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Development of payment banking market in Ukraine

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PLAN

INTRODUCTION	3
PART I. THE TORETICAL FUNDAMENTALS OF THE PAYMENT BANKING MARKET.....	6
PART II. THE PRACTICE OF PROVIDING PAYMENT BANKING SERVICES IN UKRAINE FOR 2014-2018 YEARS.....	14
2.1. Characteristics of banking segment on the market of payment services.....	14
2.2. Order of interaction of payment banking entities.....	24
2.3. Financial monitoring of the provision of payment banking services.....	32
PART III. RECOMMENDATIONS ON THE MARKET OF PAYMENT BANKING SERVICES IN UKRAINE.....	39
3.1. Risk management methods of providing payment banking services.....	39
3.2. Algorithm of generating payment banking services for potential demand in the market of these services.....	44
CONCLUSIONS AND RECCOMENDATIONS.....	52
REFERENCE	61
APPENDICES.....	61

Introduction

The actuality of the theme: The modern world is characterized by new, rapidly developing, high-tech processes affecting all spheres of our life under the conditions of Ukraine's integration into the world economic space, institutions that provide payment services depend on their pricing and opportunities to move from using traditional mechanisms and procedures of customer service to the introduction of innovative technologies, modern electronic payment services, expanding the range of offered products and communication strategies for their promotion. Globalization of the world economy today requires simplification of access to payment service from any point of the earth. Therefore, the theme of the financial institutions of foreign countries for the provision of payment services is an achieve for the search of successful aspects in the international experience of providing payment services to further implement them in the domestic space and that is why it requires thorough and studying, elaboration of relevant as the technologies, methodical recommendations, and fundamentally new approaches to their treatment.

The work is used by the legal and normative base of the European Union and Ukraine, periodic literature of Ukrainian publishers, textbooks, reports, and researches of international companies and other sources. For a more complete disclosure of this topic, the sources of such authors as Avanesova I. A. [6], Volosovich S. V. [49], Vovchak F. D. [50], Arbuzov S. G. [4], Burkovska A. V. [7], Purih S. O. [33], Sviatnenko A. [43], Prykhodko V. P. [37].

The purpose of the course work is to reveal the theoretical principles, develop methodological approaches and practical recommendations for the market development of payment banking services.

To achieve this goal, the following tasks are solved:

1. The payment service entity definition;
2. Research of normative legal principles of regulation of payment services process in the European Union;

3. Research of the process of adapting the Ukrainian legislation to European standards in the field of payment services regulation;
4. Analysis of practical aspects of providing payment services in Ukraine;
5. Investigation of the financial monitoring process for the provision of payment banking services;
6. Analysis of risks arising in the provision of payment banking services;
7. Carry out an analysis of the dependence of demand and offers on the banking services.

The object of course work is the process of functioning of the payment banking services market.

The subject of course work is the interaction of the market items of payment banking services.

The following methods of research are used in the course work: generalization and systematization of scientific developments of domestic and foreign scientists-economists and normative-legal base.

The information base of the study is legislative and regulatory acts on regulation of banks' activities; official data of the National Bank of Ukraine; monographic research and scientific publications on the problem under study.

The scientific novelty of the obtained results is the following, for the first time, the scientific hypothesis regarding the formation of demand for payment banking services is formulated, which depends on the level of information and is also checked on the data of the National Bank of Ukraine.

The practical significance of the results obtained. Practical guidelines for the formats of quantitative and qualitative information on the number of payment services can be helpful for banks when creating their own websites. Banks can use these demand and supply guidance in their activities.

Master's personal contribution. Graduation is a self-completed study by the author.

Publications. Some results of the study were reflected in a scientific article:

Bliakha Y. S. Framework for the functioning of the market of the bank payment services in Ukraine // Managing financial institutions: changing stereotypes: coll. of sciences. art. stud. full-time study / resp. ed. N.P. Shulga. - K.: Kyiv. Nat. Trad. - Econom. Univ., 2018. - 363 p. (C.183-186).

Structure of work. The work consists of 3 sections, introductions, conclusions, a list of used sources and applications. The volume of work is 53 pages. The paper presents 3 tables, 14 figures, 5 appendices and used 50 scientific sources.

PART 1

THE TORETICAL FUNDAMENTALS OF THE PAYMENT BANKING MARKET

The bank payment market is an important part of the economic and financial system of the country. It provides business entities with the implementation of any cash transactions and payments undertakings appearing in the process of economic activity. The efficient functioning of the payment banks market contributes to the effective functioning of the financial sector improvement monetary-credit relations, implementation of Interstate settlements. Developed and stable market of payment services is a guarantee of stable functioning of the banking system and the economy as a whole.

The current state of the bank payment services market is the result of long-term development as well as complex legal and economic transformations. Researches of different aspects of this market attract. The attention of many domestic and foreign scientists and practitioners, which are explained by the expansion of the spectrum, updating and modernization of banking.

Based on the hypothesis of the study that the formation of demand for payment banking services depends on the level of information security of the subjects of such services, we decided to use in our study the work of the authors described below.

Exploring theoretical aspects, we analyzed the output of payment service, which provides legislation of Ukraine and which tells us that the payment service is an activity to ensure the fulfillment of payment transactions using a special payment instrument made by payment service providers [25]. Avanesova I. A. in the textbook «Financial Services» defines that the «payment service is the activity of the financial institution to ensure the payment on behalf of another person – the initiator of money transfer, or on its behalf» [6]. At the heart of our work, we will start from this definition. We also consider it important to note that such a payment system is a legally defined set of payment instruments, rules, rules and mechanisms for providing and using payment services [6].

For comparative performance, we investigated articles by various scholars, including Volosovich S. V. in his article cites definitions that «payment services – is the activity of the ferments of implementing tran's stocks to the benefit of consumers [49] and proves that the city provision of payment services is to ensure customers needs to pay for goods, services and works received» [49]. In our opinion, it is possible to add that the aim is to ensure the need for reciprocal payments between physical, legal and natural persons and legal entities.

Analyzed the legislation of Ukraine, the following - payment of money transfer is a compulsory function, which should carry out a billing system. The Law of Ukraine "On payment systems and money transfer in Ukraine" exclusively to the activities of banks, «The opening of accounts of the payment system, issue of electronic payment means (payment cards) and issue of electronic money». [23] When making payments use different payment instruments – a means of a certain form on a paper, electronic or other storage media used to initiate transfers. [23]

We fully agree with the views of Vovchak, F. D. in the tutorial "Payment Systems" where the scientist allocates that the payment system is [50]: «payment organization (legal entity, which determines the rules of the payment system), the participant of the payment system (which provides the services for transfer on the basis of the agreement with the payment organization), the settlement bank and the operators of payment infrastructure (legal entities that carry out processing, clearing, acquiring and other technical services related to the organization of money transfers)».

As for the bank, as a financial intermediation entity, the Law of Ukraine "On banks and banking" defines the «bank-legal entity that, based on the banking license, has the exclusive right to provide banking services».

Arbuzov S. G. In the «Banking Encyclopedia» provides the classification of payment documents and as the main select the following: payment order, payment request-order, payment check, payment request, memorial warrant [4].

Burkovska A. v. In his work defines «the forma of international payment instruments differ in the degree of banking participation in their conduct [7]:

- The minimum participation of banks during bank transfers (fulfillment of the payment order of the client);
- Higher-at collection (control over a transfer, shipment of shipping documents, and issuing them to the payer according to principal's instructions);
- The maximum participation of banks at the letter of credit (providing beneficiary payment obligation, which is realized when performing the latest basic conditions, contained in the letter of credit)».

Purih S. O. the textbook "Payment Systems" highlights the stages of formation of payment systems and the date of forming of a payment card as an official payment instrument [33].

Sviatnenko A. In the article "National peculiarities of money transfers" allocates, that «the payment of money transfers is a network of service points (as a rule, bank and post offices), which carries out money transfers and payments, are convenient because they do not need to open a bank account (neither the sender nor the recipient of funds)». [43]

Analyzed European experience in the provision of payment services and under the "Four Freedoms" in the field of payments, the principles of freedom to provide services and the value of the movement of capital and payments [13]. Within the framework of the national program to adapt the legislation of Ukraine to the European Union legislation, taking into account the above-mentioned principles and developed domestic legislation to introduce a successful functioning of the country's financial system.

According to the Directive of 2015/2366/EU [9], payment services are deemed not only to make cash payments through banks, but also to make money transfers through various payment agents, as well as payment operations through a network of telecommunication and operators of information technology systems, issue of payment means and other activities related to payments.

Among the important existing EU legal acts in the payment sphere are the following [34]:

- Directive 2009/110/EC of the European Parliament and the Council on the establishment and implementation of activities by the institutions — issuers of electronic money and prudential supervision;
- Regulation (EC) No 924/2009 of the European Parliament and the Council on cross-border payments within the community;
- Regulation (EC) No 260/2012 of the European Parliament and the Council on the creation of technical and business requirements for credit transfers and direct debit transfers in euro;
- Directive 2015/2366/EU on payment services in the domestic market;

Examined the directives in PSD2. The directive is supplemented by regulations on interbank fees for payment transactions made with the help of payment cards.

The directive establishes the rules regarding [38]:

- Strict security of electronic payments and the protection of consumers financial data, guaranteeing secure authentication and reducing the risk of fraud;
- Transparency of terms and requirements for payment of services.

Quite progressive, in our opinion, is the concept of the Open banking [12], which is based on two documents: PSD2 and Open banking remedy, a list of proposals by the British Department of Protection of Competition, focused on create a transparent bank servicing system.

In a document describing the reform regarding market of payment banking services, the main point in may 2018 was put into operation the general data Protection Regulation (GRPD) [1], which carries a set of data protection rules for all companies that operate in the EU wherever they are the discrepancy between these rules may be worth up to 20 mln. euro, however, now users have greater control over their data and business benefits from activities in the field with equal conditions.

In the context of the European integration processes in Ukraine in accordance with the gradual implementation of norms and provisions of the comprehensive program for the development of the financial sector of Ukraine till 2020, the approved of the Board of the National Bank of Ukraine dated 18.06.2015 No 391 [8]. The liberalization of financial markets and acquisition of the internal market

regime with the EU in the sphere of finance, including payment services, is envisaged. This is confirmed by article 133 of the Association Agreement between Ukraine and the European Union [40], according to which the parties acknowledge the importance of approximation of the current ukrainian legislation with EU legislation.

Integration of the ukrainian market of banking and other financial services requires consideration of the provisions not only of EU acts but also for documents of international organizations, which determine the rules and recommendations that Promote effective interaction between banking systems in different countries. Such international legal documents by Prykhodko V. P. perfectly rightly brought to the conceptual factors of the formation of the norms of the bank law [37]. Moreover, in our opinion, they cause more difficulties in the process of adapting ukrainian legislation than the implementation of the EU directives.

"The legislation of Ukraine does not allow the implementation of bank transactions providers third-party services, as well as access to banking secrets. Customer identification and verification should be done exclusively by a bank employee. The bank should also be financially monitored independently. Therefore, the principles of open banking cannot be used in Ukraine ".

In June 2017 the Verkhovna Rada of Ukraine dismissed the bill "on amending certain legislative acts of Ukraine on regulating the funds transfer" № 5361-D [44], which, in particular, identified and delimited the rights and obligations of banks, payment institutions, transfer service providers, internet payment providers, and also provided the concept of payment infrastructure in accordance with the norms of Directive 2015/2366/EU.

In August 2018, another step was taken to adapt the Ukrainian legislation to EU norms – a new revision of the № 705 resolution, which brings changes in implementation of the principles of PSD2 for elimination of gaps between the European and Ukrainian Legislation and provision of conditions for renewal of the competitive environment in the payment market among which: framework agreements, including "electronic" agreements, procedural issues of interaction with users, improvement of business terminology, etc. [22].

