

Transformation of the Banking Sector in the Digital Era

PAVLO M. RUBANOVⁱ

In the context of global digitization of the economy and development of alternatives to banking services, the transition to open platforms and their integration with the FinTech sector becomes relevant. The article identifies four levels of integration between banks and FinTech companies: traditional banking, digital banking, open banking and Open-X banking. At the current stage, the first three models coexist. Traditional banking includes classic banking services (loans, deposits, payments) for individuals and corporate clients, as well as investment banking. Digital banking involves the use of various channels of banking services for clients, among which the digital channel plays a significant role. The analysis of digital banking let to define its main features in terms of the financial services consumers and the bank. Open banking is based on the bank's ability to engage non-banking intermediaries ecosystems and third parties to the banking service provision and to interact with them through such technologies as application programming interfaces (API). In the research of the open banking the main reasons for the cooperation of FinTech companies with banks are considered. These include enhanced visibility by partnership with an established brand, achieving economies of scale, etc. The highest level of integration of banks and FinTech companies and the future development trend of the banking sector is Open-X banking. The main features of Open-X banking include: sharing rather than sole ownership; information is a primary resource instead of tangible assets; partnerships between market actors are formed instead of developing the product independently or purchasing ready-made software solutions; focus on providing a positive customer experience from working with the bank instead of offering a specific product.

Keywords: banking sector, banking services, digital banking, digitalization, FinTech, integration, open banking.

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Introduction. FinTech companies are becoming more active participants in the financial services market. They entered this market segment, first of all, with the most profitable and digitizable banking services, i.e. their provision does not require the physical presence of a bank or other mediator. The development of the FinTech segment transforms the banking sector, leads to a change in traditional banking business models. Nowadays, many banks continue to follow the traditional management approaches and generate their income from two main sources - interest and commission income, derived from the classic banking services provision: lending, deposit operations and cash and payment services. However, in the context of the global digitalisation of the economy, the emergence of new financial management tools and banking services and the development of alternatives to banking services, the transition of banks to open platforms and their integration with the FinTech sector are only matters of time.

Problem statement. The issue regarding the impact of information technology on the banks' functioning and the prospects of interaction between the banking and FinTech segment is the subject of many domestic and foreign scholars' research. Among foreign researchers,

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these problems are studied by J. Cherowbrier [4], K. Pousttchi, M. Dehnert [7], A. Walker [8]. Among the studies of domestic scientists in this field, we can mention the works of such scientists as L. V. Zherdetska, D.I. Gorodinskii [9], A. A. Derkach, M. V. Korneeva, and O. V. Abakumenko [5]. Besides, representatives of the largest banks and leading financial companies in the world, such as Deutsche Bank [6], Capgemini [1-3] and others study the partnerships between banks and FinTech companies.

The purpose of the research is to study the levels of integration of the banking sector and the FinTech segment, to analyze current forms of interaction between banks and FinTech companies.

Results of the research. Depending on the degree of integration of the banks and the FinTech segment, there are four levels of interaction between these entities in the financial services market: traditional banking, digital banking, open banking and open-X banking (Fig. 1).

