HUMAN RESOURCES

HIRING MARKET 2021: WIND OF CHANGE

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2020 has become a year of fundamental change for both lifestyle and the job market. Many businesses fell apart, and only flexible ones have stayed afloat. We saw some interesting trends that changed our working routine in 2020. They are still relevant in 2021.

Everything we used offline stopped working. The main component of business efficiency turned out to be its digitalization. “If you do not have an online business, you do not have a business.”

Remote work has become a thing. Many foreign companies became more interested in Russian IT specialists. Now we have a good balance between high-quality technical personnel and staff costs.

To the opposite of the usual order, a new trend has formed. Because of the pandemic, Russian IT specialists no longer want to relocate. They prefer to work for a foreign company being at home.

The demand for specialists has grown enormously, but their number has remained the same. Russian employers have started to raise salaries and implement human-focused well-being programs. It is customary for IT professionals to have a C&B package with LCA, full sick leave coverage, a vacation, sports and educational compensations, and a cafeteria plan with unique benefits. Soon the competition for staff between Russian and foreign companies will increase. Local employers are already taking steps to keep IT professionals. All businesses have to hire not only in the capitals but also in the provinces. Some IT specialists have migrated back to their hometowns because of the pandemic and don't plan to return to big cities.

At the beginning of the pandemic, some employers anticipated specialists to lower their salary expectations, but it turned out the other way around. By October, almost all companies had already indexed salaries. The remote wage is expected to be higher. Compensation for the Internet, calls, utility bills — all of this becomes an integral part of the offers candidates accept.

New intangible benefits became an essential factor for the acceptance of an offer. Today employers need to quickly equip a home workplace and provide personnel with a cafeteria plan, thus making them choose options themselves. Companies that were not flexible enough lost their positions on the market.

In 2021. a new round of competition for candidates is expected — entry into the market of state corporations and opening a vast number of vacancies for the digital transformation of the economy. The trend towards increasing demand for IT specialists continues. Now more than ever, the issue of supplying new personnel, including the modernization of the education system, is acute. The most effective models are opening its training centre inside a company, a system of ambassadors in universities, and retraining internal resources for new needs. Many companies, including intella, have already launched similar projects, while others think about it right now.

Assessment of the overall HR situation in the software industry

At the end of 2020, there were at least 640,000 employees in Russia who were directly involved in the software development process (such specialists are considered to be specialized in software companies). The increase in their number over the year amounted to about 12 %. In the previous 2 years, it remained at the same level (slightly lower – 10–11 %), and until 2017 inclusive, this indicator was steadily 6–8 % for several years. Consequently, in 2020, at least 60 thousand software developers were added to the industry. Most of the growth (almost 80 %) was provided by universities.

This is a cautious assessment. It is necessary to take into account a serious error in the available calculations, which are carried out on the basis of a survey of software companies. As for the assessment of the number of software developers who are engaged in other sectors of the economy and social sphere, as well as in the public sector, it is assumed that they account for about ¾ of all specialists, and this share does not change significantly from year to year. This assumption needs to be checked annually, but for this it is desirable to conduct additional research on human resources and training in the field of software development, which is much wider than the software industry studied by RUSSOFT.

If you consider Russian software companies alone, then at least 200 thousand specialized technical employees worked in them at the end of 2020. Calculations are made according to the data of a survey in which respondents indicate the number of such employees in their companies (indicating the change in the number for the year). At the same time, at least 10 thousand of them are outside the country, working in the development centers of these companies abroad. Consequently, approximately 190 thousand work directly in Russia in software companies, which is 12 % more than at the end of 2019.

Calculations show that an increase in the number of specialized employees by 12 % occurred both across the entire industry and among the surveyed companies.

Since the error in the calculation results based on the survey data is quite large, it is better to focus on cautious estimates. Nevertheless, taking into account other indirect data, it's safe to say about an increase in the growth rate of the software development industry staff in Russia.

Total number of specialized staff

	the end of 2016	the end of 2017	the end of 2018	the end of 2019	the end of 2020
Software developers working in Russia in all sectors (including IT services), thousand people	470-480	>500	>540	>580	>640
In the software industry of Russia (without employees in foreign centers), thousand people	132-137	>140	>155	>170	>190
Distribution of employees according to business model					
In service companies (including working for foreign customers)	57 % (≈22 %)	≈58 % (≈22 %)	≈59 % (≈22 %)	≈54 % (≈23 %)*	≈55 % (≈23 %)
In product companies	≈40 %	≈38 %	≈37 %	≈41 %*	≈40 %
In Russian R&D centers of foreign companies	≈3-3.5 %	≈4 %*	≈4 %	≈5 %*	≈5 %

* – the change in this indicator does not reflect growth, but an adjustment made upon receipt of additional information (in 2019, a significant adjustment is due to the sale of a number of large companies that were no longer considered Russian, as well as the use of an updated calculation methodology).

In the last 3 years, both large and small software companies have steadily increased the staff by at least 8 % per year (according to the results of 2020, the increase was 11.3 % for companies with a turnover of up to 320 million rubles and 12.1 % for companies with a turnover of more than 320 million rubles). Until 2017, large companies grew faster and largely due to the migration of personnel from small companies.

2020 turned out to be especially difficult for HR departments of software companies. In the first quarter, the situation became slightly more difficult than in the same period a year earlier: there was a more active recruitment of personnel amid an increase in the difficulty of retaining their own employees. In the second quarter, with the outbreak of the pandemic, everything changed dramatically: instead of recruiting, HR departments, together with company executives, began to think about a significant reduction in staff. They had a dilemma: either try to retain the staff as much as possible, assuming that after the lockdown completion, the cost of finding and selecting personnel will exceed the cost of paying non-working specialists, or still not spend money in vain if the reduction in the global and Russian IT market promised by analysts is prolonged.

However, in the third quarter there was again a 180-degree turn. It turned out that the market is not declining, payments delayed in the second quarter began to be received. For the second half of the year, HR managers of software companies had to compensate for the downtime of their developers in the spring months during the most stringent restrictive measures. A very active recruitment of personnel began and such a shortage arose that was not even in quite prosperous years for the industry. As a result, the total staff of software developers increased over the year by record 12 %.

The increase in the growth rate of the total number of employees can also be explained by the fact that thanks to the activity of the APKIT Association, starting from 2014, quotas for budget places in IT specialties began to increase in universities. It is unlikely that their number increased in three years by 70 %, as announced in the media, but their number increased by 20–30 %. The admission of students in IT specialties was increased mainly by regional universities (leading universities in Moscow and St. Petersburg did not see the opportunity to accept more students without reducing the average level of training, since a significant increase in the graduation of qualified programmers requires initial investment in teacher training).

The share of companies with a growing number of employees in 2020 turned out to be exactly the same as in 2018 (from 2019 it is difficult to compare due to the unusually small number of companies surveyed), but the percentage of companies, whose staff grew by more than 10 % over the year, increased. In 2020, 11 % of the surveyed companies had more than 30 % staff growth, and 7 % had more than 50 %.

Staff turnover

The turnover rate until 2015, inclusive, fluctuated mainly in the range of 6–7 %, but in 2016 it increased to 9.5 % and in the next two years stabilized at this level. In 2019, there was a new jump – up to 12.5 %. Given that an insufficient number of companies participated in the survey in 2020, there were doubts about the accuracy of the value received. However, data from the 2021 survey showed that such a jump did occur: according to the results of 2020, the turnover rate was 13.3 %. The growth of this indicator is confirmed by other sources as well.

In previous years, at least half of the companies surveyed faced annual layoffs (in 2016 – 59 %, in 2017 – 50 %, in 2018 – 58 %, in 2019 – 67 %). According to the results of 2020, 96 % of the companies that answered the corresponding question had losses. However, at the same time, more than half of the survey participants (54 %) chose the option “Not sure”. It is difficult to assume the reasons for such a mass refusal (a year earlier there were only 28 % who did not want to answer the question about staff turnover). Apparently, this question has become especially painful for companies or it is already difficult for them to keep track of how many employees quit during the previous year (when there are no layoffs, it is easier to answer the question).

Now we can no longer talk about a low rate of staff turnover in Russia. Under current conditions, when the staff is updated annually by more than 10 %, companies have to learn to start projects with one team composition, and finish with a completely different one.

Annual turnover rate according to size of companies (by turnover)

Year *	For all surveyed companies	More than $100 million **	From $20 million to $100 million	From $5 million to $20 million	From $1 million to $5 million ***	$1 million ****
2012	6.0 %	4.6 %	8.3 %	9.0 %	8.4 %	4.8 %
2013	6.0 %	7.7 %	7.4 %	7.8 %	8.2 %	13.1 %
2014	7.7 %	5 %	6.5 %	7.4 %	6.6 %	7.7 %
2015	5.7 %	6 %	6.1 %	8.1 %	6.1 %	6.2 %
2016	9.5 %	11 %	6.7 %	10.9 %	6.2 %	6.5 %
2017	9.5 %	9 %	8.8 %	16 %	5.4 %	6.6 %
2018	9.3 %	2 %	13.8 %	10.8 %	9.7 %	6.7 %
2019	12.5 %	12.6 %	9.9 %	17.5 %	12.3 %	8.5 %
2020	13.3 %	17.4 %	7.1 %	12.9 %	13.3 %	18.6 %

* – in 2019–2020, in connection with the transfer of calculations to rubles, intervals were recalculated at the rate of 64 rubles per dollar.
* * – as a rule, several companies, and in 2016 and 2018 only one and two, respectively
* * * – up to 2014 inclusive “from $0.5 million to $5 million”.
* * * * – up to 2014 inclusive “less than $0.5 million”.

Sources of staff additions

To replenish the staff of software companies, there are three main sources: university graduates, foreign specialists (primarily from neighboring countries) and employees with engineering education from enterprises of other industries. By and large, until 2019, only one source of staff addition was important for several years: universities. If until 2016, in some years, the migration of software developers from Kazakhstan, Ukraine and Belarus provided up to 20 % of the increase in the total staff of Russian software companies (without employees of their foreign development centers), then in 2017–2018 this figure did not exceed 5 %.

