



# **HUMAN RESOURCES**

## RECRUITMENT MARKET 2022—2023: MAIN CHALLENGES AND TRENDS

**Pavel Eideland**  
Managing Partner of  
Development and Testing  
segment, IBS



The recruitment market in IT sector is nowadays in a state of continuous transformation. In spring 2022, companies focused on recruiting experienced specialists and reduced the recruitment of beginners and trainees. A significant number of employees had been released after the foreign companies exited the market. The custom development and testing segment, working mainly with open source software, feels now more confident, there is an active struggle for talents in a number of areas (information security, 1C development), but in general the situation remains hardly predictable.

What does the ideal portrait of a developer company look like and which HR tools come to the fore in the face of turbulence?

The main focus of employers should be taking care of the employees' well-being. Standard benefits, such as VHI and loyalty programs, become not just a sign of good form, but critical HR options. Here we can add psychological and legal support services, advanced insurance options (cancer insurance, life insurance), vaccination in the office, support in non-standard situations (for example, VHI and payments to families in case of employee's mobilization).

During periods of instability, it is difficult to overestimate the importance of a developed corporate culture and trusting communications. The company's task is to openly inform employees about internal and external events that may affect their lives and work, using operational communication channels for this. These can be direct lines, e-mail newsletters, social networks, and hot lines. Educational, entertainment and charity events help maintain an atmosphere of cohesion, partnership, and strengthen the morale of a team.

Modern development standards: a software environment, a problem-solving working infrastructure, transparent goal setting are perceived by job seekers as a "hygienic" level of work. Priority more often will be given to large companies with a reliable brand that can guarantee stable employment, a variety of tasks, the use of sought-after technologies and programming languages.

In recent years, the attitude of employees to office space and working hours has changed dramatically. Developers prefer to choose between working at home and in office, or at least have a hybrid pattern option. This is especially true for large cities, where the way to and from the office can take more than 3 hours a day.

It is important to understand that recruitment in the IT industry does not stop completely even during periods of instability. With the strengthening of the course on technological independence, IT professions will remain among the most in-demand on the market. Attracting and retaining talented specialists will always be an urgent task of business, therefore, the contribution to the development of HR tools today will bring significant dividends to companies tomorrow.

## 5.1. Assessment of the General Situation with Human Resources Availability in the Software Industry

It was stated in all the reports on the results of the study presented in the beginning of this chapter how many software development specialists have worked in Russia at the end of the previous year and what was the increase of this indicator compared to the previous year (both in the industry as a whole and in certain categories of companies). It was always assumed that every year the number of programmers is increasing by another few percent.

Information about the number of IT specialists and on the growth of this number was the main one in the chapter on human resources. In 2022, one of the key sections was the section on the brain drain with the personnel moving abroad, which brain drain in the previous 10–15 years posed a problem affecting a not very wide range of companies.

After the start of a special military operation in Ukraine, this circle has expanded — the software industry lost up to 13 thousand specialists during the first half of 2022, and with account for the departure of all software developers, including those working in other industries, possible losses can amount to about 20 thousand people. Given the annual number of graduates from universities in IT specialties, the growth of the total staff of Russian software enterprises for this year is likely to be positive, but it will be much less significant than in the last few years.

As a result, data on the number of the personnel in the industry at the end of the previous year become less relevant due to a large-scale drain of the personnel in the first months after the start of a special military operation, but these data are still important in order to

track changes occurring over a period significantly exceeding several months.

There were at least 720 thousand employees in Russia at the end of 2021 directly involved in the software development process (in software companies such specialists are considered to be profile-specific experts). The increase in their number for the year amounted to about 12%, as in 2020. In 2018–2019 this figure was at the same level, but was slightly lower — 10–11%, while over the previous few years (through 2017 inclusive) this indicator was stable at around 6–8%. It follows that in 2020 the industry added at least 80 thousand software developers. A significant part of the increase (about 40%) was provided by universities.

This is a conservative assessment. It is also required to account for a serious error in the available calculations conducted based on the survey of software companies. As for the assessment of the number of software developers employed in other sectors of the economy and social sphere, and also in the public sector, it is assumed that they account for about  $\frac{3}{4}$  of all specialists, and this share does not change significantly from year to year. This assumption must be checked annually, but to do this it is desirable to conduct an additional research on human resources and training in the field of software development, which is significantly larger than the area of the software industry studied by RUSSOFT.

When restricted to data only for Russian software companies, it turns out that at the end of 2021 at least 225 thousand profile-specific technical employees worked in these companies. Calculations



**Lately, many foreign IT companies have closed their businesses in Russia, which has put the labor market in motion and has rectified the accelerating trend towards the “candidate-driven market”. However, despite forecasts, there has been no mass relocation of IT professionals. Under these circumstances, a key task of HR business partners has become to consult engineering managers on resolving non-standard employees’ issues and maintaining a favourable atmosphere in a team. This is what has enabled Auriga to increase the level of expertise and motivation in project teams.**

**Oksana Kapasova**  
Head of HR Business Partners  
Department



are made based on the data of the survey in which respondents were asked to indicate the number of such employees of their companies (indicating the change in numbers over the year). At the same time, at least 10 thousand of specialists are located outside the country, working in the development centers of these companies abroad. It follows that about 215 thousand persons worked directly in software companies in Russia at the end of 2021, which is 12% more than at the end of 2020.

Calculations show that this 12% growth in the number of profile-specific specialists has occurred both throughout the industry and in the companies surveyed.

Since the error of the results of the calculation conducted based on the data of the survey is quite large, it is better to focus on some conservative estimates. Nevertheless, with account for other indirect data an increase in the growth rate of the staff of the Russian software

development industry can be stated with certainty.

Over the past 4 years, both large and small software companies have steadily increased their staff by at least 8% per year. According to the results of 2021, the increase amounted to 11.6% for companies with up to RUB 375 million turnover and 9.5% for companies with more than RUB 375 million turnover. This data apply only to the companies surveyed. If these figures are extrapolated to the total industry, the average growth in companies with more than RUB 375 million turnover is 12.8%.

Before 2017, the growth of large companies was faster, largely due to the inflow of personnel from smaller companies.

The increase in the growth rate of the total number of personnel can also be explained by the fact that, thanks to the activity of the APKIT Association, starting

in 2014, the number of quotas for state-financed openings in IT specialties in the universities started to grow. It is unlikely that the number of state-financed openings in IT specialties has increased by 70% in three years, as was announced in the media, but it can definitely be said that there are 20–30% more of them. The number of admitted students in IT specialties was mainly increased in regional universities (the leading universities in Moscow and St. Petersburg did not see the opportunity to admit more students with no reduction of their average training level, since a significant increase in the output of qualified programmers requires initial investment in teachers training).

