RUS®SOFT

2014

Export of Russian Software Development Industry

11-th Annual Survey

With support from APKIT Association

RUSSOFT Association 2014

RUS®SOFT

RUSSOFT Association is the most important nation-wide amalgamation of software development companies (both — software vendors and software development service providers) from Russia, but also comprising a number of companies from Ukraine and Belarus.

RUSSOFT Association was created in 1999 in St. Petersburg (Russia) as a non-commercial partnership under the name of "Consortium Fort Ross" composed of 10 local companies. Consortium was primarily intended to coordinate joint marketing efforts of its members for promoting Russian software development services worldwide. After the merger with NSDA, a Moscow based Software Developers Association, in 2004, the united Association took the name of RUSSOFT Association.

RUSSOFT unites over 80 companies with the total staff exceeding 30 thousand qualified software engineers. 9 member companies of RUSSOFT enter the List of 100 World leading outsourcing service providers (Global Services, 2014). Names of 8 RUSSOFT members are listed in the ratings of World leading software vendors in particular software segments (including Gartner Magic Quadrants).

RUSSOFT is the major lobbyist of the industrial interests in the State bodies at all levels. The Association also works on developing IT-education and professional retraining, on diminishing administrative barriers, on High-Tech export support. RUSSOFT organizes numerous marketing events worldwide, it also conducts marketing campaigns among major Russian customers, including State corporations.

Members of RUSSOFT Association form the Pyramid of the Russian software development industry — from startups to worldly known corporations — which represents the major Russian IT-centers — Moscow, St. Petersburg, cities from Siberia, Ural and Volga areas.

Beginning from 2004, RUSSOFT Association has been conducting the annual market surveys which studied the entire Russian software development industry. The results whereas form the unique source of information for the State bodies, international analysts and clients, as well as for the whole Russian software industry itself.

You are welcome to look through results of our study in Y2014!

15 years in IT-industry

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Dear colleagues!
Dear friends!

Let me bring to your notice results of the annual (this time already 11th) survey of the software development export industry in Russia.

The research was conducted by RUSSOFT (Nonprofit Partnership of Software Developers, RUSSOFT Association) from February to April 2014.

More than 130 market players were interrogated within the research, additionally a wide range of sources of information were studied, expert judgments were received from dozens of CEOs of software development companies.

The last year has witnessed the global contraction of economic growth and a slowdown in the Russian industry. This period was also marked by the 'rebound' in the Russian IT market dynamics; the market volume practically remained at the previous year's level. Nevertheless, in 2013 the Russian software development industry continued to develop actively, having increased its export almost by 17% and having reached the export volume of 5.4 billion dollars. The last year was notable for strengthening positions of Russian software vendors in the so-called Magic Quadrants of Gartner. Besides Russian service companies strengthened their positions in the international ratings of outsourcing service providers (Global Services, IAOP). For the first time the growth of the share of small companies in the total export volume became evident reflecting the performance results of measures undertaken by the State Institutes in the recent years.

Unfortunately, prospects for export growth will not depend only on companies themselves but on political developments, particularly on situation in Ukraine. Russian companies feel appearance of political barriers although typical only for clients who lack experience in working with Russia. The relationships with loyal clients remain unchanged, fruitful and friendly. De-escalation of political tensions between Russia and the West is unavoidable thereupon business activities will certainly come up.

Taking this opportunity, I would like to thank ConfirmIT and Toy Opinion for their effective support of information collection, and also to thank PROMT for their excellent translation of report into English. Also I would like to express gratitude to our dear colleague Andrey Terekhov, professor of St. Petersburg University, for his precious remarks and advice, and to Andrew Rysin for the outstanding design of this report. And certainly, I wish to give kind words of gratitude to our analyst and writer Dmitry Zhelvitsky.

We are very grateful to the Association of Computer and Information Technology Companies (APKIT) and to our sponsors: Auriga, Artezio and Genesys for supporting the research.

Many thanks to all survey participants who provided information on their companies and thus contributed to the overall success.

With best regards,
Valentin Makarov
Executive Editor
RUSSOFT Association President

Chapter 1

Russian IT-Market on the Global Scale

1.1. Publications on High Technologies in Russia in Foreign Mass Media

The tone of publications in foreign media over the past year changed to the disfavor of Russian software exporters. A share of publications concerning high technologies that refract Russia increased from 39% to 51%. However this increase in and on itself does not suggest the appearance of new serious problems which can block export of Russian software companies. Some revealed changes even play in favor of promotion of their services and solutions abroad. We will speak about it a little further.

The analysis was only performed based on publications describing the hi-tech economy sector and, first of all, the software development industry. The search within a number of specialized editions and in the media resources most popular in the world and in separate continents was performed hunting for two keywords — Russia and Software.

A number of indicators were compared for two periods: 01.07.2012–30.06.2013 and 01.07.2013–30.06.2014. In prior years the similar methods were used but with small modifications (for example, comparison was made for other timeframes).

The list of monitored mass media included the following 21 resources: Asia Times, BBC, BusinessWeek, CNET, Computerworld, eWeek (PC Week), Financial Times, Forbes, The Hindu, IT Europe, InfoWorld, Linux Magazine, MacWorld, Network World, The New York Times, PC World, REUTERS, TechNewsWorld, The Washington Post, The Wall Street Journal, and ZDnet.

Messages and reviews not directly related to the high technologies were peeled apart. Of primary concern were publications where information technologies were mentioned. However, if some publications were met which were related to other high-technology industries (such as space or aircraft manufacture) they were accounted for as well. All in all, almost 500 articles were analyzed published from July 1, 2012 to June 30, 2014.

A share of publications with the negative tone towards Russia during the year increased, nevertheless, it is much lower than several years ago. In those times the analysis of leading mass media publications suggested that the article writers often thought of Russia as a huge territory with oil derricks, vodka making factories, and missile pits. Even the availability of the frightening military industrial complex, which seemed to testify the Russians' capability to solve the most challenging technological tasks, hardly influenced the extremely show-me attitude of ordinary people towards advanced technological products from Russia including software products.

Because of this, the Russian software companies oriented towards the wide audience of foreign consumers and customers tried — whenever possible — not to draw attention to the country where solutions were originated. They often operated at a foreign market on behalf of their local subsidiaries, who sold their alleged own product without reference to the Russian developer.

Round 2012, such secrecy faded in importance. Usage of the "Made in Russia" slogan in marketing is not unambiguously desirable yet (especially in the leading western countries, i.e. in the markets on which Russian software companies are mainly focused), but it is not as risky as it was in the middle of 2000–2010.

A revulsion of mood happened in 2010–2011. Then, the share of scientific and technical publications that provided relatively positive information about Russia exceeded the level of 50% and reached

66% with a significant increase in foreign mass media interest in the Russian hi-tech economy sector. For all the previous years, there were approximately one and a half times more negative publications than positive ones. And if by the results of last year a share of publications that negatively influence the image of Russia increased to 51%, anyway it is much less than 60–70% which were consistently observed till 2010.

As things stand now, anti-Russian hate speeches have not reappeared. There is no objective cause for such reappearance (if there is no further and serious aggravation of the international situation that should not be absolutely ruled out).

The revulsion of mood of foreign media to Russia in 2010–2011 was primarily connected with a more active PR politics of our companies. The Russian export companies, government men, close-to-the-State structures and trade associations deserve some credit for this change.

An increase in the share of publications that negatively influence the image of Russia in the high-tech area in the last 12 months is not particularly noticeable as might appear from the first sight. First, fluctuations of this indicator (we will call it "disloyalty" indicator) by 5–7 % from year to year are quite natural and don't witness any trends. This indicator is primarily influenced by great events — news hooks important for media. For example, in 2012 holding an IPO by two Russian companies and discovery of a unique and very dangerous computer virus by Russian specialists brought to life the explosion in publications. Thus just three news of a like nature could substantially affect the disloyalty indicator (it may drop up to 10 percentage points). Besides, considering small sample in this case a margin of error is sufficiently big.

In contrast to previous 12 months, hardly any dramatic events ever happened over the last period under consideration. Such events occur irregularly due to a combination of circumstances.

Notwithstanding the foregoing, in 2013 an effect was felt that could be anything but a coincidence. It was presentation of Russia in the western media as an image of the enemy that took shape in the dramatically increased number of publications where Russia together with China was presented as a country in the best position to endanger the information security of the USA and EU. These publications describe Russian hackers placed under arrest in foreign countries, cyber attacks against information systems and websites from the Russian territory and cyber-espionage. At the same time, nobody could State that the western journalists carry out someone's orders. As a rule, they respond to the Statements of politicians, experts, representatives of law enforcement agencies in charge of information security. This is apparent from the review of publications.

The more frequent Statements about Russian threats in 2013 first and utmost were related to the flare-up between the US and Russia. It all started with granting temporary asylum by Russia to Edward Snowden, a former CIA and NSA officer. The United States Government required extradition but Russia refused.

Experts in the sphere of information security unrelated to government institutions normally presume that so great attention paid to Russia as far as computer frauds are concerned is unjustified. Firstly, cyber crime is of an international nature when functions are divided between citizens of several States. That is not to say that Russians play a key role in criminal groups. Nevertheless, media often put them into the spotlight. For example, if it is currently reported that a group of hackers from different countries was arrested, the published list of people in detention usually begins with a Russian national. If the fraudsters used servers in different countries, it is emphasized that one of the servers is located in Russia.

At the same time, it is already seen that the newsmen try to exclude this prepossession. If before they wrote about Russians (even if they were not Russian citizens), now they increasingly mention Russian-speaking hackers. Publications (primarily analytical reviews) suggest not blaming Russians in all things and seeking the Russian scent everywhere as the cyber crime penetrates all countries with highly trained technical specialists. Sometimes doubts are voiced as regards the real guilt of an accused Russian. Traverses of previous indictments appear as well.

It is not possible to allege that definitely all publications about Russian hackers only negatively influence the image of Russia. For instance, reports about youngsters who revealed a security vulnerability but did not seemingly inflict maliciously (perhaps they did not mean mischief) may tell about abundance of the talents in Russia and the good educational system.

A positive fact is that in the last year a total amount of publications related to high-tech and Russia, increased approximately by 30%, though there were relatively less publications positively influencing the image of Russia. For one thing, the popularity can be used for promotion of services and software products, even if information in media seemingly does not tell anything good about the country. Lack of information is even worse. If according to media, only Russia and China can be really dangerous to the USA as regards confrontation in cyberspace, it makes one wonder about the available vast scientific and technological potential of these two countries. Furthermore, as military operations in the East Ukraine are still underway, many western readers begin taking a more dim view of image of the enemy.

At the same time, it is critical to underscore that 30% growth of publications owes its origin mostly to those publications which influence upon the image of Russia we could not determine as either positive or negative (if we ignore these articles, the growth will be just 5%). This year for the first time we had to define a separate group of publications with ambiguous conclusions. When previously we had doubts about the tone (positive or negative), these publications were not considered in analysis even if they mentioned both “Russia” and “software”. However in case of certain articles it would be impossible to deny their substantial social impact even if it is not possible to say whether it is positive or negative.

First of all, it concerns Edward Snowden. One part of western readers appreciated the fact that Russia granted him temporary asylum as an unfriendly act towards the USA. Another part took Snowden as a hero and developed respect for the country that sheltered him and secured from persecution.

Character of publications in foreign mass media

(analysis results for two periods: 01.07.2012–30.06.2013 and 01.07.2013–30.06.2014)

Period	Amount of negative*	Amount of positive*	Amount of positive and ambiguous
01.07.2012–30.06.2013	75 (39%)	116 (61%)	130 (63%)
01.07.2013–30.06.2014	102 (51%)	98 (49%)	164 (62%)
For 2 years	177 (45%)	214 (55%)	294 (62%)

* — within brackets a share of all publications exclusive of "ambiguous" publications
** — within brackets a share of all publications inclusive of "ambiguous" publications

Many did not come to a decision how to perceive granting of asylum to the fugitive NSA officer, but they cared for Russia to say the least of it.

The results of some polling show that Snowden even in the USA has more adherents than opponents. Thus publications about him one could fit into the group of materials positively influencing the image of Russia. In this case the "disloyalty" indicator over the period 01.07.2013–30.06.2014 will be not 51% but just 38% (that is at the level of the precedent 12 months). However it should be pointed out that uncertainty of nature of social impact of these publications yet is sufficiently high.

It would not be wise to ignore information about Snowden due to this uncertainty because to his movements and Statements was given exclusive attention of almost all specialized publications. They kept a close watch on every event related to the fugitive NSA officer, though in the vast majority of cases this news did not correspond to their subject matter. The articles about Snowden in the specialized computer media generally did not mention any technologies at all. Neither it was said anything about IT business and IT markets.

The publications selected for investigation can be divided into two groups. The first group includes specialized print press dedicated to IT, the second — business and general political papers. The "loyalty" indicator of two groups is almost identical. It is slightly higher for business and general political publications comprising of 52% articles published within 01.07.2013–30.06.2014 which positively influence the image of Russia. For the first group this indicator is 48%. This somehow better attitude towards Russia on the side of business and general political print press is observed for two years in succession.

A few years ago, the situation was entirely different. There was a consistent pattern: positive publications favorable for Russian software companies' export appeared mainly in the specialized editions that were far from participation in political games, as well as in mass media of the countries that assumed, at least, a neutral attitude to Russia.

By all tokens, the changes of tone of business and general political publications are irreversible. Anyway, in foreseeable future. Even certain popular US editions became ones of the most loyal among those selected for media analysis.

All conclusions drawn above only concern those articles and reviews that refer high technologies. Publications on other subjects (for example, about political events) contain much more negative information than positive that is certainly not favorable for promotion of Russian software products and software development services in foreign markets. However, it is not worth overestimating the importance of the negative articles. For example, in western mass media, China is presented as an

Rating of editions by publication number for 2 last years (01.07.2012–30.06.2014)

		All publications
1	PC World	54
2	Computerworld	51
3	Network World	49
4	CNET	41
5	ZDNet	40
6	eWeek (PC Week)	37
7	InfoWorld	30
8	TechNewsWorld	29
9	The New York Times	26
10-12	REUTERS	18
10-12	The Wall Street Journal	18
10-12	Financial Times	18

Top-7 most loyal editions for last 2 years
(01.07.2012–30.06.2014)

		Share of positive publications	All publications
1	Forbes	91%	11
2	The Hindu	82%	15
3	The Wall Street Journal	78%	18
4	CNET	77%	41
5	BCC	67%	7
6	ZDNet	65%	40
7	REUTERS	65%	18

* — Only editions with at least 5 publications per year are included in the table

Top-6 most disloyal editions by number of publications for last 2 years
(01.07.2012–30.06.2014)

		Number of positive publications
1	CNET	32
2	ZDNet	26
3	The Wall Street Journal	14
4	The Hindu	12
5	REUTERS	12
6	Forbes	10

even more non-democratic State but it does not disturb successful promotion of Chinese goods in the US and European markets.

Some Russian companies also take the leading positions in these markets irrespective of the content of western mass media publications about Russia. The Kaspersky Lab manages to dominate not only in the US corporate market but even in the retail one.

In Germany, the Russian antivirus developer steadily heads the list, having beaten the local G-Data to the second place. In the spring of 2013, the IDC analytical company awarded Kaspersky Lab the title of the leader following the results of the comparative analysis of vendors in the West European market of Endpoint Security protection solutions for large business.

Apparently, the western consumers are pragmatic and mostly evaluate quality and price instead of an exporting country's "democratic character" and "friendliness" in the mass media representation. It seems that the pragmatic nature in combination with disregard of created image of the enemy even increased.

In 2008 there were events when foreign customers withdrew from bargains with the Russian companies by reason of Russian-Georgian war conflict. In 2014 by early July we do not have unambiguous information that the strain in Russian-Ukrainian relations (with imposed sanctions and severe accusations against Russia in western media) has greatly influenced the software exporters.

Communication with top managers of leading US high-tech companies demonstrated that they by no means plan to curtail cooperation with Russian partners or even correct it amid American public servants.

Top-7 most loyal to Russia editions includes only two specialized magazines — CNET and ZDNet. If the inclusion of the Indian general political journal The Hindu in this rating is expectable (Russia has been having good relations with India for many decades), the inclusion of four British and American media (Forbes, The Wall Street Journal, The Wall Street Journal, BCC) seems to be contrary to expectations. In this case it is important to remind that this refers only to publications which were found by key words "Russia" and "software". Therefore, publications on political and other subject matter almost did not come in view.

The American Forbes in terms of the amount of positive to Russia publications even became the most loyal magazine. However by amount of publications (both of whatever kind and positive) the highest places are taken by the specialized media.

The majority of foreign mass media publications were connected to the information security. Thus, foreign readers may think that other IT directions are neglected in Russia, although it is not true. However, the similar distortion is natural. Firstly, it is explained by the fact that the mass media pay special attention to information security (to threats and revealed vulnerabilities). Secondly, Russian companies that are engaged in information security communicate with foreign journalists more actively than others. Thirdly, the western mass media still consider Russia (along with China) to be the largest source of cyber threats that reflects an artificially created enemy image rather than the real situation.

For last 12 months (up to 30 June 2014) a share of information security reduced compared to this indicator over the previous similar period. It occurred with the significant increase in negative publications on this subject.

An increase of a share of publications unrelated to information security is pluses. However it still would be rash to assert that this change suggests a new tendency. A number of publications related to information security decreased thanks largely to the fact that Russian experts over the last 12 months brought to light much less vulnerabilities and new types of scumware than in the previous years, and it's most likely that this is attributable to random factors and implies a lull.

Top-5 most disloyal editions by share of negative publications for last 2 years

(01.07.2012–30.06.2014)

		% negative	All publications
1	InfoWorld	75%	30
2	eWeek (PC Week)	65%	37
3	The New York Times	63%	26
4	TechNewsWorld	60%	29
5	The Washington Post	56%	9

Publications by subject area, % of all publications for the period

	07.2012–06.2013	07.2013–06.2014
Investment attraction, merges and takeovers, cooperation	5%	0,5%
Space	3%	5%
Conditions for hi-tech business in Russia	10%	16,5%
Activities of Russian developers and scientists	15%	10%
Information security	60%	41%
Edward Snowden	5%	24%
Sanctions	—	1,5%
Other	2%	1,5%

Russian companies most mentioned in foreign mass media publications for 2 last years

(01.07.2012–30.06.2014) (the number of publications with reference)

	Company	Number of publications
1	Kaspersky Lab	45
2	Yandex	19
3	Group-IB	14
4	Vkontakte	11
5	Yota	8
6	Luxoft	6
7	Mail.ru	6
8	Parallels	5
9	Skolkovo	3

Over the last 2 years the publications about GLONASS hardy appeared. The interest in this subject greatly languished also in Russian media. That is why this subject matter was moved to the category "Other".

There were far fewer publications related to investments, merges and takeovers. Much of it is owed to the fact that over the last 12 months no much-publicized IPO Russian companies took place.

In the meantime, two new topics appeared — "Edward Snowden" and "Sanctions". Discussion of potential impact of sanctions against Russia in foreign media began just in the spring 2014.

In particular, their influence upon European IT companies and European IT market is regarded. And still experts are not ready to present specific predictions on consequences of the sanctions imposed.

For the first time, a lot of publications appeared reporting that long-hoped for technology novelties will first enter the Russian market, and then the others. This points to its maturity and increased importance for global producers. Some 10 years ago these novelties appeared in Russia at least with one-two year time delay.

The foreign media also commented the advent of a unique double-screen smart phone developed by the Russian company Yota. Newsmen and experts also discussed the project of development of the secured Operating System of Kaspersky Lab. As a whole, this system was welcomed, although some experts look skeptically at the prospects of its promotion on the global market. In particular, they suspect that the head and founder of Kaspersky Lab Eugeny Kaspersky is bound up with the RF Federal Security Service.

Several publications were dedicated to complex IT projects successfully implemented in Sochi within the scope of preparation for the Winter Olympic Games.

The foreign print press also reports on developments of Russian startups which are not domestically known yet.

It is telling that Financial Times published two articles which in quite different ways show conditions for activity of high-tech companies in Russia. One describes a number of successful Russian companies while another tells the story that the founder of the social network VKontakte Pavel Durov lost in Russia everything, though he just voluntarily sold his share of the company that he had established and engaged in a new project.

A series of publications is dedicated to the investigation of money allegedly slipped by representatives of Microsoft in Russia and Pakistan.

The newsmen also noted the propelled stock performance of Luxoft after IPO on the New York Stock Exchange in June 2013.

All in all, in the publications selected for analysis (for 2 years) 36 Russian companies and organizations are mentioned, but only 9 of them more than twice. Kaspersky Lab expectedly leads by far the rating of the most mentioned Russian software vendors. This company is the largest Russian software product exporter and dominates at the markets of many economically developed countries including the US and Germany. Besides, its managers established a permanent contact with many journalists of foreign print press.

Such short list of companies mentioned in media amid the success of already more than 15 Russian companies included in international ratings of best suppliers of software and services - shows that a number of the biggest Russian software exporters due to some reasons have not improved their public relations with foreign media yet. There is room for better presentation of Russian IT industry as a whole. This work may be executed, for example, in the process of implementation of government support of international marketing activity of Russian high-tech companies.

1.2. General Situation in the Russian ICT Market

The net effects of two last years studies show that it would be wide off the mark to pass meaningful judgment upon the IT market situation only on the basis of the change of its size (in the same manner as drawing conclusions on the health of the whole economy just by the GDP volume). If we focus on the volume of the Russian IT only, we might conclude that it is stagnating (at a standstill). According to IDC and Gartner, this volume by the results of 2013 did not change (the value of revealed reduction is within the measurement accuracy). However if we take the IT market segments separately, any stagnation (which is characterized by zero growth rates) is absolutely out of the question. Last year almost every segment either significantly (as a rule, more than by 10%) decreased, or significantly increased (sometimes more than by 100%).

Admittedly, the analysis of all segments with due allowance for their relations makes it possible to see that there is neither crisis nor standstill because some technologies (or solutions) were intensively replaced by the others. In such a case this replacement from the standpoint of technology level can be confidently viewed as progress.

1. With a significant reduction in PC sales (by 32%), the sales of tablet computers increased by 67%. It is worth mentioning that in pieces the reduction in PC sales is not so great (27%) while the growth of tablet PC sales looks more significant (108%).

2. The slumping sales of servers and a decrease in the growth rate of software market takes place against the background of the cloud service market growth.

3. Smart phones squeeze out normal mobile phones.

4. Sales of printers and multifunctional devices are reduced with the mass change-over of companies and governmental structures to the e-document flow.

5. The market of infrastructural video conferencing products reduced by13%, but at the same time, the sales of video conferencing software systems increased by 180% (in the H1 2013).

Therefore, a decrease in a certain segment is compensated by a growth of another (partially or fully alternative) segment. It is accompanied by the drop of turnover of certain companies that focus on diminishing segments and the sales growth of other companies (more often smaller ones currently not ranking among the leaders). According to RIA Rating, the turnover of 10 biggest Russian IT companies reduced by 1.4% and that of 60 — increased by 3%.

It may be noted that against reduction in PC sales a number and a share of web-connected households keeps growing. These indicators are interrelated as new users normally connect to global Internet first via PC and only afterwards via smart phones and tablet computers. However what

Basic figures characterizing the Russian ICT market in 2013

Indicator	Absolute value following the results of 2013	Drop (–)/ Growth (+) following the results of 2013	Drop (–)/ Growth (+) following the results of 2012	Source
Russian ICT market	635 billion rubles ($20.5 billion)	–11.3%*	+7%	Ministry of Economic Development and Trade
	$33 billion	–1%	+3.9%	IDC
	—	–0,6%	—	Gartner
Total income of 60 major Russian IT companies	685.6 billion rubles	+3%	+27%	Rating of major Russian IT companies (RIA Rating)
Total income of 10 major Russian IT companies		–1.4%	—	Rating of major Russian IT companies (RIA Rating)
Cumulative business volume of major Russian IT companies in Expert RA rating	451.4 billion rubles	+2%	+21.5%	Expert RA
Telecommunication market (volume)	1.635 trillion rubles ($53 billion)	+6%	+7%	J'son & Partners Consulting
Communication market (consumer services)	1.695 trillion rubles (1.127 trillion rubles)	+5.1% (+6.4%)	+5.2%	Rosstat
Earnings of companies of the Communication and IT industry excluding VAT	2.76 trillion rubles ($87 billion)	+4.9%	—	Rosstat

* — presumably, the Ministry of Economic Development and Trade has changed the calculation methodology, however, not determined the growth according to a new or an old methodology

outweighs is exactly the number of Internet users and web-connected households. If it is growing with reducing computer sales then it means that in order to increase the number of computers in use the growth in PC sales is not so important.

Inhibition Factors

Nevertheless, the total IT budget of households, companies and government institutions ceased to grow anyway (slowdown in growth rate was also observed by the results of 2012.). In such a case the IT development in Russia still has not come up to that of the most economically developed countries meaning that the growth of the IT market still has serious prospects and is clearly desirable for national economy in its entirety. Statistical discrepancies in recent years increased more likely by reason that many companies stopped to disclose information on their turnover on the Russian market (primarily, vendors), and a vast number of growth startups put themselves on the map which sales the analysts have not learned to measure yet. Still there is no cause for thinking that due to difficulties in accurate calculation of capacity of the Russian IT it will be impossible to reveal its considerable growth.

The results of independent investigation demonstrate that in 2013 the market volume was almost unchanged. IDC determined 1% drop, Gartner — reduction by 0.6%. According to rating prepared by RIA Rating, the turnover of 60 biggest Russian IT companies increased by 3% (usually the biggest companies pinpoint the market situation), but in this case calculations were made in rubles. If one recalculates the cumulative business volume in dollars, the growth will be almost zero. In this case, among all companies covered by rating only15 had reduced turnover and 45 — increased turnover. In other words, the majority of biggest companies gained traction albeit in ruble counterpart.

Actually, the Ministry of Economic Development and Trade determined that the reduction of the IT market was as great as 11.3% in rubles (in $ it is bigger). However we have serious reservations about correctness of this figure. The civil servants from the Ministry for Communications and Media responding to questions of journalists suggested that such significant decrease in estimation of the IT market volume in 2013 by their colleagues from the Ministry of Economic Development and Trade was due to the change of methodology.

Traditionally, the market players have more confidence in information provided by IDC, Gartner and RIA Rating than that by the Ministry of Economic Development and Trade, among other things, due to changes in calculation methods. It is fair to assume that the foreign analysts have not considered the quickly growing total revenue of young IT companies, but these companies could hardly assure the increase in market size more than by 2–3%. Thus if any IT market growth occurred in 2013, anyway it was next to nothing.

One can acknowledge this situation as stagnation, but only from the position of company owners who failed to increase turnover. Considering the role of information technologies in society and economy and their net output, the IT market development in 2013 is hard to deny.

At the same time, the indicators dropped in almost all segments of the IT market — even rapidly growing ones. If, for example, in 2012 proceeds from sales of tablet computers according to various estimates increased 3–4 times, in 2013 — less than two times. Naturally, it does not say much about stagnation or crisis, but slowdown in the rate of growth is obvious. In this connection, taking into account active changes on the Russian IT market in 2013, it must be acknowledged that last year the IT market was developing by far less dynamically than in the year-earlier period.

At most, the analysts consider the complicated macroeconomic situation as a main reason of stagnation (as seen by sellers) or slowdown in the rate of growth (as seen by users). Economy does not grow (anyway at the previous rate), so does the IT market.

Indeed, the economic climate exerts influence on the IT market. However if one does not take into account other comparable factors it will result in somehow distorted and simplified interpretation of what really takes place on the Russian market of information technologies.

Among the factors influencing the Russian IT market against low GDP growth rate one can name:

1. Improvement of effectiveness of investment in IT

Since 2009, in expectation of new shocks business is learning to use the available IT budget in the most effective way. Selection of parties responsible for projects and decisions as well as of service providers becomes more careful. It is not inconceivable that companies will improve the investment performance as regards information technologies, so in order to solve IT problems they don't need to increase the IT budget even though there is room to do it.

In 2013 for the first time the analysts did not fid out a Pre-New Year sales lift and expenditures at the enterprise market. Thereby general forecasts of market growth were not confirmed. In early autumn of last year the analytical companies anticipated that the IT market at year-end would grow by 6–8%, but on the whole there was not any growth at all according to their calculations. It may be assumed that retail buyers and business customers went for their expenses in a more down-to-earth manner. Now purchases of computer equipment and investments in information systems to a lesser extent are pegged to certain dates (New Year or yearly closure) but are made as and when necessary. To check this assumption will be possible next year.

2. Emergence of new technologies

It should not go without mention that both cloud technologies and e-document flow allow for significantly saving expenditures on primary inputs in IT at least. Purchase of servers, workstations, printers and multifunctional devices could grow down not only by reason that there was not sufficient money to buy them but also owing to the existing alternative which allowed getting the same or even greater functionalities with reduced expenditures on IT.

3. Saturation in some segments

It is hard to deny the impact of such factor as market (certain segments) saturation. For example, a vast majority of Russians have personal computers. Notebooks and desktops are often bought to replace old devices. Besides, in recent years they are themselves ousted from the market by tablet computers which have gone down in value far and away.

4. Price-cutting

Price reduction of different devices is another factor slowing down the spending spree connected with information technologies on a nationwide scale. It is telling that, for instance, the Russian data storage system market in 2013 reduced in monetary terms by 5%, at the same time it increased in petabytes (total amount of delivered systems) by 11.4%.

5. Lack of sensational specialties

Finally, in 2013, the Russian market did not face any essential novelties (devices, technologies or products) that could have driven demand. This factor is less significant compared to those above mentioned, anyway it is worth mentioning.

All these factors are mentioned by the experts and representatives of IT companies but far and away less often than aggravation of the macroeconomic situation.

Nevertheless, from our point of view owing to these factors there is every indication that the utilization efficiency of IT services and IT products sold in Russia in 2013 grew significantly for Russian economy.

Communications Market

On the telecommunication service market the same processes are observable as on the IT market. The growth is evident only in rubles — by 5–6%. If the market size is calculated in dollars or if the inflation is accounted for, the drop/growth indicator will be next to nothing. However one must not speak about standstill in relation to telecommunication market too. New technologies are actively introduced, in different regions the LTE networks are put on stream, data rate speed is increased with

Individual segments of the Russian IT market

Indicator	2013	Drop (–)/Growth (+) following the results of 2013	Source
PC	10.24 million ($5,73 billion)	–27.2% (–32.1%)	IDC
Tablet computers	8.58 million pcs ($2.77 billion)	+108% (+66.8%)	IDC
UPS	1.95 million pcs ($503.6 million)	–17% (–9%)	ITResearch
Video conferencing systems	$86 million	–10,4%	TrueConf
Infrastructural video conferencing products	—	–13%	Polycom
Software-based video conferencing		+180% (first half 2013)	SPIRIT
Data storage systems	473.4 petabytes ($734.2 million)	+11.4% (–5%)	IDC
Printers and MFD desktops	4 million thousand	–10% (in monetary terms –4.1%)	ITResearch
(Document) flat-bed scanners	192 thousand pcs (-)	–25% (–33%)	ITResearch
Monitors	4.15 million pcs ($735 million)	–18% (–16%)	ITResearch
Servers	145 thousand pcs ($890 million)	–9.9% (–29.3%)	IDC
Total capacity of sold PABX	1,64 million ports	–11%	J'son & Partners Consulting
Projection devices	199.33 thousand pcs ($194.3 million)	–14%	ITResearch
Cloud services for Business Management System offices	20.5 billion rubles ($633 million)	+32%	Parallels
Software	$5 billion	+3.9%	IDC
Expenses on software	—	+8.9%	Gartner

* — preliminary data

permanent tariffs. For example, according to 3GSpeed, an average rate of mobile Internet among three biggest St. Petersburg mobile network operators increased two times over year. Similar increase is observed on other cities too.

According to J'son & Partners Consulting, in Russia as of April 2014 LTE networks in 58 out of 85 territorial entities of the RF were brought into commercial operation, and the LTE subscriber base approximated 2 million (which is equivalent of about 1% of the global 4G base).

According to Roskomnadzor (Federal Service for Supervision in the Sphere of Telecom, Information Technologies and Mass Communications), in the end of 2013 in Russia there were more than 7.5 thousand base stations of mobile telephone communications of LTE standard. According to GSA as of May 6, 2014, 7 operators all over the world including Russian MegaFon brought LTE-Advanced (LTE-A) networks with Carrier Aggregation into commercial operation.

Among the factors which keep down the telecommunication service market, the macroeconomic situation is almost of no importance. A greater influence is exerted by market saturation which actually is as high as possible, and the use of alternative technologies which allows for saving considerably. For example, the earnings of long distance and international telephony cannot possibly grow with the available Internet telephony.

The entire Russian ICT market in 2013 increased approximately by 5% reaching 2.76 trillion rubles ($87 billion) that amount to 4.1% of the national GDP. Compared to other countries, the share of ICT in the Russian GDP is rather small. Thus there still is a serious market growth potential.

Software Market

According to IDC, in 2013 the Russian software market increased by 3.9% and reached $5 billion. In the year-earlier period the growth was bigger — 10%.