In 2021, a new question appeared in the questionnaire, which allows us to determine the significance of all the main sources of staff addition of software companies. It allowed us to abandon two old questions: the proportion of specialists who moved to Russia, and the proportion of university graduates among the new employees. As a result, it became possible to get unique and completely new information.

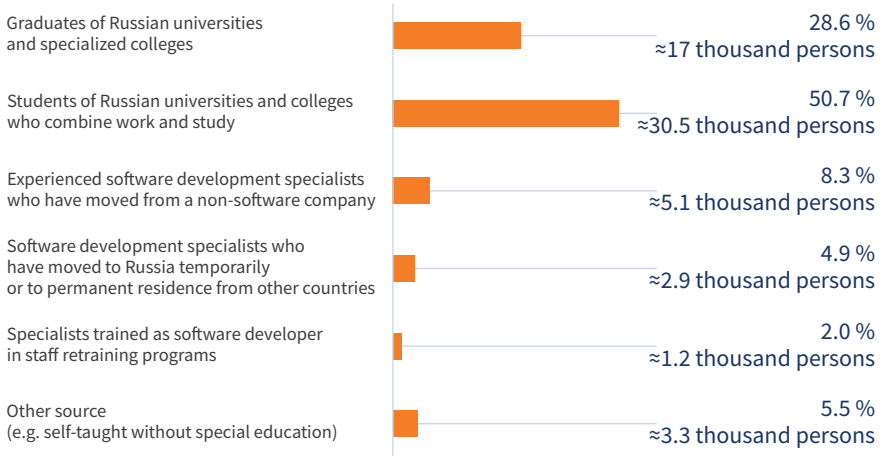
It is not improbable that the share of students combining work and study differs in reality by 5 or even 10 percentage points, but according to the survey results, these students make up the main share in the additional number of employees that appeared during 2020. The second place was taken by university graduates. Together, they represent one staff source – higher education institutions. In 2020, they provided almost 80 % of the increase in the total staff of Russian software companies.

Despite the pandemic and difficulties when crossing borders, almost 5 % of the increase in IT staff is due to the migration of specialists (primarily from neighboring countries).

A little more than 8 % is accounted for by the specialists who moved to software

companies from IT departments of enterprises of other industries. However, it is difficult to consider this staff source to be full-fledged, since it is not known which stream is moving in the other direction. We can assume that it is at least no less. The same applies to migration, but in 2020 moving to the West was hampered not only because of the pandemic (the United States temporarily refused to attract IT specialists from abroad), but also because of gender policy in the United States and EU countries. Therefore, most likely, the balance of arrival/departure from Russia of software developers turned out to be positive. It is this balance that is desirable to determine by intersectoral transitions and interstate migration of specialists, but it is not yet possible to track where the retired employees go.

Distribution of the growth in the staff of specialized technical staff of software companies received following the results of 2020 by sources of staff addition



Increase of labor efficiency

In 2017, the total number of employees of Russian software companies increased by 7 %, and the total turnover in dollars – by 19 %. In 2018, the difference was less – 7.8 % and 10.6 %, respectively. The rapprochement occurred due to the depreciation of the ruble against the dollar.

Nevertheless, there was a clear increase in labor productivity, if measured in dollars. The productivity of software developers increased mainly due to the higher cost of software developer services and the scaling of the business of replicated solution developers.

At the end of 2018, one specialized employee accounted for $75 thousand in revenue (together with foreign development centers), and at the end of 2019 – $96 thousand. It should be borne in mind that the composition of the companies of respondents surveyed in 2019 and 2020 is very different, which makes correct comparisons difficult.

At the end of 2020, the total number of employees increased more than turnover in dollar terms (by 12 % and 4.5 %, respectively). Consequently, revenue per specialized technical employee decreased to $91 thousand. Most likely, this indicator will increase in 2021, but much will depend on exchange rates. In ruble terms, output per employee increased, as turnover in ruble terms increased by 16 %, which is more than the headcount growth.

The existing need for IT specialists

It is largely pointless to quantify the overall shortage of software development specialists. If you declare that the shortage of programmers is 500 thousand people, 1 million people or 2 million people, then any of these values will be true. Taking into account the global staff shortage and Russia's small share in the global software market (including custom development services), the domestic software industry can grow 2–3 times or even more due to a sharp increase in exports. Therefore, it seems more correct to focus on determining how to make the most effective use of all the opportunities for training and attracting personnel: who, how many and whom can train in Russia or attract from abroad. Quantitative benchmarks for the number of software developers will still be required, but for the best allocation of available resources required for training.

In any case, an audit of all available educational resources (both public and commercial) and all human capacity, with an analysis of the possibilities for their more effective use, would be useful. Without it, any planning for the training of specialists will be carried out almost blindly.

If we consider the current need for an additional number of employees required by software companies for one year, then it can be estimated more accurately than the total shortage for 10–15 years. Judging by the plans that companies announce regarding recruitment, on average they need an additional 15–20 % of the already existing staff of specialized professionals annually. That is the number they are ready to hire during the year.

Throughout the industry in 2020, this shortage is 28–38 thousand people. In fact, the companies in 2020 hired much less – about 20 thousand people. Consequently, the shortfall in the short term is only about 10–20 thousand people in the software industry. Almost 4 times as many programmers work in the entire economy. However, this does not mean that the staff shortage for the entire software industry is 4 times greater. It can be assumed that the total annual unmet need for software developers is 25–40 thousand people. That is, such a number of specialists needed to be attracted additionally to meet the needs of the industry.

Possibilities for solving the personnel problem:

1. Russian universities

The higher education system can significantly increase the number of trained specialists if at least the same level is added to the existing 20–30 leading universities. Even the best universities still need to develop (according to some surveyed employers, not all departments provide equally high quality training).

For more information on the potential of personnel training at universities, see section Staff training of this chapter.

2. Secondary special education system

Until recently, technical schools and colleges were not considered at all by employers in the software industry as a source of personnel, although the need for qualified middle-level specialists was very high. In secondary special education system, there is quite a mass training in IT specialties, but only system administrators for small enterprises that do not use complex information systems are obtained from them at best.

3. Migration

It is difficult to count on a large influx of personnel from abroad in the current situation. Nevertheless, the possibilities of attracting foreigners and former compatriots to Russia need to be studied. Of course, if specialists are satisfied with everything abroad, then it will be difficult to convince them to change their place of residence. However, dissatisfaction with work and life in other countries is gradually growing. Perhaps not everyone knows what conditions for life and work are available in Russia. The most important vacancies in the management and organization of foreign sales can be filled with the help of foreigners from economically developed countries. There are already examples of this, although they are rather solitary. For more information, see section Migration of labor resources.

4. Training of girls

Software development was previously considered an exclusively male specialty. However, this view has been changing in recent years not only abroad, but also in Russia. With the involvement of girls in the development of software, one can partially neutralize the negative impact of the demographic pit in which Russia is due to the difficult economic situation in the 90s.

5. Staff retraining (postgraduate education)

Retraining of persons with higher education in specialties that do not belong to IT has the huge growth potential of IT personnel. Moreover, it should not necessarily be holders of diplomas in technical specialties who have good basic mathematical training. Biologists, doctors, chemists, linguists and many others are required. Their knowledge is needed in order to create specialized software for various industries and different purposes. What a biologist needs to know is better known by someone who has appropriate experience in this area. It is easier to

teach him/her programming than a programmer to master biology (although they sometimes have to do this). At the same time, heads of software companies are ready to take even specialists aged 50–60 years who have retrained.

6. People with disabilities

According to Gartner forecasts, the development of artificial intelligence, virtual and augmented reality technologies by 2023 will lead to a threefold increase in the number of employed people with disabilities. New technologies remove barriers that previously prevented the involvement of such employees in the workflow. According to experts, by hiring people with disabilities, the business will be able to solve the problem of qualified personnel shortage. On the other hand, in such companies, the retention rate is 89 % higher and staff productivity increases by 72 %, which leads to a 29 % increase in profit.

In Russia, no public messages were found about training programs for people with disabilities for the needs of the IT industry.

7. Automation of programming

There have been talks about replacing programmers with robots in some distant future for many years. However, until recently, it has not been considered as a real threat of job loss for software developers.

According to a survey conducted in the summer of 2020 by the SuperJob portal among representatives of the most common professions, programmers, architects and nurses were the least sure of the need to completely or partially change their jobs in the next 10 years. Nevertheless, 31 % of the respondents on the software development portal still see such a prospect.

In mid-June 2021, Gartner published a new report, according to which by 2024 80 % of technology products and services will be created by non-professionals. This trend is due to the emergence of a new category of buyers who do not belong to traditional IT enterprises, which usually occupy a large share of the entire IT market.

25-40

thousand people

the total annual unmet need for software developers (RUSSOFT opinion)

Migration of labor resources

Since the beginning of 2015, in connection with the events in Ukraine, an additional migration flow has appeared in Russia from the east of this country. In 2016–2017, the influx of personnel from Ukraine and from neighboring countries slightly decreased. In any case, the share of respondents reporting the admission of new employees who arrived from other countries decreased. At the same time, the outflow of programmers from Russia either did not change significantly or slightly increased. Judging by the fact that the increase in the number of staff of the companies surveyed coincided with the number of university graduates hired, migration flows again leveled off: the number of specialists who leave and enter the country is the same. At the same time, there was an influx from countries with a high salary level, since some Russians go abroad with plans to return after the end of the signed contract.

According to the results of 2019, it was not possible to correctly assess migration flows due to the inability to conduct a full-fledged survey of software companies in the spring of 2020.

In 2021, this survey was successful. It showed that during the previous year about 3 thousand specialists, who received invitations from software companies, entered Russia. The same mass departure abroad (to Western countries) was impossible due to tough restrictive measures. In addition, the United States temporarily suspended the issuance of work visas to IT specialists.

