Characteristics of Russian outsourcing

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1. Initial history

At the end of 1980-s the so-called “Perestroyka” began in Russia. Now many people argue whether it was possible to perform it softer, but «history does not know subjunctive mode». Transition from socialism to capitalism has passed very quickly with huge asperities for the population. There were real threats of starvation and of a civil war. Inflation exceeded 1000 % a year (for example, in 1992 inflation has constituted 2600 %). Gaydar's reforms have filled empty shelves of shops by imported goods, but at such prices which were inaccessible to the majority of the population. In these conditions the availability of convertible currency which were not subject to the Russian inflation provided certain stability. The family of three persons could live well enough on the income of $200 a month in the beginning of 1990-s.

In these conditions each Russian was searching for means of survival. Some people became “chelnoks” (suitcase traders), some traded food, others opened small businesses (repair of clothes or of cars, hairdressing salons etc.). At the same time in Russia there was a very large layer of engineers, teachers and scientists (about 300 institutes of the Academy of Sciences, more than 1000 universities, thousands of applied-research institutes aimed at implementation of scientific results in production). Certainly, not all of them were equally strong but at least one third of institutes of Academy of Sciences and universities worked at the level of World standards. Thus, there were several thousands of high level experts as a heritage of the USSR. Despite difficulties many high schools saved their professors and continued to graduate qualified engineers. Not all of them have been required by the Russian economy at this time. As it is known in the USSR more than half of researches (and some sources say that even more than 75 %) have been connected with defense. New authorities of young Russia have almost completely ceased financing of military contracts. Brain drain became the main problem. Tens of thousands of best specialists of productive ages have left Russia for other countries (basically for the USA). However not all. Many physicists, chemists, engineers and technicians have been retrained into IT-professionals and were successfully working. At that time Americans spent a lump of money for conversion training of Russian nuclear physicists and rocket specialists to prevent them from leaving to North Korea, Iran or still somewhere. They became excellent programmers.

Fortunately, a reverse situation established in the West (mainly in the USA). There were a lot of job positions in IT without sufficient amount of engineers. Green card program expanded in the USA, but American authorities simply did not want and could not increase number of immigrants immensely. Thus, it was quite natural to transmit a part of works to other countries where the labor force was qualified enough, but the cost was lower. Basically the idea of outsourcing has arisen in the USA in 30-s' of the last century. For example, for a company with 10-15 people it is too expensive to keep a qualified

accountant in the staff, it is much cheaper to transmit the accounts' department to some professional organization which could well serve ten such small organizations with benefit for itself.

Presently it is usual to outsource all works that are not connected directly to the core activity of the organization (telecommunication, security, cleaning, IT-system administration etc.). The first successful examples of outsourcing to Russia were just of the same field – development of some tools, carrying out of the calculations which were not critical to the client, preprocessing of the data etc. Outsourcing was used typically as a means for minimizing expenses. However many Western companies quickly realized that there was a large quantity of almost jobless highly skilled experts in Russia in many different areas. Therefore some companies began to risk and to outsource their core processes to Russia, especially when they had failed to do it themselves before. Not to be unfounded, we will give examples from Lanit-Tercom's history.

In 1992 Italians (ITALTEL, Milan) have ordered to us the development of SETTOP - device which provides Internet access using the home TV instead of the display. Lanit-Tercom has successfully solved this task. A.Terekhov was invited to Milan for signing the next contract, and Italians showed him with a pride the huge box filled by our boards. It appeared that their purpose was not to get SETTOP but the ATM-switch. They were afraid of sharing commercial secrets with us, therefore forced us working "blindly". A.Terekhov explained they have done wildly inefficient job. For example, on each board there was a microprocessor M68000 with a few additional chips, which was absolutely unnecessary for switches. They agreed, apologized and then ordered development of ATM-switch from the scratch . We completed this task. It seems like it was the first ATM-switch in Europe, it is in use till now in PEAN network. We have developed and realized both hardware and the switch software, but what is even more important, we also developed software for management of heterogeneous communication networks. As far as we know, nobody except us has ever developed ATM tools in full in Russia.

