

Architecture-Driven Blockchain Governance

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論 文 内 容 の 要 旨

The present research examines the intersection between blockchain technology and the law. In particular, it examines the question how blockchain should be regulated. This work answers this question by drawing inspiration from the literature regarding Internet regulation and argues that regulation must not compromised the technology's architecture.

The first chapter introduces the topic and explains the overall structure of the dissertation. After elaborating the technology and historical context, the second chapter sheds light on the transition from blockchain as a payment network to its potential of decentralizing the Internet. Moreover, this chapter emphasizes the discrepancy between the contemporary debate and the reality of blockchain's transformative potential. The third chapter examines the regulatory challenges that emerge in the context of blockchain technology on the one hand and explores how blockchain regulates behavior on the other hand. I argue that design choices inherent to blockchain pose significant challenges for regulators. Furthermore, the general notion of an overarching Lex Cryptographia is rejected. Instead, it is argued that blockchain technology is capable of a process not dissimilar to legislating, adjudicating and enforcing its own regulations. However, it does so within the confines of distinct spaces, rather than on a ubiquitous level. The fourth chapter defines regulatory objectives conscious of the technology's architecture. A comprehensive analysis of models from both literature and practice is conducted and assessed based on their capacity to fulfill these regulatory objectives. The fifth chapter argues that an architecture driven governance approach towards blockchain should be pursued, as blockchain inherently fosters innovation and competition through its decentralized design. Furthermore, it proposes network neutrality rules applied to blockchain, aka blockchain neutrality, as possible substantiation of architecture-driven governance. By adopting this governance model, regulators can potentially leverage the inherent design of blockchain to accomplish effective governance that fosters innovation and competition, without erecting unnecessary and potentially stifling barriers. The sixth and final chapter concludes and presents future challenges and perspectives.