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The impact of blockchain on the modernization of the banking sector

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Abstract

Historically, the banking sector has been one of the most immune to technological innovations, but today, after events such as the global financial crisis, the COVID-19 pandemic, banking is more focused on implementing the latest, cutting-edge technology to restore trust with its customers. Such technologies include blockchain, which makes this article relevant. The banking sector is currently at a turning point. Key indicators of financial institutions are at historical lows. The price-to-book value ratio of the banking sector has fallen to less than one-third of that of other industries. This gap is less a result of current profitability and more of uncertain earnings growth going forward. The aim of the article is to consider the impact of blockchain on the modernization of the banking sector. Research methods: analysis, systematization, comparison, forecasting, generalization, abstraction, deduction. In the course of the study the application areas of blockchain, which can bring banks to a new level of development and efficiency, are highlighted. Blockchain's ledger technology has the ability to quickly and cost-effectively process banking payments, act as an anti-money laundering monitoring tool and even offer alternative options to measure creditworthiness. The results of the study can be applied to the activities of banking institutions in the process of developing digitalization strategies and entering new markets. Conclusions: Blockchain technology has many advantages and promising applications that allow banks to provide better products and services, as well as greater security for customers.

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Keywords

Blockchain, bank, client, security, service.

Introduction

The banking sector is currently at a turning point. Key indicators of financial institutions are at historical lows. The price-to-book value ratio of the banking sector has fallen to less than one-third of that of other industries. This gap is less a result of current profitability and more of uncertain earnings growth going forward. While banks have made significant improvements lately, margins are on a steady downward trend of more than 25% over the last 15 years and are expected to drop to 30% in the next decade that is another 20% [Malkawi, 2023, 285].

Main part

Increasing cross-sectoral competition is a significant concern, but a more serious threat is a global trend that creates new challenges. This threat often comes from different industries based on the advantages of digital cross-industry platforms that drive the recent success of companies such as Amazon, Google, Microsoft, PayPal and Spotify with much better economic models. Some analysts believe that in this situation, banks are moving in the wrong direction, without having a strategy that can secure the future.

However, according to the author, this point of view is too pessimistic and not sufficiently substantiated, since today it can be said with certainty that technological progress and innovation is the core of the banking sector development, allowing stimulating breakthrough business models in the field of financial services. This allows banks to reshape themselves to compete in new arenas organized around specific customer needs. Consulting firm McKinsey notes that institutions that successfully manage the digital transition will become bigger, more profitable and grow faster, as well as create the opportunity to generate value up to $20 trillion [Alsalim, 2023, 80].

Blockchain is one of the technologies that will allow shaping a new banking landscape in the modern world. The blockchain technology market will grow by 62.73% per year over the next few years. As a result of this growth, the market value will be 52.5 billion USD, while the researchers expect that in 2026 the volume of blockchain use in banking and finance will reach 22.46 billion USD (see Fig. 1).

