects. In this regard, the manuscript develops a systematic categorization of BaaS. The authors analyze available online information and identify common characteristics in the BaaS offerings related to service types, distributed ledger technology (DLT) systems, consensus mechanisms, and pricing models. These characteristics are then further analyzed in the light of available literature on BaaS and expert interviews. The article critically discusses the relationship between BaaS characteristics and the properties that had originally brought forward blockchain technology, in particular preventing lock-ins and fostering decentralization. As a result, the first paper provides an overview of the BaaS landscape and develops a taxonomy that guides researchers and practitioners alike.

(2) The second manuscript, "Cross-Collaboration Processes based on Blockchain and IoT: a survey" by Tiphaine Henry, Nassim Laga, Julien Hatin, Walid Gaaloul, and Imed Boughzala, deals with decentralized cross-collaboration processes and the mistrust that can be introduced by centralized monitoring. The authors propose decentralized monitoring such as blockchain-based and Internet-of-Things-aware (IoT-aware) business process management systems to mitigate this issue. By conducting a literature review, the manuscript sheds

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light on the usage of decentralized monitoring to adopt cross-collaboration business processes. Furthermore, the results of the study underline the need to orient future research towards a more flexible, scalable, and data-aware blockchain-based business process management system.

(3) The third manuscript, "The Evolution of an Architectural Paradigm - Using Blockchain to Build a Cross-Organizational Enterprise Service Bus" by Julia Amend, Gilbert Fridgen, Alexander Rieger, Tamara Roth, and Alexander Stohr, emphasizes the use of DLT solutions in federally organized governments. Based on the case of Germany's Federal Office for Migration and Refugees, the authors investigate a cross-organizational enterprise service bus (ESB) and how it addresses the requirements of federal contexts. Furthermore, the authors discuss the benefits of blockchain-based ESBs compared to traditional ESB implementations.

References

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