To judge by other investigations, the software market has increased possibly much greater than 4%. For instance, the net sales of participants of ranking of the biggest Russian IT companies in the "software" category (according to Expert RA) increased by 16%, and the total turnover of the present study respondents grew approximately by 10%. Generally, it is little wonder that all three growth indicators differ as they reflect different things (only IDC directly measured the market capacity). However they should not be so different, naturally if there is no active suppression of foreign vendors by domestic companies.

As to software, there is no confirmation of such suppression yet. In the sphere of outsourced software development a share of domestic companies could have increased as they in 2013 were involved in large-sized federal projects.

At the same time, other analysts found out an increase in expenditures on software by 8.9%. By this indicator, Russia takes the second place among BRICS countries after India. Expenses on software and software market size are different things nonetheless growth indicators cannot differ by several percent (although this discrepancy cannot be wholly ruled out because it can be attributable to methodology mismatching).

And yet it is quite possible to assume that the software market increased a little greater than 4%. Not least because the sales of mobile applications are zooming that cannot be measured more or less accurately.

According to IDC, in 2013 the sales of data storage software increased approximately twice as much as the whole market (in particular, for network and system management and for business analysis). According to Ascon, the segment of engineering software (automated design systems, engineering data management systems, product life cycle management systems) either did not grow at all or increased by no more than 3–5%.

The software market growth rate was undoubtedly influenced by the mass change-over of small- and medium-sized businesses from software procurement to its lease (according to SaaS model).

Structure of the Russian IT Market

Structure of the Russian IT market

	2012 г.	2013 г.
IT services	19%	20%
Software	14%	15%
PCs	24%	18%
Mobile phones	16%	18%
Telecommunication and network equipment	11%	10%
Other equipment	16%	19%

Source: IDC

The change of the IT market structure is also can be thought as evidence of progress because in 2013 the share of IT services and software in the whole IT-market has increased. This indicator was and still is too low compared to developed countries but anyway it is growing.

Use of Internet Technologies

The Russian Internet industry is still booming. It was not taken into account when the size of the IT market was determined. By the results of 2013 its growth exceeded 20%, and the turnover reached 1 trillion rubles ($31.5 billion) that is about 1.7% of the Russian GDP.

Mobile Internet traffic reached 40% of all Internet traffic in Russia.

As before, the number of Internet users is growing. In early summer 2014 it exceeded 68 million people that are 47.7% of the whole RF population including children. Internet penetration in Russia is better than on the whole in Asia (27.5%), Middle East (40.2%), Latin America (43%), but worse than in Europe (63.5%) and the USA/Canada (78.6%). Thus there is room for improvement. The experts

believe that the growth of the Russian Internet users will remain up to 2020, but the pace will be lower. According to inquiry of FOM (Public Opinion Foundation), only 4% of Russians would like to connect to Internet, but due to some reasons they don't have the possibility to do it.

In Moscow, St. Petersburg and other big Russian cities Internet penetration has already reached or come near the sky line (80-85%). The growth in Internet audience occurs at the expense of small towns and settlements.

Use of Internet technologies in Russia

Indicator	Time	Absolute value	Indicator change	Penetration indicator	Source
Monthly Internet audience scope in Russia	Autumn 2013	66.5 million people over 18 years (everyday — 55 million people)	+8.7% (+17%)	57% (80% of all Internet users)	Public Opinion Foundation
Internet penetration	March, 2014	—	—	68%	Russian Public Opinion Research Center (VCIOM)
Number of subscribers of Broadband Internet access in private segment	End of 2013	27.3 million households	—	50%	iKS-Consulting
Volume of Russian Broadband Internet access market in household segment	2013	110 billion rubles	+10%	—	iKS-Consulting
Russian m-payment market	2013	35 billion rubles	+42%	9% of Russians	service UBANK
E-payment systems (payment terminals) volume	2013	2.4 trillion rubles (1,1 trillion rubles)	+27%	—	J'son & Partners Consulting
Involvement of Russians in e-comercio (regular purchase and financial operations)	October, 2013			81% (of all Internet users)	Findings of B2B International and Kaspersky Laboratory
Mobile Internet audience	Spring 2014			40% of citizens	St. Petersburg Internet Conference (SPIK)
Average time in minutes of Russian Internet users	March, 2014	121 minutes	+21%	—	TNS
Number of registered domain names in national domain .rf	May, 2014	820 thousand	+3.8%	—	Coordination center of national Internet domain
Revenue of RuNet	2013	1 trillion rubles	+ over 20%	—	St. Petersburg Internet Conference (SPIK)
E-commerce	2013	520 billion rubles	+28%	—	St. Petersburg Internet Conference (SPIK)
Total revenue of e-shops in Russia (number of e-shops by the end of the year)	2013	470 billion rubles (39 thousand)	+34% (+20%)	—	InSales

The digital gap is almost redressed because almost half of users (48%) live in villages and small towns. The prices in various regions are flattened out. Among Russian regions only in Far East some problems with Internet access are noted.

Cellular Communication and Mobile Phones

Russian market of cellular communication and mobile phones

Indicator	Time	Absolute value	Change	Source
Mobile device market	By the results of 2013	230.7 billion rubles	+15.6%	Company Mobile TeleSystems (MTS)
Total amount of mobile gadgets sold in Russia (ordinary mobile phones)	By the results of 2013	41.7 million pieces (22 million pieces)	–1.2% (–25.2%)	Company Mobile TeleSystems (MTS)
Smart phone sales	By the results of 2013	19.7 million pieces	+54.2% (in rubles +36.9%)	Company Mobile TeleSystems (MTS)

By the results of 2013, an amount of sold mobile phones is slightly greater than that of smart phones. However, in late summer Russians began to buy smart phones more frequently. By the results of Q4 the odds are in their favor — both in return and a number of sold units.

ICT Market in the Nearest Future

Judging by experts' forecast (confirmed by the Q1 results of this year), in 2014 the tendencies will be the same as last year. The growth of the ICT market will be the same fast-paced but its size will not change greatly.

IDC predicts the IT market reduction by the same 1% that in 2013. However the vigorous growth of individual segments will retain.

According to information of SKB Kontur, in four first months of 2014 via Diadoc system there were transmitted more e-documents than during the whole 2013 year. Therefore, by the most conservative estimates in 2014 one should expect the growth of e-document flow volume over 4–5 times compared with a year earlier.

The experts anticipate that Russian cloud service market will grow not less than by 30–40% per year. One of its leaders — Parallels — predicts that by 2016 cloud service sales to Business Management System enterprises will increase almost 2.2 times and amount to 55.6 billion rubles or $1.7 billion.

According to GfK, in three first months of 2014 about 5 million smart phones were sold. It is by 54% more than within the similar period a year earlier. Smart phone sales revenue was increased by 26% (up to 44 billion rubles).

The MTS company established that the market size of mobile devices in the Q1 2014 in monetary terms increased by 13.7% compared to the Q1 2013 to 55.42 billion rubles, and in natural units — by 7.8% up to 9.27 million pieces.

The RAEK experts think that even in the worst case scenario the Russian Internet industry in the next 5 years will grow by 3-5% however the growth at the level of 15% is the most probable.

The Role of the State

The State has a very significant effect on the Russian ICT market as it acts both as a major customer and a buyer, in addition, it deals with regulation that stimulated introduction of new solutions and development of telecommunication infrastructure.

Following the results of 2011, Russia moved up to a rather high 27th place among 193 countries in the UN rating by the level of Electronic Government development, having overtaken Ireland, Italy, Greece, Lithuania, Poland, and some other European countries. In the previous similar rating, it took 59th place only.

In all appearances, Electronic Government development is going on. In early May 2014, the head of the Ministry for Communications and Media Nikolai Nikiforov informed about the finalization of the project on introducing electronic interaction between federal executive authorities and regions using the Interdepartmental electronic interaction system. At the next stage since January 2015 the executive authorities will be able to request and receive data on vital records in electronic format.

The State also stimulated the development of telecommunication infrastructure. One of the next objectives is provision with accessible Internet of residents of small towns where commercial companies are in no haste to come to.

As a result of aggravated foreign-policy situation expressed by sanctions levied against Russia (including in software area), the RF Government held a course for import substitution at the IT market. What form it will take — in the beginning of July it was not clear. It is only known that the State will take yet another shot at mass change-over to domestic software or free software in federal structures. This time it may succeed that naturally will have an impact on the software market.

According to the Ministry for Communications and Media, only one fourth of the Russian software market is occupied by domestic software engineers. In terms of equipment this value is below 10%.

1.3. Russia in the International IT-ratings

Throughout recent years Russia improved its positions in the majority of various global ratings. However, this upward movement was, as a rule, slow. That is why Russia was never to come close to leaders, if a place in the rating was not conditioned by the country size. A single exception — just in a year Russia flew up 32 positions higher in the world rating of the Electronic government development (E-Government Survey 2012: E-Government for the People), having risen from the 59th to the 27th

place. This rating was published by the United Nations; it reflects the readiness and the feasibility of the State agencies from 193 countries to use ICT to provide the State services.

In reality, Russia jumped from one category of the rating to another — from the countries with emerging economics to the economically developed countries — in a year. Moreover, in this rating the countries are ranged based on the weighed index of estimates on three main components (the scale and the quality of online services, the level of ICT-infrastructure development and the human capital) and it is hard to change them in a year to overtake about thirty countries. Apparently, this breakthrough is caused by efforts on the E-government creation that were undertaken in Russia within several years, as well as the work with the rating agencies.

Very much depends on how accessible to analysts is the information that they can trust. Many successful movements of Russia and Russian cities up in the global ratings are associated not so much with real changes as with convictions and awareness of the rating's authors.

In the summer of 2013, for the first time after many years of our research we did not find any global high-tech rating where Russian position took a turn for the worse. From then onward Russia several times descended but more often Russia rose to slightly higher levels. It seems that in some cases the reasonableness of decline does not bear scrutiny.

From the look of it, the ratings' authors, as before, are often geared to negative publications in foreign media which by no means are always objective on the strength of embedded stereotypes of Russia's misperception, playing politics and creating image of the enemy. This behavior is partly provoked by the reason that Russian companies, universities and State structures not always are ready to furnish information requested by analysts.

Long-term observations of Russia's positions in various global ratings allow for bringing to light the following pattern: the better is the place the fewer is the impact of subjective expert judgments on country ranking.

Doing business

At the end of 2011, Vladimir Putin, the incumbent president of Russia (then, he held the position of the prime minister) demanded that by 2020, Russia should move up in the Doing Business rating from the 120th place to the 20th place. The ascension began straight away. In the next rating Russia turned to be by 8 places higher. A year after, Russia managed to outclass 19 countries more. As a result, Russia by the end of 2013 rose to the 92nd place among 189 countries.

It should be noted that the Doing Business rating is created by the World Bank experts that traditionally estimate the situation in Russia shade worse than other international organizations. In some instances its specialists held firm to pessimistic and not realistic forecasts concerning Russia's economic development. Therefore they labored under a mistake. Perhaps, this particular attitude toward Russia might be the reason of such low place in the Doing business rating.

As far back as two years ago, the RF Ministry of Economic Development and Trade on the basis of their data determined that Russia should have taken 44th place in this rating. This agency also can be under delusion but in this case its version is more realistic than that of the World Bank as in Russia

a lot of leading world corporations work actively and successfully. It is worth noting that even the World Bank's experts acknowledge in the interview the serious drawbacks of their rating.

First, it estimates business environment just in the chief seat of commerce (in Russia it is Moscow) and not country-wide. Secondly, it informs about a level of administrative control, but cannot serve as a direct indicator of business climate and quality of institutional environment. In essence, it presents only opinions of the World Bank's experts about the level of administrative control.

Nevertheless, they noted the certain progress of this control. The upward movement by 19 places to a large extent is contingent on simplification of grid connection procedures.

Due to exacerbation of relations between Russia and the USA, the upward movement of Russia in this rating is hardly expected following the results of 2014. At the same time, it is of no importance what way business environment and administrative control will change. Anyway they must be improved regardless of the country's place in the Doing business rating. All the more so, that even the 44th place (according to the RF Ministry of Economic Development and Trade) is by no means high.

E-Government Survey 2014: E-Government for the People

http://unpan3.un.org/egovkb/en-us/Data/Compare-Countries

The E-Government development rating, prepared by the UN experts, is updated every other year. After movement up from the 59th place in 2010 by 32 positions in 2012 the Russia's position has remained unchanged. In 2014, it retained the sufficiently high 27th place.

World Competitiveness Yearbook (by IMD)

The 64th place of Russia in the competitiveness rating prepared by the International Institute for Management Development, Switzerland looks a regular oddity. This rating considers the following 12 factors: institutional quality, infrastructure, macroeconomic stability, health and basic education, higher education and dedicated training, efficiency of services and goods market, labor market efficiency, financial market maturity, level of technological development, size of internal market, competitiveness of companies, innovative capacity.

In majority of these indicators the place of Russia should be much higher (for example, its foreign debt which influences macroeconomic stability is very low), and in the rest — somewhere in the middle.

However, the rating's authors somehow overestimated certain existing problems. In their opinion, there are plain to see a low efficiency of State institutions (118th place), an insufficient innovative capacity (78), an inefficient antitrust policy (116), a financial market immaturity (121), a low level of competitiveness in services and goods markets (135), and a credibility gap with regard to financial system (132nd place).

Since last year, Russia rose by three positions. Much of it is owed to macroeconomic factors.

Global Innovation Index (Bloomberg)

http://www.bloomberg.com/slideshow/2014-01-22/30-most-innovative-countries.html#slide14

In the rating of the world's most innovative States which is compiled by the Bloomberg agency, Russia dropped by 4 positions all the same taking the high 18th place. Ranking covered only 33 countries

but at the same time the information of more than 200 countries was analyzed (most of them are not included in the basic rating).

The agency's analysts considered the following seven factors: R&D intensity (Russia took 33rd place), productivity (47th), high-tech density (7th), researcher concentration (25th), manufacturing capability (17th), tertiary efficiency (4th) and patent activity (9th). The information was provided by the World Bank, the World Intellectual Property Organization, and the Conference Board organization, the Organization for Economic Cooperation and Development, and UNESCO.

Global Innovation Index (Cornell University)

Aside from Bloomberg, the Global Innovation Index rating is prepared by the Cornell University jointly with the INSEAD business school and the World Intellectual Property Organization. In the last year, Russia rose by 13 positions in this rating and took 49th place. In 2012, it dropped from the 51st to the 62nd place.

Between the 14th–18th places in the Bloomberg rating and the 50th–60th places in the Cornell University rating there is a whale of difference that may be explained by the fact that Bloomberg basically relies upon quantitative values whereas the Cornell University experts (and their partners) — for the most part, on judgmental estimates.

IDI ("ICT Development Index")

http://www.itu.int/ITU-D/ict/publications/idi/

As per the 2011 results, Russia rose by 2 positions in the ICT Development Index of the International Telecommunication Union and took the 38th place, having closely approached to Portugal that occupies the row above.

By the end of July 201, there have been no updated versions of this index yet.

Networked Readiness Index

According to the World Economic Forum, Russia in 2014 took the 50th place among countries all over the world in terms of networked readiness. A year ago, it was by 4 positions lower. Besides objective scoring (for example, by the number of Internet users), the place of a country in this rating is determined by such judgmental estimates as country's business climate, State policy in the IT area, practical regulation of IT industry as well as economical and social influence of information technologies.

The Web Index

The World Wide Web Foundation marked down the Russian position in their global rating of countries in terms of level of development and Internet usage "The Web Index". If in the 2012 survey it took 31st place, then in 2013 — already 41st. In the previous years Russia progressively improved positions in this rating. A drop by 10 places, most likely, is caused by very low scores that the country

received for Freedom and openness — 26.5. In all appearances, the drumbeat of adopted laws regulating activity on the Internet came into play. If they are looked at objectively, it will turn out that Russian segment of the Internet is no less free from State regulation than American or German segment. Some restrictions are imposed in Russia with a longer delay than in the West. However, the US estimate for Freedom and openness in the Web Index is almost 50 points higher — 71.

The kerfuffle over adopted laws reflected also on the positions in the rating of the international nongovernmental organization Freedom House. Russia got there the 41st place among 60 countries. Some Russian political leaders expressed their amazement at this case because among leaders of the rating there are countries (for example, the USA, Germany, France) where global Internet is cracked down much stronger than in Russia.

The A.T. Kearney Global Retail E-Commerce Index

In the A.T. Kearney global retail e-commerce rating Russia took the 13th place among 30 developed and developing countries. The list is headed by China with the world biggest number of Internet users. But for instance India with more than 1.2 billion people was not included in the rating owing to infrastructure problems.

In opinion of rating's authors, the population of developing countries faster tune themselves to current changes than people from developed countries. The inhabitants of developing countries use telephones for search for goods, price comparison and information sharing with their friends in social networks.

Russia with 18% of forecasted annual average growth rate by 2018 and online business volume of $10 billion is transformed in one of the e-retail markets appealing to both domestic and foreign retailers. Among all European countries, it enjoys the most numerous Internet users' community (70 million people). 33 million of Russian people buy goods online. At the same time, the experts forecast that Russian online business will grow at the average rate of 18% by 2018.

Internet Data Transmission

Russia takes the 20th place in the world in average data transmission with the indicator 7.8 Mbps. The lagging behind leaders is not so big if we take into account the growth rate. In a year, the average speed in Russia increased by 53% (more than in any other country). First three places are taken by the Netherlands (12.5 Mbps), Switzerland (11.6 Mbps) and the Czech Republic (11.3 Mbps). This rating was prepared by Akamai.

Innovation Cities Global Index

http://www.innovation-cities.com/innovation-cities-index-2014-global/8889

In the rating of the world's most innovative cities, Moscow moved up from the 74th to the 63rd place, and St. Petersburg — from the 84-th to the 81st in a year.

The other Russian cities get far behind the two Russian capitals: Yekaterinburg (213th place), Kazan (222), Novosibirsk (253), Samara (266), Nizhny Novgorod (282), Krasnoyarsk (303), Kaliningrad (314),

Rostov-on-Don (317), Tomsk (343), Perm (354), Saratov (355), Omsk (371), Volgograd (378), Vladivostok (381), Izhevsk (394), Barnaul (405), Orenburg (407), Togliatti (408). It is questionable that the rating compilers managed to collect objective information on all cities of the world. For instance, Minsk has the 435-th place alongside Kabul. Such adjacency is hardly justified.

The Top 100 Outsourcing Cities

For three consecutive years, the ranking of the cities with the best options for the software development outsourcing prepared by the Global Services company included four Russian cities. All of them have changed their positions insignificantly. St. Petersburg is ahead among all Russian cities. Last year it took the 32nd place, this year — the 34th. Moscow remained at the 56th. Nizhny Novgorod moved up by 3 positions (59th place), and Novosibirsk — by one (91). This rating is headed by Indian cities and cities of other Southeast Asian countries.

In various ratings where ranking is specified by such simple indexes as a number of the Internet users and cellular network subscribers, Russia takes a place which roughly corresponds to its economy (8th place) and population size (9th place). As a rule, even a little higher.

1.4. Achievements of Individual Russian Companies in the International IT-ratings

Many large Russian software exporters actively participate in various international ratings created by the globally authoritative analyst teams. However very often they refuse to participate in the ratings where authors require to disclose turnover and profit data. So they try to avoid disclosure of their financial data in their country. Besides, the software vendors sometimes do not wish to demonstrate their Russian origin as they introduce themselves at the corresponding markets as local resident companies (in order to use the status of these countries' national manufacturers).

Due to these reasons and because of the information protection generally not alien to many Russian middle-aged businessmen (who embarked upon a career in the time of perestroika), the representation of Russian companies in a number of software vendors' ratings is much lower than it can be expected in the present context. First of all, it concerns the ratings which assume providing of the financial Statements verified by auditors as ranking is made by the turnover (or its growth) indicator. However, Russian companies are gradually becoming more open, and their representation is growing even in those ratings for which the turnover data has to be disclosed.

The Russian service companies have a very different attitude towards the participation in the international ratings. Among the most well known ratings, we can note two versions of the Top-100 world's IT outsourcing companies: Global Services and IAOP (International Association of Outsourcing Professionals). In these ratings, which are mainly based on the quality of rendered services than on the company size, a significant number of companies (only India and the USA have more companies in

the ratings) represent Russia. Currently, the number of Russian software development service providers in the Global Services and IAOP ratings looks very close to the maximum extent possible, and it may be even more increased due to the progress in other Russian companies' information transparency. Totally, 10 Russian companies have been included at least once in the Top-100 outsourcing companies according to Global Services and IAOP.

In recent years, the share of Russian companies in these ratings has kept at the level of 5–8%. It is to note that not only IT service providers but business process outsourcing (BPO) service providers are also included into the Top-100 outsourcing companies in the world. Excluding such companies from the ratings above, the proportion of Russian IT-service providers will be much higher than 10%. And summing up all achievements of Russian, Ukrainian, and Belarussian companies in these ratings, the total share of service companies from the Russian-speaking industry of the former USSR among the top world's IT service companies will be much over 15%.

The Global Services and IAOP analysts not only identify the global top-100 leading outsourcing companies but also define the best ones in various categories that allows for judging the more important strengths of the Russian software developers. The companies with their main development centers in Russia are considered to be the leaders in the following areas: Product Engineering, Software/ Hardware, Information and Communication Technology Services, Entertainment & Media, Automotive, Financial Services, Health Care, Government and Industry-Specific Services.

The 2013 Global Services 100

According to Global Services, the Russian representation in the rating of the global top-100 leading service companies in 2013 increased due to return in the list of Artezio and Exigen Services (under new name). Russia in this rating is represented by 9 companies: Auriga, DataArt, EPAM Systems, First Line Software, Luxoft, MERA, Reksoft and Return on Intelligence (before 2013 — Exigen Services).

Among these 9 companies there are no first-timers. Some of them temporarily leave the list but return back afterwards.

In the Global Services 100 rating, there were also companies from Ukraine and Belarus as well: IBA Group, SaM Solutions, SoftServe, Intetics. All three countries are culturally and economically close in spite of existing big and small conflicts between them. So we can quite reasonably mention the so-called "Russian-speaking community" of the service IT companies. The strengths of the companies from these three States are approximately identical. First of all, they have high quality of education in the field of physical and mathematical sciences, creativity and experience in performing of complex projects.

The 2014 Global Outsourcing 100

The Russian representation in the IAOP rating in the last 2 years changed insignificantly. In recent years it increased and stabilized. The expansion in the number of companies in this rating testifies the highest technical level of Russian engineers which is also added to the Russian companies' growing understanding of market requirements and skills of doing business. Some companies from time to time come out of the best 100 as well as from category leaders. However they are replaced by others. So the total number remains the same.

Like in 2012, IAOP included 6 companies representing Russia in the Top-100. They are Luxoft (18th place), MAYKOR (38), EPAM Systems (51), MERA (66), Auriga (89) and Reksoft (93). First Line Software and Artezio came out of Top-100 according to IAOP, but MERA and MAYKOR appeared instead. MAYKOR is a first timer, it provides IT services and focuses primarily on the Russian market. Inclusion of IAOP in the rating is largely owing to its activity of IAOP Chapter in Russia.

FirstLineSoftware and Artezio lost their places only in the basic list but remained as leaders in individual categories.

In "The Global Outsourcing 100" there are less Russian companies than in "The Global Services 100". It is explained by the fact that IAOP covers with its rating a larger range of outsourcing directions (including the business process outsourcing sector, where Russian export companies are not represented abroad).

Except Russia, neighboring Ukraine and Belarus (the IBA Group, Intetics, Itransition, Oxagile, TEAM International, Miratech, SaM Solutions, Softjourn, SoftServe) are also represented in the IAOP global rating.

The IAOP experts selected the winners by a number of criteria, such as the turnover growth and the company staff size, the positive customers' feedback about their work with the outsourcing services provider, company's top management experience, and others.

PwC Global 100 Software Leaders

According to PwC, the Kaspersky Lab advanced from the 57th place to the 54th place in the top-100 software companies due to growth of income by software sales (with the sales result of $628 million and the turnover of $750 million). The last PwC Global 100 Software Leaders rating was published in spring 2014 but prepared on the basis of the results of 2012. Contrary to the previous version, it has no separate rating for the EMEA region and the emerging markets. Kaspersky Lab took the 12th place by the results of 2011 in this region and the second place in the emerging markets (Emerging Markets 100), being slightly behind the Brazilian TOTVS.

In the EMEA region the 1C also entered in the first hundred of major companies (30th place, software sales revenue was $360 million) and in the category Emerging Markets 100. Besides Kaspersky Lab and 1C (8th place) there were three Russian companies more — Dr. Web (42th place, $38 million), ABBYY (51st place, $31 million), Positive Technologies (68th place, $25 million).

Deloitte Technology Fast 500 EMEA

According to Deloitte, among 500 most fast-growing high-technology companies in the EMEA region, as a rule, there are not big software exporters. Last version includes three Russian companies: CTI (160th place), ER-Telecom (346th place) and Stec.com (428th place).

Many other Russian software exporters promptly increased their income for the last 5 years, but they did not provide Deloitte analysts with the financial statements.

It must be pointed out that a number of companies with Russian share traditionally participate in the Deloitte Technology Fast 500 ratings in other regions. In particular, EPAM Systems regularly ranks among 10 leaders of fast-growing technological companies in the North American region.

Software 500

Only five Russian software developers were present in the rating of 500 world best software companies. Their turnover permit several tens Russian software development companies to be present in this rating however few of them provided their turnover information. Such data by the results of 2013 was presented by EPAM Systems (in a year the company advanced in Software 500 from 181st to 140th), Luxoft (from 188th to 178th), PROGNOZ (from 292nd to 254th), Artezio (from 466th to 427th). For the first time Diasoft was included in the rating (300th place).

FinTech 100

In 2010 and 2011, only one Russian company (Luxoft) was included in the FinTech 100 (the rating of the global leading providers of technologies and services for the financial industry). In two last years it was added by Diasoft. Compared to 2012 Luxoft rose from 68th to 62nd, and Diasoft — from 88th to 83rd.

Magic Quadrants of Gartner

The Gartner Group analytical agency ratings are one of the most prestigious ratings of product companies (software product vendors). This agency year over year publishes so-called Magic Quadrants of Gartner, which include products and companies that are among the leaders in certain software segments. Since 2012, three new players were unexpectedly added to the Russian software leaders, which are traditionally present in their "quadrants" (Kaspersky Lab, ABBYY, Parallels, Acronis and some others). These companies are PROGNOZ — in the Business Intellegence quadrant, Diasoft — in the Core Banking Software quadrant, and InfoWatch — in the new Data Loss Prevention quadrant.

In the summer of 2013, Gartner included Kaspersky Lab in the new "magic quadrant", which is comprised of the global vendors of mobile device management solutions, Mobile Device Management (MDM).

Besides, according to the Gartner experts, a small Moscow company IntelTech with their products for the Big Data took the lead in the 2012 Cool Vendors list.

27 February 2014 Gartner again included Prognoz's flagship product Prognoz Platform in Platform Business Intelligence and Analytics Platforms. Polling of Prognoz's showed that this company's products are chosen due to ease of use and high quality.

Other Achievements of Russian Software Developers:

According to the American INTERNET TELEPHONY periodical, VideoMost Space of SPIRIT became the Product of Year 2012. The SPIRIT software products integrated in various telecommunication devices are used by over 1 billion people in more than 100 countries globally.

In April 2013, two Russian companies — Softkey and Next Media Group — were included in the top-100 innovative and technological Internet projects according to Red Herring, one of the largest media holdings.

The chat bot Eugene Goostman developed by Vladimir Veselov team on the basis of artificial intelligence technology and promoted by i-Free, became the world's first program that successfully passed the famous Turing test: over 30% mistook "Eugene Goostman" for a human being.

The voice biometrics of the Speech Technology Center took the first place at the competition NIST SRE 2014 — unofficial Speaker Recognition Evaluation world championship. Over the 18-year period this biennial competition is held by National Institute of Standards and Technology by order of the U.S. Government.

Another famous Russian vendor — Parallels — was included in the top-50 leading suppliers of cloud virtualization 2014 according to the American CRN Magazine. This magazine selects the most successful suppliers of virtualization solutions aimed at channel sales.

In the spring 2014, InfoWatch made the list of 20 most promising world vendors in the area of corporate information security according to the American CIO Review.

The cloud platform Parallels hit top 3 best solutions in its class according to Website Magazine.

Acronis was included in the top-5 according to CRN Partner Program Guide 2014 among companies best stimulating and encouraging their partners by offering them the most favorable business terms and conditions.

Chapter 2

Volume and Structure of the Russian Software Export

2.1. Basic concept and data

The basic concepts used in the research are as follow:

— in our research, Russian software export includes Russian software companies' cumulative income from sales of software and of the IT-services gained in the foreign markets (including the markets of the near-abroad countries, although many software developers do not consider sales in the CIS as export);

— those companies which had been historically established in Russia, which have the main development centers in Russia, which gain the major part of the added value thanks to their own software or to their IT-services - are considered as Russian software companies;

— some companies can also sell hardware (terminals, simulators, special recorders, etc.) but that hardware should be managed by software produced by these companies.

It is supposed that no less than 1600 Russian companies are software exporters (i.e. the companies that have at least 1% of their income from sales outside Russia). In the RUSSOFT database, there are almost 1700 companies that are mainly exporters. However, this database requires regular replenishment taking into account the large number of startups for the last 3–4 years. Last time it was replenished in early 2014.

As of 1 September 2014, 4330 organizations dealing with IT are accredited at the Ministry of Communications and Mass Media. The majority of them are software companies (or government institutions engaged in software development). However there are also a lot of companies that could be more properly classified as "system integrators" or "software distributors" (including those operating on the SaaS model). They also, as a rule, have a team of programmers, they elaborate and tune different systems, but they cannot be called the real software companies.

Besides, in our calculations we take some holdings for a single company since they have the common management, common gross income and export figures, although the enterprises joining the holding have been accredited at the Ministry of Communications and Mass Media as independent individual companies. At the same time, it must be acknowledged that not all companies have been accredited at the Ministry of Communications and Mass Media yet.

According to our assessment, at least 3000 stable commercial software companies operate in Russia. Probably, there are considerably more such companies. In this case (as well as in other cases when we did not have enough actual information), the most conservative estimates were used in our calculations. Therefore, any overestimation of cumulative software export following the results of our research is improbable. Most likely, there is a small underestimation.

Following the results of 2014, the cumulative sales volume of the software development companies in the Russian market in 2013 increased by 14% and approximated $5.6 billion. The export increased slightly higher — by 17% and reached $5.4 billion. Thus, the cumulative turnover of Russian software companies reached $11 billion having increased in 1 year approximately by 16%.

Absolutely the same growth of income 2013 was determined by the Expert RA rating agency for the participants of its ranking who represent the software development sector.

At the same time, according to IDC, the Russian software market increased in 2013 only by 4%. There is also a significant discrepancy of absolute values. According to IDC, the volume of the whole Russian software market is about $5 billion.

We consider that the sales of Russian software companies only in the Russian market amounted to $5.6 billion. In addition, minimum $3 billion is accounted for by foreign vendors (such as Microsoft, SAP, Oracle, IBM and many others). Therefore, simple addition of these figures should have resulted in conclusion that the total volume of sales of software companies (Russian and foreign) should exceed $8.5 billion.

A considerable mismatch of data is due to the fact that the cumulative result of software companies (Russian and foreign) from sales in Russia and the volume of the Russian software market determined by analysts of IDC and other similar agencies are very different matters to say the least. As a general rule, foreign analysts in the volume of software sales consider only sales of their own licenses, but the revenue of software companies can also be gained by rendering of various IT services and selling of equipment manufactured on the basis of own software.

Besides, in the vast majority of cases, the sales of Russian companies apart from their own software or software development services include also sales of licenses of foreign vendors on whose platforms the software developed by the Russians is used.

This part is not so big compared to the cumulative income of software companies (probably, it is not higher than $500 million), however it is of some importance. Taking the above mentioned into account, the existing disagreement with calculations of IDC and other analysts do not look significant at all.

In a few past years the income of the Russian companies is growing especially fast from mobile application development — by tens of percentage points per year and sometimes by an order of magnitude. According to J'son & Partners Consulting's estimates, a number of mobile application developers in Russia increased in three years by a factor of 2.5, and in 2013 amounted to 4100 (by all tokens, there were considered not only companies but also individuals who operate without formation of legal entity).

Basic figures characterizing the Russian software industry

Cumulative turnover of Russian software companies (including IT services and sales of vendors' licenses) in 2013	over $11 billion
Software and software development services export in 2013	$5.4 billion
Total size of staff	at least 130 thousand people
Staff size of Russian companies' software development centers in foreign countries	about 25 thousand people
Total number of software developers	at least 430 thousand people
Volume of sales of Russian software companies (products and services) in domestic market 2013	$5.6 billion
Number of stable Russian software companies	at least 3,000
Number of companies including those operating for export	at least 1,600

If we attempt to forecast on the basis of expectations of respondent companies, then the annual growth of software export in 2014–2015 will be as much as 15%. However many factors can affect this figure either way. These factors for segments of software products and custom development sometimes coincide, sometimes differ. Their potential impact comes under review in the relevant sections of this chapter.

In the current conditions, return to the growth rates of 40–50%, which were observed at the low initial base, is improbable. Nevertheless, the industry still has a potential for growth in the next several years at the level of 15-20 (with a possible small acceleration up to 30% in some years) in case the world economy will recover. Thus, an increase may be predicted by all export segments: software products, the custom-made development, and R&D of Russian centers of foreign companies.

