Russian IT Outsourcing Industry Outlook: Opportunities, Competencies, Venues for Development

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Editor's Foreword

Throughout the past decade the industry of IT-outsourcing was drawing increasing attention as the new and successful business model which permits the developing countries to gain a position in the global hi-tech market. India is leading the world industry in terms of volume receiving some USD 80 billion in IT-exports revenues annually. This success urges many other countries – from China and Philippines to Tanzania and Kenya – to stimulate the development of the national industry for IT-outsourcing and off-shore programming.

Researching the national industries of IT outsourcing gives valuable insight into the peculiarities, opportunities and risks of the national innovations ecosystems in general. Holding this view IEMS has undertaken to publish a series of reports on the development of the industry in the countries of BRICS. The series started with the work by IEMS fellow, Dr. Vinod K. Jain, "Capability Building and Innovation in the Offshore IT Services Industry in India and China". The present report builds up on the gained knowledge of these two markets to explore the state of the industry in Russia.

What role does Russia hold in the global industry of IT-outsourcing? A string of Russian companies have achieved noticeable global success, yet their cumulative share of the world market remains rather modest. Is this a sign of the weakness of the national ecosystem? The author of the report argues that this is not the case. Russia in fact holds a position which is very rare for an emerging market, as it has de-

Figure 1. Relative size of national IT markets

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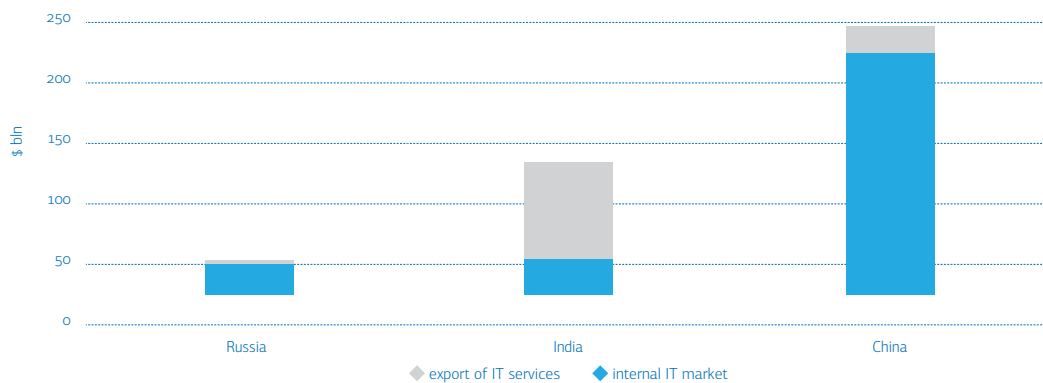
Table 1. The leading companies in off-shore programming

	Headcount	Revenue, $ mio.	Revenue/head, $ ths.
Russia: Luxoft	7500	400	53,3
India: Infosys	150 000	8240	54,9
China: Pactera Technologies	23 000	670	29,1

veloped substantial internal demand, together with the capabilities to design on its own and export the sophisticated software products. Thus the country often acts as the purchaser, not supplier of IT-outsourcing services. On the other hand the country risks getting into the "mid-income trap" with the costs, mostly salaries, too high for successful price competition, yet with the lack of competences and skills for powerful global presence through the design and marketing of the products with high added value.

In the past few months Russia encountered considerable turbulence externally in politics and internally in economics. This creates both new opportunities and new risks for the country IT industry. Among other possible venues of development the author sees the chance for "re-orientation" in the global markets with the aim to gain a more lucrative and sustainable position. This could be achieved through applying the strength of the national IT-ecosystem, first of all the high quality of human resources and potentially vast internal demand, and cooperating with other countries to develop the products targeting specifically the needs of the emerging markets across the globe.

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Researching the national industries of IT outsourcing gives valuable insight into the peculiarities, opportunities and risks of the national innovations ecosystems in general

Outsourcing of IT Services and Development of the National IT Industry

Offshore programming and IT service outsourcing[1] are traditionally viewed as important tools for the innovative development of national economies of the so-called emerging markets. The flagships of the industry globally are the countries like Ireland, which has gone from one of the most lagging Western European economies into the region's innovation growth leader within a relatively short time, and, in particular, India, which has achieved an exclusive position in the world IT market. The export of IT services not only makes it possible for India to receive significant earnings of around $80 billion per year, which is extremely important for a country with a constant trade balance deficit but also allows it to solve several important social issues, offering society alternative life strategies and raising the value of education, thereby modernizing the social structure deformed by the caste system. The creation of new high-paying (by India's standards) areas of employment contributes to the formation of a stable middle class, which, in turn, is a key factor in the emergence of the internal market and economic growth of the country.

