Management & Economics Research Journal
ISSN 2710-8856
ISSN 2676-184X
University of Djelfa - Algeria

Vol. 05 No. 02 (2023). P. 394-418

Blockchain technology and its implications on digital marketing (a case study of Amazon web services)

Belakhdar Nacera *(1) Horri Mokhtaria (2)

(1) faculty of economic and commercial Sciences and management at Ibn Khaldun university - Tiaret –

nacera.belakhdar@univ-tiaret.dz

(2) faculty of economic and commercial Sciences and management at Ibn Khaldun university - Tiaret –

Elmokhtaria.horri@univ-tiaret.dz

Received: 09/05/2023 Accepted :11/06/2023 Published: 11/06/2023

Abstract:

Through this study, we aim to highlight the significance of blockchain technology, which has been embraced by many governments as a recent financial technological innovation. We will explore its mechanism and underlying principles, as well as its impact on digital marketing. Additionally, we will shed light on the e-commerce giant, Amazon, which has launched blockchain services to assist customers in developing blockchain networks. The study's findings reveal that blockchain's features such as security, transparency in data exchange, absence of

*Correspondingauthor:–nacera.belakhdar@univ-tiaret.dz

intermediaries, and its decentralized nature, have made it possible to offer numerous privileges and capabilities to users in the field of digital marketing.

Keywords: Blockchain, Digital Marketing, Amazon, Amazon Web Services (AWS) platform.

1. INTRODUCTION : With the increasing global interest in digitalization, which is a technological advancement in information and communication, and the emergence of rapid changes and developments that have characterized transactions in the current era, numerous financial technological innovations have surfaced. Among these innovations is blockchain, which is considered a modern and innovative technology that has gained significant and growing attention, not limited to cryptocurrenciesalone. Its emerging applications have diversified and expanded beyond financial transactions, including areas such as healthcare, education, and notably, digital marketing. This has compelled organizations to keep pace with these changes.

Digital marketing is a form of marketing that utilizes contemporary technology, primarily the internet, various media channels, and digital technologies, to reach customers and convey marketing messages, attracting, acquiring, and retaining them to achieve various marketing goals. However, digital marketing faces challenges and concerns related to the internet, such as customer privacy, data protection, and transparency. Consequently, many organizations have adopted blockchain technology in the field of digital marketing to address or mitigate these difficulties and concerns.

1.1.Problem Statement: Based on the aforementioned context, our research focuses on the problem statement, which can be formulated as the following question:

What are the implications of blockchain technology on digital marketing transactions, and what are the effects of Amazon's managed blockchain on the **Amazon Web Services (AWS) platform**?

1.2.Hypotheses: To address the previous problem statement, we have formulated the following hypotheses:

- Through blockchain technology, users can be granted numerous privileges and capabilities in the field of digital marketing.
- Amazon's managed blockchain has a positive impact on the net sales of the Amazon Web Services (AWS) platform and contributes to increasing its annual revenues.

1.3.Significance of the Research: The topic has gained significance due to the financial and technological changes and developments targeted by the world. The current era is characterized by diverse financial transactions and various applications of blockchain technology, particularly in the field of digital marketing. This field faces challenges such as security issues, customer data theft, and other obstacles that erode trust between customers and organizations. The ability of blockchain technology to manage and address these challenges as a tool for digital transformation is of great importance. It can overcome various difficulties and achieve the goals of digital marketing, as it serves as an effective instrument for digital transformation.

1.4.Research Objectives: The study aims to present concepts about blockchain technology, its mechanisms, and its positive implications on digital marketing. This is based on its structure and its effective ability to monitor electronic marketing domains, reduce advertising costs, prevent fraud, and provide transparency to enhance customer trust.

1.5.Research Methodology: To encompass the important aspects of the topic, we have adopted a descriptive-analytical methodology that we believe aligns with the subject of the study. This methodology serves the purpose of describing and analyzingvarious information related to the study's topic.

1.6.Research Structure: In order to cover the topic and address the problem statement, we have divided the research into the following sections:

- Fundamentals of Blockchain Technology.
- Fundamentals of Digital Marketing.
- Blockchain Technology and its Implications on the Amazon Web Services **(AWS)** platform.

2. Basics of Blockchain Technology: After the emergence of the World Wide Web, the world witnessed a technological revolution, and the term "blockchain" became one of the most resonant terms that caused a buzz in the world of technology and financial transactions, and its use expanded in various fields. Blockchain is a fundamental technology that can reshape the nature of institutions, industries, and the global economy (Al-Qazi, p. 09.). Its popularity increased due to its association with digital cryptocurrencies. It is one of the most promising emerging technologies and an ideal means to keep pace with digital transformation.

