BLOCKCHAIN TECHNOLOGY IN THE DIGITAL MARKETING SECTOR

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ABSTRACT

Similar to the internet, blockchain technology could be the next digital revolution. Blockchains offer tremendous potential, which is why numerous businesses have begun implementing this technology. With the internet enabling the transmission of information, blockchain enables the communication of value. Blockchain is not only associated with cryptocurrencies; thanks to this technology, businesses may increase brand value. As blockchain is a developing technology, there are still numerous possible applications. This has prompted us to investigate the viability of implementing blockchain in the marketing industry. This study examines the application of blockchain technology in the digital marketing industry. This study employs a qualitative approach and descriptive methodologies. The survey results indicate that blockchain is very effective in digital marketing since it may increase consumer trust. This is because blockchain technology guarantees the honesty and integrity of data. In addition, blockchain technology eliminates intermediaries, making the marketing process more straightforward, cheaper, faster, and more accessible.

Keywords : Blockchain Technology; Digital Marketing; Consumer

INTRODUCTION

Business success in today's thriving market can be improved without constant new product development. Instead, businesses are emphasizing novel customer communication channels to grow their operations and adopt a more cohesive and coordinated approach to relationship marketing (Wirapraja et al., 2021). Businesses are creating technology portfolios to market and label a wide range of products, services, and ideas through social media and advertising. By leveraging ever-evolving social networking tools, digital marketing enables firms to interact with customers in highly efficient, cutting-edge, and impactful ways. In turn, this elevates the role of the consumer and increases their sway over traditional marketing structures (Wardhana, 2015).

The introduction of blockchain has attracted the attention of academics, practitioners, and lawmakers worldwide, due to its characteristics that disrupt the way private and public sector businesses and organizations work in the coming years

(Harahap et al., 2020). Blockchain technology was first introduced to the public through its most striking applications, cryptocurrency, and bitcoin, in 2008. Despite the volatile and speculative nature of Bitcoin and other cryptocurrencies, many studies recognizing the potential created from the use of the underlying technology for various industries sparked a lively public debate about the disruptive applications and role of new technologies in business models and management processes (Wijaya, 2016).

Although it has yet to develop to its full potential, the foundations of blockchain are already being laid, and its applications are being tested in areas such as transfer mechanisms, databases, traceability of people and objects on a global scale, the way we interact with governments and systems of authenticity and identity verification. This technology represents a paradigm shift, promising to solve the problem of trust, which has been one of the significant problems of humanity since ancient times (Zhao et al., 2016). Until recently, the solution to the trust problem was found in using intermediaries acting as guarantors. However, the existence of these intermediaries does not always guarantee this trust because they can act as they please. Moreover, they lead to increased cost and execution time (Muller et al, 2020).

Thanks to Internet openness and cryptographic security, blockchain allows us to verify information faster and more securely, automating this process, reducing costs, and building trust relationships without needing third parties. The parties. Interest in this technology is growing, this is reflected in the significant investments made by many large companies in very diverse sectors. Moreover, Blockchain technology promises to bring the internet era to the next level, to move from an internet of information to an internet of values (Firica, 2017).

The implementation of blockchain technology may result in further and more profound shifts in how we communicate with customers and manage our marketing mix and programs, thereby redefining the meaning of holistic marketing and the significance of its practice. Large companies and organizations like Walmart have developed and implemented Blockchain solutions to manage their operations and impact digital marketing programs. Meanwhile, Facebook is developing its blockchain-based cryptocurrency system within its social networking platform (Sihi, 2019).

The purpose of blockchain, a decentralized, public, and digital ledger that records and appends transactions consecutively, is to establish a permanent and tamper-

resistant record. When applied to business applications, blockchain design is a collection of technologies, tools, and methodologies that work together to address issues of trust and uncertainty (Kewell et al., 2017). Executives in charge of marketing should be aware of blockchain's potential as a communication protocol that can transform the internet from a source of information to one that can be trusted. Despite its widespread adoption, there is still much to learn about how Blockchain technology might improve openness and trust in digital marketing (Jain et al., 2021).

Nevertheless, despite the importance and potential of these new technologies for marketing, research on the subject needs to be developed and focused on the financial applications of these technologies. This paper will briefly present how blockchain works, the characteristics that make it stand out, and the possible uses and applications of blockchain in digital marketing, along with some real-world applications.