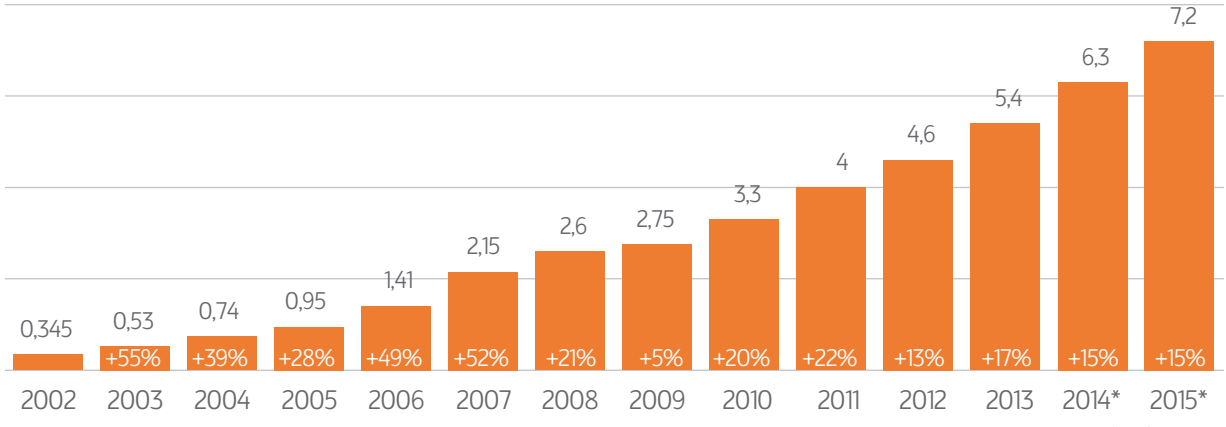
However, it should be noted that the current achievements were gained without any significant state support. This support came into being in recent years (first of all, concerning financing of startups and perspective scientific developments, construction of technological clusters, premium exemption). This support already promotes an increase in the export growth rates and can serve as a good engine of growth in the next years.

Another important reserve of the industry's export growth is the state support in the form of elimination of administrative barriers, first, in the customs and currency regulation, as well supporting of international marketing.

The effect of this support shall not be only considered from the point of view of tax payment receipt and employment growth. The increase in the software export allows to diversify the Russian economy and to reduce its dependence on fluctuations of the world prices for raw materials.

Software exporters gain the competences and knowledge abroad that will be used by them to work in the Russian market. Upgrade of outdated sectors of traditional economy in Russia is impossible without Information Technology. It is also necessary to consider that all modern enterprises of the hi-tech economy sector depend on software. The more high quality developers with experience of the successful global competition are in Russia, the higher are the chances to create globally competitive solutions in any areas of innovative economy.

Software export volume in 2002–2015, $ billion



* — forecast

2.2. Consideration of Effectiveness of Social Tax Incentives' Application to Software Companies

For two consecutive years we can see an obvious effect gained as a result of granting social tax exemption to software companies (provided under the Federal law No. 212). Companies that take advantage of this incentive have increased their turnover by 20% and their export volume — by 24%. For those that did not use the incentives, the corresponding indicators were 4% and 12% (i.e., the turnover growth rates were approximately 5 times lower and export growth rate was 2 times lower).

If we assume that companies which enjoyed incentives gained higher growth rate only thanks to social tax exemption, then the preferential tax treatment resulted in the increase worth $830 million of cumulative business of Russian software companies in 2012 and worth $1.16 billion in 2013 (the increase of export in these years was $252 million and $495 million respectively).

Such assumption is not fully well-posed as users of incentives could have grown not only thanks to the preferential tax treatment. However it allows calculating the maximum possible effect in the circumstances where we cannot exactly find out all factors influencing the result of business.

After three years of operation of the preferential tax treatment there is still no information that tax exemption has somehow impelled the software companies of Russian origin which had come under foreign registration to come back under Russian jurisdiction or to change their mind about relocation to another country. Transfer of business to Russia within so short period of operation of the preferential tax treatment could hardly have happened in the past three years. A longer time is needed for the companies to be certain that the situation should not change.

Besides, the incentives operate so far only up to 2017. If companies begin to return their business to Russia en mass it may cause not only the faster development of software industry but also an

Influence of tax incentives under the Federal law No. 212 upon the basic economic data provided by respondent companies

	With incentives	Without incentives
Number of staff	21.1 thousand	6.3 thousand
Anticipated growth of personnel in 2014	+13%	+12%
Cumulative turnover by the results of 2013	$1.08 billion	$0.3 billion
Growth of cumulative turnover	$181 million (20%)	$12 million (4%)
Cumulative export income by the results of 2012	$697 million	$47 million
Growth of cumulative export income	$134 million (24%)	$5 million (12%)

increase of tax collection to the budget, as well as an increase of social tax collection to the social funds. However it requires not only improvement of tax system but also correction of the Russia business environment as well as implementation of a flood of measures to support software developers and exporters. An important factor would be the termination of confrontation with the US and EU in regard to events in Ukraine.

2.3. Composition of Software Export

It is worth noting that according to the Central Bank of Russia, the total volume of cross-boundary services in the area of computer technologies (computing services) in 2013 amounted to $2.51 billion. Evidently, the definitions "computing services" in terminology of the Central Bank of Russia and "software development services" in our survey in this case disagree (arguably, they do not agree 100%, and the methods of export volume calculation are quite different).

The fact is that due to a serious barrier on the way of export from Russia in customs regulation, the software development industry in Russia had long ago shifted to execution of software export in the form of rendering cross-boundary services, that is why in a great measure the cross-boundary computing services shall be understood to mean export of both software development services and software products. By estimates of RUSSOFT experts, no more than 10% of actual Russian software export is recorded in the customs statistics as software export (often together with the hardware).

Nevertheless, data of the Central Bank of Russia on the volume of cross-boundary computing services is a guide mark for assessment of accuracy of the volume of Russian export of software development services and software products which we deduce on the basis of this survey ($5.4 billion).

The fact of the matter is that our export data include proceeding from software export registered by customs (and reflected in the RF customs statistics), from provision of cross-boundary computing services (reflected in the Central Bank of Russia' statistics) as well as from sales of software development services and software products of Russian companies' outlets worldwide.

If we take the total volume of Russian software companies' income from sales of software development services and software products overseas as 100% ($5.4 billion), then 80% of work is generated by the Russian developers, whereas the captive development centers of Russian companies abroad provide 20% of income (about $1.1 billion). Therefore, only a half of the export volume of software products and development services generated by Russian companies return to the RF in form of receipts to the companies' currency accounts in Russian banks. The rest arrives in the accounts of their subsidiaries abroad.

The data of the Central Bank of Russia on the volume of cross-boundary computing services in the field of R&D was also useful as an indicator of volume of foreign captive development centers in Russia. According to the Central Bank of Russia, the export of R&D services in 2013 was worth $383 million. Taking into consideration that the statistics of the Central Bank of Russia concerns not only services in the IT area (by estimates of RUSSOFT experts this share is about 20% of the total amount of cross-boundary R&D services), it is possible to assess the export volume of IT services generated by Russian scientific and educational institutions at a level of $80 million. In this case, the export volume of

Composition of software export according to export revenue sources

	2008	2009	2010	2011	2012	2013	Absolute value in 2013
Software development services provided by Development Centers of foreign companies, universities, and research institutes	15%	12%	11%	9.5%	11%	10.2%	$550 million
Sale of software and of ready-to-use solutions	30%	37%	41%	40%	43.5%	43.4%	$2350 million
Software development services	55%	51%	48%	50.5%	45.5%	46.4%	$2500 million

software development services produced by the captive centers of foreign corporations in Russia will make up $470 million.

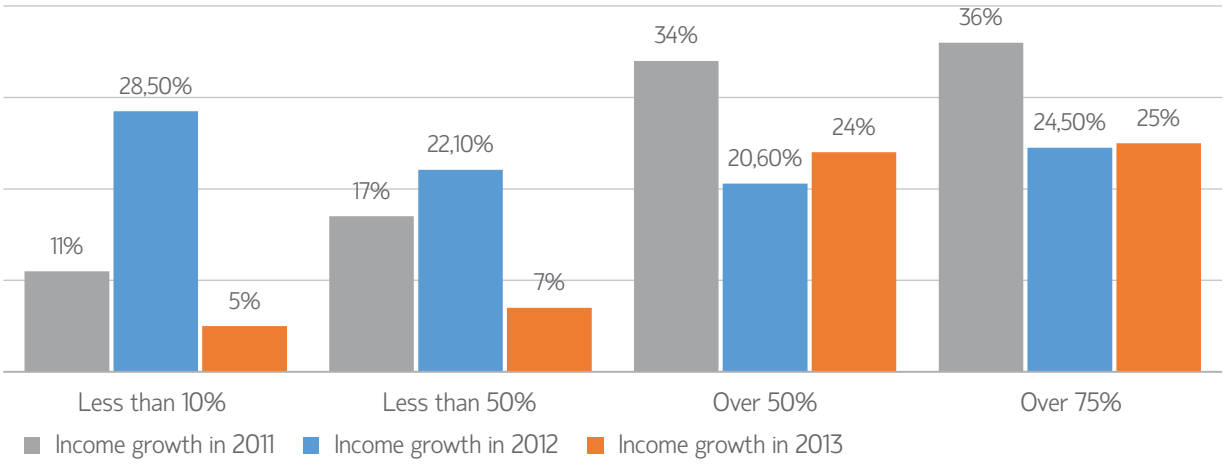
The results of our survey in 2012 for the first time showed the departure from the rule that "the more companies were focused on foreign markets, the higher the turnover growth indicators were". That might be a consequence of implementation of several large projects in Russia (in 2012 the total turnover of companies grew more than their export). Judging by the results of 2013, this rule again turns to be fair. Random fluctuations of optimal ratio of export income and sales in the domestic market are quite possible however the evaluation over the past few years shows that if the software development companies intend to provide the stable turnover growth, the export share in their consolidated revenues must be at least 50%.

The share of Russian software export in the total export income of Russian enterprises and organizations (which has remained almost the same in 2013 compared to 2012 and amounted to $523.2 billion) is growing. By the results of 2013 this share exceeded 1% (a year ago it was 0.88%, and by the results of 2012 — 0.8%). The share of Russian software is not great yet, but most likely it will be growing in years to come.

In Moscow and St. Petersburg, the software export share in the volume of regional export is higher than the average Russia-wide value — about 2% and 5%, respectively. Thus, it is necessary to consider that the exporters of energy products, wood and of other natural resources are registered in the both Russian capitals, but resource extraction and processing is generally conducted in other regions.If we ignore these oddities, the share of software and of software development services from these cities will be quite significant.

Now, the software industry is quite important for the Russian export. For comparison: the share of foodstuff is 3% of the total Russian export, that of chemical industry — 5.8%, that of machinery and equipment is 3.4%, the share of cars and trucks is 0.4%, that of arms — 3%. The next and quite achievable target for the Russian software industry can be the volume of arms export, which reached $15.7 billion following the results of 2013. The existing gap is gradually closing. However, last year, there was no essential reduction of the gap to this export segment as the growth of armament export in 2013 increased by 3%, and software export and software development export increased by 17%.

Income growth of companies with different export shares



It is important to note that when the software export volume is determined, we do not consider the income of the Internet companies the commercial success of which is mainly assured by software developers. Earlier, they were mostly oriented towards the Russian market and on a second-priority basis — towards the CIS market. However, for the last 2 years, after the successful IPO, Yandex and Mail.ru Group (Russian Internet giants) began their expansion in the foreign markets. Aside from them, there are a great number of others that are also oriented towards the foreign audience.

If, following the results of 2013, the cumulative turnover of Yandex and Mail.Ru Group amounted to $2.14 billion, (by 1/3 more than a year before), the size of the entire Russian Internet economy is $23 billion (according to the data of the Russian Association for Electronic Communications) with the annual growth of 25–30%. In addition, we should consider that the boom of Internet companies' startups began in Russia, and many of these companies are initially oriented towards the global market. Therefore, the export income from Internet services will grow.

It is not groundless to consider Internet companies as software ones. Their successful promotion in the global market is possible, first of all, thanks to their new software solutions. Therefore, their export income should be considered in our study in the future.

As these companies can be considered neither as standard software developers nor as customized software developers, their export revenue shall be accounted separately. There are serious problems concerning determination of this value. First of all, it is difficult to identify the export revenue in the cumulative income if an Internet company mainly earns at the expense of advertizing.

Such advertizing may be oriented towards both the Russian audience and the audience of Internet users in the near- and far-abroad countries. Besides, it is incorrect to sum up the revenues (such as the export ones) from advertizing and e-commerce. It is more correct to identify as an online store income not an entire turnover but only the margin which is not as great for e-commerce as for offline commerce. It is essential to decide whether we can consider the revenues that were gained by Mail.Ru Group from purchase and sale of foreign hi-tech companies' shares as the export revenue. In 2012–2013, these revenues were $1.85 billion

There are a lot of methodical difficulties but some estimates still can be made if more complete information about Internet companies is available. For example, the export share can be calculated taking into account the proportion of the Russian and foreign audience. Presently, about a half of Russian-speaking Internet users are citizens of other states.

Based on the available data, we can assume that the export volume of the Internet companies that use their own software and therefore can be accounted for in investigation of software development export industry exceeds $1.5 billion. Taking into account this addition it would be possible to assess the total Russian IT export at the level of $6.9 billion (however in this survey we do not include the export income of Internet companies in our final estimations).

2.4. Software Development Services' Export

Export volume — $2.50 billion
Growth rate — about 20%

The main part of growth of the Russian software development services' export over the few last years has been provided by large companies. However if previously foreign sales of companies with turnover less than $4 million did not grow at all (by the results of 2012, they even decreased by 0.4%), in 2013 they increased by 8%.

Nevertheless, companies with turnover over $4 million all the same demonstrated the best outcomes among all categories of service companies. Their total export increased by 24%. As a matter of fact, foreign sales of almost every large company increased at least by 15%. The large service enterprises can obtain more profitable orders and therefore pay to their employees more than small businesses do. This has been and still is the reason of transition of engineers from SME to large companies at the labor market.

Large companies have another advantage: they can staff up by establishing captive development centers located in different Russian cities and abroad, or by acquisition of foreign companies.

Until quite recently, only large and medium-sized enterprises (with staff number 50 people at least) had social tax exemptions that gave them additional competitive advantages at the labor market.

Conditions for conducting business for large and small companies in the last 2 years somehow equalized thanks largely to reduction of minimum staff number which allows companies to pretend to get social tax incentives (in 2012 this minimum came down from 50 persons to 30 persons and since January 2014 — to 7 persons). The last reduction could not naturally impact on increase of turnover and export of small companies by the results of 2013, but it can have positive effects on the next year results.

Perhaps, the situation of SME has also improved due by appearance of Technoparks in some Russian cities. Several such Technoparks provided the preferential rent rates. Experience shows that good conditions of employment and correct organizational management can considerably raise labor

productivity of software developers and as a consequence provide a certain increase of turnover without hiring new employees.

An increase in the growth rate of export of software development services from 10% in 2012 to 20% in 2013 is attributable not only to improved business environment (not just for small companies) but also to more active recruitment of staff by leading Russian service companies in their captive centers abroad. This recruitment which had enhanced within the last two years provided several tens of percentage points of the increase in export income in 2013.

The lion's share of the increase in software services export in 2013 was provided by Luxoft and EPAM Systems which are leaders in their sphere not only in Russia but also in the whole Central and Eastern Europe. EPAM Systems, though being a Belarussian company, is viewed historically in our survey as a Russian software company since from the very beginning it was growing largely by acquiring Russian companies and by developing their own captive centers in Russia.

Following in steps of first Russian companies of IT sector Mail.ru and Yandex, EPAM Systems successfully held the initial public offering at the New-York stock exchange, EPAM Systems' preparation for the IPO urged the company to increase the turnover in 2011 that contributed an additional hundred million dollars into the service industry's total export volume. The company retains high growth rates over consecutive three years. By the results of 2013, its turnover increased by 28% and amounted to $555 million. At the beginning of 2012 EPAM Systems' capitalization during IPO at NYSE was $490 million. In August 2013, EPAM Systems was already evaluated at $1.22 billion.

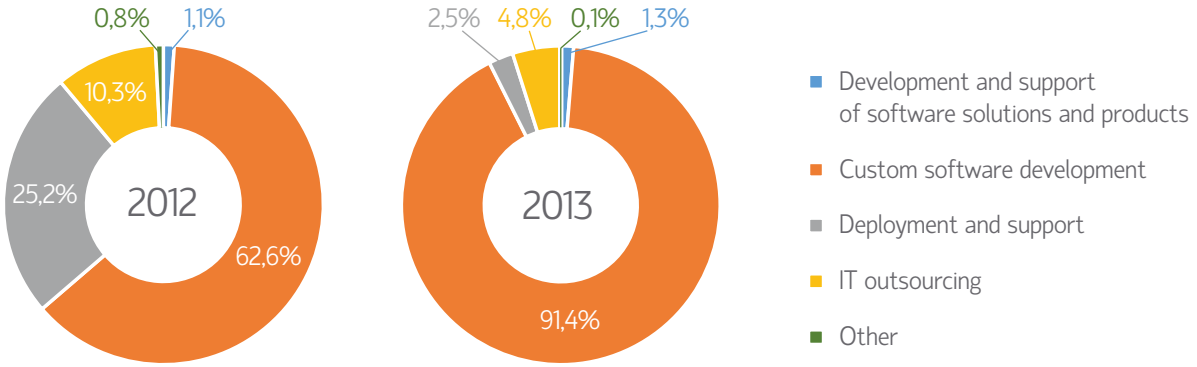
In June 2013 Luxoft held a successful initial public offering at the New York stock exchange. During 2012 Luxoft's growth rates exceeded 20% that was quite sufficient for increasing its capitalization thanks to the IPO up to $555 million. By the time of IPO holding, Luxoft already had the extended geography of its development centers location worldwide with the main development centers in Ukraine (almost 3,000 employees), in Russia (1,000 people in Moscow and Omsk), as well as in Bulgaria, Romania, Vietnam, and even in the UK (altogether 18 remote development centers).

The Ukrainian events posed before both leaders the issue of resource relocation to the countries adjacent to Ukraine. And this was urgently done. The outcomes will be judged by their finance results in 2014.

Almost all largest service companies were formed before 2000, and their number almost did not change during the last decade. Among new market players that recently came into the world elite (in the Global Services and IAOP ratings) we can mention Artezio from Moscow, which showed persistently high growth rates over the years, specializing mainly in such vertical market segments as telecommunications and health care. We should also mention FirstLine Software and Reksoft from St. Petersburg that successfully operate at the Russian and global market.

It is also worth noting DataArt, which considerably increased its staff through the contracts in the USA in 2012–2013 and Auriga which regularly appears in the global rating of the leading service companies for about 10 years. In the rating of the leading world engineering companies (Data Monitor, 2011) Auriga which accommodates the main development resources in Moscow took the absolute first place in the category of "software engineering", having outstripped such giants as IBM, Dell, HP, HCL, Wipro and Siemens.

Structure of respondent service company total export in 2012–2013



Russian service companies for almost 10 years have a strong lead in the community of IT outsourcing service providers in Eastern and Central Europe, and together with companies from Belarus and Ukraine they make a so-called IT outsourcing Russian-speaking cluster, which is the largest provider of IT services (the software development services mostly) in Europe.

In the both leading IT outsourcing world ratings (Global Services and IAOP) in 2013 Russian companies not only retained their presence but even widened it through reappearance of Artezio and Exigen Services (this company is known overseas under the name of ReturnOnIntelligence) in the list of 100 world best service providers. In the Global Services rating Russia is represented by 9 companies: Auriga, DataArt, EPAM Systems, First Line Software, Luxoft, MERA, Reksoft and ReturnOnIntelligence (before 2013 - Exigen Services).

In the 2014 Global Outsourcing 100 (IAOP) rating, as a year before, there were 6 Russian companies: Luxoft (18th place), MAYKOR (38), EPAM Systems (51), MERA (66), Auriga (89) and Reksoft (93). FirstLineSoftware and Artezio dropped out from Top-100 according to IAOP, but instead of them there appeared MERA and MAYKOR.

As the listed ratings estimate service companies by a number of parameters (including clients' assessment of quality of the delivered IT services) rather than by their turnover absolute data, we can safely state that the Russian IT outsourcing industry has gained a significant world recognition both as a hi-tech resource for effective development of state-of-the-art technical solutions and as an experienced and reliable provider of the services that add value to the client's business.

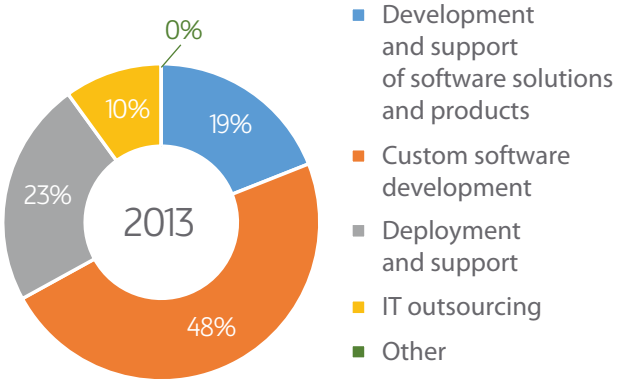
In the recent years we almost did not observe any new companies specialized in development of custom software. As a rule, they appeared only in few cases as a result of merger of the exporters that were established more than 10–15 years ago. Due to shortage of manpower and relatively high labor costs in Russia, at the present time it is no sense to create startups in the field of custom software development. The existing growing requirements can be met by service companies which have been operating at the world market for long (not only by big companies but also by small and medium-sized enterprises that are oriented towards implementation of small project in particular vertical niches).

Yet, new large service exporters can emerge in the future from among those service companies still focusing on the domestic market. ICL KME, located in Kazan, the capital of Tatarstan, held a course

for foreign markets. Its export provides still only 19% of consolidated income, but in absolute values by Russian standards it is sufficiently high — over $30 million and is growing much faster than the sales in Russia. By the results of 2013, the export of ICL KME increased by 26% and the turnover — only by 11.4%. A year ago, export sales increased by 50%. The Kazan company has about 100 customers in 26 countries worldwide. In 2013, the largest foreign projects were implemented in France, Sweden, Germany and Belgium. Having such wide range of customers the company is a serious candidate for joining the rating of leading world outsourcing companies already next year.

On the contrary, some service companies that have gained or are still gaining the better part of income from export currently are increasing the share of sales in Russia. In particular, it is associated with participation in major public projects. For example, Reksoft is developing a hardest information system for the Federal Migration Service of Russia. In the end of 2013 Luxoft announced the successful completion of the full range of services of developing commercial software for the navigation information platform ERA-GLONASS. Lanit-Tercom is carrying out maintenance and elaboration of the municipal system "Tenant" that calculates payment for housing and utilities services for 70% of St. Petersburg residential areas.

Structure of cumulative sales of respondent service companies in the domestic market in 2013



Type of services proposed, % of respondent companies

Software development	93%
Testing	66%
Technical support of IT systems	57%
IT consulting	51%
Other	7%

Software exporters gain the competences and knowledge abroad that they use in the Russian market. On the other hand, implementation of unique projects of federal importance allows for obtaining funding as well as of new competences and experience. All this may come useful for successful participation on complicated foreign tenders. The experience gained in recent years shows that in order to have sustained growth and development it is essential to have customers in different countries and to consider risks connected with special factors of one or another region. If in one part of the planet sales are reduced due to circumstances beyond company's control (as a result of economic crisis or of aggravation of political relations) the wide business geography makes it possible to quickly cross over to other major markets.

The structure of cumulative export of service companies in comparison with 2012 has changed within the random fluctuation limits. A great increase in "Custom software development" and reduction of "Deployment and support" is most probably related to uncertain terms which we started to use in questionnaires quite recently (a special section dedicated to service segment of the software industry was included in the survey only 2 years ago).

If abroad Russian service companies always gain 85–95% of income from sales of custom software including deployment and support, in Russia this proportion is much smaller — about 70%. In the

Russian market they successfully sell and support their own software products that provided 19% of income by the results of 2013.

Services on creation of captive remote development centers are provided by 8% of respondent companies (a year ago, there were 10%). The remaining 92% offer services to external customers using both types of contracts (Time & Material and Fixed price), the latter (with payment on fixed price) is used slightly more frequently. The situation was similar also by the results of 2012.

The main clients of Russian service companies are end-users (85% of respondents work with the end-user consumers). 38% of companies are engaged in activities under subcontracts and 29% of respondents render services to system integrators. These figures almost remain unchanged compared to the last year. It is worth noting that the service companies employ different models of business operations demonstrating their flexibility and providing customers with the required services.

It is very difficult to forecast whether export of software development services will grow or drop in 2014–2015. In all likelihood, judging by the results of 2014 the growth of IT service export will be within 10–20%, as the aggravated world political situation will not allow for intense increasing of new sales, still politics will not have a large impact on performance of already signed contracts. According to forecasts of income changes in the next 2 years made by the respondent companies in February-March 2014, the cumulative turnover in 2014 should increase by 18%, and in 2015 — by 26%.

However it may well be that by the end of the summer they have already changed their predictions, or anyway got gun-shy due to the existing political uncertainty. The armed conflict in Ukraine has already seriously affected the status-quo at the market of IT outsourcing providers in the Eastern Europe.

Contract types used, % of respondent companies

Payment on time consumed	52%
Payment on fixed price	59%
Both types	11%

Major customers, % of respondent companies

	2012	2013
System integrator	29%	29%
End customer	88%	85%
Software developer	36%	38%
Other	1%	1%

Before the Ukrainian crisis started, the staff of development centers of Russian service companies there amounted to several thousand people. It was thought that by some criteria Ukraine was a better place for development of custom software than Russia (lesser tax burden and labor costs). In the last year, particularly in the first half of 2014 the situation changed fundamentally. On the one hand, business environment in Russia somehow improved. On the other hand, Ukraine fell into profound economical and political crisis, the country would hardly find escape from it in the next 1–2 years, and in these circumstances almost any business will entail risk.

Many Ukrainian software developers have emigrated to other countries (not only to Russia). It's most likely that under war-fighting conditions and political uncertainty in Ukraine, large Russian companies (the same as companies of Ukraine and of any other countries) will play for safety and will not staff up their development centers in this country. Even as we speak many are shifting their developers to the neighboring countries (primarily, Poland).

The most important negative factor that can influence export income of Russian companies is the growing animosity between Russia and the USA and EU where most customers of Russian service companies are located. The late changes make someone sit up and take notice as regards building relationships with the US companies, primarily with new clients. Perhaps, for this purpose Russian providers will have to re-register in other countries or even transfer part of their staff to the foreign development centers.

For example, Luxoft's customers already in May 2014 were passed about growing animosity between Russia and Ukraine and demanded that the company would take measures to protect them against political risks. The matter was that at that time out of 7 thousand employees of Luxoft 2.75 thousand were working in Ukraine.

Under coercion of customers, already in the spring 2014 Luxoft stated that formally it was no longer a Russian company and re-registered its main office in Switzerland. Besides, it was announced that the management would go from Moscow to Switzerland, Germany, UK and US, and also 500 programmers from Russia and Ukraine would come over to the company's development centers in other countries. In the wake of risk rising for business operations in Ukraine, Luxoft had urgently to move its development division from Ukraine to the adjacent Eastern European countries.

At the same time, the tumultuous events in Ukraine may influence Russian export of software development services not only adversely but positively as well. Primarily thanks to transfer of Ukrainian programmers to Russia. The accession of Crimea to Russia provided potential increase of the total number of programmers by 4–5 thousand people. After accession, due to political pressure the Ukrainian software companies had to close their development centers in Crimea. On the basis of such center of SoftServe (one of the major software developers in Ukraine) in Sevastopol a new company Alvion Europ was founded. In the past it operated till 2002, but as a result of merger became a part of SoftServe. Unfortunately, the development companies in Crimea cannot independently operate at the world market owing to sanctions imposed by the US and EU on Russia. What Crimean companies and their personnel are blamed for? Let the politicians deal with this problem.

2.5. Products and Ready-to-Use Solutions

Volume — $2350 million
Export growth — at least 18%

It appears to be that the decrease in the growth rates of software product and standard solutions' export observed in 2010–2012 is over (in 2010 their growth was 30%, in 2011 — 20%, and in 2012 — 17%). In 2013 the growth rate of software product and standard solutions' export actually remained at the last year level — 18%. However the factors affecting this indicator changed fundamentally. If in 2012 the growth was generally provided by large companies, in 2013 the growth driver' status was rendered to small enterprises (predominantly startups with export income not higher than $1 million).

The export income of large enterprises changed in different ways. Some companies had almost zero (or even negative) growth, other companies increased export income by tens of percentage points. On the average they showed about 8% growth.

At the same time, the cumulative export of small enterprises was increased approximately by 60%. An increasing number of small companies that were established in the recent years also made a contribution to the growth. It is quite possible that the 60% growth in 2013 does not clearly reflect the scoring as the "startups" come in our sight (the database which is used in definition of the range of respondent companies) with a time lag. So it would be more reasonable to state that the increase in export volume of small companies (startups) took place in the last 2 years but was revealed only in the results of the 2014 polling.

In our previous survey we noted certain repeatability in development of software industry. New software companies which were most actively had been created in certain time periods (for 3–4 years) during economic crises or just after them. A number of successful software product exporters appeared during the Soviet economy collapse. The next startup boom took place in the late 1990s and early 2000s (in 1998 there was a default and economic crisis in Russia). The third wave is connected with the world crisis of 2008, which also affected the Russian economy.

Development of individual product companies also has certain cycles. For a few years (probably, decades), they can increase export by 30–50% per year. In occasional years, the growth even may exceed 50%. However, deceleration inevitably takes place when product companies reach a certain size and their market segment saturation. In the last 2–3 years, the leading Russian software product exporters reached this size, and fast-growing younger companies still have not achieved such large turnovers to compensate the reduction of leaders' growth rates.

Things are changing: the startups already are capable by their number and turnover growth to significantly affect the increase of the cumulative Russian software export. In this case, some large and medium-sized companies that ceased to grow in the recent years are trying to move to a new level (investing in marketing and/or launching new products).

In all appearances, a new cycle has begun which may lead to enhancing growth of software export in 2014 and 2015. It may but not necessarily will, taking into account the negative media coverage of Russia in some countries owing to aggravation of political situation.

For example, it may happen in the largest world market — in the USA. There is an article on the English-language website ZDNet.com which suggests that the trouble will begin for many large Russian software producers who already have a considerable portion of the US market and who are popular among American customers. It concerns such companies as Kaspersky Lab, Nginx, Parallaels, Acronis and Veeam Software.

Another very large market, China, also may limit business of Russian developers. Because of safety reasons it tries to abandon any foreign software in government institutions. At the Chinese market, some Russian companies (for instance, the largest Russian software exporter Kaspersky Lab) have dominant positions. In addition, as a result of Ukrainian events China agreed to enhance cooperation with Russia in the IT area. The agreement concluded between the Russian Ministry for Communications and the Media and the PRC Ministry of Industry and IT development envisages that Russia will purchase more China-manufactured servers and telecom equipment, and China will purchase more Russian software products.

Taking into account the political risks related to activities on American and European markets, it makes good sense to approach more actively the markets that are new for Russian companies.

Reorientation has already begun before the growing animosity with the USA concerning events in Ukraine. In the recent years, several large and medium-sized Russian companies began active promotion of their software products in Africa, Southeast Asia, Latin America and the Middle East.

In the context of the appeared big political and economical volatility it is hard to forecast even for one year to come. Nonetheless, at all appearances the small "product" companies in the future will also show better growth ratio than larger enterprises. All prerequisites are at hand.

At present, Russian development of mobile applications (including computer games for mobile devices) is rapidly growing. The companies that specialize in such development are still very young and, as a rule, do not enjoy wide popularity. Nevertheless, their quantity is already so great (about 2300 companies in 2012, according to J'son & Partners Consulting, 2013) that it makes possible holding of large-scale conferences on mobile applications and games in Russia.

Such companies are practically not covered by the surveys that are carried out on demand of the RUSSOFT Association. This may be due to the fact that many of them are startups, which are included in the Association's database of software companies with a delay of several years. Besides, the developers of Internet computer games and applications often do not position themselves as software companies and, therefore, are not included in the above base, as well.

The sphere of mobile application development is still under-explored. We can only assume that export of such applications in 2013 (most likely) exceeds $300 million. According to the J'son & Partners Consulting experts' forecast, in 2016 the Russian market of mobile applications will reach $1.3 billion that is 8 times greater than the similar figure of 2012. As the developers of such solutions are mostly oriented towards the global market, we can assume that their export growth rates will remain approximately the same (the average figure is 60–70% per year) and, probably, will even speed up. Thus, mobile applications can ensure the annual gain of software product foreign sales in the amount of at least $100–200 million. Now, their share is 5–10% of the entire product export, but it can increase considerably.

Certain hopes are pinned on development of the Global Navigation Satellite System GLONASS (it is worth mentioning that the similar functioning system is only available in the USA). Thanks to the availability of the system, the Russian companies exporting the terminals and applications that ensure monitoring of moving targets on Earth and processing of relevant information have gained some advantage over foreign competitors. For example, NIS GLONASS plans to occupy about 20% of the Indian professional navigation equipment market within 5 years; and in the long term, the company intends to capture 20–30% of the global market in this segment with the estimated current capacity of $60–90 billion.

