

# DIGITAL PLATFORMS AND THE ECOSYSTEMS OF FINANCIAL INCLUSION. THE RUSSIAN EXPERIENCE



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All across the world there is a growing discussion of the phenomenon of *digital financial inclusion*. This discussion is especially meaningful and important in the context of the emerging markets. At the turn of 2010 about half of the global population remained uncovered or undercovered by the formal banking system<sup>1</sup>, with figures ranging from a little over 10% in the advanced economies to over 70% in Sub-Saharan Africa. However precisely at that time the situation started to change rapidly. More and more start-up companies were entering the market with offer to make everyday financial transactions cheaper to the customers. Many of these solutions did not involve the traditional banks, or involved them on a limited scale, thus creating the so-called parallel banking<sup>2</sup>. Among other solutions, the new phenomenon of digital financial platforms emerged, building up on the success of the business models of the digital social networks, search engines and application stores. The introduction of these models into the realm of financial services have created both exiting new opportunities and new risks for the customers. The present research report of SKOLKOVO School of Management explores the issues of digital financial platforms and ecosystems created by them based on the study of four cases of successful Russian financial technology companies. This study outlines the specific business models and corporate strategies and also contributes to the understanding and conceptualization of the global parallel banking practices.

<sup>1</sup> McKinsey Co.: *Half the World in Unbanked*. [http://mckinseysociety.com/downloads/reports/Economic-Development/Half\\_the\\_world\\_is\\_unbanked.pdf](http://mckinseysociety.com/downloads/reports/Economic-Development/Half_the_world_is_unbanked.pdf)

<sup>2</sup> We feel that this term is different from the widely used "shadow banking". The latter tends to stress the risks of the non-regulated operations. While these risks do exist, many of the practices of financial businesses other than formal banks are remarkable for the opportunities they open to the customers, promoting financial inclusion, especially in the emerging markets.

# Concept definition



*Digital Platform* is a complex information technology system, which introduces a peculiar way of performing an important function and is open for use by customers and partners, including developers of applications, merchants and agents. A platform can be used directly, or via applications built upon it either by the platform owner or by independent third parties. An example is provided by the M-Pesa mobile money platform in Kenya whose functionality serves as a basis for almost 100 independent business applications, like Musoni (microfinance) or Kopo Kopo (services to merchants)<sup>3</sup>.

*Digital Ecosystem*. In biology an ecosystem starts from a unique combination of natural forces – air, water, soil, solar radiation – that support breeding of living creatures of special types. These creatures get increasingly adapted to living in the specific natural circumstances and with each other, finally benefiting more and more from this adaptation. Likewise, a digital ecosystem is a community which emerges from the combination of everyday usages of a platform and its applications by their customers, developers of applications and merchants and agents with the skills and routines acquired through these usages. I. e. the ecosystem of the mentioned M-Pesa would include the people who do the mobile money transfers, the developers of applications who are skilled in creating interfaces to the system to run independent businesses building up on its functionality, the merchants who accept mobile payments, the agents who provide the cash-in and cash-out services, etc. The actions of these people are mutually beneficial and tend to support and reinforce each other, creating further opportunities, which are not feasible outside of the specific ecosystem.

<sup>3</sup> Marc Bourreau and Tommaso Valetti: *Enabling Digital Financial Inclusion through Improvements in Competition and Interoperability* – CGD Policy Paper 065, June 2015

# Global context





The recently coined term “exponential finance” does aptly describe the nature of the transformation that is happening in financial services in the world. We see the growing number of accounts<sup>4</sup>, volume of transactions and increasingly complex network of participating institutions. Such a quick development comes from important shifts of paradigm both on the supply and the demand side of the financial services.

### Supply-side development: digital technologies and mobile

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The digital technologies are remarkable in many ways, yet for the world of financial services they are especially beneficial due to their capability to dramatically decrease the cost of transactions and operations. As we long knew, money is information, so a dollar can be handled as effectively as a kilobyte. This handling nowadays can be easily done on the global scale due to a key force of the technological transformation called cloud technology. The expansion of the network connectivity, data processing power and the competences in creating interfaces between various independent pieces of software led to the proliferation of geographically dispersed systems, which work seamlessly for the user. Thus a series of independent applications running from separate servers situated all across the world can provide seamless customer experience in satisfaction of a complex need. These advances allowed to achieve the new low level of transaction costs. The development of blockchain algorithm caused a lot of controversy over the regulation and monitoring issues, but it has a potential to bring the cost of financial transactions down by two orders compared to the modern banks’ systems. This in turn permits to offer formalized financial services in the occasions, which have been traditionally seen as the domain of informal cash-based economy – like giving tips or sharing a café bill for a friend’s reunion.

At the same time, the mobile communication technologies have come to play a special role in expanding the frontiers of financial services. It was not that long ago that mobile phones looked like nothing but a rich man’s toy: a way to make a call on the run at a cost of several dollars per minute from a device which cost several hundred dollars. Yet as the technology became less and less expensive it found its way to the less developed areas of the globe – where it often appeared to be the only modern way to make a connection in the absence of landline telephones and even paved roads. In the developing economies the consumers usually had to maintain pre-paid accounts with the mobile telecom providers, and these accounts evolved into something very closely resembling a regular basic bank checking account. They offer the possibilities of depositing of sums at will, making an array of fixed payments, transacting to third parties and even – in some countries – withdrawal of cash. For many customers in the world it was the mobile account that initiated them into the on-going management of non-cash finance, and in many cases mobile operator’s account remains the only basic account of a family. Additionally a mobile phone was portable – i. e. it could operate as a “personal financial terminal” potentially a safer and more functional one than a traditional wallet or even a bank card, especially in the areas with limited penetration of ATMs and POS terminals.

Another way of having a non-bank basic account is represented by the so called e-wallets, which store and transfer value on the Internet. Nowadays they can also be accessed through a mobile phone, and the convergence of e-payments and mobile payments becomes a visible trend. The advantage of e-wallets is their potential international accessibility, which is difficult to attain through the mobile network accounts, which are limited in operations by the national borders.

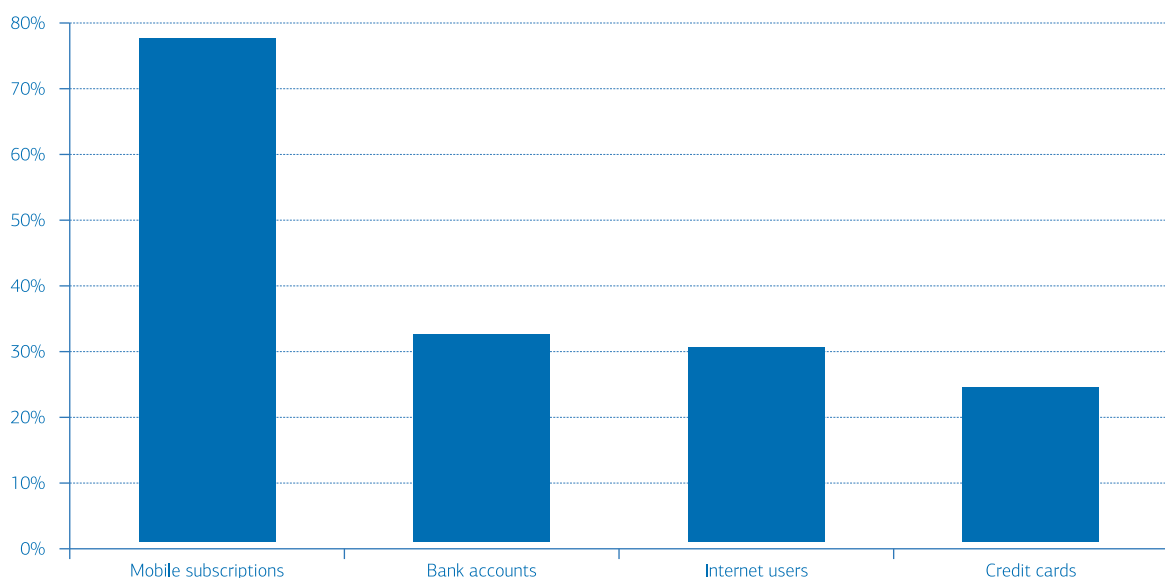
<sup>4</sup> Findex research by World Bank estimates the growth of penetration of account with a formal financial institution from 51% in 2011 to 62% in 2014, the absolute increase is 700 million accounts.

Both mobile and online payments are operating on the basis of the digital platforms with the core of functionality dedicated to handling the account balance and enablement of payments to merchants and transfers to peers. These platforms breed ecosystems: customers, merchants, agents and developers. The latter devise and promote independent specialized applications, which create value-added services on top of basic payments. The combination of better and cheaper processing on the one hand and the possibility to reach customers through a simple account-handling device like the mobile phone or a PC opens not only the possibility to boost the number of transactions processed within the formal financial system. It also allows to offer financial services like microcredit or microinsurance based on the platforms' ability to generate the customer data.

Indeed, the complexities of verifying the financial state and estimating the risks of

lending to non-banked population have always been the barrier to crediting people with restricted means. The problem can be solved with the help of the growing body of data of parallel banking transactions, the route already explored extensively in many markets (like the mentioned Musoni case in Kenya). Another important inclusive development is microinsurance, which becomes increasingly popular in Asia and Africa (examples of Linda Jamii in Kenya or Talkshawk Mohafiz in Pakistan). Dedicating small proportion of daily transactions to insurance provides effective coverage of basic medical and disaster risks. Combined usage of microcredit and microinsurance makes customers more immune to the external shocks like illness, loss of job or bad crop, giving them the vitally needed instruments to smoothen the personal cash flows and keeping the acceptable level of quality of life even in the lean times.