METHOD

Method is a method of work that can be used to obtain something. While the research method can be interpreted as a work procedure in the research process, both in searching for data or disclosing existing phenomena (Zulkarnaen, W., Amin, N. N., 2018). This research takes a qualitative approach, and the analysis will be descriptive (Sugiyono, 2011). In the meantime, this investigation makes use of a descriptive methodology, which, as defined by Rukajat (2018), is a method for analyzing the present status of a population, object, set of conditions, theory, or category of occurrences. This descriptive research aims to provide a comprehensive and correct description of the phenomenon that is the subject of the investigation. This will be accomplished by providing an in-depth analysis of the phenomenon's aspects, characteristics, and interrelationships. Researching published works can provide both data and information for one's projects. In order to obtain secondary data and primary data that can be relied upon for research, the author either engages in a Literature Study or makes an effort to analyze a variety of reading materials, library materials, and other papers that are relevant to the subject that is going to be studied.

RESULT AND DISCUSSION

Blockchain Technology

The public lost faith in established financial institutions after the global financial crisis of 2007–2008. Both tech believers and digital pioneers are building a banking

system without relying on any outside parties since they see the need for it to be obsolete. Satoshi Nakamoto introduced the Bitcoin digital currency in 2008 as a peer-to-peer electronic cash system to address a pressing issue in the modern economy. A cryptographically secure and rule-based system governs Bitcoin's transaction processing. These are hashing, time stamping, consensus processing, and asymmetric encryption using public and private keys.

Cleverly avoiding double spending, the proposed cryptocurrency model creates a novel framework to scale digital transactions and conditions. A blockchain-enabled transaction must follow a strict set of guidelines for data integrity, third-party verification, and community consensus to be valid. Each transaction is deciphered, stored in a block, and then chronologically connected to the public transaction record. Changing the previous blockchain's cryptographic hash was technically challenging and was ultimately ruled impossible due to the high amount of computational power needed (Bonneau et al, 2015).

Distributed ledger technology, or blockchain, works by having each node in the network add to a growing list of entries. All information, including every transaction, is publicly accessible and recorded. To rephrase, the lack of a single dictatorship and the widespread participation in decision-making characterize the Blockchain network's decentralized nature. There is no way to alter the data in the ledger, so it is accessible to anyone who wants to look at it. Therefore, everything developed on the blockchain must be open and accessible, and everyone involved in its development must take responsibility for their contributions. A Blockchain-based solution can operate independently of any central authority. Everyone in the network has access to details about all past transactions that have taken place on the blockchain. It is expected that decentralized transactions will be more open and less reliant on middlemen (Curran & Curran, 2020).

Each node in a Blockchain network can remain anonymous, another strength that inspires trust when confirming transactions by other nodes. As the first digital currency to employ Blockchain technology, Bitcoin is a groundbreaking innovation. Bitcoin's decentralized digital currency system spawned a new form of digital cash used for commerce: cryptocurrencies. The difficulty of mining blocks stems from the fact that each block on a lengthy chain has its unique nonce and hash and also points to the

hash of the block before it. Blockchain is primarily an immutable distributed database hosted by a decentralized network of computers. The data is organized in blocks, and the blocks are linked using cryptographic principles (Banafa, 2017).

DLT provides a consensus validation mechanism by employing computer networks that can validate transactions. The word "Blockchain" refers to a digital ledger in which each transaction is recorded once validated and then added to a chain of previously recorded transactions. There is no way to change or remove a transaction after it has been recorded on the blockchain. The entire blockchain must be re-mined when a change is made to a previous block in the chain. Because of this, blockchain cannot be easily manipulated. Because it takes so much time and processing power to obtain the golden nonce, it can be thought of as a mathematical "safety." Blockchain is a phrase used in the context of cryptocurrencies to describe a system of interrelated technology.

Digital Marketing with Blockchain

The applications of Blockchain technology should be unrestricted to the realm of cryptocurrencies only because its benefits are quickly becoming more prominent. Over the next few years, the widespread use of blockchain technology will affect more than fifty distinct business models and the operations of various industries. Since it will soon be able to conduct transactions involving digital assets, it has become a possible tool for executing contracts without intermediaries and preserving data with confidentiality and dependability that is unmatched in several economic processes.

Blockchain technology can be used as a promotional tool. Because of this, the advantages of blockchain are widely recognized as undeniable in practitioner literature. Blockchain technology is based on peer-to-peer networks, which can either shake up business as usual by fostering direct marketing or save money by cutting out the need for intermediaries when dealing with trustworthy data sources. These two advantages are both valuable. Because it creates a permanent and shared data repository, blockchain technology has the potential to boost system reliability while simultaneously speeding up data access. Blockchain technology can vastly improve the user experience by increasing data and information openness while strengthening security and privacy. This is possible due to the decentralized ledger features it offers. This allows for a plethora of

potentially valuable client loyalty goods to be manufactured. We will get into these traits in greater detail below: Sun & Park (2021).

