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DIGITAL BANKING AND E-COMMERCE IN THE CONTEXT OF DIGITALIZATION OF BUSINESS MANAGEMENT

Abstract. The article considers the growing trends and specifics of digitalization of the banking sector. The main directions of digital transformation and the emergence of new financial market players due to the institutionalization/symbiosis of traditional banks with technology firms are studied. It is noted that this process can have far-reaching and ambiguous consequences and threats, such as moving away from the model of perfect competition and transition to platform-based competition, monopolizing markets by displacing some firms and creating favorable conditions for others, financial and reputational risks for banking structures, which provide payment cards, increase advertising prices, etc.

The identified problems of traditional (classical) banks — sluggishness, impossibility of prompt adjustment of strategies, the use of outdated development tools, in particular, the closure of branches and the use of outdated technologies, loss of control over the payment system; the thesis is substantiated according to which the mechanisms of their functioning and management need cardinal corrections and innovations, first of all in approaches to interaction with clients and realization of e-business.

Outlined strategies for the operation of new digital banks — the introduction of digital operations with a focus on efficiency, accessibility, transparency and consumer protection, increasing competition with traditional banks with the acquisition of customers of the latter. The consequences and prospects of the arrival of high-tech companies Apple and Google in the banking market are analyzed. Specific examples show the reasons for the bankruptcy of the previously prosperous companies Kodak (USA), Blockbuster (USA).

The authors argue that digital banking is gaining a global character and the effective operation of national financial structures requires taking into account the threats and lessons of the onset of high technologies in practice. The features of the development of a digital bank on the European continent and in the United States have been clarified.

Keywords: digital banking, digitalization, traditional banks, fintech, cashback, blockchain, smart contracts, cloud technologies.

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ЦИФРОВИЙ БАНКІНГ ТА ЕЛЕКТРОННА КОМЕРЦІЯ У КОНТЕКСТІ ДІДЖИТАЛІЗАЦІЇ УПРАВЛІННЯ БІЗНЕСОМ

Анотація. Розглядаються наростаючі тенденції та специфіка діджиталізації банківської сфери. Досліджено головні напрями цифрової трансформації та виникнення нових суб'єктів фінансового ринку внаслідок інституціоналізації / симбіозу традиційних банків із технологічними фірмами. Відзначається, що цей процес може мати далекосяжні та неоднозначні наслідки і загрози, як-от відхід від моделі досконалої конкуренції й перехід до конкуренції на основі платформ, монополізація ринків із витісненням одних фірм і створенням сприятливих умов для інших, фінансові й репутаційні ризики для банківських структур, які надають платіжні карти, підвищення цін на рекламу тощо.

Виявлені проблеми традиційних (класичних) банків — неповороткість, неможливість оперативного коригування стратегій, використання застарілих інструментів розвитку, зокрема закриття філій і використання несучасних технологій, втрата контролю над платіжною системою; аргументовано тезу згідно з якою механізми їх функціонування та управління потребують кардинальних корекцій та інновацій, насамперед у підходах до взаємодії з клієнтами та здійсненні електронного бізнесу.

Окреслені стратегії функціонування нових цифрових банків — запровадження цифрових операцій з орієнтацією на оперативність, доступність, прозорість і захист прав споживачів, посилення конкуренції з класичними банками з перебиранням на себе клієнтів останніх. Проаналізовано наслідки і перспективи приходу високотехнологічних компаній Apple та Google на ринок банківських послуг. На конкретних прикладах показано причини банкрутства раніше процвітаючих компаній — Kodak (США), Blockbuster (США).

Доведено, що цифровий банкінг набуває глобального характеру й ефективна діяльність національних фінансових структур потребує врахування у практичній діяльності загроз і уроків наступу високих технологій. З'ясовано особливості розвитку цифрового банку на Європейському континенті і в США.

Ключові слова: цифровий банкінг, діджиталізація, традиційні банки, ФінТех, кешбек, блокчейн, смарт-контракти, хмарні технології.