One more example. At the end of 1992 A.N.Terekhov got a letter from US through one former Soviet citizen from Leningrad (and at that time already American citizen). The letter was from the American company Seer Technologies with the invitation to take part in the project on reengineering of legacy systems. Actually, this letter has not been addressed to any definite company as they had already made some unsuccessful attempts in the USA and have been almost despaired. The American business idea looked very attractive: there are tons (it is their expression) of programs written on Cobol, PL1, Adabas Natural and other out-of-date languages in the World. These programs have been successfully maintained for more than 10-20 years in crucial areas (defense, finance, public health services, etc.), but their support was becoming more and more expensive from year to year. With the time authors of programs did not work in the given firm any more, Universities did not prepare experts in old languages, nobody supported technologies used when this software was developed. The worst thing was that the documentation did not reflect a real state of affairs, because of numerous changes made in software for many years of operation. Thus, a unique source of the real information on the program was the source code (the program text). And as Americans always were famous for the adherence to "a brute force" method it was not rare to have an application with 4-5 million lines, consisting of modules with 40-60 thousand lines on 10-15 different languages.

On the other hand, even the understanding of the program operation logic and especially its convertion into the modern platforms demanded deep and detailed analysis (data flow graph, control flow graph , sequence of windows of interaction with the user graph, databases etc.). As it is known the number of paths in the graph grows exponentially according to the number of nodes in this graph, i.e. the analysis written «straight forward» will need to work very long.

Our long-term experience of compiler development and the strong mathematical background of our employees helped to solve this task. Reengineering gave us mass of absolutely new tasks and solutions. Some tens of master thesises and three PhD thesises were proved on this topic. The final product – RescueWare was admitted by Gartner Group as the best in the field of Legacy Understanding and Legacy Transformation in 2000 and 2001.

We think that almost every successful Russian enterprise has set of such stories of entrance to the outsourcing world.

2. Start of the Russian IT market and of the IT industry

In the USSR the software market (as well as the markets of other industrial products) simply did not exist. Software was developed under the state contracts, accumulated in the State bodies and centrally distributed. There was no software market, so there was no advanced industry of software development. At the very beginning of “Perestroyka” there existed so-called “cooperatives” which basically were selling personal computers. It was not meaningful to sell software as it was impudently copied, the piracy was prospering (however as well as in other kinds of activity). We know from the pioneers of Russian's software products' development how difficult it was to get money from first corporate customers. But piracy is not a feature of Russia alone. When in 1989 A.Terekhov has arrived to Bombay to sell a program called JEC of a dialog task input and text editing for ES EVM (clone IBM/360), developed at Leningrad university, he has seen with surprise this program already installed practically on all computers.

In programming itself we were not worse than our Western colleagues, besides in the mathematics and knowledge of effective algorithms – even much stronger. But we were amateurs, not professionals in the organization of development process, in such fields as version control, configuration management, quality assurance, project management. We were gaining all this knowledge at completing works for our Western partners. Budgeting seemed especially difficult – we simply could not understand how it was possible to estimate precise cost of the product development. In Soviet period we had the fixed budget for many years forward, even the most good experts could not receive more than 1,5 standard monthly salaries, for the shifted completion dates we could be scolded, but not fired. Contracts with Americans were the real school for us and for our teams.

The total turnover of all Russian software companies working for export hardly exceeded 100 million dollars per year by 2000. Russian economy was basically recovering by this time, many branches of industry felt quite successful, inflation was limited enough though still exceeded 10 % a year. Success in putting the country in order basically was associated with Putin's name. Well, he is not a true democrat, many liberals criticize him for some decisions, especially often discussing Khodorkovsky's case, but we can’t but say that in our opinion, essential economic progress in Russia began after 2000. In new conditions of relative stability and economic growth in Russia we faced a challenge of forming our software industry’s image, increasing its visibility from outside the country, finding possible ways of lobbying laws, important for our industry. Usually the role of the industry voice for the society and for the authorities is being played by a professional association because it’s quite difficult for one even very large enterprise to represent the industry as a whole.