Digital marketing was predominantly utilized in advertising directed toward customers when it was initially launched in the 1990s. Nevertheless, due to the development of digital marketing over the past two decades, the idea of client interaction has become increasingly relevant. The goal of digital marketing is to establish lasting relationships with customers, communicate effectively with those customers, and adapt to their evolving requirements of those customers. Today, digital marketing is a fluid and technologically-driven process. It is a method by which businesses interact with their consumers and partners in order to create, communicate, generate, and preserve value for all parties involved. Moreover, digital marketing involves various topics, including consumer data mining, e-commerce, analytics, social media marketing, and internet marketing. Businesses are emphasizing digital marketing tactics, such as internet-based search marketing, digital advertising, and banner advertising, more than ever before (Krishen et al., 2021).

Blockchain technology is a distributed digital ledger that combines the best features of the early internet and modern social media. The widespread adoption of Blockchain technology now makes its application in promotional campaigns a real possibility. A "blockchain" is a continuously expanding set of documents, sometimes called "blocks," linked together in a distributed ledger that does not rely on any central authority to verify their accuracy. The public's familiarity with blockchain stems from its role as the underlying technology behind Bitcoin. Blockchain technology enables the verification and recording of all transactions. Marketers can use the positive aspects of technology that modern consumers value, such as openness and privacy.

With so much competition in the business-to-consumer sector, companies need to put the needs of their customers front and center if they hope to succeed. Marketing can increase or decrease a consumer's perception of a product or service's worth. Different industries use a wide range of communication tools. However, the objectives and difficulties associated with customer involvement continue to be the same. Smaller enterprises can buy cutting-edge tools thanks to the democratizing effect of technology. Although there are no return assurances, small firms increasingly invest in fee-based

technology and platforms they view crucial to maintaining their competitive edge (Pergelova et al., 2019).

In light of this developing pattern, businesses that employ marketing technologies have benefited from integrating marketing automation and technological solutions. As a result, it shifts what customers expect from brands and how businesses interact with them. Blockchain technology may allow for more openness in marketing and data collection. Due to Blockchain technology, numerous industries are undergoing rapid transformations. Although the word "Blockchain" is most commonly used in the banking and financial industries, its potential applications extend beyond those sectors. Many people are curious about how marketers might use Blockchain technology, given its association with the financial sector. There is potential for blockchain to be used in advertising. Blockchain has allowed for new methods of data collection and utilization by marketers, allowing them to understand better and meet the needs of their target audiences and manage their advertising campaigns.

Incorporating ideas like global credibility scores that can interact with several parties doing business together is made possible through the use of Blockchain technology. Counterparty risk refers to the potential that the counterparty's claimed identity is not whom they say they are. Proof of identification implemented at the protocol level by blockchain technology eliminates this vulnerability in marketing situations. When several forum sites get a bad reputation, it might hurt e-commerce. Some believe that the vast majority is wholly made up to positively or negatively impact the public's opinion of a company. Creators' identities may be verified and kept under close watch thanks to blockchain technology.

Digital currency is most obviously used for online purchases. This is applicable in B2C and B2B settings (B2B). Combined with smart contracts, they can boost trust between buyers and sellers and make financial transactions more efficient and secure. In addition, when intermediaries are cut out of the equation, operational and financial expenses are decreased, leading to larger profit margins. The public's interest in Bitcoin and Blockchain is something we should leverage to increase sales. Supply chain management is another area where Bitcoin and the Blockchain could prove helpful. Long-term, dependable surveillance of suppliers and retailers; the avoidance of fraud and other issues that impair brand image and reputation; the promotion of consumer

trust and loyalty; are all areas that can benefit from using smart contracts (Treibmaier & Sillaber, 2021).

Different parts of the marketing mix can also benefit from Bitcoin and the Blockchain. Automation and real-time tracking make sales management simple and affordable. In addition to facilitating disintermediation, blockchain will allow for more precise monitoring of the efficacy of marketing and advertising campaigns and more precise targeting of digital marketing techniques. Digital and email marketing will profit significantly from this because fraud may be avoided, and much money can be saved thanks to tracking. A lack of transparency and personal data security are two major problems plaguing the digital advertising sector. The immutability of blockchain ensures that once a transaction is made, it cannot be undone. Consumers' confidence in the security of a distributed ledger makes them more willing to agree to sell their personal information to corporations in exchange for monetary compensation (Sas & Khairuddin, 2017).

