The Impact of Blockchain Technology on Marketing through Social Media

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Abstract
Blockchain technology has become a particularly promising innovation in recent years, impacting various fields, including marketing. This study looks at how blockchain technology is impacting social media marketing. Through a literature review and case studies, the advantages and challenges of using blockchain technology in marketing strategies in the context of social networks are highlighted. Identified benefits include increased transparency and security, elimination of intermediaries, increased consumer trust and engagement, and increased authenticity and originality of content. However, challenges such as high costs, lack of regulation and standardization, and technical difficulties are also identified. Therefore, this study examines how blockchain technology can change the paradigms of social media marketing, providing insights and research directions for the future of this ever-evolving field. To identify this, we conducted an exploratory research on multiple articles, books and blockchain related websites, because it is a new technology and most of the information in this field can be found online. Moreover, we conducted a qualitative research based on expert interviews in the fields of blockchain and marketing through social media.

1. Introduction

Blockchain technology has become extremely influential in many fields, completely changing the way we interact and manage information. Its impact is increasingly evident in social media marketing. With the explosive growth of social media usage and consumers' increased reliance on these platforms, marketers are faced with new opportunities and challenges. In this context, the use of blockchain technology in social media marketing appears to be an innovative tool that can transform the way marketing campaigns and customer interaction work.

Initially designed as the foundational framework for digital currencies like Bitcoin, blockchain technology has now gained recognition as a revolutionary force with the potential to be applied in several marketing areas (Stoica, Popescu & Orzan, 2015). The widespread integration of social media platforms into the everyday routines of billions of individuals globally has significantly transformed the marketing industry, necessitating marketers to

proficiently utilize these platforms (Kietzmann et al., 2011). Recurring problems in the domain of social media marketing revolve around openness, data protection, and trust (Orzan et al., 2015). The implementation of blockchain technology presents a promising resolution to these difficulties, owing to its inherent characteristics of decentralization, immutability, and transparency (Tapscott & Tapscott, 2016).

The purpose of this study is to examine how blockchain technology plays a role in social media marketing and to highlight the impact this ever-changing sector is having. To achieve this goal, we will first study the concept of blockchain and its essential elements such as decentralization, security and transparency. Additionally, we will look at how these features of blockchain technology can address current social media marketing issues and gaps, such as fraudulent advertising, data management, and privacy protection. In this article, we will review studies and research that have examined how blockchain technology affects social media marketing. We will look at some of the ways blockchain can improve data validity and transparency, how it can provide effective ways to track marketing campaigns, and how it can increase trust between marketers and consumers. We will also talk about things that can go wrong when it comes to the adoption and implementation of blockchain technology in the marketing industry. We will conduct a qualitative research based on interviewing.

Finally, in this article we aim to highlight the importance of blockchain technology and its potential in social media marketing. Understanding its effect can help marketers and researchers develop marketing campaigns that are more effective, transparent, and relevant to customers.

2. Literature review

Within marketing strategies, blockchain technology provides a secure and transparent infrastructure for data and information transactions in social networks (Tselios, Drosos, & Matsatsinis, 2020). By using blockchain, marketers can create and monitor marketing campaigns in real-time, thus ensuring better visibility and tracking of results (Xu, Li, & Liang, 2020). Blockchain technology also facilitates content authenticity and originality by implementing intellectual property and copyright certification functionalities (Houshmand, Davis, & Goldhaber, 2019).

Another important use of blockchain technology in social media marketing is to improve the relationship between influencers and users (Pilkington, 2016). Blockchain can ensure transparency and trust in influencer recommendations, eliminating issues of fraud and hidden sponsorships (Jørgensen & Hauge, 2019). Through blockchain technology, users can verify the authenticity and integrity of content generated by influencers, thereby increasing their trust and engagement (Wang et al., 2020).

Moreover, blockchain technology can be one of the opportunities in tax optimization. Because tax planning means compliance with tax payments (Jakubowicz, & Munteanu, 2022), which can be optimized through blockchain, so a company can spend less in this area and redirect funds to marketing, for instance.

However, implementing blockchain technology in social media marketing is not without its challenges. High costs and technical difficulties are major obstacles to the widespread adoption of blockchain in this field (Sivarajah et al., 2017). There are also concerns about the scalability and efficiency of blockchain technology in the context of the large volume of data generated by social networks (Bai, Xu, & Xu, 2018).