Therefore, it comes as no surprise that "India's way" of IT industry development is viewed as a benchmark in the developing world, and other countries, such as China, Philippines, Jordan, Tanzania, and many others, are striving with increasing determination to join the pool of offshore IT service providers. In this list of countries China stands out. Its domestic IT market is estimated to be $200 billion dollars[2], which is by far greater than the size of domestic markets in Russia and India combined. Several Chinese companies (e.g., Huawei, Lenovo, ZTE, HTC) have attained leading positions in the world of hardware production, the most symbolic achievement in this respect being the launching of the world's most powerful supercomputer NUDT Tianhe-2 (MilkyWay-2) at the National Super Computer Center in Guang-

zhou. Compared to this the volume of the Chinese IT-outsourcing export, some USD 22 bln., looks rather modest, though in absolute terms it is second only to India, and quickly grows to compete for the No. 1 position.

A common media opinion is that Russia is behind in the development of the sector and must apply systematic efforts (including at the government level) to catch up. In this publication, we intend to analyze the development of IT outsourcing services (including offshore programming) in Russia in connection with other IT market sectors, taking into account the experience of the two largest world players in this field, India and China. We seek to objectively evaluate the IT-outsourcing industry in the broader context of the national IT-ecosystem, assessing its potential for development, and the opportunities and risks it faces. Hence, this report continues the series started by the work Capability Building and Innovation in the Offshore IT Services Industry in India and China by a IEMS research fellow Dr. Vinod K. Jain[3].

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1 Usually the research of the industry covers the segments of off-shore programming, technical support services and services of the remote software deployment. The relative weight of those segments in a specific country may vary. The services like technical support, for example, generally are delivered in English and thus require high level of oral English proficiency in the country

2 www.computerworld.com/article/2486456/it-management/china-passes-japan-to-become-world-s-2nd-largest-it-market.html

3 Available at iems.skolkovo.ru

I.
IT-outsourcing
in India and China:
a brief comparison

In his work, Dr. Jain compares features of the ecosystems of the two largest offshore IT industry hubs, India and China, basing his comparisons on analyzing a substantial volume of facts and market participant opinions. His analyses disprove, to a great extent, the common one-dimensional and optimistic view of the phenomenon and present a more sophisticated and insightful picture. In particular, describing the industry in India, Dr. Jain notes several serious problems. Indian companies work in labor intensive but relatively low-skilled (by IT industry standards) operation areas, creating sep-

arate components of software and not complete products. The development and assembly of final solutions, which are high added-value areas that develop worker proficiency and create intellectual property, remain within the province of the Western client companies. This division of labor results in the situation where Indian companies become hostages of the "Time and Material" business model when revenue from an order linearly depends on labor expenditures for it. The advantage of such a model is the absence of market risks, which are assumed by the client. On the other hand, business ex-

Table 2. Comparison of models of IT-outsourcing and development of final software products		
	IT Outsourcing	**Creating Proprietary IT Products**
Advantages	* No risks related to product marketing. The client pays a fixed price according to the man-hours spent on work. * No risks of error in R&D investments; operation requires just training the personnel in line with the development of programming tools, platforms, languages, etc.	* Higher added value and the company's capitalization as a result of creating non-material assets, such as know-how, brands, relationships with clients, etc. * A chance of creating a "network effect" when a profit increase outpaces an increase in sales.
Risks	* Business profitability vulnerable to the level of global prices and the pressure to increase the personnel expenses. * Business cannot be intensified due to profits being directly dependent on labor expenses; increasing labor force deficit.	* Market and technological risks: placing wrong "bets" in product development, more effective products from competitors, free clones based on different monetization models. * Risks of ineffective marketing: mistakes in evaluating the potential demand, ineffective measures in its creation and stimulation.
Opportunities for National IT Industry	* Accelerated launch of the national IT industry from scratch as a result of eliminating market risks (creating guaranteed work places) and relatively low worker qualifications requirements, which allows mass training under standardized methodology by practicing instructors.	* Development of innovation industry producing high-margin products, constant raising of educational standards, country participating in the closed club of "world innovation leaders," which presents an opportunity to form advantageous international labor division systems.
Restrictions for National IT Industry	* Country participates in labor division systems created by other countries in their own economic interests; difficulties with advancing the system to a higher level of added value (due to the necessity of obtaining complex competences, saturating the educational system with highly qualified specialists that have a strong academic background).	* Difficulties with the large-scale reproduction of high-level skill specialists; risks of brain drain to more prosperous countries; risks of business migration of companies to countries with more favorable business climate.
Input into national innovations ecosystem	* Creating the national school of mass education of mid-qualified specialists	* Creating the national school of education of highly qualified specialists * Creating the national school of sustainable R&D * Development of the competences of commercialization of innovations