With the National Bank of Ukraine initiatives, the most necessary steps are already implemented for the development of Ukraine's economy and increased cashless payments. Among them: the transition of the SEP to the latest standard SWIFT-payments ISO20022 [42], electronic digital signatures, electronic sighting of documents, cancellation of seals and stamps, remote identification of banking and Mobile [21], the transition to the IBAN account form [5]. The regulator discusses the creation of a so-called "sandbox"-a special legal regime for the group of companies or territories where it will be possible to work out financial technologies in practice [32].

In consideration of the Verkhovna Rada of Ukraine, there is a bill № 7270 [19] about the payment systems, whose provisions are intended to unify the laws of Ukraine on PSD2. The draft law envisages the introduction of norms allowing Use of "third-generation" payment systems in Ukraine.

Also analyzed global figures and in 2017, revenues from global payments increased to 1.9 trillion USD, which is the best year of growth over the past five years, and the projected growth to 2022 is 2.9 trillion. U.S. dollars [14].

Despite the rapid revolutions of digitalization of all spheres of life, traditional payment methods still play an important role in most countries. Paper checks, although rapidly declining in numbers, are still a popular choice for larger consumer or corporate payments in several jurisdictions, such as the United States (136% of GDP) and Korea (290% of GDP) [31]. Similarly, cash still enjoys and its turnover continues to grow in many jurisdictions. Cash in circulation is significantly different between member-states CPMI. The fate of cash ranges from 1% of Sweden's GDP to 20% of GDP in Japan and is more than 5% of GDP in two-thirds of CPMI countries.

Having analyzed the modern trends in digital space, we have allocated based on the research of authors, which will link further on the text the following directions for improving the methodological foundations for providing payment services to institutions and services at the global level, the introduction of which in symbiosis and observance of all rules can help to increase the competitiveness and opportunities to gain considerably higher profits.

1. Artificial intelligence, robotization and automation of processes [47]. This direction will allow us to detect deviations in the work of huge data arrays, predict the probability of occurrence of events, differentiate products, make decisions based on the analysis of the data arrays, rather than on the experience of generations. However, the most important thing in this area is not the algorithms, and data arrays, which allows you to attract new users who generate new data, which in turn improve the product. That brings us to the next trend;

2. Big Data [47]. Briefly, you can explain for example Apple and Google have launched Apple Pay and Google pay, thereby gaining access to the financial data of its users and increasing their earnings at times. Gradually exploring the habits of their clients and at the right moment make a reminder that they have a certain product or service that will help them at this point, for example, send money to relatives abroad. It is important to know exactly what your client wants and how he lives every day.

3. Data protection [39]. We would like to draw more attention to this trend.

Cybersecurity is a serious problem, and it won't be solved by itself. Despite preventive measures and authentication, unlawful and unauthorized activities will not cease. However, opportunities that make the network more vulnerable can also increase their level of protection. Financial institutions may use modern al tools for data analysis and other technologies to detect anomalies in applications designed to ensure the safety and prevention of unfair actions by involving both structured and unstructured sources. This will help them determine the growing risks of external and internal security and take appropriate measures more quickly and the miniaturization technology, which led to the proliferation of smartphones, also made possible the use of biometric security in practice: the ability to access accounts with fingerprints or even the voice and recognition features of the face-such the approach is more convenient for consumers and increases security level [39].

Cybersecurity now plays an important role, and its importance to institutions and their regulators in the future will only grow. The main task is still to maintain a balance between the security and convenience of clients.

In addition to the highlighted trends, it stretches the issue of development of payment systems of the fourth generation, which will conduct its activity based on blockchain-technologies, in which we see a breakthrough for payment services.

At the beginning of April 2019, an international Trusted Blockchain Application Association (INABA) was introduced in Europe [50], which included more than 100 companies, including large payment and technological SWIFT, IBM and Ripple. It is assumed that the new organization aims to promote the technology distributed to the Register in the EU. It is noted that INABA purpose is to interact with blockchain-based solution developers and users to popularize this innovation and to increase its adoption in various spheres of the economy. In the course of its work INABA is going to build an ecosystem within which private and public companies will cooperate, as well as regulators and legislators. Also, special standards will be created for applications that will be developed based on blockchain technology.

The establishment of this association becomes a green light to all market players payments, and not only. Staying on a spare bench, you can lose a lot. Now it's time for testing, planning, and learning because of the extremely wide range of opportunities and potential technology partners, one of the most challenging tasks is to understand the true essence of blockchain technology and begin to develop an action plan to implement it in the activities of the organization.

By systematic submitting problems and giving them directions for improvement, we concluded that traditional institutions should direct efforts to work with large arrays of data, to use them for their processing, and at every stage to remember what they are responsible for storing the data they work with. The companies that already use the latest technologies should keep the bar and develop them further and try to maintain and understand the wave of blockchain technology. Of course, this significantly heats the market and enhances competition, but during these the processes of payment services become cheaper, more convenient, mobile and, most importantly, differentiated and necessary at this time and this point, that is, in any case, wins the consumer, whose life in the last decade in various ways try to make it easier through digital technology.

PART II

THE PRACTICE OF PROVIDING PAYMENT BANKING SERVICES IN UKRAINE FOR 2014-2018 YEARS

2.1. Characteristics of the bank segment in the payment services market

The world is in a state of changes. All over the world new technologies and new subjects are disputed by the traditional banking paradigms. The available providers of payment servants are under pressure from the financial technologystartups, and also by large technological firms. But in the long run and fourth, much cheaper, smarter and more versatile mobile devices allow for new and convenient ways to transfer money. Also, digitalization leads taxpayers of payments to get faster online payments anywhere and at any time.

Payment services of banks are the services of transferring funds from client's accounts and receiving payments in favor of clients, accompanied in several cases of transfer of commodity-related documents and the provision of payment guarantees [6]. The basis of payment services constitutes cashless payments. Their implementation is provided, in particular, through the use of payment cards.

As can be seen in figure 2.1. The number of payments and transfers of ukrainian increases every year that may indicate the development of the payment market of Ukraine as a whole. As you can see, the main share of payments and transfers accounted for card systems, a little less on the money transfer system.

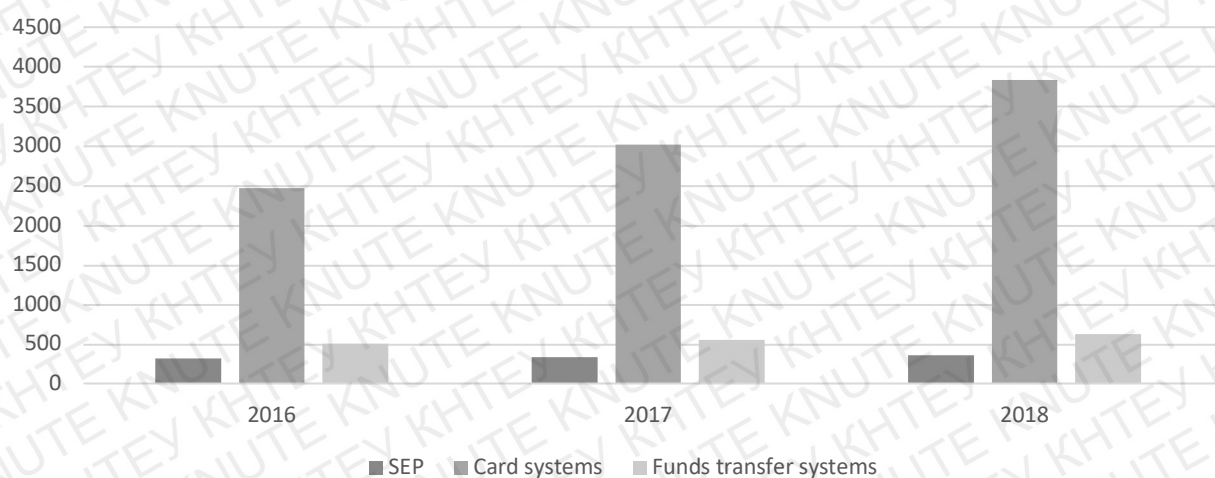


Fig. 2.1. Number of payments and transfers within Ukraine in 2016-2018 (mln. operations) [29]

Regarding the number of payments in bln. uah, depicted in fig. 2.2, the main share belongs to the system of electronic payments, then card systems and at the last place – the system of transfer of funds. As for the shifts, they are similar to the last figure, there is a positive tendency that can not negatively characterize the payment space of the country.

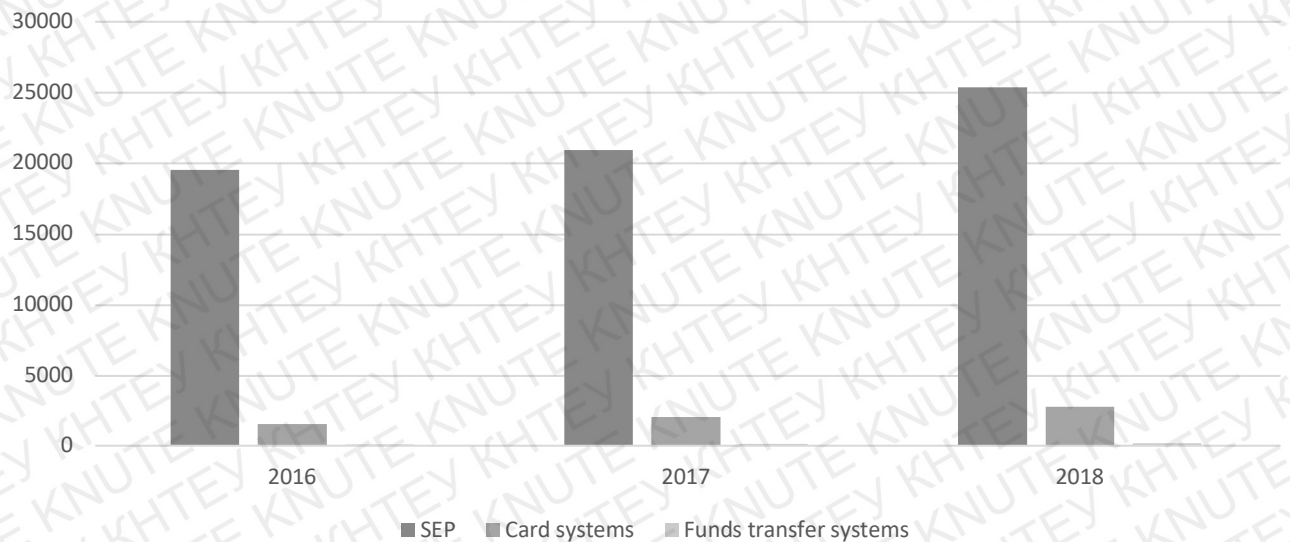


Fig. 2.2. Number of payments and transfers within Ukraine in 2016-2018, UAH billion [29]

In Ukraine in the field of payment card transactions for the last 5 years, there is a positive trend associated with a steady increase in demand for cashless transactions among ukrainians and popularization of innovative financial services (fig. 2.3). The project "Cashless economy" has defined a target of cashless operations in the amount of 55% by the end of 2020. In assessing the dynamics, we believe that for 2 years this figure will be achieved if the rate of development of a given pace, because innovation, which will increase cashless operations becomes more with each passing day, digitalization is captivated by all spheres of society, and especially payment infrastructure.