3. RUSSOFT Association

As it often happens, our association was born almost occasionally. In 1999 the city administration of Saint-Petersburg organized a delegation to San Francisco for visiting Silicon Valley. The

delegation of Saint-Petersburg included 4 representatives of IT Organizations and the deputy-chairman of the International Relations committee of the Saint-Petersburg's Government – Mr.Valentin Makarov. The General Consulate of Russia in San Francisco and Russian trade mission have helped with organization of this visit.

We have visited head-quarters of Oracle, Sun Microsystems and Hewlett Packard and met representatives of these organizations at level of vice-presidents. Naturally we praised our native qualifications and asked for serious orders. It was before the beginning of 2000th - the period on the threshold of Internet-Bubble. The Indian companies have grown to very vast scales by this time, therefore vice-presidents of all three mentioned corporations told us that they were interested in teams of 500 persons and more and they could not accept working with such small organizations as ours.

Sitting in our hotel round a pool in the evening, we sadly discussed visit results. Then Andrey Terekhov and Valentin Makarov have suggested creating a consortium of the several Saint-Petersburg companies to have possibility to expose "500 bayonets". We did not think long about the name of a consortium. Just in the eve of meetings with the US IT-big bosses we had visited the ancient Russian fortress called Fort-Ross in California and spent there a playful christening, having bathed in ice waters of Pacific Ocean. This fortress has been constructed by Russians about 200 years ago for providing Alaska (it was Russian then) with foodstuff. Later on, answering the questions of journalists why we had chosen such American name for Russian association, we said that we had exactly the same problem as 200 years ago – to create a front-point a for providing Russians with orders on software development.

We have held series of meetings with managers of St.-Petersburg enterprises after returning from America, our idea has been supported completely. Valentin Makarov has left the City government and became the President of our consortium. After that in different regions of Russia similar associations of software developers began to be formed, we were sending them samples of necessary documents gave advices about the work organization, answered numerous questions. Historically St.-Petersburg organization became the leader among Russian associations. The association of Moscow developers was organized essentially later. According to the Moscow traditions they immediately took name RUSSOFT, claiming the All-Russia scale of the association. Two years passed and the Moscow association did not reach our scale. That's why we merged at 2004 and fixed RUSSOFT as the name of the All-Russia association, but with the headquarters in St.-Petersburg and with Valentin Makarov as a president of united Association. Andrey Terekhov was the first Chairman of RUSSOFT Board and bears a proud name of the founding father of this organization.

Now there are 70 companies in RUSSOFT, not only from Russia, but also from Ukraine and Belarus. Sometimes hot discussions take places between the governments of these three countries, but we do not remember any scandal, but even small disagreements between businesses. Both in Ukraine, and in Belarus there are associations similar to RUSSOFT and we support close friendly relations with them, organize joint conferences, road-shows and other activities. Annually RUSSOFT conducts survey on the software development export industry in Russia which covers such questions as estimation of export values (depending on different models of business and industry sectors), geography of clients, vertical markets, situation with staff, software companies' satisfaction of the government policies, quality of regional infrastructure etc. We use data of well-known consulting companies like IDC, Gartner, Forrester Research, NeoIT and others for marketing surveys.

Nothing was saved from the initial idea – collecting contracts under the umbrella of an Association. It is difficult to convince the Customer that splitting of its precious problem into almost

independent pieces is possible, difficult to adjust cooperation, it is almost impossible to distribute responsibility and profit fairly among members of an Association. With years coming the tasks of association were essentially changing. The «club» atmosphere comes upon foreground. Directors of the IT enterprises gather regularly and discuss problems and ways of their solution in informal conditions. The important part of Association activity is lobbying of the IT-industry interests. 20-30 years ago "lobbying" was the abusive word in our country applied in newspapers for accusation of defects of capitalist society. Now lobbying is perceived absolutely normally, we often deliver speeches in State Duma, we keep in touch with many officers from the Government, we push both to make business conditions better for the industry.

