

## Expansion of Hypermedia Services as a Promising Direction for Russian Commercial Banks

Liudmila G. Kuznetsova

Dr. Ec. Sc., Professor, «Finances and Credit» chair, Far Eastern Federal University, Vladivostok, Russian Federation; Email: igr1863@yandex.ru

Ariguna Ts. Dashidondokova

Student, Far Eastern Federal University, Vladivostok, Russian Federation  
Email: Ariguna666@mail.ru

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### Abstract

Today the information and its content have become one of the key drivers of changes the world is exposed to. The growing role of the Internet and mass communications in everyday life lead to a society in which everyone can communicate, share data, make transactions and trade with each other electronically on a global scale. In the banking sector these processes of fundamental changes mean that there is a need to review the specifics of the interaction of the credit institution with the outside world, clients and regulators. Besides, they require further reflection and understanding of the new changed operating conditions of banks. This determines the relevance of the research topic. The goal of the research is to examine the major trends which characterize hypermedia as an indispensable component of banking business, to analyze the specifics of their services, as well as to determine the effects of the hypermedia expansion in Russian credit organizations. General-theoretical and econometric methods of research were used while reviewing the development of hypermedia in the banks functioning. Statistical data on the Internet distribution, penetration of social networks and mobile banking in the work of Russian credit institutions were analyzed. A method of comparisons and analogies was applied in analyzing the indices of such regions as the Middle East and Africa, Central and Eastern Europe, Latin and North America, and others. Expert assessments of Brett King and Chris Skinner were used to describe the current state of hypermedia development in the world. The assessment of implementation and development directions of hypermedia in Russian commercial banking was given on the basis of the research methodology, perspectives and possible consequences are defined and described. Methods of comparisons and analogies of empirical data on the implementation of hypermedia services in the world banking by regions were used. Comparisons of these data allowed us to reasonably determine and describe the level of development of hypermedia in Russian commercial banking.

**Keywords:** Hypermedia, social networking, internet, mobile banking, communication, information.

### 1. Introduction

Along with the constantly changing world, banks are going through some transformations as well. They now show a big interest in using expanding hypermedia. The emergence of smart phones, social networks and the Internet affected the everyday life of each person, changing almost every sphere of his life, including the relationship with banking institutions. Under these conditions, the main aim of all banks is to identify the preferences of its current and potential clients in the digital space.

Hypermedia is a unifier of human activity, a way of communication, the condition of human being. In modern sense hypermedia is the result of digital media development. It creates the technical ability to form a common information space, which surrounds the modern man and his life. Computer hardware and media technology are no longer strictly separated, they are involved in the processes of integration and universality. Therefore there is a need of consolidation of these concepts in single and broader term, such as hypermedia.

Hypermedia helps banks organize their work, manage business processes, follow the modern trends, and also gives a competitive advantage. The basic elements of hypermedia in a banking sector are the Internet, social networks and mobile banking. In our opinion, expansion of hypermedia is a promising direction in the Russian banking institutions work, whose purpose is to optimize bank services provision and to establish the closest possible connection with customers.

There are many researches that were written on the topic of credit institutions using mobile and Internet network companies' services. Brett King works *Bank 3.0*, Chris Skinner *Digital bank* where different variations of banks of the future are described in the changing world, as well as Jim Marous's reports which reveal the essence of the digitalization of banking, are devoted to a topic of informatization and expansion of hypermedia in relation to banking organizations.

All the mentioned and some other authors made a big contribution into creating an analytical framework for the research of hypermedia expansion processes that was taken into account when writing this article which is focused on the development of virtualization in the Russian banking.

## 2. Analysis Result

Hypermedia expansion is done by means of the development of the global Internet network. The Internet incorporates the functions of all traditional forms of communication and becomes a universal platform for banks.

As of 2013 the number of Internet users in the world was more than two and a half billion people. Almost every third person on the planet has an Internet access (Gonzalez-Horta, F.A.a, Mejia-Alvarez, P.b, Buenfil-Alpuche, E.c, 2015). Geographically network users are placed in a non-uniform way. The main part of the Internet audience is placed in Asia (44.8%), second goes Europe (21.5%) and the third is North America (11.4%). In terms of absolute number of users China is in the lead with 500 million Internet users. Then it's US with 245 million people and the third place is taken by India with over 135 million people (Boavida, F.a, Kliem, A.b, Renner, T.b, Riecki, J.c, Jouvray, C.d, Jacovi, M.e, Ivanov, S.f, Guadagni, F.g, Gil, P.h, Triviño, A. i., 2015).

