Decentralising Power, Competence and Incentives – Emerging Visions in the Blockchain Space

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Introduction

The Bitcoin blockchain introduced a technical solution to decentralised consensus, which, up to that point, had been a major ambition for computer scientists in cryptography and distributed systems. Six years after Satoshi Nakamoto revealed Bitcoin, Vitalik Buterin proposed the Ethereum blockchain, a 'world computer' that runs smart contracts.

What makes blockchain so intriguing to social sciences is its promise of trust. Centralising trust is at the very core of institutions that emerged across today's societies and economies. These institutions are framed in legal and moral contexts which ultimately fail to extract trust out of a social context. For the first time in human history, trust may now become digitised and abstracted from social contexts.

While information systems research unmistakably states that blockchain resonates with the foundation of organisation studies, scholars in this field have barely scratched the surface of blockchain and its implications for the field. Partly, this is due to a lack of technical understanding of the technology which draws from peer-to-peer networks, game theory and cryptography. Hence, the objectives of this research are to characterise the technology and discuss its implications for organisation studies.

Materials and methods

To make sense of blockchain as an emerging technology, a qualitative research design is chosen. A holistic multiple-case allows to incorporate various methods, including documentation analyses, observations and expert interviews.

Eleven semi-structured in-depth interviews with a total length of 492 minutes were conducted with experts across Europe and North America. Such primary data was complemented by secondary data, e.g. documentation material (e.g., project whitepapers, blog posts and recorded interviews). Observations from four conferences and several community events (meetups) contributed ethnographic data.

All interview recordings were transcribed following a strict verbatim style with occasional conversational elements. The data was analysed through open coding in MAXQDA12.

Results

Traditionally prevalent organisational forms decentralise competence and power to varying degrees (Figure 1). For instance, *outward-looking firms* that engage in open innovation draw from external knowledge and thereby decentralise competence, yet decision-making power remains internalised. Vice versa, *closed communities*, such as holacracies, decentralise decision-making processes but are less outward-looking. Decentralising both competence and power, *open communities* such as free and open-source software (FOSS) communities are the basis for major successes, notably Wikipedia and Linux. However, open communities often rely upon utilitarian and hedonic motives, lacking systematic incentivation of contributors.

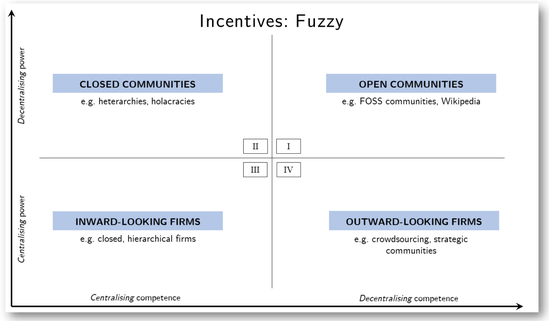

Figure 1: Competence-power-incentives framework in a Web 2.0 context

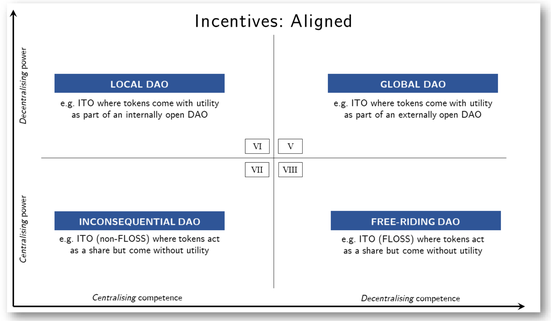

Figure 2: Competence-power-incentives framework in a Web 3.0 context

Drawing on principles of cryptoeconomics, blockchain introduces a third dimension of decentralisation: incentives (Figure 2). By distributing stake through initial token offerings (ITOs) and ongoing distribution (e.g., pay-outs, airdrops and exchanges), a formerly fuzzy crowd evolves into an aligned group of contributors who each have skin in the game. Hence, appropriate token designs transform a blockchain into an 'incentive machine'.

Decentralised incentivation introduces novels forms of organisations, so called decentralised autonomous organisations (DAOs). A DAO is a governance structure whose rules are code and enforced autonomously whereas its governance is subject to various degrees of decentralising competence and power. For instance, an *inconsequential DAO* decentralises incentives through token distribution; yet, its governance mechanisms reinforce patterns of centralised competence and decision-making power. On the contrary, a *global DAO* utilises a token design that incentivises collaboration across teams while also drawing from external competencies (e.g., through low barriers to entry) and distributing decision-making power (e.g., through reputation-weighted voting power).

Moreover, this study finds that the blockchain space is coined by two organising visions which diverge in sensemaking of the novel dimension of incentivation (Figure 3). While *Vision 1* restricts power to a federated group of stakeholders for commercial reason, *Vision 2* is coined by ethical considerations. Growing research in token engineering, cryptoeconomics and decentralised governance are key to *Vision 2* in bringing about not only novel forms of organising but also a new economic model for the Internet.

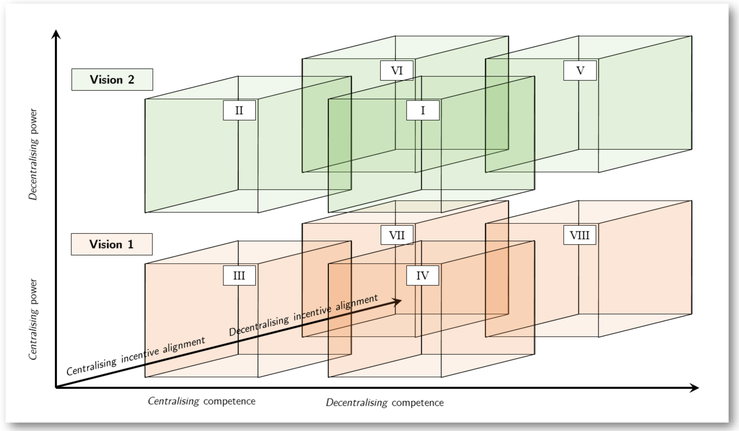

Figure 3: Two visions within the solution space of the competence-power-incentives framework

Conclusion

Blockchain technology is an emerging phenomenon that is thought to change how individuals and businesses organise themselves (Beck et al., 2018; Voshmgir, 2017). A key differentiation between DAOs and traditional forms of organisations is their ability to decentrally incentivise members through a system that is native to public blockchain technology. By introducing aligned incentives as a third key characteristic besides sourcing competence and allocating decision-making power, DAOs extent the solution space of organisational forms. The shaping of DAOs is subject to ideologies. Contributing towards a sensemaking of blockchain, two organising visions are identified which each follow their own ideology. Moving forward, it remains to be seen whether incumbents will successfully retain their power in blockchain-based infrastructure, or whether blockchain is a 'crypto trojan horse' (Waters, 2017) that changes business models to inevitably end the paradigm of artificial scarcity.

Literature cited

Beck, R., Müller-Bloch, C., & King, J. L. (2018). Governance in the blockchain economy - a framework and research agenda. Journal of the Association for Information Systems.

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Further information

The full paper can be found at http://theodorbeutel.de.