In 2013, the GLONASS navigation satellite system for the first time is being considered as the one capable to pay back the huge investments and to bring a notable economic effect. However, the failures to launch rockets with communication satellites that would allow the system full use in the near future create some uncertainty concerning the perspectives of the system commercial use. Most likely, an increase in the volume of services involving traffic and cargo tracking based on the GLONASS system will remain, but it will be not as high as it could be on condition of planned implementation of the global project on GLONASS satellite group in the redundant operation mode.

Some companies involved in development of systems and applications for satellite navigation also undergo difficulties. For example, after explosive growth and successful initial public offering in 2010

Russian Navigation Technologies took a bad knock in 2012. As a result, the company was recognized as a bankrupt, it has not gone into liquidation however the external management is being conducted.

But other companies successfully work in the field related to GLONASS. In particular, Transas intends to become a system integrator in the pilot project on installation of monitoring and correcting stations GLONASS/BeiDou/GPS in China.

In order to realize the available potential in the satellite navigation area, a JSC GLONASS is being created with 100% state participation. Its main objectives are provision of reliable operation and competitive development of the ERA-GLONASS system. It will allow for unlocking the high commercial potential of the existing high-tech infrastructure, securing investment in its development, decreasing burden on the state budget.

An additional gain of export may be ensured by sufficiently large Russian software companies that were previously oriented towards the Russian and CIS market. Many of them plan to work more actively in far-abroad countries. Among them, there is 1C with the turnover of about $1 billion (including the income from software distribution and franchising). Such turnover allows for investing not only in improvement of existing solutions for their localization in foreign countries, but also in promotion of these solutions in various countries. Besides, 1C has extremely successful experience of sales organization involving partners (franchising) that can help it to move ahead successfully at foreign markets.

There are a few other mid-sized companies that hold promises of promotion in foreign countries of their solutions successfully approved in the Russian market. This promotion is, in particular, supported by their inclusion in so-called Magic Quadrants of Gartner. Last year the list was added by such companies as Diasoft (CoreBankingSoftware), PROGNOZ (Business Intellegence) and InfoWatch (Data Loss Prevention). In 2012, the IntelTech Moscow company headed the Gartner's Cool Vendors list of the most progressive product companies.

Diasoft which until recently has mainly produced solutions for Russian banks, has good prospects thanks to the agreement for global cooperation with IBM (Global Alliance Attachment) signed in 2011. This agreement provides the joint development and promotion in the global markets of the Russian company's banking solutions based on the Service Oriented Architecture (SOA). As part of this agreement, IBM will provide its partner with technological expertise, with support of Diasoft projects on optimization and introduction of banking systems, will assist with implementation of marketing initiatives and worldwide promotion of the Diasoft products. The Russian company management expects that by 2015, about 30% of the company's income will be connected with the operation at international markets.

ABBYY in 2014 yielded first products for enterprise search and data acquisition on the basis of technology of text understanding, analysis and translation called Compreno. R&D in this field have been performed by ABBYY for 19 years, their own investment in this line for the whole period of work amounted to over $80 million. The company does not disclose the revenue target but considering such serious investments it must count on tens of billions of RUR per year if not by the results of 2014 or 2015 then on a mid-term horizon.

PROGNOZ strives to join the ranks of world leaders in its area using new versions of the own software PROGNOZ Platform.

The state support of international marketing activity could significantly facilitate faster promotion of young companies' development at offshore markets, but this support is so insignificant that cannot exert noticeable influence on the volume of software product export.

2.6. Captive Development Centers of Foreign Corporations in Russia

Volume — $550 million
Export volume growth — 11%

By the results of 2013 the amount of international R&D centers' export reached $550 million. This figure includes not only the direct revenues from delivery of software development and engineering services to the parent offices of large foreign corporations but also revenue from R&D and education projects implemented by foreign partners jointly with Russian universities and academic institutes.

In the recent years the growth of the number of orders for R&D and software development in R&D centers of foreign corporations was quite stable, as a rule, within 8-12%. Nevertheless, there are only few foreign corporations which had long ago created Russian R&D centers and every year increased investments in R&D in Russia at a steady pace and up to schedule. More often than not, their turnover is growing by 10–20% annually. Other companies either cannot afford to do it due to the problems at the world market (and sometimes are forced to right size), or only recently established research divisions in Russian cities and increased investments (level of orders, respectively) by tens of percentage points.

In 2012, some international companies started implementing the earlier declared plans for creation of new R&D centers in Russia. Generally, these centers appeared thanks to the Skolkovo Foundation and the self-named innovation center being built, the residents of which already receive certain tax privileges. A possibility of obtaining privileges (first of all, tax ones) supported an increase in the volume of foreign corporations' investment into R&D in the territory of the Russian Federation.

Such powerful corporations as IBM, Cisco Systems, Microsoft, and SAP were among the active investors in implementation of R&D in the territory of Russia in the last 3 years. By 2015 SAP plans to bring its research division staff up to 250 people, and its R&D investment volume — up to 45 million euro. Microsoft plans to develop software for face and speech recognition in video in Skolkovo, as well as software for multimedia data broadcasting. Microsoft's Russian development center staff size is expected to reach 150 people by 2015.

Another Russian R&D center of Microsoft in one year and a half since its creation in May 2012 brought the staff number to 200 people. This center in the end of 2013 became the independent company Microsoft Development Center Rus, its engineers are responsible for business solutions of Microsoft Dynamics AX for the whole Europe.

The R&D centers of the EMC and Samsung have been operating for a long time in St. Petersburg and Moscow respectively, but both companies established additional centers at Skolkovo in 2012.

T-Systems, Deutsche Telekom' subsidiary, while expanding the number of developers in its St. Petersburg office, entered the labor market of Voronezh, where the company has already begun to engage programmers and to cooperate with Voronezh State University within the staff training program. The T-Systems office in Voronezh was opened in the autumn of 2012.

Chinese Huawei Technologies declared its plans to increase investments into R&D in the territory of the Russian Federation. Qualcomm, a US mobile microelectronics vendor, last year started sourcing a team that can form the basis of creation of its Russian development center. The company is interested in the experts who have experience in application programming and digital signal processing.

Facebook is considering a possibility to establish its R&D at the Skolkovo center. In August 2013, Cisco stated that it was going to put into effect a long-term research program aimed at introduction of innovations in the course of R&D in Russia. This initiative will allow Russian educational and research institutions to participate in the Cisco Research international program. The project envisages the financial support of Cisco and will be implemented by the company for purposes of new technology development, promotion of innovations and involvement of ambitious engineers in mutual R&D activities.

In August 2014, The EMC R&D Center in St. Petersburg signed an agreement with the Academic Institute of the Russian Academy of Sciences aimed at joining efforts to develop a simple and easy-to-use cloud platform for genomic analysis in clinical medicine. It will be helpful in revealing so called "hybrid genes" that often are sources of malignant neoplasm.

In April 2014 the R&D division of Microsoft Research announced the conclusion of 3-year cooperation agreement with the Moscow State University in the area of the newest IT solutions including opening of the joint research center. The cooperation will cover joint research projects on Big Data processing and visualization as well as on computer vision. It also envisages organization of scientific and practical incentives for students.

Symantec in the end of 2013 began to contemplate possible opening of its development center in Russia.

One can get an idea of the growth of investments in international R&D centers through the example of cumulative turnover of the residents of IT cluster Skolkovo. Mostly it concerns subsidiaries of large foreign companies. Within a year the turnover increased from 1.5 billion rubles to 4.5 billion rubles (over $140 million).

If foreign corporations fulfill their plans to increase investments in R&D in Russia, the volume thereof must increase by the results of 2014 not less than in 2013. At the moment of preparation of this report none of American or European companies has announced plans to reduce investments to their own R&D centers due to the strained relations between Russia on one side and the US and the EU on the other side. The heads of R&D international centers in Russia in conversations with the RUSSOFT experts also confirmed the consistency of their plans to stay in Russia.

The primary and unsolved issue for international R&D centers is serious administrative barriers for import to Russia of hi-tech equipment required for software development and testing. Thus, the customs duties and VAT are applied when importing the equipment. One has also to post bail and wait indefinitely for permits.

The foreign companies that have their own R&D centers in Russia:

Alcatel-Lucent
Allied Testing
AVIcode
Cadence
Design Systems
Chrysler
Cisco Systems
Columbus IT
Dell
Deutsche Bank
Digia
EGAR Technology
EMC
EMS
Ericsson
Google
Hewlett-Packard
Huawei
IBM
Intel
InterSystems
Jensen Technologies
LG Softlab
Motorola
NEC
NetCracker
Nival Interactive
Microsoft
Nokia
Nokia Siemens
Quest Software
RD-Software
Samsung Research Center
SAP
Scala CIS
SmartPhoneLabs
Oracle (Sun Microsystems)
Tagrem Studio
Teleca
T-Systems

Chapter 3

Primary Trends in the Russian Software Development Industry

3.1. General Trends

In all recent years the main trend of the software development industry has been an increase of interest of software development companies in operations in the Russian market. A share of respondent companies that choose "More active work at the domestic market" as the priority of their development over one year increased from 55% to 60%. "Work for export/expansion of the marketing network abroad" was also chosen by more than a half of respondents however the indicator of this trend slightly decreased — from 59% to 56%.

The attitude towards the promising outlook of internal and external markets is reflected in answers to another question — about trends that are specific for Russian software development. The growth of domestic market was mentioned by 59% of respondents (year ago, there were 58%), and the export growth by 33% (37%).

Such outcome of the survey disharmonizes with evidence that the cumulative export of respondent companies increased in 2013 by 23% and the cumulative turnover by 16%. The contradiction is apparent because the basic export growth was provided by large companies representing just a quite small part of respondents. For many of respondents work in Russia is more important than in foreign markets. The enterprises with the turnover over $4 million more often mention the priority "Work for export" (64%) than "More active work at the domestic market" (62%). However for them "Domestic market growth" is also a more clear choice than "Export growth".

These comparisons only point at the importance of work in one or another market but the crucial thing is that 93% of respondents mentioned the growth (it does not matter, in Russia or abroad) as a primary target of development in the next two years. Moreover, for 36% of respondent companies the activities both in Russia and abroad are equally important (for companies with the turnover less than $4 million this indicator is even a little bit higher — 38%).

Judging by the results of 2014, the dependence of priorities and challenges on location of companies was changed. Historically, in Moscow and in the Ural region there were more companies that intended to play more actively at the domestic market, whereas in St. Petersburg there were more companies dealing with export growth. Other regions fell in between. The last survey showed interest in work for export in Siberia with the biggest share of companies having as "Work for export" (36%). In St. Petersburg this indicator is almost the same — 35% meaning that this city lost its unconditional leadership.

Besides, the orientation of Moscow companies toward domestic market in comparison with respondents from other regions still is noticeable but not so obvious as before. If in Moscow the goal to improve the work in the domestic market is set by 73% of respondent companies, in Ural — 100%, and in Siberia — 80%.

It is worth noting that Siberian companies now have more optimistic view regarding their future development. Most probably, it is caused by support of local authorities (primarily, Novosibirsk).

It appears that the growth of the number of companies that since 2009 specified their main objective as "Growth of sales via Internet" stagnated. Many developers, even newcomers, begin to realize that these sales are not so easy as seemed before. The fact that the application placed in

the Web, is theoretically accessible to every user worldwide does not mean that anybody will make advantage of it. The vast majority of these applications were never downloaded.

Nevertheless, the desire for increasing sales via Internet is still mentioned by respondents almost in 50% of cases. In the B2C area Internet will remain the main sales channel, and the trend of growth of sales via Internet will steadily take place among three first leading market trends.

As in the previous years, the greatest focus on growth of online sales is peculiar to the Siberian companies, but now they share the leadership with the Ural developers (this goal was set by 33% of companies from Siberia and Ural).

Creation of remote development centers in the current year is typically mentioned by medium-sized companies with the turnover $4–20 million (100%) and $20–100 million (43%). The largest companies (with the turnover more than $100 million) did not set such goal at all. They make progress mostly by means of acquisition of local companies in the regions that are of particular interest to them. In 2013 none of respondent companies with the turnover less than $0.5 million set the goal of opening a new development center while in 2014 there were 13%. This indicator among companies with the turnover from $0.5 million to $4 million changed insignificantly (reducing from 15% to 12%).

Other main areas of development are as follows: new product launch, improvement of product quality, keeping of the market share, launching of new projects, business process adjustment, Russian R&D spending growth in comparison with similar centers in other countries, recruitment, attraction of investments into innovative solutions, diversification, creation of own products, increase of direct sales. These "Other" fields were mentioned by 7% of respondent companies. A year ago there were 3% of respondents. The growth of this indicator gives evidence of appearance of a wider range of objectives, therefore of a more active process of business development.

In the recent years, such phenomenon as purchase of foreign companies by large Russian software enterprises has become distinct. Such purchases pursue different objectives. The purchased company may be used as a remote development center (but by no means always). However, acquisition of a new

Main areas of companies development*

	2009	2010	2011	2012	2013	2014
More active work at the domestic market	66%	68%	77%	73%	81%	73%
Growth of online sales	22%	31%	28%	29%	36%	27%
Work for export/expansion of the marketing network abroad	—	—	47%	52%	59%	56%
Certification of software development processes	8%	13%	12%	13%	10%	5%
Establishment of regional development centers	7%	12%	13%	15%	15%	15%
Other			8%	8%	5%	8%

* — respondents could choose more than one area

Modern trends in the Russian software development industry in opinion of enterprises

	2008	2009	2010	2011	2012	2013	2014
Domestic market growth	71%	44%	49%	54%	51%	58%	59%
Export growth	56%	19%	35%	35%	23%	37%	33%
IT outsourcing growth (IT infrastructure support)	30%	34%	32%	28%	35%	32%	33%
Growth of direct sales via Internet	31%	27%	39%	38%	39%	47%	48%
Market consolidation (mergers, takeovers, creation of holdings)	61%	21%	35%	30%	25%	31%	33%
Increase in product developments (Box/Licensed Software)	32%	21%	26%	19%	26%	27%	33%
Growth in development and support of software solutions (Services & Solutions)	50%	18%	35%	24%	37%	32%	35%
Increase in custom software development (Custom Software Development)	38%	14%	35%	29%	30%	31%	41%
Set up of a quality assurance systems	38%	10%	21%	12%	20%	24%	24%
Other	—	—	12%	4%	10%	4%	3%

asset is mostly aimed at getting access to a new market and to new customers. Later in this chapter, in the section dealing with investments, this aspect is addressed in more detail.

Quality Assurance Certification

The results of survey showed that the interest to the quality management system certification kept decreasing. The share of companies that mentioned obtaining the Certificate of Compliance with the international standards (ISO and CMMI) decreased first from 13% to 10% in 2013, and from 10% to 5% in 2014.

One of explanations of that decrease is the fact that all large service companies were certified in the year 2000 or around (Russia takes the leading place in Europe by the number of certificates on compliance with the CMMi highest maturity levels (4 and 5)).

Also is significantly lower the share of companies that plan to obtain certificates in the next 2 years. If in 2012 among respondents without certificates there were 46% of those who mentioned willing obtain certificate, in 2013 there were 27%, and in 2014 — 19%.

It is obvious that companies (especially small ones) are more realistically estimating their chances to go through expensive certification and the benefits of certificate issuance.

According to the interviewed experts, the issue of establishing a quality assurance system in the software development companies in Russia lost its urgency approximately in the middle of 2000s because to a varying degree practically all companies have implemented their own quality assurance systems. For those service companies, which participate in the international tenders with formal requirements for availability of CMMI certificates, this problem is resolved by the regulatory certification. All product companies and small service providers content themselves with ISO and implement their own quality management systems based on ISO and CMMI, but not requiring expensive procedure of certification and its confirmation.

As the problem of availability of certificates becomes less pressing, the respondents don't demonstrate any interest whether there is the state support of certification, though essentially such support is almost zero. Most of the companies are not aware that in the competing countries, the state is interested in the quality assurance certification of domestic companies.

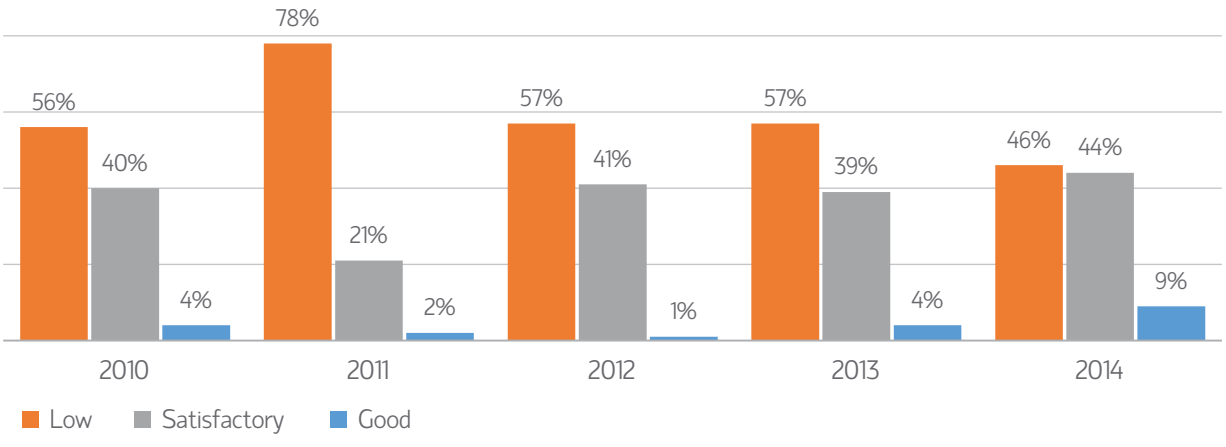
In 2007, the first authorized (and later — certified) CMMI Expert appeared in Russia and in 2009 — the first Russian-speaking Lead Appraiser (that still remains the only one). This fact only led to a short-term and small increase in the number of certified companies as the share of the Russian experts'

Share of companies certified to international standards

	2009	2010	2011	2012	2013	2014
Not certified	65%	61%	69%	64%	74%	71%
ISO	31%	31%	29%	35%	24%	24%
CMM**	0%	7%	3%	3%	1%	—
CMMI	4%	7%	2%	6%	6%	5%

* — more than 100 % overall because some companies have been certified for compliance with more than one standard
** — the CMM was not included in the 2014 questionnaire as it was recognized as obsolete and completely replaced by CMMI

Evaluation of the state support for international certification



services cost in the total assessment and certification cost is not great enough to have a serious bearing on the certification cost.

In 2014, we for the first time included the question about use of SCRUM or another kind of Agile Programming. It was found out that 50% of respondent companies answered affirmatively. 43% do not use these technologies, and 7% were undecided.

3.2. Foreign Investments

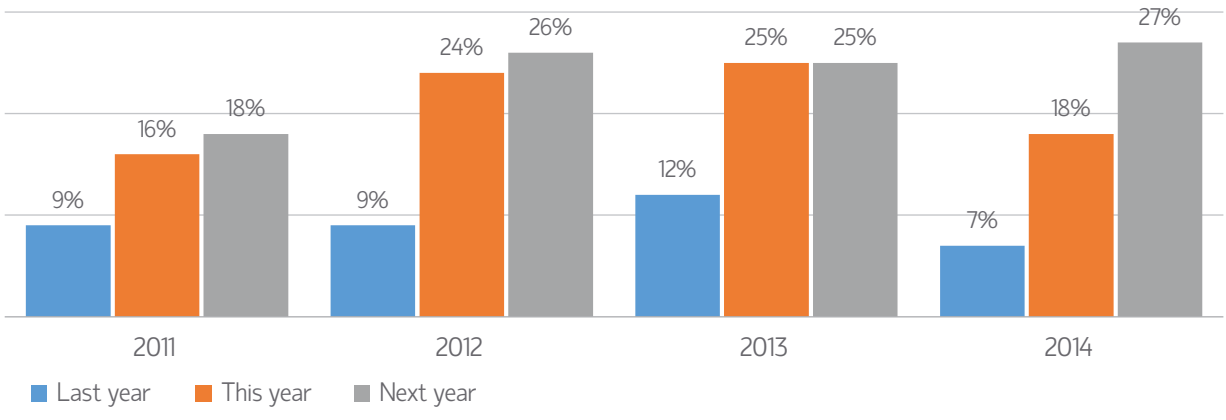
The share of companies that attracted investments in 2013 was 7%. This is less than a year before, in all appearances reflecting the changes in the area of venture investment in Russia. The volume of these investments not merely did not increase but according to different surveys even decreased by the results of 2013. At the same time, the number of transactions keeps growing (with a substantial reduction in the average transaction value), but the growth slips (from 50–100% to 20–30%).

Our results should rather precisely correlate to the number of transactions, and not to investment volume. However the respondent companies represent only a part of IT industry. In addition, in their number with a 2–3-year lag come startups (recently established companies) which more often attract investments. Besides, our polling covers only exporters and not all Russian software developers. A significant part of investees are oriented exclusively towards Russian market. Finally, on the basis of the changed share one can assess an absolute number of companies that obtained investments in 2013 with due diligence.

That is why the amount of venture transactions and the share of companies that have attracted investments not necessarily ought to change in one direction. Correlation is manifested only in the reduction of the share of companies that have attracted investments and the growth rate of the number of transactions.

Since 2011, when the question about investments was included in the questionnaire for the first time, in the next 2 years the challenges of attraction were not met in roughly half the instances.

Share of companies that attracted (or plan to attract) investments



Therefore, the needs of software companies in external financing are satisfied only in part. This is not to say that these needs always comply with companies' capabilities to return money invested. A lot of applications to venture funds are known to look lame.

Venture funds begin their operation in the Russian market mainly in Moscow. Though they have begun to express an active interest in investment in the regions (the Russian Venture Company even arranges the tours across the country to put the investors in touch with regional high-tech businessmen), still it is much easier to find investments in the capital. The biggest number of respondent companies that attracted investments in 2013 come from Ural (17%) however this region is represented by not so many respondents, and in the case of small sample the random facts may dominate. In reality, their overall sampling population can be much lower. For the capital the sample is sufficient. So 10% of investment beneficiaries in Moscow present a more forcible argument than 17% in Ural.

Sure enough that our results reflect the real situation with investments in St. Petersburg. The size of sample is, as in Moscow, quite sufficient. Our polling demonstrates that in St. Petersburg in the last three years the proportion of companies that attract investments was very low (in 2013 only 4%). At the same time, St. Petersburg had much more companies (in terms of percentage points) that planned to attract investments in the next 2 years. In 2014, St. Petersburg companies already less frequently than national average, express such plans. Presumably their expectations became more realistic.

If we compare three big groups of respondent companies, then in Moscow the proportion of investment beneficiaries in 2013 was much higher than national average, in St. Petersburg — much lower, and outside two capitals — just national averages (though this value greatly differs in various regions). This power balance is observed for some time now.

Thus there are solid grounds for supposing that the attempts to create the investment climate favorable for activities of venture investors in St. Petersburg have failed in comparison not even with Finland or American Silicon Valley, but with other Russian cities. It should be noted that in St. Petersburg the education in the IT area is as good as in Moscow to say the least, a lot of international high-tech conferences and forums are held here, half of captive development centers of foreign corporations are also based there.

The evidence that the local St. Petersburg authorities insufficiently support high-tech industry sector (in other areas such support sort of exists) is given also by other surveys' results, as well as by different facts (for example, in 2014 St. Petersburg was not included in the Federal program of finacing Technoparks' construction). Finally, it is hardly surprising that the St. Petersburg respondent companies have indicators of growth export and aggregate income lower than national averages. In St. Petersburg aggregate income increased by 10%, and export — by 7%. For Russia the similar indicators were 16% and 23%, respectively. It is important to clarify that in this case we speak only about respondents and not all Russian and St. Petersburg companies.

In our recent years' reports we stated that regions possess huge potential for development in software area. By 2014, enough factual evidence has been accumulated to think that the potential is big but existing opportunities are poorly exploited. Relatively low growth rates to a greater extent can be associated with the short delivery of investments.

Most often, investments in 2013 were attracted by companies with the turnover $20–100 million (14% of respondent companies). More investees than on average were found in the category of the

smallest companies with the turnover less than $0.5 million (9%) including a lot of startups that cannot develop at all without external investments.

None of companies with the turnover over $100 million in the last survey planned to attract investments in 2013 and sure enough they did not. Besides, such companies don't count upon external financing in 2014–2015.

As a rule, they do need investments, while the amounts in question are interesting for serious venture and investment funds (tens of millions US dollars). If a company with the turnover over $100 million attracts external financing (for example, by IPO), this volume can be greater than the amount of investments in all small companies in a few years. Contrary to small companies, the large ones have their own resources to invest into development and they really do it. As the growth indicators of large companies are good, as a rule, they don't need to attract investments more often. Besides, the large companies not always want to declare publicly their activities for attraction of investments, considering this to be a private matter, however they do not hide the fact of receiving funds in the previous period.

With conventional division of companies into 2 big groups (with the turnover less than $4 million and with the turnover more than $4 million) to provide a quite sufficient sample we conclude that the proper fact of investment attraction does not depend at all on the amount of investments, though, naturally, volumes and types of investors are totally different.

Only 5% of companies that operate less than 10 years in the market managed to attract investments in 2013, among older companies there were 8% of such cases. It should be noted that startups established in the recent 2–3 years almost were not covered by our survey. At the same time, young companies established less than 10 years ago mentioned the planned attraction of investments in 2014–2015 much more often than the rest.

In 2012, producers of licensed software attracted investments more often than service providers (12% and 9%, respectively). By the results of 2013, the situation was vice versa — investments were attracted by 5% of respondent "product" companies and by 8% of service companies. Still it is not possible to determine the opportunities of investment attraction as a function of business model. It cannot be ruled out that the chances of attracting external financing are basically similar for service and "product" companies, and the apparent advantage of certain model in one year or another is of random nature.

According to the survey performed by J'son & Partners Consulting in early 2014 on venture investors operating in Russia, last year the funds received 1200 applications for investment. In this case, the share of projects in ICT industry and content was 90%. In 2013, in the Russian venture market 278 investors participated in 419 transactions to the total amount of $3.25 billion (an average transaction volume was $7.7 million). In respondents' opinion, the Russian venture market in 2013 increased by 25%, and in 2014 the growth will be 20%.

J'Son & Partners Consulting' experts found out the existence of a sufficiently high share of syndications in the total structure (36%). The share of startups oriented toward B2C segment is uppermost: in quantitative terms it is 72% of transactions, in monetary terms — 82%.

Foreign projects provided shy of 15% of transactions which attracted about 30% of all investments. An average amount of investments as a whole is the same for Russian and foreign projects, however the cost of Russian projects is slightly higher.

In the USA compared to Russia, a share of venture capital relative to national GDP is higher by 13% or by a factor of 4.25 in absolute values. As regards this relative indicator, Russia takes the same place as China and Europe.

In H1 2014 J'son & Partners Consulting detected in Russian venture market 120 transactions to the total amount of $241.3 million, out of which 110 were cash-in transactions to the total amount of $160 million and 10 exits transactions to the amount of $81.3 million. A maximum amount of investments was made by the state Internet Initiative Development Foundation — 37 transactions.

The industry analysis of projects financed in 2014 demonstrated the reduction of the share of ICT projects both in monetary and quantitative terms. J'son & Partners Consulting report draw attention to the growth of investments into medical projects gaining 8% of market in monetary terms.

According to forecast by J'Son & Partners Consulting, in 2015 perspective, USA will remain the main venture capital market (investment volume in 2012 was $34 billion, that approximately 10 times higher than in Russia. At the same time, one needs to assume that in the US venture market attracts all world companies, not only American ones). The J'Son&Partners analysts think that the greatest growth will be demonstrated by Chinese venture market ($8.3 billion). Taking into account the advantages of population and industry size, India has not very high figures versus Russia — $2.1 billion. The same has Israel that is very significant for such small country. Europe is still ahead of Russia in terms of extent of financing per capita, but Russia would come over in foreseeable future (of course provided that the crisis in Ukraine will be successfully resolved).

Whereas the US market of venture investments is one of the most promising, the number of venture funds there has been substantially reduced in the last 10 years. It is worth noting that the similar trend is observed also in Western European countries — in the last 12 years the number of funds decreased by 63%.

According to the PwC Technology and Innovation Center, at present it is much easier to acquire information about investment in Russia than several years ago. This center presented in early 2014 its third annual report MoneyTree with analysis of Russian venture industry for 2013 prepared with support of the Russian Venture Company (RVC). It says that over a few last years the total dominance of investments into information technologies (incidentally the most transparent segment) is observed. Generally speaking, only IT demonstrates the growth of financing.

In 2013, on this sector fell almost 87% of transactions (193) and 93.5% of the total amount of investments ($611 million). Therefore, the share of IT sector in the total volume of market under investigation has markedly increased compared to the last year when 83% of the amount of transactions and 87% of total amount of investments fell on this sector.

Though on the back of the growth of transaction number by 23.7% there is simultaneously observed the reduction of total volumes of financing by 22.8% (to $653.1 million) with the reduction of the deal average cost from $5.6 million in 2012 to $3.3 million in 2013. PwC and RVC are comfortable with it, they even look at the future with optimism as this reduction primarily is indicative of maturity — the average transaction volume is aligned with similar indicators of mature markets of other countries.

Investors gain more experience (particularly by investing with western partners into foreign companies) adopting practices that allow them to take correct view of domestic projects. They begin

to look more conservatively at employers' business plans and present transactions in a structured fashion such as not investing all the amount at one stroke but breaking it into individual installments (and in essence, into individual transactions).

As before, among IT subsectors the segment of E-commerce is in the lead on which falls the biggest number of transactions (28) and the largest investment volume ($172.8 million). If results are tabulated on the basis of sums of money, the second place in the rating should be given to telecommunications and IT outsourcing — altogether four transactions but for the value of $105.9 million instead. In research of grant (non-repayable, non-market) financing PwC notes that compared to the last year a number of grants in 2013 increased from 702 to 1693, however in this sphere the reduction of grant volume is also observed — from $145 million to $102.8 million.

In spite of the detected decrease in investment volumes, the MoneyTree report draws the conclusion that the industry has moved into adulthood: competence of market members is growing resulting in hardening of requirements to the quality of project preparation (investors more carefully treat the selection of companies for investment, attempting to mitigate risks, they invest smaller resources at each round of funding). The previous survey of RVC and PwC showed that in 2012 the wave of "emotional" startups and unfairly overestimated investment expectations came to the end.

Data of venture market volume provided by PwC and J'son & Partners Consulting differ by many times, this owes to differences in calculation methodology. J'son & Partners Consulting, in all appearances, cover a much bigger range of transactions. In calculation of the Russian venture market the J'son & Partners experts took into account all transactions with Russian startups (both Russian and foreign investors), as well as Russian investments into foreign startups including syndications.

According to Inventure Partners, in 2013 IT-businesses are associated with more than 80% of investment transactions aimed at startup financing, in this case the transaction volume of Russian online companies and startups in the first nine months of 2013 increased by 61% and amounted to $916 million.

The Russian venture industry has reached a maturity degree when significant exits are seen in the market. These successful exits witness the profitability of investments made that in turn promotes new venture investments. According to FRII (Internet Initiative Development Foundation), 17 exits of investors/owners took place in 2.5 years from the beginning of 2012 in Russian Internet segment. Five from them were in H1 2014 (Finparty.ru, Delivery Club, Auto.ru, VKontakte, IT Invest).

The transaction chart in the Russian Internet segment is based on the international venture industry database CB Insights and includes transactions with Russian Internet companies exceeding $150 thousand over the period between 1 January 2012 and 30 June 2014. According to CB Insights classification, Internet segment does not include: startups and companies engaged in mobile applications, m-commerce, Wi-Fi, communication devices and technologies (included in Mobile & Telecom segment).

In the last couple of years about one half of investments into Internet segment fall on the seed stage (52% of all transactions). An average transaction volume at this stage was $0.65 million, the most common — $0.45 million. Altogether, according to CB Insights, in Q1 2014 Russian startups attracted investments to the amount of $231.7 million

Worldwide, Internet segment in Q1 2014 accounted for $23.93 billion of investments which is by 110% more than in Q1 2013. An average transaction volume was $10.2 million, the most common — $1.7 million. In Russia there were $21.45 million and $1.9 million, respectively.

According to FRII, RuNet attracts investors and promotes an increase in the number of startups. The volume of public transactions related to investments into Internet projects in the two recent years increased from $537 million to $966 million, and their number — from 161 to 230. Many youngsters already are committed to business carrier: 15% of IT students want to set up business and 6% plan to do it immediately after graduation.

In 2013, there were altogether 167 transactions at early project stages — pre-seed and seed stages. For such big country as Russia it is next to none. Currently, there are dozens of investors in the market and several dozens more at their heels. In opinion of the FRII experts, Russia needs 2500 active investors at least.

While polling companies' staff, the research division of HeadHunter revealed that every second of them was not averse to invest earned money into startups. The majority of respondents are ready to invest up to 500 thousand rubles, approximately one third — up to 100 thousand rubles, every fifth — from 100 thousand to 500 thousand rubles. At the same time, 3% of respondents won't regret spending more than 10 million rubles.

