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Blockchain as an inevitable factor for future financial and industrial management

Blokčejn kao neizbežan faktor budućeg finansijskog i industrijskog menadžmenta

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Abstract

Blockchain technology, originally developed for cryptocurrencies like Bitcoin, is becoming a key factor in future financial and industrial management. This paper explores its potential for the transformation of these sectors through analysis of current research and projections of future trends. Blockchain is characterized by features such as decentralization, transparency, and security, which can significantly improve efficiency, reduce transaction costs, and improve data accuracy. In the financial sector, the technology enables the development of new digital assets, smart contracts, and decentralized applications, while in the industrial sector, it can improve logistics, supply chain tracking, and resource management. The paper also discusses the challenges in blockchain implementation, including technical, regulatory, and operational aspects. Through analysis and recommendations, the paper provides insight into how blockchain can shape the future of management and contribute to global economic and industrial changes.
Keywords**:** *blockchain, efficiency and decentralization, transparency and security, financial and industrial management*

Sažetak

Blokčejn tehnologija, koja je prvobitno razvijena za kriptovalute poput Bitcoina, postaje ključni faktor u budućem finansijskom i industrijskom menadžmentu. Ovaj rad istražuje njen potencijal za transformaciju ovih sektora kroz analizu trenutnih istraživanja i projekcija budućih trendova. Blokčejn se odlikuje karakteristikama poput decentralizacije, transparentnosti i sigurnosti, što može značajno poboljšati efikasnost, smanjiti troškove transakcija i unaprediti tačnost podataka. U finansijskom sektoru, tehnologija omogućava razvoj novih digitalnih sredstava, pametnih ugovora i decentralizovanih aplikacija, dok u industrijskom sektoru može unaprediti logistiku, praćenje lanca snabdevanja i upravljanje resursima. Rad takođe razmatra izazove u implementaciji blokčejna, uključujući tehničke, regulatorne i operativne aspekte. Kroz analizu i preporuke, rad pruža uvid u to kako blokčejn može oblikovati budućnost menadžmenta i doprineti globalnim ekonomskim i industrijskim promenama.
Ključne reči*: blokčejn, efikasnost i decentralizacija, transparentnost i sigurnost, finansijski i industrijski menadžment*

1. Introduction

Blockchain technology represents one of the most revolutionary innovations of the 21st century, with an increasing impact on various spheres of business, especially in financial and industrial management. Its decentralized nature, transparency, and security bring new opportunities for optimizing business processes, reducing costs, and improving efficiency. In the era of digitization and globalization, blockchain technology is becoming an inevitable factor shaping the future, transforming traditional management models and opening the door to innovations that will change the way financial and industrial institutions operate.

The initial purpose was designed as a basis for the generation of cryptocurrencies like Bitcoin. However, in a relatively short period of time, blockchain technology found a wide application outside of its basic purpose - creating digital currencies and performing financial transactions on a global level, bypassing banks and other financial institutions and their costs of bureaucratic

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regulation. Today, Blockchain technology is used for the automation of financial transactions, management of smart contracts, state administration (registry books), supply chain monitoring in various industries, identity verification, education (diploma storage), copyright protection, and even in voting through digital platforms, as well as in hundreds of other services (Minović, 2017). In this context, financial management and the industrial sector recognized blockchain as a powerful tool for optimizing operations, minimizing intermediaries and reducing costs.

In industrial management, Blockchain brings solutions that enable more precise monitoring of the movement of raw materials and finished products through the entire supply and distribution chain, which is a key factor for reducing asymmetry and increasing the availability of information to all participants in business processes in a certain industrial branch, first of all managers, for whom the smooth performance of all functions within the production and business systems is of crucial importance, primarily the reduction of bureaucracy, inefficiency and downtime so that, for example, the process of by all participants in the supply chain The unified database and transparency that blockchain brings throughout the chain leads to a reduction in disputes between members of the business system, as it reduces opportunities for fraud and inefficiency. In particular, Blockchain is a new type of distributed database in which transactions are securely appended using cryptography and hashed pointers. Those transactions can be generated and ruled by special network-embedded software - known as smart contracts - that may be public to all network nodes or private to a specific set of peer nodes (Lucena et al., 2018). Companies from various industries can use blockchain to authenticate products, eliminate counterfeits, and optimize production processes, thereby improving operational efficiency and reducing losses. In this way, significant savings in business costs and an increase in the speed of numerous business operations are achieved, which results in an increase in success. i.e., the quality of industrial management.