In 2021, the number of staff decreased in 11% of surveyed companies, did not change — in 29%, and increased — in 60%. The increase in numbers by more than 10% was noted in 40% of companies, by more than 30% — in 14%, by more than 50% — in 6%.

## Total number of profile-specific specialists

	end of 2016	end of 2017	end of 2018	end of 2019	end of 2020	end of 2021
Software developers working in Russia in all industries (including IT services), thousand people	470-480	>500	>540	>580	>640	>720
In the Russian software industry (without employees in centers located abroad), thousand people	132-137	>140	>155	>170	>190	>215
Employees distribution by business model						
in service companies (including works for foreign customers)	56–57% (≈22%)	≈58% (≈22%)	≈59% (≈22%)	≈54% (≈23%)*	≈55% (≈23%)	55.8% (≈23%)
in product companies	≈40%	≈38%	≈37%	≈41%*	≈40%	≈39.4%
in Russian R&D centers of foreign companies	≈3–3.5%	≈4%*	≈4%	≈5%*	≈5%	≈4.8%

\* — the change in this indicator does not reflect growth, but the adjustment made upon the receipt of additional information (in 2019, a significant adjustment was made due to the sale of a number of large companies that no longer were considered to be Russian, and also due to the use of an updated calculation method).

### 5.1.1. Staff Rotation

The personnel turnover rate has been fluctuating through 2015 mainly in the range of 6–7%, but in 2016 it has increased to 9.5% and in the next two years has stabilized at this level. There was a new jump in 2019 — up to 12.5%. Given that in 2020 an insufficient number of companies participated in the survey, there were doubts about the accuracy of the value obtained. However, the data obtained during the survey conducted in 2021 showed that such a jump did occur: at the end of 2020, the personnel turnover rate was 13.3%. The increase in this indicator is confirmed by other sources.

The results of 2021 indicate the stabilization of the personnel turnover process at the level approximately 12–13%. The average personnel turnover rate for the companies surveyed was 9.7%, but if you delete the data of one large company, this figure will be 13.3%. For companies with turnovers from RUB 75 million (USD 1 million) to RUB 7.5 billion (USD 100 million) this indicator was never below 12%. The number of the companies surveyed with more than USD 100 million turnover is too small to extrapolate to all such companies in the industry. Data on the companies with less than USD 1 million turnover are almost

always less than 10% with some jumps caused, apparently, by random factors. Herewith, it can be considered that the average indicator for the entire industry is not less than 12%. It follows that, compared to the previous year, in 2021 there was a decrease in the personnel turnover rate, but a very small one.

In previous years, at least half of the surveyed companies have faced annual layoffs (in 2016 — 59%, in 2017 — 50%, in 2018 — 58%, in 2019 — 67%). At the end of 2020, 96% of the companies that answered the corresponding question have faced personnel losses. However,

#### Annual personnel turnover rate by company size

year	For all companies surveyed	more than USD 100 million*	from USD 20 million to USD 100 million	from USD 5 million to USD 20 million	from USD 1 million to USD 5 million**	less than USD 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%
2021	9.7%	5.22%	12.63%	13.10%	12.08%	8.0%

\* — as a rule, several companies, and in 2016 and 2018 only one and two, respectively.

\*\* — through 2014 inclusive “from USD 0.5 million to USD 5 million.”

\*\*\* — through 2014 inclusive “less than USD 0.5 million.”

\*\*\*\* — in 2019–2020, due to the translation of calculations into rubles, the intervals were translated at the exchange rate of RUB 64 per USD (in 2021 — RUB 75 per USD).

more than half of the companies participating in the survey (54%) have chosen the “I find it difficult to answer” option. It is difficult to assume the reasons for such a massive refusal to answer this question (a year earlier there were only 28% who did not want to answer the question on the “personnel turnover”). Apparently, this question has become especially painful for companies

or it is already difficult for them to keep track of how many employees have quit the job during the previous year (it is easier to answer the question when there are no layoffs).

When summing up the results of 2021, only 9% of the companies surveyed found it difficult to answer the question on how many employees have quit

the job during the year. 69% of the companies that answered this question had layoffs.

In the current conditions, when the staff is annually renewed by more than 10%, companies have to learn to start projects with one team, and finish them with a completely different one.

### 5.1.2. Sources of Staff Replenishment

There are three main sources of staff replenishment for software companies: university graduates, foreign specialists (primarily from neighboring countries) and employees of enterprises of other industries with engineering education. Basically, there was only one important source of staff replenishment until 2019 — universities. Until 2016 in some years the migration of software developers

from Kazakhstan, Ukraine and Belarus has provided up to 20% of the increase in the total staff of Russian software companies (not counting employees of foreign development centers of these companies), but in 2017–2018 this figure did not exceed 5%.

In 2021 a new question appeared in the questionnaire allowing to determine

the significance of all the main sources of staff replenishment of personnel in software companies. This question allowed to abandon two older questions — on the share of specialists who have moved to Russia, and on the share of university graduates among the new employees. As a result, it became possible to obtain the unique and completely new information.

#### Distribution of the increase in the number of profile-specific technical staff of software companies obtained at year-end 2020 by sources of staff replenishment

	according to the results of 2020	according to the results of 2021	less than RUB 375 million turnover	more than RUB 375 million turnover
expert graduates of Russian universities and specialized colleges	28.6%	28.1%	39.1%	27.6%
students of Russian universities and colleges that combine work and study	50.7%	10.8%	35.7%	9.6%
experienced software development specialists who have joined your company from a not software company	8.3%	28.9%	16.1%	29.6%
software development specialists who have moved to Russia temporarily or for permanent residence from other countries	4.9%	1.3%	1.0%	1.3%
specialists who have been trained as software developers under retraining programs	2.0%	8.7%	5.7%	8.8%
other source (e.g. self-taught persons with no special education)	5.5%	22.2%	2.4%	23.2%

It is possible that the share of students combining work and study differs in reality by 5 or even 10 percentage points, but these students prevail in the additional number of employees that appeared during 2020. University graduates ranked second. Jointly they represent one source of staff — higher education institutions. In 2020, they provided almost 80% of the growth in the total staff of Russian software companies.

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

A little more than 8% are accounted for specialists who have taken jobs with software companies from IT departments of enterprises in other industries. However, it is difficult to consider this source of staff as a full-fledged one, since the flow of personnel moving in the other direction is not known. It can be assumed that this source, at least, is no less than the outflow of specialists to other industries. The same applies to migration, but in 2020 moving to the West was difficult due to the pandemic (the United States temporarily refused to attract IT specialists from abroad). For this reason the balance of software developers arrival to/departure from Russia most likely was positive. It is desirable to determine this balance with division by intersectoral transfers and interstate migration of specialists, but it is not yet possible to track new places of employment of those employees who have quit the job in the company.