The most popular objects of investment turned to be Internet projects (48%), waste recycling projects (37%) and business aimed at development of environmentally friendly technologies (36%). Interest of company staff is aroused also by global investment projects such as artificial intelligence creation (19%), space exploration and development of space tourism (13%).

However only 8% of respondents are prepared to invest into startups related to development of fundamental science. 8% have already invested their money into startups and got money's worth: 39% said that they had earned good money or had good dividends. At the same time, every fifth had unprofitable investments. Survey was performed 1–8 October 2013 among 5330 company employees. HeadHunter does not specify what kind of employees was questioned but it is fair to assume that they were top-paying ones.

Although some business owners complain that they cannot find financing for their projects or ideas, the majority of venture investment experts consider that in Russia there is more money than high-quality projects. For example, according to the Russian Venture Company (RVC), the relation between the volume of available funds and the annual volume of investment is 7:1. However, experience of investment fund operation has proven that the optimum ratio is 4:1 (5:1 at most).

The reason is that there are still many projects that are good from the standpoint of technology development but are poorly "packed" from the viewpoint of business plan and marketing. It is understandable considering that the opportunity to attract investments with the wide range of startups appeared actually 3–4 years ago.

The Russian market of venture investments has sprung up recently (in many respects thanks to such state development institutions as the Skolkovo Foundation and RVC) and it is natural that not all but just a few first-time entrepreneurs know how to attract these investments. Therewith, there are not enough those who can share their successful experience.

According to the RVC and All-Russian Public Opinion Research Center, there are about one thousand active business angels in Russia. However, there is not enough information on their work. As a rule, they do not desire to provide publicly available information on transactions made. In this regard, RVC suggests continuing the systematic work directed on an increase in the number of practicing business angels, as well as on an increase in transparency of this venture investment market segment.

Some most important events connected with investment attraction by Russian companies and establishment on new investment funds are presented below:

— In early 2012, EPAM Systems held the IPO at the New York Exchange and attracted $72 million. After the trading, the price of company shares grew several times, that showed the investment capacity of companies from the software development industry service segment. EPAM Systems achievements were especially significant against the failure of the most expected IPO of the year — the Facebook's IPO.

— In June 2013, Luxoft successfully placed 4.1 million shares at the NYS. Thus, 2.05 million shares are sold by Luxoft, and the same amount was realized by IBS Group, Luxoft's controlling shareholder. Hence, the flotation value was 12% of the total number of shares, and the company was valued at over 700 million US dollars.

— In the autumn of 2013, the payment system Qiwi held SPO at the American exchange NASDAQ and sold about 8.2 million of American depositary shares (ADS). The offer price of shares was $30.5 per ADS. Hence, the flotation value was $250 (less commission of organizers — $240 million).

Most likely, other large Russian companies also plan to hold IPO but in the context of unstable world economic environment, they still have not made their final decision, which could be reported publicly.

— The originators of Runa Capital fund reported in the summer of 2014 that the resources of this fund were almost depleted, and thus it would establish the second similar fund. It is planned to be bigger and aimed at investments into startups of a later stage. A volume of the new venture fund Runa Capital II must amount to $200 million. A half of capital should be formed by the first fund's investors, a second half is planned to be attracted from new investors. Runa Capital II will invest into high-tech companies. The expected volume of one investment will be from $3 million to $5 million.

— In October 2012, the OppenheimerFunds, an American investment fund, became one of the largest Yandex shareholders, having purchased 5% of the total number of its shares. The market cost of this holding of shares is $390 million.

— In October 2012, Acumatica, the supplier of cloud ERP solutions for medium-sized and small business, announced the attraction of $10 million in the third financing round performed by venture funds Runa Capital and Almaz Capital.

— In the spring of 2014, the state fund Rosinfokominvest obtained 12 partners from among large IT companies and venture funds. Through join efforts they will invest into IT startups. The fund plans to invest into IT projects up to 1.45 billion rubles.

— The American investment company Waddel & Reed in early 2014 purchased shares of Russian high-tech companies. It became the owner of about 5% of Qiwi shares and about 3% of Luxoft shares.

A total cost of these blocks of shares is about $150 million. Besides, Waddel & Reed together with another American fund Pennant Capital became owners of 10% of EPAM shares. It happened when the main shareholders — Arcady Dobkin and Russia Partners — substantially reduced their shares.

— Established in 2010, Russian musical service ecosystem Zvooq in August 2014 completed the invest round to the amount of $20 million

— Nginx founded by Russian programmer Igor Sysoev — developer of the popular open Web server under the same name — announced in the autumn of 2013 the attraction of investments to the amount of $10 million. Money was obtained from the group of investors headed by the Californian fund New Enterprise Associates.

3.3. Investments of Russian Companies and Funds Overseas

With the increase in the amount of venture investment in Russia, in recent years there is also a growth of investments of Russian individuals, Russian companies and funds in the hi-tech sector of foreign countries. According to J'son & Partners Consulting, in H1 2014 the number of investments into foreign projects with participation of Russian investors increased both in quantitative and monetary terms. At the same time, the share of syndications changed insignificantly: in quantitative terms increased from 28% to 35%, in monetary terms decreased from 53% to 48%. Compared to H1 2013, the number of transactions with participation of Russian capital increased from 18 to 23.

Russian investors can pursue different purposes when investing abroad (establishment of their remote development centers, access to new significant clients in the markets concerned, receipt of profit from subsequent resale, as well as getting an opportunity to exert influence upon decision-making process as the company's shareholders).

Foreign investments allow particular individuals or companies to enjoy their profit. However, they are also important from the viewpoint of Russian economy integration into the world economy. Acquisition of large holdings of shares in successful foreign companies is a way to adopt executive experience and to find opportunities for cooperation between these enterprises and the Russian IT companies, as well as to provide Russian companies' entrance into new markets. In certain cases, the Russians obtain ready-to-use technologies that may be elaborated and used in their own business in Russia.

In this regard, in the spring 2014 the US FBI warned high-tech companies and research institutes in Boston and its neighborhood about ulterior motives of Russian venture investors showing interest in the US startups. The true motive of Russian investors' interest to American solutions, in opinion of FBI representatives, is in gaining access to new promising technologies and stealing them.

Besides, the money earned from purchase and sale of shares may return to the Russian IT sector. Judging by the successful transactions, this process is already in progress.

First, it should be mentioned that after the Facebook's IPO, the Russian shareholders of this company (Mail.ru Group, Alisher Usmanov, Yury Milner, Mikhail Frolkin, and others) became the owners of shares worth a total of several billion dollars.

In late 2013, the group of funds DST of Yuri Milner and Alisher Usmanov began actively unloading stock in foreign Internet projects: Facebook, Groupon and Zynga. For the sold shares they gained about $300 million.

In early 2014, first exit as a consequence of sale of the US mobile bank Simple to the Spanish bank group BBVA for $117 million made the Russian venture fund Life. Sreda. According to this fund, by way of transaction it earned 180% per annum out of investments.

Some examples of Russian investments in foreign high-tech companies in the last 2–3 years:

In the spring of 2014, EPAM Systems announced acquisition of the US company NetSoft specialized in IT solutions in medicine as well as its Armenian partner — Ozsoft. An amount of transaction can reach $6 million. Since IPO in 2012, it is already the third acquisition of EPAM Systems. In 2013 the company purchased for $34 million Empathy Lab, an American consulting company specializing in development of digital strategies and UX design on the basis of user experience. It also purchased for $14.7 million Thoughtcorp, a Canadian software developer.

Within 2-3 months after purchase of NetSoft, EPAM Systems announced acquisition of the Chinese company Joint Technology Development Limited (Jointech), the service provider in the area of strategically important technologies for multinational corporations connected with investment banking, asset management and big private business. Thanks to transaction, EPAM Systems plans to enhance its business in Asia.

In early summer, Epam Systems announced another acquisition of the US company GGA Software Services with a development center in St. Petersburg and one of the originators of Russian descent. GGA Software Services is engaged in software development and rendering services of math modeling, database development and alike to pharmaceutical companies, manufacturers of medical equipment etc. Details of the transaction as well as financial results of GGA Software Services activity were not disclosed. The GGA Software services HQ is based in New England, Cambridge, Massachusetts, but its development office is located in St. Petersburg, Russia.

In the spring of 2014, Runa Capital fund jointly with foreign investors invested $2.69 million into the US medical IT startup Drchrono. It is already the third fund's investment into companies from the medical care area.

The international venture fund QWave Capital established by Sergey Belousov — CEO of Acronis and the chairman of the board of Parallels — reported in the autumn of 2013 about investment of $5.6 million into the Swiss company ID Quantique. Direct investments into the company business were $4.5 million, and $1.1 million was spent for acquisition of another shareholder's stock. As a result, QWave Capital became an owner of "substantial however minority interest". ID Quantique is operating in the communication encryption market and developing the commercial quantum encryption systems. This communication security method is based on quantum physics principles.

In the autumn of 2011, Yandex announced launching of a new program Challenges to seek for startups worldwide (Yandex is already one of investors of the Israeli startup Face.com).

In early 2014, Yandex purchased the Israeli startup KitLocate, the developer of geodata acquisition mobile technology. The full team of the purchased company joined Yandex. KitLocate technology may be employed in applications in need of information about user's movement to render services in the right place at the right time.

In the spring of 2014, the Israeli startup SalesPredict that developed solutions allowing for forecasting the sales in B2B sector announced the receipt of $4.1 million of investments in the round A. Main investors became Yandex and fund KGC Capital.

The US company Weaved obtained in the spring of 2014 investments from the Russian venture fund Maxfield Capital on further development of integral unit technology for Internet of things that they had developed. The company's solution is already employed by various equipment developers such as Philips and Astak. The volume of attracted investments is not disclosed.

The US corporation Net Element, undergoing financial difficulties, found in the summer of 2014 a new investor for development of payment services in the USA and Russia. It was a Russian Anvar Mamedov who invested into the corporation $11 million provided that Net Element would obtain credit for $10 million more.

In the spring of 2014 the GS Group Holding spent 5 million EUR on acquisition of companies — members of the Portuguese group Novabase. Thanks to this transaction, the Russian holding that produces TV receivers and software for cameramen is going to enter Western European and African markets. Around the same time, GS Group invested at the seeding stage 200 thousand EUR into Finnish startup Tellyo that has developed and elaborated the solution at the confluence of TV and social networks.

In the summer of 2014 Luxoft purchased from the Swedish company Mecel the right to the solution simplifying development of embedded software interfaces for motorcars. The transaction amount was $3 million.

In late 2012 it was announced about a new investment transaction with participation of Yuri Milner. Together with Sergey Brin (Google co-founder), his wife Anne Wojcicki and several investment funds they invested $50 million into the US 23andMe company operating in the bio-informatics field. It was announced that Yuri Milner was the marquee investor in this investment round.

In the autumn of 2011, the DST Global fund headed a new round of investments into the Swedish developer of the Klarna payment system, in which $155 million were invested.

In the spring of 2012, Transas acquired Revue Thommen Swiss, which manufactures air equipment.

In October 2012, InfoWatch (Natalya Kaspersky's company) declared acquisition of a 16.3% stake in G Data, a German antivirus developer that ranks No.2 at the antivirus market in Germany, yielding leadership to the Russian Kaspersky Lab. Acquisition of a stake in G Data is fully compliant with InfoWatch's plans to promote their own corporate products in the European markets.

3.4. The Global Software Market and Ways to Increase Sales of Russian Suppliers

According to Gartner, the global IT market increased in 2013 by 2.1% and reached $3.62 trillion. IDC analysts determined a higher growth — 4.5%. Both IDC and Gartner during 2013 reviewed their forecasts towards decrease. In the H1 2014 they did the same. According to the most recent figures, the growth by the results of 2014 will remain at the last year level or slightly decrease (IDC analysts expect the growth of global IT market by 4.1%, and Gartner — by 2.1%).

The market of such devices as personal computers (PC), ultrabooks, cell phones, tablets and printers, as Gartner expects, will grow next year by 1.2%, up to $685 billion, and expenses on DPC will increase by 0.4%, up to $140 billion. The market of IT services will increase by 3.8%, up to $967 billion, and the enterprise software market — by 6.9%, up to $321 billion. Gartner analysts think that the holiday of IT market is near at hand: from 2015 to 2018 the market will return to the "normal growth" stage as formation of prices and purchasing operations will get into equilibrium again. The IT market will come to the third phase of development when the focus will shift from technologies and processes to new business models.

According to the IDC experts, from 2013 to 2020 the global amount of information will increase tenfold and amount to 44 ZettaBytes, but the storages will accommodate only 15% of data. Up to date, Russia has accumulated 155 ZettaBytes, or 2.4% of the global volume. In the next seven years this proportion will remain.

According to the Polish firm PMR, the IT market in Central and Eastern Europe reached 14.6 billion EUR in 2013, i.e. 2.5% more than in 2012. Regardless of predicted deceleration in 2014 to 1.3%, the PMR analysts think that in 2015 the growth will accelerate (in 2014–2018 it will approximate 4.5%). The analysts associate the growth slowdown with competitive recovery and price drop almost in all market segments.

According to the IDC experts, global software sales in 2014 will increase by 5.9%. By 2018, the sale proceeds of software developers will increase on average by 6% annually. The highest annual average growth rate, measured by indicator about 9%, will be demonstrated by the following segments: Structured Data Management Software, Collaborative Applications and Data Access and Analysis and Delivery. In regional terms, according to IDC's forecast, the forming markets will continue to demonstrate the higher growth rates than mature economies.

Over horizon period 2013-2018, an average CAGR for Asia-Pacific region without Japan, Latin America and CEMA (Central and Eastern Europe, Middle East and Africa) will amount to 8.5%, whereas an average CAGR for mature markets – North America, West Europe and Japan — 5.9%.

According to Gartner, the growth of expenditures on software In BRICS countries increased by 6–10% in 2013. The highest growth-rate is shown by India (+10%). Russia takes 2nd place (+8.9%). In Brazil, China and South Africa, the growth of expenditures on software varies from 6.3% to 7.8%.

According to Gartner, in 2013 the global software sale proceeds reached $407.3 billion with the 4.8% growth. A similar growth is demonstrated by the global market of security packages

(it increased by 5% to $19.9 billion). According to IDC, the world market of hardware and software security appliance is successfully developing. In QI 2014, the sales increased by 8% on an annualized basis and amounted to $2.1 billion. This is already the 18th consecutive quarter of the global market growth which began in Q4 2009.

In geographic terms, the highest sales growth — by 20% — is recorded in Latin America. In Asia-Pacific region sales in monetary terms grew by 13.6% compared to Q1 2013. According to J'Son and Partners Consulting, the global M2M market demonstrated on the back of world economy recovery high growth rates in 2013 reaching about 25%.

RnR Research forecasts that in the next 6 years the market of technologies related to contactless sensors and gesture recognition will explode and by 2020 will reach $22.4 billion. By "contactless sensors" and "gesture recognition technologies" are implied hardware and software tools that allow the user to work closely with an electronic device without making contact with it. The market of biometrical products including contactless sensors contains different products for recognition of face, eye iris, voice and fingerprints. Technologies used for contactless gesture recognition include 2D cameras, 3D cameras, ultrasound, near-infrared emission and electromagnetic fields. Gesture recognition technologies and contactless sensors find a ready market in such areas as banking and finances as well as medical care. Besides, demand for contactless readers is gradually growing in proportion to advancement of electronic passports and passports for traveling abroad.

Russian developers are able to work successfully in all high-growth segments of the world software market. They enjoy well-deserved recognition especially in the field of information security. However, the politically motivated decision to go back from Russian software may have a major negative impact on the sale of respective solutions in the Western (and not exclusively) countries.

Besides, Russian companies and programmers are good at developing and selling abroad mobile applications, and this segment is one of the backbone directions of the global IT industry development. According to the analysts, "cloud services", social networks, and systems for "large data" analysis belong to the same line. Mobile applications can be developed and successfully sold abroad by even very small Russian companies, as well as individuals.

Availability of the GLONASS system can provide certain advantages to Russian developers in the field of creation of geo information systems (GIS). But contrary to expectation, its full-size commercial use in 2013 did not start yet. In the summer of 2014 the Russian Government approved "the Road Map" for creation of JSC GLONASS, development of the state automatic information system ERA-GLONASS and its use in the interest of other information navigation complexes and systems established by federal executive authorities and organizations.

According to the Road Map, in 2015 with budgetary allocations on system operation to the amount of 590 million rubles, the income of JSC GLONASS should amount to 1 billion rubles. By 2018, the state expenditures must be lowered to zero while the income of society will alternatively increase to 5 billion rubles.

According to Gartner's calculations, no more than 2.7% of the global software market (including customized development services) is accounted for by Russian software companies. However, for many years, this share has been increasing by approximately 0.1% per year irrespective of the global market growth deceleration or acceleration.

Russia is far behind India (more than 10 times) by software export volumes in monetary terms. However, the gap is gradually narrowing (10 years ago, the difference was 20 times). Russian developers should not look up to the Indian IT export volume figures. The difference in population and living standards is too great. At the same time, the Russian industry is on firm ground in the most expensive hi-tech development segment, where it is worth increasing Russian developers' competence.

According to the Russian IT industry development strategy, which was formulated by the Association of Computer and Information Technology Companies (APKIT in collaboration with McKinsey, Russian software export revenues are expected to reach $27 billion in 2020. To reach such level of export receipts, it is enough to increase the export approximately by 20% per year. Such export growth rates have been already observing for four years (before the crisis, the growth rates were 40–50% per year). By the results of 2013 software sales abroad increased by 17%. With the state support of IT export, the export growth may be even higher. There are all opportunities for acceleration.

Chapter 4

Business Environment in Russia

4.1. General Situation

The present survey of 2014, which has covered data provided by 131 software exporters, showed the positive attitude of respondents to changes in the Russian business environment. Besides, the all-around progress was noted also for all groups of respondent companies distributed according to their location.

Only in St. Petersburg the respondents indicated the worsening of business climate over the past year. A sharp reduction of the City budget related to changes in distribution of taxes collected from businesses in regions resulted in diminution in business supporting programs as a whole and in reshuffle in the City Administration. As a result, the city was disappointed of participation in the Federal program of Technoparks' construction. The federal financing ignored St. Petersburg within other programs as well. In comparison with the previous survey, St. Petersburg companies gave a better estimate only to changes in bureaucratic and administrative hurdles and to financial support of small businesses and startups.

As before, business environment in the industry taken as a whole is evaluated by respondents depending on the company size. The larger is a respondent company the higher is an estimate. Some average estimates counter this argument, however it is connected most probably with random changes in the respondent composition (this is especially true in regard to small groups under consideration).

In the 2013 report we suggested that the reference point for assessment of the national policy in a few next years might have been the attainment of a total "good" mark (not less than 4) for "business

Average estimate of operational environment in Russia according to five-mark grading system by the results of software exporters polling

	survey 2011	survey 2012	survey 2013	survey 2014
State support in IT area*	2,90 ↑	3,14 ↑	3,16 ↑	3,21 ↑
Defense of IPR rights*	3,10 ↑	3,16 ↑	3,17 ↑	3,13 ↓
Labor supply and provision of educational systems	2,83 ↑	2,64 ↓	2,58 ↓	2,71 ↑
Tax system	2,37 ↑	2,61 ↑	2,73 ↑	2,87 ↑
Bureaucratic and administrative hurdles	2,34 ↑	2,47 ↑	2,45 ↓	2,69 ↑
Availability of modern infrastructure	2,82 ↑	3,16 ↑	2,98 ↓	3,17 ↑
Financial support of small businesses and startups	2,38 ↑	2,65 ↑	2,67 ↑	2,79 ↑
State support of international marketing activity	2,23 ↑	2,31 ↑	2,36 ↑	2,44 ↑
State support of certification for compliance with international standards	2,24 ↑	2,44 ↑	2,47 ↑	2,63 ↑
Financing of R&D	–	–	–	2,70 ↑

↑ – growth relative to previous year; ↓ – fall relative to previous year

Assessment of business environment in Russia depending on the respondents' location

	survey 2011	survey 2012	survey 2013	survey 2014
Moscow	2,61 ↑	2,74 ↑	2,70 ↓	2,92 (2,89) ↑
St. Petersburg	2,65 ↑	2,76 ↑	2,76 ↑	2,70 (2,69) ↓
Siberia	2,42 ↑	2,81 ↑	2,86 ↑	2,96 (2,93) ↑
Ural	2,45 ↑	2,72 ↑	2,90 ↑	2,91 (2,91) ↑
Other towns	2,57 ↑	2,65 ↑	2,65 ↑	2,84 (2,83) ↑

↑ — growth relative to previous year; ↓ — fall relative to previous year
* — including evaluation of R&D financing (in brackets)

Assessment of business environment in Russia depending on the respondents' turnover

	survey 2010	survey 2011	survey 2012	survey 2013	survey 2014
less than $0.5 million	2,72 ↑	2,56 ↓	2,76 ↑	2,72 ↓	2,82 (2,80) ↑
from $0.5 million to $4 million	2,72 ↑	2,54 ↓	2,65 ↑	2,73 ↑	2,85 (2,84) ↑
from $4 million to $20 million	2,67 ↑	2,68 ↑	2,87 ↑	2,71 ↓	2,86 (2,85) ↑
from $20 million	2,77 ↑	2,66	2,92 ↑	–	–
from $20 million to $100 million	–	–	–	2,73 ↑	2,91 (2,88) ↑
over $100 million	–	–	–	2,93 ↑	2,81 (2,78) ↓

↑ — growth relative to previous year; ↓ — fall relative to previous year
* — including evaluation of R&D financing (in brackets)

environment" by all categories of companies (including small ones). Due to the changed circumstances, we have to replace "might have been" by "must be". In this context we should mean not a few next years but the very next year. Surely, achieving this goal within such a short period will be hardly possible (if just for impossibility of fast resolution of human resources problem), but coming close to the average 4 mark can and should be done.

4.2. State Support of in the Information Technology Area

In 2014, a share of respondent companies that positively assessed the state support in the IT area in the last two years increased by 5% compared to the results of the 2013 survey and reached 30%. As a year ago, a share of those who thought that the situation with the state support went downhill amounted to 9%. The bulk of respondents thought that the situation with the state support did not change over the 1-year period.

Much the same values were demonstrated in 2008. However in that time almost one third of responding presidents of companies found out a certain improvement owing to promises made by high-ranking officials and announced plans to support the industry. The hopes were soon exchanged for disappointment thanks largely to governmental actions during the world crisis 2008–2009. As a result, in 2009 almost 90% of respondents pointed out that nothing had changed ("the state support is inconceivable").

A fundamental distinctive feature of estimates in the last 3–4 years is that they reflect no longer the expectations of the respondent companies but the real amelioration manifested in specific decisions of the Government and the State Duma in implementation of state-run projects and programs aimed at supporting of IT companies (in more detail see below and in other sections of this chapter).

The higher is the frequency of improvement mentioned, the bigger is the size of a company (responses of enterprises with the turnover over $100 million were not taken into account as the sample of this group was too small) and the higher is export share in consolidated revenues. The smallest number of companies that saw progress in the actions of the Government is located in Moscow, but in St. Petersburg and other cities their number is not much higher. Naturally, the support became perceptible by the companies that took advantage of the social tax incentives, but the difference in estimates of these companies and those that do not enjoy incentives is not too big.

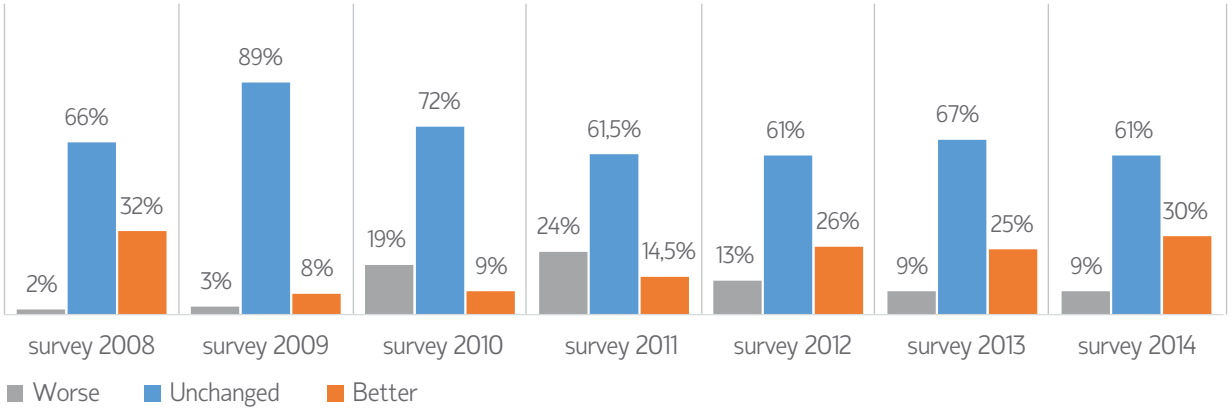
On the one hand, the opinion of startups that are the most favored companies in terms of support is poorly represented in our survey. So if the scope of polling was wider the estimates of small enterprises could be better. On the other hand, startups often simply do not have a reference point when they are asked about improvement or deterioration of the state support. Anyway there is no sense to suggest that the government is primarily concerned with big business. Perhaps such-like priorities remain to a certain extent but the support of small business is evidently more efficient and perceptible inter alia by small companies themselves.

If by the results of 2014 survey no profound changes in the companies' attitude to the state support were revealed, then in the next year there is every reason to expect such changes. The situation at the Russian market and in some foreign markets is becoming quite different. Threats or even real limitations for business are emerging as well as new opportunities arise that are often difficult or even impossible to take without the state support.

Russian software companies already are faced with problems about sales on foreign markets (not only in countries that have strained relations with Russia), while the Russian IT market can become more accessible to them due to the sanctions of the USA and EU aimed at restriction of Russian access to dual-use technologies. Even if the state support in real life does not change or improves only a little bit, more than likely that the future respondents will feel deterioration in the business environment. Since spring of 2014, due to the growing animosity between the US/EU and Russia some new challenges have appeared that should be responded to.

The RF Government and the members of the Parliament together with the representatives of software industry (in particular, branch associations) already discuss the need in import substitution, the issues of information security and technological self-sufficiency. First of all, an attempt was made to agree upon the definition of "domestic" software. Without it no one can make decision on measures of the state support of domestic software industry in new current conditions. In theory, the definition of the term should be given in any events, but after the risen threats and block of delivery of mission-

Assessment of changes of the state support in the IT area in the last 2 years



critical software for a number of major facilities of the fuel and energy sector everybody had to jump the gun. With no such definition it is not possible to speak about import substitution that today is nothing else but a heightened need.

The leading associations of software industry (ARPP, RUSSOFT, RASPO and APEAP) in July 2014 harmonized their own definition of Russian software. This definition can be approved by the members of parliament in the autumn following which the decisions aimed at support of the domestic software companies might be expected.

One important governmental decision has been already made (unrelated to 2014 political events). In July the RF Ministry of Communications and the Media prepared the order "On approval of cumulative groups of IT establishments" which formally designates the boundaries of this branch — kinds of relevant economic activities and IT products. Thanks to these changes an opportunity will be given to obtain statistic information branch-wide. Up to date, the activity of IT companies in the state statistical accounting was reflected by 2–3 indexes of which accuracy gave rise to doubt.

Therefore, it was very hard to determine what effect one or another governmental decision or change of legislation had on the IT area. Currently, the feedback is brought into action mainly through branch associations which themselves often need factual information that can be collected exclusively by government agencies. This feedback is particularly required for monitoring the implementation of "IT development strategy in the RF for 2014–2020 and projected 2025" approved by the Government in the end of 2013. In the context of latest events this document may need readjustment.

Also in the end of 2013 the results of selection of organizations for the purpose of establishing the breakthrough innovation centers in the area of information technologies were summarized. The competition was organized by the RF Ministry of Communications and the Media jointly with the Ministry of Education and Science. In the space of a month and a half in August-September 2013 more than 130 applications of universities and scientific research institutes were made. Based on evaluation of these applications and on information about applicants, the experts decided on 19 winners.

Each winner has well-known IT companies among its partners. It is assumed that all together (including 19 selected companies) there will be chosen some 50 organizations that principally can claim to win the state funding for development of breakthrough innovations in the IT area (the name

of the game is billions of rubles). They will deal with the whole range of popular subjects (big data processing, cloud computing, Internet of things, bio-informatics, human-computer interface etc.).

This program of research effort support in the higher educational institutions through interaction with commercial sector has found the most outspoken backing of business. Unfortunately, over the past months the program did not go any further. If the case stands thus, the refusal to perform it will definitely have negative impact on assessment of the state support by IT industry.

Below is a list of events and decisions made by government agencies that have influenced or may influence in the near future the perception of changes in the field of the state support by software exporters:

1. Recovery since 2010 of the social tax incentives concerning payments to the Pension Fund, Compulsory Social Insurance Fund and Federal Medical Insurance Fund (which actually were no longer in force with abolition of the Unified Social Tax since 1 January 2010) and subsequent widening of the circle of software developers to whom this privilege can be granted due to reduction of the company staff size from 50 to 30 persons and further from 30 to 7 persons.

2. Adoption of the bill that defines creation and operation of Skolkovo innovation center as well as approval of amendment to the RF Tax Code establishing exemptions for income tax, property tax and VAT for innovation enterprises of Skolkovo center.

3. Grant awarding of software companies for performance of advance research by Skolkovo foundation.

4. The RF Governmental approval of "National software platform" (among top-priority "technological platforms") that must provide import substitution, national security, catch-up plan regarding the level of IT imlementation in economy, and competitive recovery of home-grown technologies at the world market.

5. Entrance into force in the middle of 2011 of the OpenDocument (ODF) national standard.

6. Preparation of a bill on introduction of amendments to the Law "On information, information technologies and information security" implying introduction of the concept of self-regulating organizations of software developers (SRPO).

7. Involvement of foreign scientists in the Russian science within the framework of concourses for which the state allocated mega grants.

8. Development of science and technologies was named as one of the priorities for federal expenditures in 2012–2014. In order to support it, in 2012 it was assumed to allocate from the federal budget a total amount of 323 billion rubles (over $10 billion). Out of this amount, to space and telecommunications must be allocated 161 billion rubles (including development and operation of the GLONASS system — 20.5 billion rubles), to strategic computer technologies and software — almost 40 billion rubles.

9. In December 2012, the head of the RF Government Dmitry Medvedev approved the program "Development of science and technologies" that will specify the national policy in the scientific and technological field of Russia by 2020. The main funding streams will be

as follows: establishment of modern infrastructure of Russian science, development of its human resources and material and technical base, and enhancement of fundamental and applied research efficiency.

10. In the autumn of 2012, the deadline for transition of the Russian government authorities to electronic document flow was imposed. It should be done within 5.5 years by estimate. In the USA the automation of document flow will take much longer.

11. In March 2013, the RF Government held two meetings dedicated to export stimulation. At one of them the RF Prime Minister Dmitry Medvedev stated that the state strategic course would be the RF export capacity development by increasing a share of high-tech and science-intensive products. A key part is assigned to JSC Export Insurance Agency of Russia (AXIAR) which was established two years ago. This agency has already begun to provide insurance services that allow for mitigating risks of exporters.

12. In 2013 the law was adopted on reduction (from 30 to 7 persons) of the staff size of companies that gave rights to social tax exemption. In July 2013 the Government approved the Road Map of IT branch development prepared by the RF Ministry of Communications and Media.

13. In June 2014 the RF State Duma passed in a third reading the draft federal law "Concerning the Introductions of Amendment to article 13.2 of the Federal Law "Concerning the Legal Status of Foreign Citizens in the Russian Federation". The draft law was developed by the RF Ministry of Communications and Media under implementation of the Road Map "IT branch development". It addresses improvement in terms of business operations of Russian IT companies and allows for attracting the high-skilled foreign experts according to the simplified procedure. Once this law enters into force the IT companies accredited at the RF Ministry of Communications and Media will take the advantages of innovation.

14. Some important decisions on support of IT industry are made on the regional level, among other things in Novosibirsk a law was adopted on income tax abatement for IT companies concerning the part of tax to the regional budget.

4.3. Taxation System

The surveys performed in the last three years show an obvious and significant improvement in the attitude of our respondents to the tax system. The proportion of companies that are unsatisfied in terms of procedures and of amount of taxes paid reduced from 66% in 2011 to 30% in 2014. Compared to the previous year, not only this share decreased but that of those who give a "good" mark to the tax system increased almost twice — from 9% to 17%.

The improvement of tax system rate by software development companies is related to the amendments to the Federal Law 212. Due to these amendments adopted in 2010, it was found out that the social tax rate for software development companies, accredited at the Ministry for Communications and Media and complied with two requirements — the share of software development in the income and the staff number — remained at the 14% level (like it was in 2008–2009 exclusively for software exporters).

In the course of 2-year struggle, business was fortunate not only to prevent the attempts to increase this rate but also to extend the effect of this privilege to the companies that operate at the domestic

market. Moreover, in the late 2010 the RF Ministry of Finance endorsed initiative of the RUSSOFT Association and that of the Ministry for Communications and Media as to apply the premium rate to a wider number of IT companies by reduction of the requirement to a minimum staff number from 50 to 30 persons. An amendment to the FZ 212 was adopted establishing that this rate would be valid up to 2017, and at a later stage could be extended.