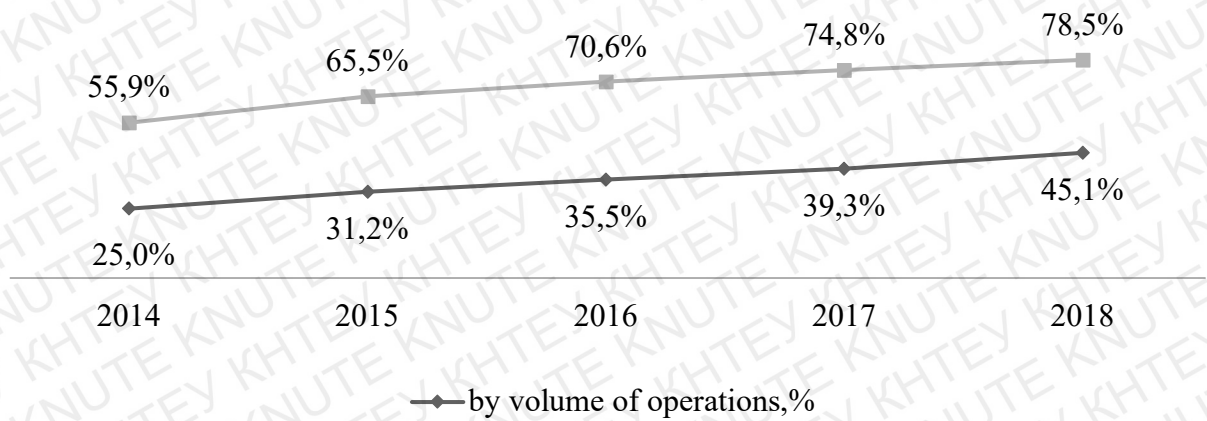


Fig. 2.3. Dynamics of changes in the share of cashless operations, from total amount and number of transactions performed using the payment cards for 2014-2018 in Ukraine. [30]

We also decided to analyze the amount and number of operations in the context of payment systems operating on the territory of Ukraine for the IV quarter of 2018. During this period the operation was carried out only with 3 payment systems, of which 2 international (MasterCard, Visa) and 1 national (PROSTIR). In terms of volume and the number of transactions, the leading position takes MasterCard. It would also be desirable to note that the amount of transactions with obtaining the cash is greater than cashless operations on all payment systems, but the biggest difference is in 5.8% for transactions with "PROSTIR" cards.

Low interest both in sum and by the number of cashless operations can indicate greater confidence of the population by the international payment systems-Giants for cashless settlements. After all, although the amount of cash receipts by them is still higher than non-cash transactions, however, the number of transactions noticeable significant difference. In appendix 3 you can get acquainted with the number of transactions in terms of payment systems for the IV quarter of 2018, mln. UAH.

We also consider it expedient to analyze information on the number of active payment cards in the context of card payment systems in 2018 (table 2.1).

Table 2.1

Number of active payment cards in the context of card payment systems for 2018 in Ukraine. [29]

Payment system	Quantitative expression (million operations.)	In% to the total
Mastercard	26	70.29
Visa	10.5	28.5
Space	0.5	1.2
Other	-	0.01
Just	37	100

Last year in the domestic payment space, the following situation regarding the volume of payment card transactions has been observed: the total amount of transactions amounted to 2877 billion. UAH, of which 1579 bln. UAH. – The cash transactions and 1297 mln. UAH. – non-cash transactions. For 2018, the increase in the share of cashless operations by volume reached 45.1 %. Information for the last 6 years is presented in appendix 1.

As for the number of payment card transactions, in 2018 this figure amounted to 3915 mln. operations, of which 842 million operations. Transactions were in cash form and 3073 in non-cash form. The increase compared to 2017 was 8% and 33% respectively. The increase in the share of cashless operations by the number in 2018 amounted to 78.5%. Similar information in the last 6 years is reflected in appendix 2.

In Ukraine, over the past five years, there is a trend of increase in the volume of transactions with payment cards, which reached 183.34%, and the average cheque on transactions with payment cards, as opposed to world tendencies, is increasing (fig. 2.4)

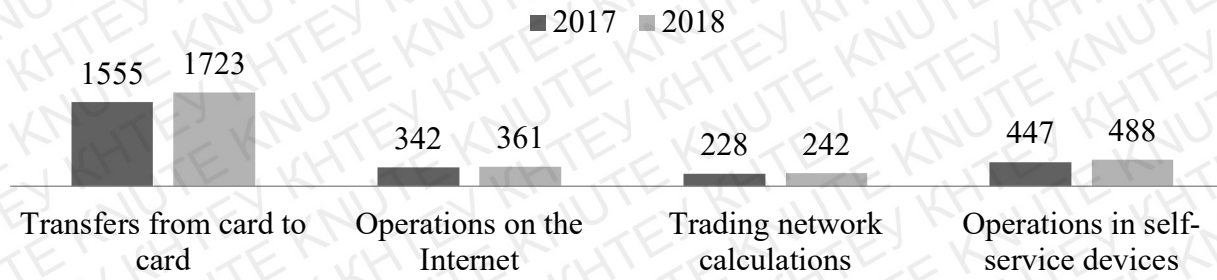


Fig. 2.4. The average cheque for payment card transactions for the 2017-2018 in Ukraine, UAH. [29]

In Ukraine, the result for 2017 and 2018 can also confidently say about the small changes in the distribution of the number of cashless operations, the main places occupy settlements in trade networks and operations in the internet, although their number in the 2018 year decreased by 0.6%. and 2.9% respectively (fig. 2.5).

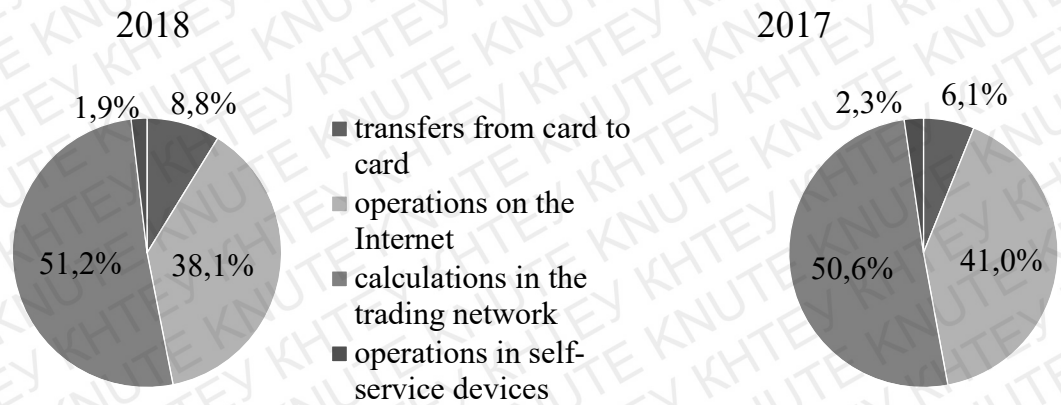


Fig. 2.5. Distribution of cashless operations for 2017-2018 in Ukraine. by number in % to total [29]

On the payment cards market in 2018, the total number of issued payment cards in circulation amounted to 59.4 million operations, number of active payment cards – 36, 9 mln. operations, which is 6% more compared with the previous period. Contactless cards are issued in the amount of 4 million operations. This figure also increased by 44% compared to 2017. Quantitative expression of cards with magnetic stripe - 30.4 million operations, increased by 12 %, compared to the previous period. Total in the country 42.3 million person holders of payment cards about statistical information in terms of one person, 1.4 payment cards are accounted for one ukrainian, and 0.9 active payment cards.

Regarding the statistical information concerning payment infrastructure, the total number of POS-terminals was 279.0 thousand, which is 20% more relative to the last period.

Detailed subjects can consider the information in a table. 2.2.

Table 2. 2

Number of POS-terminals by the subjects of use in 2018 in Ukraine [30]

Name of the entity	Quantitative expression (thousand pieces)	Growth compared to the 2017 year
Trade and service companies	208.7	20
ATMs	20	0.1
Software-technical complex of self-service	16.6	-3

If we consider the information in terms of population, then 1 million. The population in 2018 accounted for 7.1 thousand payment terminals, in 2017, this figure was – 6 thousand. Accordingly, we can conclude once more that payment infrastructure is being actively developed.

Depending on the territorial characteristics of the number of terminals as follows: in the central part of Ukraine more than 6 thousand by 1 million population. In western Ukraine less than 6 thousand by 1 million population, and in the eastern part of the country, then this figure is less than 4 thousand by 1 million population.

As for the activities in Ukraine of the transfer systems, in 2018 the territory of Ukraine provided services to 35 money transfer systems, of which 28 system created residents and 7 systems, created by non-residents.

In just 12 months 2018, the systems, created by residents and non-residents, have been transferred to:

- Within Ukraine – 150.53 bln. UAH;
- 5541 million. Usd. USA (in eq.) – 68.11% of the total amount of transfers;
- In Ukraine-2301 mln. USA (in eq.) – 28.28% of the total amount of transfers;
- Outside Ukraine – 294 mln. Usd. US (in eq.) – 3.61% of the total transfer amount.

In terms of countries, the greatest share of money transfers in Ukraine is the United States – 17%, if not to take into account 46%, which in total fall to a sample from other countries that are not included in fig. 2.6.

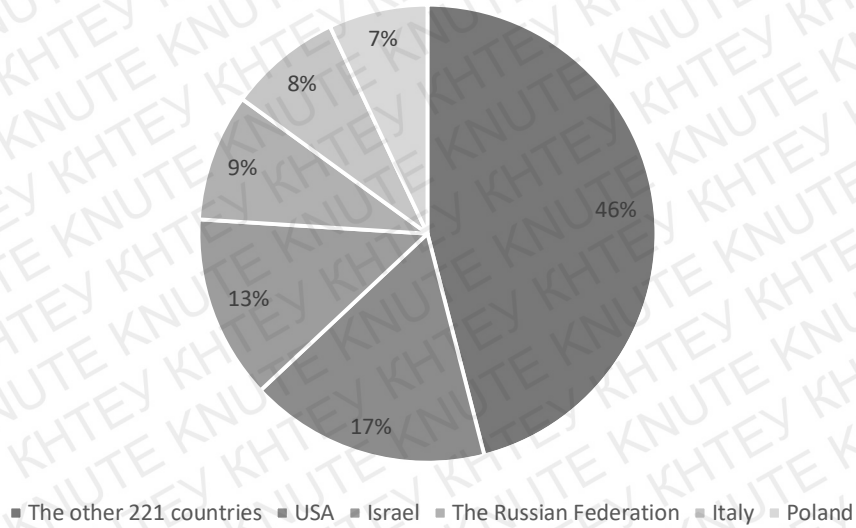


Fig. 2.6. The share of transfers to Ukraine in the cuts of countries, in 2018 % [30]

As for the operations of Ukraine, the largest share in the Russian Federation – 36%, if it is not considered 38%, that fall into the sample for all other countries, not depicted in fig. 2.7.

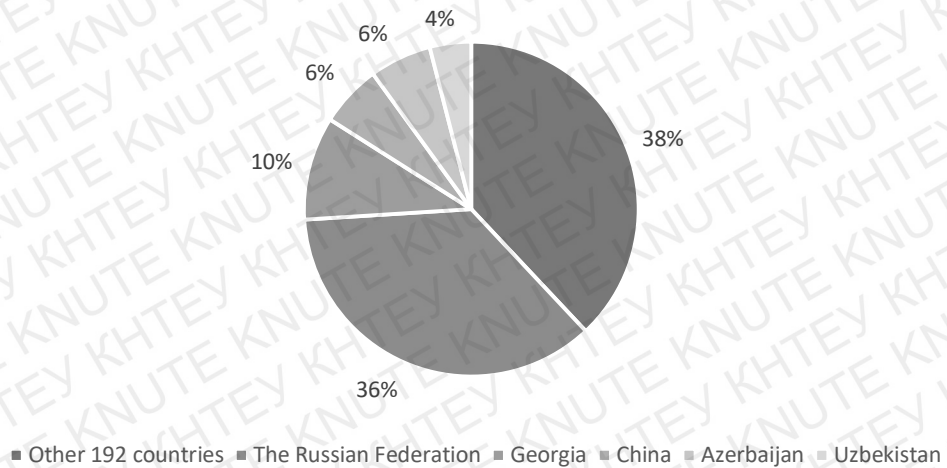


Fig. 2.7. Share of transfers from Ukraine to the cuts of countries, in 2018 % [30]

As to changing the volume of transfers from Ukraine to Ukraine, and within Ukraine in Ukraine, the present shows are constantly increasing, in 2018 increased by 24.4% about 2017 year. As for the transfers to Ukraine, the figure was decreasing every year. Data depicted in fig. 2.8.

