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DIGITAL BANKING SERVICES IN KOSOVO

December, 2016

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INTRODUCTION

The banking system in Kosovo developed rapidly considering that the country came out of the last war without any banks or branch offices. This conjectures that the regular flow of capital was very restricted if not impossible.

What is meant with the concept of development in this context? Does it simply entail the opening of the banks - financial institutions, increasing the number of their branches and financial services coverage for the entire territory of Kosovo?

Furthermore, can the following be considered part of this development process: increase in the number of depositors and deposits in general, credit growth, profit, etc.? Alternatively, is there something else that characterizes the successful growth of the banking sector? Studies show that there are some additional aspects which are very essential such as security, the quality of services and efficiency in meeting customer needs which comprise a successful banking sector. This implies the modernization of services, introduction of new financial products, reducing the transaction execution time or different financial services which are in demand by clients.

What is the level of development that bank services have reached in Kosovo, specifically in the field of digital banking? Are they aligned with client expectations? Is the current quality of banking services sufficient for fulfilling client expectations which are continuously growing?

Through the study "Digital Banking Services in Kosovo", the Center for Strategic and Social Research – STRAS – together with PHB Development has researched and analyzed the current level of organization, efficiency, and modernization of banking services, with the aim of reflecting the current situation and also deriving recommendations for addressing potential deficiencies. For this purpose, data from different sources have been used in compiling an assessment of the level of digital banking services development in the countries of the region, as well as in some countries of the European Union which can also serve as a comparison with Kosovo.

The Kosovo Banking Association and the Development Facility of the European Fund for Southeast Europe – EFSE DF – has supported STRAS and PHB Development in accomplishing this study.

The study's conclusive goal was to reflect the extent of service offers that rely on information technology, particularly those offered digitally. Furthermore, the study's aim was to evaluate the quality of services and how accessible they are to the clients / citizens of Kosovo. On the other hand, the study has also included information regarding their impact on expense rationalization for banks,

businesses, but also citizens, reducing the time to complete a transaction, as well as for the general economic development of the country. Bearing in mind that the 21st century is the century of information technology, the study also is focused on the prospective of e-banking services. As such, many circumstances were taken into consideration:

- **To what extent does the primary and secondary legislation create an opportunity for e-banking service development in Kosovo?**
- **Institutional infrastructure, which does not only rely on the Central Bank of Kosovo or the licensed commercial banks in the country, but also on other state mechanisms with oversight responsibility or security provision for commercial activity;**
- **Expansion or development of the network, which should be coordinated with opportunities created by internet service providers and information technology in general;**
- **Opportunities offered by e-banking;**
- **Number of e-banking service users;**
- **Volume of transactions;**
- **Level of transaction security;**
- **Security measures taken by operators – commercial banks, both in the internal infrastructure, as well as in educating clients on how to safely use this technology;**
- **Staff training, an issue related to the education system in Kosovo.**

Hence, it relates to the development of an entire system, particularly, a range of services that have a broad scope on the global level. All financial market stakeholders in Kosovo are moving in this direction, some faster than others, nonetheless, all have realized that this is the way towards the future. Customers must also adopt this approach, including those who work with the bank on a daily basis, while their needs for banking services will distance them from the bank tellers since by using electronic services, they will save time and money and will gain from the increase in efficiency and competitiveness.



METHODOLOGY

In order to gather relevant background information, several meetings with responsible officials of the Kosovo Banking Association and EFSE DF have been organized, as well as with responsible officials in the fields of marketing and information technology sector of commercial banks, in order to complete the study.

Likewise, other banking experts from information technology departments have been interviewed, as well as those of the Central Bank of Kosovo regarding the payment system.

Regarding the advantages that digital banking services offer, this information has been gathered through the interviews which were carried out with business managers who complete almost their entire cash flow through electronic means.

The study was complemented by secondary research in order to provide information on banking sector development and impact of information technology, specifically of the degree of service digitalization. The study mainly focused on the assessment of reports, analysis and publications of the Central Bank of Kosovo, World Bank, International Monetary Fund, Kosovo Banking Association, businesses, business associations as well as various sectoral associations.

The study consists of several chapters which address different aspects of the application of digital banking services in Kosovo.

- **Chapter One** - Economic Environment in Kosovo: A brief summary of the country's economic development and the problems it faces. In a subsection the developments of the banking sector have been addressed - with particular focus on the digitization of services.
- **Chapter Two** – Payment Systems and Digitalization of Services: This chapter addresses the main purpose of the study and presents the background of the application of information technology achievements in commercial banks of the country, its degree of application, number of users, volume of transactions, education and training offered for the use of digital services. Also the degree of security, impact on reducing costs and increasing profits, not only in banks but also in businesses.
- **Chapter Three** - Bank Cards: This chapter presents a summary of developments in the number of bank cards, their types, number and volume of transactions. Moreover, this chapter identifies the culture of the use of money in Kosovo and the fact that cards are increasingly replacing cash.
- **Chapter Four** - Kosovo and the region: This chapter presents a summary of the achievements in some countries of the region compared to the position and dynamics of banking service development in Kosovo.
- **Chapter Five** - Experiences in several countries of the European Union and Central and Eastern Europe: the aim of the study is to also analyze their experiences in order to identify the best and most successful models that could be applicable in Kosovo.
- **Chapter Six** - What are the advantages that information technology create for banks, or more specifically what are the volumes of the payments that are being made using this technology, and how much is the cost, compared to the classic form of payment.
- **Chapter Seven** – Summarizes an insight of payment security, more precisely it is about the cyber attack in numbers and figures, in European Union and Eastern Europe.
- **Chapter Eight** – Is a description about the perspectives: Cash money, or money in cash? It tells the speed on how the world is getting away with cash money payment.



EXECUTIVE SUMMARY

Despite an adverse economic environment in Kosovo, the banking industry has had a rapid and stable development. As much as it might sound paradoxical, however, this was achieved because of the confidence that people had in the banking system and the diligence that banks showed in their lending policies. Due to this situation, even in the years of the global financial crisis, Kosovo's banking system remained unaffected.

Although a lower growth rate can be noticed in some indicators, such as the growth of deposits and loans, it does not reflect a crisis or an alarmed situation. Banks in Kosovo continue to experience positive growth rates and sufficient liquidity.

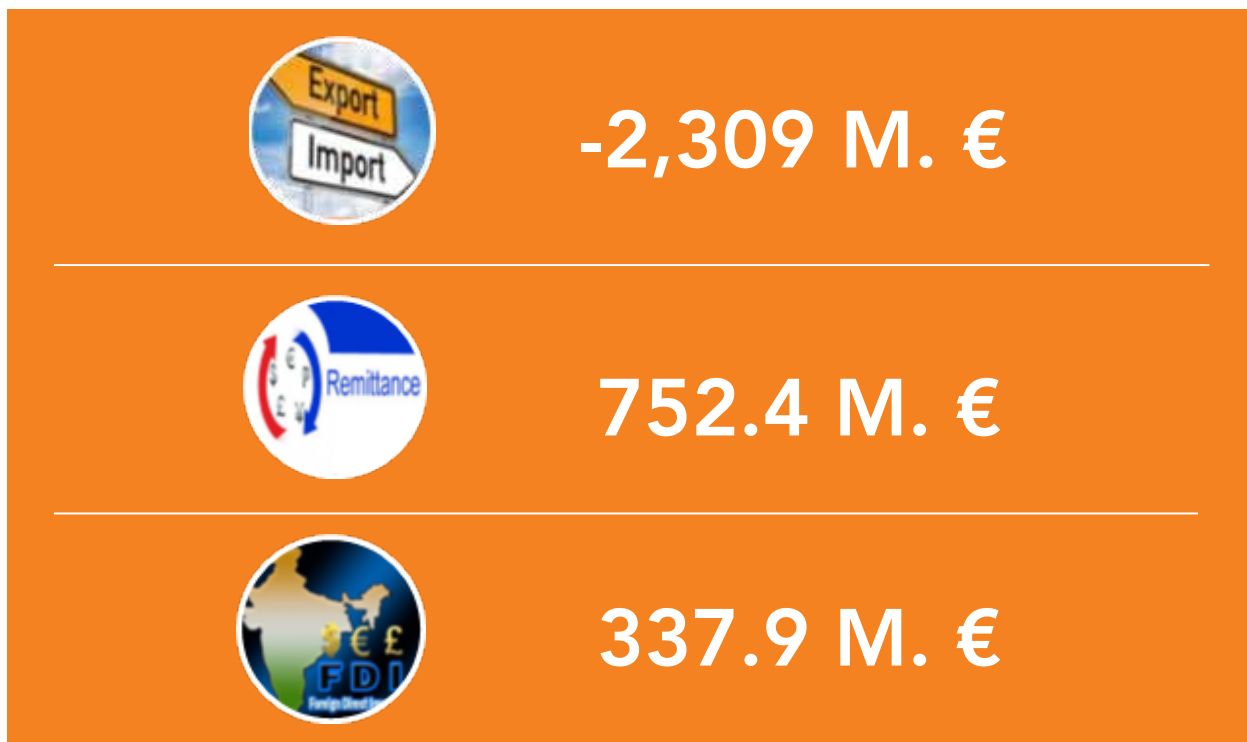
In recent years, banks are applying lending criteria which lead to lending/investment growth along with rationalizing operating costs and offering banking services with lower provider costs. This resulted in higher profits for banks and a satisfactory return on investments.

In recent years, economic growth slowed down, especially in 2014, when the growth rate of gross domestic product (GDP) was only 1.2 percent, which is the lowest rate recorded in the postwar years. In 2015, the

GDP growth rate was 4.1 percent¹, while in 2016 an economic growth of 3.7 percent² is predicted. Ambitions for such growth rely mainly on public investment, private sector investments and foreign direct investments. Public investments remain hindered by major infrastructure projects. These public investments are declining, as more budgetary expenditures are oriented to cover public social schemes necessary.

Regardless of trends that show signs of revival, the economy still faces major structural problems such as high trade deficit, rising unemployment rate and poverty, which can seriously jeopardize consumption. These deficiencies are being covered by remittances, which show no signs of decline, and high budget allocations for salaries, pensions, and others benefits for social categories.

Graph 1: Economic indicators of Kosovo for 2015



1 <http://ask.rks-gov.net/media/2404/bpv-2008-2015.pdf>

2 http://www.bqk-kos.org/repository/docs/2015/BQK_Raporti%20Vjetor%202015..pdf



At the end of 2015, the banking sector expanded its asset value to 3.39 billion Euro, with 6.3 percent annual growth, which is higher than the previous year (4.1 percent in December 2014). This derives from the loan portfolio, which continues to be the dominant category in the structure of the assets.

Loans continued to be characterized by an accelerated growth. In December of 2015, their value reached 2.02 billion Euro, representing an annual increase of 7.3 percent (4.2 percent in December 2014).

Deposits totaled 2.7 billion Euro in September 2015, or about 5.5 percent (2014) higher compared to the 3.6 percent (2013) rate recorded a year earlier. Households with 72.7 percent, followed by deposits of businesses with 21.6 percent dominate the deposit structure.

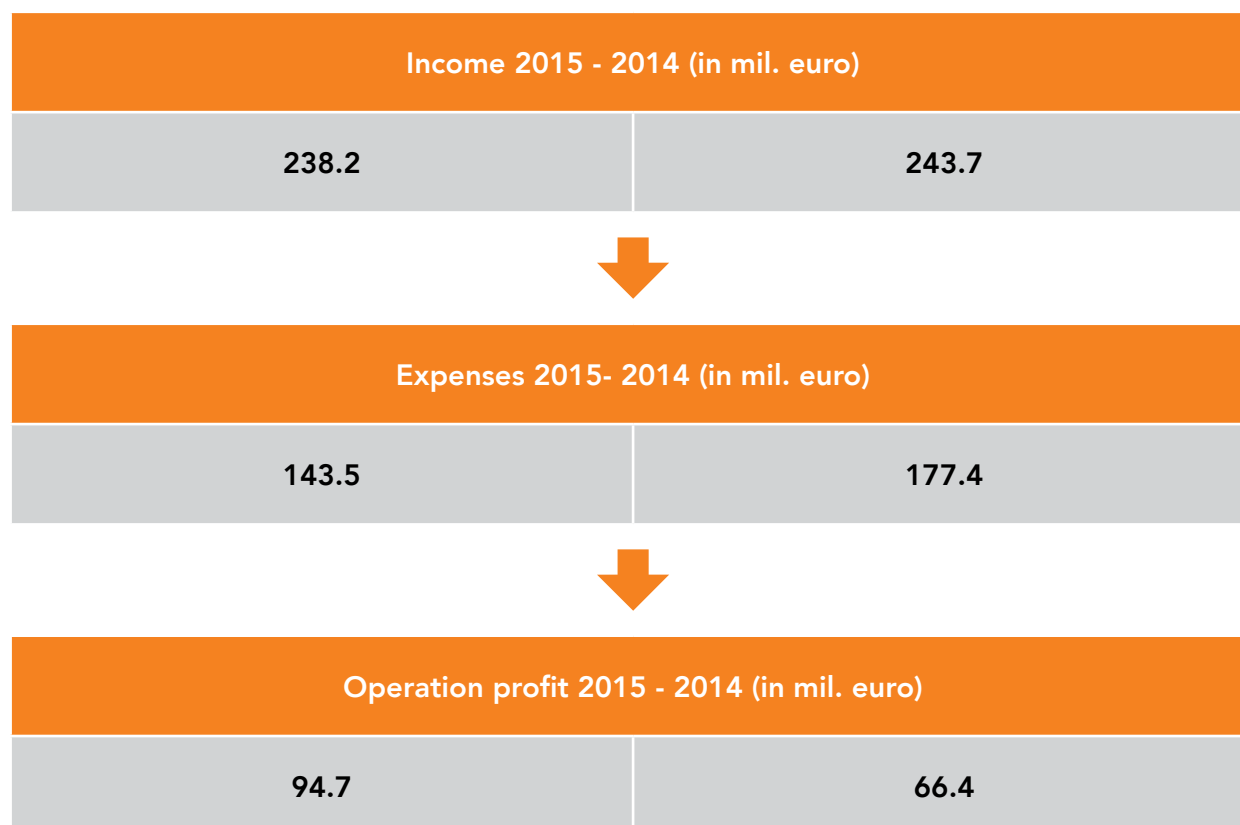
In the past two years, there has been a rapid decline in interest rates on loans, while deposits experienced frequent fluctuations,

despite a declining trend. The average interest rate on loans in December 2015 fell to 7.7 percent from 9.3 percent a year ago. The average interest rate on deposits rose to 1.2 percent from 1.1 percent in December 2014.

The profit realized in 2015 was 94.7 million Euro or 28.3 million Euro higher than in 2014; Revenues - 238.2 million Euro, representing an annual decline of 1.3 percent; Expenses - 143.5 million Euro or 33.9 million Euro less than a year ago. The liquidity level of the banking sector is satisfactory, since the ratio of loans to deposits was 75.0 percent.

All of the advanced services offered by banks were quickly embraced by customers, which can be noticed through the increase in the number of accounts, transactions, and their values. In Kosovo, there are 187,297 functional e-banking accounts, of which 79.71 percent are accounts of individuals. Compared to 2014, the number of e-banking accounts is 18.7 percent higher.

Graph 2: Kosovo Banking Sector Indicators for 2014 and 2015



By the end of 2015, 9,835,056 transactions in electronic interbanking clearing system were performed at an overall nominal value of approximately 7.5 billion Euro. Compared to 2014, the number of transactions increased by 8.6 percent, while the value of transactions – by 9.3 percent.

The number of cards also experienced rapid growth. In total, at the end of 2015 there were 862,779 cards with a payment function, which compared to 2014 represents an increase of 6.1 percent. Of which, cards with debit function were 718,717 or 6.0 percent more than in 2014. There are only 199 cards with an electronic money function in use.

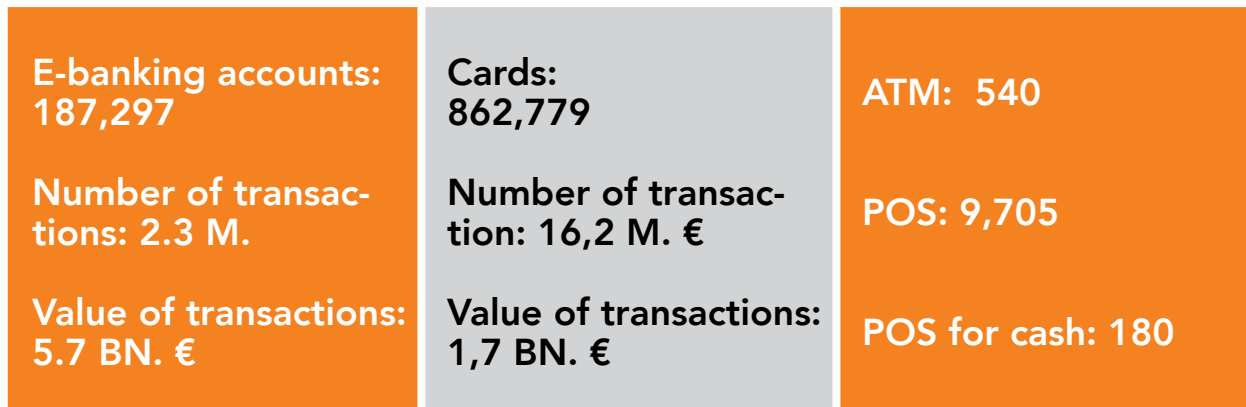
Last year, there were around 16.2 million banking transactions completed with cards. Compared to 2014, the growth was 9.8 percent. The overall value of transactions was over 1.7 billion Euro, or 36.9 percent more than in 2014.

In 2015 there were 540 functional ATMs, in 2014 - 498 ATMs, while in 2013 there were only 496 of them. Most of the ATMs have a cash withdrawal function, 97 of them with credit transfer function as well as KOS-GIRO, while 78 also have a cash deposit function.

POS terminals have also experienced a rapid growth. There were 9,705 units in 2015, 9,349 in 2014 and 9,071 units in 2013. POS is mostly used for payments (purchases), while only 180 are for cash withdrawals as well.

Last year the total value of withdrawals was 1.7 billion Euro, or 36.9 percent higher than the previous year. Withdrawals from ATMs were 70.7 percent of the total value of all card transactions, while payments in POS terminals comprised 17.5 percent of the total.

Graph 3: E-banking; cards, ATM, and POS in 2015



Based on interviews with business bank clients, e-banking service is convenient and efficient, it has enabled a much faster and easier communication with the suppliers and the buyers, saves time and reduces costs. Some of them make all payments through e-banking. They remarked that telephone services are limited, some services have to go through tellers, there are delays in transfers from banks to clients' accounts - one to two days, as well as high cost of services.

There are 3,587 employees in the country's banking institutions, or 80 employees more than 2014 and 141 less than 2012.

CBK did not report any serious complaint about the functioning of the payment system. In 2015, it received 442 complaints. Half of these or 221 complaints are directed towards banks, microfinance institutions, or non-bank institutions. Reasons for the complaints were different: categorization in the credit registry, blocking of accounts, or various issues related to loans. The majority of complaints have been resolved in favor of the complainants.

CHAPTER 1

ECONOMIC ENVIRONMENT

In 2015, Kosovo's economy experienced economic growth slightly higher than previous year, mainly due to the improved political stability. This emerged after the year 2014 which was characterized by the lowest level of development in postwar years with only 1.2 percent GDP growth. According to the data from Statistics Agency, in 2015 the economic growth was 4.1 percent.³

³ <http://ask.rks-gov.net/media/2404/bpv-2008-2015.pdf>

It is a characteristic that GDP rates have shown a tendency to decline since 2008, despite experiencing growth for several years. However, it never exceeded 4.5 percent, from eight years ago. Moreover, given the large fluctuation shown over the years, we can conclude for an unstable economic environment, which has been under great pressure from other factors, mainly political.

The economic growth recorded last year is presumed to have been generated mainly by increased domestic demand, i.e. the increase in consumption and investment, while net exports continued to contribute negatively to economic growth.

Graph 4: Economic growth



The forecast for growth in 2016 with 4.4 percent is mainly based on the estimated growth of private investment and private consumption.

In 2015, exports of goods were 325 million Euro, which represents a slight increase compared to the same period of the previous year - only 0.2 percent. In the same period, imports were over 2.6 billion euro, i.e. 3.8 percent higher. This ratio has affected the trade deficit to exceed 2.3 billion Euro, while the import export coverage ratio is 12.3 percent, respectively, which is slightly lower compared to 12.8 percent in 2014⁴.

In 2015, Kosovo's economy was characterized by declining prices. The inflation rate, expressed by the consumer price index was -0.5 percent⁵.