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Introduction. The global nature of cyberspace determines the need to create the latest formats of digital banking. The need was especially acute during the COVID-19 pandemic and the crisis caused by it, during which the population and companies significantly intensified the use of online banking. Traditional banking structures are losing customers who are moving to digital fintech institutions — companies that use technology and innovation and are actively mastering credit and financial activities. Technology giants have launched a new model of interaction with classic (traditional) banks. There is a significant transformation of the banking systems of the world and the European Union, where banks of a new format are active. Strategies for the development of new financial market participants are based on the use of the latest information and communication technologies, the provision of digital services and close interaction with customers in the context of digitalization of business management and its prospects/consequences.

Research analysis and task setting. The issues of evolution and transformation of the banking sector based on a new format of application of information and communication technologies (ICT) are actively covered in scientific papers, analytical reviews, reports of financial institutions, as well as the media sphere. The task of creating and functioning of digital banking of the future is devoted to the article of specialists of the global consulting company in the field of management, strategic management and risk management Oliver Wyman (USA). It is rightly noted that the current stage of development of financial technologies (fintech) and increased competition for consumers is accompanied by the creation of various consortia, including traditional financial institutions, technology giants and other large corporations [1].

The peculiarities of new formats of ICT application in the modern economy are to a certain extent highlighted in the works [2; 3]. R. Lawrence and S. Westcott (both of Great Britain) outlined a number of possibilities of retail banks to minimize threats from the onset of high technologies [4]. The Digital Banking Maturity 2020 study by the international company Deloitte contains a global comparative analysis of digital retail banking channels, describing modern digitalization strategies [5]. Particular attention is paid to the consequences and prospects of penetration of technology companies such as Apple [6] and especially Google [7] in the banking sector. Of great importance for practical activities is the clarification by European experts of the prospects for the transformation of the banking sector of the European Union in the light of the implementation of the Second EU Payment Services Directive 2 (PSD2) [8].

Based on this, the objectives of the article include: study of recent trends in the functioning of traditional banks in the light of threats and lessons of high technology (high-tech); coverage of the latest tools and strategies of modern banking; analysis of the consequences and prospects of high-tech companies entering the banking services market; disclosure of the reasons for bankruptcy of previously successful companies; outlining the specifics of the functioning of digital banking on the European continent and in the United States; identifying threats to the spread of fintech in terms of market monopolization; consideration of new digital banking opportunities in the light of the implementation of the second EU Payment Services Directive PSD2.

The methodological basis of writing the article is a logical-dialectical method of cognition of economic phenomena and processes. In disclosing the factors and tools to ensure competitive advantages and strategies for entering the banking market of new digital entities used the method of analysis and synthesis, the principles of formal logic, methods of inductive and deductive analysis. Studies of the functioning of traditional banks, the transformation of business models and relationships with customers of technology companies Google and Apple were based on the use of methods of comparative and retrospective analysis, ratings, content analysis.

Results of the research. Digital banking has emerged due to increased consumer demand for more efficient and secure ways to conduct financial transactions and access bank accounts, which cannot be provided by traditional banking institutions. Today's traditional banks are sometimes associated with rudimentary phenomena such as CDs, travel agencies located on the main streets, clumsy tankers or attempts to catch a taxi in the rain [9]. The problems of traditional banks lie in their sluggishness, the impossibility of prompt adjustment of strategies; despite the satisfactory performance of information technologies, the latter are in many cases obsolete. At the heart of their systems are «big hardware» mainframes like IBM, which run on the old COBOL

programming language, which is difficult to integrate with the innovations used to serve digital banking customers. Much of the bank's IT budget is spent on supporting old computer code, and replacing the old system while maintaining the bank's performance is too difficult. The emergence of new technologies and fintechs (firms that use new financial technologies) has led to a radical transformation of financial services, due to which the mentality of the current generation of consumers no longer sees the need to physically visit a bank office, let alone use paper money; preference is given to the efficiency, reliability, speed and accessibility offered by new banking entities.