In pursuance of instructions of the Russian prime-minister Dmitry Medvedev, by the results of the meeting of the RF Council Presidium for modernization of national economy dated 24.12.2012, upon an initiative of RUSSOFT the proposals were prepared to further reduce the minimum staff number of the companies that pretend to the social tax incentive from 30 to 7 members of staff. The corresponding amendment to the Law 212 was adopted by the State Duma in the end of 2013, and since 1 January 2014 this decision took legal effect.

For the innovation companies the only way to get right to use the social tax incentive is to be awarded the status of resident of Skolkovo innovation center. In the autumn of 2010 the State Duma adopted in the third reading the draft project determining principles of establishment and operation of Skolkovo innovation center and approved the amendments to the Russian Tax Code establishing privileges to income tax, estate tax and VAT for innovation enterprises of Skolkovo center.

For 10 years the participants of the project will be freed from VAT whereas a total amount of payments to compulsory pension insurance, medical and employee insurance (social taxes) will be lowered for them up to 14%. The first residents of Skolkovo who could enjoy privileges appeared in the spring of 2011. The Ministry of Economic Development and Trade suggests extending the tax exemption provided to Skolkovo participants to 25 innovation territorial clusters that were recently approved by the Government.

In 2013-2014 survey, the average estimate of the tax system status and its convenience for business did not depend on whether the respondent companies enjoyed the social tax incentive according to Federal Law 212 or not. The overall assessment of tax system efficiency for business encouragement all the same remains at the level less than 3 points out of 5 possible points (worse than "satisfactorily"). Thus, even the fact of privilege granted does not guarantee the loyalty of respondent companies to the tax system. It may be assumed that companies thereby express their negative attitude not so much to high taxes but to the administration system (in the first thing, in the area of foreign exchange controls, export control, customs regulation, financial and accounting).

Nonetheless, month by month a growing number of software developers use the possibility of social tax incentive granting. If in 2013 35% of respondent companies had this privilege, in 2014 — they are already 44%. According to the Ministry for Communications and Media of the Russian Federation, a number of companies that applied for accreditation which allowed for pretending to reduction of social taxes was greatly increased just from the beginning of 2014 when the threshold staff number decreased from 30 persons to 7 persons.

Assumably, a number of companies enjoying the social tax incentives will grow regardless of the reduction of the staff number threshold, because year after year a growing number of IT companies come to know about real chances to reduce their payments to state funds (if in 2012 only 49% of respondent companies could in practice assess the difficulties in privilege granting, then in 2013–2014 —already 75–80%). However, if the circle of companies that are able to pretend to privileges has not been widened, this growth will be much lesser. The big growth of number of companies accredited

at the Ministry for Communications and Media was made primarily due to businesses with the staff number less than 30 persons (generally startups).

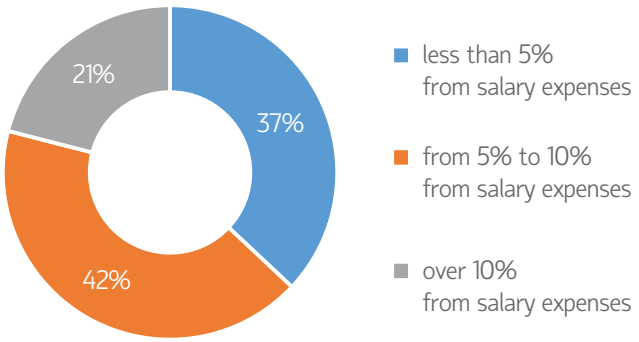
A number of companies obtaining accreditation each month is 3–4 times growing in 2014. In incomplete three quarters, the accreditation was granted to 1351 companies, and in the previous 6 years — to 2782 companies. All in all, in early August 2014 there were 4133 companies accredited by the ministry that pretended to get the diminished social tax rates for software developers (or other kinds of preferential advantages that can see the light in the future for IT companies).

According to our survey, the social tax incentive is more often granted to the companies with preferential orientation towards foreign markets. 70% of companies which got over a half of their revenue from software export were granted the preferential social tax treatment (if export provides less than a half of the turnover, the same figure is only 35%).

Criteria that are considered to be most difficult in granting a privilege according to Law 212 (% of respondent companies)

	survey 2013	survey 2014
Staff number no less than 30 persons (in 2014 — 7 persons)	52%	22%
Software and services sale exposure in the total revenue not less than 90%	19%	38%
Accreditation at the RF Ministry for Communications and the Media	40%	39%
No problem	—	7%

Savings from benefits granted according to Law 212 (% of respondent companies)

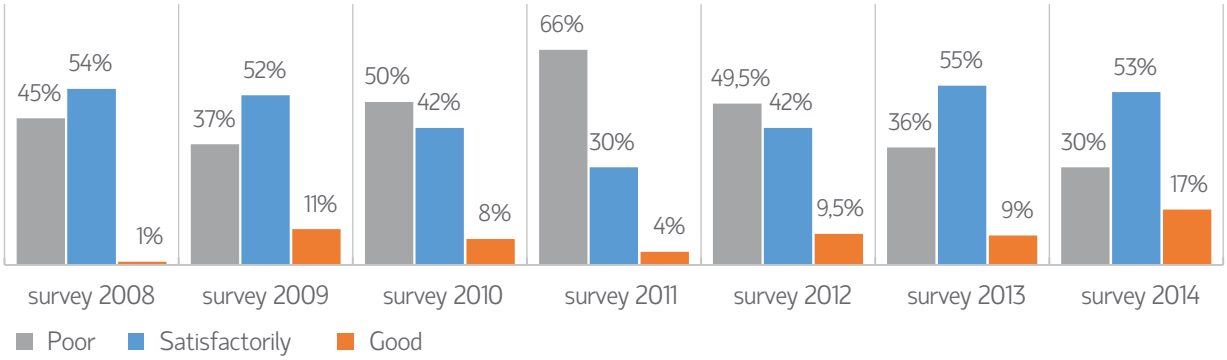


Naturally, software development service providers are the most active in the issue of social tax incentives' granting, because their competitiveness at the world market mostly depends on service cost (while the service cost depends by 70–80% on salary of employees). That is why the service companies enjoy the premium rate more often (52%). Among the licensed software developers only 25% of respondent companies had similar privileges.

Our last survey shows that, as before, the social tax incentive is used the most by companies with the turnover over $4 million (62%). Among smaller companies only 36% enjoy the tax incentive, but this value should significantly increase next year as since January 2014 just the small enterprises provided the several-fold increase of the number of companies accredited at the Ministry for Communications and the Media. The St. Petersburg companies have social tax incentives much more often than the Moscow ones (63% versus 30%), and in regions the "exempt share" is the same as in the country as a whole (44%).

In 2013 the threshold staff number was most often named as the most difficult criterion in granting of privileges by virtue of Law 212. Due to reduction of this threshold since 1 January 2014 from 30 to 7 persons, a share of respondent companies that gave this criterion as the most difficult to obtain was decreased from 52% to 22%. For 37% of companies with the turnover less than $0.5 million a threshold staff number still is a problem because many of them have personnel less or equal to 7 persons.

Tax system assessment



Two other criteria (requirement for 90% of revenue from software development and accreditation at the Ministry for Communications and Media) were mentioned by almost 40% of respondent companies, while 7% of respondents do not see any serious problems to be solved for privilege granting (in 2013 this option was not considered).

The accreditation procedure still is thought to be complicated by many companies, anyway it is sufficiently simple to provide the large-scale involvement of new users of the incentive rate.

Besides, it is worth noting that only 24% of companies accredited at the Ministry for Communications and Media think that undergoing this procedure is quite easy at all. Among the companies that do not have accreditation the share of those in doubt is much greater — 54%. It may be assumed that the opinion on complicity of meeting one or another criterion is based not on objective information but on widespread stereotypes about actions of the State department officials.

Large and medium-sized companies, as a rule, reap more benefits from preferential conditions of social ayments to state funds than small enterprises. 40% of companies with the turnover more than $4 million enjoy savings generated by social tax incentives to the amount over 10% from salary expenses, while among companies with a smaller turnover thereof only 10%.

If the availability of privileges almost does not affect the tax system assessment, then this estimate greatly depends on the size of respondent companies. For three consecutive years small companies were the most dissatisfied with the tax system. For them it is much more difficult or even impossible to obtain tax benefits (primarily due to the requirement to a minimum staff number). An average appraisal of tax system efficiency by points among companies with the turnover less than $4 million was lower than among companies with the turnover over $4 million. In this case, if the $4 million bar is skimmed, the company size does not influence the estimate anymore.

An average appraisal of tax system efficiency is better among companies that are to a greater extent oriented towards foreign markets than among those operating in Russia — 3.03 versus 2.82. In the previous years, companies with the export share over 50% were the most critical to Russian business climate, in particular, to the tax system.

These companies have to continuously compare the taxation scheme in Russia with other countries. A price of their services and the result of participation in major foreign tenders depend on the tax rate and insurance contributions. In all appearances, thanks to incentive rate their competitiveness on the global market is adequately supported.

Average estimates of tax system depending on the respondents' location

Moscow	2,95
St. Petersburg	2,74
Siberia	3
Ural	2,67
Other towns	2,88

In 2013 the tax system oftener was a pet aversion of regional companies than those in Moscow and St. Petersburg. The reason is that in two capitals, as a rule, there are more large-scale enterprises that are comfortable with the question of which way and how many taxes must be paid.

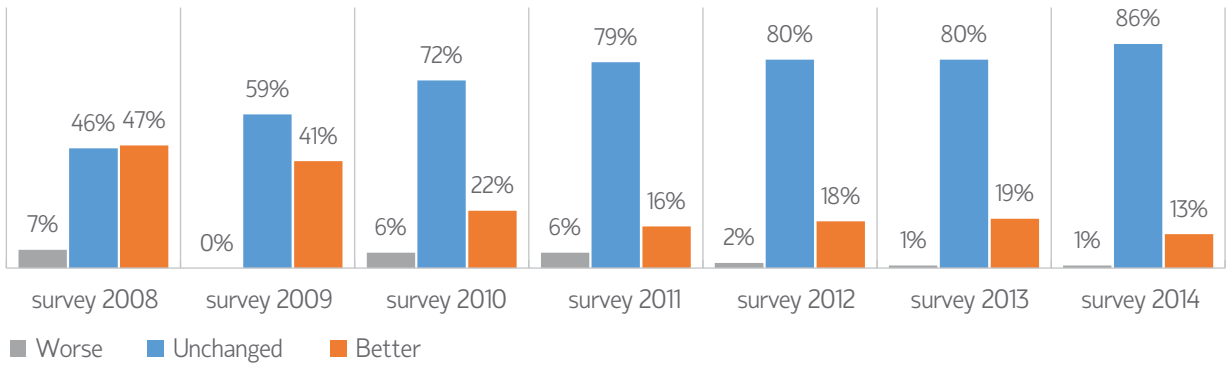
In 2014, Moscow and St. Petersburg already do not give the highest average estimates of the tax system because of the improved attitude towards tax system efficiency by relatively small regional companies.

4.4. Situation in the Area of Protection of Intellectual Property Rights

In the course of this survey, 86% of respondents did not notice any changes in the area of protection of intellectual property rights over the past 2 years. There is no cause for thinking that they are under a delusion. However it must be emphasized that for three years on end we almost did not meet companies that pointed out the deterioration of situation. Though it is true that the number of respondents that pointed out the deterioration in the area of protection of intellectual property rights somewhat decreased (from 18–19% in two recent years to 13%).

When it comes to piracy, it is worth noting that the intensity of antipiracy campaign is about the same as in a few previous years. Yes, this campaign resulted in improvement of some parameters characterizing the piracy level. According to BSA, a cost of pirated software in Russia in 2013 amounted to 87 billion rubles ($2.6 billion). Besides, the use of counterfeit software lowered by one percentage point — to 62%. The expenditures of Russian companies on regularization of relations with copyright holders among the BSA members with regard to software theft were decreased by 8% up to $2 million in 2013.

Estimate of changes over the past 2 years in the area of protection of intellectual property rights



However the level of utilization of counterfeit software in accordance with the BSA methodology only says that counterfeit software is installed, but is says nothing whether this software is used or not. In many cases a user instead of counterfeit software employs functions available in alternative cheaper or free software. In all appearances, any further actions against piracy by existing methods will not substantially push up sales in Russia of software made by BSA members — an alliance that combines efforts of major world software companies.

Currently, by the level of piracy in the IT sphere Russia takes place approximately in the middle of the world rating, near the Eastern European countries. In all likelihood, any new substantial progress in this field is hardly feasible. The Russian Government will have to think over the best way to protect the intellectual property rights of the national developers, and not only in Russia, but at the world market as well. Under present circumstances this issue must be given the highest priority.

Chapter 5

Geographic Reach and Main Vertical Markets

5.1. Main Geographical Markets

As per the results of 2013, each of respondent companies on average was active on 3–4 markets out of which 1–2 were thought to be key markets. It is of importance that these figures remained at the level of 2012 that was much lower than in previous years. Evidently, in the last two years the geographic distribution of software developers marketing stabilized, the companies to a greater extent began to focus on specified geographic markets.

Looking at the picture of changes in shares of one or another geographic market in the last 5–6 years we can see that the share of the non-CIS countries has significantly decreased. It reflects the actual refocusing of a great number of well-known software developers, that were historically oriented toward global market, on the markets of Russia and CIS countries which attractiveness greatly improved over recent years. But it is true only to a certain degree.

The fact is that over recent years has greatly increased a number of new software companies that in majority of cases started their activities at the markets of Russia and CIS countries. At the same time, the total number of Russian software companies present at the markets of the non-CIS countries has not even lowered but on the contrary — has increased.

Nonetheless, a certain decrease in attractiveness of the North American and European markets is obvious as their shares also decreased in the large companies' category which composition over the last 5–7 years remained almost the same (here the reduction of interest to the US and EU was less expressed than in the case of all respondent companies but all the same it was non-negligible).

At the same time, that is not to deny the fact that many companies have left the USA. For all that, the North American market following the results of 2013 was the second after Russia by the share of respondent companies that stay there, and the third in the list of key markets in opinion of respondents (it is important because in the last 3 years the rating of the US market lowered even to the 5th–6th place).

Looking at the geographic distribution of respondents in terms of volume of sales on different geographic markets (unfortunately, our survey does not let to measure it), the US market has been definitely taking the second place all last 10 years. In fact, the share of sales in the USA in the consolidated revenue of the major Russian exporters often runs into tens of percentage points and sometimes is as big as 50% or even 80%.

According to media, a wide range of companies (generally major ones — with the turnover over $10 million) actively develop new geographic markets. They open their offices and implement projects in countries that were almost of no interest to software developers just 5–10 years ago (see the selection of related messages below). Russian developers became interested in the markets of Latin American countries, Vietnam, Mongolia, Philippines, Zimbabwe, Nigeria, South Africa, India, China, Nepal and other countries.

Unfortunately, only in 2013 such region as "the Middle East" was included in the questionnaire. It should have been done a little bit earlier as this market was more important than those that were

Presence of Russian companies in the world markets, % of respondent companies

	2007	2008	2009	2010	2011	2012	2013
Russia	55%	87%	89%	99%	93%	89%	93%
USA and Canada	55%	52%	38%	40%	45%	31%	41%
Ukraine	17%	35%	41%	57%	35%	34%	39%
Other countries of Western Europe	35%	30%	33%	35%	40%	25%	34%
Other countries of the former USSR	39%	26%	34%	51%	50%	36%	31%
Belarus	32%	23%	31%	45%	29%	31%	33%
Germany	25%	24%	28%	33%	34%	26%	22%
Scandinavia (with Finland)	28%	18%	18%	20%	27%	19%	17%
South East Asia	19%	14%	19%	19%	23%	15%	8%
Australia, Africa, South America	25%	7%	12%	19%	15%	15%	14%
Middle East	—	—	—	—	—	10%	8%

included in the questionnaires long ago. Up to date, approximately one tenth of Russian software developers are on the Middle East market.

Some 5–7 years ago we recommended Russian companies to look at the prospects at the markets which were new for them. Even if they are smaller than the North American and European markets, they are big enough and fast growing.

Furthermore, in the developing countries there is an opportunity to overtake a bigger market share than in the USA and Western Europe characterized by very strong competition. If the heads of a number of software companies did not listen to this advice in those times, as time goes by, they themselves have come to an understanding of the importance of developing those new markets.

The importance of this issue greatly increased after aggravation of the global political situation. Some Russian software companies by the end of summer of 2014 were faced with problems in promoting their software (or development services) in the USA. The political tension even reflected on operation at the Chinese market where the local government decided to omit all foreign antivirus software in the governmental institutions. The prohibition also concerned the Russian company Kaspersky Lab with excellent indicators of activities at the Chinese market.

Moscow kept long-standing leadership in the share of exporters present in the markets of the former Soviet republics (including Russia). St. Petersburg in comparison with Moscow has many more companies present in the markets outside the former USSR. By this figure the second Russian capital was always the first, but by the results of 2013 it turned to be that the relevant share of other Russian cities is even higher. At the same time, St. Petersburg companies, as before, are better represented in Scandinavia due to geographic proximity.

A considerable growth of interest of regional companies in markets of the non-CIS countries should be examined by surveys in the next couple of years. Perhaps, it can be explained by the fact

Key markets, % of respondent companies

	2007	2008	2009	2010	2011	2012	2013
Russia	42%	71%	72%	86%	79%	24%	69%
USA and Canada	43%	28%	26%	15%	30%	14%	10%
Other countries of Western Europe	12%	15%	10%	12%	17%	13%	15%
Ukraine	6%	13%	11%	10%	9%	22%	8%
Other countries of the former USSR	12%	7%	11%	6%	11%	24%	7%
Belarus	24%	9%	8%	12%	8%	20%	6%
Germany	11%	10%	12%	12%	14%	18%	8%
Scandinavia	13%	8%	6%	6%	8%	8%	8%
South East Asia	6%	6%	3%	3%	7%	6%	1%
Australia, Africa, South America	9%	3%	2%	1%	4%	3%	3%
Middle East	—	—	—	—	—	3%	1%

that they, more frequently than developers from Moscow and St. Petersburg, lay special emphasis on sales over Internet. Besides, it may happen that the regional enterprises when being asked often manifest their intentions rather than the actual presence in markets of the non-CIS countries.

In the last three-four years, opening of sales' and local customer technical support' offices was declared by several Russian companies: Group-IB in the USA, Softline in Peru, ABBYY in Kazakhstan, Yandex in Switzerland and Belarus, Kaspersky Lab and Parallels in the Republic of South Africa, Acronis in Singapore.

At the end of 2012 InfoWatch reported that they were thinking of opening its office in the United Arab Emirates or Saudi Arabia. The share of this region in the company's revenue is quickly growing. InfoWatch already runs projects in Bahrain, Kuwait, Saudi Arabia, and other Middle Eastern countries. The office still was not opened by the end of summer of 2014, however, that did not prevent InfoWatch from expanding its presence in the Middle East.

The news connected with expansion of the Russian companies in the foreign markets for the last 3–4 years:

— **ABBYY** acquired 100% of the Connective Language Services American shares for the software localization and implementation in the US market.

— In June 2010 **Playnatic Entertainment** announced the agreement with Sina Data Coin, which the first Russian-Iranian agreement in the IT sphere.

— In January 2011 **Vitim** has officially opened its office in Finland; this company will become the main European partner of the **Speech Technology Center** (company from St. Petersburg) and will be engaged in development of the software in sphere of speech record, processing and analysis.

— **NIS GLONASS** has registered the NIS GLONASS Pvt Ltd subsidiary in India, which will be engaged in the large projects requiring system integration and in creation of the distribution network for its solutions in the consumer market. It is supposed that the subsidiary creation will help to promote the GLONASS navigation technologies in the Indian market.

— In April 2013 **i-Free** and China Telecom (Chinese mobile network operator represented by the Dazzle Interactive Network Technologies subsidiary) signed an agreement on strategic cooperation in the field of mobile games.

— In April 2013 the integrated automated security management system (KASUB) developed by the **RTEC** was presented at LAAD-2013, the leading armament exhibition in Latin America.

— At the beginning of 2013 **Mail.Ru** launched the Spanish version of its mail service interface. According to the Internet World Stats, Spanish is one of the top-3 languages spoken by Internet users globally.

— In March 2013 **Naumen** from Yekaterinburg reported that Magellan Solutions (a Philippine outsourcing call center) began operations based on the Russian company's software. Naumen expects to start expansion in the region with automation of 100 workplaces of this center. According to developers, the size of the Philippine call-center service market is considerably larger than the similar Indian market and is measured in billions of dollars.

— In the spring of 2014 **EPAM Systems** acquired Jointech (Chinese developer of software for global investment banks and organizations dealing with administration of assets). By this merger EPAM Systems is going to expand its presence in Asia.

— **Domino Soft** automated the largest Mongolian network of drugstores and pharmaceutical wholesale centers Asia-Pharma. (The solution "1C: Commerce management 8" was introduced in the main office, wholesale stores and retail outlets of the network).

— In May 2014 **NAUMEN** completed the project of automation of the outsourcing contact center Positive-Contact in the capital of the Kyrgyz Republic.

— In 2013 **NIS** concluded the cooperation agreement on implementation of the project "Safe tracker–India" with NII C-DAC (the department of the Indian Ministry of Communications responsible for development of IT solutions).

— **Omnicomm** — one of the leading domestic manufacturers of traffic monitoring and control systems based on satellite technologies GLONASS/GPS — presented their solutions on fuel control and traffic monitoring at the conference Telematics Brazil & LATAM 2013 in September in San Paulo (Brazil). This company has been solidifying at the Latin American market for several years.

— In summer of 2014 Kazakhtelecom (Kazakhstan) switched to the system of management accounting based on the BI from Prognoz Platform developed by **Prognoz**.

— In September 2014 **Kaspersky Lab** announced relocation of its Western European headquarters to Paddington, London. Previously its Western European office was located in Ingolstadt, Germany.

— In June 2014 **Macroscop**, the Russian developer of software and hardware for IP video surveillance systems, declared on the entry to the Middle East market.

— In the end of 2013 **Prognoz** completed deployment of solutions for statistical services under the initiative "African Development Bank" (AfDB).

— In February 2014 **InfoWatch** reported about acquisition of the department of the German company Secude that develops a full disk encryption technology. It is already the third acquisition in Germany. Similar actions help to expand the presence at the German market.

— In the end of 2013 the partner relationship was established between the Turkish integrator NGN and Russian system integrator **Krok**. The partnership is intended for increasing technical expertise of the Turkish party in development of comprehensive IT solutions and joint implementation of large IT infrastructural projects within the territory of Turkey.

— In 2013 the Nepalese police purchased the package for forensic processing of speech phonograms ICAR LAB of **Speech Technology Center** for their crime investigation department.

— At the partner conference in June 2014 **Speech Technology Center** stated that promotion in the American market became their priority.

— In July 2014 **Transas Group** declared that the company would become a system integrator of the pilot project on installation of monitoring and correcting stations GLONASS/BeiDou/GPS in China.

— In July 2014 the main office of **Transas** in St. Petersburg was visited by representatives of the companies-members of GIFAS (The Groupement des Industries Francaises Aeronautiques et Spatiales) to familiarize themselves with the state-of-the-art solutions and products for aircraft industry. Foreign colleagues got acquainted with the newest solutions and products of the Transas Group in the area of avionics, training simulators and systems, unmanned aerial vehicles and other modern high-tech solutions for aviation. The delegation consisted of representatives of European companies — leaders in the market of modern solutions for aircraft industry — such as Thales, Elvia, IFAERO, Dassault Systems, Cassidian, Airbus Defense and Space.

— In August 2013 **BPC Bank Technologies** won the tender for development of a processing center for interbank payment transfer between 15 financial organizations in Palestine.

— In October 2013, at the 2nd Russian-Dutch IT Conference in the International Trade Center in the Hague, the **RUSSOFT Association** announced the start of their activities within the territory of the Netherlands where their office was opened.

— In the spring of 2014 **Bell Integrator** (specialized in telecom and bank projects) opened their office in California. The company is going to carry out their principal activities in the USA.

— In summer 2014 a young Russian company **VOCORD** (developer and manufacturer of intelligent video surveillance and audio registration systems) and the Indian company TAL Secure Systems specialized in deployment of IT solutions in the public security field, entered into the cooperation agreement. The Russian management expects that this agreement will assist promotion of their

solutions in international market. The active promotion outside Russia is a part of a new strategy of the company adopted in early 2014.

5.2. Geographic Distribution of Marketing and Trade Offices of Russian Companies

In 2013 around 40% of respondent companies operated regional trade offices abroad or in Russia (a year ago the figure was 33%). 21% of respondents operated sales offices only in one region/country (12.5% in 2012), 19% in two and more (21% in 2012), 12% in three and more (12.5% in 2012).

Judging from the survey of the last year, in 2013–2014 about 25% of respondents informed about their plans to open new regional trade offices. In the last few years similar intentions were demonstrated by 10–15% respondents at least. It is fair to assume that these intentions came true in 2013.

Availability of sales agencies (the share of respondents who specified a country or a region)

	2011	2012	2013	Planned to open at least one new commercial agency in 2013–2014	Plan to open at least one new commercial agency in 2014–2015
in Russia	19%	21%	34%	8%	6%
abroad (in foreign countries)	27%	26% (17%)	29% (19%)	20% (17%)	11% (10%)
in Belarus	2%	6%	11%	1%	0%
in Ukraine	3%	6%	14%	1%	0%
in other CIS countries	6%	6%	13%	6%	2%
in Western European countries	16%	5%	10%	6%	5%
in Central and Eastern European countries	3%	2%	2%	6%	0%
in USA and Canada	19%	15%	14%	5%	6%
in South East Asia	6%	3%	3%	3%	2%
in Africa	2%	0%	2%	6%	1%
in South America	3%	2%	0%	1%	0%
in the Middle East	3%	1%	1%	1%	0%
in all countries and regions	34%	33%	40%	25%	15%

In the previous years new trade offices were essentially opened by large companies that already had offices outside the city where their head quarters are located. Small companies also planned to expand their presence in other regions, but more often they could not afford to do it. The last survey showed that their positions were improved. The growth is caused by appearance of many companies that have one regional trade office.

The share of companies with sales offices in Russia and the CIS countries has increased the most, but in the next 2 years the respondents plan to place priority on the non-CIS countries. None of the respondent companies plans to open new offices in 2014–2015 in Belarus and Ukraine. 5–6% of respondents have a good mind to do it in Russia, Western Europe and the USA.

A total of 15% of respondents plan to open at least one trade office in 2014–2015.

5.3. Geographic Distribution of Software Development Centers

50% of respondents (a year ago, there were 31% and in 2011 — 35%) informed about one own remote captive center in 2013. The share of these companies varied within 25–40% during the recent years.

In this case, the margin of error was rather high, but the fact that this figure increased to 50% suggests that, more than likely, a growing number of Russian software companies now possess their remote captive centers.

22% of respondents (in 2012, there were 16–17%) have two and more remote development centers, and 14% of companies (previously 7–10%) have at least three.

Among companies with the turnover over $4 million these figures turn to be much higher. 72% of respondents inform about at least one own remote captive center, two and more — 43%, three and more — 28% of respondents.

According to data of 2014, most of Russian companies' foreign development centers are located in Ukraine. It can be surely assumed that this country is significantly ahead of other countries and regions by the total number of the employees working for Russian companies outside Russia. In Ukraine, the favorable business conditions for software companies are established (many experts consider that these conditions are better than in Russia), and the labor cost is lower than in Russian capitals.

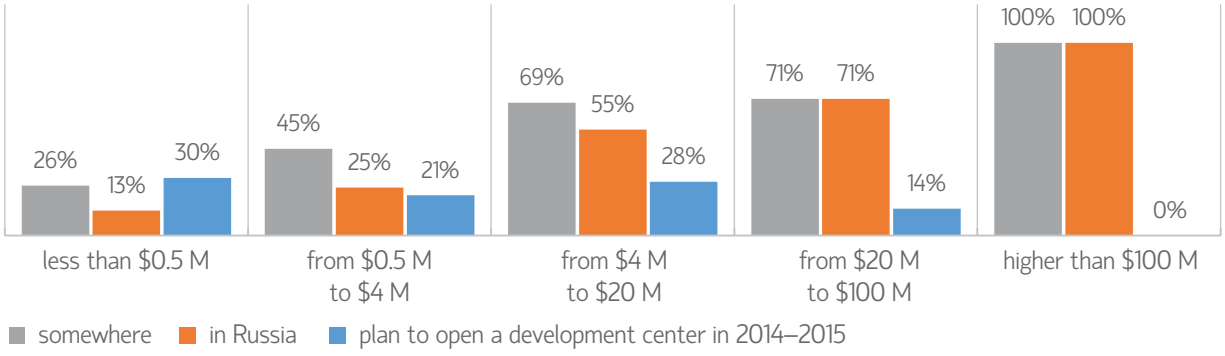
Many Russian companies' remote development centers also operate in Belarus and in other CIS countries. However, Ukraine has a special place as it is the second largest post-Soviet state (after Russia). According to Luxoft, there are about 38 thousand qualified programmers in Ukraine. Every year, the Ukrainian higher education institutions produce 18 thousand IT-engineers who know English generally better than Russians.

In 2014 the situation in Ukraine has drastically changed. Though the Ukrainian legislation regulating software development business has not changed, the business environment as a whole in the conflict-affected country, where young men can be mobilized for military service and national currency is worth less every day as a result of the cruelest economical crisis, became so bad that the leading

Availability of remote development centers (the share of the respondents who specified a country or a region)

	2011	2012	2013	planned to open at least one new commercial agency in 2013–2014	plan to open at least one new commercial agency in 2014–2015
in Russia	28%	24%	34%	4%	8%
in Belarus	7%	8%	11%	3%	2%
in Ukraine	7%	10%	14%	1%	2%
in other CIS countries	3%	6%	12%	0%	3%
in Western European countries	5%	5%	10%	1%	4%
in Central and Eastern European countries	3%	1%	2%	1%	2%
in USA and Canada	3%	3,5%	14%	1%	4%
in South East Asia	5%	1%	3%	1%	1%
in Africa	0%	0%	2%	0%	1%
in South America	0%	0%	0%	1%	1%
in the Middle East	0%	1%	1%	0%	1%

Share of export companies that have remote development centers in 2013, (depending on the company turnover)



Russian companies under client coercion had to think about translocation of their development centers to other countries.

Luxoft has already reported about these plans. It plans to transfer 500 programmers from Russia and Ukraine to the Eastern European countries, and the management to Switzerland, Germany, UK and US.

Before the power shift in Ukraine, at the very beginning of 2014, Luxoft opened a new office in Bulgaria. Company is going to increase the staff up to 400 members in 2 years.

Nevertheless, 2% of respondent companies planned to open new development centers in Ukraine in 2014–2015. Let say they informed on these plans in the early spring of 2014 and since then have supposedly revised them.

The majority of the Ukrainian software development centers of Russian companies are located in Kiev (this year, there are there offices of ~5% of respondent companies. The following Ukrainian cities are also mentioned: Kharkov, Dnepropetrovsk, Odessa, Kherson, Lvov, Vinnytsa, Cherkassy, and Anthracite (Luhansk region).

In Belarus, the majority of software development centers are also located in the capital city of Minsk. There are also development centers in Gomel, Vitebsk, Mogilev, Alekseyevka, and Brest.

Among other CIS countries, Kazakhstan is an attractive place for creation of captive development centers. Three are already several development centers in operation, and is quite possible that some new centers will be opened by the end of 2015. The Baltic countries (the cities of Riga, Vilnius, Liepaja) are also mentioned.

In August 2014 Yota, Russian producer of smartphone YotaPhone, declared that by the end of the year it was going to open the first office in North America. It will be located in Canada. The company intends to hire the BlackBerry engineers who lost job as a result of restructuring.

In early 2014 Yandex opened in the capital of Germany a new office — the 16th in succession in the world and the 3rd in Western Europe. Presumably, the staff will be engaged in development and in promotion of Yandex services, as well as in development of the world maps.

Captive development centers operate in 32 Russian cities (a year ago, 25 cities were mentioned). Most of them are located in Moscow (8), St. Petersburg (5), Nizhny Novgorod (4), Voronezh (3), and Kazan (3). It is worth to note that for two consecutive years Novosibirsk does not rank among first five cities that are attractive for opening captive software

Rating of Russian cities (by the number of the company headquarters, sales offices and captive development centers)

		2013	2014
1	Moscow	64	63
2	St. Petersburg	52	36
3	Novosibirsk	10	12
4	Nizhny Novgorod	12	9
5	Kazan	7	7
6	Yekaterinburg	6	6
7	Izhevsk	5	5
8–14	Belgorod	3	4
8–14	Samara	2	4
8–14	Perm	4	4
8–4	Taganrog	4	4
8–14	Vladimir	less than 2	4
8–14	Voronezh	6	4
8–14	Rostov-on-Don	5	4
15–17	Omsk	6	3
15–17	Penza	2	3
15–17	Chelyabinsk	3	3
18–28	Kaluga	less than 2	2
18–28	Novocherkassk	less than 2	2
18–28	Saratov	2	2
18–28	Ulyanovsk	5	2
18–28	Yaroslavl	less than 2	2
18–28	Tomsk	less than 2	2
18–28	Dubna, Moscow region	less than 2	2
18–28	Kemerovo	less than 2	2
18–28	Krasnoyarsk	less than 2	2
18–28	Orenburg	less than 2	2
18–28	Tver	less than 2	2

Rating of Russian cities by presence of (main and remote) development centers of respondent companies

		2012	2013
1	Moscow	46	48
2	St. Petersburg	45	32
3	Novosibirsk	10	11
4–5	Nizhny Novgorod	8	6
4–5	Kazan	6	6
6–7	Izhevsk	5	5
6–7	Yekaterinburg	4	5
8–13	Belgorod	2	4
8–13	Samara	2	4
8–13	Perm	3	4
8–13	Taganrog	4	4
8–13	Vladimir	less than 2	4
8–13	Voronezh	4	4
14–15	Omsk	5	3
14–15	Penza	2	3
16–21	Kaluga	less than 2	2
16–21	Novocherkassk	less than 2	2
16–21	Rostov-on-Don	3	2
16–21	Saratov	less than 2	2
16–21	Ulyanovsk	3	2
16–21	Yaroslavl	less than 2	2

development centers, although it steadily takes the 3rd place by the number of headquarters of respondent companies.