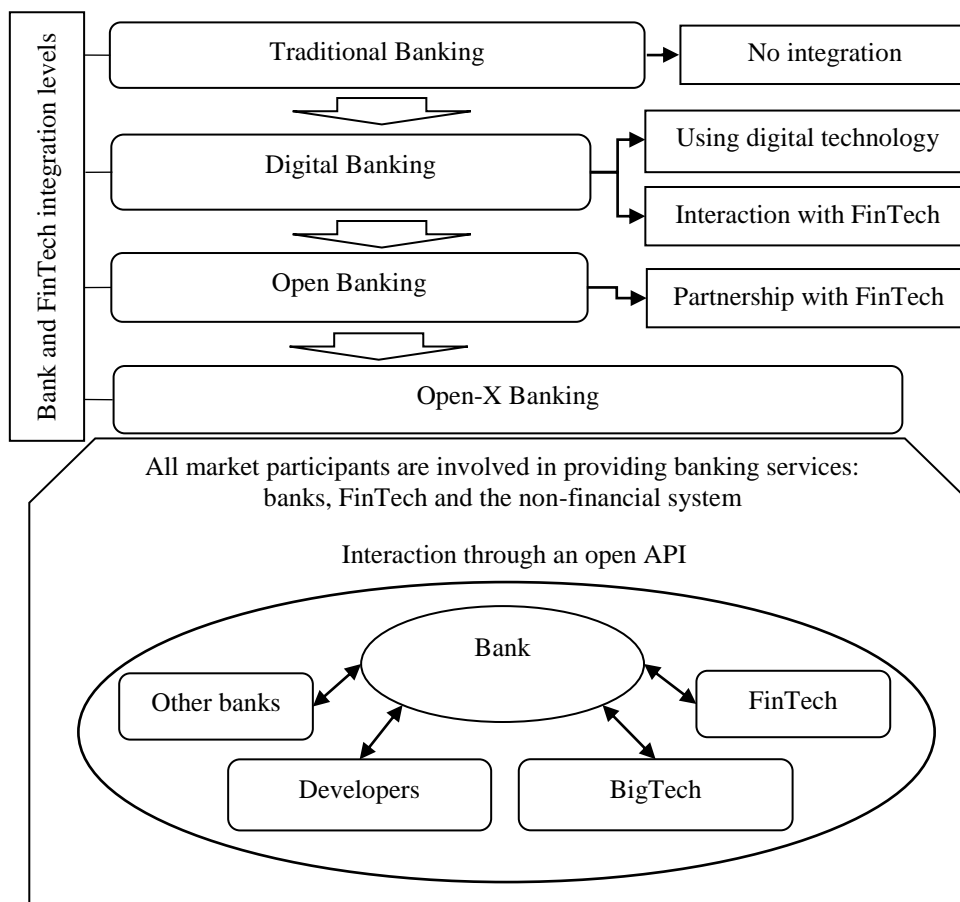


Figure 1. Bank and FinTech integration levels

Traditional banking includes classic banking services (loans, deposits, payments) for individuals and corporate clients, as well as investment banking. The digital banking model depends on the degree of digital maturity of the banking institution, the level of information technology implementation in its activity. In general, digital banking involves the use of various channels of banking services for clients, among which the digital channel plays a significant role.

Open banking is based on the bank's ability to engage non-banking intermediaries ecosystems and third parties (eg FinTech companies) to the banking service provision and to interact with them through such technologies as application programming interfaces (API).

Open X Banking is the bank's ability to control data and to create a collaborative environment to develop and to deliver banking services through partnerships with financial and non-financial corporations, providing the creation of new and improved products for banking users [2].

At present, some banking institutions retain the most traditional way of doing business and almost do not use digital technology as tools to extend banking services and attract customers. At the same time, understanding the need to change and adapt to the new challenges of the market and customer needs has provided the transition of many banking institutions to digital and open banking.

Thus, today there are three coexisting models - traditional, digital and open banking. Traditional banking is represented in countries where there is a low FinTech development and there is no demand for digital services among consumers, that is, these are mainly low economic development countries.

At the same time, the analysis of statistics shows that there is a high level of demand for digital banking or the coexistence of traditional and digital banking forms in the global dimension. Thus, according to a survey of banking consumers conducted in 2016 in 32 countries [4], we can conclude that having a full range of digital banking services for consumers is much more important than the physical presence of its subdivisions. Among three European countries taken for analysis (UK, Germany and France), only in France, the consumers prefer the physical presence of the bank to digital services (Fig. 2). At the same time, it should be noted that at least 57% of consumers gave a positive answer regarding the importance of digital banking in all considered countries and on average in the world.