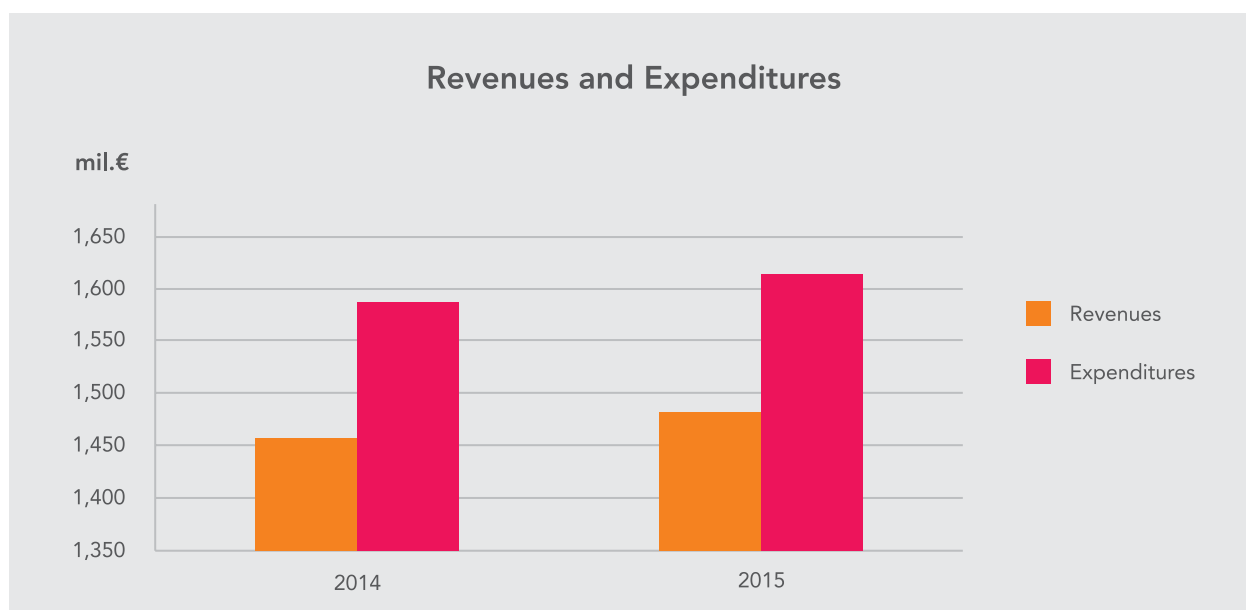
By the end of October 2015, the fiscal sector was characterized by increased revenues and expenditures versus the prior year. Revenues were 1.49 billion Euro, which compared to the same period of the previous year were 9.3 percent higher. On the other hand, the total budget expenditures amounted to over 1.57 billion Euro, or 6.2 percent higher than previous year.

⁴ <https://ask.rks-gov.net/media/1160/statistikat-e-tregtise-se-jashtme-12-dhjetor-2015.pdf>

⁵ http://bqk-kos.org/repository/docs/2015/BQK_Raporti%20Vjetor%202015..pdf



Graph 5: Revenues and expenditures of the central budget



(Source: Ministry of Finance Kosovo)

In this period, costs for salaries and wages (542.8 million Euro) increased by 8.2 percent, subsidies and transfers (418.9 million Euro) were 16.0 percent higher, goods and services (204.8 million Euro) were 0.8 percent lower, while payments for capital expenditures of 404 million Euro were 1.8 percent lower.

By the end of 2015, public debt amounted to 748.9 million Euro, or 12.98 percent of GDP and 28.9 percent higher than in 2014. Internal debt was 377.8 million Euro or 47.3 percent higher.⁶

Remittances as one of the main components of the current account increased by 8.4 percent and reached the value of 752.4 million Euro.

Within liabilities, foreign direct investment (FDI) remains the main category, which by the end of November 2015 amounted to 337.9 million Euro (159.9 million Euro in the same period last year)⁷.

In 2015 there were 9,833 new companies registered or 429 companies more than in 2014, while 970 entities were closed or 523 more than the previous year.⁸

Securities recorded an annual growth of 15.5 percent, reaching 473.4 million Euro. The very low rates of return (some even negative) in securities of foreign governments, compared to more attractive security rates of the Government of Kosovo, encouraged the shift of investment towards the latter.⁹

⁶ <http://mf.rks-gov.net/desk/inc/media/292849B9-C7B2-4754-9F03-EFC373F3D740.pdf>

⁷ http://www.bqk-kos.org/repository/docs/2015/BQK_TM4_2015-Shqip.pdf

⁸ <https://ask.rks-gov.net/sq/agjencia-e-statistikave-te-kosoves/ekonomi/ndermarrjet>

⁹ http://www.bqk-kos.org/repository/docs/2015/BQK_Raporti%20Vjetor%202015..pdf

PREDICTIONS

Projections from the Central Bank of Kosovo for 2016 suggest that the economy of Kosovo will have a higher growth compared to 2015, from 3.8 to 4.4 percent. This increase, similar to 2015, is expected to be generated by domestic demand, while net exports are expected to continue to have a negative contribution to GDP growth. Consumption, as the main component of domestic demand is expected to have the majority of contribution to economic growth in 2016. Investments, unlike in 2015, are expected to be characterized by a significant increase in public investment. Also, the reduction of interest rates on loans and the ease in standards for approving loans by banks is expected to have a significant impact on promoting private sector investment. Even FDIs, which were characterized by a significant growth in 2015, are expected to contribute to the growth of total investment.

1.1 Banking System

Although it has a relatively short history, the banking system in Kosovo experienced a rapid and very stable development. This has even greater significance when we consider that after the war the country emerged with a ruined banking infrastructure and that this damage had begun since the year 1990. The first postwar commercial bank opened in September 1999; while by the end of 2015 there were 10 banks, 8 of which with foreign capital, with a total of 265 branches and 3,587 employees.

At the end of 2015, the banking sector increased the value of assets to approximately 3.4 billion Euro, corresponding to an annual growth of 3.3 percent (previous year 7.3 percent). The highest contribution has been the expansion of the loan portfolio, which continues to be the dominant category.

Deposits had the lowest rate of growth, which are the main source of funding for the banking sector.

1.2 Loans

Banking sector loans continued to be characterized by an accelerated growth. In 2015 the

value of loans was 2.02 billion Euro, which represents an annual increase of 7.3 percent (4.2 percent in 2014). This growth came as a result of the easing of lending criteria and better credit conditions for businesses and households, by lowering interest rates, extending the credit limit, and maturity. Banks report that the demand for loans has also increased.

Within loans, the highest annual growth was noted for loans to households - 9.7 percent. However, the main contribution to the recovery of the total lending sector has been provided by loans to businesses, which recorded an annual growth of 6.1 percent (3.2 percent in 2014).

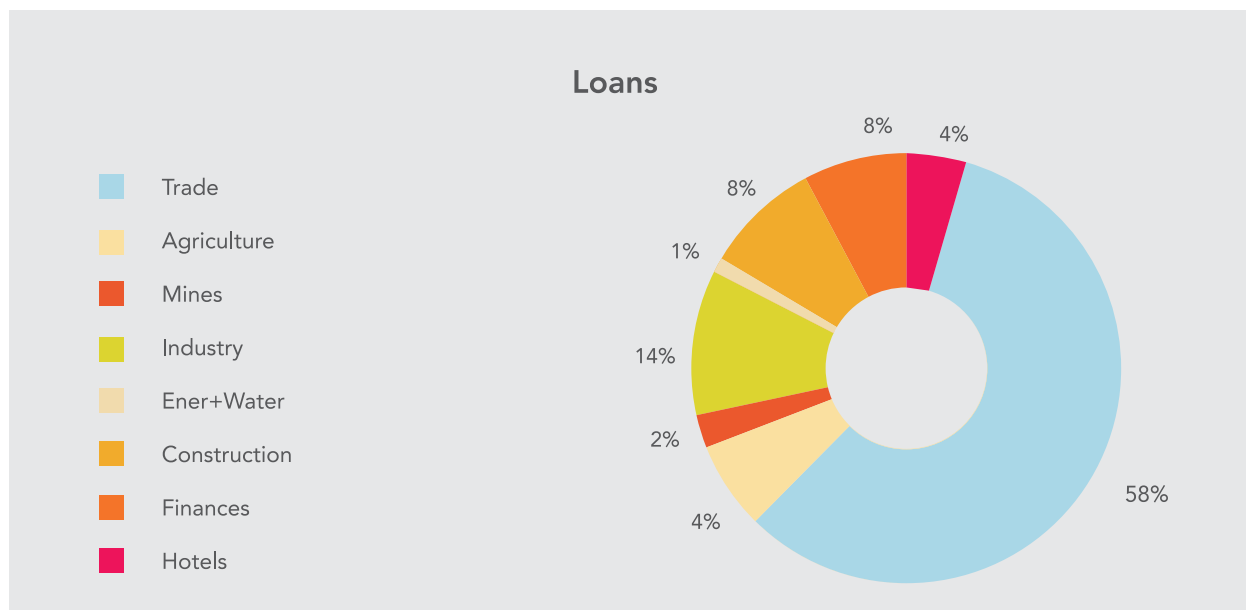
Loans to businesses comprise 65.9 percent of the total banking sector loans.

Structure of lending: Loans to trade dominate with participation rate of 58.0 percent, followed by industry loans -14.0 percent, and construction with 8.0 percent. The agricultural sector continues to have the lowest access to bank financing with a share of 4.0 percent, although the first part of 2016 has been characterized by growth in lending to this sector.¹⁰

¹⁰ http://www.bqk-kos.org/repository/docs/2015/BQK_Raporti%20Vjetor%202015..pdf



Graph 6 - Economic sector participation in lending



(Source: CBK-Monthly statistical bulletin – January 2016)

The structure of total loans by maturity continues to be dominated by medium-term loans, i.e. loans with maturity 2 to 5 years. Compared to the previous periods, there is a tendency of moving towards longer term lending.

1.3 Liabilities

The structure of liabilities of the banking sector continues to be dominated by deposits, which constitute about 80 percent of total liabilities, representing the main source of funding for the banking sector. The high reliance on deposits collected domestically and particularly from households avoids the exposure of the sector to fluctuations in foreign markets.

Equity, as the second category based on participation, recorded a growth of 15.5 percent (13.8 percent in September 2014), as a result of the high growth of profits realized by the banking sector during 2015.

The category which marked an increase was the balance from interbank borrowing with 46.8 million Euro from 22.2 million Euro in

September 2014. The increase results from banks needing to borrow short-term funds from banks abroad, including parent banks.

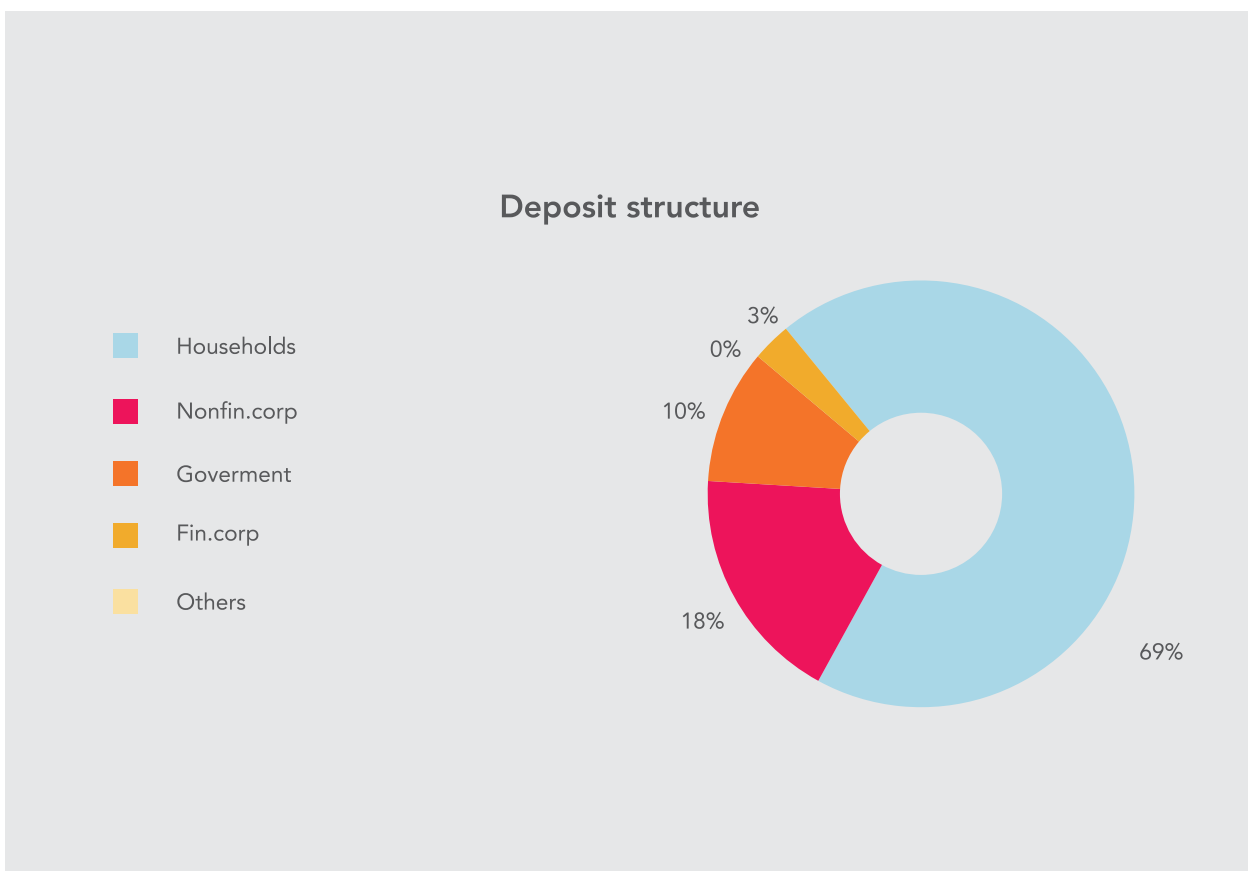
1.4 Deposits

The value of total deposits in 2015 was 2.7 billion Euro, representing an annual growth of 5.5 percent, compared to the annual growth of 6.5 percent in 2014 (3.6 percent in 2013). By the first half of 2015 there was a slowing trend in growth that accelerated in the last three months with the increase of the interest rates on deposits. However, there are estimates that migration of the population had an impact on these developments.

Those households, which comprise 69 percent of the total, dominate the deposit structure. The second category is comprised of deposits of businesses, which participate with 18.0 percent. Others (non-resident deposits, non-governmental organizations, central and local governments) participate with 10 percent.

Table 1: Structure of deposits

	Households	Nonfin. corp	Other
Deposits (mil. EUR)	1,971	594	153.9

Graph 7: Deposit structure


(Source: CBK-Monthly Statistical Bulletin – January 2016)

Even the rate of deposit growth was dictated primarily by households - 6.3 percent (from 4.1 percent), businesses - 4.2 per cent (0.7 per cent), non-resident deposits, non-governmental organizations, central and local governments - 19.0 percent (from 9.4 per cent).

Although term deposits are characterized by a decline, a significant shift towards long-term maturities can be noticed within their structure.



1.5 Interest Rates

Interest rates on loans continue to decline. Unlike previous periods where the annual decline was more pronounced in deposits, during the entire 2015 the decline of interest rates on loans was more emphasized. It fell to 7.7 percent from 9.3 percent of December 2014.

On deposits, the average interest rate increased from 1.1 percent (2014) to 1.2 percent (2015). Accordingly, it appears that the spread between the interest rate on loans and deposits decreased to 6.5 percent from 8.2 percent.

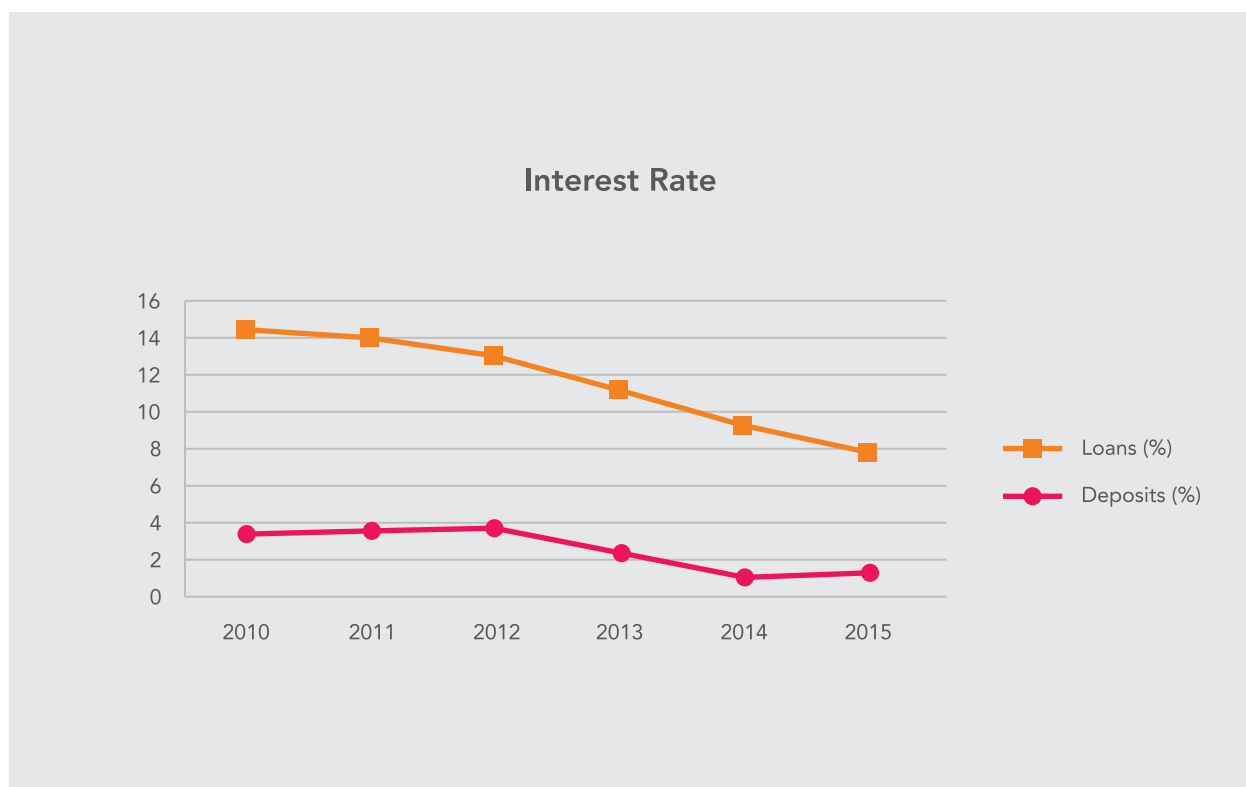
The effects of these changes have been directly observed. There is a slight growth of

deposits, the lending increased significantly, as well as demand for lending, mainly due to the low rate, as well as other benefits that banks now offer.

All economic sectors were characterized by the decline in interest rates on loans, but the decline was more pronounced in loans to the service sector and industry. The average interest rate on loans to households decreased to 8.5 percent from 10.6 percent.

Within mortgage loans of 'over 10 years' maturity, the average interest rate fell to 6.2 percent from 8.5 percent.

Graph 8: Interest rate, by year



(Source: CBK-Monthly Statistical Bulletin – January 2016)

1.6 Income Statement

The performance of commercial banks in 2015 has been very good and characterized with a bursting growth in operating profit, but also with a significant decline of revenues and expenditures.

Table 2: Income Statement 2015 (in EUR million)

	2014	2015
Operating Profit	66.4	94.7
Revenues	243.7	238.2
- Interest	195.9	186
- Other	47.8	52.2
Expenditures	177.4	143.5
- Interest	44	22.6
- Non-interest	31.6	3.6
- Gen/Admin	101.8	117.3

(Source: CBK-Monthly Statistical Bulletin – February 2016)

Operating profit: The table shows that operating profit experienced an increase, while both revenues and expenditures were characterized by a decrease, compared to the previous year.

Profit growth comes from large reductions of expenditures. Perhaps it would have been even higher if there would not have been a decline in revenues.

Revenues: In 2015, total revenues of commercial banks in Kosovo were 238.2 million Euro, or 2.3 percent lower than a year ago. Undoubtedly, the greatest influence in this decline was the reduction of interest rates on loans, since revenues from this category were 5.1 percent lower. Although revenues from other categories (including those from provisions) increased by 9.2 percent, they had no significant impact on total revenues due to their low share (21.4 percent).



Expenditures: During last year, total expenditures were 143.5 million Euro, or 19.2 percent lower than in December 2014. The main impact was the decline in interest expenses (48.7 percent), due to the low interest rates on deposits, which started to grow at end

of the year. Meanwhile, expenses for non-interest categories were 28 million Euro lower than a year ago. General and administrative expenses also increased by 15.5 percent.¹¹

Graph 9: Balance sheet 2014-2015



Other features noted in the banking sector during 2015 are:

- Return on Average Assets (ROAA) reached 2.9 percent from 2.0 percent, while Return on Average Equity (ROAE) was 26.4 percent compared to 20.3 percent in 2014;
- The ratio of expenditures to revenues improved to 60.3 percent, compared to 75.3 percent in 2014;
- The share of non-performing loans to total loans of the sector decreased to 6.2 percent (8.3 percent in December 2014);
- Provision for the coverage of non-performing loans was 115.1 percent compared to 114.4 percent a year earlier;
- The capital adequacy ratio (CAR) reached 19.0 percent in December 2015 compared to 17.8 percent in December 2014;
- In December 2015, loans to deposits ratio was 74.8 percent, while the quartio remained at 44.9 percent.

¹¹ <http://www.bqk-kos.org/repository/docs/2015/BMS%20nr%20172%20shqip.pdf>

1.7 Staff

Despite the network expansion and application of technologies to “replace the employee” in the past five years, the number of employees has not undergone any major changes. Currently, in the country’s banking system 3,587 people are employed, or 80 people more than in 2014, but 135 less than in 2012.

The number of banking branches has also undergone a slight decline. Currently, ten commercial banks have 265 branches, while there were 311 in 2010, as a result of cutting the expenditures.