Acquiring the status of a fintechbank client takes place without much effort — by registering an account online. Such ease, together with a line of attractive products and services, quickly became a threat to existing participants in the banking market. Recently, a number of banks have emerged that operate exclusively in digital format, including Chime (USA), Monzo and Revolut (both UK) and N26 (Germany). They have no branches; operation is carried out through mobile applications with round-the-clock support in real time; free payments abroad are provided with the provision of virtual payment cards, which can be used immediately through Apple Pay or Google Pay applications. The use of these tools has helped Monzo Fintech in the four years since its founding (2015) to attract more than 3 million customers from the UK [9].

The banking regulatory system, unlike other industries, took more time to start taking advantage of the fourth industrial revolution. Until ten years ago, regulators banned the creation of new banks if there was no confidence in their safe operation; there could be no question of granting permission to purchase new software and use cloud services. The new banks operate on a fundamentally different basis, focusing on the so-called «flexible» management principles, in which products / upgrades are developed taking into account the recommendations of experts from the relevant departments who are jointly responsible for the project. With such a less hierarchical approach, it is quite possible to create a rapid prototype model of the institution's operation in at least two weeks, followed by beta testing based on customer feedback and further refinement.

Globally, there are two trends in the development of digital banking. On the one hand, the growing number of its subjects on the European continent, on the other — large-scale coverage of consumers in the United States. While in Europe in recent years there has been a rapid growth of digital banks, in the US this trend is slower — due to the incomparably larger size and complexity of the country's financial infrastructure, which is an obstacle for innovative startups seeking to enter the transaction account market. However, changes are taking place: if previously large credit institutions such as JPMorgan Chase, Bank of America, Citigroup and Wells Fargo traditionally dominated customer service, now the number of fintechs offering mobile accounts (current accounts) and online alternatives to banks is currently growing. Most of them provide a number of free services, including service, overdraft or foreign transactions. In the strategy of attracting new customers, such conditions are very attractive, because the annual fee of the average American household just for servicing the current account is about 329 US dollars (253 pounds) [10]. Tools and systems of new fintech institutions, such as Varo Money, Simple, SoFi, Bankmobile, Chime, in addition, offer customers a Visa debit card with a number of features that allow you to manage your account through a mobile application.

There are four main directions of transformation of the modern banking system under the influence of digitalization of management:

1. Digital transformation of bank transfers — transactions no longer require the participation of bank staff.
2. Rethinking the banking business model using blockchain technology and smart contracts, which help reduce fraud in the banking sector (especially in transactions such as payments, direct investment, management of trade, expenditure, mortgage, credit histories, etc.). At the end of April 2021, there was announced the decision of the financial holding JPMorgan (USA) in cooperation with the largest bank DBS and investment group Temasek (both Singapore) to create a blockchain-based Partior platform for interbank payments, trading and foreign currency settlements. The implementation of the project will significantly speed up transactions — due to repeated verification of details by banks, the current radial model of cross-border payments is time consuming and leads to

frequent delays, as the final calculations require confirmation by various intermediaries. Using the benefits of blockchain technology and smart contracts will provide transparent instant payments for various financial transactions, change the methods of clearing, the system of wholesale payments and the use of digital currencies of central and commercial banks [11].

3. Application of cloud technologies — thanks to the provision of network access, banks have received many new opportunities: cooperation with partners for the development of digital products, optimization of business processes, the introduction of artificial intelligence. Diversification of the services provided confirms the successful dynamics of digital banking. On April 20, 2021, MasterCard acquired Ekata for 850 million US dollars, which made it possible to identify online the person carrying out the transaction in real time, and thus — insurance of funds transfers through accounting for various indicators that may indicate fraudulent activities [12]. Another example is the creation of a strategic alliance of global corporate technology providers for the financial industry NCR Global (USA) and Google on the Google Cloud platform, in which the former will expand the cloud availability of its digital banking software portfolio, including retail banking services and platform for NCR Authentic card and payment processing [13].

4. Entering the banking market of technology giants, especially the so-called Big Tech — large technology companies that have excessive influence in the US information technology industry, namely Amazon, Apple, Facebook, Google and Microsoft. Excessive influence means the company's ability to seriously influence the markets it enters.