**Fig. 1. Penetration of mobile subscriptions, internet usage and key financial instruments in the world<sup>5</sup>**



<sup>5</sup> <http://www.businessinsider.com/chart-of-the-day-putting-global-mobile-in-context-2012-4>

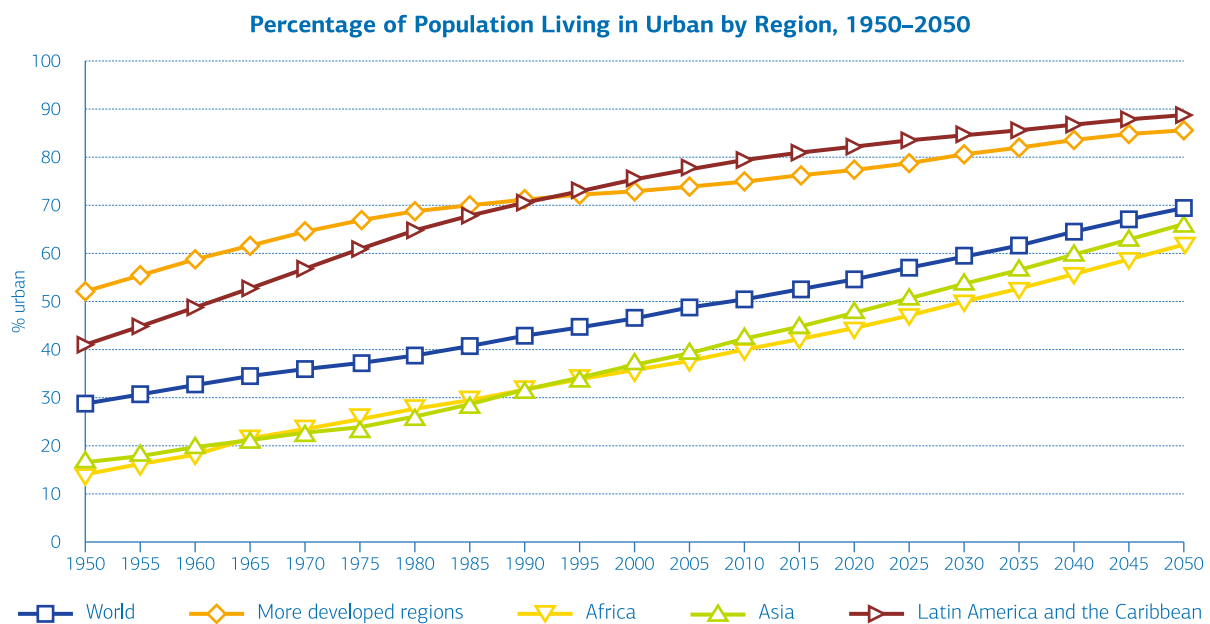
## Surge in demand for financial services is driven by increased monetization in the emerging world

While the supply-side developments are driven by technology, there are massive social and economic shifts which shape the corresponding demand. The trend of exponential finance is fueled by the growth of monetization in the world, especially in the emerging markets. In the past two decades emerging countries have witnessed a shift from agricultural to industrial economy. Fewer and fewer individuals have the possibility or desire to get daily living through simple natural economy. Migration from the rural areas to the cities and foreign countries, switching in agriculture to production of technical cultures and work

within long supply chains rather than delivery of artisanal end-products are the landmarks of socio-economic developments of the past two decades.

New opportunities and challenges emerge for people through these shifts in life paradigm, as the contemporary personal strategies defy the possibility of self-sufficiency through direct production of necessities or trading them in kind. On the one hand, the monetization gives more choices compared to the natural economy in achieving the quality of life, including getting additional income through productive investment. On the other hand, monetization can lead to deterioration of important social ties and rites, produces a more atomized society and on the personal level creates psychological pressure, fear and insecurity<sup>7</sup>.

Fig. 2. The urban population of the world grew by ca. 700 million people between 2010 and 2015<sup>6</sup>



Source: UN World Urbanization Prospects, 2007

<sup>6</sup> World Health Organization: Urban Population Growth. [http://www.who.int/gho/urban\\_health/situation\\_trends/urban\\_population\\_growth\\_text/en/](http://www.who.int/gho/urban_health/situation_trends/urban_population_growth_text/en/)  
<sup>7</sup> For a very insightful treatment of the issues of personal financial strategies among the poorer consumers in emerging market see Ignacio Mas: Money Resolution, a Sketchbook

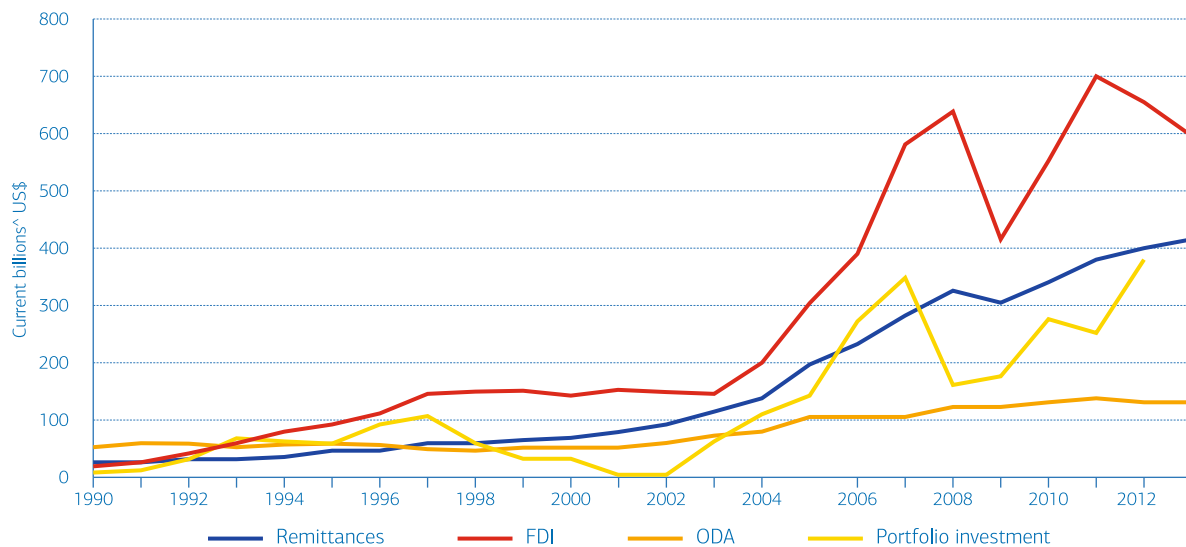
This ambivalence is very manifest in the phenomenon of labor migration, which usually works to supply the labor force for non-skilled jobs from the poorer countries to the richer ones. The migrants' remittances form one of the most important international financial flows, bigger than portfolio investment or direct aid from the advanced countries to the developing ones and comparable in volume to the global foreign direct investment (see. Fig 3). The pace of growth of the remittances and its low volatility are also remarkable.

As a result, the migrant remittances represent a major source of income for some of the countries in the world. On the other hand, the very process of migration undermines the capability of these countries to develop a more sustainable national economy. Within the families the phenomenon handicaps the younger

generations who grow in the absence of one parent (or even both parents) and internalize the model of menial migrant labor as the scenario of the life success with the corresponding devaluation of investment of efforts in education and personal development. Once again, the issues of breaking the social fabrics seem to be the pitiful cost of economic advancement in the emerging world. Still, the modern digital platforms, which are largely behind the expansion of remittance-based economics, are also capable of social construction, as we have seen in our research. There are successful examples of developing the value-added enabling services for labor migrants and their families in the world, both the end of receiving countries and the home countries.<sup>9</sup>

This expansion of number of people involved in monetary transactions and the number of transactions per person per period cre-

**Fig. 3. The dynamics of key international financial flows to developing countries<sup>8</sup>**



<sup>8</sup> <https://oxfamblogs.org/fp2p/migrant-remittances-are-even-more-amazing-that-we-thought/>

<sup>9</sup> For exploration of the topic see for example Luisa Anderloni, Daniela Vandone: *Migrants and financial services*. <http://www.fininc.eu/gallery/documents/wp-migrants-financial-services-final-january.pdf> or S. Hirschler: *Migrants and financial inclusion*. <http://www.ecosocdoc.be/static/module/bibliographyDocument/document/001/700.pdf>

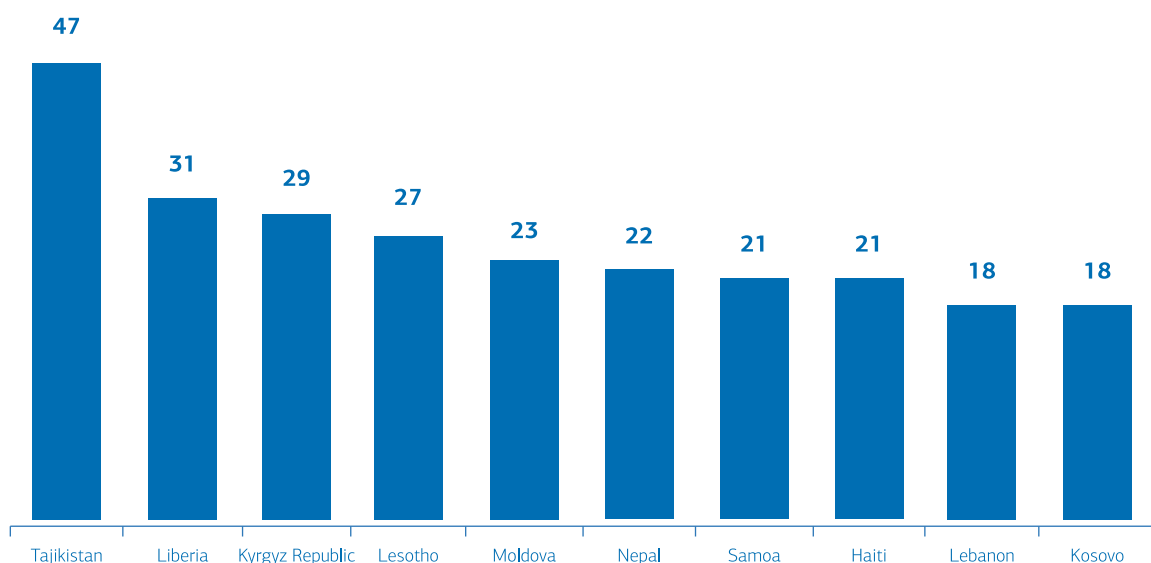
ates the demand side to the exponential finance revolution. Traditional banking is not capable of handling the whole of the phenomenon, due to high costs in operations. The world is eager for new type of financial players, who can combine broad coverage of the customer base with extremely low cost per transaction – the digital platforms are very prominent among them. Aside from the economic opportunities, the emergence of such institutions creates new social systems and socio-psychological wealth-management patterns.