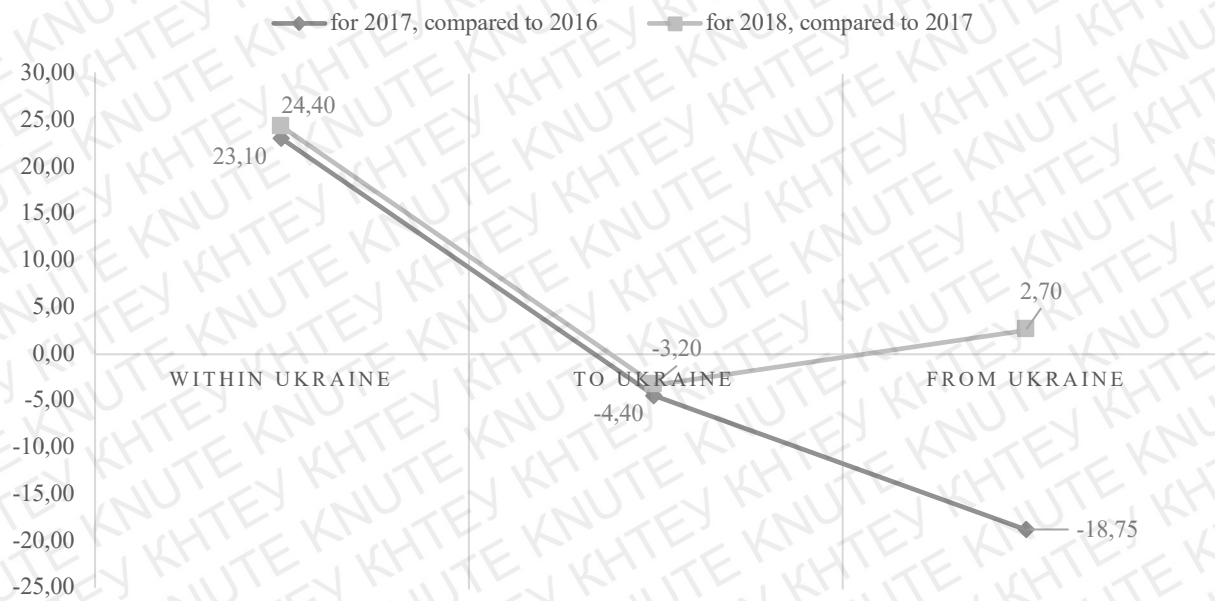


Fig. 2.8. The change in the amount of money transfer for 2016-2018 years in 2018, % [30]

The quantitative expression of the transfers made through the money transfer system is reflected in appendix 4.

Ukraine remains a country-recipient cross-border transfer. During 2018, the amount of funds received in Ukraine using the international money transfer systems is eight times higher than the number of funds sent for its limits.

The Retail EXPO study [45] revealed that 23% of customers want to make transactions in the store, which replicate the simplicity of online payments with one click.

- 53% of customers consider queues the biggest problem in the store and the payment technology itself, reducing the waiting time, was the pleasant improvement of the meeting with bricks.
- 52% of buyers have improved customer experience by features self-checking and scan-and-go (consumers automatically get paid for the scanned products at the exit of the store)
- 42% of consumers want retailers to accept options for mobile wallet or digital currencies such as bitcoin.
- 46% of customers would still use bank cards as a payment method. Although the appetite for new payment methods increases, the proximity to the payments card

does not change; Even if the mobile payments were more widely accepted. Studies suggest that this may be due to persistent security issues around mobile payments such as Apple Pay or Samsung Pay, as 61% of consumers say they are still worried about the safety of these technologies.

Even today, Ukrainians have the opportunity to pay for their purchases through Google Pay in more than 6000 online stores, so that users will save their time considerably, not to fill in every time long forms with payment data. Now, if the site has a "pay through G-Pay" button, the user has the opportunity to quickly and safely pay online using this service [48].

Consider this part of the practice of implementing PSD2 provisions in world financial institutions. In 2015, the MasterCard proclaimed Open API Declaration [39], and in February 2016, and Visa opened hundreds of APIS on site developer.visa.com [48]. Visa and MasterCard have made available an API for e-commerce, money transfers, geolocation.

In March 2019, one of the largest payment service providers, launched its Open Banking platform [45]. This platform will provide access to more than 4300 European banks through a single API by PSD2. Also, the new platform provides proven and developed infrastructure, improved market coverage and connectivity, as well as access to 99% of consumers in 14 European markets. With the launch of its Open Banking platform, an international payment service provider will greatly simplify access to the API. Banks, financial technology services and other licensed businesses will be able to provide personalized offers that will meet the growing needs of European customers.

Ukraine also does not stand still and tries to focus on world trends, so in 2014 Privatbank first in the domestic banking practice has posted its products, services, functions, and processes in individual open APIS, which are available to a wide range developers of financial technology services. In Privatbank constantly added new features that allow you to easily integrate convenient payment services to any site [35].

And as of the end of September of 2017 OTP Bank revealed its banking data and pledged 10 thous. usd. U.S. startups who can learn to earn money on them. For

this purpose, the bank and non-commercial incubator of 1991 Open Data Incubator projects with the support of Nationak Bank of Ukraine opened a set of financial technology startups in the Open Banking Lab program [46, 26]. The program's goal is to support startups that develop products based on open banking data.

Assessing the current situation, once again we can specify the world trends in the growth of cashless payments. Traditional financial institutions, payment systems to withstand the conditions of competition with the innovative services of fin-tech startups, too, are not standing still and are gradually finding ways to implement the provisions of the PSD2 in their activities. Looking through the prism of Ukraine, users confidently go to the global space and adhere to global trends in the field of payment services, but not all domestic financial institutions can support this wave of digital financial innovation.

2.2. The procedure of interaction of payment banking entities

The payment services market carries out one of the key functions of the financial system, ensuring the implementation of diverse transactions. In the modern world of digital technologies, the consumer becomes more demanding to payment services provided by banks, non-bank financial institutions, payment systems, and fin-tech services. In this section, we decided to pay attention to the research definition of "payment service", traditional payment instruments, selection of the operators of payment services.

Payment services are the activity of the customers on transactions for the benefit of consumers [49].

We adhere to the definition that the payment service is the activity of the financial institution to ensure the payment on behalf of another person – the initiator of money transfer, or on its behalf [23].

The purpose of providing payment services is to ensure the needs of consumers in the payment for goods, works, and services [23]. It can be more fully said that the aim is to ensure the need for reciprocal payments between physical, legal and natural persons and legal entities.

Payment services can be classified by payment instruments, the size of settlement transactions, the type of payment systems, the possibility of opening an account. The payment services entities include the payment initiator, the payment recipient, and the mediators, which provide payment services (fig. 2.9).

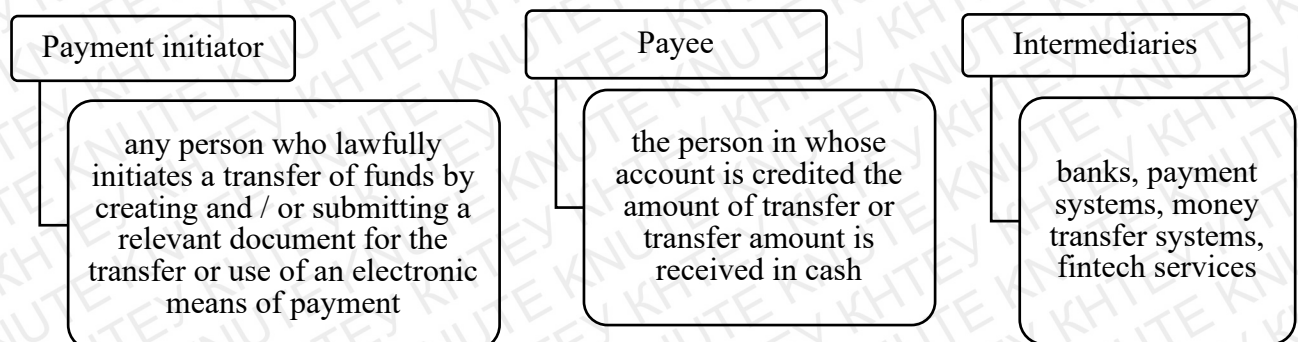


Fig. 2.9. The subjects of payment services [23]

Money transfers in Ukraine can be made using domestic and international payment systems. The payment system (except for an internal payment system) is valid according to the rules established by the payment organization of the corresponding payment system. Domestic payment system operates according to internal documents internet-payment system activities must comply with the current legislation of Ukraine [49].

The National Bank of Ukraine maintains the register of payment systems, settlement systems, participants of these systems and operators of payment infrastructure services. Payment systems payments, participants of payment systems and operators of payment infrastructure have the right to carry out activities in Ukraine only after their registration by entering information about them in the register.

The National Bank provides the register of information about:

1. The domestic payment system and the international payment system, the payment organization of which is a resident, after agreeing on the rules of this payment system;
2. International payment system, the payment organization of which is non-resident, after agreeing on the terms and conditions of this payment system in Ukraine;
3. Domestic payment system after receiving the notification of the banking on the start of this system;
4. Participant of the internal payment system and the international payment system, the payment organization of which is a resident, after receiving the notification of the payment organization on the contract concluded with this party;
5. Participant of the international payment system, the payment organization of which is non-resident, after registration of the agreement on participation in the international payment system;
6. The operator of payment infrastructure services after agreeing to the conditions and order of its activities.

The National Bank shall make information to the register concerning the payment system, participant of the payment system and the operator of payment

infrastructure services in the manner established by the normative-legal acts of the National Bank [29].

Also, in our opinion, it is worth the kind of separate elements of the subjects involved in the process of providing payment services in the internet payment system (table 2.3).

Table 2.3

The subjects of payment services in the Internet payment system [23]

Group name	Subjects and their characteristics
1	2
First Group	Operators and ISPs, provide the very functioning of the Internet, its maintenance, registration of Internet addresses, as well as convenient use at any point of access and on various kinds of sites to provide services in the Internet-payments system
The second group	Manufacturers, owners, and distributors of services, subjects who create the information content of sites and networks;
The third group	Users of Internet services, users can be a legal or natural person who orders, the need for a certain kind of services

Relations between the subjects of the transfer are regulated based on agreements concluded between them taking into account the requirements of the current legislation of Ukraine [23].

Payment services in the Internet system – payments are made in a certain scheme (fig. 2.10):

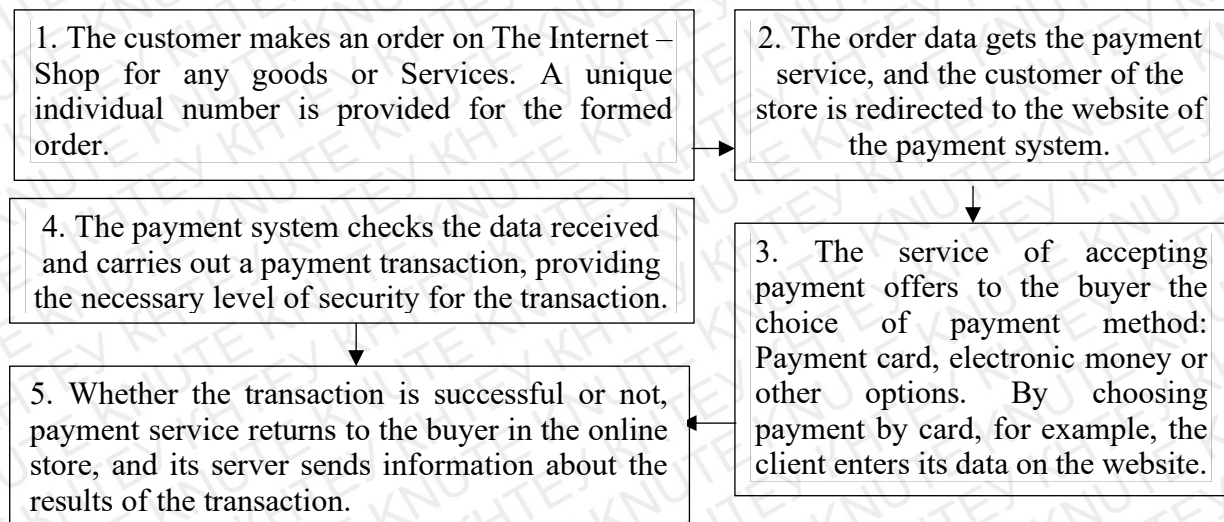


Fig. 2.10 The operating system of the Internet-payments [33].

