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DIGITAL TRANSFORMATION OF BUSINESS: APPROACHES AND DEFINITIONS

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Abstract. The relevance of this paper is due to the rapid development and spread of modern digital technology in many areas of human activity, including the banking sector. Effective banking now requires not only a reinforcement of classical banking theory, but also a deep understanding of the future of banking institutions in today's digital transformation. This paper examines information about the change in banking institutions due to the implementation of digital transformation of their systems and the development of financial technology.

Keywords: digital technology, banking system, digital transformation

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ЦИФРОВАЯ ТРАНСФОРМАЦИЯ БИЗНЕСА: ПОДХОДЫ И ОПРЕДЕЛЕНИЯ

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Аннотация. Актуальность данной статьи обусловлена стремительным развитием и распространением современных цифровых технологий во многих сферах человеческой деятельности, в том числе и в банковской сфере. Сегодня эффективное банковское дело требует не только укрепления классической банковской теории, но и глубокого понимания будущего банковских учреждений в условиях сегодняшней цифровой трансформации. В данной работе рассматривается информация об изменении банковских учреждений в связи с внедрением цифровой трансформации их систем и развитием финансовых технологий.

Ключевые слова: цифровые технологии, банковская система, цифровая трансформация

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Introduction

It's hard not to see how rapidly digital technology is having an enormous impact on the nature of today's banking system. Through the coronavirus pandemic, financial institutions have seen the need to accelerate the digital transformation of the banking industry.

When the economy slows down, banks face the challenge of maintaining demand and attracting additional resources to balance the situation. But banks need to adapt their business models for both customer and internal operations to remain resilient and avoid potential future risks.

To improve smart risk management systems, the banking system needs a faster digital transformation and adoption of the latest technology underpinning it.

Materials and Methods

The following was used as methods of research of the given topic: logic, analysis, systematization of data.

Digital transformation of banks

Traditional banking institutions are currently under intense pressure from their stakeholders to adapt to new technologies. However, data security cannot be compromised, as it is a key characteristic of the relationship between banking institutions and their customers. The reputation of banks also has a direct impact on their success, their ability to attract new customers and retain existing customers. These issues mean that making decisions about how to deal with the challenges of implementing digital transformation and cybersecurity in the banking sector is quite a challenge (Rodrigues et al., 2022).

The method of digital transformation of large banking institutions offers useful insights and is applicable to many businesses, proving useful in solving complex criterion problems for stakeholders. As early

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as March 2020, a massive and rapid response by central banks to the dire financial situation caused by COVID-19 could be noted.

Today much attention is paid to the analysis of the impact of digital trends on the procedural scheme of a traditional bank, because it is modern digital technology that significantly affects the key processes of the banking sphere of activity (Khanboubi et al., 2019).

Significant easing of monetary policy, massive provision of liquidity and targeted credit support to the real sector of the economy all played their part in stabilizing financial conditions and lending.

Moreover, more programs were implemented in 4 months than during the entire global financial crisis. Overall, there is evidence that central bank actions have been positive – for access to credit and for the real economy – in very difficult times.

But this early conclusion has two caveats: First, in a pandemic, the role of the central bank was categorically limited. At best, it could soften the blow with credit and financial easing and thus provide a bridge to future economic recovery.

It is important to note that the financial system was quite strong at the beginning of the COVID crisis, reflecting a relatively long global economic expansion, as well as much stronger capital and liquidity buffers in the financial system, especially in the world's largest banks.

A key objective of central bank policy since March 2020 has been to provide sufficient support to the real economy to prevent a large negative feedback loop between bankruptcies and defaults in the real economy and the financial sector (Nguyen et al., 2022).

Thus, in response to the economic collapse, the management of banking institutions began to implement sets of programs of digital transformation of internal systems, which was to help overcome both real and financial difficulties caused by the pandemic.

The actions and programs of the central bank can be divided into three categories: monetary policy, provision of liquidity/lender of last resort for the financial system and targeted lending programs aimed at supporting the players of the non-financial sector: firms, households, municipalities.

It is worth noting that these actions were accompanied by regulatory easing measures, including easing capital and liquidity standards, and relaxing market regulation and restrictions on activities in the financial sector, again to make financing more available at lower cost.