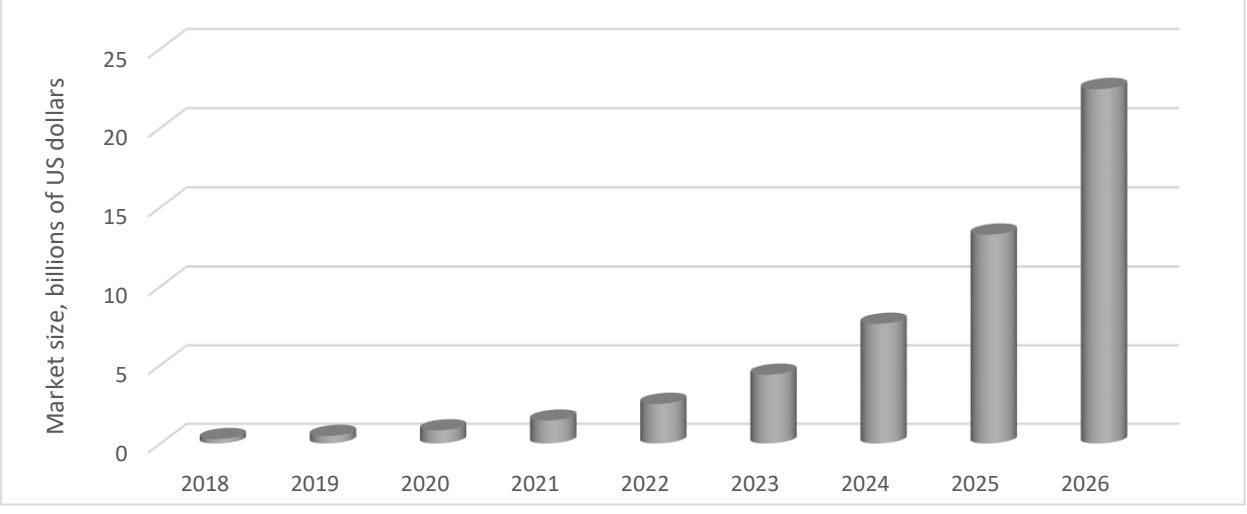

Figure 1 - The use of blockchain in the banking and financial services market around the world with a forecast up to 2026 [Chaudhry, 2023, 107]

Thus, in view of the foregoing, the study of the possibilities of using blockchain by banking institutions to improve existing products and services, as well as to develop new, more cost-effective ones, is an actual direction of scientific research, which determines the choice of the topic of this article.

The works by Yurchenko N.V., Lokhmatova A.A., Matytsina N.P., Aksenova A.R., Elghaish, Faris, Hosseini, M. Reza, Kocaturk and Tuba are devoted to the description of the advantages of blockchain in the financial industry from the side of suppliers of products and services, as well as from the standpoint of consumers.

Prospects for the secure digitization of banking operations and international trade using the blockchain are considered by Medvedeva M.B., Zhizhenko Y.P., Bobrovskaya Zh.V., Poznyakov V.V., Hoang, Yen Hai, Ngo, Vu Minh, Bich Vu and Ngoc.

However, despite the existing works and developments, some problematic points in this subject area require the more in-depth analysis. In particular, the ways in which banks can benefit from blockchain technology need further clarification. In addition, the risks that banking institutions will face if they fail to adapt to the next wave of digital innovation, including the use of blockchain in their business processes, deserve special attention.

Thus, the purpose of the article is to study the impact of blockchain on the modernization of the banking sector.

A blockchain is a shared, public ledger of records or transactions that is open to verification by every participant, but not subject to any form of centralized control. *The Economist* called it a confidence-building mechanism [Fedorova, 2022, 55].

The banking industry is now beginning to fully realize the power of blockchain. Unencumbered by centralized authorities, blockchain facilitates currency trading, obtaining loans, and processing payments, making it a worthy alternative to existing technologies in this industry.

Let us consider in more detail the areas of application of the blockchain, which open up broad prospects for the modernization of the banking sector at the present stage.

Money transfers. The annual volume of cross-border payments is about 600 billion dollars, and this market will continue to grow at 3% per year, driven by the growth of international trade. However, the payment processing tends to be cumbersome, non-transparent and highly regulated. As a result, costs are high. Commissions are usually 2-3% of the transaction amount, but can reach up to 10% [Akharonyan, 2021, 52].

The emergence of numerous FinTech companies in the payments sector (approximately every fourth of them is focused on this segment) increases competition with banks and leads to efficiency gains in some parts of the value chain. In addition, operating companies develop their own solutions. For example, the Society for Worldwide Interbank Financial Telecommunications (SWIFT) is working with banks as part of its global payments innovation initiative to improve the cross-border transfer experience. However, blockchain can bring profit by eliminating some inefficient areas. For example, if counterparties exchange not fiat currencies, but cryptocurrencies, then payments through the blockchain can be made and carried out in a matter of minutes, and not in several days, as in existing systems. SWIFT estimates that the use of blockchain in cross-border payments can save about $4 billion a year.

Some blockchain providers are already active in the payments industry. Ripple connects banks and payment providers through RippleNet, allowing them to make payments with fiat currency or Ripple's native cryptocurrency XRP.