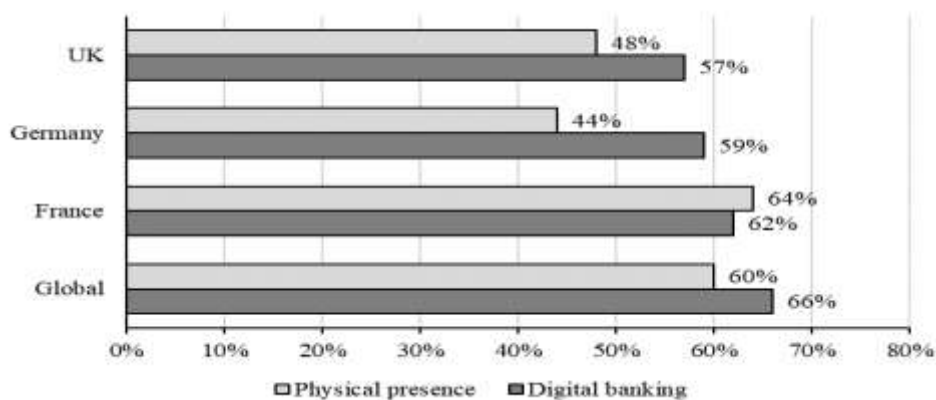


Figure 2. Importance of the bank's physical and digital presence for consumers in Europe and globally [4]

The identified trends in the banking customers' priorities reflect current tendencies in the emerging digital economy and the transition to a new technology industry – Industry 4.0, as well as changing consumer motivation – to give greater importance to the speed, convenience and accessibility of financial services.

Modern digital banking is developed in two main areas. The first area concerns the fact that banks implement digital services in parallel with offline services; develop and launch their mobile applications; provide the ability to manage personal accounts through smartphones, PCs and other devices. Another area of digitalisation in the banking field is neo-banks, which fully operate online without the creation of physical units of the bank.

Either for the bank or the financial services consumer, the transition to digital banking requires several aspects to be taken into consideration to ensure its effective functioning. The basic requirements for the secure and stable operation of digital banking for the bank are:

- formation of a comprehensive business model which differs from traditional banking business models and takes into account the possibilities of multichannel work with clients (offline through the bank branch, online through the bank application, online through other applications and social networks, etc.);
- a flexible IT infrastructure that will let to modify and complement the digital banking service environment without the additional risks and expenses;
- ensuring the data security and maintaining a reliable system to protect information regarding the personal data of the bank's clients, transactions, etc;
- technical requirements for data warehouses that enable large volumes of data to be stored and quickly processed;
- the use of BigData technology and other analytical technologies that provide research regarding customer behavioural features, data obtained from large online platforms, etc., in the managerial decision-making process and new products development;
- the use of artificial intelligence technologies for rapid interaction with clients, forming a customer profile (credit history, risk aversion, behavioural features) and providing on its basis individual offers of financial services, as well as a quick response to new information [5].

In terms of the financial services consumer, the requirements for digital banking are:

- gaining complete experience to use financial services: to provide the client with an interactive, complete picture regarding the movement of funds in his or her accounts and use of financial services;
 - using different types of biometric controls (fingerprints, retinal scans, etc.) to access digital financial services;
 - complete digitization of processes, including identification of the client, communication between the bank and the client, the conclusion of contracts, transactions, etc .;
 - personalization of services: digital wallet creation and issuance of electronic cards with credit limit determined on the basis of automated analysis of customer's behaviour;
 - advantage of mobile banking services: most customers use digital banking services via smartphone;
 - access to FinTech services, including support for peer-to-peer lending and crowdfunding [5].

Digital banking implies that a bank in its structure develops own FinTech divisions or uses existing FinTech sector investigations to provide certain digital services or incorporate individual FinTech elements into its application. Thus, unlike traditional banking, at this level, a degree of

interaction between banks and FinTech companies as independent entities in the financial services market is formed.

The realization of the fact that the modern bank's business model efficiency and its long-term competitiveness can be ensured through maximum openness to technological innovation and cooperation with the FinTech segment, facilitated the further integration of banks and FinTech and the open banking development. At this level of integration, banks and FinTech companies partner and provide financial services through shared digital platforms. This partnership has benefits for each participant. For example, banks use FinTech to develop digital banking, leverage new information technologies, and FinTech companies use banks to increase the number of consumers of their product, reduce risk, obtain financing, and more.