Until recently, traditional banks attributed to their advantages a number of factors that considered a guarantee against fintech threats: branch coverage, customer trust and government regulation. Nevertheless, these benefits no longer work and quickly disappear. Prior to the 2007 financial crisis, there was a close correlation between the size of retail bank deposits and the density of its branch network. Despite the rapid growth in the number of Internet users, customers continued to visit branches to service accounts and to familiarize and purchase new banking products. The physical presence of branches gave customers a sense of security and trust, so that banks with a higher branch density could benefit from the network effect. Currently, this correlation has weakened: according to the international consulting firm McKinsey, in 2009—2019, the 25 largest US banks were able to increase deposits while reducing the number of branches by 15% [14, p.2]. Another example: the large British operator TSB Bank, owned by the Banco de Sabadell banking group (Spain), closed a third of its branches in 2020 — 164 out of 475 — with a loss of 960 jobs [15].

These trends will have far-reaching implications for business management in terms of modifying customer motivation, professional level of staff and financial regulation. The wave of branch closures, on the one hand, will save banks money, but, on the other hand, will encourage customers to re-evaluate established preferences: the former loyalty may turn into a decision to switch to a provider that works in digital format. In order to remain competitive, banks are forced to respond to the steps of digital competitors, whose services are usually reliable, flexible and creative.

On the one hand, banks and other institutions that practice payment and credit card transactions in North America, Europe and Australia were aware of the threat of high technology, but on the other hand, their investments were mostly focused on digitizing existing products or processes rather than preparation for a fundamentally different future, in which consumer life is based on the use of digital platforms. Based on this, attention should be focused on another problem of managing both traditional banks and diversified companies — a narrow and false understanding of new phenomena: the vision of only a product or service in the system of product or service lines, and not the business model as a whole. For example, the former leaders of their markets Kodak (USA), Blockbuster (USA) and Nokia (Finland) assessed only the product (and its accompanying functions) that threatened them (and, therefore, required improvements or replacement of their own analogue), and not the competitor's business model that allowed the creation of new ecosystems. Focusing only on these characteristics, the existing companies were unable to rethink the industry strategy, which allowed dominating earlier, thus losing the opportunity to survive. Thus, the closure of bank branches as a tool to reduce costs without developing their own ecosystem indicates a misunderstanding and underestimation of the threats posed by fintech companies that provide

similar services based on digital technology, at lower cost and better conditions for customers. This leads to the conclusion that the strategy of substitution of goods or services on the criteria of lower cost and higher quality is no longer effective. The use of digital cameras was not due to new image quality and lower film costs, but due to the ability to transmit digital images electronically, Kodak's bankruptcy was not due to inability to keep up with technology, but the inability to assess new cultural and behavioral changes in consumer preferences. Blockbuster, a leader in the video rental market with the development of the Internet and video streaming, has rapidly lost popularity, and its attempts to catch up with the market by providing online services have been in vain.

In this context, the consideration / evaluation of the Apple Payment Card by Apple (USA) by banks as just another card (discussed below) would be a complete mistake; the most important transformational aspect of their strategy will be the rejection of product focus with the transition to competition based on platforms. While the motivation of traditional banks is mostly focused on profitable sales or transactions, the operation of the platform is no longer associated with profit from individual sales, but with the expansion of the user base as a value for the entire network, contrary to the strategies of most banks. For platforms like Amazon or Facebook, customers do not mean ordinary people who pay for goods or services, but — the most valuable asset, one of the reasons for the purchase of 19 billion US dollars instant messaging system WhatsApp from Facebook. As of 2019, Apple Card covered 1.4 billion active Apple devices, Facebook had 2.4 billion users — a reality that will undoubtedly reduce the importance of the traditional banking sector [16]. The sooner banks realize the threat of underestimating the challenges of fintech, the higher the likelihood of increasing their effectiveness. In order to survive, instead of closing branches, launching mobile applications and relying on regulatory barriers, they must draw conclusions from the mistakes made by Kodak, Blockbuster, Nokia and other companies.