Blockchain systems are based on the application of cryptographic hash function which are special class of hash function that has certain properties which make it suitable for use in cryptography. Hashing is a mathematical algorithm that maps data of arbitrary size to a bit string of a fixed size (a hash) and is designed to be a one-way function, that is, a function which is infeasible to invert. The only way to recreate the input data from an ideal cryptographic hash function's output is to attempt a brute-force search of possible inputs to see if they produce a match, or use a rainbow table of matched hashes (Mekić, 2018).

The aim of this paper is to show the impact of blockchain technology on financial and industrial management, that it represents their inevitable factor in the coming period, i.e., that the application of blockchain is an indispensable factor in the successful management of companies in the conditions of globalization and the fourth industrial revolution, because its application has a direct impact on the efficiency of business operations, business costs and competitiveness. On the other hand, the paper points out some limitations, primarily from insufficiently developed regulations. The paper shows quantitative indicators and graphs precisely the positive impact of developed regulations in this area, primarily in Germany and the USA, on the expansion of the use of blockchain technology, with a special emphasis on the financial and industrial sectors.

2. Definition and historical development of blockchain

Blockchain is an advanced database management technology that enables transparent movement, sharing and storage of information (transactions) within a business peer-to-peer network. This database is decentralized, which means that it is not under the control of one central entity, but is located on several computers in the network, where each participant owns his own copy of the data. In this way, a high resistance to manipulation is achieved, because it is almost impossible to change the data without the consent of all participants (Zheng et al., 2017).

Blockchain functions by grouping information into blocks and then linking them into a chain, creating a continuous and secure digital record. One can view a blockchain as a public ledger of all transactions that have ever been executed (Fanning & Centers, 2016). Since the data is shared among many computers in the network, the integrity of the information is ensured, and the possibility of manipulation is reduced to a minimum. One of the key features of blockchain technology is precisely the impossibility of retroactive changes, which makes it extremely useful for business systems and various industrial applications.

Various mechanisms are used to ensure the integrity of the network, among which the most famous are proof of work (Proof-of-Work) and proof of stake (Proof-of-Stake). These mechanisms allow a decentralized network to agree on data accuracy without the need for central control. That immediately suggests the possibility of exchanging money and services without the need for a central entity and the added cost that brings with it (Ikeda & Hamid, 2018).

Blockchain technology has its roots in the early 90s when the first digital currencies and cryptographic tools were developed to protect data (Raj, 2019). However, the watershed moment for this technology occurred in 2008 when a person or group under the pseudonym Satoshi Nakamoto published a paper on Bitcoin, the first blockchain-based cryptocurrency (Nakamoto, 2008). Bitcoin has practically implemented blockchain as a technology that allows for the decentralized management of financial transactions without the need for an intermediary, such as a bank. After Bitcoin’s success, blockchain technology has started to be used in many other fields, such as finance, logistics, healthcare, and even government. Its application is becoming more widespread due to its advantages in terms of transparency, security, and decentralization. Over the years, many other cryptocurrencies and blockchain platforms have

developed, such as Ethereum, which introduced the concept of smart contracts, further expanding the possibilities of blockchain beyond the realm of finance. This technology is constantly evolving and is expected to play a key role in the digital transformation of various industries in the future (Bashir, 2020).

3. The significance of blockchain for financial and industrial management

Blockchain technology has become an unavoidable topic in modern business, especially in the financial and industrial management sectors. Its impact on these spheres is reflected in revolutionary changes in how companies manage data, perform transactions, and communicate with partners and users. Blockchain technology represents an emerging and game-changing information and communication technology that completely transforms companies' business operations and ways management achieves strategic business goals and overall business strategy (Tušek et al., 2020). The decentralized and transparent nature of blockchain brings a number of advantages that significantly improve efficiency and reduce costs in business processes. Blockchain opens up new opportunities for investing through cryptocurrencies and tokenized assets. Traditional financial instruments can now be digitized and traded globally, giving investors access to previously inaccessible markets. In addition, a growing number of start-ups are using blockchain technology to raise funds through initial token offerings (ICOs) and other decentralized forms of funding.