Graph 10: Number of employees and branches



(Source: CBK-Monthly Statistical Bulletin – February 2016)



Table 3: Situation in december 2015 compared with 2014

Asset Value	3,387.9 M. €
COMMERCIAL BANKS	
Loans	2,020 M. €
Growth	7.30%
Interest rate	7.70%
Deposits	2,702 M. €
Growth	5.50%
Interest rate	1.20%
Revenues	238.2 M. €
Decline	2.30%
From interest	186.0 M. €
Decline	5.10%
Expenditures	143.5 M. €
Decline	19.20%
From interest	22.6 M. €
Decline	48.70%
Profit	94.7 M. €
Growth	42.6%
Foreign Direct Investments	337.9 M. €
Growth	11.2%
Remittances	752.4 M. €
Growth	8.40%



CHAPTER 2

PAYMENT SYSTEMS AND DIGITALIZATION OF SERVICES

In the early postwar years the goal was the establishment of banks, their expansion and establishment of trust with the clients. The economic development, the increase in the volume of the flow of goods and overall economic relations with the world has made the demand for modernization of services.

For a category of customers, even the bank teller services were transformed into a place where you could waste your time for a simple banking transaction. This situation stimulated investments and development of the banking market, despite commercial banks being the ones advancing the demands and offers with more advanced services.

The digitalization began with the installation of the first ATM in Prishtina by Micro-Enterprise Bank, which means that it also introduced an electronic debit card. This was a distant time, and now banking cards, both debit and credit, ATMs, and points of sale - POS terminals have become a necessity. In the past five years, banks are focused on providing e-banking services or payments via Internet. A service that is becoming more acceptable and offers the clients constant access to their money to complete all banking transactions, without having any direct contact with the bank or bank employee.

2.1 Legal Basis

There are four basic laws that regulate payments and the overall function of the banking system in Kosovo:

1. Law on the Central Bank of the Republic of Kosovo - 03 / L-209;
2. Law on Banks, Microfinance institutions and Financial Non-bank institutions - 04/ L-093
3. Law on Payments System – 04/ L-155
4. Law on the Establishment of Deposit Insurance System for Financial Institutions in Kosovo-03/ L-216.

Meanwhile, depending on the need and growth of market demand, some of these laws have undergone changes.

Because of the importance of the sector and the field they regulate, the first two laws are addressed here in more detail.

The Law on CBK defines the responsibility and authority of the Central Bank as a sole

oversight authority and regulator of the financial system of the country. Under this law, its main objectives are:

- **To promote and maintain a stable financial system, including a safe, sustainable, and efficient payment system;**
- **To contribute in achieving and maintaining domestic price stability;**
- **Without prejudice to the achievement of these objectives, the Central Bank supports the general economic policies of the Government.¹²**

Meanwhile, the primary tasks of the CBK are: to define and implement policies of a stable financial system including oversight of the deposit insurance scheme, conducting market operations, as well as providing emergency liquidity, regulation, licensing, registration and oversight of financial institutions.

Law 04/L-093 aims at promoting and maintaining a stable financial system.¹³

The Law on Payment Systems establishes rules, under which payment institutions that offer payment services are authorized and operators of payment systems, clearing and settlement of securities are licensed by the CBK; conditions and standards under which such services are provided and can operate payment systems, clearing and settlement of payments; and the means and procedures by which the CBK exercises its supervisory powers.¹⁴

According to this law, banks and financial institutions, microfinance and non-bank institutions licensed by the CBK can offer payment services under the applicable law.

However, the issuance of electronic money (Article 4) requires that in addition to the

12 <http://www.kuvendikosoves.org/common/docs/ligjet/2010-209-alb.pdf>

13 <http://www.kuvendikosoves.org/common/docs/ligjet/Ligji%20per%20bankat%20institucionet%20mikrofinansiare%20dhe%20IFJ.pdf>

14 <http://www.kuvendikosoves.org/common/docs/ligjet/Ligji%20per%20sistemin%20e%20pagesave.pdf>



general conditions set for the provision of payment services, financial institutions emitting electronic money through pre-paid cards or other equipment must meet conditions outlined in the figure below.

Graph 11: Accountability of the electronic money supplier

1	Undertake to submit statistics on the amount paid and used;
2	Ensure that the final settlement is made no later 24 hours after initiation of the guidance for payment
3	Pay out the electronic money in the same amount as deposited

The system for electronic transfers of funds executes money transfers electronically or by any other means, not based on paper, which supports the transfer executed by any of these channels, or their combination:

- **POS Terminals (POS);**
- **ATMs;**
- **Cable channels, internet and other communication channels;**
- **Telephone instruments, including mobile phones;**
- **Stored-value cards, both credit and debit.**

However, according to Article 37 of the Law, the security of a deposit received in an electronic terminal is the responsibility of the institution that receives the deposit, from the time of completion of the transaction, subject to verification of the amount deposited.

When there is a discrepancy between the amount recorded as deposited in an electronic terminal and the amount recorded as received, the institution notifies the client of the change on the next working day and in-

forms about the actual amount which is credited to the account of the client.

Also, the institution ensures that all information related to the transfer of funds to its client will not be disclosed unless it is permitted by law. No person other than an officer or agent appointed by the institution that holds the account or the client can have access through an electronic terminal to the information on the transfer of funds, work or customer account. No electronic terminal should be able to provide any information on the transfer of funds, or client's account, unless the electronic terminal is operated by an officer of the institution or agent appointed by the institution. Requests for information are preceded by the introduction of the correct access code or client card.

The institution must not provide any information on the transfer of funds or customer account issues unless the information is given, in accordance with their duty or legal responsibility, or with client consent (Article 52).

2.2 Interbank payment system

This mechanism acts as organized and supervised by the CBK. In addition to monitoring and regulating the system, it also participates directly in the system on its own and on behalf of governmental institutions. Therefore, it has the responsibility, maybe most importantly, to create an efficient and safe payment system based on a stable infrastructure.

CBK is the owner and operator of the only system of interbank payments in Kosovo, the Electronic Interbank Clearing System (EICS). This hybrid system of payments clears all priority payments, individual payments, mass payments, KOS-GIRO, and Direct Debit payments.

EICS is a platform which is fully based on the web/ network (web-based) and is proven to be a sustainable and stable system, which has met with precision the needs of the banking community and its users.

There are currently eleven direct participants in EICS. This includes ten commercial banks and the CBK (on their own and on behalf of the Government). All banks licensed in Kosovo participate in EICS. Microfinance institutions, insurance companies and other institutions through commercial banks hold bank accounts with direct participants, who act as agents of their payments. Commercial banks are connected to this system through leased lines (from the telecommunication companies).

CBK runs four EICS clearing sessions a day for all types of payments (except priority and urgent payments): one at 8:00 o'clock (the effective date of the previous day), at 10:30, 13:30 and 15:00. The price for a transaction varies depending on the type of payment and the clearing session: prices are higher on the session at 8:00, while the lowest is for the 10:30 session, rising again for the sessions later.

CBK continuously monitors the settlement process, in particular by carefully examining that the minimum liquidity reserves are not violated. The mandatory reserve rate for banks is 10% of the fixed deposit base of any bank, of which at least half (5%) should always remain in the CBK. Thus, every time banks are allowed to descend into their accounts only up to the amount equivalent to 5% of the settlement, but not below. If there is a lack of funds, the bank is obligated to provide sufficient funds to replenish the account.

EICS is used for domestic payments with low and high value. This system clears all priority payments, individual payments, mass payments, KOS-GIRO and Direct Debit payments.

The inter-banking payment system has gone through three stages of development:

First phase: Officially this phase started on May 7th, 2001. This period was characterized by the manual way to exchange orders, adjustments and reconciliations of all payments in the CBK. It was a very simple system of clearing and settlement of payment

orders on paper. In the beginning, since the number of payments was small, account registrations were done manually and on an individual basis. It was an agreement reached between EICS in the CBK and participating banks, which have agreed to join this process. Except for the daily operations, the primary characteristic of this phase was to consolidate the Interbank Payment Advisory Committee, which was established in order to review all the rules and procedures of the EICS to reach preliminary agreements on all issues of payment and proceedings.

Second phase: The manual and semi manual exchange of data was a solid base that preceded the next stage of development and modernization of the interbank payment system and transition to the so-called Electronic Interbank Clearing System (EICS). The early data transmission BANK - ICS - CBK and vice versa was technically done through telephone lines (modem). In 2002, it was eventually passed to the EICS. This phase was characterized by the implementation of the International Bank Account Number (IBAN) in October 2003. Implementation of this standard significantly increased the efficiency of the payment system and also opened the doors for other reforms. In December 2003, the implementation of the payment scheme "KOS-GIRO" started. KOS-GIRO transactions represent a particular type of transactions intended for the collection of standardized and automated large billing institutions and public utility companies.

Third phase: In May 2007, the installation of ICS was made in the Treasury, which facilitated the delivery of all payments by the central institutions and by local governments. During this phase, the scheme and the new payment instrument of direct debit was developed and launched in January 2009.

During 2009, the EICS was completely shifted into a system based on web-site technology, which has significantly improved its usability and functionality. Now every day, the participants of the interbank payment system send about 15 thousand payments worth over 15 million Euros, in a more safe and efficient way.



Graph 12: Interbank payment system



2.3 Strategy of the national payment system

One of the basics of long-term development of the financial sector in our country has been made in 2009. In coordination with commercial banks and in particular the World Bank the strategy for developing a National Payment System (NPS) was drafted.

Starting from 2016, the existing payment system in CBK is replaced with automatic transfer system designed according to the latest standards in the field of payment systems. Implementation of this system is one of the key steps the Central Bank of Kosovo has undertaken to strengthen the stability and increase the efficiency of the financial and banking sector in particular.

The new interbank payment system, called, ATS (Automatic Transfer System) consists of two main components: Component RTGS (Real Time Gross Settlement), which enables the transfer of funds in real time, as well as component ACH (Automatic Clearing House) that makes batch processing payments and with little values, within three sessions of interbank clearing in CBK.

The new payment system is designed according to new international standards in the field of payment systems (ISO 20022), according to the most advanced technology and best practices that make Kosovo one of the first countries to implement this standard.¹⁵

The vision of the National Payment System in the Future (Vision) and the Action Plan for Implementing the Vision of the National Payment System (Action Plan), which together constitute a strategy of development of the NPS, was approved by the Governing Board of the CBK in September 2009. The NPS development strategy has nine pillars: Legal framework, Large-value and urgent payments, Small-value system payments, Government transactions, Securities, Deposits, Clearing and Settlements, Monetary market, Remittances from abroad, Oversight of payment systems, and Cooperation (National Payments Council - NPC).

According to the strategy, the following payment instruments are applicable in our country:



- **Cash** - the currency used in Kosovo is Euro. CBK is required "to ensure an adequate supply of coins and banknotes for the settlement of cash transactions", which it makes through offering cash withdrawal and deposit facilities for its customers, mainly banks, and transporting coins and banknotes in and from the Eurozone.

¹⁵ <http://bqk-kos.org/index.php?id=104&l=1366>



- **Checks** - not used as an instrument for payments. However, a number of banks issue so-called "checks" which are used only in interbank basis. Although they are mentioned in the CBK law, there is no legislation covering the instruments of checks/marketable, nor is there any intention or actual need to draw interbank checks.



- **Electronic Instruments** - In addition to cards, there are four electronic payment instruments in use. Furthermore, a fifth instrument, direct debit is being tested by a small number of institutions.

I. Priority Payments - Payments that can be accepted at any time during the operation of EICS and which should be settled (cleared) immediately - within 15 minutes of submission.

II. Individual payments - Single credit transfers which are typically initiated at a bank branch where the payer fills a paper payment order which later is sent to the bank's core banking system and consequently transmitted to EICS for clearing.

III. Mass Payments - Can be used for one-to-many (payment of salaries) or many-to-one (which are primarily used for consolidation of government taxes and customs revenues before being forwarded to the CBK by commercial banks).

IV. KOS-GIRO - One way in which customers can pay their bills.

V. Direct Debit - EICS has recently been expanded to offer a withdrawal from all the accounts of the client.

VI. Cards - Banks issue their own cards (many of which are Visa and/ or MasterCard) and operate their network of automated teller machines: ATM and Point of Sale terminals (POS). Many retail points (shops) have POS terminals from several banks. Installation of more terminals in a store is necessary because there is no national interbank card with the possibility of such a clearing and consequently no interaction agreement of local banking networks between banks (note that the same thing happens with ATMs). Each bank recognizes transactions from its card through its own network and sends them to a card processing center abroad. Transactions "to us" are realized internally within each bank. The lack of interoperability or local interconnection of a card network in Kosovo causes inefficiency and costs and also acts as competition in small banks, especially the domestic ones. Domestic and international card transactions are settled through international networks. This introduces a variety of risk areas.

VII. e-Banking - All banks have introduced e-banking whereby customers can access their accounts and make transactions from the computer using a web interface. Interbank payment transactions initiated through e-banking are recorded in the bank's core banking system and transmitted to EICS for clearing. E-banking services are not yet widely used; probably it has to do with the overall internet usage in Kosovo.

VIII. m-Banking - In general there is a low interest of financial institutions to develop mobile banking and payment services. Nonetheless, some banks are considering the possibility of introducing this banking service.¹⁶

¹⁶ http://bqk-kos.org/repository/docs/SistemilPagesave/Vizioni_i_se_ardhmes_se_sistemit_kombetar_te_pagesave.pdf

CHAPTER 3

DIGITALIZATION OF SERVICES: HISTORY AND DEVELOPMENT

E-banking development, namely, the web service in Kosovo has a short history. Based on surveys conducted among the country's commercial banks, this service was launched in 2005, initially in two banks, while two years later it has also spread to other banks. It is understandable that at the beginning the number of users, as well as the volume of traffic has been negligible, either due to the reluctance of customers to start using it or because of the underdeveloped network in the banking market.

However, the development of this service, including the extent and volume of work has been very fast. It can be considered that it is constantly in the process of upgrading, either by increasing efficiency or offering more advanced and sophisticated services.

The rapid growth in the number of users, number and volume of transactions is a good indicator for increased reliability and security of this service. Furthermore, customers have had no serious complaints about the functioning of e-banking, or have suffered damages due to deficiencies in the system, namely, the service providers. The largest number of complaints is related to network operation.

This is why the internet network is important for fast and efficient operation of the digitization of banking services. According to the data of the Regulatory Authority of Electronic and Postal Communications (RAEPC), the number of internet users has become over 1.1 million citizens.

Compared to countries in the region, Kosovo is at a satisfactory level of internet penetration.

According to the operators, cable modem technology is the more dominant internet connection of users.

The leading providers of internet cable are IPKO and Kujtesa.NET, while the only operator that offers internet access to end users through ADSL technology is PTK - TiK. In addition, the capacity of access to the international internet network is 91 Gbps. In order to exchange internet traffic between service providers, the internet exchange node has been functionalized, where all operators with access to an international network have been connected: IPKO, PTK, Kujtesa, and Artmotion.¹⁷

3.1 E-Banking Transactions

E-banking has faced a large and very fast support. This is evident through the number

of users, number and volume of transactions. The increase comes from the continuous growth of supply and types of services, but also the needs of clients.

Initially, throughout the online system, customers were given the choice of viewing the balances, completing simple bank transfers, such as those within the bank, national and international. Gradually, other important services for the client have been integrated and nowadays, most banks offer a wide range of services required from customers. Currently, customers can perform the following services through e-banking:

- View bank statements and other information on bank products such as cards, loans, and term deposits;
- Make national and international payments;
- Prioritize national outgoing transfers and register them in different currencies;
- Credit repayment;
- Provide more than one authorization/signature for transfers of business customers;
- Execute mass payments;
- Reset the password;
- Manage beneficiaries;
- Check the accuracy of IBAN;
- Have an inbox in e-Banking;
- Open a term deposit account;
- Pay bills (taxes, pensions, customs taxes, electricity, water, etc.)
- View the latest statement of transactions through e-banking at any time.

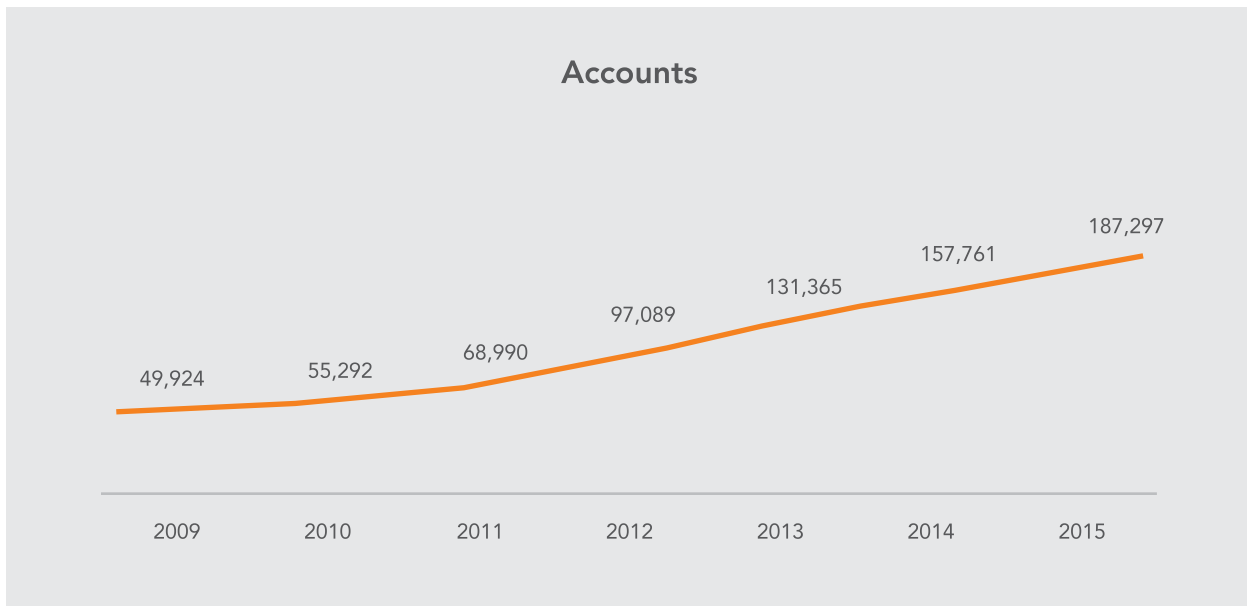
Currently, there are 187,297 functional e-banking accounts in Kosovo, of which 79.71 percent are individual accounts, while 20.29 percent are business accounts. From their overall number, only 4,036 are non-resident account holders.

Compared to 2014, the number of accounts at the end of 2015 was 18.7 percent higher.

¹⁷ <http://www.arkep-rks.org/repository/docs/Raporti%20Vjetor%20i%20Punes%20-%20Viti%202014%2001072015.pdf>



Graph 13: Number of e-banking accounts



(Source: Kosovo Banking Association)

The number of transactions and volume of cash flow has been growing rapidly.

In 2015, 2,311,564 e-banking transactions were completed. Compared to 2014, the number of transactions increased by 46.4 percent, twice as much compared to 2013 -118.7 percent, three times compared to the year 2012 [-269.4 percent].

The value of cash flow through these transactions last year was close to 5.7 billion Euros or 36.5 percent higher than 2014, twice compared to 2013, nearly four times compared to 2012, and by five times compared to 2011.

Table 4: E-Banking transactions

e-Banking Accounts					
Year	2012	2013	2014	2015	15/14
Cards/ Accounts	97,089	131,365	157,761	187,297	118.7
No of transactions	625,762	1,056,655	1,579,388	2,311,564	146.5
Transaction values (mln €)	1,499	2,671	5,746	5,746	136.5

(Source: CBK- Monthly report on cash and non-cash instruments- December 2015)

No doubt that these trends are also influenced by the overall growth of turnover and expenses, intensification of economic relations with the world and a generally increasing need for a faster flow of money payments. But at the same time, providing services through various electronic forms has facilitated transactions. This is evident from the table. The number of transactions and their value has increased proportionally to the investment for expansion and advancement of the communications network, as well as raising the quality of services.

From the survey, we can see that commercial banks will not only remain in the current level of e-banking service development, but are looking for ways to create new offers. They promise that they will continuously implement electronic alternatives for every type of banking service offered. Customers will have the opportunity to establish new relations with the bank and to manage existing ones, without having to visit the branch.¹⁸

There are ambitions for banks to follow the latest development trends of electronic banking services and to offer new products. Finally, Raiffeisen Bank is presenting the possibility of realizing payments through images (picture payments through m-banking).¹⁹

Application of such business services has offered numerous alternatives, such as offering new services to the citizens, but at the same time building forms of cooperation with partners all over the world without any payment problem or flow of goods. This has enabled the increase of the sales volume through E-bay.

In general, the experiences are good, since there is a possibility of viewing the balance, paying different bills and taxes, money transferring and other services. Surveys identified cases where companies complete over 50 percent of their turnover through e-banking, however soon they plan to make all their payments through e-banking.

¹⁸ Procredit Bank, Interview for STRAS, January 2016

¹⁹ Raiffeisen Bank, Interview for STRAS, January 2016

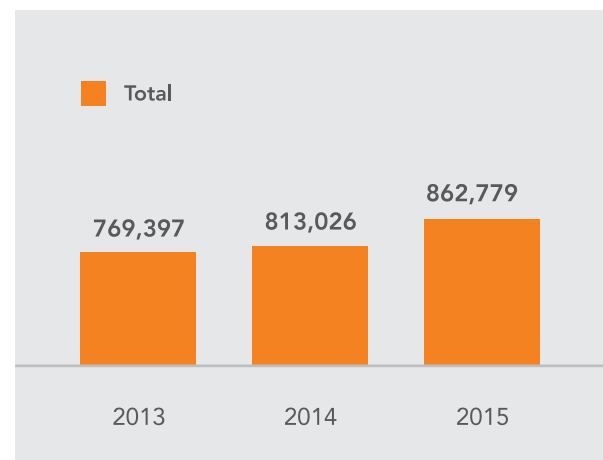
Furthermore, demands are growing. According to businesses checks are not widely used, phone services are limited, for most requests there is a need to go to the bank, and there are delays in transfers - one to two days after the money arrives at the bank in Kosovo.²⁰

The company 3CIS had a good experience with e-banking and the company does not prefer cash payments, so it completes almost 100 percent of its payments through e-banking. Meanwhile, its main objection is the cost of these services; since the company does not operate with cash at all, a withdrawal for petty cash needs in the amount to 500 Euros costs 7.5 Euros.²¹

3.2 Cards: Number and Turn-over

Number of cards: Regardless of its type, cards have already become an indispensable payment instrument for almost every citizen. In total, at the end of December 2015, there were over 862,779 cards with a payment function, which compared to 2014 represents an increase of 6.1 percent and 14.4 percent compared to 2013.