Also, in our opinion, it is important to accent attention on new interaction of the bank payments to the payment.

The new scheme (fig. 2.11.) Payment service providers will look like this:

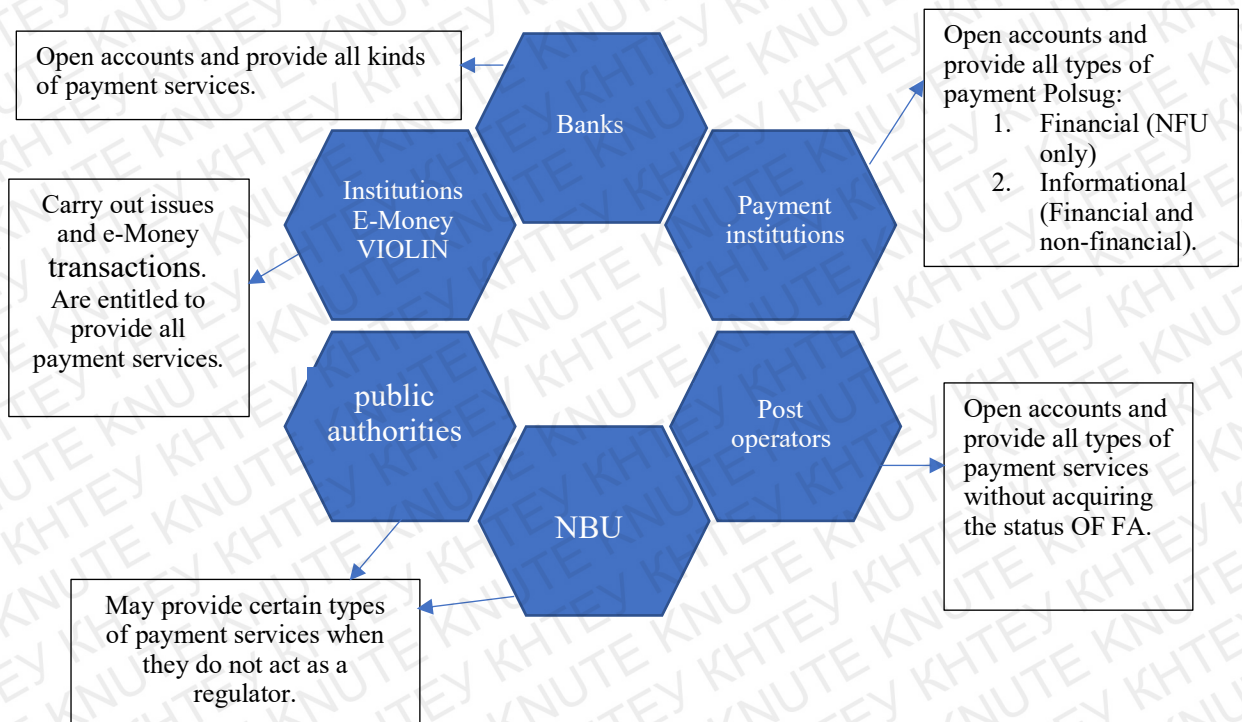


Fig. 2.11. Moderniz of payment eco-system in Ukraine [19].

The transformation of funds transfer entities does not require payment services from the supplier to create a payment system. Also, a new provider of Information Services has been introduced: consolidated information on the payment account (AISP).

Licensing of payment service providers will occur as follows (fig. 2.12):

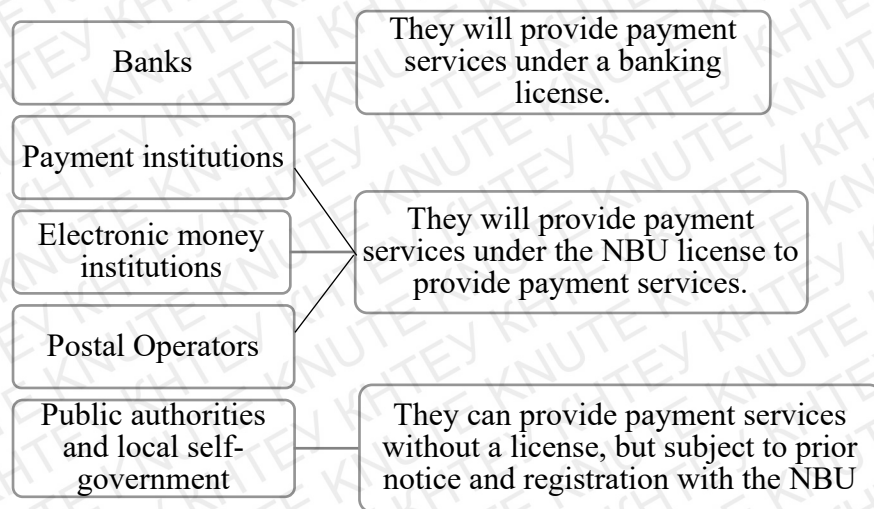


Fig. 2.12 Moderniz of payment eco-system provider licensing scheme [8].

Innovations in the licensing of payment services stipulate the following:

- The status of a non-banking financial institution will be provided automatically with the license - issuing of a two-stage licensing procedure;
- The license for the provision of payment services is issued in electronic form – downloading paper forms;
- Regardless of the number of payment services one license is a given-a list of payment services, which has the right to provide the person, is in the license.

During 2018, the following services were provided within Ukraine:

- 8 systems created by banks;
- 12 systems created by non-banking institutions;
- 8 domestic transfer systems;
- 1 system created by a non-resident.

For the whole of 2018, funds transfer systems have been transferred within Ukraine, 150.5 billion UAH or 5.5 billion usd. us (eq.)

We also consider it expedient to analyze data on the amount of transfers made within Ukraine using the UAH billion transfer systems. In fig. 2.13 we can see the absolute expression of the indicators, but in relative values for 2017 there was an increase of 26.6% compared to 2016, and in 2018 the indicator increased 26.9% compared to 2017.

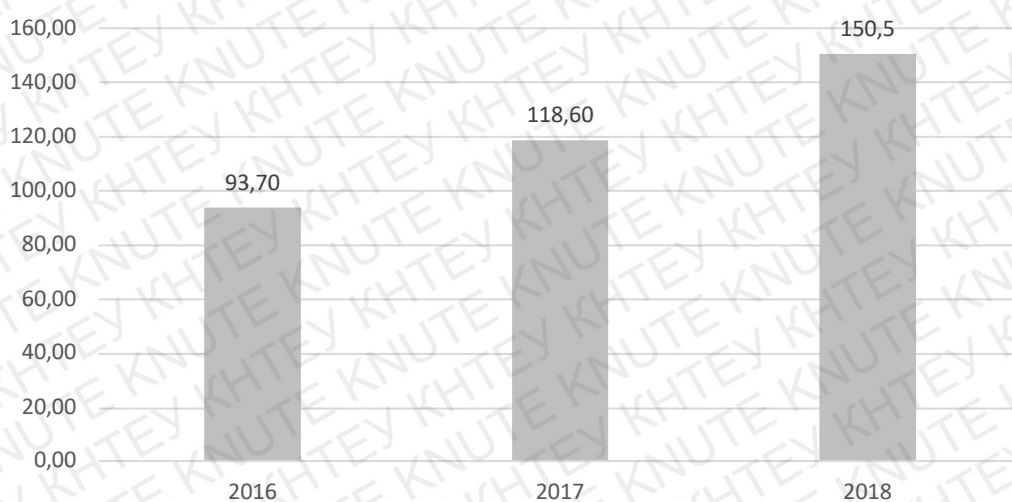


Fig. 2.13 The amount of transfers made within Ukraine using the funds transfer systems in 2016-2018, billion UAH [8].

It is also important in our opinion that we consider adding information on the development and transformation of the payment ecosystem. In Ukraine, more than

100 companies are currently operating in the field of financial technologies, and more than half of them have started their activity in the last three years. The most popular line of work is payments and mobile wallets. Such data are provided in the Ukrainian financial technology catalog-2019, the presentation of which took place on July 15, 2019 at the National Bank of Ukraine.

The edition was prepared by the Ukrainian Association of Financial technology and Innovation Companies together with the Visa Technology Payment Company and the National Bank of Ukraine.

Ukrainian financial technology catalog-2019 is not only a study of the Ukrainian market of financial technologies, but also an analysis of trends in the development of this market. In addition, it is a kind of map of the domestic fintech ecosystem and a directory of companies operating in this market in Ukraine.

Thus, according to the information contained in the ukrainian financial technology 2019, 63% of ukrainian financial technology companies are financed solely at their own expense and the same number have passed the break-even point. At the same time, 14% of companies have more than 75 employees. The international market is conquered by 43% of ukrainian fintech companies. And of those who work exclusively in Ukraine, 73% are going to start business abroad.

"Today, financial technology is one of the main drivers of digital transformation of the financial sector and increasing financial inclusion. While working on the catalog, we are convinced once again that the Ukrainian fintech market is actively developing, and therefore the country is moving in the right direction - towards simpler and more accessible financial services, transparent economy, and more and more people are involved in today's financial system," said Rostislav Duke, chairman of the Ukrainian Association of Fintech and Innovation Companies, during a presentation.

"The National Bank, as the leader of financial sector reform, supports the introduction of innovations and the development of the fintech market of Ukraine and actively works in this direction, focusing its activity on a number of projects that

can stimulate the development of innovative financial services in Ukraine", - said the Deputy Chairman of the National Bank of Ukraine Sergey Kholod.

According to him, in particular, it is about:

- launching a fundamental overhaul of the legislative framework for the Ukrainian payments market and transfer of funds, which will include the implementation of the European PSD2 Directive in national legislation, which will increase competition in the financial market and promote technology development;
- the operation of the BankID remote identification system of the NBU, which facilitates the receipt of banking, financial and other commercial services;
- modernization of the NBU Electronic Payment System, which will make payments in a format close to 24/7 on a national scale, using IBAN and ISO 20022 international standards.

In the context of the development of innovative financial services, the National Bank pays special attention to the protection of users of innovative solutions and products. It is both cybersecurity and consumer rights protection for financial services. Recently, to this end, the National Bank announced the creation of a new mechanism for protecting the rights of consumers of financial services, which will imply responsibility of banks and non-banking financial institutions for the quality of their services.

Another step in the development of the fintech industry was the creation in May of this year by the National Bank of the Expert Council on communication with innovative companies. This tool enables the regulator to understand the needs and trends of the fintech market, and for innovative companies - the features of regulation and the legislative framework.

"According to the World Bank, nearly 2 billion people in the world are outside the formal financial system. By the way, 37% of ukrainians are among them. Therefore, the top priority of the fintech market leaders is to inform people about the benefits of innovative technological solutions and how they are implemented on a

daily basis. Visa sees its role in ensuring the effective interaction of fintech and traditional banks to form a payment ecosystem and provide consumers with innovative, clear and secure solutions, "said Vira Platonova, star second vice president, head of the CIS and South-Eastern Europe Visa.

Thus, summing up the above, we make to emphasize that the world does not stand still, the processes of digitalization extend their influence in all spheres of society's life, especially significant leaps of development are noticeable in the way the tools of providing payment services change, from paper cheques for payment of smartphones and now we can note that development will not stop, because competition inflects the market, forcing intermediaries to implement alternative methods of payment, even cheaper, even faster and more convenient, and therefore to develop new business models and cooperation between participants.