One of the most significant advantages of blockchain is its efficiency in performing transactions (Zheng et al., 2017). In traditional financial systems, transaction processing can take days, especially when intermediaries such as banks or other financial institutions are involved. Blockchain enables almost instantaneous transaction execution without the need for third parties, accelerating the flow of capital and optimizing business processes. Blockchain technology significantly reduces the need for intermediaries in business transactions. Traditionally, intermediaries such as banks, lawyers, and agencies have played key roles in verifying and ensuring the accuracy of transactions. However, the decentralized nature of blockchain allows for direct interaction between participants in a transaction, thus removing intermediaries and reducing costs. This is particularly important for industrial management, where many processes rely on intermediaries to provide materials and raw materials.

With the reduction in the number of intermediaries comes a reduction in overall operating costs. The costs of commissions and transaction verification fees are significantly lower on blockchain networks than in traditional financial institutions. This enables companies, both in the financial sector and in the industry, to optimize their business models and redirect resources towards innovation and service improvement. One key advantage of blockchain technology is facilitating individuals and organizations in less developed regions access to financial services. Traditional banking systems often have high market entry requirements, while blockchain allows anyone with internet access to become part of the global economy. In this way, blockchain contributes to increasing financial inclusion, reducing barriers to access to financial resources.

Blockchain lowers the market entry threshold for many companies, especially in industries where the costs of traditional management and transaction systems are high. By using blockchain platforms, small and medium-sized companies can operate more efficiently and access global markets, without the need for expensive and complex intermediaries. This is particularly important for the industrial sector, where blockchain enables supply chain optimization and more efficient resource management. Blockchain technology is significantly changing the way financial and industrial processes are managed. New opportunities for investment, more efficient execution of transactions, reduction of the number of intermediaries and costs, as well as easier financial inclusion and lower market entry barriers, make this technology a key factor in the future development of management. With the further development and expansion of the application of blockchain, it is expected that its impact on financial and industrial management will become even more pronounced, providing companies with the necessary tools for successful business in the digital era (Drescher, 2017).

4. Technical fundamentals of blockchain

Blockchain technology consists of several basic components that enable its functioning and application in various industries. Together, these components form the basis of a decentralized, secure, and resistant-to-manipulation system. Understanding these elements is critical to understanding how blockchain technology can transform operating processes, finance, industry, and other sectors (Chuen, 2015). Blockchain (blocks and chain of blocks), as the name suggests, consists of blocks of data that are interconnected in a chain. Each block contains a sequence of transactions or data that is time-stamped and cryptographically protected. After a block is filled, it is linked to the previous block, forming a chain of data. This structure ensures that data, once entered, cannot be easily changed, as this would require changing all previous blocks in the chain, which is almost impossible without the agreement of the majority of participants in the network.

One of the most important characteristics of blockchain is its decentralized nature (decentralized network—peer-to-peer). In traditional systems, there is a central point of control that verifies transactions. However, in a blockchain system, each participant (node) in the network owns a copy of the blockchain and participates in the verification and confirmation of new transactions. This enables greater security and transparency because there is no need for a centralized intermediary, and the risk of data manipulation is minimized. Cryptography is the core of blockchain technology. It ensures the security of transactions and the confidentiality of data within the system. Each block in the chain contains a hash of the previous block, which ensures data integrity and makes

any change difficult. In addition, cryptographic keys are used to authenticate network participants, further securing transactions and preventing unauthorized access (Bačević, 2023).

A consensus mechanism allows the blockchain network to function without a central authority. These mechanisms allow network participants to agree on the validity of new transactions and blocks (Xiao et al., 2020). The most well-known mechanisms are Proof-of-Work and Proof-of-Stake. These mechanisms ensure that only legitimate blocks are added to the chain, thus preventing double spending or fraud. Distributed Ledger Technology (DLT) is a broad concept in which blockchain is only one of the implementations. DLT is, in essence, a decentralized database managed by multiple parties simultaneously. Unlike blockchain, DLT does not use blocks of records nor creates chains of data. Instead, DLT is based on a network where all participants have access to a single, shared database, allowing for greater transparency. Since there are multiple copies of the database, every change or transaction is public and recorded, making the system highly resistant to hacking and manipulation. The cost of reconciliation between the parties in the system is minimal because it is a single database shared by all participants. In this way, DLT enables a more efficient and secure exchange of data in business networks, although it is not always strictly related to blockchain technology. The basic components of the blockchain system, including blocks, decentralized networks, cryptography, consensus mechanisms, and DLT, enable the creation of a secure, transparent, and efficient platform for conducting transactions and managing data. Together, these components provide the basis for numerous applications in financial and industrial management, giving organizations the ability to optimize their processes and reduce costs, while simultaneously increasing security and trust in the system (Lashkari & Musilek, 2024).