Companies and customers alike can benefit from the increased reliability of feedback through blockchain identification applications. An incentive for users, mainly social media influencers, to produce high-quality user content is the possibility of receiving tokens in exchange for doing so. Tokens will facilitate the consolidation of all existing reward systems into a single network, including but not limited to those covering in-store and online purchases and customer connections with brands and retailers who use digital marketing and social media. The token will facilitate a more diverse and comprehensive loyalty program that records and accounts for all of a consumer's interactions with a company openly and transparently (Adihuzel, 2021). In recent months, blockchain has been used by a growing number of businesses for just this function. A good case in point is how Air Asia has adapted its frequent flyer program to operate exclusively on blockchain and mobile devices.

For the digital marketing sector, blockchain also allows for brand assurances' complete visibility and audibility. In digital marketing, brands often claim to be socially responsible, whether or not this is the case. Consequently, blockchain makes it easy for customers to instantaneously see whether or not a company is making charitable contributions and to verify the extent to which it cares about its social and environmental impacts. Additionally, patrons will be aware of whether or not the

businesses they support treat their workers with dignity and respect. In addition, customers will have crystal-clear examples of highly transparent behaviors like complaint rates, satisfaction scores, defect rates, and on-time deliveries, all thanks to Blockchain technology. Brands need to back up their promises with more than just empty assertions. Blockchain technology can potentially be used to identify and address counterfeit items and to safeguard trademarks.

To put it another way, blockchain technology eliminates the necessity for any organization to monitor and regulate digital marketing networks to ensure consumer confidence. The other party's reputation, credibility, and similar ratings are also a part of this description. Therefore, instead of a mere shuffling around of intermediaries, we should anticipate genuine disintermediation in digital marketing. One brand may offer a single service that a customer desires, but another brand may supply all of the other services they require. For instance, a customer of one bank may choose to use the digital wallet service of another bank even though they are already customers of both banks. Customers can leave in droves in a matter of minutes. In the post-transition era, brands can only stand out by providing an exceptional experience for their target audience.

As blockchain gets popularity, intermediaries will need to adapt their business models accordingly. There will be strategic alterations in the dissemination of information and people's exposure to advertising. Because of their design, they are resistant to phishing and spam. The more spammer tries to phish, the less profitable it gets for them to do so. Your digital marketing initiatives could benefit from a more profound familiarity with consumer behavior and more command over incoming traffic. However, unless anyone exposed to advertising is charged, no one will be forced to view it. Customers will be financially motivated to provide accurate information while creating online accounts. More and more businesses will begin making payments to customers directly, bypassing platforms like Facebook and Twitter. Customer value must be taken into account while designing incentive programs.

Digital marketing that uses blockchain technology may help society by fostering greater trust and giving people more say in their lives. Due to their influence on traditional marketing and advertising practices, the shifts brought about by the rise of digital marketing and advertising are of great importance. Executives making strategic, financial, and technological decisions should consider adapting to Blockchain-related

challenges. Increased trust between companies and their consumers is one of blockchain's primary benefits, as is the ability to create a more robust link between a business's products and services and its customers. Blockchain can help digital marketing and IT experts reimagine their interactions with customers. We can help best position businesses to benefit from the widespread adoption of this revolutionary technology if we move quickly to implement necessary changes. Due to the massive amounts of data used in digital marketing, we will examine how Big Data and digital marketing are related in the following sections.

CONCLUSION

This study reveals that blockchain is changing digital marketing, which the industry needs. Data suggests blockchain technology can boost value, information, and Big Data distribution. Blockchain improves data quality and reliability. Technology provides more accurate and timely data. According to the study, blockchain influences digital marketplaces and provides more reliable data. When introduced and used individually, blockchain raises customer awareness. Blockchain will pressure enterprises to deliver meaningful content and information across all networks. Technology will let consumers access their info. Improve client service. Companies must have client consent for data. This helps companies understand customers. Digital marketing may need to improve if a firm can meet client requests due to these technologies. Unless customers consent, businesses cannot utilize personal data. Digital marketers must score and fine-tune with fewer client data. Blockchain will affect digital marketing and organizational data collection. Blockchain benefits businesses. Well-designed Blockchains eliminate intermediaries, cut prices, and speed up and reach. Company procedures become more transparent and traceable. Blockchain gives marketers new alternatives and risks. Modern consumers consume and produce. Value creation. Brand ambassadors through network effects. Ecological brands must shift. Marketers also face blockchain. Growth requires a smooth customer experience. Brands need a story and a purpose. Only this engages consumers in their communities. Blockchain allows this.

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