**Financial inclusion: leveling the ground for financial operations across the geographies and income groups.**

The sad fact is that poorer and less established customers in most cases bear the higher costs

of financial transactions. Part of this cost comes from disadvantages of operating in the strings of cash-in-cash-out transactions where all the intermediaries charge substantial commissions. Another important issue are the risks of operating in cash. High cost of obtaining credit both for productive use and for smoothening the personal cash flow is the third major area of disadvantage. The intention to overcome these disadvantages brings in the idea of financial inclusivity: decreasing the relative cost and removing non-economic barriers of financial operations to the poorer customers. It is important that such a decrease does not happen through an arbitrary limitation of the choice of strategies of personal money management. Ideally customers all across the world should enjoy a similar scope of financial options with comparable level of costs in relation to the volume of operations.

**Fig. 4. Contribution of migrant remittances to the GDP of some countries (top-10 globally in the share of remittances in GDP, % of GDP in 2011)<sup>10</sup>**



<sup>10</sup> World Bank. <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/o,,contentMDK:23315792~pagePK:64165401~piPK:64165026~theSitePK:469372,oo.html>

Digital technologies are definitely a mighty enabler in solving the problem. They virtually eliminate the barrier of transaction costs leaving on the table only the issues of risk management. Those issues are really important, as the customers with less financial experience may be prone to involuntarily accept too high level of financial risks. The ideal system of financial inclusion should incorporate the elements of development of the personal money-management skills, probably putting a check on the unacceptably risky customers operations. In the historical prospective the ineffective treatment of the rogue practices of shadow banking in Russia in early 1990s led both to social disaster and deterioration of trust for the whole national financial system.

The reliance on digital technologies, however, brings another important issue: their customer base is often limited in capabilities of using modern digital systems. This handicap can result either from limitations in access – like non-availability of stable connection to Internet at affordable price – or from the absence of necessary skills, including basic literacy and computer proficiency. To be successful a platform needs not only to create an effective technological solution, but also to develop interface which will bridge the gap in competences, making financial transactions not just feasible technically, but also simple to handle. To achieve this the successful platform owners seek to cooperate with other digital systems of the broad outreach, especially with the social networks (see the case of Yandex.Money for an example of creative integration of payment services with social networks).

Going back to the social challenges of the global monetization – the social atomization and psychological distress – are they really inevitable? Are we facing the world, which rejects the role of communities in creation, management and distribution of wealth and adds a strong source of anxiety to the everyday wor-

ries of a modern person? From the perspective of our research it is not necessarily so. The digital platforms that we have studied create the unprecedented opportunities for communal actions, from social-oriented small and micro-business, to the advancement of civil society through management of important personal causes. These “microcauses” which are within the scope of activity of a small group or even one person may include supporting a person in need of expensive medical treatment, promotion of small communal improvements or running a private shelter for stray animals. Despite being individually small or sometimes arguably not very important, the microcauses play increasingly important role in knitting the social fabrics of the modern society, bringing people together and empowering their personal initiative of communal service.

### Corporate strategies of digital platforms.

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The stated developments are pushing wide the borders of what can be called the “formal financial system”. Most of the owners of the digital financial platform have the mixed background of experience in banking and IT, but prefer to position themselves outside of the banking establishment<sup>8</sup>, as technology platform providers, not the regular banks – even if they are requested to hold a banking license to perform operations. Yet the further approaches to strategic development diverge. From our research we see two types of approaches to creating such platforms:

- End-consumer oriented
- Middle of supply chain oriented

It should be noted, that the very idea of an ecosystem defies the classic stratagem of focusing all efforts on one segment of an audience. Instead a platform owner by definition has to serve all the members of the ecosystem, with

<sup>8</sup> Part of the reasons may lie in the current difference of attitudes in the investment community. Thus, Tinkoff, a Russian direct-service bank which succeeded in building up its case as an IT-driven company has managed to get the valuation at IPO of ca. 8 times the capital – while most of the Russian banks were struggling to be valued at more than their capital.

special emphasis on bringing those together in executing mutually beneficial transactions. Yet in practice each platform-operating company has its unique approach which would put priority on the benefits and comfort of either the end-users of the system or the professionals operating within the supply chains which cater to those end-users.

Another line of strategic division between the platform owners seems to be the orientation

towards the source of innovative inspiration. Some are genuinely excited with the possibilities of technology development, almost acting on the assumption that good software core will always find an application. Others, on contrary, would get involved into understanding and shaping the social practices of using the technology – what might be called social engineering, seeking to supply technological solution to innovative social settings and practices.

	Middle-of-chain oriented	End-customer-oriented
Social engineering	2Can	Yandex.Money
Technology development	AxiCredit	Qiwi

Through our analysis we come to the model of four quadrants of the possible strategic approaches of the companies engaged in development of digital platforms for financial services, and we have studied the successful Russian companies in all the four quadrants.

Each strategic approach brings visible differences in how the platforms are operated and developed. On the other hand, interestingly, the result for end-customers can be very much alike regardless of the platform chosen, though these results may come through the different value chains. In the end bytes happen to be less differentiated than atoms. While many people can make a substantiated choice between drinking Coke and Pepsi, few would care about the way their basic account gets money in. From this prospective everyone is competing everyone in the world of the digital platforms even when interfaces and whole ecosystems seem to be radically different from each other. Even those companies which seem “introvert” in their strategy – emphasizing the technology development for the middle of the value chain – finally trigger the same order of social effects in financial inclusion as the companies which get outright involved into social engineering.

## Russian background of consumer financial services

Within our present study we have kept Russia in the focus of geography. This focus adds yet another dimension, the peculiar history of the Russian system of personal finance. These peculiarities should be kept in mind when analyzing the experience of the innovative financial platforms from Russia in the global context.

Until the beginning of 1990s the country had a socialist economy where the state was running all the productive activities, and private enterprise was a legal offense. The financial services were provided by the state and there was a very limited choice of them: mostly term deposits with interest rate of 1,5% per annum. No cash credit was available, yet some durables could be bought through installment plans. Salaries were paid in cash, money transfers between persons were done through post offices, no cheques or cards were available till late 1980s. Possession of foreign currency was a severe legal offence.

At the same time, the Soviet Union was the country with high education level and quality of employment. By 1970s it had almost zero illiteracy rate, compulsory secondary educa-

tion (total 10-11 years of schooling) and a very high tertiary education enrollment. Most of the workforce was in skilled employment in manufacturing or services including some of the frontier innovative industries like aerospace, computers, nuclear energy, etc. Thus an unusual situation emerged in early 1990s when the rapid transition to the market economy began: the educated and intelligent customers were fully inexperienced and naïve in modern finance.

This brought the period of rogue shadow banking, which was relatively short, but created enough of social and economic disturbance. Using the regulatory gaps dozens of so called “investment companies” were launched between 1993 and 1995, which promised huge returns to the customers. The biggest and most infamous of them was called MMM, this one left up to 10 million people without their money. The financial pyramids were also contributing to macroeconomic imbalances of the period, with strong influence on the inflation. The painful experience had important consequences both for consumers, the bona fide market actors and the regulators. The consumer confidence towards the financial system as a whole was undermined significantly, creating a long-term liquidity problem on the market. Even nowadays, the customers are ready to deposit in reputable banks only for substantial returns, for the less established players liquidity comes at very high cost. On the regulatory side the state held itself responsible for the situation and took strong measures to avoid it in the future. This led to certain over-suspiciousness towards new technologies and market players, which sometimes created preferences for the incumbents of

the traditional banking system – even not very effective ones - at the expense of institutions of financial inclusion. Currently one can hardly invent a legal scheme for a financial platform in Russia not associated with the formal banking license. Obtaining such a license brings in significant immediate costs that put check on experimentation with business models. Such an approach on the one hand mitigates important risks both within the financial system and in the society at large. On the other hand it puts checks on some developments which have the potential to bring cheaper financial services to more customers.

Understanding this experience and learning from its lessons can be helpful to regulators and companies from many emerging markets with any heavily regulated background. There are a lot of commonalities in the task of transforming the customer mindset based on the view of financial services as part of the overall state-managed social package into a market system which however assumes some amount of social obligations on the part of the state in the areas of consumer rights protection.

Despite the historic turbulence, Russia now has a strong financial technology sector, which bridges high- and low- income groups and traditional banking and new technologies. The country has pioneered some of the financial technologies, especially in payments, where there is a mighty need for cash-in and cash-out interfaces for the modern system of money transfers and e-commerce. Below are four cases of Russian financial digital platforms that develop different market niches, promoting important aspects of the financial inclusion in the country.

## A note on methodology.

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The cases were researched through the combination of studies of open sources, including official corporate reports, and interviews with company officials. We are indebted to Prof. Thomas Casas for his work on the case of 2Can.





# Yandex.Money: digital platform for civil society



Yandex.Money is an interesting case of transition from relatively basic digital payment offering to complex products built from the social engineering perspective, which extend financial inclusion into the realm of funding of the individual civil initiatives. The proliferation of digital technologies in payments has greatly advanced the peer-to-peer money transfers. The traditional ways of sending money from one person to another had two major disadvantages: they were expensive and they usually required a visit to a payment system office first by sender and then by recipient. No wonder that the e-wallets, which allowed to send and receive money by a click of a key on a PC and for the lower commissions, quickly became popular in all the places, where Internet connection was available.

This revolution led to many important social effects. One of them was the phenomenon of crowdfunding: collection of money from a large group for a business or a cause. Although collecting funds from public through different channels was always the mode of operations of charity organizations, the process used to involve high management costs. These costs were prohibitive for small organizations and private civil volunteers to start a fundraising campaign. With the advance of digital crowdfunding is became feasible to get collective financing for small pieces of activity, like a microbusiness, an art project, or, most importantly, a “microcause” – a private initiative aimed at doing something good for the society. Such microcauses vary from building small communal improvements to running private animal shelters to supporting neighbors in need.

Yandex.Money is one of the most established e-wallets on the market launched as early as 2002, with over 22 million accounts. It was launched by Yandex, the Russia’s biggest on-line holding (by market capitalization), the owner of the only search engine outside of Asia which managed to maintain the leader-

ship over Google in the home market. As of 2013 Yandex.Money is majority-owned by the Russia’s #1 bank, Sberbank, yet it operates as an independent company within its own business model and limited banking license<sup>12</sup>. In 2013 the company had the gross commission income of over 1 billion roubles (over \$ 30 million)<sup>13</sup>. According to the research by TNS Group, the company leads in Russia in the market penetration with 44% of adult Russian population making at least one payment a year through Yandex.Money<sup>14</sup>.