Today the number of Internet users in Russia is 73.8 million people. In 2015 the audience of the Internet in Russia continued to grow with the growth rate remaining at the level of 2014 - 7.4% per year. The allocation of the audience is very uneven, as certain regions are at the different levels of informatization (Filimonov A.E., 2012).

However, Internet penetration is increasing in all regions and types of areas. In 2014 every second resident of the rural area went online at least once a month. By the end of 2014 68% of all Internet users in the Russian cities went online using mobile devices at least once a month, a year earlier the proportion was only 56% (Kazaryan K.R., Plugotarenko S.A., Vorobeva E.N., 2014). People of all regions of Russia began to use mobile devices more often. It happens due to the fact that for many people a smartphone or a tablet is the only way to access the global network.

The main trends characterizing Internet audience behavior are:

- multiplatform (accessibility of the Internet from different devices) and the growing number of Internet access points;
- significant increase of Internet users via mobile devices (due to the spread of Wi-Fi hotspots);
- growth in both the number of social networks users and the time spent on them;
- strengthening the role of the Internet as a way to solve almost any problem a person might face;
- accelerated growth of applications number for mobile devices (Filimonov A.E. 2012).

These characteristics of modern digital communication audiences indicate that the Internet is the most effective way of address delivery of information to target audience. The popularity of the Internet is determined by its accessibility, low-cost and fast and accurate information messages mailing. Banks take it all into account, as the present level of development of the Internet and of its many other services and facilities, gives banks unlimited possibilities for creating and distributing information, thereby contributing to the efficient business development.

As it was told earlier, credit institutions tend to use unconventional methods of communication with their customers for a long time. As an example, working with social media is one of the most promising directions for banks, since its coverage is not inferior to the coverage of the mass media, television and print media.

Let us closely examine the work of banks in social networks. Rates of this communication tool development demonstrate an impressive growth. On average the percent of the Internet users registered on social networks exceeds 70% (Joanne Dewberry, 2014).

*Capgemini Consulting Group* published a report on the work of commercial banks in social networks. These reports reflect the following results: 41.7% of the banks active clients (18-35 years old) are fully satisfied with the quality of service. 89% of them use at least one social media platform on a regular basis, and many of them would like to manage their finances through social networks (Joanne Dewberry, 2014). The importance of social media and mobile technologies is growing for this category of clients, while the other service channels, such as offices, ATMs and call centers are losing out.

The primary function of the social networks from the perspective of banks is providing information, which determines their importance. 56% of banks are implementing or have already implemented information support, 37% are planning on that. 48% see the customer service using social networks as promising direction in their work. It is a kind of

informal platform where employees answer questions and consult clients. 32% of banks have already taken advantage of social media in order to communicate with clients (Joanne Dewberry, 2014).

In the Middle East and Africa, the percentage of social networks penetration is 83.8%, in Central and Eastern Europe it's 75.9%, in Latin America - 74.9% in North America - 67.5%, Asia and the Pacific region- 68.6% and in Western Europe - 65.1% (Chris Skinner, 2013).

Banking institutions and social networks have a long experience of interaction in the West, but taking into account the specifics of Russia it's only now when banks begin to work in this direction.

Thus many banks constantly use social networks to tell their current and potential clients about new products, services, promos, and also to hold events on financial education. Given that, it is easier for bank customers to go online and using social networks learn answers to the questions that they are interested in, banks this way expand their capacity to attract new clients.

Analysts from *Frank Research Group* hold on a monthly basis a quantitative evaluation and monitoring of the presence of commercial banks in social media. Activity analysis is done based on the number of subscribers and active participants. The study includes the most popular social networks such as *VK*, *Facebook*, *Twitter* and *Odnoklassniki*.

The data from the analytical agency *Frank Research Group* on the number of subscribers to the official accounts of Russian commercial banks in social networks for the years 2014-2015 is being reviewed. (Table 1).

**Table 1.** Ranking of Russian banks in terms of number of subscribers in social networks in 2014-2015 (Frank Research Group, 2015).