5. Blockchain application in the financial sector

Blockchain technology is increasingly asserting itself as a disruptive force in the global financial sector, bringing with it numerous innovations that significantly improve the transparency, efficiency, and security of financial transactions. Blockchain technology has attracted interest from Central Banks, financial institutions, and technology firms, who are currently discussing and investigating the opportunities and challenges of using Blockchain technology (Kapadia, 2020). The technology enables decentralized record keeping of transactions without the need for intermediaries such as banks, which brings significant savings and reduction of processing time. Blockchain technology and smart contracts, together with other technical solutions, form the basis of the development of a decentralized financial system (DeFi) whose strategic goal is to broadcast most (in perspective all) financial products of traditional finance in a decentralized space, whereby participants will have full control over their assets with the possibility of quick realization of desired transactions. The application of blockchain in the financial sector is reflected in the following paragraphs.

Cryptocurrencies, as digital assets based on blockchain technology, significantly impact the financial sector by enabling fast, secure, and decentralized transactions without the need for intermediaries such as banks. Their advantages include reduced transaction costs, greater transparency, and fraud resistance, but challenges remain in terms of regulatory uncertainty and market volatility. The most famous cryptocurrencies, such as Bitcoin and Ethereum, are becoming an increasingly important part of the global economy, especially in the context of cross-border transfers and decentralized financial systems (DeFi). Digital currencies like Bitcoin created the basis for the modern development of cryptocurrencies. Using blockchain technology, the creator of Bitcoin aimed to create a financial system that works without the involvement and influence of governments and banks. Blockchain represents a type of decentralized technology known as a distributed ledger (DLT) that allows transactions to be recorded in blocks of data linked by cryptographic methods.

One of the most significant applications of blockchain in finance is the concept of decentralized finance, known as DeFi. This paradigm allows users to participate directly in financial activities such as lending, investing, and trading without intermediaries. Decentralized applications (dApps) use smart contracts to automate these processes, providing security and speed in transactions. Smart contracts are an advancement of blockchain technology that enables process automation without the need for an intermediary. These are programs that are executed automatically when certain conditions are met. Smart contracts play a key role in decentralized applications (dApps) and enable direct interaction between network participants without the need to trust a third party (Radziwill, 2016).

Blockchain also enables the tokenization of traditional assets such as real estate, stocks, and bonds. Tokenization enables fractional ownership of assets, making it easier for more people to access investments. This practice improves asset liquidity and reduces barriers to market entry. If we compare it with traditional finance (TradFi or CeFi), the DeFi space is largely unused. However, practice shows that representatives of traditional finance are increasingly focusing on using blockchain in TradFi or combining both spaces. For example, stablecoin issuers are making great efforts to enable alternative, faster, and cheaper global money transfers. The security of financial transactions is critical in today's digital age. Thanks to its decentralized and cryptographic nature, blockchain provides high resistance to manipulation. Each transaction is recorded in an immutable blockchain, making it impenetrable to fraud and unauthorized intervention. One of the key challenges in traditional finance is the time and costs associated with cross-border transactions. Blockchain enables almost instant international transfers, eliminating the need for intermediaries and reducing costs and processing times. Cryptocurrencies such as Bitcoin and Ethereum often serve as the means for these transactions.

Although there are many benefits to using blockchain applications (apps), it can be challenging to integrate them with older systems and off-chain data. Therefore, developers must overcome obstacles before linking their applications with services offered by different blockchains (Javaid et al., 2022). The current deficit of experienced software engineers makes this problem even more complex.