Unlike many of the financial digital platforms, which are fully technology-driven in their approach, Yandex.Money seeks to develop its business more through understanding the customers’ needs, finding and expanding new consumption occasions and scenarios. The company offers a diverse portfolio of products both to end-consumers and merchants and agents, yet what makes it special is its offer for the managers of fundraising campaigns, from professionals to amateurs. The offer includes the software application “Collect Money” which allows seamless integration into the content for Facebook<sup>15</sup> and VKontakte social networks, the most important devices for promotion of crowdsourcing projects. The Yandex.Money service is also integrated with a sister-project Yandex.Music which allows the fans to send some money directly to their favorite musician or group.

## History

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Yandex.Money was launched in 2002 as a joint project of Yandex and PayCash company. By that time Yandex was well-established as the innovative Russian search engine striving for the leadership on the market. Yet the company needed cash to finance development and one of its founders, Arkadiy Volozh's (who acted as CEO at that time) sought to introduce some freemium services. There was an important barrier to such a move, as very few Rus-

<sup>12</sup> The so-called NKO for “non-bank credit organization”, a special legal form for payment clearance houses

<sup>13</sup> <http://habrahabr.ru/post/236095/>

<sup>14</sup> [https://money.yandex.ru/i/forms/tns2015\\_en.pdf](https://money.yandex.ru/i/forms/tns2015_en.pdf)

<sup>15</sup> <http://cbr.ru/credit/coinfo.asp?id=512007244>

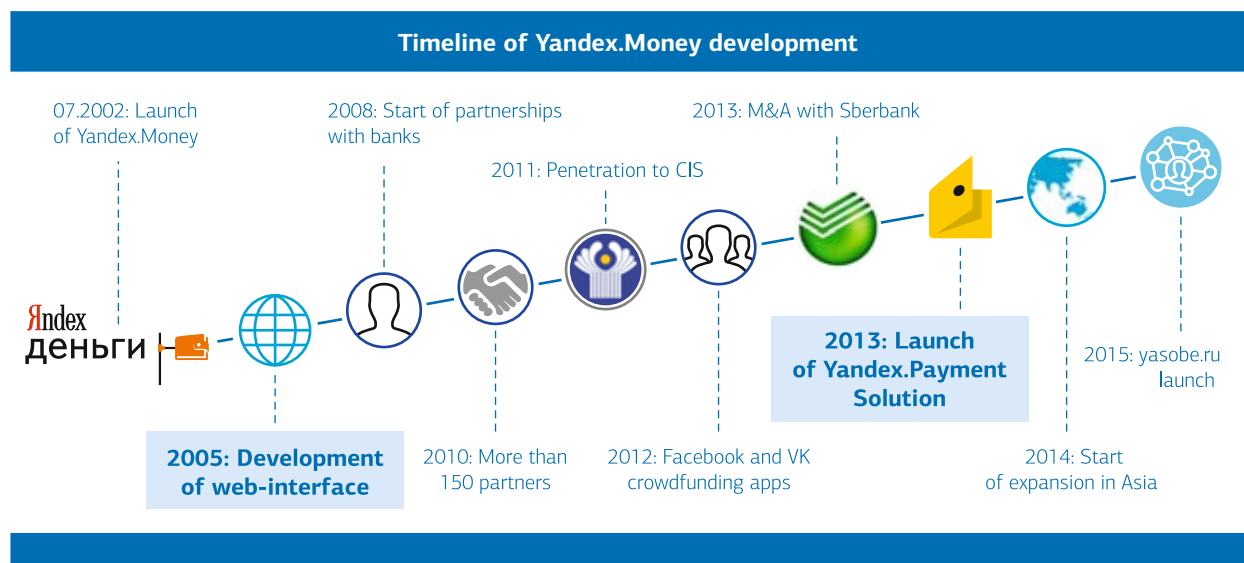
sians had bank cards and could make online payments<sup>16</sup>.

PayCash came to Yandex with a timely offer to jointly develop an on-line payment platform for the Russian market. Initially, Yandex was responsible for marketing and promotion of the service, backing the project with the already popular brand, while PayCash provided the technical “core”. The first version of Yandex.Money required downloading a special software application prior to effecting payments. The app generated sophisticated security keys that granted the transaction, and its major disadvantage was that it could not be used from another computer. A more effective interface allowing for payments through the web-site came in 2005, enabling the users to manage their wallets from any device with the access to the Internet.

In 2007, Yandex bought out the share of PayCash as it started to consider the project a strategic asset, not a complementary tool (ironically, the freemium project, which triggered the idea, never took off). That was the beginning of a new era in Yandex.Money develop-

ment. The company initiated partnerships with major Russian banks like Sberbank, Alfa Bank, VTB24, which provided the broad network of agents necessary to make the e-wallet a really popular service. Soon the cash-in operations could be done through a wide selection of internet-banks, ATMs, terminals and retail agents, by 2011 there were more than 150 partner companies, many of them owning networks with massive coverage. Finally, in 2012 Yandex started issuing its own branded bank cards in partnership with Tinkoff bank. The same year the company got a limited banking license as non-bank credit organization in compliance with new regulation of digital payments.<sup>17</sup>

In the end of 2012, Yandex announced the plans for strategic partnership with Sberbank, the top Russian bank which held almost 30% of the country’s bank assets and had a network of about 18000 branches. Within partnership Sberbank acquired 75% minus 1 ruble of the capital of Yandex.Money, effective May 2013 and the bank’s CEO Herman Gref became the member of the Board of Yandex Group. Yandex.Money operates as a separate company with its own business model, and the Sberbank cli-



<sup>16</sup> <http://runetologia.pdfm.ru/205/>

<sup>17</sup> <https://money.yandex.ru/doc.xml?id=526327>

ents enjoy certain preferences when using the e-wallet services, most importantly the 0% commission for depositing funds into Yandex. Money wallets<sup>18</sup>.

Being an established consumer brand the company decided to expand its market coverage through offering more services to merchants. In December 2013, Yandex.Money announced the launch of Yandex.Payment Solution, which allowed the merchants to get connected to all modern payment methods – bank cards, mobile payments, cash-in terminals – through one simple installation. By that time Yandex engineers have created a strong culture of open APIs (application programming interfaces) which allowed merchants with different levels of technical expertise to seamlessly integrate the Yandex.Money payments into their e-commerce platforms. The service is also effective in connecting the Russian consumers to online stores abroad. Since 2014, Yandex.Money is used by the Chinese giants of e-tailing such as Aliexpress<sup>19</sup>, TradeEase<sup>20</sup>, JD.com<sup>21</sup>.

The company's involvement into crowdfunding started practically at the beginning of the penetration of the phenomenon in Russia. As early as in 2008, a popular singer Peter Nalitch was successful in funding his new album with the help of Yandex.Money. Since then the company started to view fundraising initiatives as an interesting market segment, developing and perfecting instruments which unite payment services and campaign management tools, targeting individuals, and small and large professional organizations.

## Products and ecosystem

E-wallets and payment services are at the core of the company's product offer. Currently, more than 22 million people have a Yandex.Money wallet (up from 12 mln in 2012) with about 12,000 new accounts created every day. More

advanced consumer products include virtual and physical bank cards (Mastercard) and some on-line banking functionality like scheduling essential payments or checking balances with communal utilities operators.

The company focus in innovations is on use-cases rather than on technology per se. An interesting experiment involves POS payment terminals, which identify a payer by the palm (scanning the system of blood capillaries). This enables non-cash transactions by children, say in the school canteen – money is written off the account managed by the parents. The system can help to avoid many risks associated with cash being handled by children and even provide for parental control of the diet.

Currently the company seeks to expand its ecosystem to involve more merchants, both the majors of e-tailing and the small and micro-businesses. Its B2B solution Yandex.Payment Solution is now used by more than 75,000 Internet stores<sup>22</sup>. The service integrates all possible means of payment in one stream providing single-source accounting statements among other things. It can also permits inclusion of consumer credit providers into the process allowing the sellers to receive money from a third party. The security of the service is in compliance with Bank of Russia requirements and PCI DSS standard.

Crowdfunding may not be the biggest market segment in payments, but it is arguably a very special one. Many critics of the digital revolution stress the threats of the social atomization – people separated from each other and the real world at large by the screen of virtual reality. Still there are enough of the cases which testify to the contrary: digital platforms like social media do enable people to get together in addressing important social issues, both big and small. Enthusiasts can find like-minded peers from all over the globe to share ideas and experience and to recruit volunteers to partici-

18 <https://money.yandex.ru/doc.xml?id=526327>

19 <https://money.yandex.ru/doc.xml?id=526616>

20 <http://www.vedomosti.ru/business/articles/2015/09/08/607955-yandeksdengi-zapustil-ploschadku-s-kitaitsami>

21 <https://money.yandex.ru/doc.xml?id=527317>

22 <https://money.yandex.ru/doc.xml?id=527107>

pate in real-world activities. And, importantly, they can get funding for this.

Yandex has developed a line of products for management of crowd-funding both by individuals and professional organizations. The core idea is that fundraising is essentially a social activity, in which management of communications is as important as transfers of funds. Thus the products allow integration into the popular social media platforms like Facebook and VKontakte with posts promoting the cause and attention-grabbing devices like real-time reporting of the collected amount.

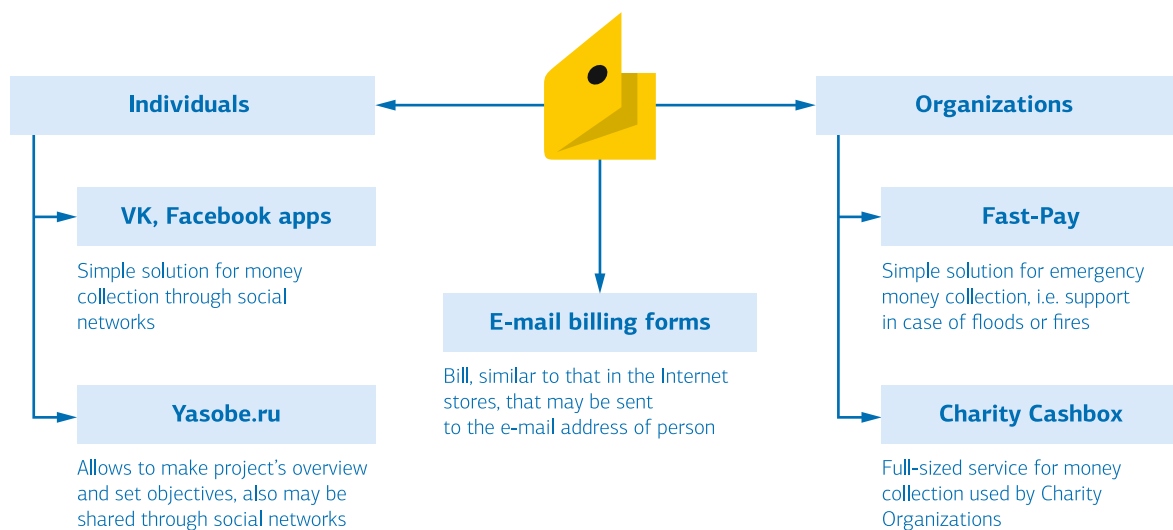
In 2014 a special platform for personal money collection called vmeste.yandex.ru (“vmeste” stands for “together” in Russian) was launched, which later was rebranded into yasobe.ru (creative way of saying “I will raise”).