pansion within the model is tightly associated with infinitely increasing the number of employees. This is exactly what is taking place now in India, with the headcount in the largest IT companies exceeding 100,000 people and increasing by several thousands every year. On the nationwide scale, this approach creates and fixates a system in which medium-skilled specialists predominate. Hundreds of thousands of computer science bachelor's students graduate from Indian universities every year, but only about two thousands of master's students, and literally mere dozens of doctors. This shortage of high-level specialists, in turn, makes it impossible to change the situation and focus on making a software end-product.

Dr. Jain believes that China has realized the danger of the Indian model and, in the development of its offshore programming industry, focuses more on offering turnkey services under client technical specifications. This approach still leaves the development stage, which is extremely important and intellect-intensive, on the client side, but the assembly stage is moved to the contractor side, thereby allowing the development of corresponding competence as well as accumulation of intellectual property.

Thereby, in his work, Dr. Jain highlights a very important problem with IT outsourcing industry in developing countries: in the world IT market, there is a high demand for services that create separate product components by medium-skilled specialists at low work costs. The initial successes in this market of a developing country create a national boom leading to the formation of an educational system that supplies the market with specialists of the required mid-level skills in ever increasing numbers. However, further industry development in the direction of higher value-added operations, and ultimately in creating own products, does not take place due to lack of the necessary skills and competence (such as concept development, interface design, marketing, and sales), while the relatively low profit margin of Time and

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Material business prevents the companies from investing into R&D. Meanwhile, new countries are eager to enter the same market, putting pressure on man-hour costs. On the other hand, internal middle class development causes salary increases that further threaten the prices competitiveness in the world market. At the national level, the system creates great social risks: in case of a drop in world demand or loss of a part of the market, a substantial portion of the middle class will experience a sharp drop in income with weak prospects of the situation taking a turn for the better. If the IT industry is a flagship national industry, as it happens in India, the social consequences of such a scenario can be very serious.

II.
Russia in the World IT Outsourcing Industry

Russia's place in the world of IT services outsourcing is mainly determined by the country's capabilities in the area of offshore custom programming, i.e., creating program code according to the requirements of foreign customers. Other market segments, like providing international technical support services, cannot be effectively developed in Russia due to the language barrier. It is important to distinguish off-shore programming from the export of finished software which is a fundamentally different market segment.

According to estimates by Russoft Association,[4] the export of software development services by Russian companies totals $2.5 billion, which is approximately half of Russia's IT export (the rest falls on finished software export). The offshore programming contribution to the general foreign trade balance is small and amounts to about 0.5% of the entire volume of Russia's export. However if we account only for non-raw material exports, the share of offshore programming will increase to almost 10%.

As opposed to India and some smaller countries, Russia's offshore programming industry currently does not have the status of the "national foreign trade flagship". The relatively small export volume and modest share of the world offshore programming market (about 1%) is sometimes considered as an indication of low competitiveness of Russia's IT industry on the whole. Several competent international ratings support this opinion.

Thus, according to the assessment by Gartner[5] published in 2012, even though Russia placed in the top 30 of IT outsourcing countries, it was substantially behind the rating leaders in the level of attractiveness for international clients. While India was considered as the most attractive country for placing offshore orders by 48.5% of the respondents, China by 45.9%, and Brazil by 46.8%, for Russia this indicator

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was only 19.2%. Russia is viewed as being traditionally strong in the area of the quality of specialists; yet the development of the market has been hindered by their relatively high cost as well as by such aspects of the country's image as corruption and intellectual property piracy. There are four Russian cities within the global top 100 cities for outsourcing.[6] St. Petersburg has the highest place (32nd), Moscow follows far behind (56th), and then there are Nizhny Novgorod (62nd) and Novosibirsk (92nd). Incidentally, Moscow dropped 10 spots in one year because of a sharp increase in labor costs. Unfortunately, Russian cities lose not only to competitors from countries with low GDP per capita, such as India or China but also to countries that are quite comparable to Russia: Poland (Krakow—10th place, Warsaw—36th), Czech Republic (Prague—17th), Ireland (Dublin—9th), or Chile (Santiago—21st). Hence, Russia loses as an offshore programming supplier both to developing and relatively developed countries.