Easing monetary policy during an economic downturn is a fairly standard operation. Almost all central banks around the world have cut interest rates sharply. In many advanced economies, interest rates have been set at the effective lower bound, and "unconventional" policies, such as asset purchase programs, have been initiated or expanded (“Global Economic Prospects, June 2020,” n.d.).

Moreover, a number of emerging market central banks have not only cut rates, but also started asset-buying programs, something that was new to some of them. The notable exception is that central banks with negative interest rates have not cut their rates further.

In the end, the massive asset purchases paid off: yield volatility was reduced within days. Asset purchases thus eased global financial conditions, allowing banks, investment firms, individuals, and countries around the world to continue to finance themselves and provide bridge loans (Mosser, 2020).

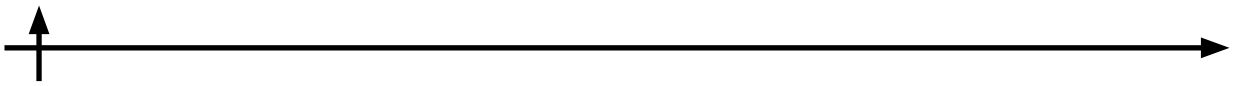
Digital banking

Of course, digital banking today is different from traditional banking both structurally and physically.

It is worth noting that in an increasingly digital world, trust is still at the heart of banking. However, the nature of banking and financial services is changing dramatically.

To improve practice, key banking decision makers must work on innovative actions related to the use of big data, distribution and sharing of cloud technology. This will reinforce key banking principles that encourage the multifaceted use of digital technology to achieve strategic goals (Tseng et al., 2021).

Over the past decade, the industry has seen a decline in profitability as measured by the return on tangible capital. These trends accelerated after the 2008 financial crisis.



At the same time, technology has made banks more competitive. Advances in digital technology are actively changing the very nature of banking, as banks are already distributing services through mobile technology.

The Internet is having a big impact on changing the traditional banking system: this includes changing the way financial service providers perform their role. This, in turn, is changing the nature of banking services and the way they are delivered.

As a consequence, in order to compete in a changing digital landscape, banks must adapt. The banks of the future, both incumbent and challenger, must address the transformation of liquidity, data, trust, competition and digitalization of financial services. Against this background, incumbent banks are focused on reinventing themselves, while challenger banks are starting from scratch (Fama, 1980).

Also, one of the main obstacles to the implementation of a general-purpose central bank digital currency (CBDC) is the risk of bank disintermediation, potentially jeopardizing financial stability and the bank lending channel of monetary transmission (Fegatelli, 2022).

For this reason, there is a need to revise the existing analytical framework. Banks perform payment and transfer functions for the economy. However, modern digital technology can now facilitate and even perform these functions. The way transactions are recorded in ledgers is changing, facilitating the creation of both public and private digital currencies.

In the past, banks operated in a world of information asymmetry between themselves and their customers, but this is now actively changing. This differential gave one bank an advantage over another through knowledge of its customers. The digital transformation that financial technology brings with it reduces this advantage, because this information can be analyzed digitally. Even the nature of deposits is changing. Banks have to accept deposits and process transactions made digitally, either in Central Bank Digital Currencies (CBDC) or cryptocurrencies (Broby, 2021).

This creates a number of problems, among which are found: changes in the way financial services are provided; the need to discuss sustainability, security and competition in payments, which also affects the issue of private and public issuance of money. In other words, there are more and more questions on the topic of threats to the financial stability of banking institutions.

The development of modern financial technology has made it possible to convert the format of storing money into digital form, which from now on allowed creditors and investors to receive funds directly through the Internet, and transfer money digitally (Song and Thakor, 2010).

On this basis, there are discussions that financial technology is capable of fully displacing the traditional banking sector, and the competitive pressures that arise will determine the banks of the future.

Typically, the digital transformation process (the adoption and use of new digital technologies to drive significant business improvement) is presented as a strategic and rational process with clear roles, the most important of which is the chief digital officer, who is often appointed in a temporary position to lead the digital transformation.

At present, it is permissible for digital transformation of an area of activity to take place without a chief digital officer, but instead to be managed jointly with a team of top managers. Based on this, it can be argued that digital transformation can be understood as distributed leadership, allowing for a more holistic approach to mobilizing and sustaining digital transformation (Lorentzen, 2022).

Robotics is increasingly being used to automate customer interactions, increasing efficiency, control and execution quality. Application Programming Interfaces (APIs) bring the same type of functionality to mobile banking. They are also used to authorize the use of banking data by third parties.