According to Statista (2021), worldwide spending on blockchain solutions is projected to reach $15.9 billion in 2023 and can reach up to $19 billion in 2024, reflecting the growing recognition of the technology's potential across various industries which can be viewed in

Figure 1. This significant investment demonstrates the belief in the transformative power of blockchain to enhance transparency, security, and efficiency in business operations.
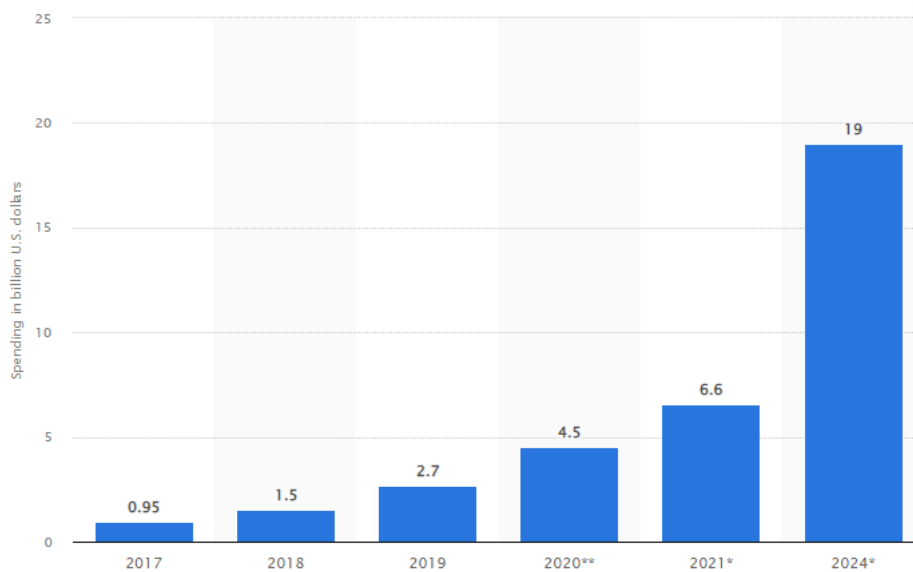

Figure 1. Spending on blockchain solutions in billions of U.S. dollars
Source: Statista. (2021). Worldwide spending on blockchain solutions. Retrieved from
https://www.statista.com/statistics/800426/worldwide-blockchain-solutions-spending/

Social media marketing could be revolutionized by blockchain technology thanks to its distinct characteristics and capabilities. Numerous academic studies discuss the benefits of using blockchain in this field. Blockchain technology, according to Li, Xu, and Huang (2020), offers transparent and decentralized data management, ensuring data integrity and doing away with the need for middlemen in social media marketing transactions. This raises credibility and lowers the possibility of fraud and manipulation. Furthermore, Kim, Cho, and Song (2019) contend that by giving consumers authority over their personal data, blockchain can alleviate privacy issues in social media marketing. Users can selectively share their information, maintaining their privacy while yet taking part in targeted marketing efforts, using smart contracts and encryption techniques. Additionally, blockchain offers a safe and unchangeable record of transactions and conversations on social media platforms, according to Singh, Khan, and Gupta (2019). This improves the openness of influencer marketing partnerships as well as the credibility and dependability of user-generated content.

Additionally, it is said in the study done by Sharma, Goyal, and Singh (2021) that blockchain technology can make it easier to verify social media data like follower counts and engagement rates. Marketers can assure the quality and authenticity of performance data and lessen the impact of false accounts and bots by recording these metrics on a blockchain. Furthermore, Choi, Kim, and Kim's research (2020) highlights how blockchain might support micropayments and incentive models for social media marketing. Content producers can receive direct compensation for their contributions through tokenization and smart contracts, boosting engagement and promoting a more decentralized and egalitarian environment.

The argument is made that blockchain technology can increase advertising transparency by confirming the legitimacy and efficacy of ad placements in the work of Xie, Liu, and Wang (2020). This can lessen problems with ad fraud and improve the general effectiveness and dependability of social media marketing initiatives.

