Chapter 10
The Promise of Blockchain–Based Decentralized Social Networks:
Enabling Privacy, Censorship Resistance, and User Control

Sasha Shilina

https://orcid.org/0000-0003-4696-0739

Lomonosov Moscow State University, Russia

ABSTRACT

This chapter explores the potential of the novel Web 3 phenomenon – decentralized social networks – to address the growing concerns over privacy, censorship, and user control on centralized social media platforms. Offering an alternative to traditional social media, decentralized social platforms utilize distributed ledger technologies like blockchain where data is stored on multiple nodes and controlled by the users, rather than a central authority. Such systems are designed to enable trust and transparency in online interactions, provide the ability to communicate without censorship or interference, and empower users with greater control over their personal data. This chapter discusses the benefits and challenges of blockchain-based social networks, as well as existing initiatives working towards a more decentralized, democratic, and user-centric model of social networking.

INTRODUCTION

The term "social" in the context of social media implies that these platforms are designed to prioritize user engagement and foster communal activity. In recent years, social media platforms have undergone a transformative revolution in the way people communicate, share information, and connect with others globally (Dijck, 2013). These platforms have become instrumental in shaping public discourse, mobilizing social movements, and fostering online communities (Hwang and Kim, 2015; Kidd and McIntosh,

2016; Pouwels et al., 2022). Major social networks serve as hubs for interaction, communication, and entertainment (Ahn and Shin, 2013; Kuem et al., 2017; Yurder and Akdol, 2020), while also playing a crucial role in the dissemination of information and news (Vosoughi et al., 2018), not necessarily true or relevant (Shu et al., 2020). Enabling individuals to generate and share false information quickly and anonymously (Del Vicario et al., 2016), social media has accelerated misinformation dissemination, particularly fake news (Di Domenico et al., 2021; Pennycook & Rand, 2021).

The boundless adoption of social networks is evident in the growing number of users worldwide. According to DataReportal, in April 2023, there were 4.80 billion social media users around the world, equating to nearly 60 percent of the total global population, with projections estimating this number to surpass six billion by 2027 (Dixon, 2023). The influence of social media extends beyond online activities, affecting offline behaviors and overall life experiences. Presently, social media usage ranks among the most popular online activities, with internet users globally spending approximately 147 minutes per day on social media as of 2022, a slight increase from 145 minutes in 2021 (Dixon, 2022).

However, the growing dominance of major industry players such as Meta and X (formerly Twitter) has raised concerns about privacy, as personal information is vulnerable to data breaches and misuse (Li, 2015; McHatton, 2023; Senthil Kumar, 2016; Smith, 2012; Trepte, 2021), and centralized control over users' content and interactions, leading to debates about censorship and the suppression of diverse viewpoints (Benson et al, 2015; Bradshaw and Howard, 2019; Gunitsky, 2015). Moreover, the centralization of power in a few entities raises questions about accountability and the potential for undue influence over public discourse.

Given the concerns surrounding centralized social networks, this chapter aims to explore the landscape of blockchain-based decentralized social networks, highlighting their advantages over traditional social networks and examining the current state-of-the-art initiatives. By harnessing the power of blockchain technology, these networks enhance privacy, enable users to have greater control over their personal data, ensure resistance against censorship, and foster a more inclusive and democratic online environment.

The chapter begins by tracing the evolution of social networks, from their inception to their widespread adoption. It then delves into the fundamental differences between decentralized social networks and their centralized counterparts, emphasizing the need for a paradigm shift in how we conceptualize and interact with social media. Furthermore, the chapter explores the emergence of the first peer-to-peer (P2P) social networks and the subsequent introduction of blockchain technology, which has revolutionized the concept of decentralization. By leveraging blockchain's inherent features such as immutability, transparency, and consensus mechanisms, a new generation of decentralized social media has emerged, promising greater privacy, security, and user control. To provide an overview, the chapter examines notable blockchain-based social media initiatives, focusing on Ethereum-based decentralized social media platforms. It also highlights noteworthy blockchain social media platforms on other chains. However, the integration of blockchain technology into social networks is not without its challenges. The chapter addresses these issues, such as scalability, user experience, content moderation, competition from established centralized networks, interoperability, regulatory compliance, and the impact of market volatility on monetization models. By understanding and addressing these challenges, blockchain-based decentralized social networks can strive to deliver on their promises and offer a compelling alternative to centralized platforms.

Combining the exploration of decentralized social networks' fundamental features, analysis of advantages and challenges, and examination of real-world initiatives, this research aims to contribute to the understanding of this phenomenon and its potential to reshape the social media landscape. Ultimately, our goal is to pave the way for a more user-centric, democratic, and empowering online environment.

24 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/the-promise-of-blockchain-based-decentralized-social-networks/329862

Related Content

Exploration of College Students' Learning Adaptability Under the Background of Wisdom Education

Henan Zhangand Xiangzhe Liu (2024). *International Journal of Information Technology and Web Engineering (pp. 1-12).*

www.irma-international.org/article/exploration-of-college-students-learning-adaptability-under-the-background-of-wisdom-education/336486

HBSD: A Hadoop Based Service Discovery Model for Enterprise Cloud Bus

Gitosree Khan, Anirban Sarkarand Sabnam Sengupta (2019). *International Journal of Information Technology and Web Engineering (pp. 37-63).*

www.irma-international.org/article/hbsd/227687

Incremental Learning for Interactive E-Mail Filtering

Ding-Yi Chen, Xue Li, Zhao Yang Dongand Xia Chen (2006). *International Journal of Information Technology and Web Engineering (pp. 60-78).*

www.irma-international.org/article/incremental-learning-interactive-mail-filtering/2608

Case Study 2: A Micro-Distributed Application in Wordpress

(2023). *Architectural Framework for Web Development and Micro Distributed Applications (pp. 202-218).*

www.irma-international.org/chapter/case-study-2/322153

Automatic Quality Assessment for Internet Pages

Thomas Mandl (2008). *Handbook of Research on Web Information Systems Quality (pp. 104-112).*

www.irma-international.org/chapter/automatic-quality-assessment-internet-pages/21968