

Novel Uses, Opportunities and Challenges of Blockchain for Digital Services

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The first Open Data Services Mini-track was organized in HICSS-46, followed by a workshop discussing Open Data service research agenda in HICSS-47, a minitrack focusing on different aspects of open data services in HICSS-48, on digital service innovations based on "open" phenomena and practices in HICSS-49 and on Open digital services and platforms in HICSS-50. In HICSS-51, we continued the discussion about different digital services and platforms. In HICSS-52 we now turn to a specific novel set of technologies: blockchain.

New platforms and platform technologies, such as blockchain, offer new opportunities, especially for developing radically new transactional digital services. According to HBR, "blockchain could dramatically reduce the cost of transactions"¹ by replacing private trust services with an open mode. There are examples of use of blockchain for identity management, maintenance of shipping records in cross-border shipping, and even for tracking copies digital art to name a few. At the same time, the volatility of blockchain implementations of currencies (especially cryptocurrencies), most notably Bitcoin, has made the same settlement mechanisms complicated. For example, returns and cancellations can become problematic if the value of the underlying cryptocurrency changes dramatically between the original transaction and the cancellation.

Until recently, blockchain service implementations and platforms have been the domain of computer science, and the main focus of research has been on technical aspects. Now, however, we are moving into an era of utilizing blockchain platforms that create novel opportunities as well as challenges for the creation of new services and whole service ecosystems, such as Ethereum. This calls for research from various disciplines, including at least information systems science, service science, marketing, law,

criminology and computer science, to better understand these opportunities and challenges.

The two papers in this minitrack describing novel digital services that apply blockchain technology to new domains.

In the first paper, "Pre-Prototype Testing: Empirical Insights on the Expected Usefulness of Decentralized Identity Management Systems", Nadine Ostern (Frankfurt School of Finance and Management) and Johana Cabinakova (Goethe University Frankfurt) investigate technical feasibility of Decentralized identity management systems (IMs) and focus on the consideration of actual user requirements and their assessment of the decentralized IMS's ability to actually protect privacy. The result suggests that the usability of decentralized IMs is not as straightforward as presumed by many companies and that a good deal of work is necessary to identify and implement actual user requirements into a functioning prototype.

In the second paper, "Buyers of Lemons: Addressing Buyers' Needs in the Market for Lemons with Blockchain Technology", Liudmila Zavolokina and Gerhard Schwabe (University of Zurich) and Gianluca Miscione (University College Dublin) discuss the automotive market. In the second-hand car market, consumers suffer from such trust-related problems as the car being in worse condition than initially indicated, accident damage that is not disclosed, fraud, etc. Blockchain technology promises to automate the tracking of cars through their lifecycles and provide reliable information at any point in time it is needed. This paper studies the problems car buyers face during information seeking and propose requirements for the design of a blockchain-based system to address

¹ Iansiti, M and Lakhani, K. (2017). The Truth About Blockchain, <https://hbr.org/2017/01/the-truth-about-blockchain>