6. Blockchain application in the industrial sector

Blockchain technology is increasingly being used in the industrial sector, bringing numerous advantages in terms of efficiency, security, and transparency of operating processes. As a decentralized and immutable database, blockchain enables industries to improve supply chain management, enhance product traceability, and optimize production processes. One of the key applications of blockchain in industry is supply chain management. Using blockchain, companies can track the movement of raw materials and products in real-time from the manufacturer to the end user. This system enables greater transparency, reduces the risk of counterfeiting, and improves trust between participants in the supply chain. For example, blockchain is used to track food, medicine, and car parts, guaranteeing their authenticity and safety (Adamashvili et al., 2024; Mališić et al., 2023). One example of tracking the impact of blockchain technology in the food industry, compared to other types of improvements, is presented in Table 1.

Table 1. The comparative impact of blockchain technology in the wine industry

Statement	Min	Max	Mean	SD
Blockchain technology and transparency impact	1	5	4.05	1.28
Digital marketing and blockchain impact	1	5	4.05	1.23
Blockchain technology and consumer experience impact	1	5	4.15	1.18

Source: Ostojić, B., Brkljač, M., Jovanović, D., & Balaban, S. (2024). Promotional activities and implementation of blockchain technology in wine production in the Republic of Serbia. *BizInfo*, 15(2), 107-113

Based on the data following the wine industry's example and the research and descriptive statistics results of previously mentioned authors (Ostojić et al., 2024), it may be concluded that blockchain has the potential to increase its presence and consumer trust, which can positively affect its sales. The research shows that applying effective digital marketing management combined with blockchain technology can significantly contribute to the wine industry's development by increasing transparency and the consumer experience (Mališić et al., 2023).

Blockchain allows industrial companies to establish a system of tracking the origin (traceability) of products, which is crucial for quality assurance and regulatory compliance. All product data, including the origin of raw materials, the manufacturing process, and delivery, can be recorded on the blockchain. This data is immutable, which allows for quick identification and resolution of problems, such as recalling defective products from the market.

Smart contracts, part of blockchain technology, enable the automation of complex business processes in the industry. These self-executing contracts automatically enforce the agreed terms between the parties without the need for intermediaries. In industry, smart contracts can be used to automate material procurement, supplier payments, and inventory management, thereby reducing costs and increasing efficiency. The application of blockchain in industrial production enables greater control over all stages of the production cycle. By integrating blockchain technology with IoT (Internet of Things) devices, factories can collect data on machine operation and performance in real-time. This enables predictive maintenance, reducing downtime and increasing overall productivity.

7. Research on future trends

Experts predict significant growth in the use of blockchain in the coming years, with increasing application in areas such as smart contracts and process automation. Predictions indicate that blockchain will become a key component of industrial ecosystems. Potential changes in financial management relate to the fact that blockchain will redefine financial management strategies, especially in the domain of transactions and financial supervision. Decentralized systems will reduce costs, speed up transactions and improve transparency (Zheng et al., 2018). Potential changes in industrial management predict that blockchain will influence the optimization of operational processes, enabling the automation of procurement and inventory management. Blockchain technology is expected to facilitate strategic decision-making through accurate data and improved resource management.

To avoid remaining on theoretical assumptions, as part of the research on this topic, we turned to Nikola Ristić, Business Development Manager at WM Datenservice Frankfurt, for assistance. In the whitepaper he co-authored with the Head of the Business Development Department on the company's website, Daniel Velt, the authors presented that after a long period of decline in the value of cryptocurrencies, institutional players are actively encouraging integrating their solutions using DLT. On the other hand, new players in the market, such as start-ups, are gaining a foothold. Even the first Bitcoin exchange-traded funds (ETFs) recently received approval from the US Securities and Exchange Commission (US SEC). "At the same time, we are witnessing the process of DLT defining new roles and opening the door for new service providers in the digital asset sector of the financial market, which is contributed by the recent approval of the US Securities and Exchange Commission (SEC) for the first Bitcoin ETFs." (Ristić & Velt, 2024).

Parallel with these processes, regulation in the cryptocurrency sector, especially in the European Union (EU) and Germany, is becoming more evident, more precise, and more defined, thus creating a solid foundation for providing security to investors and service providers in the digital asset sector (Lundqvist et al., 2017). However, although digital assets are gaining importance,

their overall value is still minimal compared to the volume of operations in the traditional securities market. According to data from the relevant institutions, Bitcoin has a total value of about 1.2 billion euros, while the capitalization of all cryptocurrencies together is about 2.3 billion euros (Coinmarketcap, 2024). Other digital assets currently play a secondary role. Through a comparative analysis, we notice that Apple, with a market capitalization of around 2.4 billion euros, has a higher value. In contrast, the entire securities market, with around 28.000 billion euros (TheBusinessResearchCompany, 2024), significantly exceeds the crypto market.