Graph 14: Number of cards 2013-2015



²⁰ Mërgim Cahani, Owner of the company "Gjirafa.com", Interview for STRAS- December 2015

²¹ Gëzim Pula, Co-owner of the company 3CIS, Interview for STRAS –December 2015



Of the total, there were 718,717 debit function cards, or 6 percent more than in 2014 and nearly 11.4 percent more than in 2013.

The biggest increase is in cards with credit function. There are 143,863 such cards in use, which compared to 2014 represents an increase of 18.2 percent and 31.6 percent compared to 2013. There are also 199 cards with electronic money function.

The number of cards with the function of electronic money as a product is offered from two commercial banks in Kosovo and one of them has stopped this process in 2014. While during 2015 it is still used from one bank in very small volume. So, for this reason in the monthly reports of payment instruments, it is noted a decline in this product.

Table 5: Number of Cards

		2013	2014	2015	15/14
1	Cash function cards	754,380	813,026	862,779	6.10
2	Payment function cards	754,380	799,742	862,580	7.80
	a. Debit	645,048	678,090	718,717	6.00
	b. Credit	109,332	121,652	143,863	18.2
3	Electronic cash	15,017	13,284	199	
4	Total number	769,397	813,026	862,779	6.1

(Source: CBK and KBA)

VISA cards are the dominating cards, followed by MasterCard.

Number of transactions: In general, the number of banking transactions through EICS is rapidly growing. This reflects an increase of e-banking services in general and shows the importance of banks in the daily lives of citizens, for functioning of businesses, but also the increasing support and need for digitized services.

In 2015, 9,835,056 transactions were made in EICS, whereas a year ago there were 9,051,427 and 6,793,430 in 2013.

A major cash flow has resulted through these transactions. The total value was close to 7.5 billion Euros or 9.3 percent more than during 2014 and 16.1 percent more than the value of transactions in 2013.

Terminals: The introduction of the card does not necessarily impose the need to be used in each place where its owner needs. Banks took care for this reason, banks have continuously invested in the expansion of the network, i.e. the number of withdrawal machines or cash deposits - ATMs and payment terminals, or cash withdrawal - POS.

Commercial banks have diligently covered all of Kosovo territory with these machines, whereas their number in different locations mainly depends on the number of residents, the number of card users, as well as its turnover.

ATM: By the end of last year, there were 540 ATMs in function, a figure that has increased from year to year. Thus, in 2014 they were 498 ATMs, while in 2010 - 415 of them. The number of ATMs increased by 30.1 percent last year compared to 2010.

All ATMs mainly have a cash withdrawal function, however 97 of them have a credit transfer function as well as KOS-GIRO, and in 78 of them cash can be deposited.

POS: The number of POS terminals has also recorded rapid growth: from 6,194 in 2010 it grew to 9,349 last year (2014) and 9,705 in 2015. The number of POS terminals last year was 56.6 percent higher than in 2010.

The largest number of POS terminals is for payments (purchase), while only 180 are for cash withdrawals.

Table 6: Number of ATMs and POS

Terminals by function	2010	2011	2012	2013	2014	2015
ATM	415	460	483	496	498	540
from which:						
1 - ATM –cash withdrawal	415	460	483	496	498	540
2 - ATM –credit transfer	141	147	145	148	50	97
from which:						
a - ATM -Kos-GIRO	39	69	73	70	50	97
3 – ATM-cash deposit	0	1	1	8	13	78
POS terminals	6,194	7,534	8,592	9,071	9,349	9,546
from which:						
1 - POS cash withdrawal	212	1,376	220	215	220	180
2 – Electronic payment	5,930	6,320	8,499	8,856	9,179	9,360
Vir. with. POS car	0	0	0	0	7	8
Terminals for electronic cash	0	0	0	0	0	0

(Source: CBK)

The geographical expansion of these devices is linked to the number of residents and the turnover made in these sites. Prishtina dominates in all aspects, where 34.7 percent of ATMs and 43.3 percent of the POS terminals

are concentrated. Hence, the number of devices in other cities is much smaller, such as in Mitrovica with 3.82 percent of ATMs and 3.47 percent of POS.



Table 7: Share of ATM and POS by cities, in percentage

Cities	ATM	POS
Prishtina	34.73	43.3
Prizren	6.68	7.31
Peja	6.3	8.61
Gjilan	5.92	6.27
Ferizaj	4.96	8.33
Gjakova	4.39	4.59
Mitrovica	3.82	3.47

(Source: CBK)

Number of card transactions

Even here the growth is very fast, which shows the increase in the needs of bank customers.

Table 8: Number of card transactions

Description	2013	2014	2015
Total card transactions	13,129,074	14,734,189	16,183,996
from which:			
1 - ATM cash withdrawal	9,251,512	9,926,136	10,422,617
2 - ATM deposits	5,314	27,724	232,625
3- Credit transfers through ATM	108,308	70,160	42,572
4 - Cash withdrawal in POS terminal	21,964	13,333	14,523
5- Payments with cards in POS terminals	3,741,976	4,696,836	5,471,659

(Source: CBK and KBA)

In 2015, there were about 16.2 million card transactions completed, compared to 14.7 million transactions in 2014. The majority of them are made at ATMs, mainly for cash withdrawals, totaling to over 10.4 million transactions. POS terminals have mainly been used for payments, close to 5.5 million transactions.

3.3 Value of card transactions through terminals

Card holders mainly use cards to withdraw money from ATMs and make payments in POS terminals, which are reflected in the value of transactions. Last year, the value of total transactions was 1,728,032,876 Euros and 70.7 percent of this amount was withdrawn from ATMs, while payments at POS terminals comprised 17.5 percent of the total.

The total value is continuously growing, at almost the same rate from year to year. Thus, in 2014 the value of transactions was 106.7 million Euros higher than in 2013, while last year it increased by 465.89 million Euros compared to 2014.

The growth trend is not the same in all categories. Card holders are now increasingly using the cards for making deposits at ATMs. The total value of ATM deposits transactions recorded last year was 13 times higher than in 2014, while two years ago it increased nearly four times compared to the year before. The withdrawal of cash from POS terminals marked a large increase as well, 46.6 %, comparing to 2014.

Table 9: Value and type of transactions (in million Euros)

Vlera	2013	2014	2015
Value of transaction	1,155	1,262	1,728
from which:			
ATM-cash withdrawal	936.2	996.2	1,222.7
ATM-deposits	1.9	13.5	181.4
ATM-credit transfer	1	0.5	0.4
POS-cash withdrawal	24.6	13.9	20.3
POS-payments	191.9	238.1	303.2

(Source: CBK-Monthly report for cash and non-cash instruments –December 2016)



The table shows that the culture of cash payments still dominates among Kosovars. Thus, from ATMs or POS terminals over a billion Euro in cash was withdrawn, which accounts

for nearly two-thirds of the total value of card transactions. However, the fact that there is a rapid growth of deposits and credit transfers is encouraging.

Graph 15: Value and number of transactions – 2015



3.4 M-Banking

The mobile phone today has become one of the most used and functional devices through which many tasks can be performed, saving the users a great amount of time. To be closer to the customers, banks have created an innovative product with which customers are able to use banking services via mobile phone. **M-Banking** enables carrying out all e-Banking actions via mobile phones. Access to internet through mobile phone is enough to use this service.

Opportunities offered by the mobile version of e-Banking:

A) Account operations

- Registration of transfers within the bank;
- Registration of national transfers (to other national banks);

B) Account information:

- Movements in the accounts and their balances;
- Viewing the latest transactions registered by e-Banking;
- Viewing all orders recorded by the bank in advance.
- According to the e-Banking product, depending on the standard for private clients, there are two types of contracts relating to the e-Banking product:

- E-Banking standard - the client is able to view all accounts as an account holder (e.g. current account, savings account, savings plan, accounts receivable/ credit card, term deposit account, and overdraft limit).
- E-Banking premium - the client is able to see all accounts as an account holder and accounts for which he is authorized from another person.
- If an order is carried out with errors by the bank, then the bank is responsible for the damage caused;
- The bank is not responsible for illegal actions of third parties, which are detrimental to the client through the use of electronic banking services, as well as non-fulfillment of customer orders for technical reasons beyond its control. The responsibility lies with the service provider where improper action is presented.

For business customers:

- Full Mode e-Banking - enables full operation of the customer business accounts in which they are authorized;
- E-Banking Selective Mode - enables operation of the customer business accounts in which they are authorized in collaboration with another user.
- Responsibilities of the bank and the client
- When carrying out a payment order from the customer, the bank is attentive to the legality of transactions;
- The customer is responsible for the accuracy of beneficiary details; therefore they carry all the consequences of a wrong or inaccurate payment order;

Security of transactions

All banks guarantee maximum security for their customers as well as transactions, including payments and transfers made through them. However, the Central Bank of Kosovo holds the responsibility for oversight of the bank safety level.

In promoting security and efficiency, the CBK applies three approaches: sound and efficient payment systems, for clearing and settlement of securities.²²

Developments: June 2016 as compared to the same period of 2015

- 965,560 withdrawals from ATMs, or 19.7 percent more than in the same period of 2015. Through these transactions 125,912,855 Euros were withdrawn, representing an increase of over 50 percent;
- 452,889 payments in POS were processed for 15,970,295 Euros. The number of transactions increased by 22.6 percent as compared to the same period of 2015, while the amount has decreased by 23.1 percent;
- Through POS terminals, 120,932 POS payment sales were made for 4.9 million Euros. The number of transactions increased by 52.05 percent, while the volume of cash flow by 19.53 percent;
- Through E-banking, 248,880 payments were made in the amount of 575.6 million Euros. The number of payments has increased by 25.86 percent, while the volume of turnover by 16.66 percent;
- There were 1,940,745 current and savings accounts, which represents a 3.6 percent increase. There are 215,233 (+30.77%) e-banking accounts;
- There were 804,862 debit cards in use (22.16%) and 149,406 credit cards (+8.87%);
- There are 9,785 POS terminals (+3.45 percent) and 534 ATMs (+5.74%).

²² <http://bqk-kos.org/repository/docs/SistemilPagesave/Politika%20e%20Mbikeqyrjes%20se%20Sistemeve%20te%20Pagesave.pdf>



Graph 16: CBK responsibilities



On the other hand, for the use of e-banking and secure payment transfers via website each bank has a manual, which provides information on its usage, as well as for the devices that the client must possess. Also, in case of need, banks organize training for e-banking users, while training for specific services can be done in the offices of the client, without any financial compensation.

Banks offer e-banking services as a web-based platform as well as an application that is installed on smart phones, tablets, etc., and attempt to apply the latest technologies

in terms of security. These security measures are related to three main principles of information security: Confidentiality, Integrity, and Availability.

Like all services, e-Banking service is also subject to regular testing/ safety assessments in accordance with procedures in place, and also in accordance with the ISO 27001 standard, for which the bank is certified. E-Banking applications are developed and maintained based on the anticipated requirements of the latest safety standards.²³

What the client should know: The client who makes or accepts payments through the electronic system must be provided with a user code and an application for generating passwords for one use. They should also know the account number of the beneficiary, name and last name, as well as the beneficiary bank SWIFT code, IBAN number, if any, name and last name of the beneficiary, and address for international transactions.

They need to protect personal data such as the username, password, and the code on the token (the last two are often changed in order not to be easily guessed).

Protection from possible fraud: Banks and financial institutions are sometimes victims of fraud called "phishing" which means fraud attempts. This form is mainly done through the internet, where clients are tricked into revealing confidential information to fraudsters in a web site.

Computer protection: It is important that unauthorized persons do not have access to the computers, malicious programs or suspicious websites. It is important to have anti-virus software, firewall and anti-spyware installed on the computer.

Using the banking system on a public computer is not recommended, since it is difficult to know how secure these computers are.

Through surveys and interviews, all banks have stated that due to potential errors it sometimes happens to have a reversal of payments and transfers and in cases where the customer suffers any detriment to the banks fault, compensation is made in their favor.

3.5 Complaints

According to reports from the Central Bank of Kosovo, the number of customer complaints is growing fast. This comes as a result

of the increasing number of customers, volume of transactions, and the efficiency of the internal mechanisms for handling complaints. However, a small number of complaints are related to e-banking. According to commercial banks, complaints are mainly related to blocking of users, eventual network disconnection, discrepancy in token synchronization, current inability to connect to network, disconnection from the network or other problems, mostly of a technical nature.

Table 10: Number of complaints

	2012	2013	2014	2015	15/14%
Financial Institutions	38	74	158	221	40

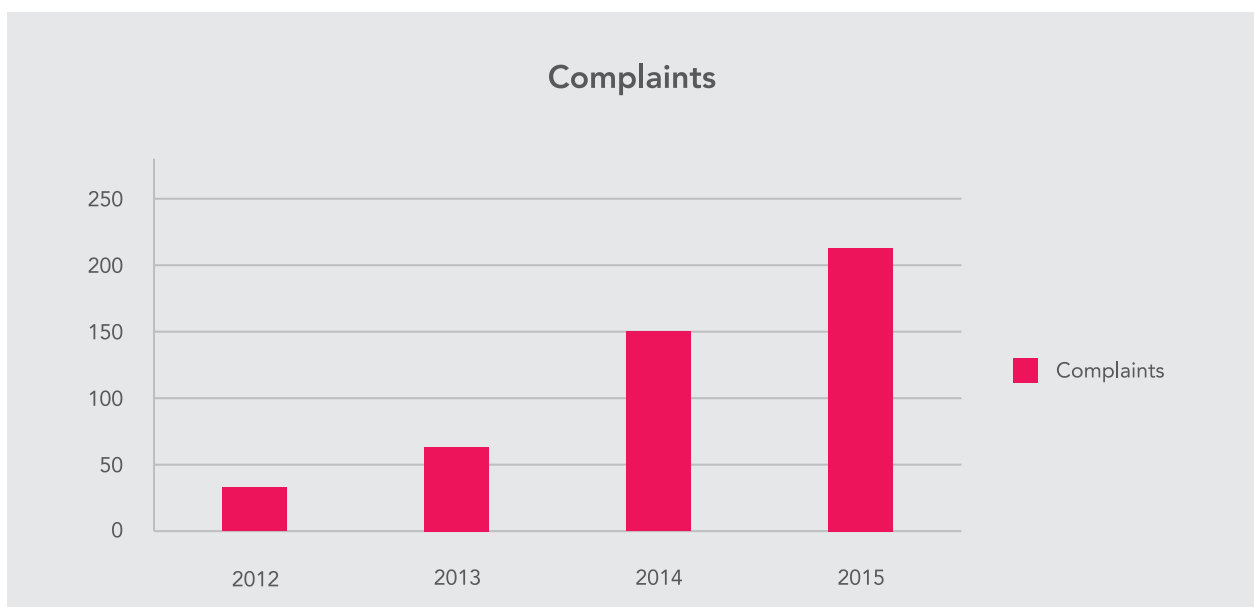
(Source: CBK)

CBK data shows that in 2015, 221 complaints were received towards the banking institutions which is an increase of 40 percent. The reasons for complaints have been different:

- Categorization in the credit registry;
- Blocking of accounts;
- Various issues related to loans.

The CBK has published a manual on its website on how to file complaints and the client's right to appeal.²⁴

Graph 17: Complaints by year



²⁴ <http://bqk-kos.org/?id=169>

CHAPTER 4

KOSOVO AND THE REGION

The overall situation of the banks in the region and in general in South Eastern Europe does not look so good. They are still faced with a high level of non-performing loans and bear the consequences of the crisis in Greece.

The overall situation of the banks in the region and in South Eastern Europe (SEE) in general, does not look so good. The banks are still faced with a high level of non-performing loans and bear the consequences of the crisis in Greece.

In July 2015, the average non-performing loans in Southeast Europe accounted for 15.8 percent of total loans which is three times higher than the pre-crisis number. Albania and Serbia, within the region, have the highest level of non-performing loans, with over 20 percent. Inefficient legal systems are among the main obstacles to enforcing collection of loans from bankrupt borrowers and the realization of the mortgage.

Weaknesses are mainly related to factors such as corporate and personal systems of insolvency and creditors' rights, along with the ambiguities about the sale of non-performing loans. Moreover, the tax law discourages settlement, restructuring, or sale of non-performing loans and there is no law that would enable the corporate debt restructuring out of court. If the issue of non-performing loans is not solved, this continues to pose a burden for banks, risk profits and capital, and reduction of lending by banks - and in general, the ability of banks to promote economic activities and growth.

Resolving the issue of non-performing loans is problematic throughout the region. Montenegro is the only country in SEE that has been able to reduce the proportion of non-performing loans.

The tightening of lending standards after the crisis and worsening conditions in funding from parent banks have reduced lending in all countries of the SEE. Moreover, due to the fragile economic growth, the limited repayment of debt from corporations has reduced the demand for loans. With the stabilization of economic growth during 2015, credit growth has been relatively strong in FYR Macedonia and has gradually increased in Kosovo, Albania, and Montenegro. Lending growth has increased slightly in Bosnia and Herzegovina as well as in Serbia.²⁵

²⁵ World Bank: South Eastern Europe: Growth Recovers, Risks Heighten - Fall 2015

4.1 Payment instruments

Regarding the extent and density of the banking network, including ATMs, POS terminals, as well as e-banking usage, Kosovo is not in bad standing compared to other regional countries in general and compared to those of Central and Southeastern Europe. This is more pronounced if the comparison is made on the number of devices, cards and e-banking accounts per capita, or per square kilometer. However, there are several factors that impact this comparison such as the area, density, level of economic development, as well as the value and the number of banking transactions.

Among the twelve countries (Kosovo, Albania, Czech Republic, Turkey, Serbia, Slovenia, Bulgaria, Hungary, Bosnia and Herzegovina, Montenegro, Croatia and Macedonia), Kosovo has the smallest area, while surpasses only Montenegro in population. However, Kosovo has a higher density of population.

A special feature of the Balkan countries is the fast increasing number of ATMs, POS terminals and e-banking accounts. This is mainly due to the fact that these countries have only recently started to modernize their networks and mechanisms for banking transactions. We should take Kosovo as an example, which created its banking institutions, networks and mechanisms for transactions 16 years ago. When we consider this as a short period, then it must be said that the achievements in this field are quite significant.

ATM: As for the number of ATMs in 2014, Kosovo was the second last (after Montenegro) with only 498 devices. However, it is the last in terms of the number of devices in a million residents (274), while, for example, Montenegro has 560 devices and Croatia comes first with 993 ATMs.

However, Kosovo does not score badly in terms of the number of devices per 100 square kilometers. It has five ATMs, just like Bulgaria and Hungary. Meanwhile, Albania, Bosnia and Herzegovina, Montenegro and Macedonia have less than that. The first one is Slovenia with 8 devices per 100 square kilometers.



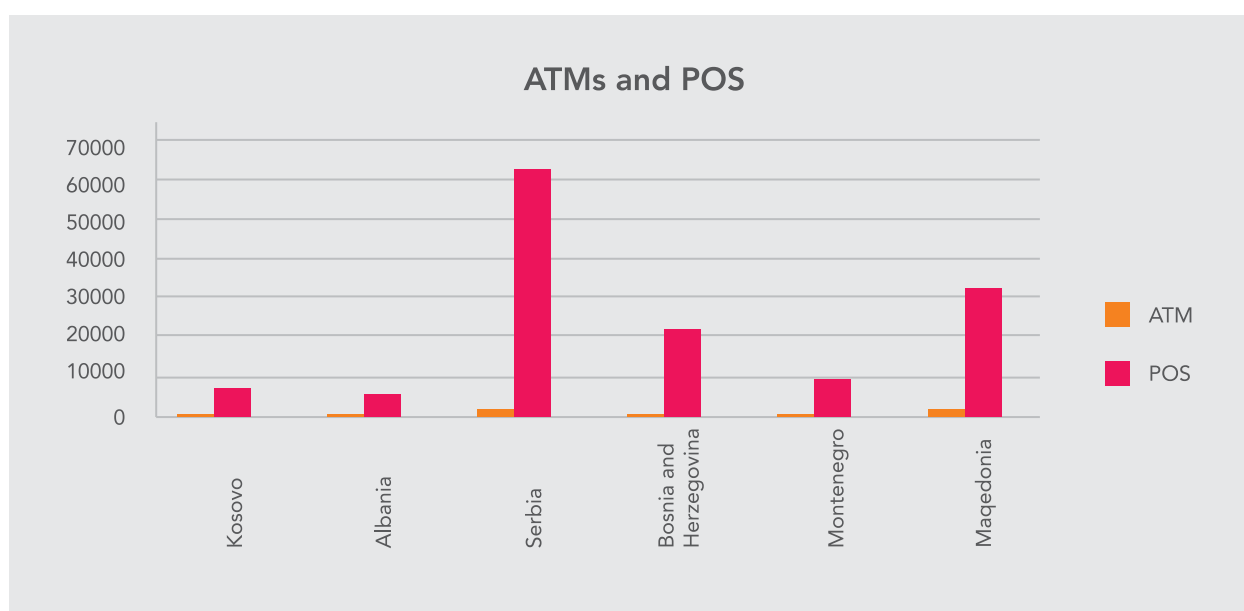
Kosovo has had a very rapid increase in the number of ATMs. Compared to 2010, in 2014 their number was 20 percent greater. Turkey had the largest increase (64.8 percent), while Bulgaria, Serbia, and Slovenia had a decrease in the number of ATMs in this period.