Blockchain technology effectively manages and protects individuals' affairs by encrypting data and creating secret codes. It transforms the encryption format into a format that can be analyzed, processed, read, and decoded only by authorized entities, thus enhancing its credibility.

Blockchain technology is associated with the name of **Satoshi Nakamoto**, who first introduced the peer-to-peer system and outlined the current features of electronic currencies and their exchange system. Nakamoto published a paper with the same name in 2008, announcing the design concept of the blockchain model. The following year, Nakamoto implemented the first blockchain as a ledger for conducting transactions using the Bitcoincryptocurrency. Bitcoin is a form of digital currency that can be sent from peer to peer without the need for central banks or other

authorities to operate and maintain the ledger, as is done in traditional monetary systems (Al-Jakhlab, 2021, p. 04.).

2.1. Concept of Blockchain: Blockchain technology, also known as the blockchain, is a distributed database that has the ability to continuously manage a growing list of records called blocks. Each block contains a timestamp and a link to the previous block. The blockchain is designed in a way that it can preserve the stored data and prevent it from being modified. Once information is stored in the blockchain, it cannot be altered later (Nadir, 2020, p. 101).

-IBM and **Forbes** describe blockchain as a shared, real-time, encrypted, and decentralized electronic recording system for processing and recording financial transactions, contracts, trading physical assets, supply chain information, and more. There is no single person or entity responsible for the entire blockchain. It is open, and all participants in the blockchain can view the details of each record or block. Additionally, it enables tracking information across a secure network without the need for third-party verification (Al-Wafi, 2022, p. 243).

-Blockchain is also known as a software mechanism that allows tracking, analyzing, and recording assets and transactions without the presence of a central trusted authority like a bank. It establishes blockchain networks and provides proof of ownership using unique digital signatures based on public encryption keys known only to the participants. Complex algorithms ensure consensus among users, ensuring the impossibility of tampering with transaction data after verification (HaraqSoumia & Latrash, 2021, p. 215).

-Based on the previous definitions, it is evident that blockchain is a decentralized giant database that allows participants to exchange values and assets worldwide without intermediaries and at minimal cost. It retains records on a network of computers (data recording and storage), gathering data into separate blocks, each connected to the preceding block and sealed with an unbreakable digital seal. This

creates an infinite, tamper-proof chain, providing an unprecedented level of security. Blockchain is a fundamental technology for electronic transactions, utilizing complex encryption techniques.

2.2. Elements of Blockchain: The key components of blockchain can be summarized as follows:

Block: It is the building unit of the chain, used to store a set of transactions distributed among all nodes in the network. Examples of blocks include money transfers, data recording, or tracking status (Zerdali & Ben Jaddou, 2021, p. 281). Each block accommodates a minimum amount of information and operations to execute processes conclusively and comprehensively. Then a new connected block is created or updated.

Data: It refers to the sub-process that occurs within a single block, representing an individual command or information that, along with other orders and information, constitutes the block itself (Hani & yedo, 2021, p. 333.).

Hash: It is the unique DNA of the blockchain, sometimes referred to as a digital signature. It is a code generated through an algorithm within the blockchain program, known as the hash function (Tiklit, 2022, p. 947).

Timestamp:(harodatagéeléctronique) It is the timing at which any operation is performed within the blockchain (Tiklit, 2022, p. 947.) . This element serves as an official authentication, ensuring the integrity of the transactions carried out through it.

2.3. Principles of Blockchain Technology: Blockchain operates according to five fundamental principles, understanding which is important and can be summarized as follows (Al-Najjar, 2019, p. 55.):

-Distributed Data Record: Through this principle, anyone can access the data and history, but they cannot control or modify that data. Instead, the data being sent is verified.

-Peer-to-peer transmission: This refers to transactions or transfers that occur directly between the seller and the buyer, without the involvement of a third party or intermediary. The communication takes place between the two parties, and then the transaction is copied and distributed to all the nodes in the network.

-Transparency with pseudonymity: All transactions are visible to everyone, but each contract or user is identified by a pseudonym consisting of 30 or more characters, such as a name or nickname. Users have the option to choose whether they want to be known or remain anonymous.

-Irreversibility of records: This element is crucial to prevent fraud and manipulation. Once a transaction is accepted on the network, it cannot be reversed, modified, or deleted. Each transaction is linked and connected to the previous ones, and the data is copied along with the newly recorded information.

-Computational logic: Transactions within the blockchain are connected to a programmed computational logic on the blockchain system automatically.