In 2021 the survey revealed significant changes in headcount growth that are unlikely during the year. First of all, the share of students who combine work and study has sharply decreased. For this reason the contribution of universities (students and graduates) to

software companies staff replenishment has decreased from 80% to 40%. The growth rate of the number of staff due to university graduates is almost the same as in 2020 (slightly over 28%). This growth should be stable.

At the same time, the inflow of personnel from other industries has increased (from 8.3% to 28.9%), as well as the share of specialists trained as software developers under retraining programs (from 2% to almost 9%). Other sources of personnel started to provide for 22% of the total staff increase, while a year earlier these sources have provided for only 5.5%.

An increase in the contribution of retraining programs has confirmed itself as a significant source of staff replenishment among all the rest major sources. Indeed, in recent years, the activity of educational institutions engaged in retraining has increased sharply. Due to the pandemic, online courses have become more actively used, which make training available to a wider range of people who want to become software developers. The availability of courses has grown both in cost and in learning opportunities available for residents of cities with no high-standard training centers. Such centers are located mainly in the largest cities (primarily in Moscow and St. Petersburg).

The question of the categorization of staff increases is relatively new in the annual study, and for this reason no data allowing to identify random fluctuations and to determine the error of calculations made on the basis of the answers received have not yet been accumulated. However, it can be assumed that graduates of universities and secondary specialized educational institutions provide approximately 28–29% of the total staff of specialists of enterprises specializing in software development. The contribution of retraining may well be increased. An

increased inflow of personnel from other industries is also possible, but the grounds for such an inflow are still unclear. It is not clear why, judging by the survey data, the students much less common do combine work and study.

Perhaps the survey results were influenced by a change in the structure of the array of surveyed companies (first of all, the share of companies with more than a half of revenues generated by exports has decreased). Among other things, the opinion expressed by the respondents could be influenced by the situation of the first months after the start of a special military operation in Ukraine, since their emotional mood, which always influenced the answers, has changed significantly compared to 2021.

These differences can be understood if we analyze the distribution of the contribution of all sources of staff replenishment in companies of different sizes. Smaller companies (with less than RUB 375 million turnover) are more actively recruiting specialists with no work experience (students and graduates of educational institutions). Companies with more than RUB 375 million turnover prefer to recruit specialists with work experience (and they have the opportunity for this). A higher proportion of new employees who have received retraining has good reasons, since many large and medium-sized companies have their own training centers in which they train specialists for themselves.

All the changes analyzed above relate only to the inflow of personnel into the software industry and do not account for intra-industry transfers. According to the results of 2021, intra-industry transfers account for 62% of all filled vacancies. In 2020 this figure was much less — 32%.

In any case, universities still remain the main source of staff replenishment in

software companies. The inflow coming from other industries is due to the staff replenishment in place in these industries sourced from higher education institutions. The entry of specialists from abroad, retraining of personnel along with other sources of personnel so far give much less than half of the number of new employees joining the Russian software industry over the year. For this reason it is especially important to understand how many specialists in the field of software development are trained by Russian universities.

At the end of November 2021, Deputy Prime Minister Dmitry Chernyshenko has stated that more than 80 thousand people have joined higher education programs in the field of information technology at the expense of the federal budget. 97 thousand Russian school students will be trained under secondary education programs related to artificial intelligence. At the same time, based on the instructions of the Russian President Vladimir Putin the number of state-financed openings in Russian universities in specialties related

to the development of artificial intelligence was increased by 7 thousand.

In December 2022, it became known that RUB 27.8 billion will be allocated from the state budget of the Russian Federation for the development of the potential of the personnel in the IT industry in Russia for the period from 2022 to 2024. The project for the development of IT personnel involves three areas giving consideration to the work with school students, university students and graduates.

The issue of paying the for second higher education in IT areas from the budget is being currently considered to attract personnel into the IT-sphere. The proposals were prepared following a meeting held in July 2022 on the topic “Scientific and Educational Policy and Training in the Digital Economy,” chaired by Deputy Prime Minister Dmitry Chernyshenko and the First Vice Speaker of the Federation Council Andrei Turchak.

The demographic situation is difficult enough for an increase in the number

of state-financed openings to lead to a real increase in the number of students able to receive full-fledged education in IT specialties. Some universities cannot recruit the number of students allowed by state-financing. The problem is that the number of young people in 2013–2020 has decreased due to the demographic pitfall in Russia. At the same time, the popularity of IT specialties is very high.

According to a study conducted by the Russian School of Online Education in the field of GameDev XYZ School and by the Research Me analytical agency in the fall 2021, 51% of Russians want their children to work in IT.

According to a survey conducted by the Ministry of Digital Sciences of Russia and the “University of 2035” autonomous non-profit organization, 67% of parents of school students associate their future with the IT sphere. This survey was conducted among parents of grades 7–11 students, and its results were announced in January 2022.

### 5.1.3. Productivity Growth

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

Nevertheless, if the productivity is measured in dollars, a clear growth of productivity can be noted. The productivity of software developers has increased mainly due to the increase in the cost of services provided by software developers and due to the scaling of

the business of replicated solutions developers.

At the end of 2018, one profile-specific employee generated USD 75 thousand of revenues (foreign development centers included), while at the end of 2019 this figure was USD 96 thousand. At the same time, it is necessary to account for the fact that the composition of companies of respondents surveyed in 2019 and 2020 very different, and this makes correct comparisons difficult.

At the end of 2020, the total number of employees has increased above the

turnover increase in dollar terms (by 12% and 4.5%, respectively). It follows that the revenue per the profile-specific technical employee has decreased to USD 91 thousand.

In 2021 the average annual dollar exchange rate almost did not change compared to the same indicator in 2020. Since the total turnover of software companies has increased more than their headcount, it means that productivity has increased by 4% in dollars and by 6.3% in rubles. Income per one specialist amounted to USD 94 thousand (RUB 6.9 million).



## 5.2. Existing Need for IT-Specialists

It is largely senseless to try to quantify the overall shortage of software development specialists. Any of the statements on the deficit of programmers of 500 thousand people, 1 million people or 2 million people will be true. With account for the global manpower shortage and for the small share of Russia 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. For this reason it seems more correct to focus on the determination of ways to make the most of all the opportunities for personnel training and attracting — who can deliver training in Russia, who and how many persons can be trained in Russia and or who can be attracted from abroad. Quantitative benchmarks for the number of software developers will still be required, but for the optimum distribution of available resources required for training.

In any case, it would be useful to audit all available educational resources (both public and commercial) and all human resources with an analysis of the possibilities for their more effective use. Without no such audit any planning for specialist training would be carried out almost blindly.