This situation contrasts with the country's place in the global indexes of IT infrastructure development. Even though Russia is behind many Western countries in the Network Readiness Index[7] (50th place), it is appreciably ahead of not only China (62nd place), India (83rd), and Brazil (69th) but also of Poland (54th), Italy (58th), and Greece (74th). The Global Innovations Index roughly exhibits the same correlation of countries. According to this rating,

4 http://www.russoft.ru/upload/RUSSOFT_Survey_11_ru.pdf

5 http://www.gartner.com/newsroom/id/1500514

6 http://www.tholons.com/TholonsTop100/pdf/Tholons%20Top%20100%202013_Rankings%20and%20Report%20Overview.pdf

7 http://www3.weforum.org/docs/WEF_GlobalInformationTechnology_Report_2014.pdf

the country is characterized by high development potential (the so called "inputs", first of all the level of education) at insufficiently high efficiency of use of the same potential ("outputs", as measured by patent and trademark applications or revenue from licensing).

Russia was a launch pad for several world-known offshore programming companies, such as Luxoft or EPAM. Moreover, there are also Russian companies such as Auriga, Data Art, First Line Software, MERA, Reksoft, Return on Intelligence, and Maykor which are represented in the prestigious international ratings, Global Services 100 and Global Outsourcing 100 (which assess the quality of services and not the size of business). On the whole, based on the results of 2013, nine Russian companies were ranked in the Global Services 100 and six in the Global Outsourcing 100, which is an impressive showing. On the other hand, by world industry standards, the volume of operations of the Russian outsourcing companies is small both in terms of the turnover and human resources availability. The leader of the Russian market, Luxoft, has a turnover of just under $400 million and 7.5 thousand employees. One of the largest Chinese IT service companies Pactera Technologies had the turnover of $670 million and staff of 23 thousand, but even this looks modest in comparison to Indian giants Infosys and Wipro, which have turnovers of $8.24 billion and $7.3 billion and staffs of 150 thousand and 140 thousand, respectively. Such a large number of employees in Indian companies allows them to accept unique projects in terms of labor force with very complicated project management of the teams of thousands of specialists. It is impossible to create an outsourcing business of a comparable size in Russia. For comparison, only about 70 thousand IT specialists of all profiles graduate from all the country's institutes of higher education per year.

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country is already sufficiently high and does not provide a strong price advantage, but resources and competences are not yet developed enough for effective design and marketing of quality products for the end consumers. As was mentioned above, the volume of Russian export of finished software is comparable to the volume of the IT outsourcing, and several Russian software products hold quite strong positions in world markets. The capability to produce the marketable software sharply distinguishes Russia from the "classical" offshore model that was pioneered by India. The production of finished software is a segment adjacent to the IT outsourcing industry and competes with it for specialists and investments; therefore, performance capabilities of Russian vendors in international and domestic software markets are an important formative factor for the IT outsourcing industry in the country.

III.
Roles and Competences in Russia's IT Industry

The first experiments of the Russian software companies venturing into international markets began almost simultaneously with the start of the market economy in the country. Already at the beginning of the 1990s, such companies as ABBYY or Transas were able to find relatively free product niches and used revenues from international sales as the main source of funds for development. This was when the Russian market experienced high piracy levels that made profitable domestic sales almost impossible.[8] Since then, quite a number of Russian companies have entered international markets. For example, over 130 firms participated in a survey concerning the export of software and IT services conducted by the Russoft Association; the actual number of exporters can be significantly larger. Yet, Russian companies do not typically specialize in export, with only about 20% of them receiving more than half of their revenues from foreign sales and the rest combining operations in foreign markets with active domestic sales. The industry of software development was influenced in mid-2000s by the trend of acquisitions by the larger IT-integrators, examples are the acquisition of Reksoft by Technoserve in 2008, of Metasoft by De Novo in 2009 or of Averta by BAC (now Asteros) in 2008. These mergers brought a somewhat unexpected effect, as the software development business appeared to be secondary in volumes to the integration projects. In some of the cases the acquiring companies soon lost interest in the software development business, thus the speed of innovations in many cases slowed down; in a few instances the acquired products have completely lost their market position despite the influx of resources.

Some Russian companies are represented in international ratings of software vendors, for example, in PwC Global 100 Software Leaders, Deloitte Technology Fast 500 EMEA, Software 500, and Gartner Magic Quadrants. Companies most often found in these ratings are those engaged in active exports, for example, Kaspersky Labs, ABBYY, Parallels, Acronis, Prognoz, as well as companies operating mostly in domestic markets but offering quality products and with significant turnovers, for example, Diasoft or 1C. Russoft supposes that Russian companies could be represented more extensively in international ratings but are restrained from this by the traditional unwillingness of Russian business to publish financial results.