Fraud prevention using "know your customer" technology (KYC). KYC protocols are important tools in the fight against fraud, which is a serious and growing problem. According to a Javelin study,

banks lose between $15 billion and $20 billion annually due to identity fraud alone [Asalbekova, 2023, 5]. Institutions are also under increasing regulatory pressure to protect customer data. Some banks have invested up to 30 million Euros to meet the requirements related to the identification and verification of their customers. A related issue is money laundering.

Blockchain could be a potential solution in this case. To register or open an account, blockchain-based technology allows customers to use a digital fingerprint, which, like a real fingerprint, can be used as a unique identifier. It can be stored in a distributed ledger and used by any bank in the network. The owner of a digital fingerprint can use it to submit new account opening applications and universal verification of his identity. The decentralized blockchain structure eliminates duplication of KYC checks (banks exchange information for authentication), reduces time costs and allows data to be used as it is updated.

According to expert estimates, blockchain-based customer onboarding solutions could provide operational cost savings of up to $1 billion for retail banks worldwide and reduce regulatory fines by $2-3 billion [Sobenina, 2021, 47].

Increasing accountability and transparency of the parties involved in a financial transaction. Blockchain transactions are easily traceable and can be quickly verified. This is because the data generated by these transfers remains unchanged after validation. Since transactions are generated digitally, the risk of errors or intentional falsification is greatly reduced.

Blockchain technology can help banks prevent fraud or other misuse of assets. This is because blockchain transactions rely on two keys: a public key, which every user has, and a private, one-time key, available only to those involved in the transfer. If an attacker gains access to the private key, he will still not be able to complete the transaction.

Optimization of back office operations. Reconciliation and settlement procedures are two examples of back office tasks that can be optimized using blockchain technology. Most of these labor- and time-consuming operations have the potential to be automated thanks to blockchain technology, which reduces the likelihood of errors and increases the efficiency of the process.

Improving customer experience. In banking, blockchain technology has significant potential to improve the consumer experience. Customers can have more confidence in a financial system that offers faster, safer and more transparent transactions. In addition, blockchain technology allows the creation of completely new services, such as peer-to-peer lending or microfinance, which can increase access to financial services for the poor.

Conclusion

Thus, summing up the results of the study, we can draw the following conclusions. As blockchain technology develops, new examples and opportunities for its use in the banking sector appear. Thus, the modernization of the banking sector based on the blockchain is manifested in providing faster, safer and more transparent transactions, reducing costs, simplifying customer identity verification procedures, streamlining back office processes and improving the overall quality of service.

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Влияние блокчейна на модернизацию банковского сектора

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Аннотация

Исторически банковский сектор был одним из самых невосприимчивых к технологическим инновациям, но сегодня, после таких событий, как мировой финансовый кризис и пандемия COVID-19, банковский сектор больше ориентирован на внедрение новейших передовых технологий для восстановления доверия. К таким технологиям относится блокчейн, что делает данную статью актуальной. Банковский сектор в настоящее время находится на переломном этапе. Ключевые показатели финансовых институтов находятся на исторических минимумах. Цель статьи: рассмотреть влияние блокчейна на модернизацию банковского сектора. Методы исследования: анализ, систематизация, сравнение, прогнозирование, обобщение, абстрагирование, дедукция. В ходе исследования выделены области применения блокчейна, которые могут вывести банки на новый уровень развития и эффективности. Технология реестра Blockchain способна быстро и экономично обрабатывать банковские платежи, выступать в качестве инструмента мониторинга борьбы с отмыванием денег и даже предлагать альтернативные варианты измерения кредитоспособности. Результаты исследования могут использоваться в деятельности банковских учреждений в процессе разработки стратегий цифровизации и выхода на новые рынки. Выводы: технология блокчейн имеет много преимуществ и многообещающих приложений, которые позволяют банкам предоставлять более качественные продукты и услуги, а также обеспечивать большую безопасность для клиентов.

Для цитирования в научных исследованиях

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Ключевые слова

Блокчейн, банк, клиент, безопасность, сервис.

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