When considering the current need for an additional number of employees required by the software company during one year, this need can be estimated more accurately than the total shortage for 10–15 years. Judging by the recruitment plans announced by the companies, on average they annually need additional 15–20% of their existing staff of profile-specific specialists annually. It is this amount the companies are ready to hire during the year.

Across the industry this deficit amounted in 2020 to 28–38 thousand

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

Opportunities to solve the staffing problem:

### 1. Russian universities.

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

(For more information on the potential for training at universities, see section 5.5. of this chapter.)

### 2. Specialized secondary education system.

Until recently, technical schools and colleges were not considered by employers in the software industry as a source of personnel, although the need for solid mid-level specialists was very high. The specialized secondary education system provides for quite mass training in IT specialties, but this system graduates only specialists that at best can be employed only as system

administrators at small enterprises that do not use complex information systems. But in recent years, during the survey conducted by RUSSOFT, the heads of IT companies in a number of regions started to indicate vocational education institutions as the sources for staff replenishment.

### 3. Migration.

In the current situation one can hardly expect a large inflow of personnel from abroad. Nevertheless, the possibilities of attracting foreigners and the citizens of the former USSR to Russia must be studied. Of course, if specialists abroad are satisfied with everything they have, it will be difficult to persuade them to change their place of residence. However, dissatisfaction with work and life in other countries is gradually growing, which is facilitated by the anti-Russian prejudice and multi-gender policies, openly promoted in unfriendly countries. Obviously, in the conditions of the information war, not all foreigners know what conditions for life and work are available in Russia. The most important vacancies in the field of management and organization of foreign sales can be filled with the foreigners from economically developed countries. There are already examples of such vacancies filling, although these cases are rather isolated (see section 5.3 for details).

### 4. Teaching girls.

Software development was previously considered exclusively a male specialty. However, in recent years, this idea has been changing not only abroad, but also in Russia. With the involvement of girls in software development, it is possible to partially neutralize the negative impact of the demographic pitfall in Russia due to the difficult economic situation in the 90s.

According to a survey conducted by GeekBrains (its results were presented in March 2022), every second (56.3%) woman today wants to master a new profession. Housewives (62%), job seekers (61.6%) and pensioners (38.2%), as well as employed (59.9%), and self-employed (53.4%) respondents are interested in obtaining a new specialty in IT, design and marketing. At the same time, more than half (57.1%) of women wishing to find a job prefer a remote format of work (239,141 women participated in the survey).

In spring 2022, Kaspersky Lab conducted a study on how IT careers of women are developing in Russia today. It was found out that the main incentive for work and development in the industry is a high level of wages and bonuses. This answer was indicated by 56% of people participating in the survey, and the financial factor is more important for the age category 18–35 years (64%), while in the category 36–55 years it plays a key role for 43% of respondents.

The very fact of such a survey conducted by one of the largest software companies in Russia, aimed at expanding the staff, suggests that attracting women to the industry can help solve the problem of staff shortages.

#### **5. Employees retraining (postgraduate education).**

The huge potential for growth in the number of IT personnel is laid in the retraining of persons with higher education in specialties that are not IT. At the same time these are not necessarily the holders of diplomas in technical specialties who have received good basic mathematical training. Biologists, doctors, chemists, linguists and many others are required. Their knowledge is needed to create specialized software

for various industries and purposes. What a biologist needs to know is better known by someone with relevant experience in biology. It is easier to teach programming than to master biology for a programmer (although this also has to be done sometimes). At the same time, the heads of software companies are ready to hire even mature (50–60 years) specialists who have received retraining.

In spring 2022, The Wall Street Journal reported that the US IT industry was flooded by employees with no university degrees. Companies prefer to hire such people and train them on their own to avoid a shortage of specialists and to maintain high growth rates. Large IT companies, including such big-name ones as IBM, have ceased to require university diplomas from employees. Russian analysts are confident that this is also due to the lower quality of modern higher education.

#### **6. Disabled persons.**

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

In Russia no publicly available news reports were found on the training programs for people with disabilities for the needs of the IT industry.



**Since the beginning of spring 2022, the IT personnel market has undergone a number of transformations. Foreign companies that left Russia have released thousands of specialists. Relocation ceases to be a trend. Many developers have returned, the reasons for this are: the language and cultural barrier, comfortable living, patriotic position. In March, the dollar renewed its maximum, so many programmers converted their salaries into foreign currency. Now the situation is reversed, so employees are returning to ruble equivalents. The interest of jobseekers in our country is growing.**

Artem Gavrishin,  
CEO at Simtech Development

**simtech**  
DEVELOPMENT

In May 2022, it became known that NtechLab, MVS Group and MTS AI agreed to hire employees with autism spectrum disorders. They will also consider to introduce an up to 2% quota for such workers. An NtechLab spokesperson told CNews that the company believes the business's reluctance to promote inclusion presents a dubious decision.

### 7. Automation of programming.

Discussions about programmers' replacement with robots in some distant future are conducted already for many years. However, until recently this possibility was not considered to pose a real threat of loss of work for software developers.

According to a survey of the SuperJob portal conducted among the most common professions in summer 2020, it were programmers, architects and nurses who were least sure of the need to completely or partially change their job in the next 10 years. Nevertheless, 31% of those surveyed on the software developer portal still saw 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 non-traditional IT customers, who usually hold a large share of the entire IT market.

Gartner also projected that by 2025 70% of new corporate enterprise-grade applications will be developed using low-code/no-code technologies, up from less than 25% in 2020.

In February 2022, it became known that the DeepMind startup forming a part of the Alphabet holding (directly related to Google) launched the AlphaCode neural network, capable of writing programs from scratch with only one description of the task. The project is at an early stage of development, but in its capabilities it already bypasses the entry-level and even more experienced programmers. The creators are confident that in the future AlphaCode will fully automate the process of codes generation.



**Making the medical profile of the team makes it possible to one to adapt the insurer's VMI program to the real employees' needs. The platform based on DSS is used for coordinating doctor's appointments with an insurance company and improves the quality of treatment of the insured, the quickness of their service, the efficiency of spending money. Also, it reduces the losses of clinics from unpaid treatment bills. "Medical Arbitration" simplifies the work of HR with employees' complaints about refusals from the insurers, involves expert doctors from clinics for further consideration and coordination with the IC.**

Yuriy Volkov  
CEO "SOPOS"

**SOPOS**

## 5.3. Workforce Migration

Starting from the beginning of 2015, in connection with the events in Ukraine, an additional migration flow from the east of this country has made appearance in Russia. In 2016–2017 the inflow of the personnel from Ukraine and from neighboring countries has decreased slightly. In any case, the share of respondents reporting the admission of new employees arriving from other countries has decreased. At the same time, the outflow of programmers from Russia has not changed significantly, or rather has slightly increased. Judging by the fact that the increase in the number of personnel of the companies surveyed has consisted with the number of hired university graduates, it is possible to make the conclusion that migration flows have leveled off again — the number of specialists leaving the country is equal to the number of specialists entering the country. At the same time, there was also an inflow from the countries with a high

level of wages, since some Russians travel abroad with plans to return after the termination of the signed contract.