There are first successes. In 2007 the unified social tax (which is the biggest tax paid by the employer in our industry as the salary forms over 60 % of all expenses) was diminished from 26% down to 14% for export oriented software companies. For businesses which deal with natural resources the salary makes 3-5 % from general expenses, so 26% from the salary is absolutely insignificant loss for them. But it is dramatically significant for enterprises developing software for export. Taking into consideration that our basic competitors in India, China, Brazil, Ireland and other countries have no such tax at all or it's rate is very low, it is obvious that the Russian enterprises are losing the international competitiveness "a priori" because of this tax alone. We managed to achieve decrease in this tax for our enterprises for two years (2008-2009). We have also been struggling for simplification in customs' regulation, of rules of VAT collection, on export promotion measures, etc.

Nevertheless one part of the initial task was kept intact. We mean creation of a positive image of Russia in other countries as the important constituent of the marketing strategy. 15-20 years ago it was very easy to hear a question from the potential customer, whether bears walk along Nevsky Avenue (the main avenue of Saint-Petersburg). If you open any Western newspaper the word "Russia" can be met only in a context of «Russian mafia», «crime», etc. When the entire World was trying to solve the Y2K Problem, Associated Press has published the big interview with Professor Andrey Terekhov, but has supplied his interview with a photo of the tired peasant in a padded jacket, sitting at desktop with bottle of vodka. There were a lot of such cases. RUSSOFT has spent many years of regular operations promoting true state of affairs and success stories because we tried to break this situation. In our opinion, today the Russian image is essentially better, than it was 10-15 years ago. Though relapses of "cold war" have an effect from time to time.

Our favorite success story is the ACM-ICPC International Programming Contest sponsored by IBM. In the first 20 years of existence of this competition American universities had won many times. But since 1996 when Russia began to take part in them, it became difficult for Americans to enter even into the first ten. Six times Russian universities won the absolute first place, practically every year they occupy 4-6 prize-winning places from the first ten. And these are universities not only from Saint-Petersburg or Moscow, but also from mid-sized Russian remote cities. We consider this fact shows level of Russian education in the field of IT in general.

4. Samples of Russian outsource success stories

To begin with the report on the "50 Global Emerging Outsourcing Cities' study" produced by Global Services and Tolons in 2009. St.-Petersburg has won the first place among attractive places for establishing R&D. It also entered into the Top 5 on engineering services and in Top 10 on products' development. Moscow is number 3 on R&D and also is included into the Top 5 on games development services.

Besides, it is necessary to consider that 6-8 largest companies from Russia, Ukraine and Belarus are always presented in Top 100 of different ratings in different nominations (fig. 1).

Almost all world IT leaders organized development centers in Russia proving that Russia is one of world's leaders in the field of research and development:

1. Intel – over 1000 employees in Nizhny Novgorod, Sarov, Moscow, Saint-Petersburg and Novosibirsk
2. Sun – over 300 employees in St.-Petersburg
3. EMC – over 300 employees in St.-Petersburg
4. IBM – large development center in Moscow
5. Motorola – over 300 employees in St.-Petersburg
6. T-Systems – over 300 employees in St.-Petersburg

HP and Google opened their development centers in Saint-Petersburg in last 1-2 years despite crisis and programmers' salaries growth.

fig.1

Our companies took strong positions in the vertical markets.

1. Finances. Luxoft and Exigen Services successfully work with the Deutsche Bank, DataArt – with smaller financial institutions.

2. Oil extracting, processing and trade in oil products. EPAM Systems carries out large orders for Halliburton.

3. Industrial production and design. More than 700 Luxoft employees are working under direct orders from Boeing

4. Lanit-Tercom works for many years in the field of creation of the medical equipment (for Laerdal), in development of software for devices for foodstuff quality check (FOSS), in reengineering of Legacy Software (Relativity Technologies).