2.4. The mechanism of blockchain technology: The mechanism of blockchain can be summarized in three stages (Tumi, 2022, p. 1365):

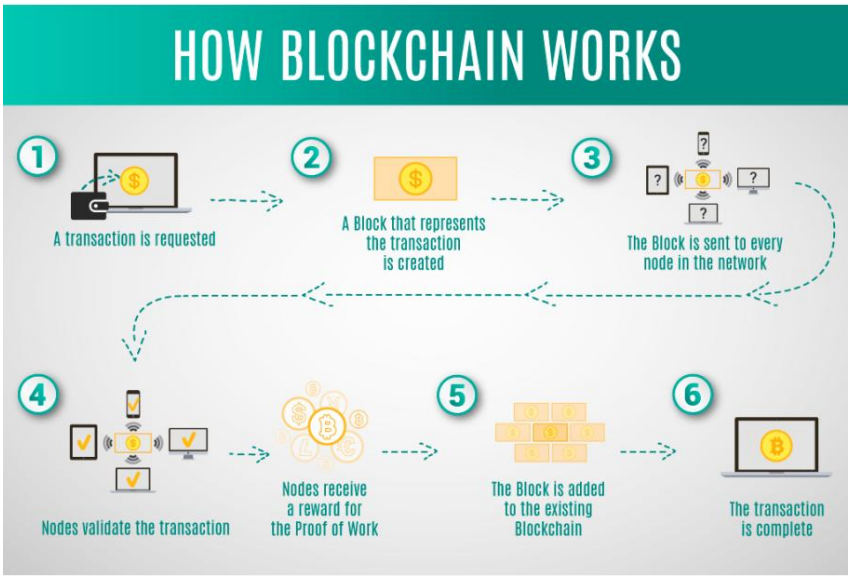
-Transaction initiation stage: Each financial transaction begins with a request, such as sending 1BTC from A to B. It requires the sender to have an electronic wallet (e-wallet), similar to a bank's account number (RIB), to execute the transaction.

-Transaction confirmation stage: The transaction is confirmed and encrypted using its unique address, similar to a PIN in banks. At this point, the transaction becomes visible to all participants in the network. Each node adds the transaction to the block

it is building. Once the block is built, it is mined through a process called proof of work, and the network confirms the transaction.

-Transaction distribution stage: The miner distributes the new block to the entire network. Each node verifies the validity of the new block and adds it to the blockchain. This process ensures the transaction is validated, and B receives 1BTC. (Refer to Figure 01 in the document for a visual representation of the blockchain mechanism.)

Fig.1. Blockchain Technology Mechanism.



Source : http://mlsdev.com/blog/156-ho-to-build-your-own-blockchain-archetecture.

3. General Concepts of Digital Marketing:

Digital marketing is one of the new concepts in the field of marketing and one of the most discussed and growing topics in business in recent years. It has become one of the most important indicators of success and differentiation for organizations in various sectors. It has become a key element in attracting and acquiring customers, retaining them, and building long-term relationships by leveraging its ability to gather and analyze data, understand the behavior of the target audience, and meet their needs

and desires to enhance their trust and achieve the goals of the organization, ensuring its sustainability and continuity.

3.1.Definition of Digital Marketing: The tremendous growth in the use of smartphones and social media platforms, which are among the most important digital marketing platforms, has driven most organizations worldwide to utilize these digital channels. However, this has led to confusion in defining the concept of digital marketing, with some believing that it is limited to social media platforms alone. It should be noted that digital marketing encompasses all digital channels, including smartphones, email, digital content, video, websites, search engines, digital advertising, analytics and monitoring channels, affiliate marketing, and how to use these channels to reach the target audience, analyze competitors and target markets, enhance brand reputation, and enhance innovation and product development (Al-Kamali, 2023) .

-Digital marketing is defined as the process of buying and selling goods and services over the Internet (Sabra, 2010, p. 44.) .

-It is also known as one of the prominent and essential activities of e-commerce conducted online. This is because the marketing function is one of the functions of an organization that seeks to facilitate the exchange and flow of products from the producer to the consumer (Al-Adili, 2015, p. 11.) .

-Digital marketing is based on the principle of interactivity. The term "interactive marketing" refers to the ability to address or send a message to an individual and receive responses to establish direct relationships with them, understand their real needs, and satisfy them in a way that achieves customer satisfaction (Ahmed, 2009, pp. 132-133) .

-Where traditional marketing plays a key role in building awareness and interest, when interaction advances and customers demand stronger relationships with

businesses, the importance of digital marketing escalates, with its main role being to drive business and rally support (Kotler, 2018, p. 74).

-From the previous definitions, it is evident that digital marketing is a modern concept in the world of marketing that focuses on modern communication technology and the internet, as well as various interactive digital methods and media for communicating and interacting with customers and achieving marketing objectives.