2.3. Financial monitoring of the provision of payment banking services

The normative base of payment industry regulation in Ukraine is quite complicated. It includes laws "On the National Bank of Ukraine", "On banks and banking", "On payment systems and transfer of funds in Ukraine "(Law on payment systems), as well as the National Bank of Ukraine regulations. It also includes the internal rules of the National Bank of Ukraine, since a single interbank payment system is available for Ukrainian banks, is the SEP (Electronic payment system), which is a subdivision of the National Bank of Ukraine.

However, we believe that to expose the substance of this issue, it is advisable to focus on the laws "On prevention and counteraction of legalization (laundering) of Crime, terrorist financing and financing the proliferation of weapons of mass destruction" and "On the basic principles of cyber security in Ukraine."

The National Bank of Ukraine does not have clearly defined powers to regulate the payment market in Ukraine. Powers of the National Bank of Ukraine "control payment systems" are stipulated in art. 41 Law on payment systems, art. 13 of this law allows the NBU to set rules regarding the use of payment instruments, including payment cards.

According to clause 6 and 7 of article 7 of the National Bank of Ukraine law, the central bank has the right to "define the system, order and form of payments", as well as "creates, coordinates and controls the creation of electronic payment means, payment systems. These norms undoubtedly give the National Bank of Ukraine authority in the field of the payment industry in Ukraine. However, the competence of the National Bank of Ukraine is not clearly defined. For example, the legislative framework for the use of payment cards is quite clear.

At the same time, what is implied in the law when it comes to "control over payment systems" and how that control applies to non-bank members of the payment industry-it is a difficult question. Thus, the National Bank of Ukraine was forced to interpret its powers independently. Over the past few years, the National Bank of Ukraine has decided to increase its interaction with the payment systems and spent more time preparing the rules for payment industries.

The National Bank of Ukraine regulation extends the basic rules stipulated in the legislation. For example, banks are obliged to register their agreements with payment systems, and the National Bank of Ukraine also approves rules of the payment system, founded in Ukraine. Rules of a payment card system should contain several necessary elements. Also, international payment card systems may not include the requirements for the exclusivity of cooperation with banks.

The law also has several general provisions concerning the issuance of payment cards. In particular, the card's internal payments must be held in UAH, the issue of payment cards must be carried out following the National Bank of Ukraine regulations and payment system rules.

An interesting feature of Ukrainian legislation is the requirement for sellers of goods and services to accept cards of at least three systems. However, this provision is implemented following the regulations.

Among regulation of National Bank of Ukraine deserves the attention of National Bank of Ukraine Decree № 223 from 30.04.2010. It is a relatively new resolution defining terms and conditions of payment card issuance and use. Although it mainly defines the technical details of the use of payment cards in Ukraine, the resolution has several notable provisions: there are additional requirements for the protection of consumer rights, limiting the liability for transactions under If they are unauthorized or carried out without the physical presence of the cardholder. Banks have also been obliged to inform the cardholder about the exact amount of commission for operation with the ATM before its completion; the requirement for international payment systems to accept payments for their services in hryvnia through the ukrainian bank, as well as deduct guarantee deposits in UAH in the ukrainian bank; requirements for the processing center of the international payment card system to be in the territory of Ukraine, or if it is located outside Ukraine, the contract for the provision of services must contain provisions for the implementation of the requirements of the legislation of Ukraine on laundering money.

When the resolution № 223 entered into force, some of its provisions have been applied in different quantities. For example, one international payment

company decided to change the approach to work in Ukraine and receive payments from its clients ukrainian banks for a portion of their services in hryvnia. At the same time, another large company continues to bill its customers, banks only in US dollars.

Also, in our opinion, it should be noted recommendations on financial monitoring to avoid fraudulent transactions, relying on domestic legislation [20].

The Law of Ukraine "On preventing and counteracting the legalization (laundering) of income, obtained criminal by financing of terrorism and financing the proliferation of weapons of mass destruction" obliges subjects of primary financial Including banks, identification, client verification (client representative), client's study and clarification of client information in cases established by the law, provide for in their activities risk management and to develop risk criteria, conduct analysis of conformity of financial transactions carried out by the client, existing information on the content of its activities and financial situation in order to identify financial transactions that are subject to financial monitoring, confirm in the process of verifying the identification of the identities of the client (client representative) information specified in the official documents received from him, as well as the conformity of registration of official documents with the requirements Legislation and to verify their validity (reality), etc.

According to a part of article 9 of law and part 4 of article 64 of the Law of Ukraine "On banks and Banking" the bank has the right to claim, and the client (person, representative of the client) shall provide documents and information necessary for the identification and/or verification (including identification of the identifying data of the ultimate beneficiary owners (controllers), analysis and identification of financial transactions subject to financial monitoring, and other stipulated by law documents and information that vitrebuê the bank in order to comply with the requirements of the legislation regulating the relations in the prevention of legalization (laundering) of incomes, obtained criminal through, financing of terrorism and financing [20] the proliferation of weapons of mass destruction.

In accordance with part two of article 10 of the law, the subject of primary financial monitoring is obliged to deny the customer service (including through termination of business relations), in particular, in the case of establishing the fact of filing with him at the time of Identification and/or verification of the client (in-depth verification of the client) of unreliable information or submission of information for the purpose of misrepresentation of the subject of primary financial monitoring, and also has the right to refuse the installation (maintenance) Business relations (including through termination of business relations) or a financial transaction in case failure the client is necessary to study the customer documents or information or to establish the unacceptably high risk on the results of the Assessment or revaluation of risk.

At the same time, the law (article 6) and the Law «On Banks» (article 64) give banks the right to claim information relating to customer's identification (including the managers of client-legal entity, customer's representative), client's study, clarification of information on client, implementation of in-depth verification of the client, in public authorities, state registrars, banks and other legal entities, as well as take measures to collect such information from other sources.

According to part seventh of article 64 of the Law on Banks the bank is obliged to claim in the bodies of state power, state registrars, banks and other legal entities information (official documents) required (necessary) for the analysis of conformity of financial operation of its activity and financial condition.

If it is necessary to obtain confidential information about the client from third parties, we recommend obtaining the customer's consent/foresee the bank's right to receive relevant information about it.

The banks should give increased attention to the detailed study of documents provided by the client, in particular, to identify fake ones among them. Thus, the signs of forgery of documents, according to the National Bank of Ukraine, can be:

- The mismatch between a stamp and a stamp by the name of a legal entity, the discrepancy between the legal entity and/or the identification code and/or information about the supervisor in the document with the data contained in the

unified state register of legal entities individual entrepreneurs and public organizations (hereinafter-the USR);

- Cleaning, writing, processing of data, the presence of stains on separate parts of documents, etc.;
- Deviation from the prescribed form of the document, which is approved by the relevant normative and legal act.

Particular attention should be paid to the registration of identity documents. Thus, there are cases of forgery of the passport of the citizen of Ukraine, in particular by making new or making changes to a real document. In order to identify a fake passport, first of all, it is necessary to establish whether a state authority exists that issued the document, whether it is affixed with the seal, whether it corresponds to the contents of the stamps of the records made by it, or the correct mark marital status, place of residence, etc.

Making false information about the owner in a real passport (for example, change of birth date, photographs) occurs, as a rule, lost (lost or stolen) passports, obtained by fraudulent actions, etc. such fake passports are most often used to obtain loans, sell real estate, cash withdrawals at bank desks, etc.

In order to identify lost or stolen passports that may be used by scammers for unlawful purposes, banks must use a database for finding a citizen's passport among the stolen and lost, the administrator of which is the Ministry of in the database of invalid, stolen or lost identity documents, which is available on the official website of the State Migration Service of Ukraine. Access to these databases is free of charge. For a better understanding in fig. 2.14 shows a generalized financial monitoring process for payment transactions

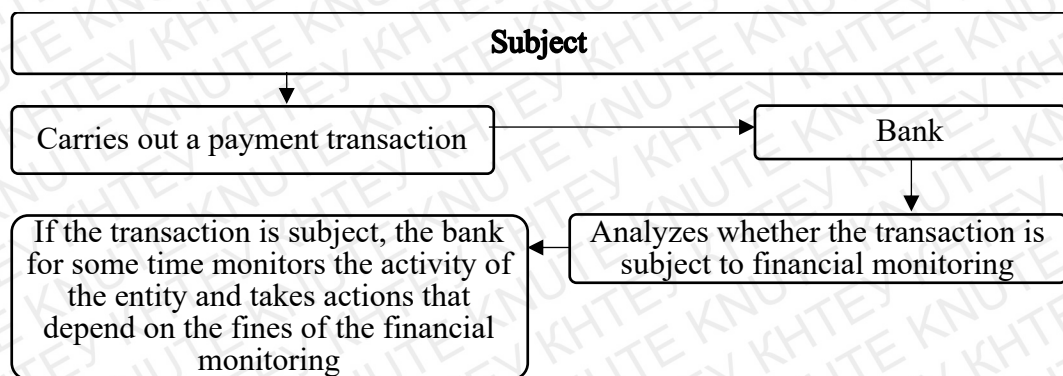


Fig. 2.14 The process of financial monitoring of payment transactions in Ukraine is generalized [8].

The National Bank starts a large-scale work on the fundamental renewal of the Ukrainian market of payment and transfer of funds.

Over the next few months, the National Bank plans to hold a series of meetings for market participants and stakeholders to introduce the conceptual vision for future regulation of the payment market. The result of these meetings with all interested parties should be joint work on proposals for future legislative regulation.

The regulator intends to harmonize with the European national payment legislation by the requirements of the Association Agreement with the EU. In particular, we are talking about the start of the process of implementation of the European Directive PSD2 (regarding Open Banking) in national legislation that will strengthen competition in the financial market and promote the innovative development of the domestic payment market [8].

The work is done with the involvement of external legal expertise with the technical support of foreign donors.

In particular, the National Bank plans to introduce many new payment services (financial and non-financial). Instead of one service for transferring funds today, there will be eight new ones, including six financial (depositing funds on the payment account, withdrawing/writing off funds from a payment account, transferring funds from a payment account, transferring funds from payment account at the expense of credit, emission/acquiring, money transfers) and two non-financial (service initiation of payment and the service of consolidated information on payment account).

Transform the subjects of money transfer and change the role of payment systems, in particular, cancel the need to create or membership in the payment system for the provision of payment services (money transfer services).

In addition to payment service providers, the market should appear new information service providers – initiation of payment (PISP) and provision of consolidated information on payment account (AISP);

Categorize payment service providers – in particular, payment services can provide banks, payment institutions, electronic money establishments, postal

operators, government agencies, etc. It will also include providers of limited payment services, such as telecom and internet operators, social projects, etc.; establish Open Banking (secure online access to money and data on customer accounts for certain categories of suppliers rendering services initiation of payment and provision of consolidated information on accounts); create new licensing rules and registration of non-banking institutions that will provide payment services as well as supervise them.

Thus, it is necessary to cancel the necessity of preliminary acquisition of financial institution status before appeal to the National Bank to obtain a license: the status of the financial institution will be provided simultaneously with the license issuance. The license for the provision of payment services will be issued in electronic form, reporting and interaction between market participants is also in electronic form. Registration will be through inclusion of information into the unified register of payment service providers and payment infrastructure services; to create new regulation in the segment of electronic money on the subjectivity of their issuers and to provide operations on their circulation, as well as granting the right to non-banking financial institutions for emission and acquiring of payment cards, issue of electronic money, opening of payment accounts (for payment and settlement purposes);

Implement payment accounts together with the procedure of safeguarding funds of users of payment services on such accounts, as well as increasing requirements for the protection of payment services, in particular establishing enhanced client authentication requirements and secure remote interaction; To increase protection of the rights of payment services users by establishing clear requirements to suppliers on their duties, introducing limits of liability for unauthorized transactions and other;

To determine the role of the National Bank of Ukraine as a regulator of the payment services market, authorized to control the provision of payment services, to organize work with appeals of users of services, as well as the right to adjust the level of interbank rates for card payment transactions, etc.).