It is possible to describe hundreds of such examples, we have mentioned only the most known (or most familiar to us).

Russian IT offshoring market has grown from $1.5 billion to $2.5 billion before the crisis in 2006-2008. Especially it is worth to underline that R&D's part of export has reached $1 billion of the total $2.5 billion in 2008. Many Russian companies which met problems in competing with Indian companies on the cost basis in traditional services have chosen a niche of high-end software and technology development. It allows them to effectively use advantages of the educational scheme and of R&D experience of Russia.

5. Russian IT-Industry Today

The first 10-15 years of outsourcing activities were very important for Russia, especially in the field of project management and quality assurance. However today we understand that outsourcing cannot provide explosive growth to our industry, there is no intellectual property accumulation, it is necessary to struggle at least for moral rights on intellectual property when you work on a contractual basis (possibility of the publication on work topics, a mention of authorship of development, etc.)

Many Russian companies, who have stored enough experience in product development for Western customers, started to develop own products, to master the vertical markets. While preparing this article the authors studied success stories of Russian companies but faced an old problem. There are products which are being sold in million copies. We precisely know that they are developed not only in Russia, but namely in St.-Petersburg. But their authors are forbidden to mention Russian roots as are afraid that the disclosure of that information would damage sales. Nevertheless, we will give some examples.

1. Parallels (Sergey Belousov) – one of world leaders in area of resources virtualization.
2. Aelita Software (Ratmir Timashev, Andrey Baronov) – Microsoft networks administration and network security. Has been sold more than for $100 million to Quest.
3. Speech Technology Center (Michael Hitrov) - is engaged in the field of the voice integration. They have successfully decrypted records of the black-box of the submarine "Kursk" which lain at the bottom of the sea for more than a year. They have also the World's largest application in the field of speech recognition.
4. SPb Software – one of the leaders on Windows Mobile applications development, while Novosibirsk company Vito Technologies has leading positions in iPhone applications development for Education.
5. Lanit-Tercom company created technology of designing of the chips optimized for the required problem, and now is promoting its solution in the field of stereovision (two webcams without any additional equipment).

It is important to notice that 5 from 10 leading world service providers on software products development (Global Services&NeoIT, 2009) are Russian companies. In our opinion, this leadership in product development is strongly related to the educational and scientific background of Soviet and

Russian engineers. It seems that owing to the superiority of our education system and of engineering school, our developers and experts in algorithms are able to smoothly adapt to changing conditions and to find solutions for the most difficult technical (and also — administrative, financial and other) problems better than anybody else. When we added understanding of market and of its requirements to this ability, we have quickly reached leading positions – first in application developers and then - in software products developers.

Throughout a number of years the growth of export of software from Russia exceeds growth of export of software development services. There is a maturation of capital venture activity supported by the Government. The State owned Russian Venture Company (RVC) together with Bank for foreign trade (VTB) initiated creation of a network of regional venture funds and also of «seed-money» funds. Large foreign corporations (Microsoft, Cisco, HP, IBM) and foreign venture funds («Almaz Capital","Siguler Guff","Drapper, Fisher&Jurvetson) actively cooperate with these funds. Associations of business angels have been created in Moscow and St Petersburg first, and then in mid-sized cities.

According to the annual survey organized by RUSSOFT in 2010, business has reacted immediately. Already more than 20 % of respondents plan to involve investments in 2010 and as much — in 2011. Market consolidation became an important tendency during the crisis – it was noted by more than 60 % of respondents. These tendencies coupled with development of the system of venture financing instruments should lead to a series of new World leaders of the software industry in Russia very soon. It will be unexpected even for Russians at first. And then it should become norm. Finally we will easily forget that time when potential of Russian developers was used for «driving nails», competing in prices with colleagues from developing countries.