3.2.Characteristics of digital marketing: Digital marketing has several distinguishing characteristics that set it apart from traditional marketing, including (Ziyadat & DurmanSulaiman, 2014, pp. 35-36) :

-Addressability

-Interactivity

-Memory

-Control

-Accessibility

-Digitalization

Digital marketing has the ability to address potential customers by identifying them, understanding their needs and desires before the purchasing process, thanks to digital technology that facilitates the provision of information from visitors. It is characterized by interactivity and giving customers the freedom to directly determine their needs through various digital media. Digital marketing also monitors the historical transactions and preferences of customers, retaining various data (memory feature). In addition, customers have the ability to monitor and control the information they disclose, and they can access vast amounts of information through the Internet, whether about their favorite products or competing options before making a purchase decision. Moreover, the digital nature of digital marketing

involves using the Internet for promotion, distribution, and sales, leveraging these advantages beyond the physical attributes of the product itself.

3.3. Importance of digital marketing: The importance of digital marketing lies in achieving several advantages, including:

-Lower marketing costs and maximizing revenue and profits.

-Enhancing customer value through satisfying their needs, desires, and improving service quality.

-Preserving current resources or obtaining better resources through effective strategic implementation.

-Increasing brand awareness and acquiring new customers by reaching targeted customers without geographical barriers.

-Direct and automated interaction with customers and a better understanding of their behavior.

-Absorb unemployment and provide job opportunities.

-Increasing the ability of small and medium-sized enterprises to participate in global trade and thus supporting the national economy (Ghanem, 2009) .

3.4.Tools for activating digital marketing strategy: Digital marketing relies on various digital media and technological tools, including websites, search engines, social media networks, online advertising, instant messaging via smartphones, and other cost-effective and sometimes free tools that are characterized by their high speed. Here are some tools that activate digital marketing strategy (Al-Kamali, 2023).

-HubSpot Application: This application enables the management of an organization's online presence and includes various marketing tools. It focuses on content management for three main applications: blog creation and management tools, templates used in other content forms.landing pages.

-SEO giant: This tool works on keyword filtering and ranks them based on their importance. It analyzes pages, competitors, and monitors the organization's ranking in search engine result pages. It provides powerful means to manage the organization's search engine optimization (SEO) operations.

-Buffer tool: Considered one of the most powerful tools, it allows users to schedule posts and automatically publish them on social media accounts. This simplifies the organization's control over its communication channels.

-Google Analytics tool: This Google analytics tool helps analyze the entire website and understand customer responses to the organization's products. By placing a programming code on the organization's website, it facilitates the management of various marketing campaigns, goal setting, performance measurement, and tracking expected results.

-Mailchimp: It enables the organization to send email campaigns, schedule sent emails, and track customer responses, such as open rates and response rates for each recipient.

-Google Drive: It provides cloud storage for files, ensuring file security. It allows file uploading, downloading, and editing online, regardless of the operating system used by the organization.

Zoho CRM: It is one of the easiest and best customer relationship management applications. Its purpose is to integrate and automate sales, marketing, customer support, and interaction.

Optimizely platform: It helps make decisions regarding changes in the marketing plan through its ability to conduct tests and customization on the website.

4. Blockchain technology and its implications on the Amazon platform for e-commerce, Amazon Web Services (AWS).

4.1.Introduction to the e-commerce giant Amazon: Amazon is considered one of the most important global companies. It is an American e-commerce company founded on July 5, 1994, by Jeff Bezos. Its headquarters are located in Seattle, Washington. It started by selling books and then expanded its product offerings. It later revolutionized the world of shopping and e-commerce, competing with global companies like IBM and Microsoft. Its annual sales value exceeds $100 billion. Amazon aims to fulfill all customer orders every day, meeting their desire for lower prices and the best products and services. It has an integrated website that provides shopping, payment, and product selling services. It is a global e-commerce marketplace that stands out for its excellent customer relationships, constant interaction and engagement with customers. It excels in meeting their needs and desires quickly. Amazon offers a wide range of products through 1.7 million small and medium-sized companies around the world. It provides several services to its customers, including (http://www-annajah-net.cdn.ampproject.org) :

- Product selling service.
- International shipping service.
- Deal of the day service.
- Sending and receiving money service through Amazon.
- Cloud storage service.
- Gift card service.
- Amazon Associates service, which is dedicated to customers to showcase their products.
- Exceptional customer service

In the face of fierce competition, Amazon strives to serve its customers, maintain them, and build trust with them. It follows several strategies, including continuous

diversification and innovation of its products to enhance customer value. Amazon has also worked on international expansion and active online presence, becoming a pioneer in e-commerce. It has expanded through partnerships with global countries. During the first quarter of 2023, Amazon attracted attention by ranking among the top ten brands, with a decrease in value from $350.3 billion to $299.3 billion by the end of 2022.