Achievements of Russian software companies are based on the strength of the national school of mathematics, as demonstrated by such achievements as the consistent top placings of Russians in the ACM ICPC International Programming Contest. The strength of the Russian IT school lies in the area of highly complex projects of mathematical analysis, which bring even the modern computers to the limits of their productivity. These are projects in such areas as image and speech recognition systems, machine translation, semantic search, etc. They fully justify the attention traditionally given by the Russian programming school to algorithmic purity and management of processor utilization and memory resources. Below are just a few examples of international achievements by Russian companies in these areas:

- voice biometry from the Speech Technology Center company took the first place at the Speaker Recognition Evaluation 2014;
- the InfoWatch company placed in the list of the 20 most promising world vendors in the corporate information security area according to American publication CIO Review;
- video phone Video Most Space from the SPIRIT company was declared the product of the year in 2012 according to American publication INTERNET TELEPHONY.

But Russian companies are also faced with a very acute scale problem in the finished software market. Only one Russian player, Kaspersky Lab (54th place), is on the list of the first 100 international software companies in terms of turnover. Even such a large Russian developer as 1C, which dominates in the domestic market of accounting software for small and medium-

8 For details about the ways of formation of some Russian innovation companies actively operating in international markets, see the IEMS research in BRICS Business Magazine, No. 3/2014, p. 62 or on iems.skolkovo.ru.

sized businesses with its turnover of over $300 million, appears only in the regional EMEA rating (30th place). On the whole, Russian companies hold only 25% of the Russian domestic market (volume about $4 billion), i.e., the volume of their domestic sales is two and a half times lower than the export. Here we encounter an unusual side of the "middle income trap": the internal market has substantial volume, many of the Russian companies are rich enough to import international software and this creates the demand for deployment services instead of original software products. This demand creates a comfortable market for the so called IT integrators, i.e. the companies servicing package implementations of hardware and software systems for largest Russian clients, which attract most of the resources on the market.

The situation in the domestic market is, on the whole, quite accurately described in an interview by Tagir Yapparov, the chairman of the board at one of largest Russian IT enterprises, IT Co. Group[9]: "During the last 20 years, most of the large players have been working under the model of reselling foreign products and solutions, building their services around these solutions, such as system integration, technical support, consulting, training, etc. In most cases, service business of Russian IT players develops in such a way that increase of the business volume demands a corresponding increase in employee numbers. But the industry practically has no personnel reserve. To date, the personnel deficit in the IT market is virtually the key constraint to the industry's development and leads to an unjustified growth of expenditures due to the constant increase of salaries and overhead for searching for and retraining IT specialists at the required level. During the last few years, we have witnessed how newly created captive integrators actively bought up the specialists they needed off the market offering them salaries many times greater than the market ones."

Russia is increasingly finding itself in an unusual position for an "emerging country", as it starts itself to purchase services of offshore programming and IT outsourcing

In this interview, the key problem of the Russian market has been pinpointed, which is the relative weakness of the IT ecosystem. This weakness is caused by a combination of two factors:
- Difficulty of preparing specialists within the high Russian educational standards which focus on the quality and breadth of theoretical training and fundamental knowledge not only in programming but also in mathematics and physics; and
- High demand for high-quality Russian specialists in the international market, which makes brain drain from the country an ever-present problem.

As a result, according to some estimates (by Association of Communications and Information Technologies Enterprises[10]), there is a deficit of up to 320 thousand of IT specialists in the market (whereas only 70 thousand graduate from all higher schools yearly). Owing to substantial contracts (delivery of hardware and IT services comprises, in total, 85% of Russian domestic IT market, i.e., about $20 billion dollars), the leaders among the IT integrators, such companies as NKK (with revenue of about $4 billion dollars in 2012), Lanit (about $2 billion dollars), or Technoserve (about $1.2 billion)[11] can attract best specialists. However, business of IT integrators is not of the innovative nature. It requires accumulation of competences in project management area and in knowledge of prod-

9 http://www.kommersant.ru/doc/2459343

10 http://www.russoft.ru/upload/APKIT_press_ALL.pdf

11 http://www.cnews.ru/reviews/new/2013/review_table/ed22734311cfe6ccbf46b7b7f1d40547ea6c1054/

ucts by international vendors (such as SAP, Oracle, IBM, Microsoft, etc.), but not in the area of developing and producing proprietary software. The salary level set by the largest companies in conditions of personnel deficit in the market challenges both business of developer companies, which assume high market risks, and business of IT outsourcing companies operating in conditions of the world-level prices for a man-hour of specialist work.