Departure abroad

In connection with the growth of staff outflows abroad in 2015, during the survey of 2016, questions were included in the questionnaire that allow you to determine the impact of migration flows on the software industry. As a result, it turned out that the migration of employees abroad was a problem for 14 % of surveyed companies, and then this share increased to 17–18 %. According to the results of 2019, the values are not indicative due to the features of the survey during the pandemic, and according to the results of 2020, the share was 27 %. However, it cannot be said that there has been such a large increase in the departure of programmers abroad, since the wording of the relevant question has changed. If before respondents simply indicated the presence of a problem, then during the survey of 2021 they were able to choose its nature (“It is quite massive for our company” or “We lose specialists in individual cases, but these specialists are key ones”). It is presumed that, earlier at least half of the companies indicating the presence of the problem believed that its mention was justified only if the outflow of specialists abroad was quite massive.

Influx of personnel from abroad

Thanks to the question that appeared in the 2019 questionnaire about the share of new employees hired in 2018 and arrived from abroad, it became possible to calculate the number of programmers who entered Russia from abroad. As a result, the influx of foreign specialists hired by Russian software companies was estimated in 2016–2017 at 400–500 people. It is possible that there were slightly more of them, as some respondents may not have complete information about hired employees in the companies in which they work.

According to the results of 2018, calculations showed that more software developers arrived in Russia from abroad – about 600–700. Taking into account the fact that some of the specialists who arrived got a job in other sectors, the total influx is estimated at about 2–2.5 thousand people.

In 2015, 20 % of surveyed companies hired foreign software developers, in 2016 – 18 %, in 2017 – 14 %. However,

in 2016–2017, the absolute number of specialists who arrived from abroad did not change. In 2018, both the share of companies hiring foreign specialists (up to 21 %) and the number of these specialists increased. In 2019, the growth of these indicators continued (22 %). In software companies, their total number was approximately 2,850 people.

It is possible that the accuracy of calculations has improved due to changes in the questionnaire: instead of two questions, one was introduced, which allows respondents to give more accurate data. According to the results of 2020, the influx of personnel into the industry turned out to be about the same as a year earlier (about 3 thousand), but the share of companies that hired foreigners amounted to 16.2 %.

Labor compensation

During all the years of the RUSSOFT study, the average salary in the software industry increased if measured in rubles. During the crisis periods (2009–2010 and 2014–2015), the growth rate only decreased: from 10–20 % to 8–10 %. Software developers always had an increase in income, but during the crisis it could not cover the losses from inflation and decline in dollar terms due to the devaluation of the national currency.

At the same time, the average salary in the software industry has always grown relative to a similar indicator for the entire Russian economy. Only in 2017, for the first time, there was no obvious advantage of software developers in terms of growth rates. Most likely, the salary of programmers nevertheless increased slightly more (by 1–2 percentage points) than the national average in all sectors, but for the first time the difference was so insignificant.

However, in other industries, even nominal incomes of workers in the last 2–3 years have either not grown at all or decreased, and real ones have definitely decreased. In 2017, there was only partial compensation for these losses, which software developers actually did not have.

In 2018–2019, the increase in the average salary of software developers and the increase in the nominal accrued wages of workers as a whole in the economy of the Russian Federation (the Rosstat data) completely equalized. According to RUSSOFT, salaries of specialized employees in the industry increased by 12.1 % in 2018 and by 5.8 % in 2019, and in the entire economy – by 11.6 % and 7.5 %, respectively (the official average salary in Russia in 2019 was 47.5 thousand rubles). There are discrepancies, but they are insignificant given the available calculation error.

According to the results of 2020, the average salary of software developers increased by 11.1 % in ruble terms and slightly decreased in dollar terms (by 0.4 %).

At the same time, the average nominal salary in Russia in all sectors according to the results of 2020 amounted to 51.083 rubles, which is 6 % more than a year earlier (the Rosstat data). Consequently, developer salaries have risen more again.

In the case of software developers, the Russian labor market is just a part of the world one. Therefore, programmers not without reason often focus on measuring the value of their income in dollars. If we consider the dynamics in average salary in dollar terms, then for Russian software developers it increased in 2017 by about 24 % (largely due to the strengthening of the ruble). However, in 2018, due to the national currency depreciation, the dollar average salary increased by only 4 %. The growth of 2019 in dollar terms turned out to be insignificant – by 3.2 %, and in 2020 there was a slight drop (by 0.4 %). Thus, the average salary of software developers in dollar terms has not yet reached the pre-crisis level of 2013 (it is 15.9 % lower). At the same time, in Western countries, the salaries of programmers over the years have increased significantly.

Change of average salary for Russian software companies surveyed by RUSSOFT in 2014–2019

Years	2014	2015	2016	2017	2018	2019	2020	Total for 7 years (from 2013 to 2020)
In ruble terms, %	+11.6	+8	+10	+7.7	+12.1	+5.8	+11.1	+88
In dollar terms, %	-6	-32.5	0	+24	+4	+3.2	-0.4	-15.9

The average salary in the software industry in Russia by the beginning of 2017 reached 82–84 thousand rubles, by the beginning of 2018 it amounted to about 90 thousand rubles, by the beginning of 2019, most likely, exceeded 100 thousand rubles. With an increase of 6 % during the year by the beginning of 2020, it amounted to about 106 thousand rubles, and by the beginning of 2021 increased to 119 thousand rubles.

Staff training. Universities

University education, with all its shortcomings, is the basis for the software industry in Russia. In cities where there are good universities, a large number of software companies successfully operating in the world market appear.

With all other available sources of personnel, universities will be their main supplier to enterprises developing software in the foreseeable future. Therefore, the task is to increase the number of students studying in IT specialties, and to develop cooperation in personnel training between companies and leading departments of universities.

Major challenges and changes in the education system

In the field of training for the software industry of Russia, changes do not occur, as a rule, since the education system is by definition conservative. It is possible to draw conclusions about changes in it, considering a period of at least 5 years. If we expand it to 10–15 years, we can confidently talk about improvement in the higher education system in terms of financing. Higher educational institutions (faculties of classical universities), which train specialists for the software industry, over the years have got an opportunity to develop.

With a lack of money in the entire education system, some universities have such low performance that the question may be whether their budget funding should continue. The low efficiency of such universities is evidenced by the very low percentage of their graduates who found work in their field.

In the field of software development, there is no unemployment problem when looking at the labor market of all

of Russia, and not some individual cities. Therefore, any well-grounded graduate will find a job without problems if desired. Sometimes this requires moving to another city, which is not a serious obstacle for young people. In addition, you can work remotely from any city in Russia.

Some employers believe that among university graduates of their city, no more than 5 % graduates (at best 10–15 %) are ready to work in the company. Up to half of recent students can be recruited if they continue their training, without counting on any return from them in the first months after the formal start of their work. At the same time, 50 % of employees potentially suitable for work are the average for all universities. Since it exceeds 70 % in leading universities, others can have it much lower than 50 %. We can confidently say that in some universities the allocation of budget funds for the education of the vast majority of students has almost zero return.

Unfortunately, there is no mechanism and tool for adequate assessing the quality of work of higher educational institutions in Russia yet, which is recognized even by the heads of leading universities themselves. Most likely, this applies not only to the training of specialists for the software industry, but also to the entire economy of the country. Basic training in universities is good, since fundamental physical and mathematical education remains at a very high level. The basics of programming are also well studied. However, university students are not taught at all about industrial programming, which involves working in a team, product managers are not trained, soft-skills are not imparted.

In the labor market of Russia, there is a clear shortage of specialists with business competencies and work experience in international markets: managers, marketers, sellers, entrepreneurs, etc.

The Bologna system, which led to the division of the higher education process into Bachelor's and Master's degrees, has also been criticized. Four years of the Bachelor's degree program may not be enough to train a specialist who meets business requirements.

In the system of higher education (and not only higher education), serious changes are coming, judging by the decisions of the Government of the Russian Federation from the end of 2020.

Russian Prime Minister Mikhail Mishustin launched the implementation of a digital educational environment in Russia. He signed the corresponding decree in December 2020. According to the document, the Ministry of Education had to develop and approve the procedure for selecting Russian regions for conducting the experiment within 10 days from the date of its entry into force, as well as to approve the roadmap for conducting the experiment within one month, in agreement with the Ministry of Digital Industry. It is assumed that the experiment itself on the introduction of a digital educational environment will last two years, starting from December 10, 2020.

In May 2021, Deputy Prime Minister Dmitry Chernyshenko announced the creation of a consortium of educational organizations by the Ministry of Digital Industry of Russia together with the Innopolis University (Tatarstan). The consortium should allow to unify and standardize the main approaches to training personnel for the digital economy, as well as to form educational modules on digital competencies for teachers and students. Thus, government priorities aimed at supporting and developing the IT industry will be taken into account in the country's educational programs.

In June 2021, the start of competitive selection for participation in the Priority 2030 state support program for Russian universities was announced. The goal of the Priority 2030 program is to form a wide group of universities that will become leaders in creating new scientific knowledge, technologies and developments for introduction into the Russian economy and social sphere.

Number of IT graduates

According to APKIT, in 2019 there were 50 thousand budget places for future IT specialists in Russian universities. During a speech in July 2020 in the State Duma, the Prime Minister of the Russian Federation Mikhail Mishustin said that in 2020 the number of budget places in IT specialties increased by 20 % compared to 2019, and by 2024 it would increase by 2.5 times.

In September 2020, Deputy Prime Minister Dmitry Chernyshenko said that Russia needed 150 thousand IT specialists additionally, and by 2024 the need for such personnel would increase to 300 thousand people. According to him, three years ago the number of budget places where they studied at institutes in IT specialties was about 40 thousand, today it is already 80 thousand, and by 2024 there will be 120 thousand students.