## Crowdfunded urbanism

In 2014, Igor Bagin from Kirov and his fellows organized the movement “Beautiful Kirov”. These young people were inspired by urbanistic theories and international practices, including a project “Beautiful St. Petersburg”. However unlike the latter, “Beautiful Kirov” is a fully private initiative which depends raised funds and volunteers. They managed to perform several successful projects like planting an apple alley and putting an abandoned football field back to service. The initiatives were fully funded through campaigns combining yasobe.ru and social media sites.

The service may be used to raise money for different goals: for a business project, for an art or musical project, for extracurricular activities in a school class or even for a civil urbanist initiative (see the case of Kirov in the exhibit)<sup>23</sup>.

### Map of croudfunding services of Yandex.Money



<sup>23</sup> <https://blog.yandex.ru/money/post/10940/>

Some 500,000 visitors came to the site in the first six months of 2015.

Yandex.Money demonstrates an interesting and peculiar approach to expansion and management of the ecosystem. The company has invested substantially in API and SDK (software development kit) encouraging independent third parties to build applications over its platforms. The company hosts Hackatones (competitions for independent developers), yet unlike many other industry players who seesuch events as scouting vehicle for M&A, Yandex.Money prefers to keep major innovations projects fully developed in-house, not bought ready-made from the market.

Another point of focus are the enthusiast promoting their microcauses and seeking crowdfunding for them. A lot of efforts is invested into the education of amateur fundraisers with live seminars and blogs dedicated to the issues of campaign management. The company seems to get more business inspiration from social trends, than from pure technological opportunities. In this it provides crucial insights into the possible effects of the modern digital platforms on the new developments of the civil society in the emerging markets.



# QIWI: from innovative cash-in solution to blockchain operations





In early 2000s, Russians faced a growing problem of making increasing number of payments without having a formal bank account. Quick penetration of the mobile phones was the trigger: as most of the tariff plans were pre-paid, people needed an effective way to maintain the balance with the mobile operators. A few solutions emerged, with retail chains acting as payment agents, yet the coverage was far from satisfactory, especially outside of major cities. However, the operators were reluctant to deal with small individual shops, foreseeing problems of actually receiving the payments.<sup>24</sup>

The ultimate solution came in the form of the networks of cash-in machines. Those could be installed in any small shop – providing necessary coverage – yet for the operators the network would act as one partner who could be trusted as money-collection agent. QIWI was not the pioneer in the solution, rather a second-mover into the market, but it offered better user interface based on touchscreens and was more aggressive in expanding the network. In the end it managed to install almost 200 000 cash-in terminals, which is arguably the largest private network of any kind in Russia. To compare: the total number of ATMs in the country is ca. 130 000.

QIWI further expanded its platform to offer e-wallets, which could be accessed both through the terminals and by Internet from a user's PC. This extended accessibility played as an important competitive advantage over the "pure" e-wallet platforms like Yandex.Money. The leadership position was further strengthened through partnership with VISA. Now the product mix includes not only the terminals and e-wallets, but virtual and physical bank cards. Since 2011 the company operates under a formal banking license due to the regulation requirements, still it positions itself as a financial technology company rather than a tra-

“QIWI’s secret to success can be formulated like this: the will plus the desire to break through the limit of possibilities. If we look at the evolution of QIWI products we’ll see that each new product did totally cannibalize the previous one.”

Boris Kim, Co-founder and Chairman of the Board of QIWI

ditional bank. The company is arguably among the champions of financial inclusivity in Russia as its current client base is estimated to reach 70 million people monthly, about half of the country's population.

In September 2015 QIWI drew a lot of media attention by announcing that it works on launching its own version of crypto-currency based on blockchain technology. The company has called its project “Bitruble”, the move stemming enough of controversy, as previously plans to make Bitcoin illegal in Russia were announced by some government officials. Yet QIWI sees the blockchain technology as the revolutionary breakthrough which allows bringing much of the current cash turnover into the payment platforms. If this happens, argues the company, the state will be among the biggest beneficiaries through new level of fiscal transparency and the liquidity influx stimulating the economy growth. QIWI is strongly committed to offer the first blockchain-based products early in 2016, and the company is engaged into extensive dialog with regulators promoting the responsible use of the technology for the sake of financial inclusion.<sup>25</sup>

<sup>24</sup> [https://iems.skolkovo.ru/downloads/documents/SKOLKOVO\\_IEMS/Research\\_Reports/SKOLKOVO\\_IEMS\\_Research\\_2015-06-16\\_en.pdf](https://iems.skolkovo.ru/downloads/documents/SKOLKOVO_IEMS/Research_Reports/SKOLKOVO_IEMS_Research_2015-06-16_en.pdf)

<sup>25</sup> <http://www.rbc.ru/finances/16/09/2015/55f8cc5b9a79475016382a47>

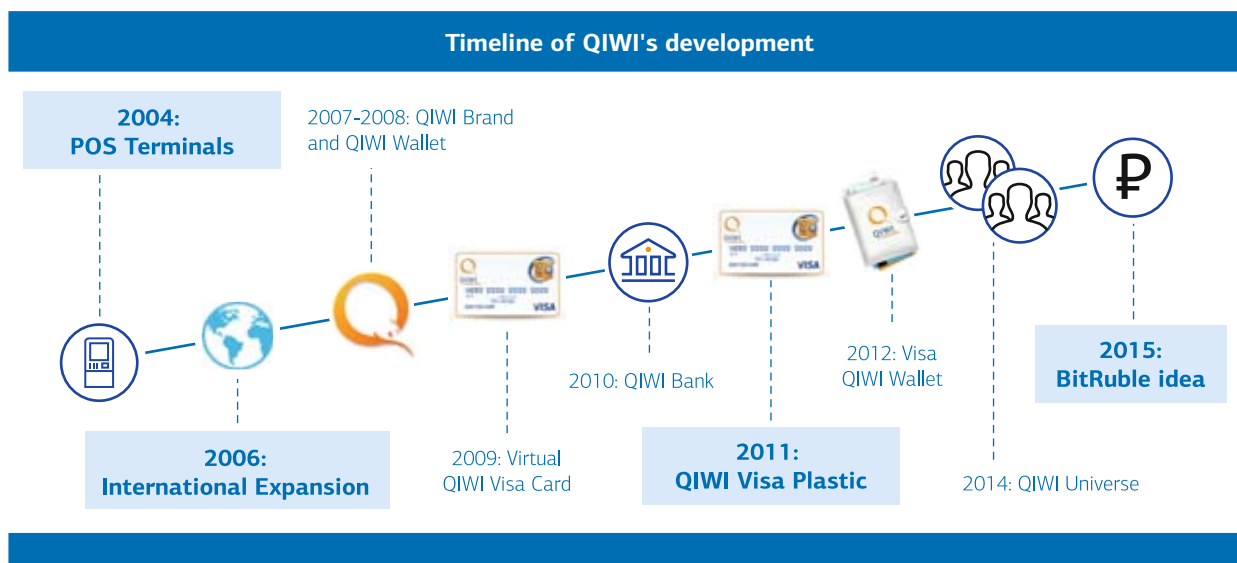
## History

The official foundation year of QIWI is 2008, the year of the merger of its two constituent companies, e-port and OSMP. E-port, founded in 1999 by Boris Kim, was specializing in production of scratch-cards which were popular at that time as a way of uploading money to the pre-paid mobile accounts. A card contained a code which had to be texted to mobile operator to add a certain fixed sum to the account. The code was protected by a layer of special paint which was to be scratched by a customer – hence the name of the product. The scratch-cards were sold at numerous retail outlets all across the country. OSMP (for the Russian abbreviation of “United System of Instant Payments”) was founded in 2004 by Andrew Romanenko to promote a more technological solution, a free-standing cash-in terminal which allowed to make payments to certain pre-selected accounts. Though the idea of such terminal seemed rather obvious to the company founders, they were surprised to find that there is no satisfactory hardware solution available for purchase on the global market, so they had to design the machine and launch

the production themselves. This turned to be a lucky move, as the company managed to come up with a very effective proprietary user interface; a competitive advantage that laid the foundation of the market leadership.<sup>26</sup>

The two companies merged in 2008 in order to expand the coverage of the Russian regions and be more aggressive in marketing. They saw branding as an important instrument of competition with focus on being visually attractive and effective in user experience. This was important as the market tended to be saturated by cash-in solutions by that time and in many places a customer had a choice between two or even three terminals. Many of the users were not very proficient in handling modern digital technologies, so a very simple and graphic interface solution was required. The merged company became the market leader both in coverage and customer loyalty.<sup>27</sup>

Initially the payment platforms, including cash-in terminals and e-wallets, were not regulated in Russia, so the market fully belonged to the realm of parallel banking. In 2011 a law was introduced requiring the banking license for operation in payment processing, since then all



<sup>26</sup> <http://www.youtube.com/watch?v=Zv8laHoT88s>

<sup>27</sup> <https://QIWI.ru/company/history.action>

the market players worked within a bank affiliation. QIWI was not an exception, the company acquired a licensed bank and structured the business as a group of companies to be more flexible in technological innovations. Overall the company prefers to think of itself as an innovative financial technology provider, rather than a traditional bank. Yet the banking license brought important new product opportunities.