Digital platform owners demand that processes be simple, uninterrupted, and instantaneous. The desire to provide these criteria for new consumers is accompanied by increasingly stringent requirements for the optimization of payment transactions to financial service providers, which in case of non-compliance with the requirements there is a real opportunity to refuse. Practice has confirmed the ability of large technology firms to take over payment functions and consumer lending and thus completely exclude banks from this process. A similar situation can be observed in Asia, where the payment systems Alipay and WeChat (both China) and Grab (Malaysia) have won a significant share of the market of retail banking and payments.

After the global financial crisis and the rescue from the collapse of many banks through financial assistance, confidence in the banking system has been shaken. Arguably, tech companies like Amazon, Google, and Apple are now more trusted by consumers than banks. Billions of devices and services of these companies have already received bank data and access to payments in the form of applications and mobile wallet cards for financial transactions of customers. Recently, they have moved to banking.

Practice shows that the onset of high technology can sometimes determine the financial and reputational risks for banking institutions that provide payment cards. An example is the transnational investment bank Goldman Sachs Bank USA (USA), which suffered losses by issuing Apple Card payment cards for payments with Apple Pay in stores, applications and the Internet. In addition to the 300 million US dollars spent on the card, the bank is also forced to bear the costs of servicing payments, processing cash and customer support. However, the main reason for the conflict of interest was Apple's dominant position in the relationship — the presentation of the product launch used the slogan «Created by Apple, not the bank», which leveled a significant role of Goldman Sachs in the project [6].

Inequality of relations is confirmed by the terms of the partnership: Apple Card holders are not penalized for late payment on loans, while in any bank in case of late payment to the client is usually charged a higher rate with the subsequent transfer of the case to collectors. In addition, Goldman Sachs prohibits the transfer of user data to third parties, which is nonsense for today's business environment. The bank loses reserves of additional earnings due to the inability to provide information to advertisers about users' payment transactions, their purchases and other information. What can't be said about cardholders who have a certain profit.

Apple, for its part, did not pursue the goal of making a profit at the expense of Apple Card¹ holders by controlling purchases, the main goal was to more firmly tie the clientele to the company's services. As a result, users will no longer be able to abandon the iPhone, as Apple Card service is possible only with an Apple smartphone and constant access to the Wallet, which stores the image of the card. However, users are provided with very loyal terms of service, such as receiving 3% cashback (refund) for goods or services purchased directly from Apple (including Apple retail stores, Apple online store, App Store, iTunes, Apple Music and other structures owned by Apple), Uber and UberEats, Walgreens and Duane Reade pharmacies, Walgreens and Walgreens.com, T-Mobile, Nike, Exxon and Mobil, and Panera Bread, 2% cashback on purchases via Apple Pay and 1% — for all other purchases. Cardholders do not pay an annual fee, fees for international transfers and penalties for late payment, when buying an iPhone they are also provided with interest-free installments for 24 months [17, p. 5; 18].

Google continues its strategy of penetrating banking markets using the potential of its instruments in the financial market — the traditional trust in the brand and its recognition/influence. According to the international consulting company McKinsey & Company, Google's financial products are trusted by 58% of consumers, which is better than Apple (56%) and Facebook (38%), but worse than Amazon (65%) [19, p. 5]. Previously, the advantages of financial structures in the real (physical) dimension were realized through the ownership of the best / prestigious real estate, favorable location (in particular, in crowded places with heavy traffic and developed infrastructure); in a similar way, they conquered entire markets. But Google now owns the asset / property that primarily attracts most users — virtual real estate — a database coupled with advertising — no longer as a marketing or management tool, but as a development strategy. This once again confirms the correctness of one of the definitions of globalization as a knowledge-based economy, and one of the theses of R. Metcalfe's law, according to which the usefulness of the telecommunications network is proportional to the square of the number of connected users, in other words, its value increases quantity (although, in our opinion, the law does not work fully, as not all network nodes establish and will establish connections with each other).