PART III

RECOMMENDATIONS ON THE MARKET OF PAYMENT BANKING SERVICES IN UKRAINE

3.1. Risk management methods of providing payment banking services

The sub'objects involved in the provision of payment services are subject to the impact of the risk of loss, which is caused by the following major reasons: errors; extraordinary events (energy breach, breach of communication, natural disasters); fraud bankruptcy of one or several payment service providers; uncertainty about the final fulfillment of payment obligations.

The risks arising in the course of this activity can be divided into financial and non-financial [25]. Financial risks are the main subject of management in the payment system. Non-financial risks associated with payment services include Forgery of financial documents, imperfect legal base, theft, fraud, and errors.

The most frequently asked two approaches to the problem of limiting financial risk: the first – aimed at limiting the number of payments, the second – to ensure the reliability of the calculation.

Identification of risks in the payment system involves the identification of risks that may have an impact on the market of payment banking services. Risks that are affected by the bank 's exposure to the participants or the risks that the provider of payment services creates itself.

Bank's risk analysis when rendering payment banking services involves researching the nature of risk, defining their level, creating the basis for risk assessment and decision-making on risk response.

Risk assessment methods are qualitative and quantitative. A qualitative evaluation method provides for the verbal description of risks. The goal of qualitative risk assessment is to adopt managerial and organizational decisions.

Qualitative evaluation is made in cases when it is impossible to obtain accurate quantitative characteristics based on actual or forecast data and provides for determination of negative consequences, the likelihood of their occurrence.

A quantitative risk assessment method in the payment system provides for the calculation of quantitative indicators and/or assigning qualitative indicators of quantitative values [32].

The purpose of quantitative risk assessment is to determine the level of losses in the payment system, as a rule, in cost expression. This method has serious advantages: it allows to justify the sizes of reserves to cover the risks being assessed; Provides the opportunity to summarize risks and determine the level of financial losses in the payment system.

During the research we have the following risks arising from the provision of payment services to the banks:

- Legal risk;
- Credit risk
- General commercial risk;
- Operational risk.

Legal risk – the risk of a lack of legal regulation, alteration or unpredictable application of the provisions of the legislation that may lead to the occurrence of losses when issuing payment plug.

The reasons for the occurrence of legal risk may be:

- Mismatch of payment system rules and agreements on participation in the payment system by the legislation of Ukraine;
- Non-compliance with the payment organization of legislative or regulatory requirements (including legislation on consumer protection, normative legal acts governing the execution of transfers/payments, clearing, and settlement, etc.), conditions of contracts concluded with Counterparties (participants) and third parties;
- The fuzzy definition of contract terms: the subject of the contract, rights, and obligations of the Parties, the procedure of dispute resolution, etc. Legal disputes that delay or prevent the implementation of settlements may also lead to other risks (credit risk, liquidity risk, systemic risk, etc.).

Credit risk. The risk that the objects Payment Services will not be able to fulfill its financial obligations in full at a set time or at any time in the future [14].

The credit risk management of the payment system involves the following.

Defining the mechanism and instruments for identifying, measuring, monitoring and managing the credit risks of participants and credit risks arising from the results of transfers/payments, clearing, and settlement.

Credit risk measurement and monitoring include:

- Timely receipt and use of relevant information during the day;
- Monitoring the cost of providing and determining the size of its coverage;
- Monitoring of market conditions and their impact on the cost of collateral;
- Modeling of possible changes in the cost of provision and market conditions;
- Monitoring of any changes in the solvency of the entities involved in the process of providing payment services.

General commercial risk – the risk of deterioration of the financial condition of the payment organization as a result of reduction of its revenues or increase in expenditures resulting in the expenditures exceeding revenues and lead to losses, the coverage of which is carried out at the expense capital. General commercial risk does not include risks associated with failure to fulfill obligations by the recipient of Payment Services or other organization that has financial obligations to the bank.

General commercial risk arises as a result: adverse impact on the reputation of the payment organization and payment system; Weak business strategy of the payment organization; Disadvantages of competitiveness; Losses that the payment organization undergoes while conducting other types of business activities, etc.

General commercial risk management implies that management and control of the payment organization system is identified, enabling the identification, monitoring and management of common commercial risk taking into account losses in as a result of the weak business strategy of the payment organization, the negative balance on the accounts of the payment organization and the unpredictable of large operating losses [14].

Operational risk – risk that defects in information systems or internal processes, human errors, operational failures (errors or delays during processing, system outage, insufficient bandwidth), loss or leakage of information, Fraud or

violations in management due to external events will lead to the reduction, deterioration or suspension of the services provided by the bank.

The sources of operational risk are internal and external. Internal sources include improper identification or misunderstanding of the risks and controls necessary to limit and manage them; improper implementation of information systems and processes control; inadequate selection of personnel; improper procedures of the center's management responsible for payment services in the bank etc. External sources include: natural disasters; terrorism, etc.

The operational risk management provides for the value of the mechanism and instruments to identify, measure, monitor and manage the operational risk. Determination of acceptable level (tolerance) to risks, implementation of based on the operational reliability of the payment system.

Clear definition of roles and responsibilities for managing operational risk in an organization that provides payment services. Periodic implementation of testing systems and application of operating policies and procedures in practice. Presence as well as the bank's policies for achieving these objectives [14].

Risk assessment involves:

- establishment of a list of services provided in the payment system;
- identification and assessment of risks inherent in the payment system;
- identifying and evaluating the effectiveness of controls available to mitigate these risks.

Risk inherent can be calculated by the formula: risk inherent is calculated as the product of the effect of risk on the probability of risk occurrence.

Absolute values will be equal to the following figures: if the risk is low - 1, if the risk is medium - 5 and if high - 10. The probability of occurrence of the risk will be next: if the risk probability is low - 5, medium - 10, high - 15.

To make appropriate management decisions and measures to manage the risk, the person or unit of the payment organization responsible for risk management shall periodically compile and submit to the management of the payment organization the Hot Card. An example of a Hot Map is shown in (table 3.1).

Table 3. 1

Hot Risk Map [22]

		Inherent risk		
		Impact		
		Low	Average	High
Probability	Low probability	5	25	50
	Average probability	December 10	50	100
	High probability	15	75	150

Physical and information security of the bank. Availability of action plan to ensure continuity and the provision of payment services. The presence of an appropriate internal control system bank. Conduct an audit of operational risk management. Risk management in the payment system implies the existence of an effective control system for these risks, the scheme of the which we can assess the levels of risks arising in the process of providing payment services are reflected in annex 5.

So, we can conclude that the occurrence of some risks we cannot exclude, but we can minimize them using measures that should be universal and suitable for rapid changes occurring in the payment environment. It is also worth noting that one of the important tools is the remote analysis, whose main objective is to determine the risk characteristics of the banking sector based on quantitative information obtained from bank accounts.

3.2. The algorithm of generating payment banking services for potential demand in the market of these services

The development of the market of bank payment services largely depends on the coherent state policy, including the policy of regional authorities with the obligatory consideration of certain measures. and the driving the force. The development of any market advocates free competition, needs, and interests. The competition makes looking for ways to improve, encourages the maintenance of high business activity.

The consistency of the interests of all market participants is manifested in stimulating the further results of joint activities. Today in Ukraine, the typical phenomenon in the market of banking services is a steady tendency towards monopolization. In such a situation, all power and control are concentrated in the hands of several actors, which destroys competition and destroys market laws as such.

In Ukraine, the market of banking services is functioning in the conditions when leveling the phases of production, distribution, and consumption. In its turn, the National Bank of Ukraine as a special central public administration body, whose main task is to promote and support the stability of the banking system and compliance with the sustained pace of economic growth, often exerts its actions Impact on the banking services market. The main ones are active support of the monopoly position, participation in an artificial refinancing of certain commercial banks under the understated price of money and ensuring that they are coordinated with the regulator of capitalization plans.

Such a situation makes it impossible for the development of the banking services market by the main tasks entrusted to the National Bank of Ukraine. The factors listed not only adversely affect the banking sector but also affect both the country's economy and its regions. It is the regions that suffer the most, that can not affect the fall of economic and social indicators. Thus, the current model of the banking market functioning today is a completely and requiring new approaches, the main landmark of which should be regional interests.

In our opinion, it is worth analyzing the conditions of the formation and the factor and determining the demand and supply of banking products and services.

The factors of influence on-demand include:

- Main indicators of economic and social status;
- Cash income and expenses of the population;
- The rate of growth of monetary incomes and expenditures of the population;
- Structure of incomes and expenditures of the population;
- Consumer price indices and prices of industrial producers;
- Changes in consumer prices and prices of industrial producers;
- Labor market;
- Interest rates of banks on transactions with clients;
- The corporate image of Banks;
- Consumer awareness regarding the spectrum of banking products and services;
- Trust in the banking system;
- Quality of service.

The factors that affect the offer of banking products (services) include:

- Main indicators of economic and social status;
- Dynamics of banks ' requirements on loans provided to the economy;
- State of the interbank credit market;
- Structure of the deposit market;
- Dynamics of banks ' obligations by funds attracted to accounts of economic entities and natural persons;
- Interbank deposit Market;
- Refinancing interest rates of NBU banks;
- Interest rates on the interbank credit market, deposit market;
- State Securities market;
- The official rate of UAH;
- Hryvnia rate for foreign currencies in the interbank and cash currency markets;
- Operations with foreign currency in the interbank and cash currency markets of Ukraine;

- The structure of cash in circulation;
- The cost of securities in the bank's portfolio;
- Legal support of banking activities

In parallel with this great importance is given to socialnoekonomičnim and financial aspects that its influence and action also form and determine the demand and supply in the banking services markets. It should be noted that the scientists focused more on the demand and supply on the absolute values of its size and analysis of the equilibrium price. In our opinion, important in the market research of payment of banking services is an evil value of demand or supply under the influence of various factors.

Specifics of the payment banking market in different banks caused by the action as demand factors (cash income and socio-demographic structure of the population, financial results of business entities, etc.), and of the proposal (economic development, population welfare, etc.). The study of supply and demand primarily involves evaluating the needs of banking services and business entities, the analysis of the provision of banking services, the allocation of monetary income, etc.

Given the factors that influence demand and supply, we note that demand is the needs of consumers in banking services, which are provided with certain goals, relevant monetary funds, and assets. While the offer is an opportunity to provide banking services reinforced by demand, as well as the ability of banking institutions to reproduce resources depending on the specifics of payment services. Demand for regional markets banking services is formed based on the interested consumers in banking services and their purchasing power to purchase these services.

Analyzing the demand in the market of payment banking services should highlight those components that are positively and negatively can characterize its total volume. First of all, we will share the demand for the form of retail and corporate clients. Describing the retail customers, to the positive population of the working-age, to the negative-the number of unemployed. According to the above, we will highlight the positive indicators of solvency – the size of the average monthly wage and negative – the share of the cost of consumption on average per capita, the level of arrears of wages, etc. Assessing the positive factors that influence

and form the demand for retail banking services, note that over the past 10 years in all regions of Ukraine a growing number of the employed population. Parallel to this, A similar trend was observed with the size of the average monthly wage [45, 35, 46, 26].

As for the characteristics that are destructive on the consumption banking services, their analysis states that over the past 10 years, the number of unemployed people at the age of 15-70 years has gradually decreased. In turn, the costs. The population, which includes the costs of acquisition of goods and services, paid revenues from property, current taxes on income and property grew, which may be associated with the increase in incomes of the population so with a decrease in its propensity to savings.

Thus, the above trend as a whole positively influenced the market of payment banking services [2].