In Moscow in 2020, the number of freshmen who chose training in IT specialties increased by 8 % compared to the previous year and reached 26 thousand people. The greatest increase in popularity is noted in the specialties of information security, information systems and technologies, software engineering and applied informatics. In total, 100 thousand students are studying in Moscow universities in the field of information and communication technologies this academic year in Bachelor and Specialist programs (data from the Moscow Department of Information Technology obtained during a study of IT/telecom specialists' market).

Assessment of work performance of universities

Despite the shortage of IT personnel (in particular, software developers), the main thing is not so much the number of young people with a higher education diploma with a corresponding specialization, but the quality of their training. We can speak about a sufficient or insufficient number of graduates only if they have certain knowledge and skills that make recent students sought by Russian companies (especially Russian software exporters).

In this regard, the question arises of assessing the performance of universities in terms of training IT specialists (programmers). If we consider Russian software developers as a whole, then there are quite objective indicators of the highest level of their preparation. They are one of the best if not the best ones. This is evidenced by the victories of Russian students at various programming competitions, and the work of hundreds of thousands of Russian university graduates abroad (while they occupy high positions in the largest companies in the world).

To evaluate the work of universities, there are different ratings, but they allow only with certain assumptions to compare universities, which, as a rule, are advanced. The rating of universities compiled by RUSSOFT gives an assessment to the leading universities of Russia according to software companies, which simultaneously assess the number of graduates of the necessary specialization, and the quality of their training. The corresponding ranking allows you to determine quite precisely the top ten universities (although it is possible that some university which takes from the 11th to 15th place also deserves to be in the TOP-10). With less accuracy, universities are ranked from the 15th to 30th place.

Rating of Russian universities for training of IT specialists according to RUSSOFT

RUSSOFT, being an association of software developers, compiles its rating of universities based on a survey of heads of Russian software companies. It is they who can give the most objective assessments of how effectively educational institutions perform their functions. However, only training of specialists in the field of software development is a case in point.

In addition, one has to make an allowance for the fact that not all cities have appropriate representation among the survey participants, for some of them the sample is too small. Consequently, universities in those regions whose companies are not very actively involved in the study are presumably underestimated. In RUSSOFT, there is information about which cities the software development gives the total revenue calculated in billions of rubles (the Association prepares an annual rating of the regions by the level of development of the software industry in them). If some subordinate entity of the federation is quite high in this rating, and the universities functioning in it do not occupy those places that would correspond to the region position, then this will be an excuse to assume the existing underestimation of these universities.

For example, so far it has not been possible to cover a large number of companies in Yekaterinburg and Nizhny Novgorod with an annual study. Therefore, the universities of these cities received not so many votes, although for all the indicators they should be higher in the RUSSOFT Rating.

There are a lot of development centers for foreign and nonresident companies in Voronezh, and they almost never participate in surveys. Therefore, Voronezh universities are also undervalued. In Vologda and Yakutsk, there are large software companies that develop computer games. Apparently, they take almost all good specialists from local universities. Therefore, there is only one employer who is able to give an objective assessment both in the Vologda Region and in Yakutia. However, these companies have never participated in the survey. As a result, the universities of Vologda and Yakutsk did not even get into the expanded RUSSOFT rating, in which there are more than 100 universities, although they probably deserve to be among the 50 best (it is possible that even among 40 or 30).

At the same time, with a new methodology for compiling university rankings, which has been applied by RUSSOFT since 2020, the need for adjustment is assumed in only a few cases. Then they relate to those universities that do not fall into the top 15.

Previously, the problem of small representation of some regions among the participants in the study was solved by the fact that the survey results were combined over several years. So the rating was based on surveys of 2016–2019. Respondents indicated those universities whose graduates, in their opinion, are in the greatest demand in the industry.

In 2020, RUSSOFT decided to reduce the dependence of the university place in the Rating on how many companies of a city take part in the survey by introducing a 3-point assessment system. The innovation justified itself, but the 2020 survey itself turned out to be inferior due to the pandemic: only 72 companies took part in it, which is clearly not enough to evaluate the entire Russian education system in terms of training software developers. It was possible to talk only about an adequate assessment of the universities of two Russian capitals, as well as to some extent of the Rostov region and Novosibirsk.

Nevertheless, the results of the 2020 survey provided new interesting information. The peculiarity of this survey was that 10 companies rated universities not only in those cities in which their head office was located (before, with more respondents, there were no more than 3–4 of them). In total, 75 educational institutions received assessments (one of them is a college, and the rest are universities). Many respondents mentioned 5 or more universities.

In 2021, there were many times more survey participants than in 2020. In total, questionnaires were received from 232 enterprises, including 26 IT companies that have software development, but this direction is not their main one. The data of these 26 companies were not used to calculate the main indicators of the software industry in Russia. Nevertheless, their assessment of universities can well be taken into account when compiling a rating of universities.

Since almost a third of the companies surveyed do not answer the corresponding question (it is difficult for small companies to evaluate the work of universities, since they do not carry out mass recruitment of specialists, and often do not expand the staff at all), in 2021 the rating was based on the estimates of 162 companies. There was no such a large base for compiling the ranking of universities for the entire time of the

annual RUSSOFT study. Previously, at best a little more than 100 companies (no more than 120) assessed universities.

24 companies (15 % of all surveyed companies that answered the corresponding question) rated universities in another region in relation to the location of their head office. Most often, these companies have remote development centers, which include the recruitment of graduates of local universities.

In total, 125 educational institutions were mentioned by respondents. Among them, 113 are Russian higher educational institutions. In 2021, 5 secondary educational institutions: colleges and technical schools were assessed. Another 6 mentioned universities are not Russian, but Belarusian.

In the ranking, universities represent 35 regions of Russia. Most of the universities that train software developers are in Moscow (16), the second and third places are naturally St. Petersburg (12) and Novosibirsk (8). Next is the Rostov region (7), the Samara region with universities in Samara and Togliatti (6), Tatarstan (6). There are 5 universities in Bryansk and Nizhny Novgorod, 4 in Izhevsk (Udmurtia), Tomsk and Yaroslavl, 3 in Penza, Saratov, Ufa (Bashkiria), 2 in Vladivostok, Yekaterinburg, Yoshkar-Ola (Mari El), Krasnodar, Krasnoyarsk, the Crimea, Omsk, Perm, Ryazan, Tver, Ulyanovsk, Chelyabinsk; and Barnaul (Altai Territory), Vladimir, Voronezh, Irkutsk, Kirov, Kostroma, Kursk, Saransk (Mordovia), Tyumen each have one such university.

In 2020, the survey could not be conducted fully, so the results were different. They should not be mentioned, although the leadership of St. Petersburg State University cannot be considered completely undeserved and accidental.

In comparison with the rating based on surveys in 2016–2019, then there are no huge differences.

Rating of educational institutions that train software development specialists according to the amount of points given by the surveyed software companies

Place in 2021	Place in 2019		
1	1	Moscow State Technical University named after Bauman	90
2	2	St. Petersburg National Research University of Information Technology, Mechanics and Optics	87
3	4	St. Petersburg State University	73
4	6	Moscow Institute of Physics and Technology	68
5-6	3	Moscow State University	66
5-6	5	St. Petersburg State Polytechnic University	66
7	13	Moscow Engineering Physics Institute	52
8-9	7	Novosibirsk State University	42
8-9	11	Novosibirsk State Technical University (NSTU)	42
10	14	Southern Federal University	40
11	9-10	St. Petersburg State Electrotechnical University	39

Place in 2021	Place in 2019		
12	17	Higher School of Economics	31
13	8	Tomsk State University of Control Systems and Radio Electronics	26
14-15	9-10	Tomsk Polytechnic University	22
14-15	15	St. Petersburg State University of Aerospace Instrumentation Engineering	22
16	32-34	Moscow Aviation Institute (MAI)	19
17	26-29	Nizhny Novgorod State University named after N.I. Lobachevsky (NNSU)	18
18-19	12	Tomsk State University	17
18-19	21-22	Nizhny Novgorod State Technical University (NNSTU)	17
20	18-20	St. Petersburg State University of Telecommunications named after Prof. M.A. Bonch-Bruevich	16
21	23-25	Kazan Federal University	15
22	>43	Samara National Research University named after Academician S.P. Korolev	14
23	30-31	Siberian State University of Telecommunications and Informatics	13
24-25	18-20	Don State Technical University	12
24-25	>43	Samara State Technical University	12
26	>43	Bryansk State Technical University	11
27-28	>43	Moscow Technical University of Communications and Informatics	10
27-28	>43	Volga State University of Telecommunications and Informatics (Samara)	10
29	>43	Perm National Research Polytechnic University	9
30-33	26-29	Voronezh State University	8
30-33	26-29	Moscow Technological University (MIREA, MGUPI, MITHT)	8
30-33	>43	Ural Federal University named after the first President of Russia B.N. Yeltsin (UrFU)	8
30-33	>43	South Russian State Polytechnic University named after M.I. Platov (Novocherkassk, NPI)	8
34-37	>43	National Research University of Technology MISiS	7
34-37	>43	Siberian State University of Geosystems and Technologies (Novosibirsk)	7

Place in 2021	Place in 2019		
34-37	>43	Ufa State Aviation Technical University (UGATU)	7
34-37	>43	Udmurt State University UDSU	7
38-45	18-20	Kazan National Research Technical University named after A.N. Tupolev (KAI)	6
38-45	30-31	Omsk State University named after F.M. Dostoevsky (Omsk State University)	6
38-45	35-43	Saratov State University named after N.G. Chernyshevsky	6
38-45	35-43	Saratov State Technical University named after Yu.A. Gagarin	6
38-45	>43	Innopolis University	6
38-45	35-43	Ryazan State Radio Engineering University named after V.F. Utkin	6
38-45	>43	Rostov-on-Don College of Communications and Informatics (RKSI)	6
38-45	>43	Yaroslavl State University named after P.G. Demidov (JarSU)	6
46-50	>43	Kazan National Research Technological University (KNRTU)	5
46-50	>43	Russian Technological University (MIREA), Moscow (merged with MGUPI)	5
46-50	>43	Moscow Power Engineering Institute	5
46-50	>43	Novosibirsk State University of Economics and Management (NSUEU, Narkhoz)	5
46-50	>43	Tver State University	5

In principle, it is possible to build one general rating of educational institutions by the average score, but there are doubts that the ranking will reflect the actual quality of training of specialists. There would be no problem if each university estimated the same number of employers. At the same time, it is desirable that everyone has a single scale for assessment. This is not yet possible. Comparing the average scores of universities that have only 1–3 grades with universities that were rated by more than 20 employers is incorrect.