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

In 2021 this survey was successful. It showed that over the past year about 3 thousand specialists with invitations received from Russian software companies have entered the country. The same mass travel abroad (to Western countries) was impossible due to strict restrictive measures. In addition, the United States temporarily suspended the issuance of work visas to IT specialists.

The data of the survey conducted in 2022 indicate that the inflow of the personnel from abroad has decreased significantly.

It is quite possible that the reduction of this inflow is significant, but is not that great. The technique used implies a particularly large error in measuring small shares (several percent of the number of all new employees). Unfortunately, there is no way to accurately determine migration flows. It is fair to say that 1–3 thousand foreign specialists move to Russia annually. About the same number leaves the country, but this estimate was more or less reliable before the start of a special military operation. In previous years there was also a temporary increase in migration flows after certain events. For example, a sharp increase in software developers wishing to move to Russia from neighboring countries (from Ukraine) was observed in 2015, which fact is confirmed by data received from recruiting agencies. In the first half of 2022, there was a multiple increase in the outflow of personnel abroad.

### 5.3.1. Departure Abroad

Due to the increase in the outflow of personnel abroad in 2015, questions were included in the questionnaire during the survey conducted 2016 survey that allow 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 the companies surveyed. This figure has increased to 17–18% in the later years. At the end of 2019 it could not be accurately determined due to the specifics of the survey during the pandemic, and at the end of 2020 it amounted to 27%.

However, we cannot say that there has been such a large increase in the departure of programmers abroad, since the wording of the corresponding question has changed. In the earlier years respondents have simply indicated the presence of a problem, but in the survey conducted in 2021 they were able to choose the form in which this problem does exist (“The problem has a quite massive scale in our company” or “We lose specialists in isolated cases, but these are key specialists”). Presumably, in the earlier years at least half of the companies indicating the presence of the problem believed mentioning this

problem is justified only when the outflow of specialists abroad has a quite massive scale.

In 2022 it became possible to fully compare the results of answers to the question in a new wording (with account for the fact that the data of 2020 have a too large error due to the small number of companies surveyed during the lockdown at the very beginning of the pandemic). It turned out that in 2022 there was no increase in the share of companies for which the migration of employees abroad posed a problem.

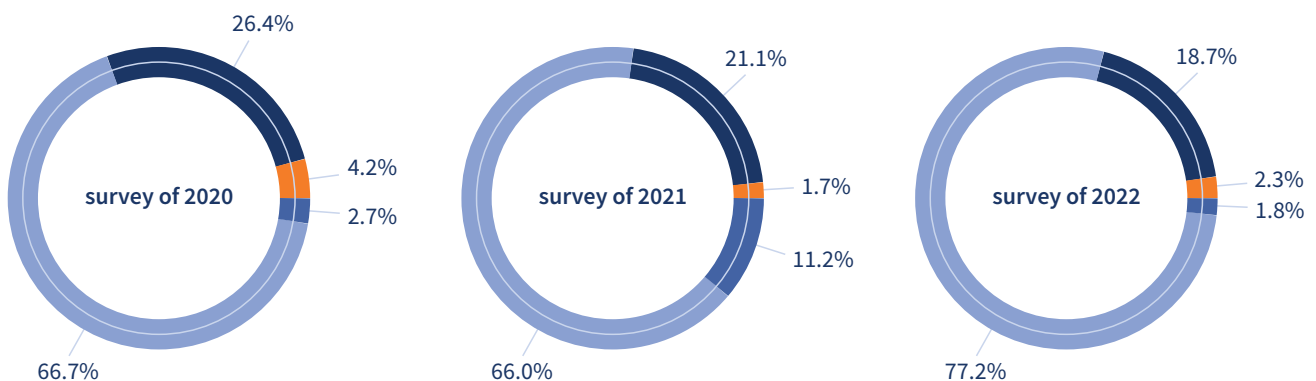
On the contrary, the percentage of companies that have chosen the answer “There is no problem for our company” increased slightly from 66% in 2021 to 77% in 2022.

However, in some companies, this migration has a quite massive scale. For

example, the respondent has chosen the answer “There is no problem for our company” in the condition of the expected loss of almost half of the headcount. In fact, it turned out that a significant share of employees will be fired and will begin to work abroad, but these employees are registered in those

foreign legal entities that were created by the owners of this Russian company. It follows that formally the outflow is significant, but in fact the company does not lose anything. Losses are likely to be for the budget of the Russian Federation.

### Distribution of answers of surveyed companies to the question on the migration of employees abroad



- The problem has a quite massive scale in our company
- We lose specialists in isolated cases, but these are key specialists
- There is no problem for our company
- “I find it difficult to answer” option

Nevertheless, the problem of “brain drain” is quite serious. The departure of IT specialists from Russian companies is quite massive, but it concerns primarily those employees who worked in companies that have completely stopped their operation in Russia. They are few, but these are large companies or development centers of foreign corporations that have organized a planned relocation of their employees.

The following forecast was formed in early June: Russian software

companies may lose a total of 9–13 thousand profile-specific specialists in the first half of 2022 due to their travel abroad. If you add software developers employed in enterprises of other industries and government agencies, this indicator will increase to a maximum of 20.5 thousand. Losses for all IT specialists cannot exceed 40 thousand people.

Such estimates are made due to the collection and processing of a large array of information. In the first instance,

the results of the survey conducted this spring as part of an annual study of the Russian software industry (it was conducted during the period from the end of February to May 31, 2022) were collected by RUSSOFT. In connection with the events in Ukraine and the US reaction to them, questions were added to the questionnaire about the expectations related to the outflow of personnel with their departure abroad, related to the change in the number of employees and turnover in the first half of 2022.

The sample was more than sufficient — 162 fully completed questionnaires. The results of calculations were changing only slightly with an increase in the number of surveyed companies changed slightly after receiving the first 20 questionnaires. Many years of research experience also suggest that 150–160 survey participants are quite enough to obtain industry indicators with an acceptable error.

The only problem is that the survey did not include companies that publicly announced the termination of all operations in Russia. But insider information was collected for these companies, which information was analyzed separately.