It should be noted that in most scientific studies, when analyzing the benefits, risks and opportunities formed by the collaboration of banks and FinTech companies, researchers focus mainly on banks, as major players in the financial services market. However, there is a need for partnerships between the banking and FinTech sectors not only for banks but also for FinTech companies, that is confirmed by studies which observe the interaction between banks and FinTech companies from the perspective of the FinTech segment. In particular, in 2017, the company Capgemini surveyed FinTech companies that already have partnerships with traditional financial intermediaries regarding motives or benefits they see in such a partnership [3]. The survey found that in most cases the main benefits for FinTech companies are to achieve the scale effect and increase the visibility of the FinTech company to the consumer through the use of a well-known brand of a partner bank (Fig. 3).

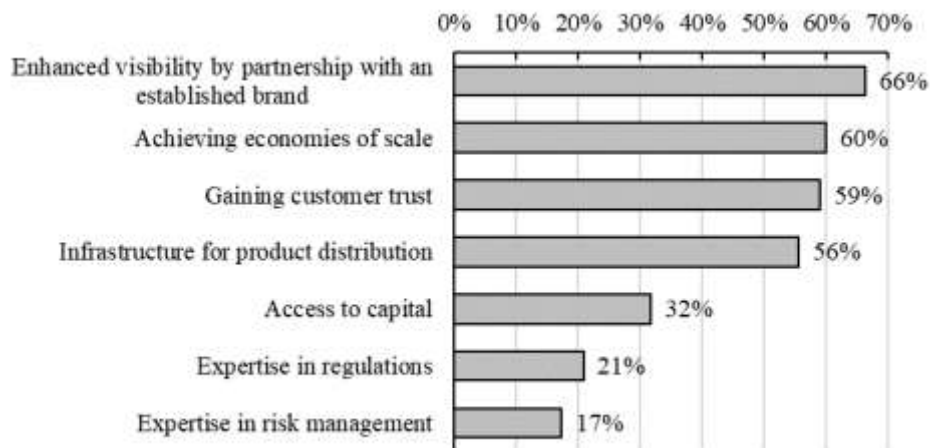


Figure 3. Percentage of FinTechs that have given a high rating (6 or 7 on a scale of 1-7) for each of the options [3]

Thus, traditional banking, digital banking and open banking are three already existing banking business models. Digital and open banking are the most effective.

At the same time, the FinTech innovations market continues to develop, the tightness of integration between market entities is gradually increasing, and in addition to FinTech companies, there are entities in the financial services market that were not previously typical of it, such as big technology companies (BigTechs), software developers, and more. Thus, the modern ecosystem of the financial services market is formed by a large number of companies,

including financial intermediaries (banks, non-banking financial institutions) and non-financial companies (FinTechs, BigTechs, developers). This ecosystem can interact through open platforms and application programming interfaces.

The modern consumer wants to have a choice regarding the channels of interaction with the bank, ways of choosing and using financial services. Based on this, in an analytical report by Capgemini [2], researchers believe that in the future Open-X banking should be the banking business model, which provides the possibility of interaction and joint work of all subjects in the financial services market through open digital platforms. The Bank of the Future is seen as an institution that controls and manages financial services delivery processes and is not their sole provider. In the Open-X model, the bank creates an open platform (open APIs) and through it interacts with other banks, non-bank financial intermediaries, FinTech companies, big technology companies and other entities that share their FinTech products and technology using the bank's customers decision.

The key features of Open-X banking are [2]:

- sharing instead of sole ownership;
- information as a primary resource instead of tangible assets;
- partnerships between financial market entities instead of developing the product or purchasing ready-made solutions;
- focus on providing a positive customer experience from working with the bank instead of offering it a specific product.

Conclusions and prospects of further research. Depending on the degree of integration of the banks and the FinTech segment, there are four levels of interaction between these entities in the financial services market: traditional banking, digital banking, open banking and Open-X banking. Nowadays, there are three models - traditional, digital and open banking - but the most effective and operating are digital and open banking. Digital banking involves the use of various channels of banking services for clients, among which the digital channel is important. Analytical studies confirm that having a full range of digital banking services for consumers is far more important than having a physical unit at a bank. Open banking is based on the ability of a bank to engage and interact with ecosystems of non-banking intermediaries and other third parties to provide banking services with such technologies as APIs. Further integration of banks, FinTech companies and other entities in the financial services market may lead to the formation of an Open-X banking model, the key features of which are shared access instead of sole ownership; information as a primary resource instead of tangible assets; partnerships between financial market entities instead of developing the product or purchasing ready-made solutions; the main focus is on providing a positive customer experience from working with a bank instead of offering it a specific product