Even setting one level on the number of grades to be included in a single rating on the average point is not a solution to the problem, because it is impossible to determine a place for this level, so as not to discriminate against some universities. For example, if you set the level at 10 grades, then Novosibirsk State University will be in the first place, and Tomsk State University of Control Systems and Radio Electronics and Southern Federal University will be without a place at all. If you lower the level to 8, then they will take the 2nd and 3rd place. If you raise the level to 20 grades, then Novosibirsk State University will not fall into such a rating.

If you take into account universities without these restrictions, then 38 universities will be in the first place with an average point of “3”. Of these, only 5 will have at least 3 grades (the remaining will have one or two): Novosibirsk State University (14 grades and one mention without assessment), Nizhny Novgorod State University named after N.I. Lobachevsky (6), Kazan (Volga) Federal

University (5), Samara State Technical University (4) and Perm National Research Polytechnic University (3). The undisputed leader is Novosibirsk State University. However, it is completely unclear what its average point would have been if it had been evaluated by 25–36 employers, as in the case of a number of Moscow and St. Petersburg universities. That is, 2 times more.

In such a situation, it is necessary to make not just one ranking, but a minimum 2 of them: with cut-off according to 8 grades and cut-off according to 20 grades. In fact, it turns out that universities are divided into metropolitan (Moscow and St. Petersburg) and regional.

TOP-10 Russian universities according to the average point obtained from the results of assessments of at least 8 employers

Place in 2021	Name of the university	Average point	Number of mentions
1	Novosibirsk State University	3	15
2	Tomsk State University of Control Systems and Radio Electronics	2.889	10
3	Southern Federal University	2.857	15
4	Higher School of Economics	2.818	11
5	St. Petersburg State University	2.808	26
6	St. Petersburg National Research University of Information Technology, Mechanics and Optics	2.806	31
7	St. Petersburg State Polytechnic University	2.750	24
8	Tomsk Polytechnic University	2.750	9
9	Moscow Engineering Physics Institute	2.737	21
10	Moscow State Technical University named after Bauman	2.727	36

In the TOP-10 based on the average point, with at least 8 grades, the first three positions are occupied by universities in Novosibirsk, Tomsk and Rostov-on-Don. There are reasons to consider them the best universities in terms of the quality of training specialists in the field of software development outside Moscow and St. Petersburg. At the same time, the leadership of NSU is clear and does not cause any doubts.

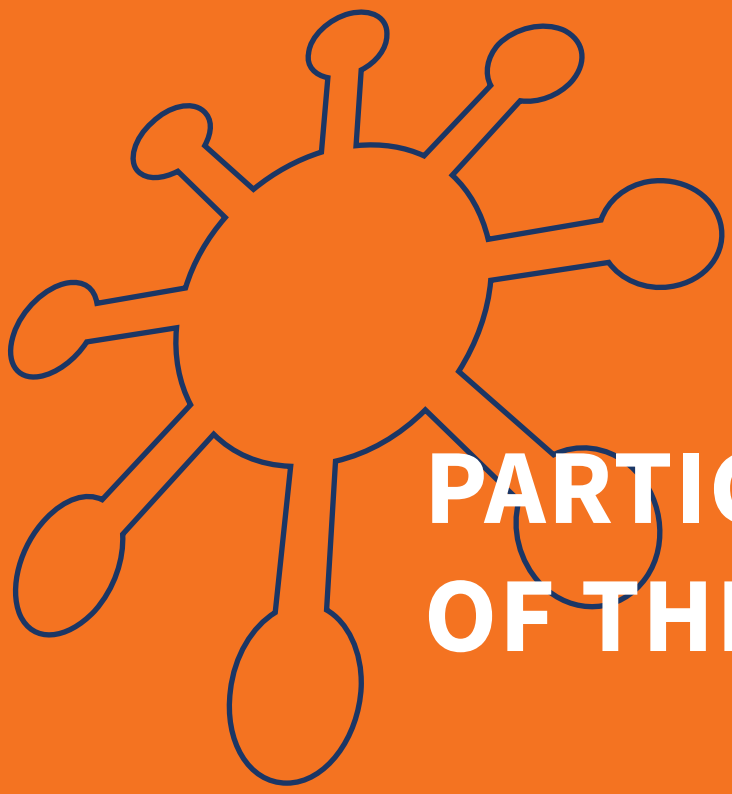
If you set the level of 20 grades, then only 4 Moscow and 3 St. Petersburg universities will remain in the ranking. There is simply no such number of companies surveyed from other subordinate entities of the federation. With the quantitative advantage of Moscow, St. Petersburg universities occupy the first three places. St. Petersburg State University had an equally high average point in 2020.

Therefore, its leadership is not accidental. However, the gap between the first place and the 7th, which Moscow State University occupies, is not so significant as to talk about a completely different level of specialists' training. All the 7 universities that are included in this rating have a very high rating.

TOP-7 Russian universities according to the average point obtained from the results of assessments of at least 20 employers

Place	Name of the university	Average point	Number of mentions
1	St. Petersburg State University	2.808	26
2	St. Petersburg National Research University of Information Technology, Mechanics and Optics	2.806	31
3	St. Petersburg State Polytechnic University	2.750	24
4	Moscow Engineering Physics Institute	2.737	21
5	Moscow State Technical University named after Bauman	2.727	36
6	Moscow Institute of Physics and Technology	2.720	28
7	Moscow State University	2.640	28

Thus, it is more reasonable to refrain from determining one of the best universities in the country in terms of the quality of student training. Among regional universities, this is Novosibirsk State University, and among the universities of two capitals – St. Petersburg State University. It can be assumed that they are at about the same level, and the advantage of one of them cannot be unambiguously determined.



PARTICIPANTS OF THE SURVEY

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
3iTech	Moscow	3itech.ru	info@3itech.ru	(495) 645-4306	Text and media processing products	Artificial Intelligence, Big Data & BI, Smart City
3kex	Krasno-yarsk	3ksigma.ru	info@3ksigma.ru	(902) 945-6719	Basic software development (DBCS, OS, o ce applications, virtualization tools, programming languages and tools)	Smart City
404studio	Orel	404studio.ru	office@404studio.ru	(4862) 78-2696	Website designing	
4px	Moscow	4px.ru	we@4px.ru	(495) 181-1619	Full Cycle Digital Agency	Artificial Intelligence, Big Data & BI, Blockchain Technology
7 Red Lines	Moscow	7rlines.ru	a.gavrilovich @7rlines.com	(965) 277-9107	Custom software development	AR & VR Development, Big Data & BI
A2B	Ufa	a2b.su	zaripov@a2b.su	(905) 355-9194	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
ABISoft	Saint-Petersburg	abisoft.biz	info@abisoft.spb.ru	(921) 936-1280	Custom software development	
AGNEKO	Moscow region	agneko.com	sales@agneko.com	(495) 660-3590	Custom software development	
AIC	Moscow	en.aic.ru	reception@aic.ru	(499) 350-5674	Intelligent design, plain and simple.	Big Data & BI
ALFASATCOM	Moscow	Alfasatcom.ru	info@alfasatcom.ru	(916) 601-3838	Custom software development	BigData & BI, IoT
Allliance+ (Internet-agency)	Bryansk	alianscompany.ru	sergejkonet@mail.ru	(920) 605-9345	Custom software development	Artificial Intelligence, Big Data & BI
Andsoft	Saint-Petersburg	andsoft.ru	admin@andsoft.ru	(921) 301-2085	Basic software development (DBCS, OS, o ce applications, virtualization tools, programming languages and tools)	
Aquarius Software	Kostroma	aqua-soft.ru	info@aqua-soft.ru	(910) 660-4618	Basic software development (DBCS, OS, o ce applications, virtualization tools, programming languages and tools) , Custom software development	

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
Aquilon Software Technologies	Kazan	aquilon-st.ru	dir@aquilon-st.ru	(843) 524-7366	Custom software development	Big Data & BI
AraxGroup	Moscow	araxgroup.ru	info@araxgroup.ru	(495) 504-8263	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence
Arcadia	Saint-Petersburg	softwarecountry.com	info @softwarecountry.com	(812) 610-5955	Custom software development	AR & VR Development, Artificial Intelligence, Big Data & BI, IoT
A-Real Consulting	Yaroslavl	xserver.a-real.ru	hello@a-real.ru	(800) 555-9297	Information security solutions	
Artezio	**Moscow**	**artezio.com**	**sales@artezio.com**	**(495) 981-0531**	**Custom software development**	**Artificial Intelligence, Big Data & BI, Blockchain Technology**

ARTEZIO

Artezio is an international technology company that specializes in professionally solving complex tasks in digital business transformation and custom software development.