In turn, characterizing the demand in banking services markets by corporate clients, it should be noted and its dependence on the level of economic development of regions. For example, the value of such indicator as the volume produced in the regions of industrial production means for enterprises the increase in revenues from its implementation, improvement of their financial state, and therefore has a direct relation to the formation of demand for bank services.

It is also important to consider the latest changes in the market of payment banking services, which stimulate the growth of supply and demand [41].

Considering all of the above, we can describe an algorithm for how tanks should generate a supply to maintain and increase the existing level of demand. The consumer of payment banking services sets the potential demand for their needs and thus forms one of the key elements that will influence the formation of the offer in banking. The bank analyzes current trends, external factors and consumer needs. The next step will be to standardize the information obtained into an algebraic expression, which will look like this (formula 3.1)

3.1

$$S = X + Y + Z$$

where, S – supply

- X – external factors
- Y – requirements of the regulator
- Z – consumer needs

At the final stage, the bank refines existing products and approaches to providing payment services based on the calculations and research carried out. This algorithm is shown schematically in figure 3.2

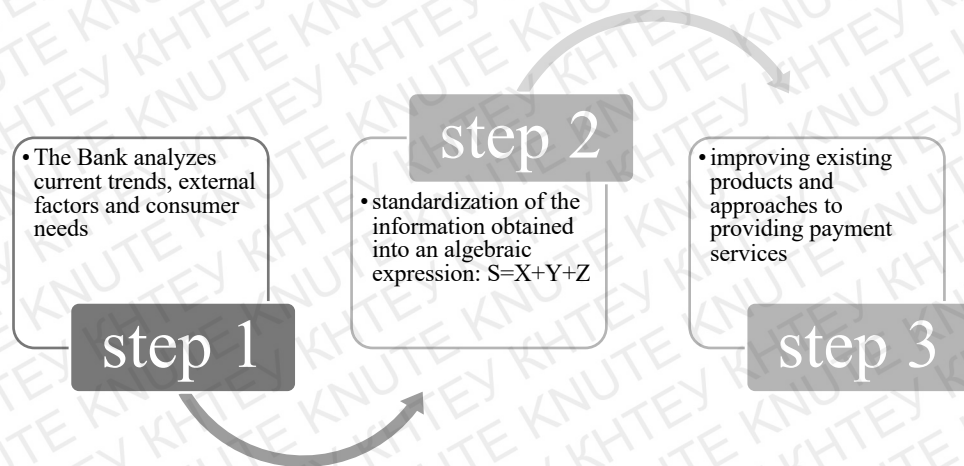


Fig. 3.1 Supply generation algorithm

However, by assessing the domestic economic situation, we can conclude that supply-side banks need to take the following steps to maintain demand.

- to work out the principles of open banking, ensuring (restoration) of the competitive environment in the ukrainian financial market;
- implement the terminology, principles and provisions of the European Payment Service Directive;
- implement digital financial services consumer protection requirements that are proportionate to all types of service providers
- Improve the legal framework that protects the privacy and security of personal data when consuming digital financial services.

Promote competition, fair and open conditions for digital financial inclusion technologies by ensuring that providers of similar digital financial services have similar rights and obligations, regardless of their institutional type and the technology they apply. Including preparation and implementation of the following projects based on government decisions:

- digitization of large-scale, periodic payments from government agencies to consumers and small businesses (G2C, G2B);
- implementation of transactional services for financially excluded and uninvolved citizens, which can provide significant amounts of digital payments;
- providing actual informal free choice for the financial institution's customers to service;
- elimination of organizational (documents on the facts of receipt of digital payments must be actually recognized by the executive documents for the movement of goods and ensuring the procedures prescribed by law for the protection of consumer rights) obstacles to the reception of digital payments;

Work with national authorities to remove barriers and promote internal and cross-border financial services to promote digital financial inclusion and to ensure a clear separation of responsibilities between regulators (NBU, National Financial Services), regulatory and regulatory frameworks financial services and digital financial inclusion in general.

Facilitate the development and implementation of harmonized and balanced regulation to preserve customer funds belonging to non-prudentially regulated digital financial service providers (financial companies, payment aggregators, payment service providers who do not seem to provide them to mobile operators). The positive trend of cashless settlements development is underway. In General, the results and I quarter of 2019 showed a positive trend of cashless settlements, which became commonplace for Ukrainians. Today in Ukraine 8 out of 10 transactions with payment cards are cashless [39].

According to the results and quarter of 2019, the share of cashless payments on the volume of transactions with payment cards has reached 50%. This is 5 interest rates points greater than the results of the year 2018 (45%). In total, the volume of card operations, due to seasonal 48 fluctuations, was annually observed in the quarter.

In the current period, such an increase in the share of cashless operations is explained mainly by:

- Decrease in the amount of cash withdrawal operations (10% by volume and by 5% by number) if compared with the IV quarter of 2018;

- Stable positive trend by cashless operations (increase by 0.2%), if compared with the IV quarter of 2018.
- The amount of cashless settlements with the use of payment cards has grown, comparing with the 1 year quarter by 45%, and amounted to 395.5 billion UAH; and the number of cashless operations was nearly 35% and amounted to 906 million of operations [47].

The amount of cashless operations has been distributed as follows:

- Transactions of money transfer from card to card (P2P transfers) amounted to 39% or 153 billion UAH, their average bill – UAH 1 576;
- Transactions for goods/services payment on the Internet where 17% or 69 billion UAH, the average cheque is UAH 472;
- Transactions of money transfer from the card to a bank account on the Internet (for example, replenishment of deposits, repayment of loans, etc.) amounted to 13% or almost 52 billion UAH, the average cheque is UAH 264;
- Settlements with the use of payment terminals amounted to 29% or 113 billion UAH (of which 22% are contactless payments, cards carried out and 4% are payments using NFC gadgets), the average check is 250 UAH;
- Cashless operations in ATMs and PSCS amounted to only 2% or 8 billion UAH, the average check is 593 UAH.

The largest number of was carried out cashless operations using payment terminals is nearly 50% of the total.

For the first three months of 2019, the total number of payment cards in Ukraine increased by 4% to 61.8 million operations (60% of them are active payment cards). However, the number of contactless active payment cards in this period increased by 15% to 4.5 million operations. Already every eighth active payment card in Ukraine is contactless [50].

The payment infrastructure in Ukraine is expanding. Increased demand for Ukrainians for cashless transactions and popularization of innovative payment services stimulates the further expansion of payment infrastructure.

Since the beginning of 2019, the network of trade payment terminals has risen by 4% to 289.6 thous. Pieces, of which 0.6 thousand operations are mobile payment terminals. At the same time, 81% of trade in POS-terminals in Ukraine provided the possibility of contactless payment (as of 01.04.2019).

The total ratio of the number of payment terminals to the number of the permanent population of Ukraine since the beginning of the year increased by 3% and reached 7.3 thousand operations by 1 million people.

In the regional section, as before, there is an uneven distribution of the terminal network. The smallest number of payment terminals about the population is evident in the Transcarpathian (4 thousand units per 1 million people), Donetsk (3.1 thousand operations per 1 mln population) and Lugansk (1.9 thousand operations per 1 million population) areas. This indicator is dominated by the city of Kyiv (19.1 thousand units per 1 mln population), Kyiv (10.5 thousand operations per 1 million people), Dnepropetrovsk (9.9 thousand operations per 1 million people) and Odesa (8.2 thousand pieces per 1million population) of the region.

Thus, there is a direct connection between supply and demand in the market of payment banking services and changing demand causes a corresponding change of offer. The offer is determined by the number of bank institutions, their opportunity to provide these services and the number of banking services that are on the market. In turn, imbalances in the regional distribution of bank institutions can not be displayed on the development of demand and supply in the market of payment banking services, they have caused the uneven provision of certain types of services in some areas or even their full absence on the other. Demand and supply have a significant impact on the market development of payment banking, which is a real reflection of the interests of such entities as banking institutions and clients.

CONCLUSIONS AND SUGGESTIONS

The development of the digital economy stimulates the development of modern business models and financial systems, structural changes in the financial infrastructure of the world market, namely the creation of virtual banks, financial and technical companies, attracting platforms internet investment, etc. The need for making payments will always be relevant among people, so in the last two decades, financial technologies have radically changed the procedure for their provision and receipt, and the scope of payments is not the most popular among the founders of fintech startups.

In the first section, we have deepened our understanding of the nature of payment services in their traditional form by analyzing the work of various scholars.

Ukraine's current focus on joining the European Union and the Association Agreement signed have defined the relevant area of the first section, in which we have examined the regulatory framework for the provision of payment services to financial institutions in the EU.

In the second section, we analyzed the practice of providing payment banking services. Quantitative characteristics have been identified and have been associated with the related changes in the values. We were formed based on the detailed study of the evolution of instruments for providing payment services and system calculation methods, each of which includes clarification and major payment systems giants in the form of observant examples for clearer understanding.

The Directive 2015/2366/EU analyzed, which is a key document in this field, offers strict regulation of the market of payment institutions and strict conditions for obtaining a license to stop any fraud with the money of its citizens. The PSD2 consolidated the possibility of providing payment services not only to traditional institutions but also to fin-tech services, according to regulating their activities. The directive calls for cooperation in all institutions to improve the provision of payment services to its citizens and emphasizes the importance of mandatory data protection enhancement. Therefore, we believe that this is the case where Ukrainian legislation should adopt the best global practices.

It also caused the procedure of interaction of entities in the process of providing payment services. We have allocated that the world does not stand still, the processes of digitalization extend their influence in all spheres of society's life, especially significant leaps of development are noticeable in the way that the tools of providing payment services are changed, from paper cheques to smartphone calculations and now we can note that development will not stop, because competition inflects the market, forcing intermediaries to implement alternative methods of payment, even cheaper, even faster and more convenient, and therefore to develop new business models and cooperation between participants.

Examined the financial monitoring of the provision of payment banking services and reforms, which are planning to conduct a regulator for the more efficient functioning of the market, which will further promote the development of the banking system and the economy of Ukraine as a whole. One of the main changes will be: to introduce several new payment services (financial and non-financial), to transform the subjects of money transfer and to change the role of payment seven, x to legalize suppliers. Payment services, implement Open Banking (secure online access to money and data on customer accounts for certain categories of vendors providing services to initiate payment and to provide consolidated information for the new licensing and registration of non-banking institutions that will provide payment services, and supervise them. Increase the protection of the rights of payment services users by establishing clear requirements for suppliers on their duties, introducing the limits of liability for unauthorized transactions and other, to define the role of the National bank of Ukraine as a regulator of payment services market and other.

In the third section, we have analyzed the main risks arising from the provision of payment services by banks and the actions that will help to minimize them. We have concluded that the occurrence of some risks we can not exclude, but we can minimize them using measures that should be universal and suitable for rapid changes taking place in the payment environment. It is also worth noting that one of the important instruments is a remote analysis, whose main objective is to determine

the risk characteristics of the banking sector based on quantitative information obtained from banking reporting.

We also analyzed the demand and offer on the market of payment banking services and made the conclusion that there is a direct connection between supply and demand in the market of payment banking services. And changing demand causes a corresponding change of offer. The offer is determined by the number of bank institutions, their opportunity to provide these services and the number of banking services that are on the market. In turn, imbalances in the regional distribution of bank institutions can not be displayed on the development of demand and supply in the market of payment banking services, they have caused the uneven provision of certain types of services in some areas or Even their full absence on the other. Demand and supply have a significant impact on the market development of payment banking services, is a real reflection of the interests of such entities as banking institutions and clients.

Based on the hypothesis of our study that the formation of demand for payment banking services depends on the level of information security of the subjects of these services, we can confirm it. After all, as described above, domestic legislation is currently in a transformational period and is actively pursuing policies in all areas, in particular in the area that we are interested in adapting to EU legislation, amending existing legislation and processes, transforming approaches to the interaction of actors and special emphasis is placed on the fact that the consumer can focus his attention on the security of information during payment transactions, since active actions carried out by the National Bank of Ukraine allow the maximum encryption all the data.

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