As a result, Russia is increasingly finding itself in an unusual position for an "emerging country", as it starts to purchase services of offshore programming and IT outsourcing. Russia's demand is localized, to a great extent, in the Russian-speaking part of the world, countries of the former USSR, first of all in Ukraine and Belarus. Unfortunately, the tensions in Russia's relations with Ukraine that have been growing during 2014 could not fail to affect the perspectives of cooperation with companies from this country, even though among the CIS countries, only Ukraine possesses the IT ecosystem at least partially comparable to Russia's in size and quality. (The total population of Belarus which has very high level of IT specialists is 9.5 million, which is about 15 times smaller than Russia's and 5 times than Ukraine's; the population of Kazakhstan is 17 million). Russian companies operating in international markets are constantly expanding the geography of their IT purchases. For example, Luxoft had development centers not only in Russia and Ukraine but also in Bulgaria, Romania, Poland, Mexico, Singapore, and Vietnam, as well as in Great Britain and the USA. However, cooperation of this kind has been quite limited so far. In particular, despite the fact that the Russian and Indian IT ecosystems are highly complementary in competences, there is little cooperation in the IT sphere between private companies of these two countries. Perhaps, the barriers here are a relatively low (by Indian standards) volume of demand from Russian companies and their lack of competence in organizing development on the basis of international labor division.

Until recently the conservation of the present structure of the Russian IT-market looked the most likely future development. Such conservation would lead to increasing dominance of the large IT integrators who work mostly in the area of complex deployment of imported hardware and software systems with somewhat depressed segments of own software development and IT services, both for export and internal market. Yet the quick and turbulent development of the external political situation and internal economics creates new context for the Russian IT industry which is likely to lead to considerable changes in the established model of the market.

IV.
Venues of development of the Russian national IT-ecosystem

We can single out three groups of factors that will play a determinative role in the development of all segments of Russia's IT market in the coming years, shaping, inter alia, its IT outsourcing market:

- due to the specifics of the international situation and the forecasted dynamic of the country's economic growth put the macroeconomic factors to the forefront: economic stagnation and even recession, falling domestic demand for large-scale IT implementation, all of which will endanger the leaders of the IT integration market on the one hand and the weakening of the ruble against world currencies, which makes the Russian specialists increasingly price competitive globally on the other hand;
- a related factor is the trend of the government's increasing role in the market, aimed both at lowering various risks in the area of IT systems and at self-reliant import-independent development of the national IT industry;
- finally, there are extremely important powerful global processes of transforming "information technologies" into "digital technologies" that fundamentally change the principles of the software product development and marketing, redistributing market power among different types of players, and creating new market segments.

The relative influence of these three groups of factors will depend on the specific development of the situation in the country. We can project three venues of development: "self-reliance", "business-as-usual," and "refocusing in the international space."

"Self-reliance"

This route will be taken if either the Western sanctions against Russia transform into constraint of the current business cooperation at all levels, or the Russian government makes a decision based on internal security reasons to enforce switching of all main IT systems under the government control (including those of state corporations and large businesses depen-

dent on state support) to software other than that provided by large international vendors.

Theoretically, there are increasingly more opportunities for doing this due to the global trend of open source software, which is already affecting all main IT systems providing a functionality level quite acceptable even for large business. Theoretically, it is possible to create a core software library totally isolated from international markets. This can be achieved by saving copies of software code in the country at a certain moment and then conducting further development solely by national means (the so called "forking" the code.) Perhaps, this approach will lead to decreased quality of the systems, as large international vendors deliver not just a software product but also libraries of business processes based on international best practices. The latter component will largely be lost. Another area of risk is the capability of open source systems to sustain the productivity required by the country's largest enterprises.

