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Applying blockchain technology to sharing economy models such as car sharing and mobility

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The sharing economy has gained in popularity in the recent years. More specifically, shared and on-demand goods such as bikes, cars, flat rooms or working spaces are increasing substantially in urban cities and promising solving optimization problems related to space, time and expenses, which are the most prevailing factors when living in a city. However, agency theory suggests that the relationship between service providers and governments comes with difficulties optimizing the merit model. This is where blockchain technology has a big potential to solve existing conflicts and inefficiencies by removing the need for intermediaries and substituting them with an automated, secure and self-sovereign transaction technology, such as Smart Contracts using the Ethereum blockchain. Additionally, embedding intelligence to shared products by connecting devices to the internet and “enabling them to sense, monitor, and authorize transfers between users, firms can economically participate in the collaborative consumption of their goods...” (Weber, T.A., 2017). This product intelligence, when used actively for collaborative consumption, can narrow down the gap between retail prices and the equilibrium, due to the tendency of decreasing ownership status. For now, retailers do profit most in the sharing economy from high-cost units and patient consumers. Also, a peer-to-peer economy tends to increase the consumer surplus and social welfare, which might become stronger when adding IoT and blockchain technology as additional components. Partly, this has socio-economically reasons and partly can be contributed to an improvement of environmental aspects. A study conducted with 363 car sharing participants in the Netherlands, has shown that there was a drop of 30% in car ownership as well as a 20% drop in car use. This has led to a reduction of up to 390 kilograms of individual CO₂ production per year.

Biography

Philipp Sandner is Head of the Frankfurt School Blockchain Center at the Frankfurt School of Finance and Management. The center was launched in February 2017 and analyzes implications of blockchain technology on companies and business models. It provides a platform for decision makers, startups, technology experts and industry professionals to exchange their knowledge and share their visions. He is a member of the FinTechRat of the Federal Ministry of Finance. His expertise in particular includes Blockchain Technology and its application in various industries but also concerns Digitization, Entrepreneurship and Innovation Management. Further, his core topics are Corporate Entrepreneurship, Digital Transformation, Fintech Startups and Intellectual Property Rights.

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