Bank	VK			Facebook			Twitter			Odnoklassniki		
	2014	2015	Growth rate	2014	2015	Growth rate	2014	2015	Growth rate	2014	2015	Growth rate
Sberbank	1 225385	1 411 837	+15,2%	300 914	305090	+1,4%	246 544	269 517	+9,3%	1 301 434	1 333 983	+2,5%
UniCreditBank	163 314	164 643	+0,8%	26 374	27 180	+3,1%	2 177	1 802	-17,2%	-	-	-
UBRD	136 132	158 169	+16,2%	2 155	2 533	+17,5%	1 728	1 968	+13,8%	2 654	2 283	-13,9%
Home Credit	38 524	39 705	+3,06%	4 985	5 096	+2,22%	4 568	4 929	+7,9%	83 254	82 875	-0,4%
Trust	36 235	37 924	+4,6%	75 854	78 415	+3,4%	23 950	24 496	+2,3%	-	-	-
Svyaznoy Bank	52 850	55 823	+5,6%	16 850	17 191	+2,02%	8 513	8 835	+3,8%	-	-	-
Tinkoff Bank	39 854	41 351	+3,8%	21 564	22 061	+2,3%	26 112	25 012	-4,2%	10 119	10 320	+1,9%
Alfa-Bank	30 029	33 623	+11,9%	11 893	12 224	+2,8%	27 528	26 536	-3,6%	16 250	16 804	+3,4%
Bank Saint-Petersburg	21 524	27 935	<b>+29,7%</b>	3 058	3 368	+10,2%	1 754	1 981	+12,9%	4 698	5 236	+11,5%
Russian Standard	25 998	26 078	<b>+0,3%</b>	4 325	4 289	-0,8%	3 254	3 017	-7,3%	12 780	12 773	-0,05%
<b>Overall</b>	1 769 845	1 997 088	+12,8%	466 647	473158	+1,4%	346 128	368093	+6,3%	1 431 183	1 464 274	+2,3%

The table shows ten Russian banks that are leading in the number of subscribers in social networks. The data clearly demonstrates that *Sberbank* has the largest number of subscribers: the number of subscribers on *VK* reaches 1,411,837 people, on *Odnoklassniki* - 1,333,983 people, on *Facebook* - 305,090 and on *Twitter* - 269 517. Such banks as the *UniCredit*, *Svyaznoy* and *Trust* are not represented in *Odnoklassniki*, which may be due to the fact that the age of the users of the network *Odnoklassniki* varies from 30 and up, while the main subscribers of bank accounts are users between 18 and 35 years old.

If we compare the data on the number of subscribers to the last year's data, almost all credit institutions have rates growth. The number of subscribers of bank accounts in each studied social media (*VK*, *Facebook*, *Twitter*, *Odnoklassniki*) increased by 12.8%, 1.4%, 6.3% and 2.3%, respectively. The total number of followers of official accounts among the top 10 banks in 2015 is 4,302,613 people, whereas in 2014 it was 4,013,803 people. As of the 2015 *Bank of St.Petersburg* is a leader in terms of subscribers growth among the banks, the number of subscribers on *VK* account increased by 29.7%, on *Facebook* by 10.0%, on *Twitter* by 12.9% and on *Odnoklassniki* by 11.5%. *Ural Bank for Reconstruction and Development* is the second with an increase of subscribers on *Facebook* by 17.5%, on *VK* by 16,2%, on *Twitter* and on *Odnoklassniki* by 13.9% and 13.8%. *Sberbank* is the third as the number of its subscribers on *VK* increased by 15.2%.

Thus, according to the statistics of the media activities of commercial banks monthly monitoring in Russia, the interest of financial institutions in social networks increases.

Some Russian banks take social networks as an only channel of service and communication with the client, e.g. the bank *Tinkoff Credit Systems* works exclusively on the Internet. It has no departments or offices for client services, which is why social networks are the main way to promote its banking products (Filimonov A.E., 2012).

Social networks attract banking institutions due to the fact that by means of networks banks are getting closer to

the clients as they are present in a familiar, comfortable and interesting to the user zone. In addition, social media make it possible to analyze the behavior of users, track their activity, conduct real-time monitoring (different surveys, mobile marketing information, feedback in real-time and tracking of responses to new products and services, trends, views and preferences study) as well as help to promote and enhance its brand awareness.

This way a constant group of loyal customers and users of bank products who actively recommend them to their friends is formed. But at the same time there is a risk of negative information spreading, which may form a negative opinion on bank reputation because of the unsatisfied clients.