The long-term success of the cash-in model was challenged by the growth of on-line payment systems based on e-wallets. Many Russians were still reluctant to use bank accounts, but met with enthusiasm e-wallets like Yandex. Money. These systems offered extended functionality compared to the cash-in terminals which allowed transactions just to a few dozens of pre-selected partners. Ironically, cash-in terminals were used extensively to upload money to e-wallets, thus contributing to the success of the competitive system. To fight with the challenge QIWI Wallet was introduced in 2008. The fact that the wallet could be accessed both through Internet and via terminals constituted substantial competitive advantage as Internet penetration was still limited at that time especially in the Russian regions. Since the company acquired full banking license, it received an opportunity to deal with bank cards, and introduced QIWI Visa Plastic, which enabled to use money from e-wallets for offline purchases. In 2011 the company reached about 40% share of the Russian payments market, with the network of 181 000 devices used by some 70 million people (almost half of the Russian population) monthly; there were additionally about 17.2 mln users of QIWI Wallet service.

In September 2015, QIWI announced that it is going to develop the blockchain technology and introduce the Russian cryptocurrency BitRuble, the third major step in the company development. The blockchain technology can have a significant impact for peer-to-peer transactions, customers-to-business payments and even G2C and C2G (government to citizens and citizens to government) payments, offering en-



QIWI terminal

hanced security, lower costs and improved error handling. Here QIWI enters the fully uncharted land, as no country in the world has yet issued a comprehensive regulatory framework on the cryptocurrencies, though some of the leading private financial institutions in the world like Bank of America, Morgan Stanley, HSBC, Deutsche Bank, as well as a string of financial technology companies are actively experimenting with relevant technology.<sup>28</sup>

## Products and ecosystem

QIWI offers a wide range of products and services. Historically the first product was the execution of payments to selected partners via cash-in terminals. The functionality of the devices evolved considerably and currently QIWI's terminals can be used to pay for:

- Utilities and communal services, with the possibility to check on-line the current balance with the suppliers;

<sup>28</sup> <http://www.ft.com/intl/cms/s/0/72ffd222-66be-11e5-97do-1456a776a4f5.html#axzz3pCVjhQB8>

- mobile services of all operators and Internet service providers;
- some C2G payments including traffic fines;
- railway and air tickets

and also to upload money to QIWI Visa wallet, QIWI Visa Card and even some competitive e-wallets.

The success of the product was largely dependent on the accessibility of the terminals and the company invested substantial efforts into building a country-wide network. It relied on cooperation with small independent retailers of all sorts. In exchange for a small floor space of about 1 sq. m. the retailers got rent payment, the devices also served to attract clients. Additional expansion of the network was achieved with the help of popular business centers and even residential condominiums.

The terminals were designed to cater to the client base of people who don't have formal bank accounts. However, the market development went into an interesting direction. Currently there are over 200 million of bank cards issued in Russia – about 2,5 per one adult – and most of the big and medium enterprises pay salaries via transfers to bank accounts. Still most of the consumers prefer to withdraw all the money on the payday and then live in the world of cash payments. It is considered quite normal to use this cash later on for transactions in cash-in terminals. Part of the reasons for this seemingly irrational behavior lies in low trust in the banking system, another part comes from the fact that the networks of ATMs and POS-acquiring are less developed in Russia than the cash-in networks<sup>29</sup>. Overall QIWI enjoys a very broad client base in terminals ranging from migrant workers (who are limited in the capability to open accounts) to affluent

urban professional who may occasionally use the service as a substitution of bank ATM for the reasons of physical proximity.

Visa QIWI Wallet was historically the second product of QIWI but now it is the main revenue generator in the product portfolio. This is an e-wallet, based on a Visa Prepaid Account. Using QIWI Wallet, consumers can conveniently pay over 75,000 merchants with Visa-backed security and reliability. In addition, the account can be linked automatically to a virtual or physical Visa prepaid card that can be used to make purchases at off-line retailers worldwide. An important product within the range is QIWI Visa Virtual, which allows to make online purchases on the websites in the Internet. In order to get this card it is enough to enter mobile phone number and the amount to be placed on the virtual card. Card details are sent via SMS, which is enough to make purchases on the Internet from the card account. The product targets those customers who are reluctant to pay with a full-scale bank card on-line for the reasons of security. It can also make e-commerce available to people without bank account.

The digital platform of QIWI wallets is at the center of a broader ecosystem, which includes numerous on-line merchants, and also developers of software platforms for e-commerce<sup>30</sup>. The company provides integration of its payments into many popular solutions which enable even small e-retailers who cannot afford expensive technical specialists to quickly move on to using the service. The possibility to get on-line payments from the unbanked customers allows reaching expanded customer base, especially in the Russian regions. At the same time the good old network of cash-in terminals remains the backbone of inclusivity of the non-cash operations across all social groups in Russia.

<sup>29</sup> See the case of 2Can in the present report for an approach to solving the problem

<sup>30</sup> At the same time the numerous retail outlets which host the company's terminal are not the system's agents in full sense of the world. They just rent some floor space, but do not participate in processing of the payments or cash-in-cash-out operations, unlike, say, agents of systems like M-Pesa. For this reason the impact of QIWI and its competitors on the Russian retail landscape is arguably less profound, than in many international cases.



2can:  
a digital platform  
for off-line retailing



2can enables the Russian retailers to do mobile acquiring of bank cards with a combination of affordable portable POS-terminal operated via a simple smartphone and a software platform that pre-processes transactions and clears them with the banks and the global payment systems. This brings the world of non-cash payments closer to the customers, especially of small regional businesses and enables merchants to reduce the costs and risks associated with handling cash.

A paradox of the Russian consumer finance market: with more than 234 million bank cards issued<sup>31</sup> (i. e. ca. 2,5 per adult) the country ranks among the cash-intensive economies of the world. Most of the big and medium companies pay salaries through bank transfers to the employees' accounts, but these funds get almost fully withdrawn on the payday through ATMs. According to the statistics of the Bank of Russia cash withdrawals account for 80% of bank card operations in Russia, about 11 trillion rubles out of 14 trillion in the first half of 2015. An important barrier to more extensive use of the cards for payments is the low availability and reliability of the infrastructure of retail acquiring, especially in the regions. The owners of small businesses who constitute an important part of retail landscape – especially within the shopping routes of less affluent consumers – are reluctant to deal with non-cash payments for a number of reasons. One of them is the relatively high cost and complexity of operations of most of the models of portable card-reading terminals. Special accounting procedures are also required, and the business owners tend to overestimate the amount of efforts to introduce and maintain them. Finally the Russian banks often charge too high commissions for acquiring from small businesses due to insufficient turnover. As a result, Russia has only about 900 POS-terminals for 100,000 people, two times less than the USA or EU.<sup>32</sup>

<sup>31</sup> Source: Bank of Russia, June 2015

<sup>32</sup> <http://www.cbr.ru/statistics/?PrId=psrf>

<sup>33</sup> <http://www.vedomosti.ru/technology/articles/2015/06/10/595907-startapi-2can-i-ibox-obedinyayutsya-chtobi-zanyat-do-polovini-rinkamobilnogo-ekvairinga>

The situation was even worse in 2012 when Nikolay Zhmurenko and Yuri Vladimirov were launching 2can, a startup that promoted usage of a small device connected to a smartphone to process payments from Visa and MasterCard cards. The mobile card reader gave all the functionality of a regular payment terminal and additionally processed the payments at more favorable terms than most of the banks. In three years, the service managed to subscribe 5,000 enterprises, mostly small and medium companies. In 2015 came a merger with an important competitor iBox, which granted to the combined company almost a 50% share of mobile acquiring market, which was growing at an astonishing rate of 300% a year in 2014<sup>33</sup>. The merged company has also started international expansion with the presence on the Asian markets like Vietnam, Indonesia and Thailand.

## History

Nikolay Zhmurenko, a co-founder of 2can, had substantial experience in corporate finance and hold a position of the CFO in a large media holding in 2011. Still he was looking for the ways to escape the corporate routine and establish own business, definitely an innovative one. He was considering various combinations of mobile services, finance and digital platforms in search of a promising solution that could be brought to the market. Finally inspiration came from acquaintance with Jack Dorsey and his service Square ([www.squareup.com](http://www.squareup.com)), which promoted the acquiring apps for mobile devices with cloud-based processing and support.

To start the project Nikolay teamed with an old friend, Yuri Vladimirov, also a CFO. Together they have invested about \$300 000 into the launch of the company Smartfin in the end of the Winter of 2012 and started to develop an app for both Apple iOS and Android operating systems, and the central cloud-based pre-processing “core”. By the fall of 2012 they

had a marketable product, the zcan platform.<sup>34</sup>

The service of processing by definition could not be developed in isolation; the support of the key payment systems was required. Thus the negotiations with Visa and MasterCard were a crucial point in the project's roadmap. The example of Square was helpful, as both international systems were well aware of the service and saw it as an important vehicle in providing broader penetration of non-cash operations. zcan ensured the support of the Russian offices of the two most influential players in world's card payments, with the promise of help with advice, technical integration and clarification of some legal issues. Getting the regulator's permission for operations was another landmark achievement.

In Autumn 2012, after having the greenlight from Visa, MasterCard and Bank of Russia the company attracted the first round of investments, a respectable \$1.6 million from venture capital fund InVenture Partners and another \$400 thousand from Almaz Capital and the ESN Group. The money went into finalization of software, creation of customer and technical support services and expansion of the operational staff and salesforce. All this enabled a quick success in the market with more than 2,000 clients subscribed in just a few months after the official launch. The fact that the average check of a merchant within the platform varies from \$1 to \$700 tells for the diversity of the client base.

In November 2014, a joint project started with Sberbank, the largest Russian bank, aiming at development of the full "cloud box office" service. The idea lies within the push of the national tax-collection authority to offer the "cloud fiscalization" to the small businesses in the country, when checks for each sale will be accounted automatically in a processing center and each transaction will be assigned a unique fiscal code.

## Square: a source of inspiration

Square's product package is the software and mini-terminal, which may be plugged in through the audio jack to the smartphone. With such a device a registered business entity may easily handle the transaction in any place convenient to the client, the only necessary condition is the access to the Internet. Eighteen months into the operations the project had about 1 million clients, now the number grew to more than 3 million.