3. Problem statement

Blockchain technology has a significant impact on social media marketing, bringing benefits such as increased transparency, security, increased consumer trust and engagement, as well as content authenticity and originality. However, there are challenges and obstacles that need to be addressed before a widespread adoption of blockchain technology in social media marketing, which will be found across this study.

In the context of social media marketing, the question arises as to the impact of blockchain technology on this field (Pentescu et al., 2014). As social networks represent a dynamic and vast environment of interactions between users, the need to investigate and understand how blockchain technology can influence marketing strategies, transparency, security, user engagement and authenticity of generated content is highlighted. Therefore, the main question addressed in this study is: "What is the impact of blockchain technology on social media marketing and how can it help improve performance and results in this field?". This statement of the problem presents the context, the need for the investigation, and the main question that guides the study of the impact of blockchain technology in social media marketing.
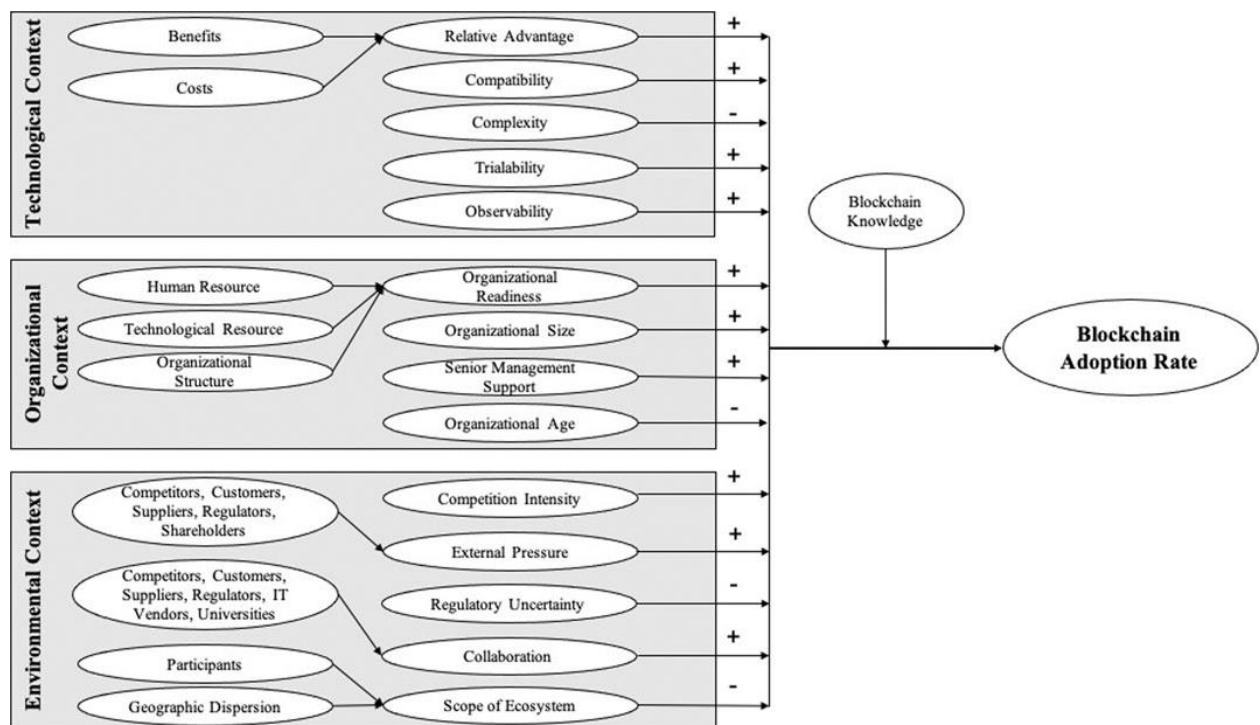

Figure 2. Blockchain Adoption Rate
Source: Lustenberger M, Malešević S and Spychiger F, 2021, Ecosystem Readiness: Blockchain Adoption is Driven Externally. Front. Blockchain 4:720454. doi: 10.3389/fbloc.2021.720454