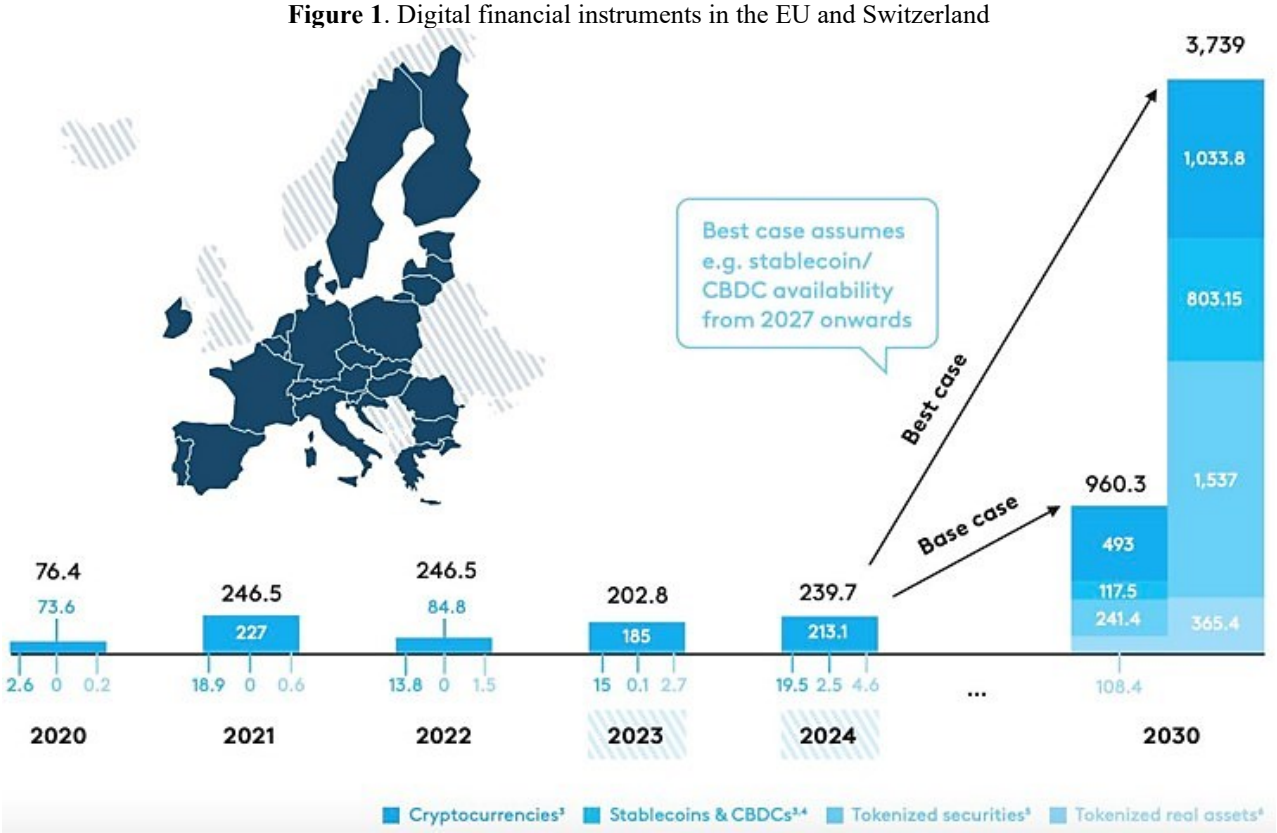
Nevertheless, digital assets have a favorable prognosis. While around 9.000 different cryptocurrencies exist worldwide (Coinmarketcap, 2024), around 500 digital assets with an investment character (yield) and over 70 crypto securities, Crypto securities list according to the German Electronic Securities Act (eWpG) were issued (BaFin, 2025). Compared to the nearly 18 million active conventional securities, according to the Association of National Numbering Agencies, digital assets still represent a low-volume category of total activities (AnnaWeb, 2025).