All in all, the respondent companies have headquarters in 36 Russian cities, their software is developed in 49 cities (with not only a main office but a captive software development center too) and are presented in 56 cities (a year ago there were 60 cities).

In Moscow and in economically developed countries with a high programmers' salary level, development centers are opened purposely either to access the sources of high competence or to support customers' project by efforts of local engineers. Western companies are also acquired for this purpose.

For example, in April 2013, Luxoft declared its acquisition of Freedom OSS, a US developer of corporate open source software using the Red Hat products. The acquisition was made in order to obtain new customers from the US financial sector.

Earlier, in the spring of 2012 EPAM Systems expanded its presence in the market of North America, having acquired for $17.4 million Thoughtcorp, a Canadian software developer with customers in retail, telecommunications and finance.

At the beginning of 2013 one more bargain with EPAM participation was concluded: the company purchased Empathy Lab, an American consulting company specializing in development of digital strategies and UX design.

23% respondent companies plan to expand the network of captive development centers or to establish the first such center in the next 2 years (in 2013 there were 12%). Most probably, the growth of this figure is related both to expansion of large companies and to the upbeat mood of small ones. Adjustment can be made by the change of political situation due to Ukrainian events. Though, by the results of the sample interview of CEOs of RUSSOFT members that we performed in the summer of 2014, a general attitude of long established clients in the USA and Europe toward the Russian companies remained positive in spite of anti-Russian campaign in mass-media and of sanctions imposed on Russia.

Now it is harder to speak to new potential clients who are not experienced yet in work with Russian providers. In opinion of companies' top managers, this new barrier could be overcome in one-two years depending on developments in Ukraine.

Within the post-Soviet region the respondents plan to open new development centers in Kazakhstan (mentioned by 12 respondent companies), in Minsk (9), Uzbekistan (3), Mogilev (Byelorussia — 2). Once were mentioned Armenia, Vilnius (the capital of Lithuania), Estonia, two Belarussian cities — Vitebsk and Gomel, as well as two Ukrainian cities — Kiev and Zhitomir.

5.4. Vertical Markets

For the previous 10 years, no regular change in the importance of separate vertical markets for our respondents was revealed. The majority of the figure fluctuations are random or temporary.

Frequency of vertical market references in 2006–2012 (percentage of all respondents)

	2006	2007	2008	2009	2010	2011	2012	2013
Information Technology	89%	88%	69%	71%	74%	70%	74%	75%
Banking*	35%	36%	36%	28%	23%	36%	26%	27%
Telecom	34%	44%	33%	29%	26%	38%	31%	35%
Industrial automation	31%	40%	31%	34%	27%	36%	38%	40%
Hospitality, Travel & Transportation	24%	29%	31%	26%	28%	37%	29%	33%
Government	28%	38%	25%	28%	21%	31%	24%	34%
Power supply, Gas & Oil	18%	27%	24%	19%	17%	22%	22%	24%
Healthcare & Pharmaceuticals	23%	29%	24%	18%	23%	29%	28%	31%
Retail & Distribution	35%	38%	24%	21%	26%	41%	29%	31%
Education	36%	32%	23%	24%	21%	28%	28%	31%
Science & Research	—	—	—	—	18%	28%	26%	31%
Gambling & Entertainment	20%	19%	11%	12%	9%	17%	15%	18%
Media	—	—	—	—	13%	20%	18%	15%
Sport & Travel	—	—	—	—	10%	20%	17%	18%
Insurance	—	—	—	—	13%	28%	15%	15%
Building & Real estate	—	—	—	—	12%	23%	17%	21%
Services	—	—	—	—	27%	40%	35%	31%
Finances	—	—	—	—	25%	30%	26%	27%
Energy	—	—	—	—	17%	22%	21%	20%

* — before 2011 — Banking & Financial Services

As a whole, it can be concluded that Russian export companies' industry priorities have not changed essentially for the decade.

The only clearly revealed regularity connected with vertical markets is a sharp reduction of their frequency of mention during period of crisis. In 2009–2010, software developers were forced to focus their efforts on the areas in which they were most competitive or which were least affected by the world crisis.

In 2014 only 5% of respondents mentioned "Other" (not listed) vertical markets (a year ago they were 3%). For the past 2 years among "Other" were mentioned "International Organizations", "Advertising", "Housing and Utilities" (twice), "Agriculture", "Security companies" (or "Security"), and "Printing Industry".

The segment "Information Technology" still remains the main vertical market, though its share decreased following the world crisis 2008–2009. In terms of priority such segments step after IT as "Industrial automation", "Telecom" and "Government".

After the crisis it is worth mentioning a certain upsurge in interest of responding companies in the segments "Education", "Science & Research", "Healthcare & Pharmaceuticals".

Chapter 6

IT-Education and Labour Market

6.1. General estimations

In 2013 we considered that a total of 120 thousand programmers had been working for Russian software companies (including staff of Russian companies' development centers in other countries), at the same time a total of more than 400,000 developers had been engaged in software development in all sectors of Russian economy.

Over the past year, a number of developers in software companies increased more than by 11 thousand. Out of them no less than 4 thousand new employees emerged in foreign development centers of Russian companies. Altogether, the number of software developers in Russia increased by more than 30 thousand people. Increase in personnel of software companies in 2013 on average was 8–9%.

Much the same growth rate was determined by ANCOR High Technologies recruiting company. According to their information, the number of software developers in Russia in the recent years was increasing approximately by 9–11% every year. Therefore in early 2014 over 130 thousand of programmers had been working in Russian software companies, while in all branches of Russian economy — there were over 430 thousand software developers. Not less than 25 thousand programmers out of 130 thousand had been working in the foreign branches of Russian software companies worldwide, while 105 thousand people had been working in Russia.

According to the ANCOR High Technologies, 26% of Russian software developers are employed in Russian software companies. Others work for the IT divisions of government institutions, banks, large industrial companies, Internet companies, and so on.

A total number of Russian employees in software development industry (including secretaries, marketing and sales managers and other employees) is much bigger.

Migration pressure does not have such significant effect on the number of programmers in Russia as it used to be 10 years ago. In 90-s and early zero years the outflow of human resources to countries outside the CIS was a serious problem for Russian software companies. Just about 2005–2007 the salary increase in Russia was so significant that for many developers there was not much sense to go for earnings to another country. Some engineers who had left before came back to Russia. At the same time a steady flow to Russia of software developers from Belarus and Ukraine was observed.

In recent years (up to the beginning of Ukrainian crisis), migration to both sides reduced. The outflow of human resources fell short to be a problem. At the same time, the invitation of developers from former Soviet republics also ceased to be a significant source of recruitment. Russian companies more frequently wended the way of opening the development centers in Belarus and Ukraine. Especially since the tax legislation in these countries was more favorable for software development than in Russia.

It is easy to predict that the relatively stable accessions in Russian software companies will be disturbed as a result of economic crisis and military conflict in Ukraine. Significant changes must be expected in the latter half of 2014 and in 2015. Due to aggravation of political relations of Russia with the US and EU one may expect a certain increase in the number of people leaving Russia among those software developers who primarily looked up to the US market.

The Ukrainian labor market by now under a high pressure of physical risks for software developers directly caused both by military activities and nationhood mobilization. The main result of this aggravation is being transferred into requirements of clients and investors to remove software development centers from Ukraine as a high risk area.

All above mentioned had an impact on data on staff number of Russian software companies referred to early 2014. Because of this, the accession of Crimea in March 2014 with thousands of software developers living there was not taken into account. Preliminary data indicates than no less than 5 thousand software developers live in the peninsula with 2 million residents.

Prior to accession of Crimea to Russia, several Russian software companies created their development centers in Sevastopol and Simferopol (two major cities with Universities in the Crimea). Their staff in 2013 was accounted for in determination of the total number of programers of all Russian software companies. However these centers are relatively small (with 100–200 employees at most).

A lot more employees of Ukrainian software companies work in Crimea who were forced to close their offices and development centers due to the political pressure of the Ukrainian government. These Ukrainian companies stated the readiness to transfer all their employees from Crimea to the towns of Ukraine with already existing development centers. However it's unlikely that this proposal arouse much interest because it meant leaving the native town and a change of scenery for Ukraine where economic recession and armed stand-off was building up.

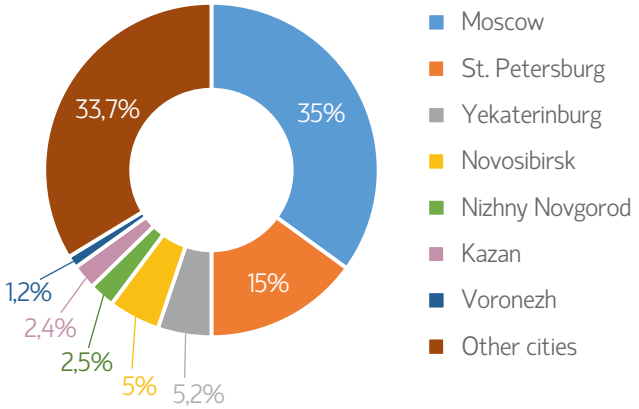
More likely the staff of the closing Crimean offices will soon find new job in the comfort of their home. Some Russian companies responded to emerging recruiting opportunities in Crimea. For example, in the middle of July 2014 Naumen opened a new center of software solutions' development in Sevastopol and actively started to engage personnel for the software development team created in Crimea. In the peninsula there also have emerged Russian venture capital funds which will encourage establishment and development of local startups.

Owing to accession of Crimea, Russia acquired several thousand new programmers but the continuous aggravation of the situation in Ukraine may provide a greater inflow of IT engineers. Over several months of military operations in the East Ukraine, a number of Ukrainian refugees in Russia exceeded 200 thousand people. It is not known how many IT professionals left for Russia but it is obvious that Ukraine is evolving into an unforgiving place. In this case we speak about whole Ukraine and not only war-struck regions.

Mobilization which must take all men between 18 and 60, price advance, corruption, idle government institutions (as for example police) — all this affects more and more Ukrainians and makes them think about search for new places of residence. As software developers can easily find well-paid job in other countries, their mass transition to other states may be easily anticipated, particularly to Russian towns where many of them have relatives. Transition to Russia is facilitated by cultural proximity and by common language of communication.

The US company eBay already raised concern in relation to drafting of employees of its Ukrainian office in the army. Other foreign companies also had problems with Ukrainian staff and partners. There are not vestiges of easing of the situation. In all likelihood, the further exacerbation of crisis, both political and economical, is expected. Even dissipation of the state may be predicted, it is not impossible that the territory of civil war will extend over other Ukrainian regions.

Approximate distribution of software developers by the largest cities of Russia



Source: ANCOR High Technologies

Even before the Ukrainian crisis a significant population decline owing to emigration process was also observed. The Ukrainian population over the last 15 years decreased approximately from 55 million to 40 million people. Migration of IT professionals to Russia will be facilitated by the policy of easing the access to Russian citizenship and labor permit. Following the advent of stream of refugees from East Ukraine it became much easier for Ukrainians to get established in Russia.

However even before Ukrainian crisis the Russian Government made some decisions promoting the inflow of foreign High-Tech professionals. These decisions will presumably allow for attracting up to 200 thousand people from abroad in a few years by 2020.

Particularly, in order to realize targets in the autumn 2013 the Ministry of Communications and Media of the Russian Federation proposed to lower the minimum rate of wages of a foreign high-tech engineer from 2 million rubles per year to 1 million rubles. It will allow for inviting not only very expensive foreign experts but also those who lay claim on an average salary for a software developer (or just above average).

Experts expect that the highest inflow of programmers will come from the former Soviet republics (from Ukraine, Belarus and other CIS countries). At the same time, the terms proposed by employers to programmers in Russia are also sufficiently attractive for programmers from Southeast Asia and even from Southern Europe where the rate of unemployment is rather high.

According to the research of the international recruiting company Kelly Services conducted in February–March 2014, the indicator of loyalty to the employer in Russia is one of the world-highest. One of the key factors influencing personnel loyalty level is "a feeling that employer appreciates their contribution to the development of organization". The satisfaction of Russians by this criterion is comparable to that in the countries of the Asia-Pacific region, where the most respondents answer that their management "values highly" or "thinks no end" of them. The highest percentage of these employees is noted in Russia (62%), Thailand (58%) and Indonesia (57%) while the lowest — in Italy, Portugal and France.

6.2. Situation on the Labor Market in Russia and in Other Countries

By now more than 10 years long (except the crisis in 2009) the lack of software engineers in Russia is being felt more and more whereas the expenditures on programmer labor payment have been skyrocketing. For this reason the country is losing the competitiveness in the global market of software

development (most notably, at the software development outsourcing market). The labor cost of developers is losing relish and becomes a barrier on the way of competitive recovery.

Due to a rapid growth of salary, Russian software companies' export (in any case, export of software development services) could have reduced long ago if the same tendencies did not take place almost around the world. Shortage of programmers is a global problem of the world economy. In the majority of large countries, the labor market supply goes behind the growing demand for software developers.

Now, Russia is experiencing a 'demographic hole' that is caused by a great reduction of the birth rate during the "perestroyka" time about 20 years ago. In economically developed countries the process of reducing of the young people share is observed as well, but it is a time-expanded process. In the states with high living standards there is a problem of freshmen admission in technical colleges not only because of the birth rate but also because of decreasing popularity of technical professions.

The majority of young people in the western countries are not eager to strain themselves studying such difficult subjects as advanced mathematics and physics. However, this problem is typical not only for such countries as the USA and Germany, but also, for example, for Russia and Mexico.

Both in Russia and in other countries (for example, the UK) the governmental institutions jointly with big employers try to solve the problem of the not-too-high popularity of skill development.

The British Broadcasting Corporation in collaboration with various engineering companies, state organizations and schools is going to set up educational projects to acquaint children with digital technologies and software engineering. Since 2014, in England and Wales the new school curricula in the area of computer science come into effect with a special focus on children training in programming and not just handling of the ready-made software programs.

As the Ernst & Young experts consider, the decision of many large western companies on transfer of IT operations to offshore territories, which was made in the mid-nineties, became one of the main reasons for the current industry's staff shortage. For example, in 1998 about 32 thousand students studied mathematics, physics, and computer sciences (i.e. the subjects that are necessary for work in the IT area) at British universities. Two or three years later, the number of such students dropped down to 8 thousand. According to the Ernst & Young experts, the whole generation will probably be required to eliminate the gap in training.

According to European Commission, an acute shortage of skilled IT professionals can result in some 900 thousand available vacancies in EU IT industry by 2015 with no suitable applicants' number. A total number of vacancies in the IT sphere in EU are growing by 100 thousand annually. The educational system prepares near the same number of engineerss, but by that time it will require to fill ALL vacancies. According to Eurostat, the difficulties with recruitment of skilled professionals are faced particularly by the IT companies from Iceland, Luxemburg, Austria and Sweden.

As a result of mass staff reductions in software companies, unemployed software developers appear in the Nordic countries. For example, in the spring of 2012 TietoEnator (the largest Swedish-Finish-Norwegian IT-company), declared its plans to dismiss 7% of the regular employees (about 1,300 people) working in Sweden and Finland. However, the reason for this reduction is the high level of salaries in these countries which are much higher than the world average level.

It becomes more favorable for Finnish and Swedish business to place orders for software development into other countries, than to keep own programmers staff. In some countries, the unemployment is caused by this reason and due to the lack of career attractive software companies with solid reputation and high-quality management. However, in such countries as Sweden and Finland, the redundant developers usually remain unemployed for a short time. Thus, their number is not great enough to influence demand and supply in the world labor market.

Many skilled programmers are unemployed in the countries of Southern Europe, which are experiencing the crisis. In these countries, custom software development has not been developed yet, and software companies are not reputable enough for customers from wealthier countries. For example, Germans would rather cooperate with Russian software developers than with Greek ones.

However, there are no investments into offshore development centers in these countries yet, and the situation has not become aggravated to the degree that leads to software developers' mass emigration from these countries, although there is a probability of exodus of software developers.

In spite of a formally common labor market, Europeans very reluctantly look for a job abroad due to the lack of the uniform standard of educational certification and huge discrepancies in employment laws. In the economically developed countries, the problem is the same: some university graduates are not prepared for unsupervised work. Even in the USA, employers complain that they have to retrain recent students after the graduation, so those students could become productive employees.

Staff shortage is experienced even in the densely populated India, which is the absolute world leader in the area of software development outsourcing. However, the staff shortage in this country is not connected to a birth rate decrease. The reason is that there is no general secondary education system in India, so only a small part of Indian children gets the high-quality school education.

The situation in the Indian labor market leads to the fact that India is gradually being less considered as a low-cost labor country. According to Reuters, the largest Indian outsourcing companies started to depart from having a numerous staff of low-skilled employees with rather low salaries. They often aspire to build a small team of high quality professionals in order to make money not by providing labor-consuming and low-profitable software development services, but by creating of intellectual property.

There as a considerable pool of IT professionals in Brazil, which is one of the five most heavily populated countries in the world. The government of this country has been implementing a manpower training program for many years. As a result, thanks to technical education, millions of people have moved up from the category of the poor into the middle class category. Annually 100 thousand Brazilian university graduates have an opportunity to continue training at the 50 world best universities at public expense. The Brazilian government set a task to train additionally 900 thousand IT professionals in the next 10 years. This figure is almost equal to the number of the IT-professionals currently working in Russia.

However, the vast majority of Brazilian IT specialists and the largest Brazilian IT companies are oriented towards the internal IT market. It should be noted that — thanks to the state IT development support policy — this market reached $123 billion following the results of 2012. It is 3.7 times greater than the Russian IT market, although Russia and Brazil have the fairly comparable population size and gross domestic product volume. Thus, the Brazilian IT market continues to grow quickly.

For various reasons (first of all, because of the domestic market high attractiveness, which is partly provided with the protectionist policy) Brazilian software companies achieved an important success in the world market, whereas the entire software export of Brazil is less than that of Russia. Besides, the Brazilian programmers' labor cost is quite high. Therefore, creation of software development centers in this country may be interesting for software companies from other countries, first of all, thanks to the opportunity to enter the large Brazilian IT market. If Brazil further increases the number of IT major students, the situation may change. The country may significantly increase software export that will allow reducing the labor market demand in other countries.

China and some other countries of the South East Asia achieve a good pace in training of software developers. However, building of an education system is a long process. Therefore, the global shortage of developers cannot be covered by the increasing offer in this region, all the more so, taking into account that the internal demand for qualified personnel is growing very quick in the countries of the South-East Asia. Chinese IT industry competitiveness is not promoted by the country's improving standard of living, which displays itself in a wage level growth in all economic sectors.

Generally, we can state that even a significant increase in the number of trained software developers in any country in the world does not allow compensating the growth of demand for these professionals in the internal and foreign markets.

The Manpower Group annual research showed that 49% of employers worldwide undergo difficulties in filling crucial IT vacancies in their companies. IT engineers take the third place in the list of the vacancies that are the hardest to fill. Java, J2EE, and .Net programmers are especially demanded.

Due to the existing disproportions, their salaries are growing worldwide. In most cases, the increase is at least 5–10% per year. By this indicator, Russia is hardly differs from other countries.

In early 2012 the consulting company Hackett Group declared the research results demonstrating that up to 2016 North American and European companies would arrange 750 thousand of additional jobs in India and other countries with a low rate of remuneration. It concerns not only the IT industry but the enterprises of all industries which practice mass outsourcing. India remains the most attractive country for staff recruitment, about 40% of all vacancies fall to its share.

According to Evans Data Corp., by 2017 India will sidestep US in the number of software developers. On international scale there will be 18.2 million software developers in 2017, and in 2019 — 26.4 million. In the middle of 2013 US were the first in the world in amount of programmers (those amounted to some 3.6 million) whereas in India the number was 2.75 million.

By 2018 in India there will be 5.2 million developers, and in the USA — 4.5 million (in China — 1.9 million, in Russia — 1.3 million).

The experts of Evans Data Corp. explain the Indian phenomenon, first, by a big population size (1.2 billion people), second, by the youth of population — more than a half are young people up to 25 years. Besides, the rate of economic growth plays no small part. For example, by one quarter of 2013 Tata Consultancy Services hired 17 thousand new employees. As a result the total number reached 263.6 thousand.

If this company's results are true, Russia accrues not less than 2.5% of all programmers worldwide. This value is neither very high nor low. It is higher than a share of Russian residents in the general population of our planet (it is about 2%).

Too optimistic estimates of Evans Data of the growth of the number of software developers worldwide arouse mistrust. The company's experts rely on the India's rate of economic growth, young population and intense recruitment by the leading Indian companies. But in order to increase the number of trained developers it is essential not merely to buildup the GDP and have a lot of young people, but also to develop the educational system, and this is changing slowly even with big financial injection.

At the first stage, new teachers must be trained and only at the second stage new students will be enlisted who will become advanced professionals in some 5 years at best.

Not infrequently, large companies grow at the expense of smaller ones. So their activity on the labor marker not always goes to prove that there are much more offers at that market.

The expectations concerning Russia seem to be especially incredible. We assume that even with the mass transition of developers from abroad, by 2018 Russia will have 700 thousand software developers to the maximum (most probably, much less), but by no means 1.3 million.

The programmers' average salaries in Russia are still much lower than in the USA, where this figure in the Silicon Valley and in the largest cities reaches $8–11 thousand (in Russia, it is $2–4 thousand). In addition, there is a gap to the Nordic countries, Germany, the UK and several more countries, but it is not as essential as that of to the USA. For example, in Sweden, where the pay level is higher than in Russia, the software development cost is already comparable with the Russian one because of a higher average office rent in Russia. The competitive advantage of Russia over more economically developed countries in the labor cost is compensated by the higher costs on overcoming of administrative barriers, office rent, administration of accounting and financial reporting.

Judging by the Java programmers' average incomes, the salaries of the Russian developers are approximately the same as the salaries in the Spanish-speaking countries (Spain, Mexico, Colombia, Argentina, and Peru) as well as in such countries of Southern Europe as Greece and Italy.

According to Russian software developer companies, the labor cost in Vietnam and China is at least twice lower than in Russia. Other costs on business organization are also lower there. As earlier total expenses on software development in India are much lower, than in Russia. It is partly due to the fact that in India, there are no social insurance system and pensions are generally absent at all (in any case, for the most part of the population).

In spite of the fact that the deterioration of the Russian labor market situation is offset by the similar problems abroad, the current state of things cannot be considered as normal. The available huge unused potential of Russia allows counting on a significant increase of the country share in the global software market. According to Frost & Sullivan, Russia is on the first place in the world by the number of researchers and developers per thousand citizens, and on the third place by the number of scientists and engineers per million persons, considerably advancing India and China.

Russia is also on the first place in the world by the share of students acquiring technical qualifications (according to UNESCO, Federal Statistic Office of Germany). To use this potential, it is necessary to create more favorable conditions for IT business development in Russia.

In the recent years, American IT companies became more active; they lobby for a significant increase in the number of employment visas for foreign professionals. However there are forces in the USA who try to block the entry of new IT migrants protecting the local labor market.

Although a number of countries (for example, Germany and Finland) recently did not invite foreign engineers more actively, they have the state programs providing a simplified naturalization procedure for programmers and their adaptation in the new living conditions. Thus, a threat of an increase in Russian software developers outflow abroad still remains.

Russia needs to undertake active actions to sustain competition for IT professionals in the global labor market. It is desirable not only to create favorable conditions that will prevent brain exodus from Russia, but to involve foreign experts more actively.

The government of Russia has already declared that it is necessary to promote attraction of IT professionals from the near-abroad countries. However, it still does not deal with the matter in practice. Probably, it is more reasonable to involve IT-professionals not only from the near-abroad countries but from the entire world, as well.

In spite of the anti-Russian campaign in media in connection with events in Crimea and Ukraine, in many countries there is a quite loyal attitude to Russia. For example, at Indian forums, you can read enthusiastic reviews of trips to Russia. Thus, the participants of the discussion complain that the life conditions in India are not trouble-free. In addition, the European programmers who lost their jobs may be minded to move to Russia.

The global tendencies and the crisis phenomena in a number of countries are such that reasonably massive immigration of programmers does not seem a fantasy any more. Actually, not a few employees from the West European countries already work for Russian software companies. And it is observed despite the fact that obtaining employment visas for such specialists is an intricate task, and the visas shall be prolonged each six months. However, the relocation of software developers to Russia is not a mass phenomenon yet.

6.3. Mobility of Personnel. Staff Turnover

According to present survey, a share of companies that employed nobody within the last year decreased almost to the pre-crisis level. In 2013 it was 11%. Before 2009 this value ranged within 5–10%. In 2010 it increased up to 28%, and in 2 next years decreased to 15–16%.

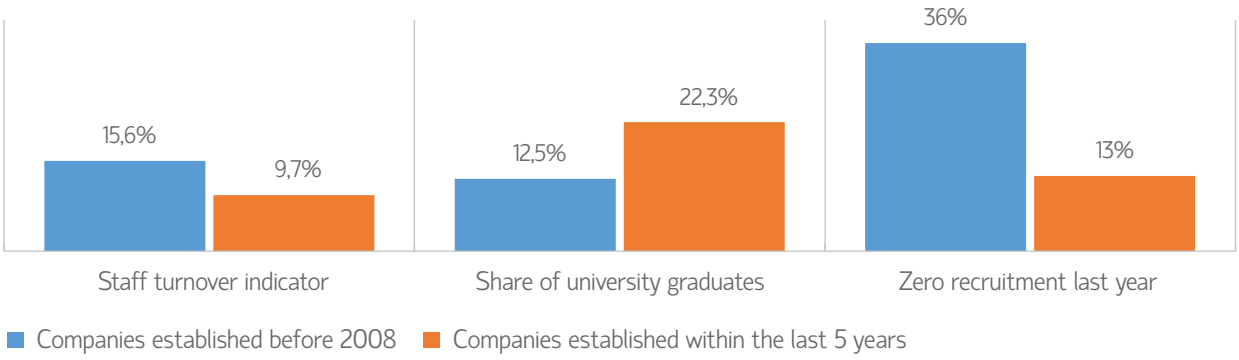
The staff turnover rate did not change in 2011-2012 neither, being at the rather low level — 6%. By the results of 2013 it grew slightly (up to 7.7%) although in comparison to other countries this value remains low that is one of competitive strengths of Russia. The growth of staff turnover rate (though little) and the reduction in the number of companies that did not employed new staff bears evidence of revival of labor market in 2013.

The revival of the labor market is also evidenced by the increase in a share of employed university graduates of a total number of employed persons from 4.6% to 8.4%. The survey of the Superjob.ru recruiting portal revealed similar tendencies for the whole Russian economy: year after year the employers hire recent university graduates best of all. The portal's polling in the middle of June 2013 showed that 72% of Russian enterprises and organizations hired inexperienced university graduates. Two years ago there were 66% of these employers and in 2009 — 54%.

Respondent companies' activity in the labor market depending on their location

	By the results of 2012			By the results of 2013		
	Zero recruitment	Staff turnover indicator	Employed university graduates	Zero recruitment	Staff turnover indicator	Employed university graduates
Moscow	29%	4,4%	2,4%	15%	7,2%	8,2%
St. Petersburg	11%	9,7%	9%	4%	9,5%	9,3%
Regions	11%	8,5%	7,6%	11%	7,4%	8,2%

Companies' activity in the labor market with turnover less than $0.5 million depending on year of foundation

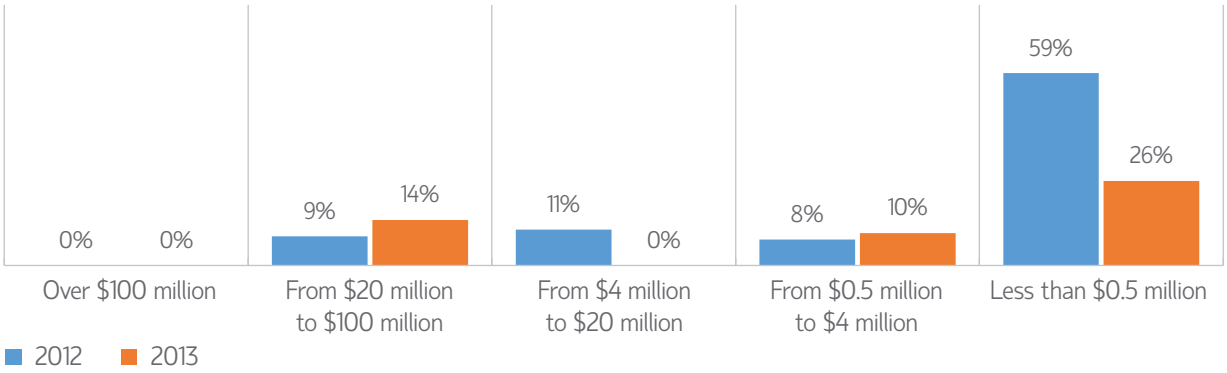


Our polling of companies from different regions showed that the St. Petersburg software companies are the most active at the labor market. St. Petersburg during almost all years under investigation leads in indicators of staff turnover and a share of hired university graduates. In addition, St. Petersburg always had the least number of companies that employed nobody the current year. In 2013 St. Petersburg partly lost its leadership. In some indicators companies from Siberia were beforehand with practically all companies involved in recruiting in 2013. St. Petersburg was behind Siberia and a group of cities in the European part of Russia (not including two capitals) in the share of hired university graduates. However by this indicator the lag is no more than 1% (i.e. within the measurement accuracy).

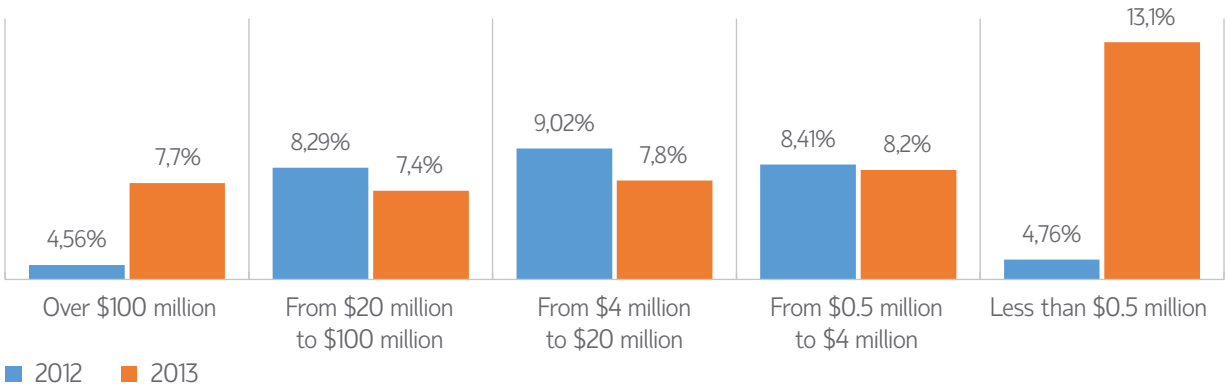
Generally companies from Moscow reduce staff less than companies from other towns, and more often they employ nobody. By the results of 2013 this leadership of Moscow was retained but the difference with other Russian cities was reduced. As a whole, the situation on the labor market in various cities and regions year after year is smoothened. However, adjustment of indicators characterizing the activity of the Russian software companies on labor market can be disturbed due to anticipated in 2014–2015 mass inflow of programmers from abroad (primarily from Ukraine).

From the point of view of market activity changes depending on company size we should point out that a share of the smallest companies (with the turnover less than $0.5 million) that employed nobody — is significantly reduced (from 59% to 26%). It may be assumed that the increase in activity

Share of companies that did not recruit new employees in 2008–2013 depending on the company turnover



Annual figure of the staff turnover, depending on company size



in the labor market of small-sized companies is connected with the general improvement of business climate for small companies.

They receive assistance from venture capital funds, from regional and federal small business' support programs. In addition, the activities of small enterprises have be affected by the reduction of the staff size from 30 to 7 employees that a company should have to be able to take advantage of the preferential social insurance rate (14% instead of 30%).

However it is worthwhile noting that these enterprises also have the most increased indicator of staff turnover — from 4.76% to 13.1%, while the increase in recruitment compensated the fact that a part of personnel left for larger companies. Now it is more difficult to them to keep the staff, at the same time they receive an opportunity to hire new employees, and thus the trend for small businesses is very positive.