One of the negative consequences of credit institutions operating in social networks is the construction of non-existent banks of the virtual space. Therefore there is a need for legislation that would require banks to confirm the reality of the social networks accounts of the credit institution.

Let us point out several key directions that we think are important for the development of this segment of the banking market.

Firstly, banks need to constantly monitor and analyze social networks, closely examine how people respond to the forms and quality of banking products, respond to comments, suggestions and preferences. In other words, they need to take a full advantage of one of the benefits of social networks, which determines the interest in the media from any goods and services providers.

Second relatively new direction of bank expanding the usage of networks is crowdsourcing. Crowdsourcing is a way of gathering the knowledge from an online community. This method works when banks bring to the discussion inner issues, new ideas and is ready for a dialogue, where bank show willingness to accept any incoming information. Some European banks which have an aim to be open and have a dialogue with anyone use this trend gaining new clients from the social networks products users.

Another interesting new trend, which is already working in some countries, is the creation of special network products that consider specific features of social network structures. And what is also important, such products distribute themselves on their own. For example, German *FIDOR Bank* has already created its own internal social network integrated with Facebook. Using the network the bank introduces a new loan product with a interest rate depending on the number of "likes" on the social network (the more likes you get the better are offered conditions). Another example that is now being tested is a United States network product built on the principle "the more your network "friends" made a deposit or taken out a loan, the better the conditions of the loan or deposit you receive" (Christian Canales, 2015).

Another relatively new trend of network technologies in banking is social scoring. Social scoring is an assessment of the loan borrower on the basis of his behavior in life, in society, including social networks. The point is that the client gives a permission to the bank to get the information from his social network account. Then the loan officer makes a decision about the reliability of the borrower on the basis of the received information on him, taking into account the fact of agreement or disagreement for providing requested data. Social scoring is now used in Russia too. *TCS Bank* and *Home Credit* have already begun testing these models (Kazaryan K.R., 2014).

There is another integration direction of banks and social network cooperation. This refers to making payments through a social network with digital currencies (Bitcoin, etc.) for various paid services, like buying virtual gifts or real goods as it is planned by Facebook. Such joint projects are being implemented by *Alfa-Bank* and *TCS Bank*. In March 2011 *TCS Bank* announced the launch of credit cards together with a Russian social network *Odnoklassniki*. Of course, the amount of such transactions is not comparable with the amount of "real" banking products, but they are still important for the purpose of popularizing the banks work in the new media space (Kazaryan K.R., 2014).

Social networks gained mass distribution just a few years ago, their further development is not quite clear, but the purposes and methods of their use are already being developed and improved. Thus, the banks that already began to communicate with their audience in social networks offering hi-tech bank products and services will get new opportunities to enlarge their client number and will be able to influence very important nowadays hypermedia space.

Mobile banking is another important part of hypermedia.

Mobile network is one of the industries with a rapid development. According to the *International Telecommunications Union (ITU)* report, by the middle of 2014 the number of mobile network subscribers reached 5.5 billion and by the end of 2015 it will hit a point of 6 billion people. The number of people using mobile banking services worldwide will be almost 2 billion people (Filimonov A.E., 2012).

According to the *Gartner Group*<sup>1</sup>, the mobile payment market is actively developing; in 2013 it had 235.4 billion dollars of the total amount of global transactions, which is 44% increase in comparison to the previous year (Christian Canales, 2015). That is why a lot of companies invest into mobile payments services and into the development of mobile

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<sup>1</sup> *Gartner group is a research and consulting company specializing in information technology market*

finance.

In regard of continuing growth of mobile networks popularity banks develop large-scale cooperation projects with mobile operators. It was found that 52% of consumers have significantly increased the number of regularly made mobile banking transactions in the past two years (Jim Marous., 2015). Many experts think that the current trend will proceed in the near future, as consumers will continue to actively buy mobile devices.

Simplicity of use and ease of carrying out payments are the main factors that influence the growth of mobile banking usage. Accordingly those banks who currently do not focus on the development of the mobile banking segment risk losing a part of their clients, and might lose their position in the competition in the near future.

According to the *World Association GSMA*<sup>2</sup> (*Groupe Speciale Mobile Association*), which brings together more than 750 mobile operators in 218 countries, there were 219 mobile payment services registered that have worked in 84 countries around the world by the end of 2014. In 2008 there were only 16 of them (Jim Marous, 2015).