4.2. Amazon, the e-commerce giant, is a successful model of digital marketing. Amazon has a sophisticated experience in digital marketing, especially during the COVID-19 pandemic. The company has completely redesigned itself and changed its plans and methods in some of its business operations to leverage artificial intelligence (AI) and machine learning, which are considered fundamental pillars in its strategies for digital shopping to give it a competitive advantage compared to competitors, here are some services provided by Amazon to activate digital marketing (Sayf al-Din, 2021, pp. 373-374.):

-"Come, take and go": This service helps in speedy delivery and is a distinctive feature of both digital and traditional marketing. It enhances customer trust. One of the main reasons for customer dissatisfaction is the delay in product delivery, but when you shop from Amazon, you won't have to wait.

-Payment through the Amazon app: This app enables the flow of massive amounts of data and provides a superior online shopping experience for customers.

-Amazon is constantly learning 24/7 and provides a unique customer experience: Amazon stores are equipped with advanced technologies such as computers, sensors, and machine learning. These technologies allow them to gather and analyze all the data and information they are looking for, understand and analyze customer behavior and predict their preferences. They provide customers with a unique experience that achieves their satisfaction.

-FulfillmentCenters: Amazon provides highly organized networks that allow computer systems to efficiently verify and manage various orders. Amazon's centers can handle around 10 million orders. Amazon processes and analyzes the journey of each order, relying on robots in the process of order transportation, supported by artificial intelligence. Algorithms help in learning, and Amazon has a logistical chain that helps track deliveries, leaving a positive impact on customers.

-Alexa's comprehensive system skills: Alexa, Amazon's digital assistant, provides all customer data and information. It relies on voice technology supported by artificial intelligence and has the ability to interact with customers personally, fulfilling their various requests.

-Amazon Web Services (AWS): It is the most comprehensive and widely used cloud platform globally, offering a broader and deeper range of services.

-Targeted advertising technology: Amazon utilizes this technology to track and analyze user activity on the web, understanding their interests and displaying targeted advertisements that align with their preferences.

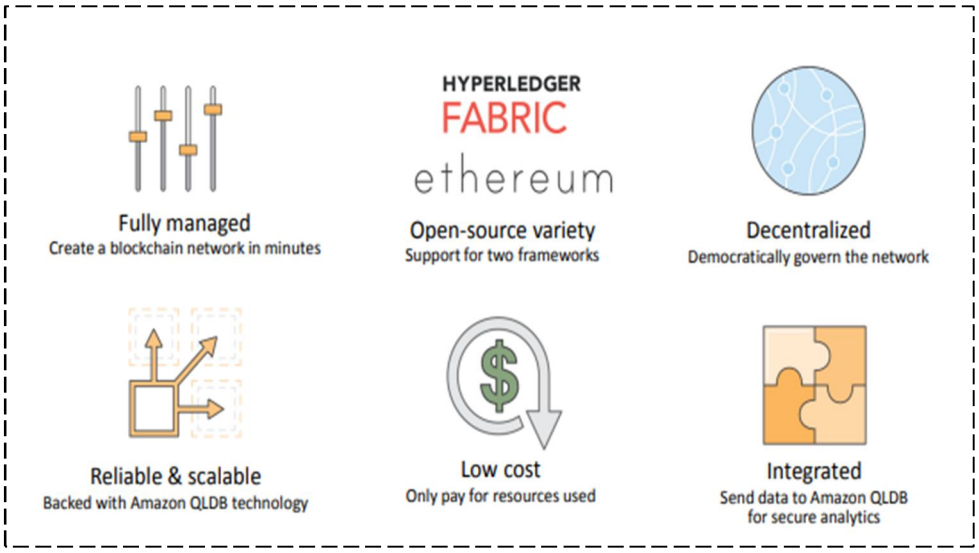
4.3.Amazon Web Services (AWS) is a cloud-based storage and processing server that focuses on integration with various software to drive business, reduce costs, and provide intelligent products and services. It has made significant advancements in offering tools, solutions, and machine learning services. It enables monitoring of the amount of data traffic each client receives, the duration and quality of communications. This descriptive data feeds into machine learning models that predict when and where a buyer will place an order, facilitating shopping, purchasing, and strengthening the business relationship (Sayf al-Din, 2021, p. 374.). AWS is considered one of the most comprehensive systems as it offers over 200 fully featured services from data centers worldwide. It is renowned as one of the leading digital platforms in the field of e-commerce (www.Magtlk.com) . The concept of AWS

revolves around providing multiple services relying on decentralized servers distributed across Amazon's global data centers. These services include:

Amazon Elastic Compute Cloud (Amazon EC2) - Flexible cloud computing service. • Amazon Simple Storage Service (Amazon S3) - Simple storage service. • Amazon Relational Database Service (Amazon RDS) - Service for relational databases. • AWS IoT Core - Internet of Things service. • AWS Lambda - Serverless computing service. • AWS Amplify - Development platform. Amazon Managed Blockchain: Amazon, the technology giant, has launched "Managed Blockchain" service to assist customers in developing blockchain networks without incurring the costs of building their own platform. It is a fully managed service that makes it easy to create and manage scalable blockchain networks. Users can create platforms using Hyperledger Fabric or Ethereum (www.arab-btc.net) .