In 2018, in order to provide banking products, Google began to enter into agreements/alliances to implement «smart current accounts» (smart checking accounts) based on partnerships with traditional financial institutions: Citibank and Stanford Federal Credit Union (both — USA) Google Cache co-branding project (digital platform), which was joined in 2020 by six banks: two federal banks — BBVA USA and BMO Harris, two municipal Coastal Community Bank and First Independence Bank, SEFCU credit union and online bank Bankmobile (all — US), which will service Google Pay user accounts [7]. The partnership model / algorithm consists of opening Google accounts through Google Pay e-wallet and providing an interface by the corporation with deposit storage and account maintenance by partner banks without creating their own infrastructure and simultaneously promoting their brand on the Google digital platform. Compliance with Google's criteria and standards will allow banks to improve the quality of customer service, increase their number and increase the visibility/influence of their own brand. Therefore, Google's entry into the banking market does not mean opening its own bank; traditional banking partners will service the accounts. Cooperation with banks will allow the company to increase market share and transform into the largest financial and information center. The specifics of the operation of Google Cache, as noted above, will be that the accounts — the code name of the project — despite the merger under the brand will be in financial institutions and, most importantly, will retain federal insurance contributions.

¹ Apple Card is just an example of the symbiosis of the bank and fintech, but its use is not every day, because not all ordinary customers regularly buy Apple products, including rarely update their iPhone and do not plan to purchase a new Mac laptop until the current model fails. When comparing the Apple Card cashback program with payment instruments of other fintechs, it is seen that buying Nike or Walgreens products is profitable [20; 18], but in everyday life, many payment cards of other financial institutions offer better deals and rewards for buying food, gasoline and food in restaurants. For example, Amazon Prime Rewards Visa Card guarantees a refund of 5% on all food [21], others (American Express, Capital One, etc.) — significantly higher cashback for visiting restaurants [22; 23].

Big Tech companies view financial services as a way to reach out to users and collect valuable data. One of the key elements of Google's strategy is advertising, which banks and credit unions spend a lot of money on being able to appear in Google search results. Google's desire to penetrate deeper into the financial market is also determined by competition with other major payment systems — especially Apple Pay, which lags behind Google Pay: according to a leading research company in the field of mobile communications Juniper Research (UK), in 2020 the number of users Google Pay in the world should have numbered 100 million (in 2018 — 39 million), and Apple Pay, respectively, 227 and 140 million [24, p. 34]. The leader here is Alipay (China) with 1.3 billion consumers (but 2/3 of them are concentrated in the country) [25]. Google can face serious competition from the Facebook network, which in 2019 launched the Facebook Pay tool, which works in all major products of the company, including the social network itself, Facebook messengers, Messenger, Instagram and Whatsapp. A bankcard or PayPal account is linked to Facebook Pay, the settlement currency can be chosen by the user [26]. More than 2.5 billion users of this ecosystem can become a potential audience of the Facebook Pay payment system, and the Android operating system has about the same number of active users.

It cannot be ruled out that advertising will become one of the determinants of Google's business strategy, as a lot of money from banks and credit institutions is spent on being able to stay in Google search results both when processing regular results through search engine optimization (SEO) and in search engine marketing systems (SEM). Google makes money from personalized ads, so its services collect users' personal information to create the most accurate image of a potential buyer. In addition, Google and Facebook often influence the information that is broadcast to users on social networks. The banking sector has been wary of Google's ambitious plan for its relationship with financial institutions. Google has actually crossed the line that distinguishes banks from financial technology companies — the right to open current accounts. Based on this, there is a natural assumption that banks and credit institutions that do not establish a partnership with Google run the risk of disappearing from Google search results, in other words — become irrelevant. It is considered possible to identify other reasons for serious concerns on the part of many banks because of Google's partnership with Citibank and Stanford Federal:

First, the biggest threat will be that Google may give these banks a competitive advantage, and all the attention paid to the news of the partnership with Google will lead to backlinks that will benefit Citi and Stanford Federal.