Under such a development, the combined capability of the country's IT industry to modify and implement new systems will be the weakest point. As was mentioned earlier, currently the industry on the whole struggles to fulfill the simultaneous tasks of implementing robust and well-documented vendor systems with international technical support, developing proprietary niche software, and handling the relatively modest export volume of IT services. Having encountered the re-implementation problem simultaneously with the need to modify large-scale systems, often using new programming languages and baseware (operating systems, database management systems), the country's IT industry, most likely, will simply find itself in the situation of significant lack of resources. At the same time some specialists (perhaps a significant number of them) may prefer to continue working with the software products they are accustomed to either by physically emigrating or by offering their services in the offshore programming market. Thus, for the IT outsourcing or the software export industry, the push to self-reliance can unexpectedly turn out favorably due to a sharp increase in labor supply accompanied by lowered labor rates and expenditures. (Foreign currency deficit can

also become an important factor, as it was in Russia during the end of 1980s – beginning of 1990s). For the IT industry on the whole, however, this line of development brings the risks of being unable to handle the entire volume of problems, it will be forced to lower the quality of solutions, gradually falling more and more behind the leading world products and losing some skills and competences. On the client side, a loss of functionality and, possibly, system productivity will be encountered, which may result in a drop in production quality and efficiency vs. the world market benchmarks.

"Business-as-usual"

A possible option is that the IT industry continues developing within the framework of the current international contracts. Generally, as of the current moment, nothing has happened that would make the "business as usual", impossible. Definitely, two factors will exert strong influence on the market: economic stagnation and the sharp drop in the ruble's exchange rate. Falling oil prices, which unavoidably limit market abilities of the government and state companies, present an additional challenge. The IT market will be almost definitely faced with serious budget cuts by key clients in 2015; the only open question is what the structure of such cuts will be.

Currently, hardware systems comprise over 60% of Russia's domestic IT market, and it is these systems that are most vulnerable to the swings in currency exchange rates, given that each production unit has a fixed cost. On the other hand, software products have almost no cost, as having been developed for the international market once each additional copy goes at negligible production costs for the vendor. If the large international software companies opt to stay on the market, they will be capable of doing this via relevant price reduction. It is likely that the market will be redistributed for the benefit of software and deployment services. This, incidentally, will bring the market structure closer to the international practice, whereas

The weakening of the ruble will increase price competitiveness of Russian companies in international markets, motivating larger numbers of Russian software companies to go to international markets

currently Russia's share of hardware expenses is abnormally high. This turn of events may seriously hurt the business of leading integrators (who heavily rely on hardware deliveries), but will open a window of opportunity to middle and small-size companies.

For the IT outsourcing and software export markets, this, most likely, is a positive scenario. The weakening of the ruble will increase price competitiveness of Russian companies in international markets, while the attraction of currency proceeds will motivate larger numbers of Russian software companies to engage more actively in international sales. On one hand, this will step up the competition, while on the other expand the footprint of Russia's global market presence and create an increased number of cooperation practices and cases; as a result, the combined international position of Russian developers may become substantially stronger. The size of the IT ecosystem will never allow the country to match the volumes of India and China in the global market of offshore programming and IT outsourcing; however, it is quite realistic to join the ranks of the leading world vendors, winning in the competition with Eastern European and Latin American countries.

"Refocusing in the International Space"

There is also a possibility that Russian companies will use the current international and domestic situation as an opportunity to revise and redefine the country's IT paradigm, in general,

and the directions of international cooperation and sales, in particular.

This scenario will be based on the effective adaptation of the global technological trends, including the previously mentioned rise of open source systems as well as development in the direction of "analytics-sociality-mobility-cloudiness." As opposed to the "self-reliance" scenario, in this case, there will be no enforcement of the rejection of the established vendor systems. Rather the local software developers will approach the largest clients, which will be experiencing the shortage of funds, with the focused solutions on top of the already deployed "heavy-weight" vendor systems. Such "add-ons" will aim at enhancing the functionality in the production process area, in the ideology of quick wins in productivity. While international production management systems usually imply high quality of assets and processes, which often cannot be attained by Russian industry, newly developed solutions should take into account the actual specifics of the majority of Russian companies, as this is the area in which breakthroughs in efficiency can be achieved. The successful solving of this type of problems can make Russian products attractive in many developing markets with comparable level of industrial assets and processes. In this case, software developers from Russia will get a good chance of leaving relatively narrow niches in international markets which they currently occupy and start competing for its most lucrative segments involving the automation of business management. China with its vast internal market is the most attractive area for this type of expansion.