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AssetData	Moscow	assetdata.market	au@assetdata.market	(965) 320-8512	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence, Big Data & BI, IoT
ASV	Perm	asv.ru	a.kazymov@asv.ru	(912) 885-3300	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Smart City

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
Auriga	**Moscow**	**auriga.com**	**pr@auriga.com**	**(495) 713-9900**	**Custom software development**	**AR & VR Development, Artificial Intelligence, Big Data & BI, IoT**
AURIGA SOFTWARE SERVICES DELIVERED	Established in 1990, Auriga (www.auriga.com) is recognized as one of the Top-100 leading outsourcing software R&D providers worldwide. Headquartered in Boston, MA with 600+ employees, seven development centers across six time zones, 13+ embedded testing R&D labs and 100+ projects yearly for medical device, automobile and construction tools manufacturers, telecom and power management companies, chip manufacturers, our company offers maximum flexibility in terms of processes, communications, issue resolution while conduct project in strict compliance to quality and risk management standards (ISO 13485).					
Axbit	Samara	axbit.ru	info@axbit.ru	(495) 414-1404	IT Services from site development and mobile applications to comprehensive enterprise automation.	AR & VR Development, Smart City
Axilon Consulting	Moscow	axilon.ru	info@axilon.ru	(916) 815-3499	Information and Analysis Platform (CPM, BI)	Big Data & BI
BACUP IT	Novosi-birsk	bacup.ru	a.r.rakhimov@bacup.ru	(383) 325-0771	Custom software development	Artificial Intelligence
BaseALT	Moscow	basealt.ru	org@basealt.ru	(903) 288-1093	Basic software development (DBCS, OS, o ce applications, virtualization tools, programming languages and tools)	
Bee Pitron	Saint-Petersburg	beepitron.com	all@beepitron.com	(812) 740-1800	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	IoT
BellSoft	Saint-Petersburg	bell-sw.com	info@bell-sw.com		Basic software development (DBCS, OS, o ce applications, virtualization tools, programming languages and tools)	BigData & BI, Blockchain Technology, IoT
BETA	Saint-Petersburg	beta.spb.ru	info@beta.spb.ru	(906) 259-3820	Custom software development	Artificial Intelligence, Big Data & BI, IoT, Smart City
Bitrixoid	Novosi-birsk	b-id.ru	info@b-id.ru	(383) 380-5259	Website designing	
Budget and Finance Technologies	Moscow	bftcom.com	info@bftcom.com	(495) 784-7000	Software and consulting solutions for public sector and business	Big Data & BI

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
Business Automatics	Moscow	npc.ba	info@pba.su	(495) 221-2965	Build and support complex, intelligent information and analysis systems	Artificial Intelligence, Big Data & BI, Smart City
CEREBRO	Moscow	cerebrohq.com	info@cerebrohq.com	(499) 110-3482	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Big Data & BI
Chilisoft	Moscow	chilisoft.ru	info@chilisoft.ru	(905) 537-2692	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	BigData & BI, IoT, Smart City
CodeInside	Penza	codeinside.ru	info@codeinside.ru	(8412) 63-6736	Custom software development	Artificial Intelligence, IoT, Smart City
CommFort software	Novosi-birsk	commfort.com	support@commfort.com	(383) 380-4274	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
CrossTech Solutions Group	Moscow	ct-sg.ru	info@ct-sg.ru	(495) 741-8864	Information security solutions	Artificial Intelligence, Big Data & BI, IoT
CVisionLab	Taganrog	cvisionlab.com	info@cvisionlab.com	(905) 454-3313	Custom software development	AR & VR Development, Artificial Intelligence, Big Data & BI, IoT, Smart City
CyberTech	Saint-Petersburg	trikset.com	mikhail@trikset.com	(911) 917-6186	Educational solutions for the study of modern technology and robotics	IoT
Diasoft	Moscow	diasoft.ru	pr@diasoft.ru	(495) 780-7575	Global provider of financial technologies	Artificial Intelligence, Big Data & BI
Digital Mind Develop-ment	Krasno-yarsk	dmdevelopment.ru	dmd @dmdevelopment.ru	(3912) 05-0778	Custom software development	Artificial Intelligence
DIP (stp "dip")	Saint-Petersburg	ntp-dip.ru	dip_zenit@mail.ru	(911) 928-8478	Basic software development (DBCS, OS, o ce applications, virtualization tools, programming languages and tools)	
Directum	Izhevsk	directum.ru	office@directum.ru	(3412) 72-1100	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
DocLab	Ufa	freshdoc.ru	avtushov@freshdoc.ru	(495) 212-1484	Custom software development	Artificial Intelligence
Dom programm	Saint-Petersburg	domprog.com	info@domprog.com	(812) 337-2136	Custom software development	Artificial Intelligence
Ecomash IT	Moscow	ecomash-it.ru	kodeks@ecomash.info	(495) 481-2220	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
Econophy-sica Ltd	Tomsk	econophysica.com	contactus @econophysica.com	(3822) 90-03-10	Custom software development	Artificial Intelligence, Big Data & BI, Blockchain Technology
eidos	Rostov-on-Don	facebook.com/ lubarsky.ru	sergey@lubarsky.ru	(918) 558-3785	Basic software development (DBCS, OS, o ce applications, virtualization tools, programming languages and tools)	Artificial Intelligence, Big Data & BI
EmDev Limited	Saint-Petersburg	emdev.ru	akakunin@emdev.ru	(812) 385-5778	Custom software development	
EPAM Systems	Moscow	epam.com	ask_ru@epam.com	(495) 730-6362	Custom software development	AR & VR Development, Artificial Intelligence, Big Data & BI, Blockchain Technology, IoT, Smart City
ErmineSoft	Novosi-birsk	erminesoft.com	denis@erminesoft.ru	(913) 926-2697	Custom software development	AR & VR Development, Artificial Intelligence, IoT, Smart City
EuroMobile	Saint-Petersburg	euromobile.ru	info@euroml.ru	(812) 331-7576	Information security solutions	BigData & BI, IoT, Smart City
eVelopers	Saint-Petersburg	evelopers.com	info@evelopers.com	(812) 032-4321	Custom software development	
EveryTag	Moscow	everytag.ru	hello@everytag.ru	(495) 008-1695	Information security solutions	
Fast Reports	Rostov-on-Don	fastreport.ru	info@fastreport.ru	(863) 227-0740	Basic software development (DBCS, OS, o ce applications, virtualization tools, programming languages and tools)	
FayGroup	Moscow region	faygroup.ru	info@faygroup.ru	(964) 786-6003	Custom software development	

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
ForClasses	Ekaterin-burg	moyklass.com	info@moyklass.com	(495) 108-5239	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
Foresight	Moscow	fsight.ru	info@fsight.ru	(495) 137-5498	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence, Big Data & BI, IoT, Smart City
GDC Services	Kazan	icl-services.com	pr@icl-services.com	(800) 333-9870	Custom software development	AR & VR Development, Artificial Intelligence, Big Data & BI, IoT
Geoscan Group	Saint-Petersburg	geoscan.aero	info@geoscan.aero	(812) 363-3387	Professional unmanned technologies	AR & VR Development, Artificial Intelligence, IoT
GS Labs	Saint-Petersburg	gs-labs.ru	alexey.goilo@gs-labs.ru	(911) 000-3347	Integrated solutions for the formation of ecosystems for the creation and delivery of digital products based on proprietary technologies	IoT, Smart City
HARMAN Connected Services	**Nizhny Novgorod**	**harman.com**	**Olga.Sheinfeld @harman.com**	**(905) 664-1155**	**Global leader in connected car technology, lifestyle audio innovations, professional audio and lighting solutions, and design and analytics**	**AR & VR Development, Artificial Intelligence, Big Data & BI, IoT, Smart City**
			HARMAN Nizhny Novgorod (founded in 1991, staff – 700 eng.) is following modern trends in Artificial Intelligence, Machine Learning and Natural Language Processing. Our end-to-end software engineering, IoT and data analytics services enable the world's top automotive, mobile and communications, retail and healthcare and software-enabled businesses drive innovation-led growth. HARMAN NN provides cloud technology services, services supporting the Internet of Things and Mobile Applications for Android, iOS, QNX, Java and other mobile platforms. In March 2017, HARMAN became a wholly-owned subsidiary of Samsung Electronics. Customers: Samsung, Jaguar-Land Rover, Mercedes, OnStar/GM, PSA PeugeotCitroën, MSC Cruises, Nielsen, Huawei, Thales, Roche, MainCare, Facebook etc.			
High Technologies Center	Izhevsk	htc-cs.ru	dpletnev@htcmail.ru	(906) 818-7668	Custom software development	Artificial Intelligence, Blockchain Technology
IBIK LLC	Moscow	ibik.ru	director@ibik.ru	(977) 261-1668	Basic software development (DBCS, OS, o ce applications, virtualization tools, programming languages and tools)	
IceRock Develop-ment	Novosi-birsk	icerockdev.com	info@icerockdev.com	(495) 109-7329	Custom software development, Mobile applications	Blockchain Technology, IoT

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
Infoapteka	Moscow	infoapteka.com	office@infoapteka.com	(495) 150-3426	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
INFOPRO	Moscow	info-pro.ru	post@info-pro.ru	(800) 600-2401	Information security solutions	BigData & BI, IoT, Smart City
Information Systems and Services	Novosi-birsk	isands.ru	ashovkun@isands.ru	(913) 377-9002	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Smart City
Inostudio Solutions	Taganrog	inostudio.com	russoft@inostudio.com	(8634) 32-0318	Custom software development	AR & VR Development
INOVENTICA Technology	Moscow	inoventica-tech.ru	info@inoventica-tech.ru	(495) 646-7308	Information security solutions	
Inreco LAN	Vladimir	inrecolan.com	sergey.pyatigorskiy @inrecolan.com	(4922) 44-4090	Custom software development	Artificial Intelligence
INTERFACE	Novosi-birsk	interface.nsk.su	interface @interface.nsk.su	(913) 912-2216	System Integration	Big Data & BI
Internet-Frigate	Novocher-kassk	ifrigate.ru	main@ifrigate.ru	(86352) 2-4110	Navigation systems & Geographic information systems (GIS)	Artificial Intelligence, Big Data & BI, IoT, Smart City
IQ300	Naberezh-nye Chelny	IQ300.ru	info@iq300.ru	(927) 480-6426	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Blockchain Technology, Smart City
iSpring	Yoshkar-Ola	ispring.com	valentina.bulygina @ispring.com	(960) 099-0074	Online Training Software	
ISPsystem	Irkutsk	ispsystem.ru	k.petrunina @ispsystem.com	(914) 001-7106	Embedded software (equipment, devices)	
IT "Design Soft"	Ekaterin-burg	d-soft.ru	info@d-soft.ru		Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
IT Pro	Moscow	biqube.ru	mail@biqube.ru	(499) 347-8480	Custom software development	Artificial Intelligence, IoT