Overall, financial technology has evolved to the point where online banking and banking as a service are challenging incumbent companies and the nature of banking intermediation. Banking is rapidly being transformed by changes in such technologies.

Electronic and mobile banking is ubiquitous today. Almost everybody uses it in some form or another – typically via mobile apps or web services. And there are many suggested and implemented security means, such as SMS codes, mobile tokens and so on (Wodo et al., 2021).

In financial theory, banking provides an accounting system for transactions and a portfolio system for holding assets. For the banks of the future, this will not change. In practice, traditional banks compete for deposits through the interest rate they offer.

This makes the transactional element dependent on the resulting debits and credits they process, turning banks into accounting organizations with an intermediary function. Because this occurs in response to competitive forces, the overall equilibrium is passive. Thus, the banking business model is vulnerable to disruption, especially as a result of innovations in financial technology.

A bank's equity capital consists of authorized capital and outstanding reserves. The latter are held by the bank to protect the bank's deposit customers. This portion is also mandated by regulations to protect customers and the entire banking system from systemic failure. These protections include requirements to hold cash reserves or other liquid assets.

Practice shows that banking services can be provided over the Internet without these safeguards, fundamentally changing the nature of protection and the way banks convert assets. Already today, the development of financial technology is actively influencing the competitive environment and thereby determining the nature of the bank of the future.

To increase efficiency and strengthen competitiveness, banks need to promote smart and practical branded services especially self-services at the same time promote a universal adoption of e-banking system services that add entertainment or extra convenience to customers such as ease of usage including digital wallet, real-time interaction (video banking), ATMs integrated with smart phones, website customization, biometric services, and digital currency. These services can contribute to an increasing adoption of online services (Yusuf Dauda and Lee, 2015).

In this respect, the threat to incumbent banks comes from peer-to-peer Internet lending platforms, as they perform the brokering function of financial intermediation without the use of a bank balance sheet. Nevertheless, it should not be forgotten that financial technology in banking is not a novel technique, as its use to facilitate electronic markets has been going on since the 1980s.

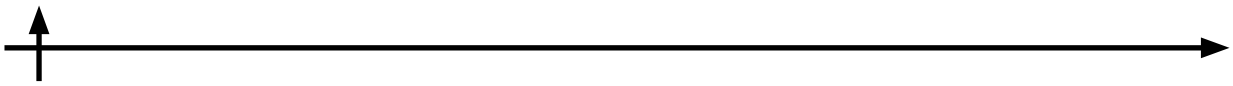
However, the nature of financial asset trading is changing. Price-setting can now be done via the Internet, moving liquidity from centralized marketplaces to decentralized marketplaces. Meanwhile, the nature of money itself is changing. A digital wallet for cryptocurrencies performs virtually the same storage and transmission functions as a bank, and cryptocurrencies are increasingly being used for payment. This shift to credit and debit cards, as well as solving the problem of double spending where digital money can be cryptographically secured, has led to the possibility that paper money could be replaced entirely in the future (Zuo et al., 2021).

Along with these trends, when considering what the bank of the future will look like, one must understand the unregulated lending market that competes with traditional banks. This part of the lending market has seen the growth of shadow banks. Shadow banks have taken significant market share away from traditional banks.

They perform the brokerage function of banks, but regulators have only partial control over their risk transformation or leverage. The emergence of shadow banks has been facilitated by financial technology that uses alternative trading systems that function as electronic communication networks.

They facilitate the creation of dark pools of liquidity in which buyers and sellers of bonds and securities trade over-the-counter. After the credit crisis in 2008, total assets of broker-dealers began to differ from bank assets. This indicates a change in lending conditions.

As noted, the bank of the future in its various manifestations will be a consequence of the evolution of the current banking business model. It has been suggested that there are three aspects of this evolution of banking, namely competition, complementarity and co-evolution (Kitsios et al., 2021).



Although liquidity transformation is evolving, it remains central to the role of the bank. Against the backdrop of all these trends and changes, new dynamics define the future of the banking sector. Market liberalization has already changed banking by increasing competition.

The impact of technology on productivity should prove positive and improve the functioning of the national financial system. New fee-based ancillary financial services as well as proprietary use of balance sheets have become widespread. Risks have been protected and even packaged into tradable products.