The motivation for this study arises from the fact that blockchain is one of the technologies that will see a steadily increasing adoption in the coming years. The conceptual Blockchain Adoption Model is depicted in Figure 2 (Fernandes, Cunha, & Ribeiro, 2021). Several characteristics, including relative benefit, compatibility, complexity, trialability, and observability, are relevant in the technical setting. The perceived advantages and disadvantages of blockchain technology have an impact on the relative advantage. When it comes to the organizational context, elements like organizational size, senior management support, organizational age, and organizational readiness all play a big part. The availability of people and technological resources, as well as the organizational structure, have an additional impact

on an organization's readiness (Fernandes, Cunha, & Ribeiro, 2021). In the context of the environment, variables including the level of competitiveness, external pressure, regulatory uncertainty, cooperation, and the size of the business ecosystem are relevant. Competition, consumers, suppliers, regulators, shareholders, and IT vendors comprise external pressure, whereas universities, regulators, and IT vendors comprise external collaboration. The impact of each of these factors, whether positive or negative, is visually represented in the figure. Additionally, the introduction of "blockchain knowledge" serves as a control variable (Fernandes, Cunha, & Ribeiro, 2021).

4 Research Questions/Aims of the Research

This study aims to study the impact of blockchain technology on social media marketing, in the context where distributed ledgers are a technology that is just starting to be used globally and many Web 2.0 companies are transitioning to Web 3.0. And Amazon by partnering with Avalanche, Paypal by offering crypto services for customers, Meta creating a whole division for Metaverse and introducing NFTs to Instagram are just a few early examples. To understand where social media marketing is headed with the advent of blockchain technology and how it may evolve following implementation, we've built a series of objectives that can help us find out.
   • Identify the advantages and disadvantages of using blockchain technology
   • Measuring the impact blockchain technology can have on social media marketing
   • Determining the intersection of marketing and blockchain
   • Identifying the reasons why blockchain should be implemented in social media
   • Analyzing the challenges that blockchain can bring to social media

5. Research Methods

To begin with, we conducted an exploratory literature search: we consulted various articles, books and online specialist publications to build an informative framework, both on blockchain technology and on social media marketing, to then find out what stands at the intersection of these, through an in-depth interview with blockchain, crypto and marketing specialists. We chose these scientific articles for reference because we wanted firstly to see what other scientists already found so far in their studies about blockchain and if they crossed it either with marketing and social media. We looked for the keywords „blockchain", „marketing" and „social media". After the research we made a few ideas for our future study and decided to create a qualitative research based on an interview for this article alone. After that we will try to test the hypothesis from this study in a quantitative research.

Most of the questions were open-ended to be able to identify all the blockchain factors that can make their mark on social media marketing, but also to measure what impact they have. The interview was conducted on 9 blockchain experts working in several fields. We had lawyers, tax consultants, traders, influencers, as well as marketing and blockchain specialists. We have explored the pros and cons of blockchain in general to then identify what impact it has strictly on the social media marketing area. The impact was analyzed through the opportunities and challenges that technology brings to this field, different case studies, the relationship between influencers and users of social media platforms, when and how will blockchain be implemented at large scale.

The interview guide was based on 12 open questions and 3 closed questions through which we tried to measure certain stimuli. When asked a question, some experts made additions and answered more at one point. Here are some key takeaways. The experts were interviewed on 7th and 8th of June 2022. This method of research based on interview was chosen mainly because it's a new technology, there are few studies in this field and we wanted to gather all

the information we could and after that test it in a quantitative study. The best way to receive information at the beginning is asking the experts who are working in this field, because they have already been through some undisclosed studies and tested different hypothesis in this area, but, because of lack of resources and time they couldn't publish this data.

These experts have already implemented and tested the knowledge from this study or worked on the legal, accounting, finance or advisory parts with projects who implemented blockchain in their company and studied the role of this technology in marketing through social media.

6. Findings

Below we will present the main advantages of blockchain in general transparency, security, independence from third parties, self custody, high speed, confidence, impossibility of data manipulation, traceability, verifiability, bringing instant cross-border payments, educating the public, eliminates bureaucracy.

Disadvantages and limits found by the experts are: high difficulty of understanding and application, the technology is at early stages, not fully developed yet, the existence of the confusion between blockchain and crypto, people thinking that blockchain means speculation, current infrastructure, lack of regulation, reduced education of the public, the transfer of responsibility from the intermediary to the user brings additional worries, high costs, low scalability.