POS terminals: As for the number of terminals, Kosovo is the second last with 9,394 devices in 2014, or 2,817 more than Albania. Turkey is in the first place significantly ahead of others with around 2.4 million POS terminals. Even by the number of terminals in a

million residents, Kosovo is again ranked next to last; while, for their geographical scope Kosovo is ranked before Albania, Serbia, Bulgaria, and Bosnia and Herzegovina.

Even for POS terminals, Kosovo had a very fast growth during the past five years, even the highest, compared to countries in the region with nearly 51 percent. The largest increase was in Montenegro with 53.4 percent. Among these countries, only Slovenia had a decline (8 percent), while only Croatia and the Czech Republic had a single-digit growth.

Graph 18: ATMs and POS in the region – 2014



Credit cards: Kosovo with 121,652 credit cards is ranked before Slovenia (116,316), Albania (84,824), and Montenegro (48,864). Meanwhile, for the number of cards in a million residents it passes Albania, Slovenia, Montenegro and Croatia. In the period 2010-2014, Kosovo and Albania tripled the number of credit cards, while Bulgaria, Czech Republic, Montenegro and Croatia reduced their numbers. Turkey also had a significant increase in its number (21.4 percent).

Debit Card: Kosovo is second last, with 676,090 cards. As for the number of cards in a million residents it ranks just before Montenegro. The number of debit cards grew

slower than those of credit cards, which were 41 percent. Moreover, Turkey leads with the growth rate of 51 percent, while Bulgaria, Croatia, Hungary, Serbia and Slovenia declined in their numbers.

E-banking accounts: E-banking is taking over the region. It has been converted into a banking instrument with a great range, but is also growing rapidly, which excels all other instruments in the function of banking transactions.

Table 11: Terminals and payment instruments 2014

TERMINALS AND PAYMENT INSTRUMENTS						
	Kosovo	Albania	Bosnia and Herzegovina	Macedonia	Montenegro	Serbia
Credit cards	121,652	84,824	209,059	313,365	48,864	955,221
Debit cards	678,090	777,195	1,562,277	1,188,947	355,441	5,133,080
E-banking Ac- counts	157,761	145,211	122,522	468,097	48,215	N/A
ATM	498	811	1,426	4,880	347	2,632
POS	9,349	6,577	22,994	39,027	12,748	64,142

From 2010 until the end of 2014, the number of e-banking accounts in Kosovo nearly tripled, while rapid growth occurred in Albania with over five times, Bosnia Herzegovina with over three times, and Macedonia and Montenegro with over two times.

Table 12: Terminals and payment instruments per million residents

Terminals and payment instruments				
	Credit cards	Debit cards	ATM	POS
Kosovo	66,842	372,577	274	5,137
Albania	29,351	268,926	281	2,276
Bosnia and Herzegovina	N/A	N/A	372	6,004
Macedonia	154,344	597,812	466	18,945
Montenegro	78,813	573,292	560	20,619
Serbia	135,051	724,957	369	8,983

According to the table, it is noticeable that Kosovo is not ranked badly when it comes to payment instruments and terminals in a million residents. For POS terminals, it is listed before Albania, as well as for credit and debit cards.

CHAPTER 5

MARKET TRENDS IN THE APPLICATION OF DIGITAL FINANCIAL SERVICES IN CENTRAL AND EASTERN EUROPE

Digitalisation has revolutionised the way we live and think; everything is connected and operating at high speed. All industries have, in one way or another, experienced the dire need to adapt to technology megatrends such as digitisation, Big Data or to use of analytics. At this time of digital age that brings innovative processes and business models, standing still is considered as a great danger, as illustrated by the so-called 'Kodak-effect'.²⁶

²⁶ Kodak, once leader of the photographic industry, had missed the orientation on the future market of digital photography and eventually went out of business with photographic equipment.

Graph 19. Digital revolution



Source: SunTech, The digital revolution

The finance industry has also been disrupted by technology. Growth of non-cash payments increased by 7,6% from 2012 to 2013, reaching up to 358 billion in 2013 and was projected to grow even further (at a rate of 8.9%) to reach a record high of 389.7 billion transactions in 2014.²⁷ This figure will continue rising, with Juniper Research forecasting the global market for digital payments to grow to nearly 5000 billion dollars by the year 2019. Banks need to find a way to make digitalisation work or else risk becoming obsolete, as Tunde Olanrewaju from McKinsey puts it, "it is fair to say that getting digital banking right is a do-or-die challenge".²⁸

5. Rate of application and use of IT in the European Union (EU) and Eastern Europe (EE)

Mobile banking – defined as the execution of banking services through the use of mobile phones or tablets – has seen impressive

adoption rates since its early days in 2000-2005. At the beginning, the scope of services offered was rather limited, consisting of only balance enquiries and account statements. Now, with the proliferation of smartphones and the impressive user adoption, these services have de-multiplied, fuelling the mobile banking's big machinery. Yet, experts notice a disconnect between the offer and demand of mobile financial services: while customers are rapidly embracing technology, with increasing need for online shopping and payment services, most banks are lagging behind in terms of appropriate and innovative offer. We will detail in this section this two-pace system, and will present the different typologies of mobile banking strategies adopted by Europeans banks, taking the example of mBank in Poland, and the multi-national BNP Paribas's Mobile offer.

5.1 Slow adoption by banks

Nowadays, almost all banks – in developed and emerging financial markets alike - have engaged in digitalisation, offering some kind of basic mobile banking services like mobile applications and text banking to their clients. Yet, rare are the banks that embrace the entire scope of what digitalisation has to

²⁷ World payment report 2015, Cap Gemini
The transactional data in the report is from 2013. It makes a projection for 2014 at 8,9%. Data is not yet available for 2015..

²⁸ Tunde Olanrewaju, The rise of the digital bank, McKinsey, Financial Times, October 25, 2013.



offer, with most financial institutions having relatively shallow digital offerings focused on enabling basic customer transactions.²⁹

Mc Kinsey estimates that across Europe, retail banks have digitized only 20 to 40 per cent of their processes and, as far as the investments go, only 10% of European banks invest more than 0.5 per cent of their total spending on digitalisation.³⁰ Same slow adoption rate applies for Eastern Europe microfinance institutions (MFIs), with reluctance mainly coming from a lack of digital understanding on both clients and field staff sides.³¹

Indeed, digital financial services are proving to be a challenge for many traditional financial institutions, mainly because their existing systems were designed for specific services and not easily optimized for the broader range of digital services now being offered (a list and definitions of digital banking services offered is available in Annex 1). Besides, the adjustments needed in their business strategies to respond to digitally driven structural change are often perceived as heavy and challenging status quo.

But going digital does not mandatorily mean millions in investment or convulsive upheaval in IT. As advised by Olanrewaju, some preliminary action points for a bank to progressively go digital can be to:

- **Maximize the use of existing technology: many banks often have existing workflow systems in place, but don't use it at their full potential;**
- **Apply lightweight technology interventions like e-forms, workflow systems, etc.;**
- **Place a few selective big bets: automate those products or processes that drive the most capacity and give the greatest returns, not all of them.**

29 Tunde Olanrewaju, The rise of the digital bank, McKinsey, Financial Times, October 25, 2013.

30 Tunde Olanrewaju, The rise of the digital bank, McKinsey, Financial Times, October 25, 2013.

31 Carol Caruso and Geraldine O'Keeffe, Digital Field Applications: Opportunity Bank Serbia Case Study; Accion, September 2015.

In Kosovo, financial institutions are also lagging behind on digital transformation. The financial sector, as well the entire economy, has been severely damaged by the political conflict affecting the region in the 1990s, with Yugoslav banks having fled the province during the conflict.³² The formal financial sector has ceased to exist until September 1999. The country had to work hard to turn the corner and build basic financial infrastructures from scratch. Nowadays, the 10 banks that constitute the financial sector in Kosovo have introduced e-banking services, but these are limited to account consultation, transfers and bill payments, as explained earlier in the report. General interest from financial institutions to develop mobile banking and payments is growing, but still very low.

5.2 Pre-conceived ideas banks should let go

The reluctance of embracing the use of digital solutions does not only come from investment chilliness. Some institutions hang on to the idea that the machine will replace the people, and that banks will become unnecessary. Yet, what they should consider is that they have some years at most to become digitally proficient. If they fail to take action, they risk entering a spiral of decline similar to laggard in other industries.³³ That is why there is a tough stance from regulators across geographies to increase the pressure on banks to modernize their IT infrastructure.³⁴

On the other hand, some banks think that investing in digital applications would not necessarily guarantee more revenues.³⁵ Chapter 6 on the advantages of the use of IT will sweep this concern away, highlighting the cost saving and revenues generation impacts.

32 KfW Case Study: Kosovo, The World Bank/Brookings Conference on Access to Finance: Session VI Case Study.

33 Henk Broeders and Somesh Khanna, Strategic Choices for Banks in the Digital Age, McKinsey, January 2015.

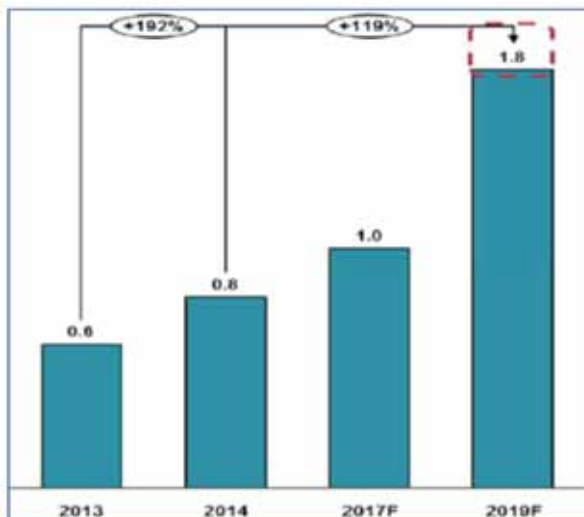
34 The Digital Revolution: A Business White Paper, SunTech Group, 2013.

35 The Love-Hate relationship between banks and digitalization, Bobsguide, 15 February 2016.

5.3 Customer adoption leading the market's development

While the adoption of technology by European banks has been quite cautious, customers have deeply embraced digital technologies in all sorts of industries. Nowadays, customers evolve in a digital world where so many regular operations can be done online or using a mobile phone: travel booking, shopping, small merchants, payments, etc. As such, the number of global mobile banking users set to rise from 0,8 billion in 2014 to 1,8 billion by 2019.

Graph 20: Global user adoption trends and growth projections



Source: Juniper Research, KPMG Analysis

This high adoption of mobile banking is mostly due to quickness and time-saving. Vocalink's mobile payment research demonstrates that speed and convenience to use drives adoption of mobile banking way better than cost (66% against 8% for cost savings).³⁶

To gain a better understanding of how its customers (and potential customers) behave with regards to mobile financial services, ING Bank commissioned a survey compelling 15 countries globally and about 15,000 respondents.³⁷ The results highlights that:

³⁶ David Hodgkinson, Mobile Banking 2015, Global Trends and their Impact on Banks, KPMG, July 2015.

³⁷ The rise of mobile banking and the changing face of payments in the digital age, ING International Survey, April 2015.

- More than half of respondents in Europe who own a mobile device have shopped on it in the last 12 months, buying goods and services via phone or tablet.
- Mobile shopping is most popular among men under 35.
- Mobile payment apps however, have been used by 33% of European consumers³⁸
- When asked which channel they trust the most for mobile payment apps, 84% choose their own bank.

In Russia particularly, Taylor Nelson Sofres (TNS) conducted a study on popularity of electronic money, which gathers quite compelling results on the level of awareness and use of non-cash payments being very high. For example, rates of people familiar and having heard of e-money are respectively 100% and 95% of the study's sample.³⁹

However, in Kosovo, the usage of e-banking services is rather low. As described in sections above, a number of e-banking accounts (allowing card payments) was below the 200,000 threshold in 2015, whereas the total population was estimated at 1,6 million people in 2014. This means that around 10 percent of population have an e-banking account. This low usage and demand can be attributed to the overall low Internet usage and poor network coverage and operations. Yet, there is a huge opportunity to be tapped into considering the increasing demand for loans, which has been facilitated by the decrease in interest rates. To respond to and drive this demand, Kosovo banks might want to consider automating credit scoring to save time and money – see the Opportunity Bank Serbia Case study on page 60 of this report.

Besides, the Government of Kosovo and the World Bank are currently working on driving ICT demand up and including more women in the digital economy. The "Women

³⁸ The rise of mobile banking and the changing face of payments in the digital age, ING International Survey, April 2015.

³⁹ The Popularity of Electronic Money in Russia, TNS, April 2015.



in ICT” initiative aims at opening doors for women to find well-paid employment in the information and communication technology (ICT) sector, by for example equipping 100 under/unemployed women in rural areas.⁴⁰ Another similar initiative, “Digital Kosovo”, launched in 2013 by a local entrepreneur KushtrinXhali and developed by IPKO Foundation, aims at enabling Kosovo citizens to act as digital diplomats, taking part in online advocacy and helping integrate Kosovo into the digital landscape.

As demonstrated by these two initiatives, demand and usage of ICT in Kosovo have not arisen naturally, but are likely to emerge with significant encouragement and support from industry and government leaders who understand the forefront of leveraging ICT for economic growth in the country.

5.4 Typology of mobile banking strategy

Banks’ vision and strategy regarding mobile banking and use of IT differ in many ways as there can be plenty of options awaiting for those willing to embrace it.

KPMG envisions three types of strategies that banks typically follow:

Incremental strategy: Banks tending to offer basic portfolio of banking offerings via mobile devices, like mobile applications or text banking. Those banks are relatively slow in developing enhanced mobile banking offerings. As an example, the Deutsche Bank, only offering a mobile application and bill payment services, is considered by KPMG as an incremental Bank (see Graph 21).

Transformational strategy: Banks evolving from a basic to a broad, rich set of capabilities in mobile banking. They tend to be followers of the market trend. Example of a transformational bank is BNP Paribas which offers banking and payment services (except bill payment), as well as some value added services (personal financial management and cloud storage).⁴¹

Pioneering strategy: Banks using new and innovative ways of mobile banking by aggressively experimenting with new age digital culture. They act as trendsetters in the market for disruptive offerings. Barclays, Caixa Bank and Westpac are some of the pioneering banks that developed innovative value-added services, like social media banking, virtual support, or cross-selling marketing.

The figure below provides a comparative analysis of some global banks, highlighting innovative/disruptive solutions tried out by each of them.

⁴⁰ Kosovo works with the World Bank on an ICT Perspective for Young Women in Rural Areas, October 2015, World Bank.

⁴¹ These terms are described in Annex 1.



Graph 21: Mobile banking offering: Comparative analysis of banks globally

	JP Morgan Chase	Com-mon-wealth Bank	Caixa Bank	Bar-clays	BNP Paribas	Bank of America	RBC	Deutsche Bank	Intesa Sanpaolo	ICICI Bank	Mizuho	Swed Bank	Ned Bank	ICBC	Alfa Bank	Lloyds Banking Group	Brad-esco	Westpac	
Mobile app, website and basic services																			
Text banking																			
P2P payments																			
Bill payments and recharges																			
POS solutions/ NFC																			
Virtual wallet																			
Image/camera based banking																			
Cross-selling and marketing																			
Personal financial management																			
Virtual support																			
Cloud storage																			
Wearables																			
Biometric apps and security features																			
Social media banking																			
Augmented reality technology																			

Source: KPMG Analysis

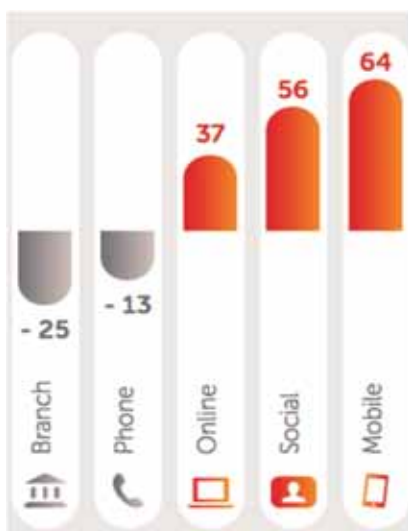


Europe is mostly a mature mobile banking market, with plenty of opportunities for growth, especially in the Southern and Eastern European regions.⁴² Adoption of mobile banking services is close to 38%, with average modest growth year on year.⁴³ The Netherlands, in particular, is the “most developed” mobile banking market in the ING International Survey 2015, followed by the US and the UK.⁴⁴ According to this study, uptake in Europe is mostly lower than in the US or in Australia, but the share of who intend to use it is higher, especially in Turkey, which has the highest share of users who use the technology and is thus

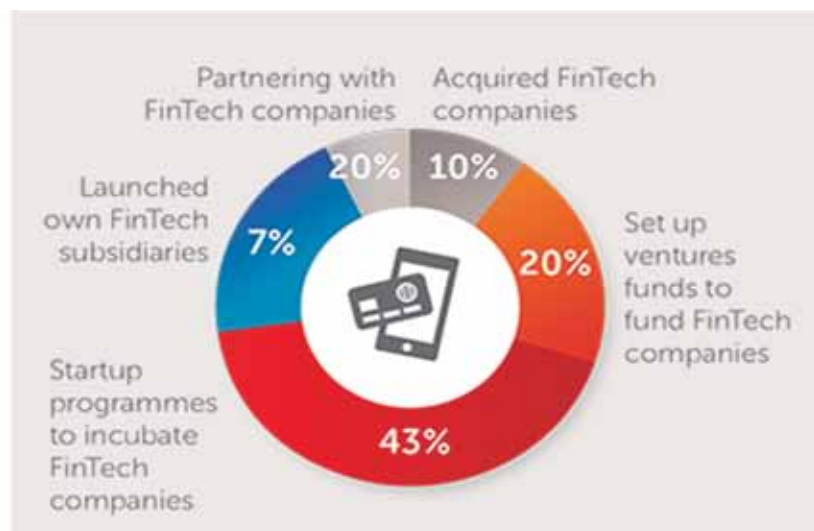
considered as the future hotspot for mobile banking, with a potential to rapidly grow.⁴⁵

In Kosovo, banks tend to follow the incremental strategy, offering some basic banking and payment services, but value added services are yet not part of the landscape. For example, Raiffeisen Bank now offers SMS top-up & banking, m-banking and e-banking services to its clients. ProCredit developed ProCredit Online for company owners, which provides a Smart Card offering secure access, proper fund management and time savings solutions for clients.

Graph 22: Disruption in customer channel



Graph 23: European Banks & FinTech



Source: The EBF blueprint for digital banking and policy change, European Banking Federation, 2015

42 Eastern Europe B2C E-commerce Report 2015 (Facts, Figures, Infographics and Trends of 2015 and the 2015 forecast of the Eastern European B2C E-commerce Market of Goods and Services).

43 Mobile Banking 2015, KPMG.

44 The rise of mobile banking and the changing face of payments in the digital age, ING International Survey, April 2015.

With a panel of almost 15,000 respondents, the study compares 15 countries (The United Kingdom, Spain, Belgium, the Netherlands, Germany, France, Luxembourg, Italy, Austria, Romania, Czech Republic, Germany, Poland, Turkey, the US and Australia).

45 The rise of mobile banking and the changing face of payments in the digital age, ING International Survey, April 2015.

With customer needs and habits changing rapidly, banks are anticipating major disruptions in customer channels. A study by PWC estimates the approximate percentage change of the activities on various customer channels in 2013 and 2016 (Graph 22), while AvinashSwamy indicates that European Banks are increasingly engaging with FinTech companies (telecommunication companies, payment services companies, etc.) to stay as relevant as possible before these changing behaviours (Graph 23).⁴⁶

46 European Banking Federation blueprint for digital banking and policy change.

5.5 Role of FinTech

FinTech companies refer to new solutions that demonstrate an incremental or disruptive innovation development of applications, processes, products or business models in the financial services industry. FinTech offers users an array of financial services from transactions to underwriting that were once almost exclusively the business of banks. They are for example easing payment processes, reducing fraud, saving users money, promoting financial planning, and ultimately moving a giant industry forward. Telecommunication companies, like Orange with Orange Money, and payment companies, like PayPal, WePay, Bitcoin or Qiwi, are particular disruptors in the financial service sector, supported by customers who have well embraced the idea, thanks to the rise of the mobile, on-demand economy.

FinTech innovations both represent threats (i.e. competition - diminution of margins and market shares) and opportunities (for ex. cost savings with innovative new technologies) for banks.⁴⁷ For example, Goldman Sachs estimates that FinTech start-ups could steal up to 4.7 trillion USD in annual revenue, and 470 billion USD in profit, from established financial services companies.⁴⁸ Yet, for banks and financial companies that realised the opportunity, FinTech could be an immensely savvy bet.

As seen in Graph 23, banks are taking different approaches to FinTechs. For example, Barclays, like 43% of banks as reported by the European Banking Federation (EBF), has launched the Barclays Accelerator programme, a 13 weeks programme designed to help start-ups develop. Start-ups with capability in machine learning, lending, digital banking solutions, trading, cyber security, data analytics, payments, cryptocurrency, insurance, wealth management and others,

get access to the bank's knowledge base and network, and receive some funding to develop their solutions.