Amazon Managed Blockchain can create an immutable copy of the blockchain network activity called Amazon Quantum Ledger Database (QLDB). QLDB serves as a fully managed ledger database, allowing for easy analysis of network activity outside the blockchain network and gaining insights into its trends 25 (www.arab-btc.net).

Fig.2. Amazon Managed Blockchain



SOURCE: LanaKalashnyk, Principal Blockchain Architect Ikalash@ Amazon. Com , Building inproved Data Exchange Systems with Blockchain and Ledger Technologies, Date : Atic 2019.

4.4.Reasons for choosing Managed Blockchain by Amazon: Some of the most important reasons for choosing Amazon's Managed Blockchain include (www.geeksforgeeks.org/what is blockchain-on-aws/) :

Application Security:

Cost Reduction ;

Easy Information Sharing ;

Transparency ;

Elimination of Manual Hardware Provisioning:

And here are some specific decisions regarding security considerations that impact the workload of blockchain, which must be taken into account when deploying such workloads on AWS. They are as follows (2023, p. 05.):

- Access management for deploying and managing the managed blockchain infrastructure from Amazon: Authentication is handled by AWS, and permissions are determined through IAM permissions associated with IAM roles, similar to other permissions in AWS. It is recommended to use a least privilege strategy and only allow those who need access rights to perform these activities.

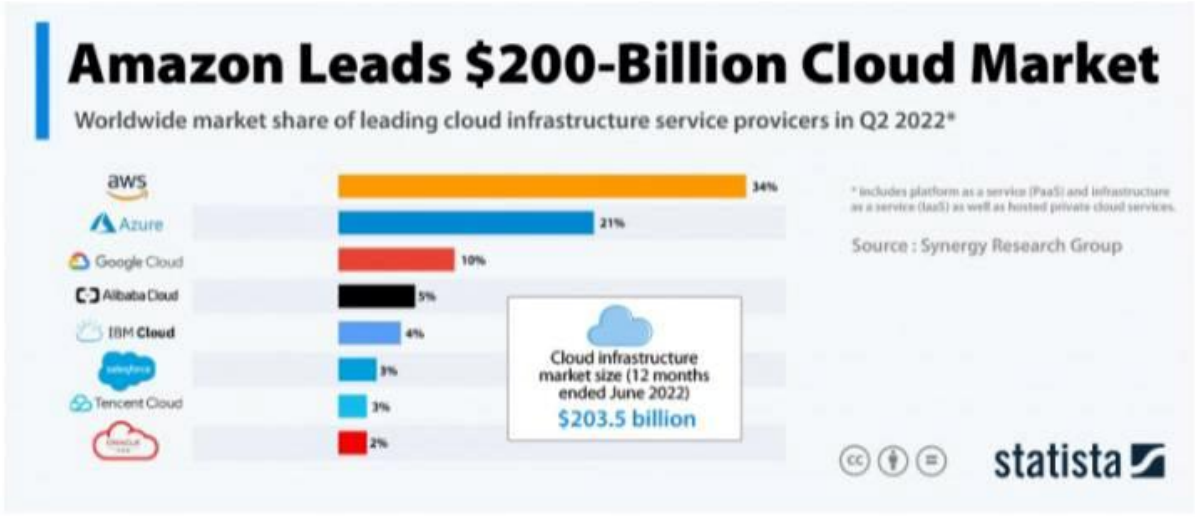
- Access management for interacting with Ethereum API or Hyperledger Fabric: When the first member is created on the Hyperledger Fabric network on Amazon Managed Blockchain, the initial user for the member must be specified. The managed blockchain automatically registers the user identity using Hyperledger Fabric, which is called "bootstrap identity." Despite the identity registration, additional steps must be taken to register this user as an administrator and update the certificates.

- Access management for external users interacting with the blockchain: User interaction with an application running on the blockchain network should be allowed. User accounts need to be created in the form of certificates with appropriate permissions in Hyperledger Fabric CA, which is a mechanism that enables users to authenticate and access the certificate to perform actions.