Judging only by the companies surveyed, the expected personnel losses are 1.5% of the total headcount. Companies with a service business model and a high share of exports suffer the most. Companies that receive more than half of their revenues from operations in foreign markets may lose almost 7% of profile-specific specialists, but this figure is only 0.5% in case the company has no export revenues at all.

Given all the difficulties and problems, the total headcount of the companies surveyed will increase by 5.5% in the first half of 2022, and the total turnover in ruble terms (compared to the same period in 2021) will increase by 24.1%. For companies no export revenues in 2021 this growth will be 9.8% and 34.9%, respectively.

According to the existing expectations, with more than 50% share of exports in the turnover, the staff will be reduced by 1%, and the turnover will increase by 22.7%. Such an increase in turnover with a reduction in staff, apparently, is associated with the assumption of a significant devaluation of the ruble (all

questionnaires were obtained before strengthening of the ruble against the dollar and the euro).

Nevertheless, such forecasts indicate quite a dynamic development, but not any crisis in the software industry.

The situation will look a little different, given the data of companies that have announced the termination of their operations in Russia. This is especially true for the migration of employees abroad.

For such companies (with foreign owners, with head offices located abroad, with

main revenues received from operations in the markets of Western countries) the information was provided by former employees, managers and also by recruiting agencies. It turned out that 30–40% of Russian employees agreed to the relocation in these companies, and they have already started to move en masse. About 20–30% are in thought, but did not give any consent, and the rest decided to stay.

For a month (from mid-April to mid-May) in St. Petersburg alone, a little more than 1.5 thousand specialists with work experience in those foreign companies which have announced their departure

### The expected share of employees who may quit their jobs (including those who have already quit) in order to travel abroad in the first half of 2022

<b>All companies surveyed</b>	<b>1.5%</b>
Business Model	
Service model (custom development and services to parent companies of development centers of foreign companies)	4.5%
Product Model	0.4%
Turnover in 2021	
Less than RUB 375 million	2.2%
More than RUB 375 million	1.3%
Availability of export revenues in 2021	
There were no export revenues	0.5%
There were export revenues	3.1%
Share of export revenues less than 50%	1.7%
Share of export revenues more than 50%	6.9%

from Russia posted their resumes or updated them. Although more than half of them (54%) allow for the possibility of relocation (not necessarily to move abroad), they have demonstrated their willingness to stay. These data were provided by the press service of the hh.ru in the Northwest Federal District.

The total number of profile-specific employees of companies that have made the decision to stop software development in Russia maximum amounts to 25 thousand people. Consequently, with the successful relocation plans implementation personnel losses will amount to 10 thousand specialists. In total, 210 thousand profile-specific technical specialists worked in the Russian software industry at the end of 2021. If we exclude the enterprises that have announced termination of their operations in Russia, we come to about 195 thousand, to which the results of the survey can be extrapolated with expected losses of 1.5%. In absolute values, these losses will amount to 2.9 thousand people. This means that the total decrease in the total number of profile-specific specialists of Russian software companies can reach a maximum of 13 thousand people.

About 500 thousand software development specialists work in other industries and government agencies (in IT services, in IT companies and insourcing companies that are not software). It is quite possible to apply the indicators of losses of companies surveyed by the RUSSOFT Association to these specialists, since no one is purposefully engaged in their relocation, and they almost do not participate in international projects. It follows that from 0.5% to 1.5% of these specialists can quit their jobs and can leave Russia, which is 2.5–7.5 thousand people. Together with the losses in the software industry, a maximum figure of

20.5 thousand people is obtained, but, most likely, it is much less in the first half of the year. The scale of migration abroad after the announcement of mobilization is difficult to estimate with no additional survey. Most likely, the vast majority go temporarily to neighboring countries, continuing to work for Russian software companies remotely. It follows that such a majority of those who are leaving do not yet represent losses for the Russian software industry.

The same approach applies to all other IT professionals in Russia. At the beginning of 2020 the APKIT Association estimated the number of specialists employed in the ICT industry at 1.8 million people. With account for the increase in this indicator over 2 years and exclusive of software developers, estimated losses from migration abroad range from 6.5 thousand people to 19.5 thousand people. Most likely, this figure is closer to 6.5 thousand than to 19.5 thousand since it is Russian software developers who are primarily in demand abroad, and the demand for other IT specialists, although some, is much lower.

Thus, the total losses in Russia can amount to 40 thousand IT specialists in the first half of the year. This figure was obtained based on the most pessimistic scenario, and the realistic one assumes not more than 30 thousand.

According to the hh.ru portal, the share of IT specialists who allow for relocation from Russia has increased in the spring 2022, but slightly. In the period from February 8 to February 26, 2022, the share of CVs in the IT sector with the status of a desired or possible relocation as a whole in Russia was at the level of 36%, which is on average 2 percentage points lower than the level of 2021. Since February 28, the number of such CVs in IT has only increased, and in mid-March it has exceeded the level of the last year.

By the end of spring 2022 over 40% of resumes in the country indicated the status of readiness for relocation, which is 1.5 percentage points higher than in March 2021.

The possible reduction of headcount due to migration abroad is significant, but still not catastrophic for the software industry, even if you consider that it will be not the worst software developers who will leave the country. Some company executives regret that the best are leaving, while others are happy that they are staying. Apparently, the most experienced and competent employees both leave and remain.

The reduction of personnel as a result of migration abroad will have a greater negative impact on foreign sales of software companies, while its impact on the implementation of projects within Russia will be insignificant. Catastrophic consequences are more likely be experienced by those companies which terminate their operations in Russia.

At the same time, there is also a reverse flow. It is unlikely to be comparable to the drain of the personnel, but it is definitely noticeable. Its presence is noted not only by the heads of software companies, but also by foreign media. For example, the British newspaper The Guardian in April 2022 reported on the mass return to the homeland of those Russians who have left after the start of a special military operation.

Quantifying this backflow across IT is very difficult and hardly makes sense. The situation was very uncertain and could swing both one way and the other. In spring 2022, many IT specialists did not make a final decision themselves. Some who have agreed to the relocation suddenly refuses it, and those who have declared their stay in Russia optioned to leave. Some return only to prepare their

final move to another country, but may also change their mind.

Many IT specialists moved to neighboring countries (most often to Georgia, Armenia or Uzbekistan, where, due to the inflow of well-paid specialists, the cost of office and residential premises rentals increased sharply), as well as to foreign sea resorts, staying in hotels. Departure to such foreign countries looks temporary. It is possible that from such foreign countries IT specialists can either return to Russia or can move to Western countries.

All existing losses do not look non-recoverable at all. Much depends on what conditions for work and life will be

existing in Russia and in the countries selected for relocation. Not the least role in this is played by the awareness level of specialists. It can be assumed that many software developers have decided to leave Russia due to the lack of an objective idea of the conditions abroad, as well as due to deliberately disseminated fake information on what is happening in the world.