Partnerships between banks and Telcos are also increasingly happening. This is very much the case in Central and Southern Europe where companies like Teleshop Bank and Asseco SEE have teamed up to address relatively low adoption rates of online and mobile banking, despite the region's high levels of connectivity.⁴⁹ The solution is Asseco's ASEBA Multichannel Hub, that includes services for a variety of channels (web, mobile, ATM, branch, call center, etc.), and as well as fundamental business operations that can be integrated with external back-end systems. The synergy between the telecom and the bank results in a customized loan offer created from data derived from two different companies, a complete end-to-end solution for banking and a fully automated process to support the development of new products.

At times, telecommunications companies can push negotiations further by acquiring banks' stakes, like it has recently been the case with the partnership of Groupama bank and Orange. In January 2016, Orange and Groupama announced they would be developing a new business model wherein Orange would diversify its operations into banking services, acquiring 65% stake in Groupama to develop Orange Bank. With this model, Orange would benefit from the existing operational infrastructure of Groupama whereas the Telco will bring its digital knowledge to develop a 100% mobile offer corresponding to new uses increasingly employed by the two partners' customers. The launch of "Orange Bank" is planned for the start of 2017 in France, followed by other European markets such as Spain or Belgium. The services offered will cover all standard banking services as well as savings, loans and insurance services.⁵⁰

47 Steve Webb, Banks confront the FinTech challenge, PwC FinTech Blog, 16 March 2016.

48 Why Fintech Is One of the Most Promising Industries of 2015, Maria Aspan, Inc 500.

49 Finovate Debuts: Asseco SEE Brings Real-time Big Data Processing to Multichannel Banking, David Penn, April 2, 2015.

50 Groupama and Orange enter exclusive negotiations for the creation of "Orange Bank", an innovative, 100% mobile bank, Orange Group, January 4, 2016.



Hence, to compete and match the rise of Fin-Techs, banks investments are progressively expected to become consequent, as stated by a 2015 Celentresearch, which highlights that European Banks are to invest 62 billion USD in Information Technology in 2018.

Some banks have already gone down that path, looking to find ways to echo customers' needs. While some have met an undeniable success (see example of mBank), the journey has been more challenging for others, regardless of the amount of efforts put. Exposing the case of BNP Paribas Mobile would help understanding that efforts and investments in digital channels are not the sacrosanct of success. A deep understating of the customer and macro-trends are some of the key for success.

Case study1: mBank, Poland: An undeniable digital success story

mBank is a Polish direct bank brand established by BRE Bank in 2000 as one of the first of its kind in the country.⁵¹ It is now a mature brand with an offer addressed to mass customers, personal and private banking clients, as well as businesses, from micro-enterprises to the biggest corporations.

mBank in numbers

Geographic region: Eastern Europe (Poland)

Total clients:

- 1 million active users of m- banking,
- 5 million retail clients,
- 19,000 corporate clients

Loan portfolio: 20,4billion USD in 2014

Cost/income ratio: 44.9% in2014

Number of branches: 47 corporate branches and 130 retail branches + available online via

mBank now gathers more than 6 million customers, 6,318 staff, and deposits totalling 20.6 billion USD. It is currently the fourth largest bank in the country. For its innovative business and achievements (digital platform redesign and its Bancassurance initiative), mBank has received two Celent Model Bank awards.⁵²

mBank, established long before initiatives like GoBank, Moven or Hello Bank, capitalized on the shift in consumer behaviour: serving customers where they want, when they want and through an innovative direct approach that borrowed from the world's best retailers:

- **A virtual store, inspired by Zappos**
- **Advanced search functionality, inspired by Google**
- **Merchant-funded rewards, inspired by Cardlytics**
- **Research and advice, inspired by Amazon and Mint**
- **Video banking, inspired by Skype and Google Hangouts**
- **Gamification⁵³ and social media integration, inspired by Foursquare, Like and Love.**

In 2014, seeking further growth, mBank leveraged its new digital platform to introduce a complete digital transformation of insurance delivery to retail and SMEs, under its Bancassurance model. The platform is offered under an omni-channel environment, accessible through online, mobile, phone, video, or branch, and supported by a real-time, event-driven Customer Relationship Management engine. mBank enables the entire process to be handled electronically, while decision-making and purchasing can be started and completed through different channels at a customer's convenience.

Starting from the overhaul of its digital delivery in 2013, and then extending into insurance services, mBank is a model for how

⁵¹ Since 2007, mBank is also established in Czech Republic and Slovakia.

⁵² Bob Meara, Learning from mBank's branch channel investment, 15 December, 2015.

⁵³ Gamification is the application of game-design elements and game principles in non-game contexts.

digital can transform an institution, enabling innovative applications that can substantially grow the business.

Case study 2: BNP Paribas Mobile

BNP Paribas Mobile solution was developed in 2011 from a partnership between the BNP Paribas, one of the largest banks in the world, and the French multinational telecommunications corporation Orange.

BNP Paribas Mobile originally consisted in four main offers: mobile banking, mobile payment, mobile phones, and mobile subscription. 4 different types of subscriptions and 8 smartphones were proposed to potential customers. The bank was the first to offer a service combining mobile subscription, phones, and m-banking services. The objective was to reach hundreds of thousands clients by 2015.

But, after three years of activity, both partners have jointly decided to cease the business, due to a hyper competitive environment and a too low customer base (22,000 in April 2015).⁵⁴



BNP Paribas is now focusing other on-going initiatives and developing account management applications and mobile payments.

The other on-going initiatives consist of:

Hello Bank	A mobile bank launched in Belgium, Germany, France and Italy that allows users to manage their budgets and put their spending into categories. Clients can also make transfer in a very simple way (only three clicks) and have access to advisers via online chat, email, Twitter, Facebook and telephone for extended hours six days a week. At the end of 2013, Hello Bank had more than 175,000 clients and 1,8 billion EUR collected. The Hello Bank! Mobile Application won the Favorite Website Award.
Web banking applications	A few applications have been developed, such as 'My Transfers', 'My portfolio' and KIX' to allow users to make payment directly through mobile. 'Express View' feature enables seeing statement of accounts without having to enter any code at all, whereas 'My Account' manages the account.
Pay Lib transfers	A mobile payment solution (person-to-person) that can be used via smartphones or tablets. It doesn't require account details, only the other person's telephone number.
Mobo	A hardware plugged on smartphone allowing merchant payments to accept card payments on the move.
Six dots (Wallet)	A mobile wallet enabling customers to pay online in total security. It offers a multitude of additional services, such as managing discount coupons or electronic ticket storage.
YouPass	A contactless payment mobile application using NFC (near Field Communication) technology, a short-range wireless link. To make a payment, customers only need to hold their mobile phone over a POS terminal.

This example highlights that innovative banks do not systematically find success. Yet, from the experiences and lessons learnt so far, some guidelines can be drafted in Chapter 8.

⁵⁴ BNP Paribas renonce à vendre des téléphones mobiles, Les Echos, 28 April 2015.



CHAPTER 6

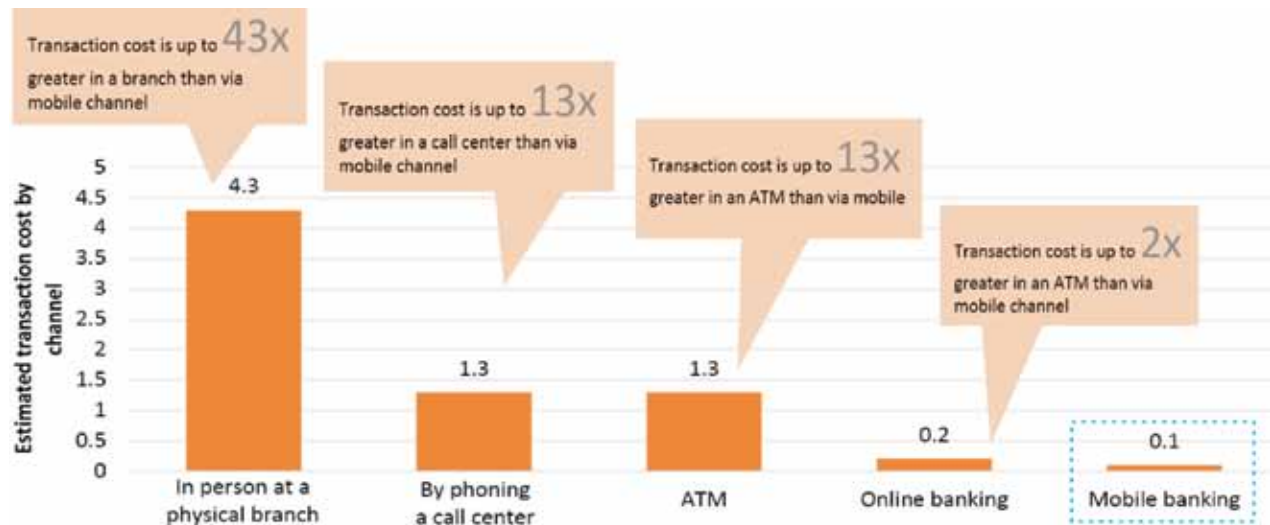
ADVANTAGES OF
INFORMATION
TECHNOLOGY IN BANKS

6.1 More revenues, less costs

Mc Kinsey estimates that digital transformation will put upward of 30% of the revenues of a typical European Bank (particularly in high turn-over products like personal loans and payments) and reduce its costs by 20 to 25%.⁵⁵

Similarly, Javelin Strategy & Research found out the average cost per mobile transaction to be just 10 USD cents, while an in-person transaction at a physical branch is 4,25 USD. There is thus a significant cost saving resulting from the shift from traditional higher cost channels to the lower cost mobile banking channel as illustrated in Graph 24.

Graph 24: Impact of bank costs of transaction migration to mobile channel



Source: Javelin Strategy & Research, 2013, KPMG Analysis

This financial value gained by the use of mobile services can be detailed as follow:

- Increased product holding:** The average number of product holdings (loans, certificates of deposits, credit cards and mortgages) immediately increases after consumer's adoption of mobile banking. A study conducted by Fiserv indicates that the increase approximates 11%.⁵⁶
- Increased transaction frequency and value:** Fiserv found that there was a 46% increase in the number of POS card transactions for banks customers; average transaction also increased by 46% - from 550 to 801 USD per month.⁵⁷
- Lowered attrition:** Bank branch-only customers are more than two times more likely to attrite than mobile banking users.
- Higher average revenue:** Mobile bankers generated 72% higher revenue than branch-only customers at the banks studied.
- Customer centred product development:** more dynamic tailored pricing and product bundling, third party integration (for example, Facebook), product white-labelling, appropriate distribution via aggregators and establishment of distinctive mobile and online sales offering.⁵⁸

⁵⁵ Tunde Olanrewaju, The rise of the digital bank, McKinsey, Financial Times, October 25, 2013.

⁵⁶ Mobile Banking adoption: Where is the revenue for financial institutions ?,White-Paper,Fiserv, January 2016.

⁵⁷ Mobile Banking adoption: Where is the revenue for financial institutions ?,White-Paper,Fiserv, January 2016.

⁵⁸ Tunde Olanrewaju,The rise of the digital bank,McKinsey, Financial Times, October 25, 2013.

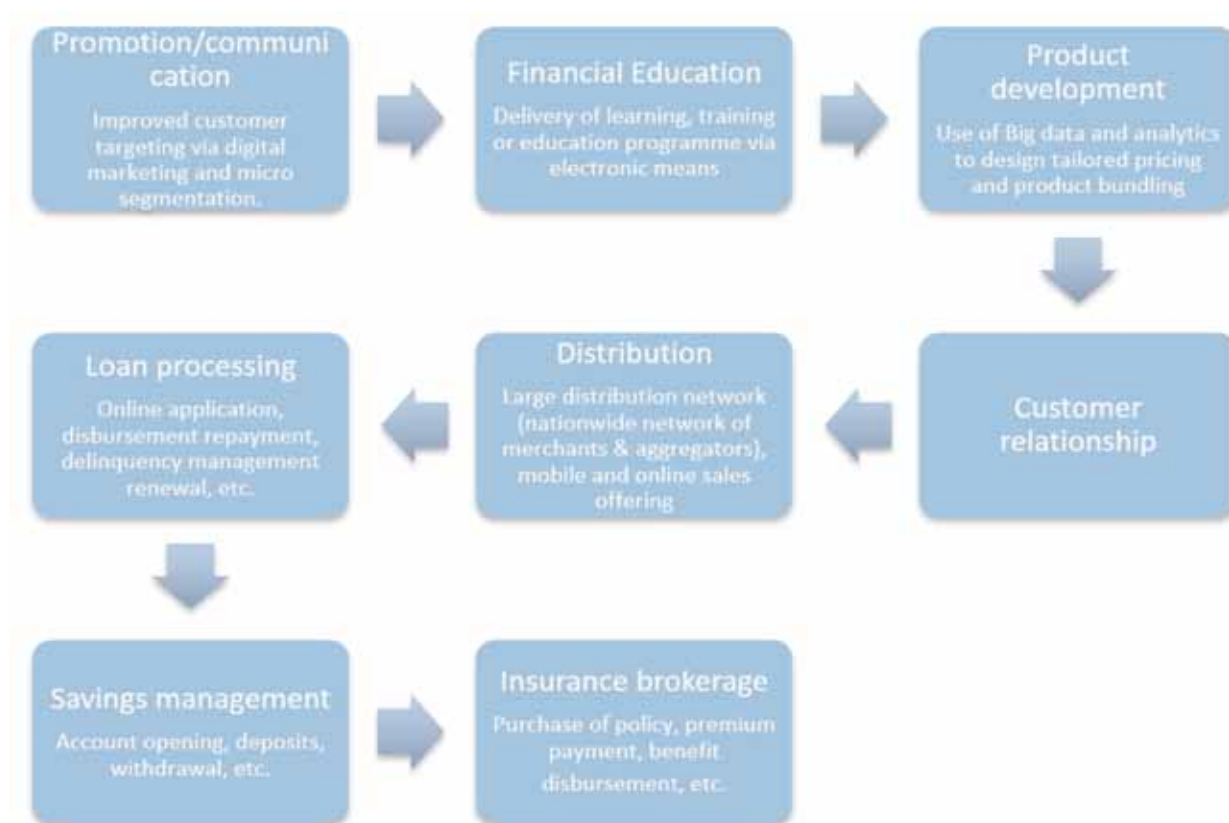


6.2. Process improvements/benefits from the use of IT

In their daily activities, banks have a number of processes (promotion, client education,

loan servicing, distribution) that can be improved by involving information technologies and mobile devices. In the figure below, we suggest some bank processes that can be improved by IT and the use of mobile.

Graph 25: How can bank processes be improved by IT and use of mobile



Case study 3 illustrates how digitalisation can benefit a financial institution.

Case study 3: Opportunity Bank Serbia implementing a Digital Field Application (example of cost savings)

Opportunity Bank Serbia (OBS) is a full commercial bank, established with a mission to provide financial solutions and training to empower underserved and financially excluded people in Serbia and transform their lives, their children’s futures and their communities.

In a willingness to improve its customer service, reduce its costs and improve its per-

Opportunity Banks Serbia overview

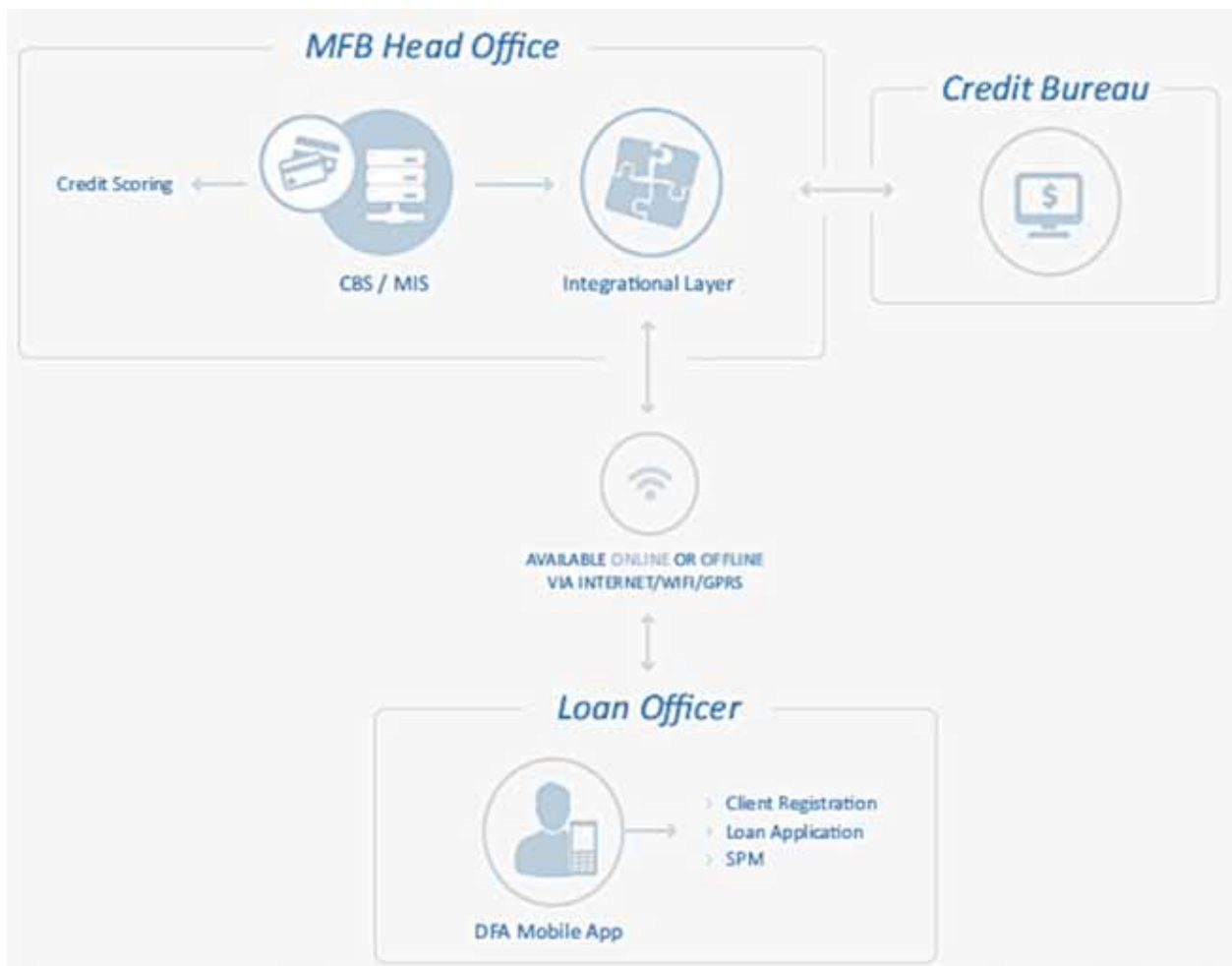
Geographic region: Eastern Europe
 Head office: Novi Sad, Serbia
 Regulatory status: Bank
 Year established: 2002
 Total clients: 30,000

formance, OBS considered implementing a technology solution. The major inefficiency at OBS was found to be the loan application process, where loan officer performed repeated visits to the field to evaluate the applicants' credit request. Once done, the application had to go through the credit committees, who would again evaluate the requests. That process was ineffective both from an institutional/financial point of view as well as from a customer satisfaction rationale.

The solution chosen by the institution was thus to develop a Digital Field Application

(DFA) for credit scoring that would ease the disbursement decision. The Android application, installed on tablets, allows loan officers to capture client and loan details directly on-site. Able to connect instantly with both the Credit Bureau and the credit-scoring module of the bank's core banking system (see Figure below), the application allowed delivering a credit decision in the field for 80% of agricultural loans disbursed during the pilot. After 6 months of implementation, it was considered a major success, improving customer service and increasing revenues for the bank.

Graph 26: DFA Overview at OBS



Source: Accion, OBS Case study



The main advantages resulting from the use of DFA at OBS were highlighted in a business case as follows:⁵⁹

At the institution level:

- Efficiency enhancement: 28% increase in loan volume due to the DFA use.
- Considerable time saving, at (1) the loan officer level (less repeated visits to the field to evaluate the applicant's credit request, gathering of information quicker with removal of unnecessary data fields) and (2) credit committee level;
- Elimination of data entry errors and non-standard data collection;
- Improved compliance;
- Cost savings as transportation costs were significantly reduced and as a result of time saving;
- Enhanced reputation, with OBS perceived as an innovator;
- Digitalised client records, laying the foundation for future Social Performance Measurement and analysis.

At the client level:

- Improve customer service as a result of faster loan application response (analysis of application as an automated process) and convenience;
- Increased access in traditionally underserved areas.

Reflecting on its digital involvement, OBS articulated several success factors, including the ability of the financial institution to engage financial and time investments (dedicated team of specialists and months of experimentation) and the need to perform a detailed requirements analysis that challenges the institution's status quo, which prove to be essential. The good data connectivity and vibrant IT sector in Serbia also facilitated the success of the operation.

On the other hand, the institution recognises a few challenges that needed to be overcome, as the initial resistance from loan officers who feared losing their client focus; the concern was wiped away with trainings and confidence building.

The experience of OBS illustrates the opportunity and benefits of deploying DFA by host of different financial service providers, from MFI to commercial banks.

6.3. Client perspective

The advantages of going digital can also be felt from a customer point of view: Reduced start-up costs and service prices: Technology helps consumers to search further and faster for the best deals/value when and how it suits them best. For instance, customised deals at select stores through mobile apps, sent by banks.