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Трансформація банківського сектору в епоху цифровізації

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В условиях глобальной цифровизации экономики и развития альтернатив банковским услугам, актуальным становится переход банков на открытые платформы и их интеграция с FinTech сектором. В статье определены четыре уровня интеграции банков и FinTech компаний: традиционный банкинг, цифровой банкинг, открытый банкинг и Open-X банкинг. На текущем этапе фактически сосуществуют три первые модели. Традиционный банкинг рассматривается как предоставление классических банковских услуг для физических лиц и корпоративных клиентов, а также инвестиционный банкинг. Цифровой банкинг предполагает использование различных каналов предоставления банковских услуг для клиентов, среди которых цифровой канал имеет большое значение. Анализ цифрового банкинга позволил определить его основные характеристики с точки зрения потребителей финансовых услуг и самого банка. Открытый банкинг основывается на возможности банка привлекать к процессам предоставления банковских услуг экосистему небанковских посредников и других третьих лиц и взаимодействовать с ними с помощью таких технологий, как интерфейсы программирования приложений. В процессе исследования открытого банкинга рассмотрены основные мотивы сотрудничества FinTech компаний с банками. К ним отнесены рост видимости FinTech компании для потребителей благодаря партнерству с известным банковским брендом, достижения эффекта масштаба и другие. Высоким уровнем интеграции банков и FinTech компаний и будущим направлением развития банковского сектора определен Open-X банкинг. К основным характеристикам Open-X банкинга отнесены: общий доступ вместо единоличного владения; информация становится основным ресурсом на замену материальных активов; формируются партнерские отношения между субъектами рынка вместо самостоятельной разработки продукта или покупки готовых программных решений; фокус на обеспечении положительного опыта потребителя от сотрудничества с банком вместо предложения конкретного продукта.

Ключевые слова: банковский сектор, банковские услуги, цифровой банкинг, цифровизация, FinTech, интеграция, открытый банкинг.

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В умовах глобальної цифровізації економіки та розвитку альтернатив банківським послугам, актуальним стає перехід банків на відкриті платформи та їх інтеграція з FinTech сектором. В статті визначено чотири рівні інтеграції банків та FinTech компаній: традиційний банкінг, цифровий банкінг, відкритий банкінг та Open-X банкінг. На поточному етапі фактично співіснують три перші моделі. Традиційний банкінг розглядається як надання класичних банківських послуг для фізичних осіб і корпоративних клієнтів, а також інвестиційний банкінг. Цифровий банкінг передбачає використання різних каналів надання банківських послуг для клієнтів, серед яких цифровий канал має вагоме значення. Аналіз цифрового банкінгу дозволив визначити його основні характеристики з точки зору споживачів фінансових послуг та самого банку. Відкритий банкінг ґрунтується на можливості банку залучати до процесів надання банківських послуг екосистему небанківських посередників та інших третіх осіб та взаємодіяти із ними за допомогою таких технологій, як інтерфейси програмування додатків. В процесі дослідження відкритого банкінгу розглянуто основні мотиви співпраці FinTech компаній з банками. До них віднесені зростання видимості FinTech компанії для споживачів завдяки партнерства з відомим банківським брендом, досягнення ефекту масштабу тощо. Найвищим рівнем інтеграції банків і FinTech компаній та майбутнім напрямком розвитку банківського сектору визначено Open-X банкінг. До основних характеристик Open-X банкінгу віднесено: надання спільного доступу замість одноосібного володіння; інформація стає основним ресурсом замість матеріальних активів; формуються партнерські відносини між суб'єктами ринку замість самостійної розробки продукту чи купівлі готових програмних рішень; фокус на забезпеченні позитивного досвіду споживача від співпраці з банком замість пропозиції конкретного продукту.

Ключові слова: банківський сектор, банківські послуги, цифровий банкінг, цифровізація, FinTech, інтеграція, відкритий банкінг.

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Трансформація банківського сектору в епоху цифровізації

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