However it turned out that the activity in recruitment depends on the duration of companies' life at the market. When we speak about growth of activity of small companies it concerns mainly new startups. For those small enterprises established before 2008 the conditions of staff recruiting or keeping did not improve at all. All their indicators were much worse that those of the startups (aged

Staff with the most popular skills that were employed by respondents in 2008–2013

	2008	2009	2010	2011	2012	2013
Developer (C/C++)	42%	30%	25%	29%	26%	28%
Developer (Java)	29%	29%	21%	30%	17%	26%
Developer (C#)	20%	19%	18%	28%	23%	27%
Developer (DB)	4%	5%	2%	4%	4%	4%
Test engineer	9%	14%	13%	22%	16%	15%
Web programmer (PHP/MySQL)	21%	11%	13%	13%	18%	20%
Web programmer (ASP.Net/MS SQL)	16%	7%	4%	15%	13%	10%
System administrator (Win)	2%	4%	7%	8%	6%	6%
System administrator (UNIX)	2%	4%	2%	5%	2%	3%
Others	8%	16%	11%	19%	15%	16%
Average number of mentioned categories	1,53	1,39	1,16	1,73	1,4	1,55

Staff with the most popular skills that were mostly employed by respondent companies in 2013 (depending on the company turnover)

	Over $100 million	From $20 million to $100 million	From $4 million to $20 million	From $0.5 million to $4 million	Less than $0.5 million
Developer (C/C++)	0%	43%	34%	29%	17%
Developer (Java)	33%	29%	41%	22%	17%
Developer (C#)	67%	43%	52%	22%	4%
Developer (DB)	33%	0%	14%	0%	0%
Test engineer	33%	29%	38%	7%	0%
Web programmer (PHP/MySQL)	33%	14%	21%	16%	30%
Web programmer (ASP.Net/ MS SQL)	0%	29%	10%	10%	4%
System administrator (Win)	0%	29%	7%	4%	4%
System administrator (UNIX)	0%	14%	0%	3%	4%
Others	33%	29%	21%	13%	13%

Staff with the most popular skills that were mostly employed by respondent companies in 2013, depending on location

	Moscow	St. Petersburg	Siberia	Ural	Other towns
Developer (C/C++)	38%	44%	0%	0%	23%
Developer (Java)	28%	33%	20%	17%	23%
Developer (C #)	25%	37%	40%	17%	21%
Developer (DB)	5%	7%	0%	17%	0%
Test engineer	18%	22%	13%	17%	7%
Web programmer (PHP/MySQL)	13%	11%	33%	50%	23%
Web programmer (ASP.Net/MS SQL)	8%	15%	13%	0%	9%
System administrator (Win)	5%	0%	7%	0%	12%
System administrator (UNIX)	3%	0%	0%	0%	7%

up to 5 years). This may be due to the fact that the state and different non-governmental structures (accelerators and venture capital funds) primarily support the startups but not the whole small high-tech business. It is fair to assume that for the state it would be more expedient to lend support to the entire segment of small innovation enterprises.

There was a general regularity in the previous years: more active in the labor market were the companies — more geared they have been to foreign markets than to the Russian market. This rule was broken by the results 2012 when there was seen no dependence between the active recruitment and preferential orientation of companies towards foreign or Russian market.

Results of 2013 did not reflect such variations neither, in particular in two indicators — the staff turnover and the share of university graduates in the staff. Companies which were more geared to foreign markets were also a little bit ahead (their staff turnover is less by 0.6%, and the share of university graduates is higher by 2.4% than that in the companies which primarily operate in Russia). However among those companies that obtained over a half of their revenue from software export almost none employed no new staff (only 3% in this category whereas among companies with preferential orientation towards Russia — there were 13% which did not employ new staff).

In 2013 developers on Java and C# were demanded much more often for work at the foreign markets as well as the web programmers ASP.Net/MSSQL and system administrators (UNIX). For work at the Russian market the need in the web programmers PHP/MySQL was a little higher (these professionals have been hired by 20% of companies which had the export share less than 50% and by 18% of companies with the export share over 50%). Similar variations in demand for specific experts have been also seen by the results of 2012.

Since 2008, the demand for developers with different skills among all respondent companies has been changing modestly. The only thing that remains the same is that companies most often declare about recruitment of C/C++, Java and C# developers. Among other most demanded skills which were not included in the Table are 1C and Delphi programmers.

Hereinafter there is data provided by leading recruiting companies on the number of job opportunities as well as on salary sheets in 2013 in Russia (in all economy sectors):

Information of the recruiting portal Superjob.ru:

A number of job opportunities increased by 30%. A number of CVs also increased (in December 2013 more by 23% in comparison with January 2013). A number of job opportunities for recent graduates increased by 78%.

Information of HeadHunter:

A number of job opportunities in IT sphere increased by 31% in 2013 compared to 2012 (up to 213.5 thousand). The Q1 2014 showed a still growing demand. In three first months a number of vacancies was 70 thousand (at an annual rate — 280 thousand).

HeadHunter has analyzed personal values which were most often mentioned by applicants in their CVs to fall under employer's notice. It emerged that differences in behavior motivations between Moscow, St. Petersburg and other Russian towns are rather big. In St. Petersburg and in regions the first place among the most mentioned values was taken by the responsibility (35% and 54% correspondingly). In Moscow this quality was not the leader. The candidates in Moscow most often mentioned the communicability (31.5%), then stress resistance (18%) and commitment (13%).

In the context of present lack of IT-professionals it becomes more and more important to provide a maximum efficiency of available personnel. Among other things managers tried to find a way of engaging their staff in work over the periods of temporary lack of projects (that is very typical for service companies).

To solve this task, in May 2013 the RUSSOFT Association and the TEAM FORCE international resource company signed a Cooperation Agreement regarding development and operation of a web-system for exchange of information about temporarily uncommitted developers' resources. Initially, the system was deployed on the RUSSOFT Association website and represented an online service to exchange information about temporarily uncommitted labor resources and about demands for projects among RUSSOFT member companies. Then it was decided to place the system under management of TEAM FORCE Group and to deploy the platform on the web-site of TEAM FORCE. Since then the system is in an active function for the interests of both — of managers of temporarily free resources and of those who need to find additional resources for their overhead projects.

Chapter 7

Technologies

7.1. Operating Systems

The leadership of two popular operating systems (OS) Windows and Linux has also continued in 2013. The narrowing of the gap between them which seemingly was demonstrated in survey 2013 is not confirmed yet. Too great fluctuations due to error do not allow for revealing not very evident trends.

At the same time, Android lays claim to the 2nd place. The growing popularity of this OS among Russian developers is evident in spite of any random fluctuations. If in 2010–2011 only 4–6% of respondent companies operated OS Android, in 2014 there were already 43%. It is not very far from the second place when one gets such pace.

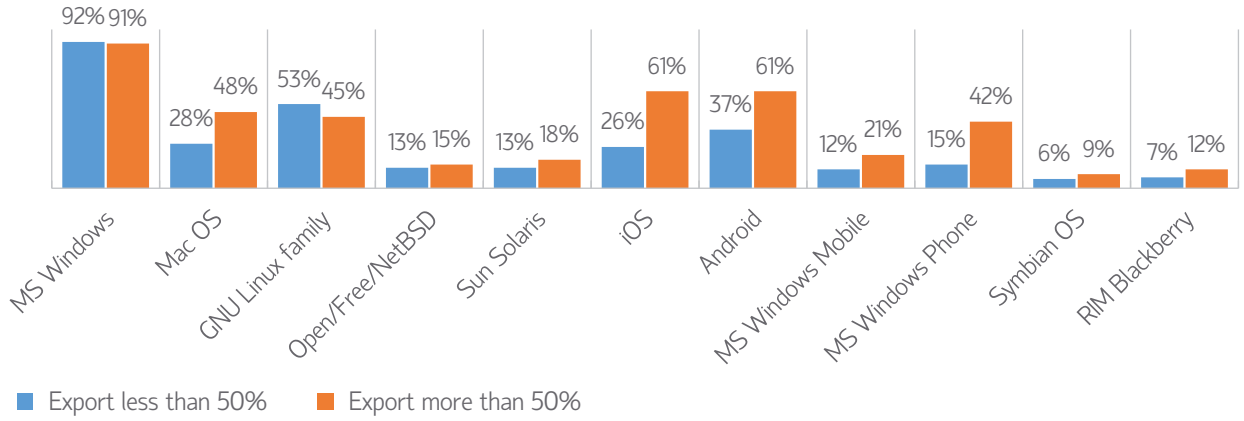
However it would not be exactly correct to match Android against Linux. Linux means a whole family of the Open Source operating systems (GNU Linux family). Android was also developed on the basis of Linux, but it is intended for mobile devices so it apparently stands out against the background of closely related systems (both in terms of popularity and devices where it is installed). That is why this operating system is separately mentioned in the questionnaire. Together with Android, the GNU Linux family is drawing upon Windows and that's for sure.

As before, the degree of utilization of operating systems for mobile communication devices is growing that naturally is related to the significant growth of their users worldwide. Companies that are mainly oriented towards the Russian market much less frequently mention these operating systems than those developers who gain over 50% of their income from export. It also concerns Mac OS, which in Russia is not so popular as in the western countries. Such distinction of OS popularity depending on the companies' export share means that the applications for mobile devices and Apple tablets are mainly created for sale abroad. Considering an increase in the share of smart phones and tablets in Russia, it is possible to assume that the indicator of these systems' popularity will be aligned among the companies with orientation towards the Russian market and particularly — among exporters.

Commonly used operating systems

		2008	2009	2010	2011	2012	2013	2014
1	MS Windows	97%	94%	93%	96%	94%	88%	92%
2	GNU Linux family	64%	54%	54%	59%	60%	65%	51%
3	Android	–	–	6%	4%	37%	33%	43%
4	Mac OS	26%	9%	15%	19%	32%	31%	33%
5	iOS	–	–	–	–	28%	24%	34%
6	MS Windows Mobile	41%	17%	16%	15%	23%	17%	15%
7	MS Windows Phone	–	–	–	–	19%	19%	22%
8	Sun Solaris	26%	16%	15%	19%	19%	14%	15%
9	Open/Free/NetBSD	25%	7%	9%	9%	13%	10%	14%
10	RIM Blackberry	–	–	–	–	11%	6%	8%
11	Symbian OS	25%	11%	12%	9%	11%	6%	7%

Main operating systems used by companies with different export shares in cumulative income



Traditionally, the share of companies that use mobile operating systems (iOS, Windows Mobile, Windows Phone, Symbian) is much higher in St. Petersburg than in other cities but in 2014 this leadership was kept only for the most popular OS — Android, iOS, Windows Phone.

Along with the OSs specified in the table, respondents also mentioned QNX (twice), VxWorks and Tru64 (once each OS). The operating systems for IBM mainframe which in previous years were mentioned at least once or twice this time were fully omitted by all respondent companies.

7.2. Programming Tools

In the questionnaire 2014 we modified the groups of programming languages. More exactly we distinguished individual languages in certain group. In this context we also restated the question — instead of specifying the main programming language, respondents were offered to select one from the list (in previous years, not one but several programming languages were put into the relevant box). Because of it, the direct comparison with the last year research outcomes now presents difficulties.

Nonetheless, it is fair to say that popularity of one or another programming language did not greatly change among respondents. This is not surprising. Stemming from the results of previous surveys it follows that, for example, first four places with identical shares were taken by C#, C, C/C++ and Java/J2EE. 5th-6th place of PHP is logical, it has risen in popularity in recent years. Among the

Frequency of mention of the programming languages specified as main tools in 2008–2013, % of respondent companies

C#	17%
C	17%
C/C++	17%
Java/J2EE	17%
.NET	9%
PHP	9%
Delphi	8%
Pascal	0%
Perl	1%
Visual Basic	1%
other	3%

programming languages that are not listed in Table of our questionnaire, respondents three times mentioned Ruby and Javascript, twice — Python, 1C, SQL and ABAP/4. Besides, PowerBuilder, Scala, Assembler and some others were mentioned once.

Usage of programming languages which are not considered as main tools, but are applied by the companies in a number of projects, % of respondent companies

1	Java	39%
2	C++	30%
3	C#	25%
4	PHP	23%
5	.Net	14%
6	C	10%
7	Delphi	7%
8-9	Javascript	5%
8-9	Objective C	5%
10-11	Perl	4%
10-11	Ruby	4%
12-14	Python	3%
12-14	Visual Basic	3%
12-14	SQL	3%

Once there were mentioned the following programming languages which are not considered as main tools, but nevertheless are applied: Fore (in-house development), ABAP/4, ActionScript, AspectJ, Assembler, LINQ, Shell, PowerBuilder, 1C, Scala and COBOL.

Some companies not only chose one programming language from the proposed list but specified another one which was used as a main tool. Only 3% of respondent companies did not meet in the list of languages those which were the main tools for them.

The results of 2014 survey as regards the used programming tools differ markedly from the last year results by considerable increase in frequency of mention of practically all tools (by 5–19 percentage points). Presumably, this growth is related to the modified phrasing in the questionnaire as well as to changes in composition of respondents.

MS Visual Studio remains the most popular development tool among Russian companies. It is fair to assume that the free of charge Eclipse and Intellij IDEA of St. Petersburg company JetBrains (that took 2nd and 3rd place, respectively, in 5–10 years) increased their shares anyway. Fluctuations due to random factors are great however one can distinguish a certain trend. Both these tools in 2014 have the highest audience rating among respondent companies for all years of our research. The list of the most popular development tools this time included Xcode and NetBeans of Oracle instead of excluded Delphi. This replacement also, by all accounts, reflects real process. A share of respondent companies that use Xcode and NetBeans, increased over the year from 2% and 3% to 14% and 8%, respectively.

Most popular development tools

	2007	2008	2009	2010	2011	2012	2013
MS Visual Studio	46%	64%	60%	62%	45%	36%	53 %
Eclipse	19%	25%	19%	6%	16%	15%	34%
Intellij IDEA	10%	5%	3%	8%	9%	4%	14%
Xcode	–	–	–	–	–	2%	14%
NetBeans	–	–	–	–	–	3%	8%
other	–	–	–	–	–	–	15%

7.3. Data Bases Management Systems

Frequency of mention for all DBMSs that are present in the table almost did not change in the recent years. The existing fluctuations of each DBMS are not big, however they are present. In particular, it is worth noting that SQLite has grown in popularity.

MS SQL is still in the lead. On the second place, there is the free MySQL DBMS, which two years ago moved back to the third place the commercial Oracle DBMS (both systems are developed and supported by Oracle). However, Oracle DBMS is still on the second place among the companies with the turnover over $4 million, which account for nearly 90% of all respondent companies' personnel (by the results of 2014 it has the same figure as MySQL — 69%).

About 15 DBMSs mentioned in the questionnaires are absent in the table. MongoDB was most often mentioned among them (4%).

Commonly used DBMSs, % of respondent companies

	2010	2011	2012	2013	2014
MS SQL	63%	74%	70%	66%	70%
MySQL	47%	40%	59%	56%	56%
Oracle	49%	55%	51%	47%	45%
PostgreSQL	17%	15%	26%	30%	28%
SQLite	9%	5%	12%	10%	1 9%
MS Access	19%	9%	19%	17%	18%
Firebird	11%	9%	10%	13%	16%
IBM DB2	13%	14%	9%	10%	12%
Sybase ASE	6%	3%	3%	6%	8%
MSDE	7%	5%	5%	5%	7%
InterBase	9%	7%	7%	10%	6%
Sybase ASA	6%	6%	5%	6%	6%
IBM Informix	7%	5%	7%	7%	6%
SAP DB	6%	5%	7%	5%	5%
Paradox	4%	3%	3%	2%	4%
other	13%	8%	7%	8%	10%

Summary

At least 1600 Russian companies supply software or render software development services to foreign customers. Software development for export as organized business on a commercial scale is conducted in 50 Russian cities at least.

As per the results of 2013, the revenue of Russian software development companies (from sales of both — software and software services) in the Russian market increased by 14% and reached $5.6 billion. The export increased a little more — by 17% to reach $5.4 billion. Hence, the cumulative turnover of Russian software companies reached the value of $11 billion having increased in one year approximately by 16%. The companies expect that the annual software export growth in the next two years (2014–2015) will be around 15%.

The share of foreign sales of Russian software in total export income of Russian enterprises and organizations (which has remained almost the same in 2013 compared to 2012 and amounted to $523.2 billion) keeps growing. By the results of 2013, this indicator exceeded 1% (a year ago, it was 0.88%, and by the results of 2012 — 0.8%).

The motivational effect of diminishing the social tax for IT-companies has been confirmed. Respondents which took advantage of this incentive have been keeping considerably ahead in terms of turnover and of the export growth of those which did not use the incentive (twofold and fivefold, respectively). If we assume that the best growth figures were reached thanks to granting the social tax privilege only, the preferential tax treatment led to an increase in the Russian software companies' cumulative turnover in 2012 by $830 million, and in 2013 — by $1.16 billion (the increase in export in these years was $250 million and $490 million, respectively).

As per the results of 2013, the software development service export amounted to $2.5 billion that is by almost 20% higher than in 2012. In the last few years, the main increment of the Russian export of software development services has been provided by large companies. However, if previously foreign sales of companies with the turnover less than $4 million did not grow at all (by the results of 2012, they even decreased by 0.4%), in 2013 the sales of these companies oversees increased by 8%.

By the results of 2013, the software product and standard solution export amounted to $2,350 Billion that is by 18% higher than in 2012. It appears that the decrease in the growth rates of software product and standard solutions' export observed in 2010–2012 is over (in 2010 their growth rate was 30%, in 2011 — 20%, and in 2012 — 17%). In 2013, the growth rate of software product and standard solution export actually remained at the last year level — 18%. However the factors affecting this indicator changed fundamentally. If in 2012 the growth was generally provided by large companies, in 2013 the growth driver were already small enterprises (predominantly startups with export receipts not higher than $1 million).

A share of respondent companies that choose “More active work at the domestic market" as the priority of their development over one year increased from 55% to 60%. "Work for export/expansion of the marketing network abroad" was also chosen by more than a half of respondents however the indicator of this trend slightly decreased — from 59% to 56%. The attitude towards the promising outlook of internal and external markets is reflected in answers to another question — about trends that are being considered specific for Russian software development industry. The growth of domestic market was mentioned by 59% of respondents (year ago, there were 58%) and the export growth — by 33% (37% last year).

The cumulative income of all respondent companies was $1,371 Billion, and export receipts — $744 million (54% of the total income). Last year the export share was 61%, and the year before — 68%. Its lowering is due not only to random fluctuations — many software developers are crossing over to the Russian market.

According to Global Services, last year the Russian representation in the rating of the global top-100 leading service providers increased due to return in the list of Artezio and of Exigen Services (under new name). Russia in this rating is represented now by 9 companies: Auriga, DataArt, EPAM Systems, FirstLineSoftware, Luxoft, MERA, Reksoft and ReturnOnIntelligence (before 2013 — it was named Exigen Services).

The main list of the 2014 Global Outsourcing 100 (IAOP) included (as a year before) 6 companies representing Russia in the Top-100. They are Luxoft (18th place), MAYKOR (38), EPAM Systems (51), MERA (66), Auriga (89) and Reksoft (93).

Since 2012 three new Russian software vendors joined Russian software leaders, which were traditionally present in their respective "Magic quadrants" of Gartner as the world leading software vendors in particular software segments (Kaspersky Lab, ABBYY, Parallels, Acronis, and some others). PROGNOZ from Perm entered the “Business Intellegence” quadrant, Diasoft — the “Core Banking Systems” quadrant, and InfoWatch — the new “Data Loss Prevention” quadrant.

The tone of publications in foreign media over the past year changed to the disfavor of Russian software exporters. A share of publications concerning high technologies that refract Russia increased from 39% to 51%. However the positive fact is that a total amount of publications related to high-tech and Russia, increased approximately by 30%, though there were relatively less positive publications than negative. The most frequent statements about Russian threats in 2013 were related to the flare-up between US and Russia. It all started with granting temporary asylum by Russia to Edward Snowden, a former CIA and NSA officer.

The net effects of two last years show that it would be wide off the mark to pass meaningful judgment upon the IT market situation only on the basis of the change of its size. If we focus on the volume of the Russian IT only, then, according to IDC and Gartner we might conclude that it is stagnating (at a standstill). However if we take IT market segments separately, almost every segment either significantly (as a rule, more than by 10%) decreased, or significantly increased (sometimes more than by 100%).

In the summer of 2013, for the first time after many years of our research we did not find any global high-tech rating where Russian position took a turn for the worse. In 2014 Russia several times descended but more often Russia rose to slightly higher levels. Events involving Ukraine make possible to suppose that within the next year Russian positions in different ratings will not get better, primarily, for political reasons.

The share of companies that attracted investments in 2013 was 7% which is less than a year before. In all appearances it reflects the changes in the area of venture investment in Russia. The volume of these investments not merely did not increase but according to different surveys even decreased following the results of 2013. At the same time, the number of transactions keeps growing (with a substantial reduction in the average transaction value), but the growth slips (from 50–100% to 20–30%).

According to J'son & Partners Consulting, in H1 2014 the number of investments into foreign projects with participation of Russian investors increased both in quantitative and monetary terms. At the same time, the share of syndications changed insignificantly: in quantitative terms this share increased from 28% to 35%, in monetary terms decreased from 53% to 48%. Compared to H1 2013, the number of transactions with participation of Russian capital increased from 18 to 23.

The 2014 survey showed the positive attitude of respondents to the changes in the Russian business environment. Besides, the all-around progress was noted also for all directions for development and almost in all groups of the respondent companies. It is worth noting the improved conditions for small enterprises (primarily, due to reduction of the threshold staff number in order to obtain the right to use incentive in social taxation) and also to companies in regions where local authorities began to give attention to support of high-tech enterprises.

Companies began to assess the availability of current infrastructure much better than before. As a result, the share of "good" marks and the average score reached the historical peak for the entire period of research — 32% and 3.17, respectively. In the spring of 2014, almost one third of respondents estimate the quality and availability of existing infrastructure better than "satisfactorily".

Year by year, different forms of supporting of startups (grants, investments from the state and private venture funds, business incubators and accelerators etc.) apply more and more to IT-companies. As a result, this support is growing, whereas in 2014 a share of respondents who gave the "good" mark reached a historic high — 15%. Almost a half of respondent companies are encouraged by the available startup support.

In 2014, a share of respondent companies that positively assessed the state support in the IT area in the last two years increased by 5% compared to the results of the survey 2013 and reached 30%.

The surveys performed in the last three years show an obvious and significant improvement in the attitude of our respondents to the tax system. The proportion of companies that are unsatisfied with taxation reduced from 66% in 2011 to 30% in 2014. Compared to the previous year, not only this share decreased but that of those who give a "good" mark to the tax system increased almost twice — from 9% to 17%.

In the recent years, the number of companies that work on the US market has decreased. For all that, following the results of 2013 the North American market was the second after Russia by the share of respondents that stay there, and the third in the list of key markets (it is important because in the last 3 years the rating of the US market lowered even to the 5th–6th place). In terms of volume of sales that our survey does not let to measure, the US market has been definitely taking the second place all last 10 years.

According to media, a wide range of companies (generally major ones — with the turnover over $10 million) actively develop new geographic markets for the Russian software industry. They open their offices and implement projects in countries that were almost of no interest to software developers just 5–10 years ago. Russian developers became interested in the markets of Latin America, Vietnam, Mongolia, Philippines, Zimbabwe, Nigeria, South Africa, India, China, Nepal and of other countries. Up to date, approximately one tenth of Russian software developers are on the Middle East market that turned to be very important for Russian companies.

The fact of crossing over to new markets is largely related to the situation in Ukraine which caused imposing anti-Russian sanctions and appearing of additional political and cultural barriers for Russian companies in the USA and EU. These barriers do not prevent from the cooperation with traditional customers while they have an impact on new ones. As fast as situation in Ukraine is mitigated one may wait for recovery of relations with mature markets.

23% of respondent companies plan to expand the network of remote software development centers or to establish the first center in the next 2 years (in 2013 there were 12% of such respondents). The growth of this indicator, most likely, is associated with plans of startups which are fund-supported and look to the future with optimism. However the plans to open remote development centers may be affected by Ukrainian events.

The growth of software developers remuneration in 2013 went on but its pace was reduced. It is evidenced by findings of various surveys conducted throughout the year by analysts and recruiting companies. The polling conducted by RUSSOFT also demonstrates that at least a decrease in remuneration growth rates compared to the previous two years is observed.

The number of companies that are not pressed for acute staff shortage keeps decreasing. However if by the results of 2012 this decrease was drastic (from 45–55% in previous years up to 27%), then by the results of 2013 the decrease turned to be insignificant (from 27% to 24%).

A share of companies that employed nobody in a course of the year decreased almost to the pre-crisis level. By the last year results it was 11%. The staff turnover rate did not change in 2011–2012 neither, being at a rather low level — 6%. By the results of 2013 it grew slightly (up to 7.7%).

In early 2014, the staff of Russian software companies included 130 thousand software developers, and in all branches of Russian economy there were more than 430 thousand developers. Out of more than 130 thousand developers in the staff of Russian companies no less than 25 thousand people are working in the development centers oversees and no less than 105 thousand work in their offices in the territory of Russia.

Altogether, the number of software developers in Russia increased by more than 30 thousand people within the last year. An average increase in the number of personnel of software companies in 2013 was 8–9%.

It is easy to predict that the relatively stable development of Russian software companies will be disturbed as a result of economic crisis and of military conflict in Ukraine. Significant changes must be expected in the latter half of 2014 and in 2015. Due to aggravation of political relations between Russia — from one side, and the US and EU — from the other side, one may expect a certain increase in the number of people leaving Russia among those software developers who look up to the US market. At the same time from 4 to 5 thousand qualified developers joined Russian IT-industry in the Crimea, while hundreds of developers from the Eastern Ukraine leave their former country to settle in Russia.

Participants of the Survey

Artezio

the Art of Technology

Founded: 2000

Headquartered: Moscow, Russian Federation

Company Overview:

Artezio is an ISO 9001:2008 certified software development and consulting company. Over the last thirteen years, Artezio has completed more than 1000 projects for its international clients. Artezio's software development services allow its clients to deploy multi-platform applications, thus letting them leverage the power of modern software technologies. This is done with the highest degree of engineering skills in conjunction with clear and transparent communication processes. As a business consulting service provider, Artezio offers technology companies help and expertise in setting up and managing their own offshore/nearshore software development centers.

Since 2005, Artezio is a member and a major offshore division of LANIT group which is a $2.5B IT Services vendor with 5600+ employees. From its development centers Artezio delivers cost effective, high quality IT services to clients in North America, Europe, Middle East and Japan thus being one of the leading Russian offshore software developers.

Industry Focus:

Core: Healthcare/Pharmaceuticals/Bio-tech/Life Sciences, Finance/Banking, Telecommunications, Hi-tech.

Emerging: Transportation/Logistics, Retail, Entertainment/Media, Education, Governmental, Gas and Oil.

Certification:

ISO 9001:2008, Microsoft Gold Certified

Industry Awards:

IAOP Global Outsourcing 100 — 2006, 2010–2013;

Global Services 100 — 2011,2013;

Software 500 — 2010–2013;

The Black Book of Outsourcing — 2005.

In-house Software Products:

Diagram Designer — cloud on-line visualization tool;

Artezio Kanban Board — plugins to simplify project management in Atlassian JIRA and MS Outlook;

MinutesPad — professional mobile app for meeting minutes management;

SendFile — cloud service for secure sending of big files;

iLikeSlide — app to create and demonstrate Instagram slideshows.

Development Centers:

Moscow, Saratov, Nizhny Novgorod (Russia); Minsk, Vitebsk, Mogilev (Belarus); Kharkov (Ukraine), Riga (Latvia).

Services:

- Custom software development
- System integration
- Technology consulting
- Software quality assurance and control
- Support and maintenance
- Business Analysis and Consulting
- Offshore development center setup and operate
- IT outstaffing

Corporate Solutions:

Custom software: Mobile, Web and desktop applications; Multi-tier distributed solutions; SaaS, IaaS, PaaS; e-learning; CRM.

Portal&Collaboration: JBoss; Liferay; Oracle; IBM; Microsoft SharePoint; Sitrion; Drupal.

Integration platforms: IBM WebSphere ESB; Oracle Fusion Middleware; JBoss ESB; Apache ServiceMix; Spring Integration; BizTalk.

BI: Oracle BI; Microsoft BI; Pentaho BI; JasperSoft.

Document workflow: Microsoft SharePoint; IBM FileNet; Alfresco; Landocs.

Business solutions: Microsoft Dynamics CRM; Microsoft Dynamics NAV.

Mobile platforms: iOS, Windows Mobile/Phone, Android.

Technological Profile:

Operating systems: Microsoft Windows; Linux; FreeBSD; IBM AIX; Sun Solaris; HP-UX.

Development platforms: Java, J2EE; Microsoft.NET; Windows API; Cocoa; L.A.M.P.

Programming languages: Java; C/C++; Objective C; C#, VB.Net; PHP/Perl/Python; Scala.

Application servers: IBM WebSphere; Oracle AS, WebLogic Server; JBoss AS; Apache Tomcat; Microsoft IIS.

Databases: Oracle; Microsoft SQL Server; IBM DB2, Informix; MySQL; PostgreSQL.

Methodology: WF, RAD, RUP, Agile (SCRUM).

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Auriga Inc.

Elite Software R&D Services Since 1990

Founded: 1990

Number of Employees: 350+

About Auriga:

Auriga (www.auriga.com), a software R&D services provider, enjoys one of the highest customer-satisfaction ratings worldwide (top 20 across outsourcing industries and #1 in engineering services). The list of services provided covers all aspects of software product engineering and a broad range of knowledge areas from embedded and mobile software to enterprise and Web apps. Due to the appropriate size of the company for software R&D tasks, its client list consists of both established industry leaders and fast-growing start-ups, including IBM, Draeger Medical, Datascope, Chrysler, Barclays, Sberbank Russia, Yandex, LynuxWorks, Pigeon Point Systems, and many others.

Founded in 1990, Auriga was the first Russian company to provide software R&D offshore/nearshore services to EU/US customers. In its work, Auriga focuses on soft factors — communications, flexibility, mindset, and culture — in addition to technology expertise. The company has been consistently included in the Global Services 100, Global Outsourcing 100, and other global industry ratings. In 2011, Auriga was named #1 Engineering Services Outsourcing (ESO) provider worldwide by Datamonitor, ahead of such names as Wipro, Siemens, Capgemini, IBM, and others.

Major Clients:

IBM, Draeger Medical, Chrysler, Sberbank Russia, Yandex, LynuxWorks, Pigeon Point Systems, Digital Guardian, Conservation Services Group, HomeCredit, IBM, CROC, iMind, onMobile, etc.

Industry Standards:

CMMI Level 4, ISO 9001, SPICE, DO-178B, ISO 13485, IEC 62304

Awards:

— In Global Outsourcing 100 (rating by IAOP) since 2008. In 2014 listed among best in healthcare, Financial Services (Banking, Markets), high-tech industries, R&D services, Information/ Communication Technology Services.

— In Global Services 100 (by Global Services Media and neoIT) since 2006. The company is ranked among the "Top 10 Service Providers: Eastern Europe".

— In The Black Book of Outsourcing (by Datamonitor) c 2006. In 2011 Auriga is ranked the No. 1 Engineering Services Outsourcing (ESO) provider worldwide. In 2010 Auriga was named #15 in the prestigious "Global Top 50 Vendors" list. In previous years the company is named No. 3 in the list of IT Outsourcing Vendors in Central/Eastern Europe and No. 6 in the list of Global Software QA & Testing.

— Auriga is included in overall Top 20 of software R&D service providers and in Top 10 among the companies serving Software industry, in a 2009 ranking of service providers in India, China, Russia, Ukraine & CEE by Zinnov Management Consulting, a leading management consulting firm

— Microsoft Silver Partner in Software Application Development since 2010

Engineering Locations:

4 development centers in Russia (2 in Moscow, N. Novgorod, Rostov-on-Don), + 1 in EU (Vilnius, Lithuania)

Services:

- Software Product Engineering and ADM
- Custom Software Development
- Product Maintenance
- Re-engineering and Porting
- Customization and Integration
- Software Testing and QA
- Product Support
- Technology Research and Consulting

Domain Verticals:

High-tech, Telecom, Mobile, Healthcare, Finance, Information security, Enterprise, Computer SW, Education, Government, Automotive and more.

Technologies & Platforms:

- Embedded devices (ARM, PowerPC, Intel, FPGA…)
- Real-time systems (VxWorks, QNX, ThreadX, pSOS, eCos, LynxOS)
- Linux (server, desktop and embedded), UNIX, Windows internals.
- Mobile (Android, iOS, Windows Phone, Tizen) and Connectivity (GSM, 3G, 4G, LTE, GLONASS, Bluetooth, WiFi, WiMax)
- Enterprise applications: Workflow, document and content management (EMC Documentum and other), CRM systems.
- Web services, high loaded distributed applications
- .Net and Java platforms for portals (SharePoint, Liferay, IBM WebSphere), web and desktops application development
- Databases (MS SQL, Oracle, DB2, Sybase, MySQL)
- Multimedia streaming: multiplexing/de-multiplexing, real-time transcoding, optimization for mobile devices, face recognition
- Geolocation and Geopositioning (LBS, GPS, GSM, NFC, SS7)
- Social networks, Web 2.0, Internet of Things

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