Widespread coverage with 24/7 access without time or travel costs: Digital technologies also reduce geographical distances and reach customers located in peripheral areas who can benefit from more offers.

Access to more diverse and tailored products.

Technology can also help people avoid other financial mistakes such as missing bill payments and going into overdraft (and potentially being charged penalty fees).

Improved money management: 85% of mobile bankers in Europe list at least one way it has improved their money management (feeling more 'in control' of finances, not missing payments, saving more). In some countries, such as in Italy, Romania, Poland and Turkey this is even 90% or higher.

⁵⁹ Digital Field Applications: Opportunity Bank Serbia Case Study; September 2015.



FINANCIAL
enforcement
consumer
SERVICAL
regulatory
loans
litigation
bankruptcy
deficiency
capital
trans
bank
creditors
debtor



CHAPTER 7

PAYMENT SECURITY IN
THE EU AND EE

7.1 Cyber-crime: key facts and figures

2013 was the worst year in terms of cyber-crimes. A survey of consumers in 2013 has shown that 10% of internet users across the EU have experienced online fraud, and 6% have experienced identity theft. 12% have not been able to access online services because of cyber-attacks, and 12% have had a social media or e-mail account hacked. 7% have been the victim of credit card or banking fraud online.⁶⁰

At present, 28% of internet users across the EU are not confident about their ability to use the internet for services like online banking or buying things online. When using the internet for online banking or shopping, the two most common concerns are about someone taking or misusing personal data (mentioned by 37% of internet users in the EU) and security of online payments (35%).⁶¹

A Boston Consulting Group (BCG) survey in 2015 confirmed that worries about data privacy and security remain significant barriers to digital adoption.

Globally, cybercrimes are split into 4 main categories: data theft (40% of worldwide attack in 2013), infrastructure attack (26%), cyber vandalism (23%), system resource hack (4%) and others (7%).⁶²

The most common security threats are malicious codes (viruses, worms, Trojan horses, etc.), Unwanted programs (spyware, browser parasites), Phishing/identity theft, Hacking and cyber-vandalism, credit card fraud/theft, spoofing (pharming) and spam (junk) web sites, Denial of Service (DoS) and Distributed Denial of Service (DDoS) Attacks.⁶³

60 Special Eurobarometer 404 – Cyber security, EU Commission, 2013, p. 52

61 Special Eurobarometer 404 – Cyber security, EU Commission, 2013, p. 4.

62 Deloitte Global Defense Outlook, Defense and Development, 2014.

63 DoS consists in hackers flooding website with useless traffic to inundate and overwhelm network; DDoS

According to the latest data, European card fraud losses hit 1.55bn USD in 2013 (+6,2% vs. 2012) whereas there is total of 760 million cards active.⁶⁴ The majority of this was card-not-present fraud, i.e. money withdrawn by writing down the card number and misusing it (66% of value), which has been increasing year-on-year. with 794 million USD in fraud losses in 2012, card-not-present fraud was not only the largest category in absolute value, but also the one with the highest growth (up 21.2% from 2011).⁶⁵

Phishing and Identity Theft is one of fastest growing forms of e-commerce crime. Information obtained is used to commit fraudulent acts (access checking accounts), and steal identity.⁶⁶

Potential losses from illegal interventions include: asset damage or destruction, service disruption, loss of identity, monetary loss, intellectual property loss, privacy breach, regulatory breach, reputational risk and legal risk.

In the EU, attacks against website are increasing: from around 100.000 in September 2013 to 1 million in June 2014. Smartphones attacks remain low for the time being. Network services attacks are the highest with 9 million attacks in June 2014.

Risks of online infections are the highest in Central Asian and Eastern Europe countries (Moldova, Belarus, and Ukraine), which are in the top 10 countries with the highest risk of online infection (>44%).⁶⁷

consists in hackers using multiple computers to attack target network from numerous launch points.

64 Ami Sedghi, European card fraud reached new high in 2013, The Guardian, 6 August 2014.

65 Third Report on Card Fraud, European Central Bank, February 2014.

66 No consolidated data at EU Level.

67 Kaspersky Security Bulletin 2015, Overall Statistics for 2015, Kaspersky Lab, 2015.



7.2 Measures taken for security of payments: regulation

As a response, several nations in the EU have published National Cyber Security Strategies in the past 5 years: Austria (2013), Belgium (2014), Czech Republic (2011), Estonia (2008), Finland (2013), France (2011), Italy (2013), Germany (2011), Hungary (2013), Latvia (2014), Lithuania (2011), Luxembourg (2011), The Netherlands (2013), Poland (2013), Romania (2011), Slovak Republic (2008), Spain (2013), United Kingdom (2011). Other countries worldwide have adopted them too.

Europe has its European Union Agency for Network and Information Security (ENISA) working with the US on best practices and European Cybercrime Centre since 2013.

To address security in payments issues, European authorities brought together supervisors of payment service providers (PSPs) and overseers of payment systems in the European Union in 2011, forming the European Forum on the Security of Retail Payments (SecuRe Pay). This body is completed by the European Banking Authority (EBA), an independent EU authority working to ensure effective and consistent prudential regulation and supervision across the European banking sector.

On 31 January 2013, the European Central Bank (ECB) released final recommendations for the security of internet payments, to be implemented from February 1st, 2015. The publication followed a two-month public consultation carried out in 2012. In 2014, the European Banking Authority (EBA) took on the job to convert these recommendations into guidelines to give them a more solid legal basis and to ensure a consistent implementation by financial institutions across all 28 EU Member States. EBA published these guidelines after a public consultation in December 2014 to come into force from August 1st, 2015. The guidelines build on the rules of Directive 2007/64/EC3 ('Payment Services Directive', PSD) concerning information requirements for payment services and obligations of payment services providers (PSPs) in relation to the provision of payment services.

However, the UK, Slovakian and Estonian regulators have all decided not to seek compliance by the date of February 2015. The UK regulator had advised that it would seek compliance following implementation of the PSD II (planned for 2017).

The guidelines are addressed to financial institutions and apply to the provision of payment services offered through the internet. Competent authorities in the 28 Member States of the European Union should ensure the application of these guidelines by PSPs as defined in Article 1 of the PSD under their supervision.

Guidelines address:

General control and security environment

- **Governance:** need for payment service providers to implement and regularly review a formal security policy for internet payment services.
- **Risk assessment:** PSPs should carry out and document thorough risk assessments with regard to the security of internet payments and related services, both prior to establishing the service(s) and regularly thereafter.
- **Incident monitoring and reporting:** PSPs should ensure the consistent and integrated monitoring, handling and follow-up of security incidents, including security-related customer complaints. PSPs should establish a procedure for reporting such incidents to management and, in the event of major payment security incidents, the competent authorities.
- **Risk control and mitigation:** PSPs should implement security measures in line with their respective security policies in order to mitigate identified risks. These measures should incorporate multiple layers of security defenses, where the failure of one line of defense is caught by the next line of defense ('defense in depth').
- **Traceability:** PSPs should have processes in place ensuring that all transactions, as well as the e-mandate process flow, are appropriately traced.

Specific control and security measures for internet payments

- **Initial customer identification, information:** Customers should be properly identified in line with the European anti-money laundering legislation and confirm their willingness to make internet payments using the services before being granted access to such services. PSPs should provide adequate 'prior', 'regular' or, where applicable, 'ad hoc' information to the customer about the necessary requirements (e.g. equipment, procedures) for performing secure internet payment transactions and the inherent risks.
- **Strong customer authentication:** The initiation of internet payments, as well as access to sensitive payment data, should be protected by strong customer authentication. PSPs should have a strong customer authentication procedure in line with the definition provided in these guidelines.
- **Enrolment for, and provision of, authentication tools and/or software delivered to the customer:** PSPs should ensure that customer enrolment for and the initial provision of the authentication tools required to use the internet payment service and/or the delivery of payment-related software to customers is carried out in a secure manner.
- **Log-in attempts, session time out, and validity of authentication:** PSPs should limit the number of log-in or authentication attempts, define rules for internet payment services session 'time out' and set time limits for the validity of authentication.
- **Transaction monitoring:** transaction monitoring mechanisms designed to prevent, detect and block fraudulent payment transactions should be operated before the PSP's final authorization; suspicious or high risk transactions should be subject to a specific screening and evaluation procedure. Equivalent security monitoring and authorization mechanisms should also be in place for the issuance of e-mandates.

- **Protection of sensitive payment data:** sensitive payment data should be protected when stored, processed or transmitted (encryption, etc.).

Customer awareness, education, and communication

Customer education and communication: PSPs should provide assistance and guidance to customers, where needed, with regard to the secure use of the internet payment services. PSPs should communicate with their customers in such a way as to reassure them of the authenticity of the messages received (should provide at least one secured channel for ongoing communication with customers such as a dedicated mailbox on the PSP's website or a secured website).

Notifications, setting of limits: PSPs should set limits for internet payment services (e.g. a maximum amount for each individual payment or a cumulative amount over a certain period of time) and could provide their customers with options for further risk limitation within these limits. They may also provide alert and customer profile management services.

Customer access to information on the status of payment initiation and execution: PSPs should confirm to their customers the payment initiation and provide customers in good time with the information necessary to check that a payment transaction has been correctly initiated and/or executed.

In addition to these guidelines, which are compulsory, EBA has also defined best practices in terms of governance (have the policy in a dedicated document), as well as risk control and mitigation (e.g. provide the customers with security devices).

The EBA also published an Assessment guide for the security of internet payments, which is intended for bodies that have supervisory and oversight responsibility and assess compliance with the internet recommendations in the member states.



Cybersecurity law in the EU and the proposed Personal Data Notification & Protection Act in the U.S. set standards for how companies respond to cybersecurity breaches.

The Euro Retail Payments Board (ERPB) asked the European Payments Council (EPC) to develop a pan-European scheme for immediate payments based on SEPA credit transfers (SCTs).⁶⁸ Other parties are looking into solutions for immediate payments, possibly based on this scheme.

Other regulations in Europe related to payment security include:

- SEPA for Cards
- U.K. PSR
- Large-Value Payment Systems Upgrades
- SEPA / e-SEPA
- PSD II (Access to Accounts)
- Electronic Identification and Trusted Services
- Financial Transaction Tax
- Interchange Fee Regulation
- Mobile Payments Security in Europe
- European Current Account Switching.

7.3 Defense mechanisms: planning a security strategy

Defense approaches are of two types: Principles based vs. rules based supervision.⁶⁹ The EU has chosen the rule based supervision.

Principles-Based Supervision	Rules-Based Supervision
<ul style="list-style-type: none"> • Freedom to pursue supervisory outcomes in suitable ways, given the specific of their own institution • Opportunity to be creative and innovative, within supervisory boundaries set by the principles • Allows for dialogue between supervisor and supervised, to understand and resolve issues optimally • Better than rules for complex multi-faceted situations • Requires experienced supervisors able to exercise appropriate judgement • High-level instruments, hence more difficult to be operationalize • Open to interpretation, hence can cause uncertainty and lead to regulatory arbitrage 	<ul style="list-style-type: none"> • Provides clarity and certainty of supervisory expectations • More transparent and more likely to be seen as being equitably enforced • Easier to operationalize and assess compliance • Reduced opportunity for regulatory arbitrage • Better suited to less-complex activities and/or simpler situations • Reduces reliance on discretion and allows the examination by less-experienced supervisors • Reliance on supervisor to be 'policeman' • Impossible to have rules to govern each and every activity and eventuality • Focus on details and on compliance, rather than on the spirit of the principle

Often, a combination of principles and rules is required.

Defense mechanisms implemented by banks to protect clients include:

- Strong authentication or "two-factor authentication", a combination of something the user knows, such as a PIN or password; something they have, such as a token, smartcard or mobile phone; or something the user "is", such as a biometric. The two elements must be independent, so a compromise of one does not compromise the other.
- Segregation of duties in information technology.
- Hardening servers with secure configurations: Securing channels of communication (SSL, S-HTTP, VPNs)

⁶⁸ The SEPA Credit Transfer (SCT) is the Pan European Credit Transfer scheme that has replaced domestic and cross border Euro Credit Transfers (CT) throughout the SEPA zone.

⁶⁹ Marc Quintyn, Principles versus Rules in Financial Supervision—Is There One Superior Approach?, Qfinance

- Applying “least privilege” principles to access control.
- Limiting login attempts.
- End-to-end encryption.
- Digital certificates and Public Key Infrastructure (PKI): used to sign electronically a payment order for instance.
- Protecting networks with firewalls and proxy servers.
- Protecting Servers and Clients with anti-virus softwares.
- Management Policies, Business Procedures, and Public Laws.

A security plan is a four-step process: 1. Perform a risk assessment, 2. Develop a security policy and implementation plan, 3. Implement the security plan and 4. Perform a security audit.

An important element to take into consideration for defining defense approaches/ mechanisms is the maturity and capability of banks in terms of payment security. Many banks are at an early or intermediate stage of implementing their cyber-security framework. It is therefore appropriate for the initial assessment to consider maturity of implementation rather than a developing capability.

The Office of the Superintendent of Financial Institutions (OSFI) in Canada has developed a six-part self-assessment framework with 90 questions enabling a bank to assess its current security implementation.

Graph 26: A six-part self-assessment framework



Often, a combination of principles and rules is required.

Organization and resources criteria refer to the organization structure, accountabilities and adequacy of skilled resources for the management of cyber security risks and operations:

- Accountability and ownership
- 24/7 identification and response capabilities
- Sufficient number of skilled staff
- Enhanced background and security checks
- Ongoing technical training
- Training and awareness for all employees.

Cyber Risk and Control Assessment is a continuous assessment and testing of the security practices, capabilities and posture of the organization and its material and critical service providers:

- Regular and comprehensive cyber risk assessment
- Change management risk assessment
- Third party assessment and testing
- Vulnerability hardware and software scans and testing
- Regular penetration testing of the network boundary
- Recovery simulation exercises.

Situational Awareness is the monitoring of events and developments in internal and external environments to proactively assess exposures to cyber threats:

- Enterprise-wide knowledge base of users, devices, applications and relationships
- Collection and analysis of security event information
- Monitoring and tracking of external cyber security incidents (e.g. Canadian Cyber Incident Response Centre).



Threat and Vulnerability (Risk) Management are Controls to detect, prevent and mitigate against cyber threats such as data loss, malicious software and to networks:

- Data loss detection / prevention
- Cyber incident detection and mitigation
- Software security
- Network infrastructure
- Standard security configuration and management
- Network access control and management
- Third party management
- Customers and clients.

Cyber Security Incident Management are processes, procedures, tools and organisation structure to allow for rapid identification, escalation and response to cyber security incidents.

- Incident Management Framework designed to respond to material cyber security incidents
- Escalation criteria aligned with cyber security taxonomy
- Internal and external communication plans
- Post incident review process.

Cyber Security Governance refers to appropriate governance and oversight over the Cyber Security Program to reduce cyber risk exposure and incidents, allocate resources efficiently and ensure the effectiveness of the cyber risk framework:

- Cyber security policy and strategy
- Second line of defence (i.e. Risk Management)
- Third line of defence (i.e. Internal Audit)
- Senior Management and Board oversight
- External benchmarking.
- Today, there is a shortage of Cybersecurity Skills worldwide.

7.4 Guarantees offered to clients for payment security

A growing number of options are offered to clients to ensure their payment security. We only indicate here the most used:

- **Credit/Debit Card security:** more and more cards embark a PIN code, chip, verification code (back of the card most often), magnetic stripe
- **Crypto-technologies:** They provide a distributed recording system which guarantees the possibility of identifying irrefutably transactional data. Furthermore, they build and monitor any transaction or event via a joint network without intervention from a third party or central authority.
- **E-identification / e-signature:** The Regulation (EU) N°910/2014: transactions in the internal market (eIDAS Regulation) was adopted in July 2014. Its purpose is to enable secure and seamless electronic interactions between businesses, citizens and public authorities and increase the effectiveness of public and private online services, eBusiness and electronic commerce in the EU.

Biometric identification

Tokenization: The tokenization of information is a relatively new concept in the payment security landscape. The process involves attributing digital identifiers to financial information at the time a mobile transaction is made. Sensitive data is essentially swapped with a non-sensitive equivalent, referred to as the token. Apple Pay is one of the most prominent services to support tokenization.

Mobile Security technologies: HCE, blockchain, QR code.

For the time being, many banks cover for losses experienced by clients as a result of security breaches (e.g. card-not-present fraud). As technology evolves and enables more and more security, clients are gradually expected to take responsibility over their payment security, using secure devices and abiding by security procedures recommended by their banks.

A close-up photograph of a person's hands in a dark suit jacket and white shirt cuff, holding a thick stack of US 100 dollar bills. The bills are fanned out, showing the '100' denomination and the portrait of Benjamin Franklin. The entire image is overlaid with a semi-transparent orange filter. The text 'CHAPTER 8' is positioned in the upper left corner.

CHAPTER 8

**PERSPECTIVES – CASH
MONEY, OR MONEY IN CASH?**



8.1 Future of cash: away from cash

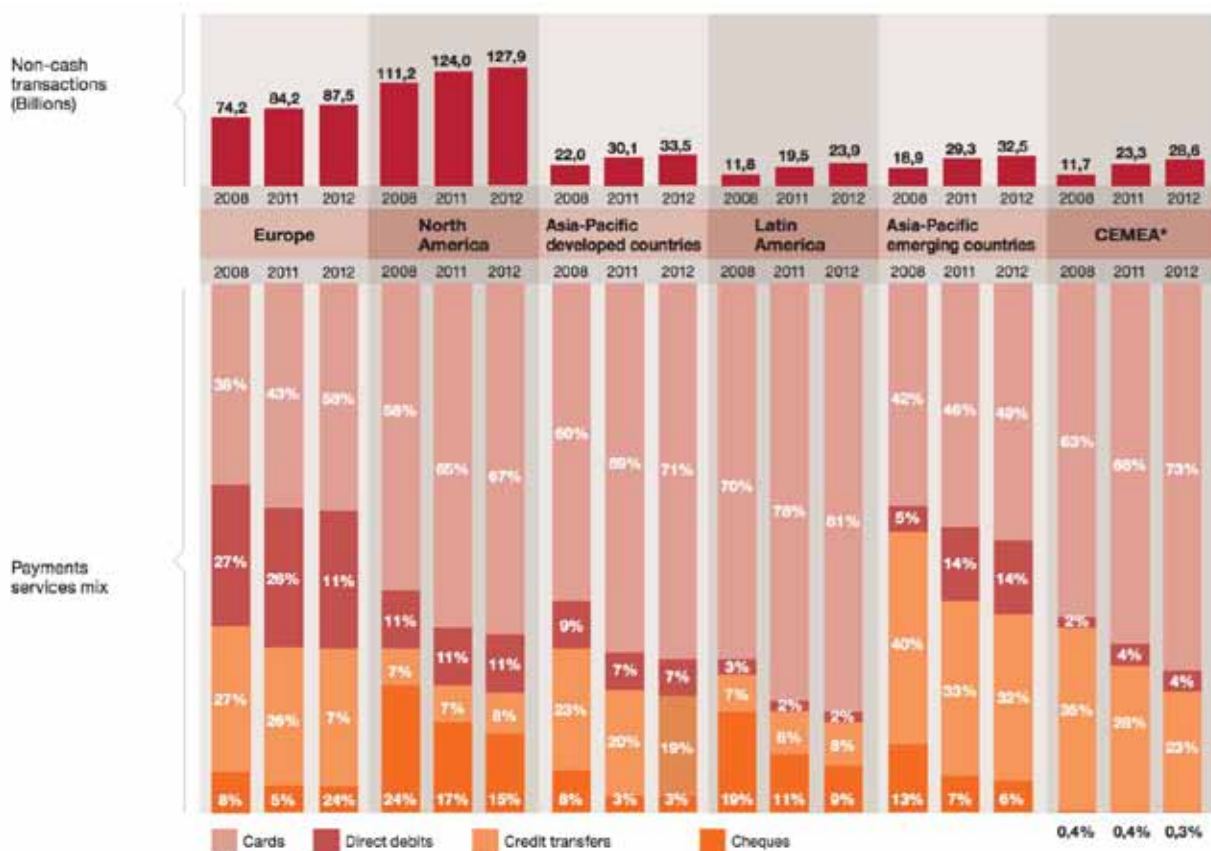
Cash still makes the bulk of transactions worldwide, in particular in Africa (99%). Means of payment which are the most used worldwide are: cash 85%, cards 9%, direct debit/credit 5%, checks 1%. In Europe, move out of cash is even stronger: cash 66%, Cards 13%, direct debit/credit 19%, checks 1.5%.

Yet, the growth for non-cash payments continues as the number of global non-cash transaction reached 358 billion in 2013 (latest year for which official market data is available), an increase of 7.6% over 2012.⁷⁰ Europe only is 91 billion transactions, and the Euro zone, 65 billion. The volume growth is

expected to continue into 2014; the number of global non-cash is forecast to reach 389.7 billion, with China moving into fourth position globally behind the U.S., Eurozone, and Brazil.⁷¹

Germany emerged at the forefront of business to consumer (B2C) e-commerce sales in Europe during 2013, with the largest number of customers using mobile devices to access retail sites. Non-cash transactions grew 9.5% to 19.9 billion transactions during the year, and an average of 247 transactions was made per inhabitant. Cultural habits in Germany mean the country still has high levels of cash usage; hence the growth potential of non-cash transactions is high.