Table 2. Bitcoin ETFs vs. Non-Bitcoin ETFs in the first half of 2024

Rank	Name	Ticker	Institutional Holders	Institutional AUM
	Bitcoin ETFs	Various	1.100	$11.0B
1	iShares Climate Conscious & Transition MSCI USA ETF	USCL	4	$2.2B
2	XTrackers MSCI USA Climate Action Equity ETF	USCA	1	$2.2B
3	Nuveen Growth Opportunities ETF	NUGO	4	$3.3B
4	JPMorgan BetaBuilders Canada ETF	BBCA	35	$1.9B
5	BlackRock US Carbon Transition Readiness ETF	LCTU	18	$1.2B
6	SDPR Gold Shares	GLD	118	$904M
7	Goldman Sachs MarketBeta US 1000 Equity ETF	GUSA	0	$0
8	iShares ESG MSCI USA Leaders ETF	SUSL	6	$1.4B
9	Invesco QQQ (Nasdaq-100)	QQQ	374	$13.3B
10	JPMorgan BetaBuilders Japan ETF	BBJP	77	$3.8B

Source: Hougan, M. (2024, August 19). *Yes, Institutions Are Still Buying Bitcoin*. BittWiseInvestments. https://experts.bitwiseinvestments.com/cio-memos/yes-institutions-are-still-buying-bitcoin

Figure 1. Digital financial instruments in the EU and Switzerland



Source: BittWiseInvestments. (2023, August 15). Digital assets market projection in the EU + Switzerland. https://bitwiseinvestments.com/

Data shows that Bitcoin ETFs are being adopted by institutions in the United States at the fastest rate of any ETFs in history, with Bitcoin ETFs leading the way far ahead. Even when comparing individual Bitcoin ETFs, research from Bitwise shows that they would still dominate the chart. Further, the adoption of Bitcoin-ETFs by private investors was the fastest in history since the appearance of the first ETF fund in the United States of

America at the end of the 80s of the last centuries. That means there is a lot of interest in cryptocurrencies as an investment class. Why is this data necessary for companies? ETFs in crypto-currencies, whether it is Bitcoin or some other, allow companies to:

- Invest in a regulated manner, indirectly in crypto-currencies, and thus not miss the chance for a return on capital;
- Diversify their investments.

From the previous, it is concluded that cryptocurrencies can become a significant investment class if this trend continues.

An analysis by the well-known German consultancy ZEB shows a large growth of newly issued digital financial instruments (that is, instruments issued via blockchain), including cryptocurrencies, central bank digital currencies, tokenized financial instruments and investment classes. In just 4 years, there has been an increase of almost 70% in the number of issued financial instruments, which speaks of their attractiveness, because they allow companies to save on the costs of issuing financial instruments, and thus reach a cheaper source of financing, contributing to better and more efficient financial management (if we are talking about tokenized financial instruments). In addition, other digital financial instruments, such as digital currencies of central banks, will enable new business models for companies, which can lead to lower costs and increased income. The forecast of ZEB is also interesting, where they forecast a growth of hundreds of percent in the number of issued digital financial instruments by 2030 (Kim & Laskowski, 2018).

8. Conclusion

The central topic of this scientific paper is based on several key aspects that confirm the central role of this technology in the future of these sectors.

Firstly, blockchain technology offers unique solutions for improving transparency, security, and efficiency in managing financial flows and industrial processes. Through decentralized databases and cryptographic methods, blockchain reduces the risk of manipulation and enables secure data exchange among interested parties. That is particularly important in the financial sector, which is increasingly used for faster and cheaper transactions, reducing intermediaries, and facilitating global trade.

Secondly, in the industrial sector, blockchain is becoming a key tool for tracking supply chains, optimizing production, and enhancing maintenance. The ability to track products through all stages of production and distribution creates more efficient processes. It reduces costs, particularly for industries with complex production cycles and low-profit margins.

Projections for the future indicate an accelerated integration of blockchain technology in both sectors. Financial institutions and industrial companies are expected to adopt this technology increasingly, leading to significant changes in managing resources, transactions, and business processes. This transition will enable companies to better adapt to the challenges of the global market and manage risks more effectively.

As authors, we assert that blockchain is not just a passing trend but a key technology shaping the future of financial and industrial management. Its application brings innovations, enabling organizations to remain competitive in the modern business environment. Developing new business models and improving operational efficiency through blockchain highlights its indispensable role in the coming decades.

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