Secondly, due to the belief of the current digital generation of consumers about the greater reliability of the data of the two brands compared to other institutions.

Third, due to the high level of user loyalty, the new Google project may affect the cryptocurrency industry and undermine the popularity of bitcoin and other cryptocurrencies.

Since Apple introduced the use of the Apple Card in partnership with Goldman Sachs, Google's cooperation with other banking structures is an example of mutually beneficial cooperation between classic banks and high-tech companies. Google's market share in the near future is quite real, as the financial services of large technology companies are increasingly attracting consumers. Undoubtedly, the boundaries between technology and banking will continue to blur. Apple's transition to acquiring, the growing number of digital current accounts from non-banking organizations and the emergence of a new payment tool Facebook — Facebook Pay — confirm the gradual loss of traditional control over the payment system by banks.

The European continent is also undergoing a transformation in this area. New trends in the digitalization of the banking and financial sector of the European Union require consideration in practice. The adoption of the Payment Services Directive (PSD2) [25] ushered in the era of open banking and requires clarification of the impact on the functioning of banks and the payment infrastructure. Following the first Payment Directive (2009), the main achievement of which was the creation of the Single Payment Area (SEPA), the EU began the transition to PSD2: on January 13, 2018, the next stage of its implementation was completed. By this date, banks have brought their activities in line with legal requirements.

The EU Payment Services Directive 2 (PSD2) was adopted in early 2018 and introduced new rules for the provision of payment services. The main goal of PSD2 is to complete the

formation of a single market for transactions in the EU, transform them towards greater innovation and implement the following tasks: increase the protection of international transactions of the European Union, which should be as reliable as any domestic for each country; securing users of digital technologies and increasing competition in the banking sector.

Under the new rules, a dual identification system has been introduced that uses online banking and performs online transactions. The document finally entered into force in September 2019, and EU banks gradually began to move to a new system. The adoption of PSD2 determined the acceleration of revolutionary mobile banking in Europe due to increased competition from companies such as Monzo, Revolut and Starling (all — the UK) with large financial institutions that have long dominated the market. The second directive has a more ambitious goal than the first — to create a level playing field for traditional financial companies and the new entrants that have emerged as a result of digitalization. One of the main requirements of the new legislation is access to customer accounts for third-party companies. In other words, an organization that owns a customer's payment account (such as a bank) will allow another organization (such as a fintech startup) to access it and, with the customer's consent, use the data to create new products and manage finances. The winning aspects of the directive include a reliable customer identification system and enhanced customer protection. It introduces specific requirements for banks and payment companies, as well as enables payment service providers to carry out financial activities, fully regulates this market, imposes rights and obligations on market participants, clearly identifies the entities responsible for data transfer to third-party providers [8].

The benefits of the new legislation for payment providers are obvious. They will have customer data that they can actually use to create services that are more efficient and, consequently, attract more customers. Open banking gives financial institutions the opportunity to receive the following benefits:

1. Development of new intelligent technologies (IT) by joint efforts of developers.
2. Conducting a more thorough analysis of the innovation market.
3. Optimization of clients' access to financial services (Omni channel interaction).
4. The emergence of new sources of income for banks due to the possibility of selling their data as a service or charging a fee from third-party providers for connection to the bank's interface.
5. Reduce costs and minimize / allocate financial risks in IT development by connecting new partners.

At the same time, it should be recognized that the creation of additional security measures for users might generate some difficulties for businesses operating in the EU, as the transformation of the payment system will take time and resources. This directly applies to both gambling, where online transactions are carried out (account replenishment, withdrawal of money), and business structures. For the latter, new benefits open up: for example, through the use of a block chain, customers will be able to put a company in a separate white list and thus further interact with it without an additional step of identification. This feature of the PSD2 rules will provide a significant advantage to firms operating within the framework of maximum transparency. In general, PSD2 will make online payments more reliable and reduce the risk of fraud. Nevertheless, for companies and banks, the transition to the new system can sometimes be tedious and somewhat reduce the mobility of payments, as the process of user identification will increase by one-step.