4.5.Reflection of blockchain on Amazon: The reflection of blockchain on Amazon is evident through the following:

Reflection of blockchain on Amazon's market share: From the figure, we observe that AWS's market share equals 34% among cloud infrastructure service providers. Amazon has become the largest portion among the remaining major competitors like Microsoft Azure and Google. Microsoft Azure owns 21%, followed by Google Cloud with a 10% market share, which is approximately three times smaller than Amazon Web Services.

Figure 03: Market Share of Amazon



Leading Cloud Market: Synergy Research Group

Source : https://www.wpoven.com/blog/aws-market-share/ ,20 mars 2023.

4.6.Impact of blockchain technology on Amazon's sales: Amazon has grown to the highest level every year since its inception, even going back to 2004. In 2021, Amazon achieved modest revenues of $6.9 billion compared to $469 billion. Most of these sales come from retail and e-commerce operations, which the company is well-known for. However, 74% of Amazon's operating profits come from Amazon Web Services.

Here is an overview of Amazon's digital platform sales in global markets in 2021:

The United States of America ranks first as a market for unloading Amazon platform products, with a value of $314 billion, representing 67% of the total global markets. This is because the platform is primarily based in the United States, and Amazon products are targeted to other markets, with Germany being a significant market with net sales valued at $37.33 billion, representing 8%. Britain follows with a value of $31.91 billion, representing 7%, and Japan with $23.04 billion, representing 5%. The

remaining global markets account for $63.5 billion of the total global markets (www.statista.com) .

Table 1. Net Sales of Amazon Web Services (2013-2022)

Sales units : Million US Dollar	Operating income	Operating expenses	Years
3,108	673	2,435	2013
4,644	660	3,984	2014
7,880	1,863	6,017	2015
12,219	3,108	9,111	2016
17,459	4,331	13,128	2017
25,655	7,296	18,359	2018
35,026	9,201	25,825	2019
45,370	13,531	31,839	2020
62,202	18,532	43,670	2021
80,096	22,841	57,255	2022

Source :ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 For the fiscal year ended December 31, 2015, 2018, 2020, 2022.

We observe a significant improvement in sales value through the above table, reaching its peak in 2022. The success of Amazon's e-commerce platform can be

attributed to the positive impact of blockchain technology on digital marketing, summarized as follows:

-Blockchain characteristics enhance and strengthen customer relationships based on trust and transparency, creating informed customers.

-The principles of blockchain, such as peer-to-peer transfer and other standards, distinguish blockchain technology, making it more secure and reliable. When these features are implemented in digital marketing, users can accurately track the source of products, making it easier to identify sellers or manufacturers with the ability to record and track data.

-Blockchain provides protection for user data, which cannot be breached due to the presence of an accurate record on the network. This reduces the authority of companies to control user data, misuse it, or even sell it illegally, thus increasing customer trust.

-Blockchain ensures accountability and transparency through its publicly accessible transaction ledger. This record holds companies accountable for responsible and honest use of data, while also providing security, encryption, and data verification. Each new transaction is encrypted and linked to the previous transaction, making blockchain technology highly secure, protecting information, reducing the risk of falsification, and eliminating fraudulent online advertisements (Al-Barr, 2021) .

-With blockchain, there is direct communication between the seller and the buyer without a third party intermediary. This facilitates ad tracking, enabling easy access to all associated data. Marketers can more accurately determine the profitability of their advertisements across different platforms and websites.

-Blockchain can also reduce significant losses in the field of online advertising.

4. RESULTS AND DISCUSSION

blockchain technology is one of the most important financial technological innovations of the current century. Its applications have expanded and rooted in various fields. As the world relies heavily on technology, especially in the e-commerce sector, digital marketing has made a qualitative leap. The adoption of blockchain technology by many global companies, including e-commerce giant Amazon, has had positive effects on digital marketing. It provides users with several privileges and rights. Digital marketing, which relies on the internet and various digital methods and media, aims to enhance customer relationships and establish trust between buyers and sellers. However, digital marketing faces difficulties in terms of data preservation, protection, and achieving transparency. Blockchain technology contributes to building customer trust in digital marketing by providing protection, security, and transparency, as well as reducing costs.

Study findings:

-Blockchain technology allows for the storage, preservation, and sharing of data across multiple platforms without the need for intermediaries, resulting in lower costs and facilitating various transactions, thereby improving and intensifying digital marketing activities.

-Blockchain reduces exposure to risks and opportunities for fraud as it adheres to security and transparency standards. Blockchain data cannot be hacked, modified, or deleted. Additionally, it enables parties to exchange data and verify ownership. Thus, blockchain technology supports digital marketing and creates professional consumers. Through open platforms, consumers can become professional consumers who contribute value to businesses, similar to producers.

-By supporting blockchain technology in digital marketing and creating professional consumers, it has the potential to increase brand awareness and achieve loyalty.