Over the past three decades, several financial and banking sector reform programs have been implemented in various countries. The main purpose of these reforms has been to improve the oversight and regulation of the banking sector, to introduce a mechanism for bank privatization, and to stimulate competition and financial innovation (Shaikh et al., 2017).

At the same time, financial technology is contributing to the development of banking as a service. We are talking about situations where financial services are provided by a broker over the Internet without reference to a balance sheet. This could include "robo-advisory" asset management, peer-to-peer lending and crowdfunding.

Its growth will be aided by Open Banking as it becomes more geographically widespread. Commercial pressure is also shaping the banking industry. The desire for cost efficiencies has forced incumbent banks to look at their personal costs. As technology advances, bank branches are closing. Branches make it easier to withdraw or transfer deposits, and challenger banks don't find it as easy to attract new deposits.

The use of modern digital technology can significantly improve bank operations in three ways: in reducing operating costs, in simplifying transactions between customers within the same network, and in reducing increased time costs (Ahmadirezaei, 2011).

Therefore, the banking sector is looking for new customer touch points, such as supermarkets, post offices and social media platforms. These structural challenges are occurring at the same time as the development of retail. Banks are actively adopting automated cash registers, reducing branches and headcount. Digital online transactions have become the norm in most developed countries.

Public administrations are investing in the digital transformation of their citizen-centered services and internal administrative processes. They are using co-production approaches and engaging different types of stakeholders in these transformational processes to improve service quality and create public value (Scupola and Mergel, 2022).

Bank financing is also undergoing significant changes. Traditional banks tend to finance illiquid assets with short-term and volatile liquid liabilities. This is one of the key factors contributing to the 2008 credit crisis. Providing liquidity as a last resort is central to the asset transformation process. In this respect, the banking sector experienced a shock in 2008, the so-called credit crisis.

The aforementioned liquidity mismatch meant that the system could not absorb all the risks associated with lending. Central banks were forced to resort to quantitative easing as a result of the failure of funding mechanisms. The image of the entire banking sector has been tarnished, and the banks of the future will have to deal with this problem. The structural weakness of the banking business model cannot be solved. Nevertheless, the latest Basel standards call for further risk mitigation, improved leverage ratios, and higher levels of reserve capital.

Another lesson from the credit crisis is that more attention needs to be paid to risk culture, governance, and oversight. The independence and effectiveness of the board of directors and the experience and qualifications of senior management are now the focus of regulatory attention. Internal controls and data analysis are becoming more robust and effective, and more attention is being paid to banks' stable funding ratios.

Central banks must also adapt. To limit the elimination of intermediaries, they must ensure that the economic design of their sponsored digital currencies focuses on access for banks, interest payments relative to the bank policy rate, bank storage limits, and convertibility with bank deposits. All of these

changes have implications for banks, especially with respect to funding, safe deposit storage, and the interaction of digital currency with traditional paper money.

API technologies

A new way of dealing with banking data protocols is a secure way to provide consensual access to bank customers' financial information. Essentially, a bank customer grants a regulated API permission to securely access their banking site.

This access is then used by the banking organization to make direct payments or upload financial data in order to provide a solution. This heralds the era of customer-centric banking.

Open banking was a response to the documentation of people's desire to change bank accounts to make it easier to change banks by allowing customers to delegate their financial data to others. This has resulted in a plethora of data-driven applications. Open banking, by virtue of the use of modern digital technology, gives added impetus to reshaping the future of banking. In addition to all of the above, it will reduce the cost of ownership of the IT infrastructure of banking institutions (Ilin et al., n.d.).

Open banking has a number of completely revolutionary implications, including the ability for a customer to make a change of banking institution and still have a clear view of the new banking financing, which will also allow finances to be consolidated in one place. Open Banking APIs create a secure, data-driven online financial marketplace.

Open Banking allows developers to create separate API-based solutions that solve very specific problems, such as cash flow-based credit ratings. As the results show, Open Banking will promote competitiveness, innovation, and new product development (Williams, 2021).

Conclusion

In today's cryptocurrency-driven world, central banks do not have the same control over the money supply. Financial technology is changing the future of banking and the way banks intermediate, facilitating the emergence of digital money and the transfer of financial assets online.

It is worth noting that the use of modern digital technology makes banks more customer-oriented and more competitive. Thus, we can conclude that it is now strictly necessary to resort to digital transformation in order to maintain the level of competitiveness of most of the banking sector.

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