Similar changes are imminent in Ukraine — one of the main conditions for the development of Fintech is to bring Ukrainian legislation in line with European standards, which is why the implementation of the provisions of the PSD2 Directive has also begun. On February 19, 2021, the Verkhovna Rada of Ukraine supported the draft law № 4364 «On Payment Services» [28], which provides for the concept of open banking and implementation of the basic principles of the EU directive, which will promote the integration of the Ukrainian market with the European one. The implementation of the directive provides for the following conditions:

1. Development of payment market infrastructure.
2. Oversight of new transfer providers.
3. Technical readiness of market participants to open the API (Application Programming Interface) — a way to communicate and exchange information between computer programs. As a

result, the data will be used to create innovative products in the financial services market, with the consent of the client, in order to comply with the legislation — the European Union Directive on Personal Data Protection — The EU General Data Protection Regulation (GDPR) [29].

The directive does not only apply to countries that are part of the Eurozone. Transactions where the other party to the agreement is located in another part of Europe are also subject to PSD2. Therefore, Ukrainian startups that are interested in entering the foreign market must master the provisions of the document, as the latter will determine the model and directions of their cooperation with European banks. This is especially true of regulatory tools to ensure the protection of personal data, which clearly stipulates that the party transferring the data must be sure that their use has a specific purpose. For example, payment-processing data may no longer be used for marketing purposes and passed on to marketing companies unless there is a corresponding agreement. For illegal collection and transfer of information without the consent of the client in accordance with paragraphs 5 and 6 of Article 83 of the Agreement, severe sanctions are imposed — up to 20 million euros or up to 4% of turnover [6].

In this context, there is a clarification need. Practice shows that violations are always considered together. For example, incorrectly sending a scanned copy of a passport will not mean an automatic fine of 20 million euros. However, theoretically, even such an innocent act is subject to regulation, which requires careful identification of banking staff who have the right to access the customer database. Therefore, servicing through European banks and receiving European service requires strict compliance with the requirements of PSD2, otherwise cooperation will be impossible.

In 2021, the National Bank of Ukraine plans to activate work on the transition of banks to the international standard ISO20022 in order to modernize the financial infrastructure of Ukraine and its integration with world markets. In addition, knowledge/implementation/strict compliance with European legislation based on the use of modern innovative technologies will contribute to the further digitalization of e-commerce and digital banking in Ukraine.

Conclusions. Digital banking is becoming global, the COVID-19 pandemic and the resulting crisis have significantly increased customer interest in online banking, and banks' prospects are already inextricably linked to digital technologies.

Traditional banks are experiencing increasing competition from firms that practice the use of financial technology; in the long run the boundaries between technology and banking will be steadily blurred. Apple's and Google's move to use credit cards, the growing number of digital current accounts from non-banking institutions, and Facebook's new payment tool mean a steady loss of traditional control over the payment system by banks. In the near future, Google will accelerate the transformation of the financial services sector and the reorientation of a large number of consumers towards the banking business of Big Tech. It is also impossible to exclude new ways of world domination: the removal of companies from the Google search engine in case of not finding a financial compromise, a departure from the model of perfect competition, monopolization of markets with the displacement of some firms and creation of favorable conditions for others, financial and reputational risks for banking structures that provide payment cards, advertising price hikes and the like. It looks likely to transform Google into a financial center and a data center — an ecosystem and a platform.

Problems of traditional (classic) banks — clumsiness, outdated development strategies, in particular, the closure of branches and the use of outdated technologies have led to their loss of control over the payment system; the mechanisms of their functioning and management need radical corrections and innovations, first in approaches to interaction with clients and realization of e-commerce.

The emergence of new technologies and fintechnologies has led to a radical transformation of financial services, due to which the mentality of the current generation of consumers no longer sees the need for physical visits to the bank office, let alone the use of paper money; preference is given to the efficiency, reliability, speed and accessibility offered by new banking entities.

New trends in the digitalization of business management, banking and financial sector of the European Union, the adoption of the PSD2 Directive ushered in the era of open banking and requires strict adherence to practice.

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