-Blockchain technology allows for significant control over digital marketing costs as it is decentralized and peer-to-peer, eliminating the need for intermediaries. Smart agreements between the seller and the buyer ensure that the buyer only pays the seller upon fulfilling the terms and conditions of the agreement.

-Amazon is considered an e-commerce giant and a successful model for digital marketing.

-Blockchain positively impacts the net sales of the Amazon platform and the volume of e-commerce.

Based on the findings, we accept the validity of the first and second hypotheses.

Recommendations:

Regulate the opinion of Sharia and the legal framework for the use of blockchain.

Hold conferences and seminars on the topic of blockchain.

Benefit from the experiences of pioneering countries in utilizing blockchain.

5. Bibliography List :

(n.d.). Retrieved from http://www-annajah-net.cdn.ampproject.org.

(n.d.). Retrieved from www.Magtlk.com .

Retrieved from www.arab-btc.net.

Retrieved from www.geeksforgeeks.org/what is blockchain-on-aws/.

Retrieved from www.statista.com.

Ahmed, M. S. (2009). *Electronic Marketing.* Amman: Dar Al-Maseera.

Al-Adili, M. (2015). *Electronic Marketing* (1st ed.). Jordan: Dar Amjad.

Al-Barr, A. M. (2021, 07 17). *Arab Information Technology*. Retrieved 05 04, 2023, from https://www.arab_cio.org.

Al-Jakhlab, D. M. (2021). Accountants' Knowledge of Blockchain Technology and Their Expectations of Its Impact on Accounting. *Islamic University for Economic and Administrative Studies , 29* (02), pp. 1-27.

Al-Kamali, H. (2023, 05 04). *The Professional Guide to Building a Digital Marketing Strategy on the website*. Retrieved from www.icklick-sa.com.

Al-Najjar, A. H. (2019). *Cryptocurrency: An Economic and Shariah Accounting Study* (1st ed.). Jordan: Dar Al-Nafa'is.

Al-Qazi, M. I. (n.d.). *Blockchain*. (Alhasalah Institution) Retrieved 05 04, 2023, from www.alhasalah.com.

Al-Wafi, S. (2022, 06 02). The Strategy of Implementing Blockchain Technology in Digital Transactions: The United Arab Emirates as a Model. *Journal of Economic Studies, , 9* (1), pp. 238-263.

(2023). *Deloitte, Securing Blockchain Workloads on AWS, Copyright 2023 Deloitte Development LLC.*

Ghanem, A. M. (2009). *E-Marketing and E-Commerce.* Egypt: Al-AsriyaLibrary.

Hani, M. J., & yedo, m. (2021, 01 01). The Role and Importance of Using Blockchain Technology in the Development of the Waqf Sector: The Ventra Platform in Malaysia as a Model. *(The New Economy) Journal , 12* (01), pp. 328-342.

HaraqSoumia, & Latrash, D. (2021, 06). The Role of Blockchain Technology in Improving the Efficiency of International Payments: Case Study of Singapore and Canada's Cross-Border Payment with Blockchain Project Jasper-Ubin,. *Journal of Entrepreneurship in Busineess economics , 07* (03), pp. 212-231.

Kotler, P. (2018). *Marketing 4.0: Moving from Traditional to Digital Marketing* (1st ed.). (IssamDawood, Trans.) Amman: Jabal Amman Publishers.

Nadir, T. (2020). Blockchain Technology and Its Impact on the Digital Future of Economic Transactions: Opportunities and Challenges,. *Journal of Contemporary Economic Research, , 03* (01), pp. 98-109.

Sabra, S. T. (2010). *Electronic Marketing* (1st ed.). Jordan: Dar Al-Issar Al-Ilmi.

Sayf al-Din, Q. (2021, 08). Artificial intelligence applications and their impact on the present and future of E-shopping, an econometric study of the Amazon case. *Al-Bushair Economic Journal , 07* (02), pp. 366-385.

Tiklit, A. (2022, 06). Blockchain Technology A Study on the Concept and Elements. *Journal of Legal and Social Sciences , 07* (02), pp. 941-952.

Tumi, R. A.-I. (2022, 06). The Reality of Using Blockchain Technology. *Journal of Legal and Social Sciences , 07* (02), pp. 1358-1377.

Zerdali, A., & Ben Jaddou, A. (2021, 06 30). Green Smart Sukuk Using Blockchain Technology. *Dimensions of Economic Studies , 11* (1), pp. 274-296.

Ziyadat, A. Y., & DurmanSulaiman, S. (2014). *Electronic Marketing: Foundations, Concepts, and Applications in Commercial Banks* (1st ed.). Jordan: Zamzam Publishers and Distributors.