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Privacy Revisited: The Impact of Blockchain Technology on the Disclosure of Personal Data

Research Idea

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Abstract

Internet users tend to lack awareness when it comes to the amount of personal data they regularly disclose online. This causes discrepancies between their reported privacy attitudes and their actual privacy behavior, a phenomenon which has been labeled "privacy paradox". They also calculate the subjective benefits and risks of disclosing personal data. In this context, blockchain technology acts as a double-edged sword when it comes to ensuring privacy. On the one hand, it allows storing data in an immutable way and creating systems which evoke Orwellian visions of intrusive governments overseeing and monitoring their most private decisions. On the other hand, blockchain technology holds the potential of giving privacy back into the hands of users. It allows them to determine which personal information they want to share and offers encryption technology to conceal the origin of data. The complexity of blockchain technology and its implications on privacy are hard to grasp for the average user. In the proposed research project, we therefore investigate how internet users, more specifically consumers, perceive the privacy impact of blockchain technology and how their attitudes and behaviors are shaped by the technology's objective features as well as their subjective perceptions. We also scrutinize the role of media and peers in shaping disclosure attitude and behavior.

Keywords: Blockchain, Distributed Ledger Technology, Privacy, Privacy Paradox, Privacy Calculus

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Research Idea

Internet users tend to lack awareness when it comes to the amount of personal data they regularly disclose online. The so-called privacy paradox refers to the contradiction between individuals reported privacy attitudes and their actual behavior (Adjerid et al. 2018). Additionally, they calculate the subjective benefits and risks of disclosing personal data. All this happens in an environment which is characterized by insufficient information about how their personal data is stored and processed. Blockchain technology, which in the context of this paper only refers to public and permission-less blockchains, adds a state layer to the Internet. It turns out to be a double-edged sword when it comes to ensuring privacy. On the one hand it potentially allows to store data in an immutable way and to create systems which use blockchain to foster desired behavior and evoke Orwellian visions of intrusive governments overseeing and monitoring Internet users most private decisions (DeVoe 2018). On the other hand blockchain offers the means to give privacy back into the hands of users as is shown by applications that allow them to determine which personal information they want to share and offering encryption technology to conceal the origin of data (Travizano et al. 2018). The complexity of blockchain technology and its implications on privacy are hard to grasp for average Internet users, successful use cases are scarce and the current legal situation is far from being straightforward (Treiblmaier 2019). In this research project we therefore investigate how consumers perceive the privacy impact of blockchain technology and how their attitudes and behaviors are shaped by the technology's objective features as well as their subjective perception. The practical relevance of this topic is highlighted by a strong media attention and the massive involvement of governments, companies and startups, all of which may have conflicting interests. We therefore also investigate to which extent the opinion of peers and the media plays a role in the shaping of individuals' attitudes and behaviors.

The preliminary framework in Figure 1 combines blockchain technology, the privacy paradox and the privacy calculus. The final model will include additional constructs such as trust, self-efficacy and privacy control. Taken together this creates a system in which users assess the perceived benefits and risk of data disclosure, both of which are based on the objective benefits and risks of blockchain technology, and calculate the perceived value of disclosure (Chen 2018). This calculation then determines individuals' attitudes and behaviors, which do not necessarily need to correspond (privacy paradox). All this happens within the context of ecosystems that heavily depend on user data to stay functional, such as online advertising and retailing. More specifically we derive the following four research questions:

(1) How do objective features of blockchain technology impact individuals' perceptions regarding the benefits and risks of the disclosure of personal data on a distributed ledger?
(2) How does blockchain technology impact the perceived value of personal data disclosure?
(3) Does blockchain impact the gap between disclosure attitude and disclosure behavior (privacy paradox)?

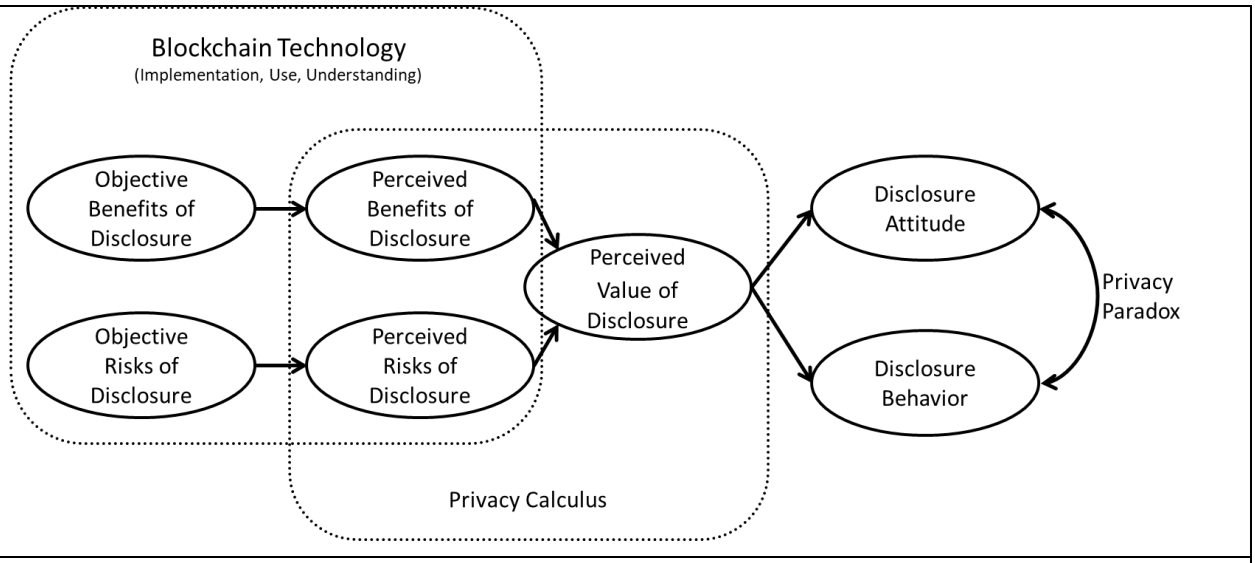

Figure 1. Research Framework for Blockchain and Privacy

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