"I watched as Square developed. I was surprised by the demand for this service, despite the fact that the infrastructure of cards in the United States is one of the largest in the world. I came to the conclusion that I would like to do such project in Russia", – Nikolay Zhmurenko

The procedure will enable quicker tax accounting with less mistakes on both sides. It will also enable the buyers to do necessary tax exemptions with ease – while currently a lot of paperwork is required for any business-related purchase. The solution developed by zcan and Sberbank consisted of a mobile tablet with the application, which registers cash transactions on-line in real time both in the payment processing center and on the fiscal data operator's server; a portable printer connected via Bluetooth® technology is used if a customer asks for a paper check. Overall, the system costs only a fraction of the cash-registering equipment, which is currently required by law. The project was met enthusiastically by retailers, who saw an opportunity for less personal involvement into the complex issues of tax accounting and substantial economy on the fees for the counsel of professional bookkeepers. The further development of the idea is subject to important changes in federal legislation that are to be passed by the Parliament.

<sup>34</sup> Casas Klett, Tomas: *Open for Business in Russia : Payments with Nikolay Zhmurenko's zcan*. The University of St.Gallen Case Study Series. Cranfield University, UK : The Case Centre, 2014.



In the Spring of 2015 came a most radical move. In pursue of the leadership on the quickly growing market of mobile acquiring 2can merged with an important competitor iBox, expanding its customer base in Russia to 5000 companies and 30 partner banks. The benefits of the deal went beyond the immediate share of the Russian market, as iBox had successful experience of exporting its technology to Asia. The potential of the Asian market is huge with even larger share of small and medium enterprises in retail business and lower level of penetration of bank card infrastructure in many countries. The company views Vietnam, Indonesia and Thailand as its primary target markets, and already has presence in them.

## Products and ecosystem

The core of the 2can product offer is the micro-terminal which allows using a smartphone or tablet as a device for acquiring of bank cards issued within Visa and MasterCard systems. The mini-terminal measures 1.5 x 1.5 cm, has a chip to read the data from a tape or a chip of a bank card and connects to a smartphone via a standard audio jack for headphones. The phone should be on-line in the Internet to perform the transaction. Recently the "Big 4" of the Russian mobile operators has expanded 3G and even 4G coverage to almost all urban areas in the country, so getting decent mobile Internet connection is rarely a problem. The data from the card is encrypted before being transmitted into the smartphone – and further to processing – which makes the transaction fully secure<sup>35</sup>.

An important feature of the 2can's app is a very simple and efficient user interface, resembling the ones used by e-wallets. This is important, as small businesses tend to employ the cashiers who are not necessarily skilled in handling modern digital devices.

Connection to the service is free for a merchant, and the rent of the microterminal is free. A fixed acquiring commission of 2.75% per transaction is charged, which is divided be-

tween the acquiring bank, payment system, the card-issuing bank and the 2can platform. Importantly small transactions are also charged with the same commission rate, while many banks apply fixed minimum fees that render some operations unprofitable for the seller. Overall the terms compare very favorably to the service packages offered by most banks to small and medium clients.

An experimental product with large market potential is the 2can\_Mobile Cashier which integrates the terminal with the fiscal register. Mobile fiscal register is connected to the smartphone via Bluetooth and allows a merchant to record cash transactions and print fiscal checks, which are important for the customers who intend to apply for tax exempt for their purchase. The integrated solution enables 2can\_Mobile Cashier to provide the merchant with automatic single-source tax accounting for the sales paid for by cash and by cards through the merchant's personal account in the system.

2can seeks to position itself in the center of a complex ecosystem of the modern retail trade. While its core clients are the merchants – usually the small and medium-size companies in retail trade and services – the company makes important impact on the shopping models of the end-consumers. With the expansion of the card processing infrastructure they can rely on card payments even in small shops and markets – where more affordable products are often available. Thus the benefits of smart shopping can be obtained without the costs and risks associated with cash.

On the merchants' side the system triggers a visible growth of sales, some of the clients reporting an increase in monthly turnover as large as 30%. 2can also enables effective delivery operations reducing the risks of collecting and carrying cash for the personnel. The banks have their own benefits, as they can count on more stable liquidity streams, not prone to massive withdrawal of cash by the customers. Overall, the platform is triggering a classic chain of "network externalities" to the benefit of all participants of the ecosystem.

35 <http://expert.ru/expert/2013/14/2can-sokraschaet-nalichnost/>

# AxiCredit: microfinance credit risk management as an open platform



Microcredit plays increasingly important role in the cause of financial inclusion in the world and it constitutes large part of the parallel banking phenomenon, as its essence is credit intermediation outside of the formal banking license. While the microcredit providers were effective in reaching underprivileged social groups and remote geographies, this came at substantial operating cost. The paradox of microcredit in most markets is that even established providers usually balance on the edge of profitability, while at the same time charging substantial premium over the regular banks' interest rates<sup>36</sup>. Substantial part of the operations costs of microcredit companies come from the procedures of credit risk management: verification and assessment of the loan application in the way which would be less formal than the usual banking procedures – thus maintaining the offer of inclusivity – but still will ensure the high quality of loan portfolio. For the sustainability of a microfinance business it is vitally important that the model is not based on higher risk tolerance (acceptance of a priori high rates of bad debt), but in different approach to evaluation of the credit risk compared to the mainstream banks. The task is often managed via human review of the applications which is definitely the most flexible of all possible approaches, but is much more expensive than the automated computer-based scoring systems. The new generation of scoring software emerges in the world, which allows for substantial flexibility and multi-dimensionality of assessment, but those solutions are too expensive for most of microfinance businesses.

Axiomatica, a Russian start-up company launched by professionals with background in banking IT saw a way to solve the dilemma via offering a “cloud technology” approach. For an affordable fee microfinancial companies get access to the platform called AxiCredit ([www.axi-credit.ru](http://www.axi-credit.ru)) which provides all the processes of credit management, including scoring. Importantly, the platform does not work in the mode

of “black box” which gives just a go/no-go decision. Its rules are transparent, and the client companies can change them as frequently as they opt for. Thus a credit strategy becomes a matter of quick trial and error, with the possibility of ultimate responsiveness to market situation, balancing the liquidity supply and cost with market demand. Some clients of AxiCredit do virtually daily adjustments in their set of rules boosting the profitability of operations.

The system is relatively new to the market, it went into fully commercial mode in Spring 2015. It has already managed to form a base of highly enthusiastic clients focused on short-term consumer microcredits, mostly issued at points of sales. For this type of business the speed of processing from application to the deal is almost as important as the quality of risk assessment and AxiCredit proved to be effective in both dimensions. Now the company sees it important to develop into the realm of productive microcredit. A promising pilot project is underway in Armenia, where AxiCredit is used to assess the loan applications of small farmers with credit scoring based on the prediction of volume, quality and value of crop output.

## History

Axiomatica is a start-up Russian company launched in 2012 by Pavel Zubkov, a seasoned banking IT professional, to offer a range of cloud solutions targeting financial businesses. As the Russian economy went from growth to contraction in 2013-2014 the initial business ideas had to be revised. The company however saw an opportunity in the changes in market environment – it foresaw more demand for “subprime” credit and also noticed that most of the market players lack competences in serving this demand. The scoring systems of the banks were tuned to work with prospering middle-class audience in the context of optimistic financial outlook, and their decisions could hardly be applied for assessment of loans on the back-

<sup>36</sup> See Vladimir Korovkin: *Microcredit in Russia. On the eve of a boom or a crisis?*, p.p. 37-39 [https://iems.skolkovo.ru/downloads/documents/SKOLKOVO\\_IEMS/Research\\_Reports/SKOLKOVO\\_IEMS\\_Research\\_2014-12-06\\_en.pdf](https://iems.skolkovo.ru/downloads/documents/SKOLKOVO_IEMS/Research_Reports/SKOLKOVO_IEMS_Research_2014-12-06_en.pdf)

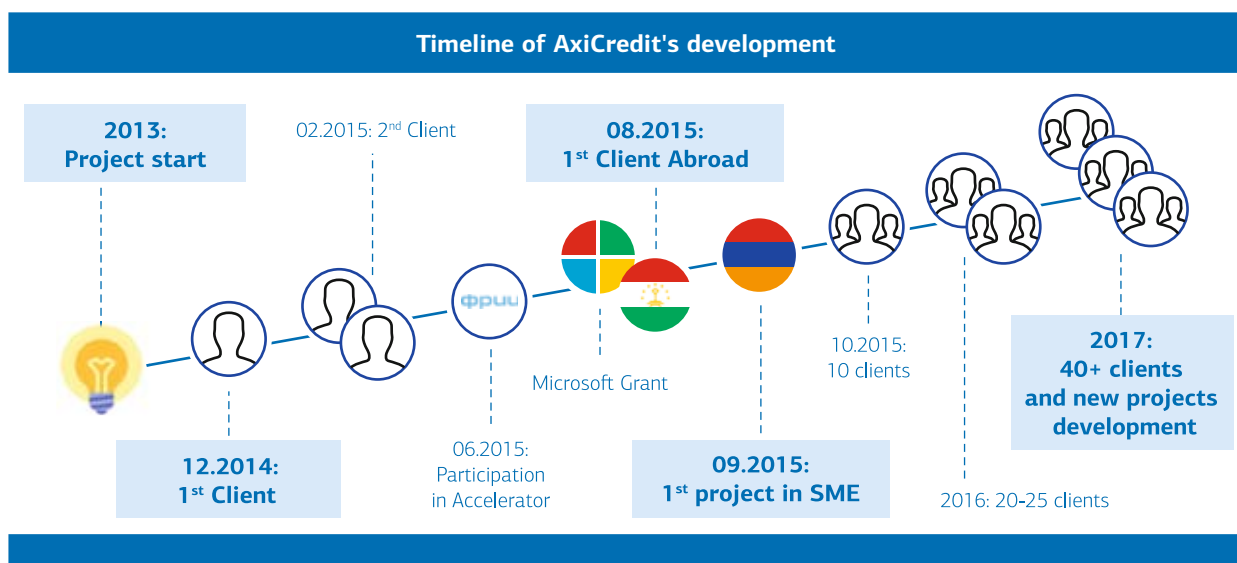
ground of stagnating or even falling economy.

The company also aimed at making its solution affordable for as many market players as possible, though initially it planned to work with small to mid-size regional banks (there are some 600 of them in Russia), not thinking of MFOs as a potentially attractive market. The aim was to offer a radically new pricing level compared to the established solutions and also make the deployment as simple as possible, as smaller banks were supposed to have relatively light technical teams.