Graph 27: Comparison of non-cash transactions (billions) and change in payments' mix (%) by region, 2008, 2011-2012



Source: Payments, a landscape in motion, PWC 2015

70 World payment report 2015, Cap Gemini.

71 World payment report 2015, Cap Gemini.

Growth in global non-cash transaction volumes during 2013 occurred in all payments instruments other than checks, which declined by 10.9%. In terms of non-cash instruments, Europe has a more balanced payment instruments mix, with cards accounting for 44% of transactions, direct debits and credit transfers both at 26% and checks at 4%.

8.2 Mobile: a tool with great potential

These figures do not factor other means of payment such as hidden payments (mobile money, virtual currencies, etc.), which are growing at a very fast pace and should overtake traditional payment means. Hidden payments transactions are estimated to have reached 24.5 – 40.9 billion in 2014. At the upper end of this range, hidden transaction volume could be as big as 10% of the total estimated non-cash transactions for 2014.

Among hidden payments, mobile is considered to be the payment means with the greatest potential:

The number of Mobile Money users was estimated to be 0.8 billion in 2014.⁷²

Mobile is already the largest banking channel for the majority of banks by volume of transactions⁷³

41% of Europeans use mobile banking defined as the execution of banking services and transactions using a mobile device, such as a telephone or tablet (38% according to KPMG).⁷⁴

The mid- to late-thirties is currently the key demographic for mobile banking, due to technological comfort and relatively high economic activity, driving very high relevance of mobile banking services, and, therefore, the highest adoption rates.

Reasons for adoption of mobile banking are: rapidity, time saving, convenience. Concerns raised regarding Mobile Banking security and confidentiality are major concerns for non-mobile banking users.

Some 214 million people in Europe will use mobile banking services by 2018 according to Forrester Research. Approximately 185 million Europeans expect to use a mobile payment app instead of cash in 2016. The value of mobile payments worldwide is set to exceed 207 billion EUR in 2015, according to an Ipsos survey conducted on behalf of a bank.⁷⁵

Effective Mobile Banking Strategies prove to drive Customer Advocacy and Cost Savings: Transaction cost is 43 times higher in a branch than mobile machine, 13 times at ATM all via call center, 2x via online banking (KPMG analysis)

Mobile banking services are a reason to switch for 16% of clients and 25% of 1825 years old.

72 David Hodgkinson, Mobile Banking 2015, Global Trends and their Impact on Banks, KPMG, July 2015.

73 David Hodgkinson, Mobile Banking 2015, Global Trends and their Impact on Banks, KPMG, July 2015.

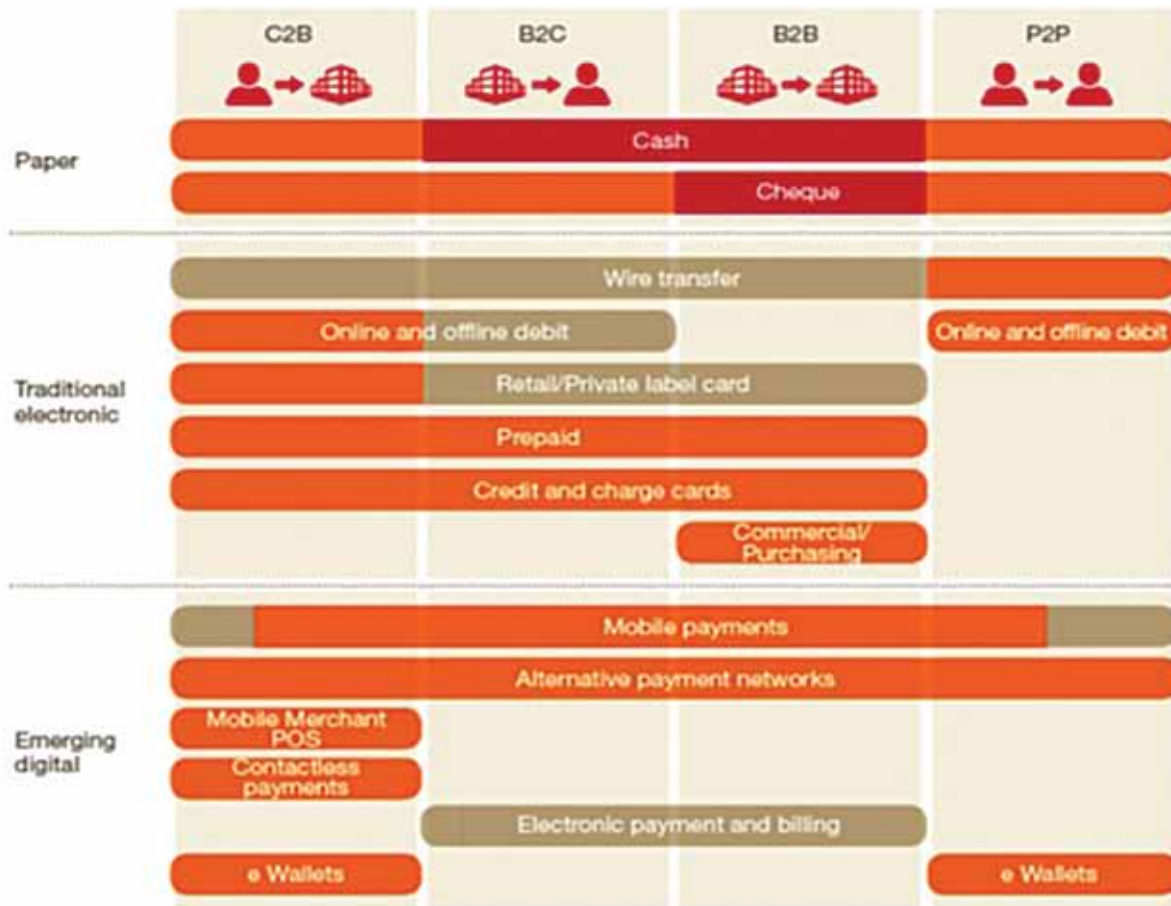
74 The rise of mobile banking and the changing face of payments in the digital age, ING International Survey, April 2015.

75 The EBF blueprint for digital banking and policy change, European Banking Federation, 2015.



8.3 Scenarii for the future: digital is a must for banks

Graph 28: Current scenario of payments



Legend: Banks (dark red), Bank providers (grey), Newcomers (orange). Source: PwC report, The Electronification of Payments 2013.

Source: The electronification of payments, PWC 2013

Reasons for going digital for banks:

Banks are facing competition from card players, but also new players such as mobile operators, mobile manufacturers, retailers, technology companies (Google, Apple, etc.), virtual currencies, etc. There are multiple business models in the market encountering success.

The payments industry continues to evolve rapidly, with differentiation for banks increasingly being their ability to provide complete offerings to meet customer demands and compete with initiatives from non-banks.

“Banks have three to five years at most to become digitally proficient. If they fail to take action, they risk entering a spiral of decline similar to laggards in other industries”.⁷⁶ Their analysis suggests that digital laggards could see up to 35 percent of net profit eroded, while winners may realize a profit upside of 40 percent or more (exhibit).

⁷⁶ HenkBroeders and Somesh Khanna, Strategic choices for banks in the digital age, Mc Kinsey 1 Company, January 2015.

By 2018, digital sales have the potential to account for 40 percent or more of new inflow revenue in the most progressive geographies and customer segments. By 2018, banks in Scandinavia, the United Kingdom, and Western Europe are forecast to have half or more of new inflow revenue in most products coming from digital sales.

“In Europe, we estimate that only about 10 percent of retail-banking revenue today is “digitally disrupted,” defined as a majority of new revenue being captured via online or mobile channels. By 2018, our high-level estimate of digitally disrupted revenue is forecast to be around 50 percent or more the forecast for digitally disrupted revenue is 29 percent in Eastern Europe”.⁷⁷

Banks benefit from trust from clients: customers trust banks with their data. Banks are the type of company most trusted to securely manage customer data, according to a study by Accenture.⁷⁸

Very few banks have managed to successfully launch their own digital payment solutions, owing to delays in product development or an inability to bring a compelling value proposition to consumers and merchants. The fact that global tech giants such as Apple Pay and Android Pay see Europe as a highly attractive territory will force banks to develop an appropriate strategy. In particular, we expect that banks will cooperate more closely with global card networks to develop and promote credible alternatives to the offerings of digital giants. Such cooperation will require banks to support a higher level of standardization to ensure scale and wider adoption. As a consequence, banks will need to rethink how best to differentiate themselves.

Digital will touch every aspect of bank operations, from product development to risk management and human-capital management.

77 HenkBroeders and Somesh Khanna, Strategic choices for banks in the digital age, Mc Kinsey 1 Company, January 2015.

78 HenkBroeders and Somesh Khanna, Strategic choices for banks in the digital age, Mc Kinsey 1 Company, January 2015.

Opportunities for Banks in Digital

Immediate payments initiatives are a catalyst for banks to move forward in developing new value-add propositions and, ultimately, holistic payments solutions. To keep a consistent focus on meeting customer requirements and providing a full range of services, banks need to make investments across three layers: value-added services, innovative offerings built on renewed infrastructure, and holistic solutions.

To prepare for immediate payments, banks need to take a transformational approach: continuous client-centric innovation is required in this fast-moving market. To move forward, banks should take a transformational approach to business cases and business model design, as well as commit to delivering new services and accelerating payments ecosystem simplification.

NFC transactions: In central Europe, Poland stands out for being ahead of the curve in innovating and adopting emerging payments technology. For example, 75 percent of POS terminals support near-field communication (NFC), and NFC transactions represent more than a third of the total for global card networks. Competition among banks to innovate has heated up, with mBank leading the charge and gaining competitive advantage owing to its superior digital customer experience.

Creating a Digital Single Market (DSM): it is one of the ten priorities set out by the President of the European Commission, Jean-Claude Juncker. When Vice-President Andris Ansip presented the DSM strategy in May 2015, he underlined the importance of making the European Union’s single market fit for the digital age. According to the European Commission, a properly functioning digital single market could contribute 415 billion EUR a year to the EU economy and create some 3.8 million jobs.⁷⁹ Achieving it means

79 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions A Digital Single Market Strategy for Europe, May 2015.



tearing down regulatory walls and moving from 28 national markets to a single digital market

A holistic approach is necessary to ensure the EU regulations are adjusted to digital market reality.

A strong Digital Single Market requires strong cooperation in the fight against cybercrime.

Customer centric innovations to enhance customer experience: In order to meet customer demand, banks continually launch, high quality digital communication, user-friendly financial products and services that simplify consumers' trade and transaction management experience. They lead the change through innovative solutions but successfully preserve their core values: trust, integrity, privacy and security to offer the best of the digital age to consumers.

Today, banks propose more 'tailor-made' customer experiences with products adapted to consumer needs: new designed apps to manage their finance, benefit from discounts (in certain shops) and have instant access to their accounts.

Banks' websites, especially online banking sections, are now required to offer a pleasant experience while remaining highly functional. This necessitates rich content including elegant designs, instant search results and interactive features.

From a multichannel to an omnichannel approach: omnichannel is the multichannel approach to commerce that aims to provide the consumer with a seamless shopping experience, regardless of which device or payment point they are using, be it is mobile, desktop or in-store. With the inevitable increase in mobile payments, the industry is more focused on omnichannel.

How to leverage digital channel

There are four fundamental ways in which digital capabilities can be used by banks to create value.

First, digital technologies increase a bank's connectivity not just with customers but also with employees and suppliers. This extends from online interactivity and payment solutions to mobile functionality and opportunities to boost bank brands in social media.

Second, digital draws on big data and advanced analytics to extend and refine decision making. Such analytics are being deployed by the most innovative banks in many areas, including sales, product design, pricing and underwriting, and the design of truly amazing customer experiences.

A third way that digital creates value is by enabling straight-through processing that is, automating and digitizing a number of repetitive, low-value, and low-risk processes. Process apps, for example, boost productivity and facilitate regulatory compliance, while imaging and straight-through processing lead to paperless, more efficient work flows. Finally, digitization is a means of fostering innovation across products and business models. Examples of this include social marketing and crowdsourced support, as well as "digitally centered" business models.

8.4 Key elements of success

To achieve a successful transition to Digital Banking, a few success factors have been identified that banks can apply. These elements have been drawn from the studies of McKinsey, BCG, PWC, Cap Gemini, European Banking Federation which all come to the same conclusions:

- Adopt a User-centered customer-journey design: put the customer first
- Personalize your services
- Pay attention to millennials (18-35 years old)
- Focus on mobility
- Educate consumers about digital payments and their added value
- Be proactive not reactive
- Seek alliances: Partnerships with FinTech Companies and start-ups
- Be flexible
- Experiment rapidly and rely on agile development

- Participate to regulatory process
- Invest in (cyber)security
- Assess new security means: crypto technologies, e-identification
- Leverage big data, and advanced analytics
- Invest in digital skills building among staff.

These advice for payment service providers must be accompanied by a conducive regulation. This is what intends to do the Payment Services Directive 2 (PSD 2), which aims to spur competition and innovation both through allowing access to customer accounts by third-party payment-service providers and through putting new security rules in place. PSD 2 is set to be submitted to the European Parliament in 2016 and incorporated into the regulatory framework over the course of 2016/2017.

8.5 Prospects of e-banking in Kosovo

Based on the level of advancement of Kosovo in digital banking services (10% of the population using it, all 10 Banks offering e-banking services), the e-banking market is at its very early stages, but there is a clear interest from clients (+80% of accounts between 2012 and 2015) and banks, which allows for disruptive innovations taking inspiration from successful experiences in both Europe and Africa.

Beside the need for interoperability of the system enabling clients to use their credit / debit cards at any ATMs or POS, we have identified smartphones as presenting great opportunities for e-banking in Kosovo. Taking into account that 77% of the population is using internet (1.1 million), of which 55% access internet through their mobile smartphones, and that nearly 40% of the population is using a smartphone (600.000 smartphones in 2013), smartphones seem to offer opportunities for development of e-banking services at a fast rate.⁸⁰

We list here opportunities that banks could leverage to develop e-banking through smartphones:

Advanced Mobile Applications for clients

These applications should be available for both phones and tablets. Currently e-banking services enable clients to perform consultations, transfers and bill payments. Advanced Mobile Applications would have all these existing features plus more advanced payment services such as Peer to peer payment enabling to send money directly to another user (instead of a formal bank transfer that requires to know the IBAN of both recipient and sender) virtual wallets enabling to pay directly at merchants for purchases up to a certain amount (depending on the Central Bank regulations),

Extended bill payment services with a wider network of merchants (gas, school, etc.),

POS functions: one could envision using the phone as a POS (in particular for professionals) to receive payments instead of investing in POS. That is already the case in Europe and in the US nowadays.

Advanced Mobile Applications could also enlarge the range of service from payment services to other services such as remittances (considering the diaspora living abroad) and savings services enabling clients either to save from their current account to their savings accounts using their app (transfer between accounts) or depositing money at a ATM or an agent/merchant and following the process/receiving confirmation of the transaction on their client mobile app.

Advanced mobile applications could also embark value added services such as personal financial management, virtual support or even biometric features to name a few (please refer to the section 1.4 for more inspiration).

⁸⁰ All figures presented in this paragraph come from a 2013 report by STIKK (Kosovo Association of Information and Communication Technology).



Advanced Mobile Application for credit officers

Bank representatives (credit officers, agents etc.) could be equipped with tablets and/or phones with advanced applications enabling them to perform operations on the device, instead of writing them down manually and then registering clients' operations in the system. For instance, credit officers would be able to register new clients, open new accounts, using these applications that would replace paper forms.

To go even further, these applications should enable credit officers to manage loan applications and follow up on loan received by clients they are following (e.g. where in the loan cycle do they stand, how much have they repaid, how much do they still need to repay, any special repayment facility granted to them at any point could be registered there). The model would be Digital Field Applications such as presented in the case of Opportunity Bank Serbia.

These applications enable great time savings, productivity gains of credit officers and cost reduction. They also enable to have all information needed on a client in an application when going to visit them, instead of printing everything. These applications can also be equipped with biometric features enabling to perform transactions with the least literate clients.

Real time credit scoring

As the demand for loans is important and growing in Kosovo, and as 66% of demand come from enterprises that usually require a fast loan approval, Kosovo banks could investigate the growing market for real time credit scoring. Mobile applications on phones and tablets enabling to register clients data but also loan applications, and connected to either the history of the client within the bank for a recurring client or a credit bureau in Kosovo if possible or data available from the client mobile money operations have been developed to enable instant credit scoring using algorithms, that enable credit officers

to perform a real time credit scoring of the client (credit officers would enter loan application on their mobile device, have the system perform a credit scoring, and grant (pre) approval or deny it in the field. As such, clients have their approval immediately (even if another approval at bank level with a more thorough analysis might be needed depending on the client profile and loan amount requested).

Leveraging the power of mobile, clients would then be able to get their loan disbursed either at a third party of the bank (usually called an agent or merchant) and could repay their loans using their mobile phones. That way the loan cycle would be completely digitized.

Conclusion: Is a world without cash desirable and possible?

In 2014, the Economist opened the debate ("abolish cash"). Renowned economists from the International Monetary Fund think it would be a smart move. It is not just a theoretical debate as more and more governments are shifting to digital. The benefits are clear but there are constraints that should not be underestimated among which customer reluctance and resistance to change to a cashless society. The implementation is more complex as cash is deeply rooted in many cultures. This is an ongoing, ineluctable process but there is still a long way to go.

ANNEX 1: LIST AND DEFINITION OF MOBILE BANKING SERVICES

Mobile banking services		Definitions
Mobile services	Mobile app, website and basic services	Viewing account statements, current balance and historical transactions, locating ATM/branch, receiving bank alerts, etc. on mobile website and/or mobile app.
	Text banking	Allowing non smart-phone owners to conduct banking via mobile. Customer can send a text to check balance, review transaction history, and check the payment date and amount of next credit card bill.
Payment services	P2P payments	Making direct payments to others via phone number or email address, includes functionality to split bills amongst themselves
	Bill payments and recharges	Making prepaid and postpaid payments in advance, viewing incoming bills, creating and modifying payee list.
	Image/camera-based banking	Taking a picture of the paper cheque/bill to deposit/send to/from a bank. In addition, it also allows capturing account opening information via an image of the customer's identity cards such as their driver's licence.
	POS solutions/NFC	Tap and pay: customers can store their account/card details on a chip to use mobile devices directly for payments at POS and ATMs.
	Virtual wallet	Banks providing virtual equivalent of a wallet to store digital cash for payments and purchases
Value-added services	Cross-selling marketing	Customers can buy banking products directly via mobile; they can view offers and deals from other retail partners. For example, bank provides housing loan deals in collaboration with a real-estate builder, free coffee, etc.
	Personal financial management	Tools to help track expenses and set budget limits, manage monthly expenditure, view spending trends as graphs and charts and get alerts if account balance dips below the set limit.
	Virtual support	Virtual interaction for real-time customer assistance 24/7 via videos, emails, tutorials, and calls
	Cloud storage	Storing documents such as bills, account statement, etc. on the cloud to view while on the move
	Wearable devices	Performing banking services on smart watches, Google glasses, and other such wearable devices
	Biometric apps and security features	Allowing users to make balance enquiry and transfers, locate branches and ATMs, using voice command on mobile devices, also includes fingerprint scanning to log in for additional security measure
	Social media banking	Sending money, viewing account balances and transactions and receive customer service assistance via Facebook and Twitter
Augmented reality technology	Customer viewing in a 3D format their account balances, historical transactions, etc. by placing the phone camera over their cards.	

Source: Adapted from KPMG Analysis

PROPOSALS AND RECOMMENDATIONS

1. Based on the study, it is clear that digitization of banking services in Kosovo is on track. However, this field is in constant growing. For this reason, commercial banks in Kosovo, under the oversight of the Central Bank of the Republic of Kosovo must continue with the application of the developments in the field of information technology, which would further refine the payment system, particularly in electronic form.

2. The Central Bank of Kosovo, Kosovo Banking Association, as well as all other stakeholders in the banking system should take the initiative for the establishment of the National Agency for Payment Processing, so that the processes are conducted in the country, which would shorten the processing time and reduce costs. The processing time is one of the complains raised by bank customers in the interviews conducted by STRAS.

3. The second step would be the unification of cards, namely to create the possibility for the client to make transactions at any ATM or at any POS terminal with a single card. This, though a non-emergency measure, would reduce the number of ATMs, reduce their maintenance costs, while at points of sale all transactions, including purchases and payments, would be completed with one POS device.

4. Banks should also focus more on the elimination of issues that customers face while using digitized banking services, including the perfection and simplification of m-banking.

5. Furthermore, banks should focus on some potential issues for clients:
 - i. Shortening the time of transfers;
 - ii. Reducing the necessity of the client to visit the bank teller, to the minimum;
 - iii. Having banks along with internet service providers care for better maintenance of the network, i.e. the client does not face any situation where they cannot access the account, or have frequent network disconnections;
 - iv. Reviewing all electronic service costs, so that customers do not have heavy burdens, especially considering the fact that some of them have begun realizing all payments through e-banking.

6. That in the payment system as an instrument checks should be incorporated, because of the need that clients have for it, especially businesses;

7. Because digitization requires certain staff profiles, cooperation between banking and university education institutions should be intensified for profiling the staff who can continue to work in banking institutions, mainly in the field of information technology.

8. At the same time, all banks, through various forms of training, should enhance the capabilities of the staff in order to fit to technological changes.

9. The Ministry of Education by law or by a special legal act should regulate the issue that certain contingencies of students from the economic and engineering - information technology branches complete internships in banking institutions without being a burden to the institutions who host them. In this way, the necessary staff for the banking system would be educated in a fast and qualitative way.