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
IT Universe	Samara	it-universe.ru	info@it-universe.ru	(846) 979-8080	Software development	Artificial Intelligence
Itransition	Saint-Petersburg	itransition.com	info@itransition.com	(495) 640-8937	Custom software development	AR & VR Development, Artificial Intelligence, Big Data & BI, Blockchain Technology, IoT
IVCS Ltd	Innopolis	iva-tech.ru	m.tuktarova@iva-tech.ru	(916) 794-2562	Developers of innovative IT solutions for building a modern digital infostructure	Artificial Intelligence
IW Group	Simferopol	iw-group.pro	alexey@ideas-world.com	(978) 015-6915	Custom software development, Mobile applications	
IZZZIO	**Moscow**	**izzz.io**	**info@izzz.io**	**(905) 520-3080**	**Custom software development**	**Artificial Intelligence, Big Data & BI, Blockchain Technology, IoT**
JoyCraft Games	Saint-Petersburg	joycraft-games.com	company @joycraft-games.com	(981) 862-7328	Computer games	
KAMIS	Saint-Petersburg	kamis.ru	info@kamis.ru	(812) 274-3522	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Smart City
King Bird Studio	Moscow	kingbird.ru	ask@kingbird.ru	(495) 540-5229	Mobile applications	AR & VR Development, Artificial Intelligence, Big Data & BI, Blockchain Technology, IoT, Smart City
KODEKS	Saint-Petersburg	kodeks.ru	kodeks@kodeks.ru	(812) 740-7887	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	AR & VR Development, Artificial Intelligence

iZ³

IZZZIO, LLC is a software design and development studio for the digital transformation of different-sized businesses and gov agencies, which specialize in web and mobile applications, high-load information systems, developing and embedding CIPF in the software. The company creates projects based on various technologies: blockchain, AI, Big data, IoT, as well as has a number of own developments for different areas. IZZZIO, LLC has an indefinite Russian Federal Security Service (FSB) license to develop solutions using CIPF.

The flagship product of the company (in the List of Russian software) is the IZZZIO blockchain platform with an integrated module based on GOST (Russian National Standard) cryptography: an infrastructure based on the LCPoA consensus algorithm and a set of tools that allow you to easily and cost-effectively create various products based on blockchain technologies.

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
KOMINTEL	Saint-Petersburg	kom-intel.ru	konstvk@kom-intel.ru	(812) 931-1272	Custom software development	Big Data & BI
Kosta	Saint-Petersburg	kostasoft.ru	info@kostasoft.ru	(812) 320-0607	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
LABS	Moscow	advalange.ru	info@advalange.com	(499) 350-2599	Embedded software (equipment, devices)	
LANBilling	Moscow	lanbilling.ru	itdep@lanbilling.ru	(495) 795-0677	Developers in the billing system for telecom operators	
Lanit-Tercom	Saint-Petersburg	lanit-tercom.ru	contact @lanit-tercom.com	(931) 330-9982	Custom software development	AR & VR Development, Artificial Intelligence, Big Data & BI, Blockchain Technology
Lartech	Saint-Petersburg	lar.tech	info@lar.tech	(812) 339-4501	Turnkey solutions for a wide variety of industries where long-distance data transmission is required, high autonomy, ease of installation and quick payback of implementation	IoT, Smart City
League Of Code	Saransk	leagueofcode.ru	welcome@Lcode.pro	(963) 149-1199	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
Leantech	Omsk	leantech.ai	info@leantech.ai	(923) 676-0266	Custom software development	Artificial Intelligence, Big Data & BI, Blockchain Technology
Lexema	Ufa	lexema.ru	market@lexema.ru	(3472) 84-7000	Development in the field of ai and robotization of business processes	Artificial Intelligence
LOGUS	Moscow region	logus.ru	ecology@logus.ru	(903) 664-1923	Custom software development	
Luxoft	Moscow	luxoft.com	VVereschagin @luxoft.com	(495) 967-8030	Custom software development	Artificial Intelligence, Big Data & BI, Blockchain Technology, IoT
Makves Group	Moscow	makves.ru	info@makves.ru	(495) 150-5406	Software for audit and IT Resources monitoring	

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
Media technology	Saint-Petersburg	sigmasms.ru	integration @sigmasms.ru	(904) 615-4608	Content provider for A2P text and multimedia messaging	
Media-tel	Moscow	media-tel.ru	info@media-tel.ru	(499) 272-7658	Custom software development	Artificial Intelligence, Big Data & BI, IoT
Megaputer	Moscow	megaputer.ru	info@megaputer.ru	(499) 753-0129	Basic software development (DBCS, OS, o ce applications, virtualization tools, programming languages and tools)	Artificial Intelligence, Big Data & BI
Monolit-Info	Saint-Petersburg	monolit.com	alex@monolit.com	(921) 937-8542	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
M-Social	Bryansk	msocialproduction.ru	a.trishin@msocialproduction.com	(962) 131-6236	Custom software development	BigData & BI, IoT
Nexign, JSC	Saint-Petersburg	nexign.com	office@nexign.com	(812) 326-1299	Custom software development	Blockchain Technology, IoT
Noviy Disk	Moscow	nd.ru	e-learning@nd.ru	(495) 785-6514	Custom software development	AR & VR Development, Artificial Intelligence, Smart City
Oggetto	Taganrog	oggetto.ru	paul@oggettoweb.com	(989) 612-7000	Custom software development	
OKTET Labs	Saint-Petersburg	oktetlabs.ru	info@oktetlabs.ru	(812) 335-4801	Custom software development	
Overmobile LLC	Novosi-birsk	overmobile.ru	finance@overmobile.ru	(913) 798-0533	Computer games	
Paradigma Soft	Saint-Petersburg	paradigma-soft.ru	info@paradigma-soft.ru		Custom software development, Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
Pikyug	Novoros-siysk	pikyug.ru	py01@py01.ru	(8617) 61-0175	Custom software development	Big Data & BI
PiterSoft	Saint-Petersburg	piter-soft.ru	info@piter-soft.ru	(812) 333-0860	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
Polymatica	Moscow	polymatica.ru	sales@polymatica.ru	(495) 748-8484	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence, Big Data & BI, IoT
Printum	Moscow	http:printum.io	dd@printum.io	(963) 766-2233	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence, IoT
PROMT	**Saint-Petersburg**	**promt.ru**	**corporate@promt.ru**	**(812) 655-0350**	**Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)**	**Artificial Intelligence, Big Data & BI**

PROMT

PROMT is one of the world's leading developers of linguistic IT-solutions for enterprise-level clients and private users since 1991. The company is among the few machine translation software vendors from Europe and one of the TOP–10 companies globally.

The company has thousands of corporate clients all over the world, such as Amadeus, Nornickel, Russian Railways, PayPal, Gazprom, LUKOIL, SpanishDict, Siemens, Mail.ru, TAdviser.

PROMT uses the latest advances in the field of AI to create solutions for all popular platforms — Windows, MacOS, Linux, iOS, Android. PROMT MT software supports more than 50 languages and integrates with Microsoft applications and CAT-systems (SDL Trados, Memsource, Across).

Qligent	Nizhny Novgorod	qligent.ru	info@qligent.ru		Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Big Data & BI
QNIUM LLC	Moscow	qnium.ru	office@qnium.ru	(495) 988-0764	Custom software development	AR & VR Development, Artificial Intelligence, IoT
RAIDIX	Saint-Petersburg	raidix.com	request@raidix.com	(812) 622-1680	Basic software development (DBCS, OS, o ce applications, virtualization tools, programming languages and tools)	Artificial Intelligence, Big Data & BI, IoT, Smart City
Raketa	Vladivostok	raketa.world	hello@raketa.travel	(925) 655-9000	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
RCO	Moscow	rco.ru	info@rco.ru	(495) 287-9887	Custom software development	Artificial Intelligence
RDTEX	Moscow	rdtex.ru	marketing@rdtex.ru	(495) 995-0999	IT Services	Artificial Intelligence, Big Data & BI, IoT
RED Soft	**Moscow**	**red-soft.ru**	**info@red-soft.ru**	**(495) 285-6268**	**Basic and application software**	
		RED SOFT — Russian developer and provider of IT solutions and services; Skolkovo resident, member of the "Domestic Software" and RUSSOFT associations. The company implements integrated projects in the field of data storage and management using its own technology stack. RED SOFT is an efficient team with more than 15 years experience in development in the Russian public and commercial sectors. RED SOFT has its own product line: RED OS, Red Database DBMS, Red Platform, Red Virtualization and others. All products are listed in the Unified Register of Russian Software and Databases. Among the company's customers there are more than 20 government bodies, including the Federal Bailiff Service of Russia, the Prosecutor General's Office of the Russian Federation and the Ministry of Defense of the Russian Federation. Projects are being actively implemented in the regions.				
Reksoft	Moscow	reksoft.ru	rfi@reksoft.ru	(495) 926-1771	Custom software development	Artificial Intelligence, Big Data & BI, Blockchain Technology, IoT, Smart City
RIT automation	Novosi-birsk	rit-it.com	lb@rit-it.com	(913) 700-8372	Embedded software (equipment, devices)	
RNDSOFT	Rostov-on-Don	rnds.pro	es@rnds.pro	(499) 110-9973	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	AR & VR Development, Artificial Intelligence, Blockchain Technology, Smart City
Roonyx	Rostov-on-Don	roonyx.tech	vladimir@roonyx.tech	(909) 413-4138	Custom software development	Artificial Intelligence, Blockchain Technology
Rubius	Tomsk	rubius.com	info@rubius.com	(3822) 97-7772	Custom software development	AR & VR Development, Artificial Intelligence, Big Data & BI, Smart City
RunCall	Saint-Petersburg	runcall.ru	info@runcall.ru	(911) 949-4560	Custom software development	Artificial Intelligence
RuNetSoft	Saint-Petersburg	runetsoft.ru	mailbox@runetsoft.ru	(812) 337-2414	Website designing	AR & VR Development, Artificial Intelligence, Smart City