One of the most advanced countries in terms of number of mobile banking users is South Korea. The number of mobile banking users exceeded 50 million, and it is growing annually by 45%. Malaysia is leading on the indicator of the annual growth in the number of mobile banking customers, which is 54% in comparison to the previous year (Yoo, C.a, Kang, B.-T.b, Kim, H.K.b., 2014).

Mobile payment services are most widely used in East Africa. The total number of its users in Kenya, Tanzania and Uganda, now exceeds 70 million (Malaquias, R.F.Hwang, Y., 2015).

There is a rapid growth in mobile payments in Russia for the last two years. 15.7 million Russians use mobile phones for financial and payment transactions. Of those 10.8 million people use the mobile banking, 9.7 million people use SMS-Banking, 5.9 million people use online banking on a mobile device and 4.8 million people use a digital wallets. Most often it's shopping in online stores, payment for services, state fees and remittances (Ezrox Yu.S., 2013).

However, the mobile banking development in Russia has its own specifics due to the presence of a number of problems. In particular this applies to certain aspects of the regulatory framework that governs the process of identification and documentation of the client. This process has mandatory requirement of the personal presence of a bank employee when working with a client. It should be mentioned that in spite of the mobile technology improvement Russian clients have access to a limited functionality and therefore use much less features of mobile banking compared to other countries.

The main features of the mobile payments market are its versatility and mobility. In the near future, mobile devices will become more functional; they will let clients use the contactless payment services, voice recognition technologies, making payment templates with the built-in camera phone etc. (Brett King, 2012). Therefore, finding and using opportunities to replace payment cards with mobile phones as a way to manage payment accounts and to actually pay for goods and services is a promising direction in mobile banking.

### 3. Conclusion

Expansion of hypermedia services through the use of social networks and mobile applications requires construction of new bank functioning mechanisms. Modern units of banks should be integrated into a high-tech system not of physical, but digital interaction with clients that will undoubtedly lead to a reduction in banking institutions.

Data provided by the *European Central Bank* in 2013 reports mass closure of bank branches. Spanish banks closed about 20 thousand offices across Europe over the past four years [15]. Over the same period France lost about 3% of its bank network. In the United Kingdom 5% of their total number of bank offices were closed, in Germany it's 8%. In Denmark number of branches has fallen by a third, in the Netherlands by a quarter. In the US, banks have lost 867 branches in 2012 (Chris Skinner, 2013).

Similar situation is typical to other developed economies with computerized society features (relevant infrastructure, penetration of new technologies), and appropriate level of educated users with a high level of financial literacy.

The tendency of banking branches reduction is obtained in Russia too. Russian banks have significantly reduced the number of branches in order to optimize expenses (Baitasheva V.V., Kosarev V.E., 2013). According to the Central Bank of the Russian Federation in a year, from 1 August, 2014 to 1 August, 2015, the number of bank branches in the country decreased by 11.1% to 38.2 thousand. Over the period of the Russian banking system existence similar rates were not ever recorded (Yablonsky, S.A., 2014).

The trend to expand hypermedia services in Russian banking system has its own features. First of all, there is a

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<sup>2</sup>GSMA is a worldwide association of mobile operators from 218 countries

fact that a lot of people perceive bank branches as a basis where physical contact is important. For many a bank office is a secure place where they can talk to someone in person and make sure their money is safe.

It must be stated that according to some experts more than half of active Internet users in Russia believe that it is safer to make financial transactions in real bank rather than using its online services. The risk of becoming a victim of cybercrime is the main obstacle to the expansion of hypermedia services in such conditions. A substantial part of those users (41%), who nevertheless decide to carry out financial transactions online, feels vulnerable (Nikitin I., 2013). It seems to be quite reasonable in a situation when cybercrime and data security issues on the Internet become urgent.

In conclusion it should be emphasized that the choice of traditional banking services because of the fear of becoming a victim of Internet fraud is common to all countries. This fact negatively affects the hypermedia services expansion and forces banks have expenses on the office maintenance. For this reason, client devices protection from cyber threats is becoming an urgent issue for banks nowadays. This approach can increase the confidence of people who prefer off-line banking in their security during online payments and reduces the risk of important financial data loss because of the clients' faults.

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