The fields where blockchain will find implementations are: supply chain, logistics, marketing, finance and banking, real estate, governmental, freelancing, data processing, social media, patents and documents, medical and health. Now we will take some use cases presented during the interviews. The experts either founded and worked projects which already implemented this use cases, either helped and advised people who build those kind of applications. If we take government, for instance, the use cases are with storage of documents as non fungible tokens to optimize the costs and the traceability, or an application for electronic voting where blockchain provides the unicity of a single vote, traceability so no votes will get lost or misplaced and anonymity for users. In medical services, people can store they data in blockchain and get paid every time a company accesses the data In real estate, the application of blockchain is tokenization of investments so people who can't afford to buy a complete apartment, will be able to invest with other people and the rewards will be distributed proportionally with the investment made. What's important in supply chain is that blockchain can improve the traceability of items. In finances and banking, the main application is the cryptocurrency or the CBDC, which stands for central bank digital currency, i.e. currency developed by government in central banks through blockchain. These have lower costs, more secure and faster than the traditional payment system.

Why should blockchain be implemented in marketing through social media? In social media there is a process of gamification, where users get paid for posting, have ownership over their content, every post is unique and can be tracked so you can see who was the first to post it so others cannot steal it, both influencers and users can benefit from these applications. With blockchain, there will be less spam and fake bots who try to scam different people, because every account will be uniquely attributed to one person or entity. Moreover, in marketing blockchain can have a great impact on different campaigns who are made on blockchain and data can be stored forever, so you do not lose it when the platform decides to reset it and can reduce costs of implementation and can solve problems of GDPR, general data protection regulation. Furthermore, this authenticity and traceability will increase the trust between brands, influencers and users in social media platforms. But these opportunities come with a cost. What are the limitations of this technology in this field? Our experts found that the

implementation of technology is too expensive and difficult to do it because there are not too many experts, the process can take too long.

When asked when they will see blockchain implemented at large scale in social media the answered varied from they are being implemented now, till in 15 years. So 1 expert considered it will be implemented in 10-15 years, 4 experts said they will see the blockchain implemented over social media in 5-10 years, 3 experts agreed in 2-3 years and one expert said it is already being implemented. So most of them agreed that blockchain will take at least 2-3 years for large implementation, the median being a period of 5-10 years.

Blockchain will also create new emerging trends and future perspectives in this field: new channels of marketing, new wave of influencers who are specialized in this technology, people will be more focused on the quality of the information and not the quantity, only projects who solve a problem will find their way in the market. Some experts agreed blockchain will bring back social media to the people, not like how it is right now, when the platforms are in hands of big corporations.

Conclusions, future directions and research limits

Blockchain technology offers the potential to revolutionize social media marketing, bringing significant benefits in terms of transparency, security and authenticity of generated content. Using blockchain technology in social media marketing can increase user trust and engagement by providing a verifiable and immutable record of interactions and transactions.

Regarding the limits of this study, it's possible that the sample size of 9 experts may not accurately reflect the total number of specialists working in the fields of blockchain and social media marketing. The conclusions might only apply to the viewpoints and experiences of the chosen experts, and their applicability to a larger community might be constrained. A lot of qualitative research depends on individual interpretations and perspectives. The researchers' prejudices and preconceptions affect how the interview data is analyzed and interpreted, which could introduce some subjectivity into the results.

Additionally, the depth and scope of the insights gleaned may be constrained by the reliance on guided interviews. The format and interview questions may limit the possible answers and inhibit the creation of original or surprising viewpoints. Furthermore, due to its small sample size and context-specific nature, qualitative research frequently lacks statistical generalizability. The results might be context-specific and might not be transferable to other contexts or circumstances.

Further research directions for this study should be a quantitative study to test the hypothesis from this research and to measure different other stimuli. Moreover, we would like to see the role and the impact of other technologies like artificial intelligence and machine learning on marketing through social media and how they can be combined with blockchain.

In conclusion, implementing blockchain technology in influencer relationships can address issues of authenticity and fraud by providing a transparent record of influencer referrals and performance. However, there are challenges and obstacles to the widespread adoption of blockchain technology in social media marketing, such as scalability, regulation and standardization. And regulation can be a factor that can completely prohibit the development of the technology, as was the case with China when it completely banned cryptocurrencies on the territory of the country.

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