To jump-start the development the company licensed the credit scoring “core” from FICO, one of the global leaders in the field, the inventor of the “FICO score”, the fixture of consumer lending in the USA. However the “core” was used as a foundation to substantial amount of proprietary development which made the set of key rules and variable transparent and manageable by the clients. The work took about a year and in late 2014 AxiCredit solution went to market with a mid-sized regional bank as its inaugural client. A bit unexpectedly for the founders the banking business appeared to be a very inert market. The potential clients stood interested, but did not rush in even to try the new solution. A likely reason was the combined

liquidity deficit and profitability crisis on the market (the whole sector went into red in the 2nd quarter of 2015), which made banks reluctant to experiment with the risk-assessment procedures even in a test mode. At the same time a few eager customers came from the microfinance segment; the fact made the founders to review their selling strategies. After all Russia has some 800 banks and about 7000 MFOs and credit cooperatives. The microfinance segment also tends to have more deals, relatively small in amount and short in period. For this quantity-driven market the offer of processing that is cheap on a per deal basis was especially attractive. AxiCredit adjusted its pricing to be based on the number of deals processed monthly.

In June 2015 AxiCredit was admitted to the accelerator of the Fund of Internet Initiatives Development, which not only brought in additional financing for the operations, but also provided valuable expertise in business planning and a network of contacts. A month later partnership was struck with HiEnd Systems, a leading supplier of “turn key” automatization software systems for microfinancial companies. Now the AxiCredit risk assessment module could be deployed as a part of a broader stack of



solutions, covering all aspects of microlending business processes.

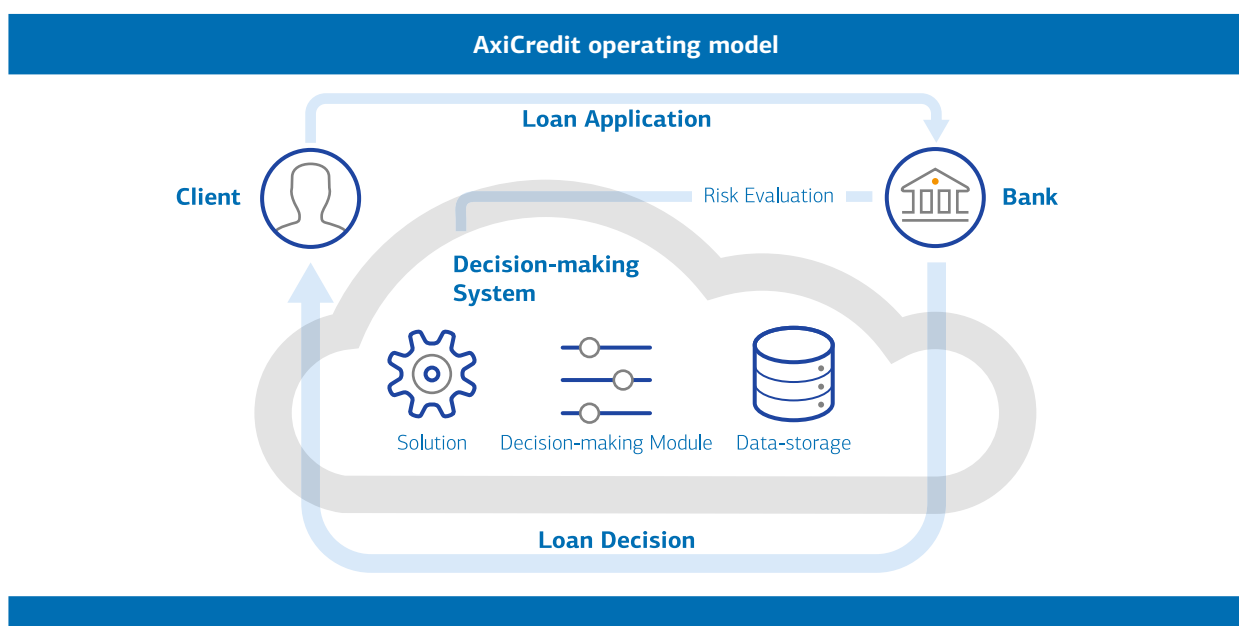
By October 2015, AxiCredit client list included over 10 MFOs and banks, among them important market players like REVO, Smart-Money, Mister Zaimov, Nacionalnii Zaim, and Life Financial Group. In August 2015, the first export contract came through the deal with Spitamen Bank from Tadjikistan.<sup>37</sup> An important sign of recognition was a grant from Microsoft which allowed to integrate AxiCredit with Microsoft Azure cloud platform, leading to higher operability and throughput capacity of the service<sup>38</sup>.

The company envisions to double the number of clients annually for two consecutive years to a figure of 40 banks and MFOs and a gross income of 200 million roubles (ca. \$ 3 mln) in 2017. More interestingly the development plans include diversification of products with focus on assessment of productive credit to small and medium business, including the naturally volatile industries like agriculture. The first experiment in this direction

is already under way in Armenia in cooperation with FINCA. The scoring system for small farms is developed which will work based on the prediction of volume, quality and value of future crops, assessing such parameters as the quality of the land, effectiveness of melioration, farming experience of the owner, etc. If successful the project may open new wide horizons for the company ultimately bringing it to the league of international champions of financial inclusivity in the emerging markets.

### Products and ecosystem

The company offers one product, AxiCredit, a service for financial institutions of all types, from large banks to relatively small organizations providing microfinance services. It helps to reduce an amount of manual work on assessment loan applications, eliminating substantial portion of operational risks from the process. The credit risk evaluation is based on FICO Origination Manager Decision Module. An important architectural innovation is the sepa-



<sup>37</sup> [http://www.cnews.ru/news/line/aksiomatika\\_vyshla\\_na\\_rynok\\_tadjikistana](http://www.cnews.ru/news/line/aksiomatika_vyshla_na_rynok_tadjikistana)  
<sup>38</sup> <http://firma.ru/data/news/5966/>

ration of the Scoring Strategy module, which is composed of the rules that are transparent to the clients and can be managed by them directly.

The deployment of the system to the client takes from 3 weeks to 2 months depending on the complexity of integration with the existing systems. There is an option of acquiring the software within a broader stack supplied by HiEnd Solutions and covering all the key business processes of an MFO. Overall the deployment time compares favorably even to other cloud solutions, and is radically shorter than installation of an independent copy of comparable software on the client's servers.

The overall process performed by AxiCredit is initiated when a financial organization sends anonymized data from the loan application to the system. The further decision process looks like this;

- Validation of the application, such as verification of validity of documents and legal status of the applicant;
- Scoring based on the socio-demographic characteristics;
- Analysis of the data from the credit histories, with the possibility for the clients to upload their own black and white lists;
- Checking of borrower's profile for pre-defined stop-factors coming from the client's Credit Strategy;
- Recommendation on the terms of the deal: amount, interest rate, period;
- Provision of overall credit score of the application

The price of one credit application processing starts from 60 rubles (\$1) with minimum service package of 3000 applications a month (i. e. the subscription monthly fee goes from \$ 3000), the per-application price goes down considerably with the volume of the requests being processed.

The company ecosystem is yet in its nascent stage, currently it is just a dozen of consumer credit providers of various types. Interesting data streams are generated on the platform and they theoretically can be used by

third party service providers as all the data is depersonalized. For the moment the immediate clients are not very enthusiastic about such a perspective, though the situation may change if they are offered a valuable service based on collective data analysis. The offer can go into the realm of consulting of smaller microfinance players on the optimal credit strategies that will balance the risks and profits of each specific company. If such service is introduced it can radically improve the sustainability of MFOs operations – a challenging issue in Russia and worldwide – leading in turn to more inclusive practices of lending.



# Conclusions: regulatory approaches for delicate issues of digital financial platforms.





Digital platforms play increasingly important role in the world of consumer financial services. They not only provide the cheaper way to perform the basic transactions compared to the traditional banks, but offer a solid foundation for building up of value-added financial applications of independent third parties. Overall the ecosystems around important digital financial platforms are capable of catering to almost all viable personal money management strategies of the unbanked and underbanked customers in emerging as well as in advanced economies.

Some of the socio-economic processes in the modern world present challenges for communities and individuals, as they require quick changes in the established practices and rites. Here the role of the digital platforms is complex. On one hand, they speed up the acquisition of personal financial skills and competences. In this, the platforms may be destructive for the traditional social patterns, promoting atomization of society. They are empowering the more entrepreneurial individuals, but may put psychological stress on others. At the same time the digital platforms often work to bring people together in new settings and roles, creating social fabrics of another order, supporting and stimulating civil initiative via instruments of crowdfunding.

We think that the phenomenon of digital financial platforms needs special attention of the regulators. For one, it is important to distinguish between the effects of the platforms and those of their applications, though this may not be always easy from the regulatory perspective. Such an approach is especially important in the formulation of the rules for the emerging phenomenon of the crypto-currencies and blockchain-based transactions. While some of the applications in this area may not meet the standards of financial monitoring transparency, the technology in itself – and the platforms using it – has huge potential of bringing operational costs of financial organizations further

down, allowing for broader inclusion of customers across the world.

Another important issue is the mitigation of social risks. On certain occasions the needs of inexperienced customers can be exploited by non-ethical market players for profiteering. This is especially dangerous in the sphere of lending, where the line between the supply of productive enabling credit and creating permanent burden of indebtedness may be rather thin. The challenge for modern regulators in emerging markets lies in promoting the financial literacy, which leads to effective choices of financial instruments by the consumers, at the same time avoiding the temptation of playing a Big Brother which arbitrary limits the scope of personal money-management strategies.

In many markets the financial regulators successfully adapt themselves to the challenge, finding the ways to work with both traditional banks and emerging parallel banking businesses. There is strong evidence that overall the two types of financial players can coexist effectively. E. g. in the case of Kenya, where a mobile money system M-Pesa has a turnover in the range of 30% of GDP, the penetration of formal banking was accelerated, not reduced, by the growing popularity of alternative payment system. In the emerging markets with smaller tradition of professional financial intermediation, any development of institutions of consumer finance – either in the perimeter of Basel-regulated banks or outside of it – is beneficial to the overall financial culture. It creates the mindset of trust to financial intermediaries, habits and skills in using the financial instruments and technologies and ultimately competes with outdated money-management practices, which linger on from the era of mostly natural economy. A tactful and insightful regulation can reinforce the coexistence pattern leading to both more stable and more inclusive financial system working for the benefit of the society.

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