It is known that some software developers already regret that they have left Russia, but they, for example, have a two-year contract that does not imply the right to return during these two years. But the reverse process may also take place if the state is forced to resort to mobilization (even if partial).



**Marketplaces of professional opportunities and project collaborations have become an integral part of life and business. Changing jobs is almost pointless, and in some situations, even reckless. There are no longer critical barriers to exchanging competencies without switching to a new employer. IT professionals are engaged "on-demand" and can work on multiple projects simultaneously. That's why hybrid teams with customers have become the norm in the IT industry.**

Ruslan Gainanov  
Founder Team Force



### 5.3.2. Inflow of Personnel from Abroad

The question about the share of new employees hired in 2018 and arrived from abroad was introduced in the questionnaire of the survey conducted in 2019 and this question made it possible to calculate the number of programmers who have come to Russia from abroad. As a result, the inflow of foreign specialists hired by Russian software companies was estimated at 400–500 people in 2016–2017. It is possible that there were slightly more such specialists, as some respondents may not have had full information about the hired employees in the companies where they work.

At the end of 2018, calculations showed that more software developers arrived to Russia from abroad — about 600–700. With account for the fact that some specialists who have arrived settled in other industries, the total inflow was estimated at about 2–2.5 thousand people.

In 2015, 20% of surveyed companies hired foreign software developers, with 18% in 2016, and 14% in 2017. However, in 2016–2017 the absolute number of specialists arriving from abroad did not change. In 2018 both the share of companies hiring foreign specialists (up to 21%) and the number of these specialists have increased. In 2019 these indicators continued to grow (22%). The total number of foreign specialists in software companies was approximately 2,850 people.

It is possible that the accuracy of calculations has improved due to changes in the questionnaire — only one question was introduced instead of two questions, which allowed respondents to provide more accurate data. At the end of 2020 the inflow of personnel into the industry turned out to be approximately the same as a year earlier (about 3 thousand), but the share of companies hiring foreigners was 16.2%.

The results of the survey indicate that in 2021 the inflow of specialists from abroad has decreased by about 3 times, but since there was no other confirmation of this fact, most likely the decrease was not so significant. The share of companies hiring foreigners has decreased to 12.3%.

In April 2022, it became known that the Government of the Russian Federation developed amendments to simplify the issuance of a residence permit to foreign IT specialists. Market participants believe that new rules can attract mainly IT specialists from the CIS countries to the country.

In February 2022, the IT Ukraine Association released a study on the situation in the Ukrainian IT industry. According to experts, the number of IT specialists in the country in 2021 increased by 17% compared to 2020 and reached 285 thousand people. In March it became known that since the start of the Russian special operation, 3/4 of all IT specialists left Ukraine — about 200 thousand, but there is no data on what share of them moved to Russia. Most likely, most went westbound.

The inflow of personnel into Russia may be facilitated by the fact that the conditions for life have worsened in many Western countries. Some big companies have started massive cuts. For example, in July 2022 it became known about mass layoffs in Oracle. The American company is forced to reduce its staff against the background of growing costs.

KMPG and the Recruitment and Employment Confederation (REC) reported in January 2022 that the growth in the number of newly opened IT vacancies in the United States was replaced by a rapid fall.

According to Gartner analysts, the acute shortage of IT specialists in the world,

which was formed by mid-July 2022, will be gone by the end of 2023, as by this time many companies will complete or slow down their digital transformation programs. Against this background, IT specialists will receive time for advanced training or retraining. For now, however, the shortage persists. According to a study conducted by Gartner, by mid-2022 the IT labor market has continued to shrink, making it difficult for companies to attract new specialists and to retain staff already working for them.

In autumn 2021, IT workers in the United States have faced the decline in average wages. Wages have decreased by 1.1% over the year. There are several reasons for this phenomenon, and among them is the desire of employers to hire less experienced specialists who are, consequently, less demanding in terms of the level of compensation. The analysts of the Hired recruiting platform came to the conclusion that the average salary of specialists in the IT industry was reduced. Their data apply only to the United States, but this could potentially happen in other countries of the world.

In summer 2022, analysts of the authoritative Zdnet portal have predicted a rapid drop in the need for IT specialists around the world. According to their forecasts companies will impose restrictions on the recruitment of new personnel and will start cuts in already existing IT departments. This is already happening in some large companies, but this has not yet become a trend. If these forecasts are justified, IT specialists will risk to start to receive fewer job offers and will be forced to become more flexible in matters of their compensation.

## 5.4. Labor Compensation

### 5.4.1. Average Wages in Russia, in IT-sphere and in Software Industry

The average wages (measured in rubles) in the software industry were growing in all years of the RUSOFT survey. During crisis periods (2009–2010 and 2014–2015), growth rates only decreased — from 10–20% to 8–10%. Software developers have always had an increase in income, but during the crisis it could not cover losses from inflation and even the 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 the same indicator for the entire Russian economy. Only in 2017 the obvious advantage of software developers in terms of salary growth rates was not revealed for the first time. Most likely, the wages of programmers still increased a little more (by 1–2 percentage points) than the national average for all industries, but for the first time the difference appeared to be so insignificant.

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

In 2018–2019, the increase in average wages of software developers and the increase in nominal accrued wages of workers in the Russian economy as a whole (data of the Federal Service of State Statistics) were completely equal. According to RUSOFT calculations salaries of profile-specific 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 RUB 47.5 thousand). There are discrepancies between these data, but, given the available calculation error, they are insignificant.

At the end 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 for all industries in 2020 amounted to 51,083 rubles, which is 6% more than a year earlier (data of the Federal Service of State Statistics). Consequently, the salaries of software developers have again showed a bigger increase.

This trend remained in 2021 — the nominal average wage in the country increased by a quite decent 11.5% (above inflation, which amounted to 8.4%), but the growth of average wages of profile-specific technical specialists in software companies was higher — by 17.4%.

As applied to software developers, the Russian labor market is just part of the world. This is why programmers not without reason often focus on measuring their income in dollars. The evaluation of the dynamics of average wages made in dollar terms shows that in 2017 the wages of Russian software developers have increased by about 24% (largely due to the strengthening of the ruble). However, in 2018, as a result of the weakening of the national currency, the dollar average salary has increased by only 4%. The growth in 2019 in dollar terms was insignificant — by 3.2%, and in 2020 there was a slight drop (by 0.4%).