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
RusBITech-Astra	**Moscow**	**astralinux.ru**	**sfedorov@astralinux.ru**	**(495) 369-4816**	**Basic software development (DBCS, OS, o ce applications, virtualization tools, programming languages and tools)**	**Smart City**
ASTRA LINUX®	Astra Linux Group is one of the leaders in the Russian information technology market in the area of developing software and information security tools — operating systems of the Astra Linux family and virtualization platforms. The Company has been operating since 2008. Today Astra Linux team consists of more than 300 highly qualified developers and technical support staff. Astra Linux solutions are actively used to ensure security of Critical Information Infrastructure (CII) facilities. The company is a member of 'Russoft' and ARPP Software Developers association. Winner of international & local awards.					
SDI SOFT	Moscow	sdisoft.ru	info@sdisoft.ru		Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Big Data & BI
Searchinform	**Moscow**	**searchinform.com**	**info@searchinform.ru**	**(495) 721-8406**	**Complex information protection**	
SEARCHINFORM INFORMATION SECURITY	SearchInform is a leading Russian developer of information security solutions. Today, the company's current list of offered products includes instruments for comprehensive protection against internal threats: SearchInform Risk Monitor, SearchInform DLP, SearchInform SIEM, SearchInform FileAuditor – a DCAP solution, SearchInform Database Monitor — a DAM solution, SearchInform ProfileCenter based on automated profiling, TimeInformer for time-tracking and control of relevance of used websites and applications, as well as offers software as a service. SearchInform products are suitable for companies from all industries, where personal data is stored and processed, as well as commercial, medical, state secret, trade secret and know-how information is kept. The competence of the company is confirmed by a perpetual license from the Center for Licensing, Certification and Protection of State Secrets of the Federal Security Service of the Russian Federation, licenses from the Federal Service for Technical and Export Control of Russia, the products are included in the Unified Register of Russian Programs.					
SFERA	Moscow	sphaera.ru	info@sphaera.ru	(495) 672-7036	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	BigData & BI, Smart City
SimbirSoft	Ulyanovsk	simbirsoft.com	info@simbirsoft.com	(800) 2009924	Custom software development	BigData & BI, Blockchain Technology, IoT, Smart City

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
Sibedge	**Tomsk**	**sibedge.com**	**contacts@sibedge.com**	**(3822) 70-1841**	**A full-cycle global software development company focusing on an approach to business transformation that puts people first**	
sibedge		Sibedge is a globally distributed software engineering company that puts people first. We combine our innovative technology vision with our clients' business objectives to help them have a smooth journey to digital transformation. For over 15 years, we have successfully implemented over 350 projects across more than 15 countries. We have offices in San Francisco, CA, and Moscow, Saint Petersburg and Tomsk, Russia. In 2019, the company opened a representative office in Australia.				
SIMETRA	Saint-Petersburg	simetragroup.ru	moscow @simetragroup.ru		Solution for dispatching, monitoring and modeling transport and logistics flows	Artificial Intelligence, Big Data & BI, Smart City
Smart Design	Saint-Petersburg	smddev.com	info@smddev.com	(921) 932-7150	Custom software development	Artificial Intelligence, Big Data & BI, IoT
Smart Life	Moscow region	smart-life.pro	v.mironov @smart-life.pro	(968) 867-1162	Embedded software (equipment, devices)	BigData & BI, Smart City
SMS-Information technologies	Samara	sms-it.ru	info@sms-it.ru	(927) 263-8621	Proprietary software and creation of solutions for energy and industrial enterprises.	IoT
SoftInform	Tomsk	ssp-soft.com	sales@ssp-soft.com	(906) 950-2550	Custom software development	
SoftLab-NSK	Novosi-birsk	softlab-nsk.com	trav@sl.iae.nsk.su	(913) 915-5915	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	AR & VR Development
Sonda Pro	Miass	sonda.ru	sonda@sonda.ru	(35135) 3-0677	Custom software development	Artificial Intelligence, IoT, Smart City
Statanly Technologies	Saint-Petersburg	statanly.com	hello@statanly.com	(921) 875-2396	Custom software development	Artificial Intelligence, Big Data & BI, Smart City
Supl.biz	Tomsk	supl.biz	Evg@supl.biz	(913) 823-5866	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence, Big Data & BI
SWDC RTSoft	Moscow	rtsoft.ru	rtsoft@rtsoft.ru	(495) 967-1505	Custom software development, Embedded software (equipment, devices)	AR & VR Development, Artificial Intelligence, IoT, Smart City

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
SWTECN	Nizhny Novgorod	swtecnn.com	valery.kalachev @swtecnn.com	(903) 060-7607	Custom software development	
T8	**Moscow**	**t8.ru**	**info@t8.ru**	**(499) 271-6161**	**Telecommunication equipment**	**Artificial Intelligence, Smart City**
		T8 is Russian developer and manufacturer of the dense wavelength telecommunications equipment (DWDM). Activities: — developing and manufacturing of DWDM equipment — optical networks design — R&D in the field of laser physics and optical electronics — developing and manufacturing of the radio-photonic component base The DWDM platform includes equipment with 100-600G speed over the channel. The equipment is used for design of metro and backbone networks, connections between data-centers, and it is adapted to the new generation 5G networks. The main clients are telecom operators, IT companies, data centers, system integrators, government and industrial enterprises.				
TAP	Tomsk	tomskasu.ru	info@tomskasu.ru	(999) 620-2759	Custom software development	IoT
Telebreeze	Tomsk	telebreeze.com	andrey.nikitin @telebreeze.com	(906) 948-3848	Solutions for video broadcasting platforms	Artificial Intelligence
Telecontact	Moscow	telecontact.ru	tele@telecontact.ru	(495) 744-5543	Contact Center Software	
Test IT	Moscow	testit.software	artem.kostriukov @testit.software	(950) 863-7003	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence
Tezis LLC	Ufa		TezisSoft@mail.ru	(996) 404-4231	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence
Thales	Moscow	thales-sentinel.ru	mikhail.chukhlomin @thalesgroup.com	(926) 996-4225	Information security solutions	IoT
Transset	Moscow	transset.ru	info@transset.ru	(499) 649-4668	Own platform - providing access, technical support	Artificial Intelligence, Big Data & BI, IoT
TrueConf	Moscow	trueconf.ru	pr@trueconf.ru	(495) 698-6066	Basic software development (DBCS, OS, o ce applications, virtualization tools, programming languages and tools)	Artificial Intelligence, Smart City

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
Tsifrovyye kontrol'nyye tekhnologii	Rostov-on-Don	mt-r.ru	am@mt-r.ru	(800) 222-2061	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	AR & VR Development, Artificial Intelligence, Smart City
T-Soft	Saint-Petersburg	t-soft.ru	office@t-soft.ru	(812) 665-5105	Development of computer training systems	AR & VR Development, Artificial Intelligence, Big Data & BI, Smart City
UC Transport	Moscow	podkontrolem.online	info@podkontrolem.online	(499) 677-1703	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Smart City
Umbrella Alliance	Taganrog	umbrellait.com	hello@umbrellait.com	(929) 815-0949	Website designing	AR & VR Development, Artificial Intelligence, Big Data & BI, IoT
UNIVERSE-Soft	Tomsk	universe-soft.ru	manager@universe-soft.ru	(495) 150-2152	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
UserGate	Novosi-birsk	usergate.com	kk@usergate.com	(926) 975-6796	Information security solutions	Artificial Intelligence
Usetech	Moscow	usetech.ru	info@usetech.ru	(495) 660-5048	Custom software development	AR & VR Development, Artificial Intelligence, Big Data & BI, Blockchain Technology, IoT, Smart City
Valmaster	Saint-Petersburg	valmaster.ru	info@valmaster.ru	(812) 329-4459	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Smart City
Videomatrix	Ekaterin-burg	videomatrix.ru	vmx@videomatrix.ru	(343) 204-7330	Developers in solutions using video analytics, neural networks and artificial intelligence in production	Artificial Intelligence, Smart City
Visiology	Moscow	visiology.su	ivan@visiology.com	(495) 133-6290	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence, Big Data & BI

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
VR Concept	Moscow	vrconcept.net	cc@vrconcept.net	(495) 212-1147	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	AR & VR Development
Web3 Tech	Moscow	web3tech.ru	ikuzmichev @wavesenterprise.com	(910) 450-2686	Custom software development	Blockchain Technology
WebAnt	Rostov-on-Don	webant.ru	v@webant.ru	(960) 466-0100	Mobile applications	AR & VR Development, Artificial Intelligence, Blockchain Technology, IoT, Smart City
Webpractik	Rostov-on-Don	webpractik.ru	info@webpractik.ru	(995) 989-0179	Website designing	Artificial Intelligence, Big Data & BI
WESMA	Moscow	wesma.ru	manager@wesma.ru	(495) 118-2474	Website designing	Smart City
WiFly	Saint-Petersburg	wifly.net	admin@wifly.net		Marketing and monetization solution for Wi-Fi networks	BigData & BI, IoT
YASP	Saint-Petersburg	yasp.ru	welcome@yasp.ru	(812) 974-7403	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence, Big Data & BI, IoT, Smart City
YouLK	Novosi-birsk	youlk.ru	info@youlk.ru	(383) 209-3430	Replicated enterprise (institution) management, document ow automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence, Smart City

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