Under this development scenario, the IT outsourcing market in the country will, probably, almost disappear, because of a stable domestic demand for high quality development will attract the best specialists, seeking to participate in the cutting edge R&D projects financially supported by export sales. Definitely, this venue looks the most potent within the listed options; however, several conditions must coincide for its implementation:

- on the demand side: a serious movement of the largest companies in the country in the direction of enhancing production efficiency with simultaneous de-bureaucratization of internal processes; going out of the "comfort zone" in making strategic IT decisions;
- on the supply side: forming a vision and quickly creating prototypes directed at solving key production issues by combining open source solutions with "heavyweight" vendor systems along with giving proper attention to the key concerns of corporate clients: security, scalability, and productivity;
- on the side of the government authorities responsible for development of the industry and of associations of market participants: selection and promotion of successful cases, shaping the mentality of key clients, encouraging experiments (perhaps with insuring part of production risks for the most interesting experiments); at the same time, the government should resist the temptation of becoming a "mega buyer" that defines the demand for and specification of products for the market, because such an approach will, at the least, hardly lead to the creation of internationally successful products. The world practice, as well as the historic experience of several countries, shows that open competition on the side of both suppliers and buyers is the most effective tool for selecting innovative ideas and solutions.

IT Outsourcing in Russia— is it the Future or the Past?

24 IT OUTSOURCING IN RUSSIA— IS IT THE FUTURE OR THE PAST?

In the light of the foregoing analyses, we can state that IT outsourcing is only one of the several segments in the overall structure of the national IT industry and there are no special reasons to give it priority over other segments. Moreover, hyper-development of this sector may lead to serious risks, as India's example demonstrates. Undoubtedly, IT outsourcing and offshore programming is a very interesting, perhaps even the only pragmatic way for countries set on creating the industry from scratch. But for the very same reason, this way is poorly suited for Russia with its historic tradition of self-development of IT systems at all levels of complexity. From a certain point of view, it can be argued that the attention given to the offshore programming sector in Russia is a result of inertial development of several concepts that took shape in the 1990s in conditions of weak domestic demand and lack of competences in creating products capable of competing in the world market.

Considering the analysis of the global tendencies in the IT outsourcing area, there are reasons to assert that the market has reached the apogee of its development. For example, Mr. Pralay Das, securities analyst at Elara Capital company from Mumbai, believes that the American and European financial sectors have already taken into offshore 80% of all services that were theoretically amenable to such alienation. The Hacket Consulting company forecasts that migration of services to developing countries like China or Brazil will slow down significantly by 2014 and stop completely by 2020[12], while KPMG has published a report called The Death of Outsourcing. Company's expert Cliff Justice explains: "During the recession of 2008–09, companies accelerated the offshore race and moved out not only the "workshops" but also exclusive competences and technologies with a high share of added value. "[13]

He also notes that many companies have been faced with the loss of some of their

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busi>ness functions. In parallel to this, the low labor costs advantage of offshore markets is diminishing, with the problems being exacerbated by high inflation rates. Salaries for developers and engineers are on the rise. If earlier there was an 80% gap between IBM engineers from India and the USA, today the gap is 30–40% and getting smaller.

Such a development of events creates serious threats for the largest country-suppliers of outsourcing services, first of all for India, where an entire social system is tied into the industry. If before long, India does not manage to solve the problem of increasing the qualification level of specialists and switching to creating high added-value products, the risk is high that, due to the growing world competition, its IT services outsourcing industry will find itself in the situation of almost zero profits, which will make it quite vulnerable to world economic activity cycles. In case the prognoses of stagnation or decline in world demand for outsourcing start coming true, the welfare of millions of India's middle class members will be jeopardized, which threatens the country with serious social disturbances.

In general we can state that development of export IT-outsourcing including the offshore

12 http://www.economist.com/news/special-report/21569571-india-no-longer-automatic-choice-it-services-and-back-office-work-turn
13 http://www.kpmg-institutes.com/content/dam/kpmg/sharedservicesoutsourcinginstitute/pdf/2012/death-of-outsourcing.pdf

programming should not be a goal in itself, without the context of the overall capabilities and risks of the national IT-industry. In any of the described venues of development in the new international and internal situation the segment of outsourcing per se will play rather a secondary role. Russia does not face a task of speeding the development of national school of information technologies from scratch. Much more pressing are the issues of integration of the developed ecosystem into the global market and of the successful commercialization of the results of its work.

In the backdrop of such prognoses, and taking into account the specifics of the historical development of its IT industry, Russia must strive to create a higher-level industry aimed at developing finished products that will be effective both in the domestic market (where the share of nationally developed software is below 25% currently) and on the world scale. Serious global opportunities are presented by re-orienting from the Western markets to the developing ones, including China, and switching to the ideology of developing products for the "bottom-of-the-pyramid" type of demand: massive and affordable solutions applicable in counties with income and infrastructure restrictions and rapid economic growth. This path may allow Russian companies to move from peripheral positions in the world software market to the roles of conceptual leaders of the global digital transformation.

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