According to the results of 2021, the wages in dollar terms have increased by 14.4%, which made it possible to come close to the level of 2013. So far, the income of programmers is below this level by almost 4%, but if the average annual dollar exchange rate in 2022 is significantly lower than in 2021, the level of 2013 will be surmounted and, most likely, surmounted with a margin. At the same time, over the past 10 years, wages in US dollars in the world labor market have been growing (in some years, the increase was estimated at 5–10%). Consequently, the competitiveness of custom development in Russia remains quite high. Another thing is that this development was in demand primarily in the USA and Western Europe, and the corresponding markets are currently closing for Russian companies. Competencies and experience in complex projects implementation are more important for working in other markets than the cost of the man-hour.

In 2021 average wages increased in 77% of surveyed software companies, decreased — in 1.3% and did not change — in 21.7% (in 2020 the distribution was approximately the same: growth — in 74%, reduction — in 2.3%, unchanged — in 23.7%).

By the beginning of 2017, the average wage in the software industry in Russia reached RUB 82–84 thousand, by the beginning of 2018 it amounted to about RUB 90 thousand, by the beginning of 2019 it exceeded RUB 100 thousand. With an annual growth of 6% by the beginning of 2020 it is approximately RUB 106 thousand. By the beginning of 2021 the average wage increased to RUB 119 thousand, and by the beginning of 2022 — to RUB 139 thousand.

### Change in average wages in Russian software companies surveyed by RUSSOFT in 2014–2021

	2014	2015	2016	2017	2018	2019	2020	2021	Total for 7 years (from 2013 to 2021)
in ruble terms	+11.6%	+8%	+10%	+7.7%	+12.1%	+5.8%	+11.1%	+17.4%	+121%
in dollar terms	-6%	-32.5%	0%	+24%	+4%	+3.2%	-0.4%	+14.4%	-3.8%

The presence of a significant increase in the average wage of programmers in 2021 is confirmed by various sources. From the report of the Rabota.ru service it follows that the wages of IT specialists in Russia since the beginning of the summer of 2021 have increased by 20%.

According to the analysis of the wages level of 13,000 IT specialists, which was conducted by the Habr Career portal, the wages level in the second half of 2021 increased by 17% compared to the first half of 2021.

According to the SuperJob service, salary offers in IT increased by 18.9% in 2021.

For testers, the increase from mid-2021 to mid-2022 amounted to 20–25%.

The Superjob wage index in the Information Technology sphere grew by 35% from January 1, 2021 to January 1, 2022.

In the first 8 months in 2022 the growth of wages continued in the field of software development, but its pace most likely decreased slightly.

As in the previous few years, average wages growing faster in the regions. This is largely facilitated by the widely used method of hiring specialists without inviting them to the company's

existing office (the remote operation of the specialist is supposed). One of the companies located in Crimea reported an average salary increase of 200%, explaining such an increase by the fact that due to the pandemic and the widely used remote work mode, it is required for the company to directly compete with larger software enterprises in Moscow and St. Petersburg.

According to the results of the survey conducted by RUSSOFT, the average salary in Moscow software companies in 2021 increased by 14.3%, by 12.7% in St. Petersburg and by 21% in other cities and towns.

## 5.5. Knowledge of Foreign Languages

Data were collected by RUSOFT on the number of specialists fluent in foreign languages as part of annual surveys conducted only until 2016. Since the indicators for the year have changed only slightly this question was not asked to respondents in 2017–2021. It can be assumed that the indicators at the end of 2021 turned out to be approximately the same as

they were at the end of 2015, but by the end of the first half of 2022 they were significantly reduced, since there was a massive departure of specialists abroad. Naturally, those specialists who are fluent in English or some other foreign language have moved to foreign countries. Consequently, the shortage of developers with the knowledge of foreign languages has increased.

The share of employees of Russian software companies who speak English well has always steadily been about 70%. Apparently, this indicator has stabilized after a consistent increase over a number of years. The share of German-speaking specialists in the surveyed companies has always been at the level of 8–10%. About the same share of employees speak other foreign languages.

### Share of employees who are fluent in foreign languages (based on the total headcount of the companies surveyed)

	2008	2009	2010	2011	2012	2013	2014	2015
English	65%	65%	68%	68%	72%	67%	75%	74%
German	10%	11%	5%	8%	8.5%	9%	8%	11.5%
Other	3%	11%	4%	8%	9.5%	11%	10%	13.5%

However, the number of employees speaking English will be much lower in the companies with no account for the employees of foreign development centers of Russian companies (according to a survey of 2016 the share of English speaking employees was approximately 55–57%). The same trend applies to German and other languages (excluding knowledge of languages by employees of foreign centers, the share of such employees will be 2–3%).

Among the “other” languages (in addition to English) in 2016, respondents mentioned German — 9 times, Spanish — 6 times, and Dutch, Italian, Korean, Latvian, Lithuanian, Finnish, French, Czech — 1 time.

Despite the obvious progress in mastering foreign languages by

employees of software companies, many problems remain unresolved. The number of English-speaking employees was not sufficient in small and regional companies. The growth of the total number of such employees was provided by the largest companies located in Moscow and St. Petersburg.

The number of English-speaking employees in IT companies was increased not due to the improvements in the Russian state education system. Developers mostly learn a foreign language at their own expense or at the expense of an employer who pays for language courses or who hires teachers to train employees at the company.

In Russia qualified teachers of foreign languages, as a rule, do not look for employment in schools and

universities due to low wages. Given the division of the world into “friendly” and “unfriendly” countries, the need for specialists who speak different languages (primarily Spanish, Chinese, French) is growing. This problem should be addressed by the government. Otherwise, the high-tech sector of the economy with respect to its international competitiveness will not correspond to the potential for technical specialists training that Russia has.

In 2022, the question on the knowledge of foreign languages was again included in the questionnaire, but it involved the feedback not on the number of specialists actually fluent in any foreign language, but on the required number of such specialists. This question is formulated as follows: How many technical specialists (developers) with

a good knowledge of foreign languages are you ready to hire additionally, if only the inability to attract them without luring them from other companies with higher wages offerings restrains your company's entry into new markets and expansion of sales abroad? Similar information was received regarding promotion specialists (marketers, sales managers, PR).

The results appeared to be generally expected: the greatest need for specialists with the knowledge of English, which allows to promote the solutions and services of the company even in countries in which English is not an official national language. In cases when the developers with the knowledge of a foreign language are needed, 78% of such developers should be fluent in English.

It is more interesting that Chinese ranked second. The need for the knowledge of Chinese is an order of magnitude lower than that of English, but in previous years the second place was confidently occupied by the German language. That is, English ranks first by a huge margin, those who speak German were 6–7 times less, and the number of employees speaking other languages was 2–3 times less. Although then it was not about the need, but about the actual availability of specialists with the knowledge of foreign languages, it can be assumed that a radical change has emerged. In any case, it is difficult to imagine that in 2015 there was at least some significant demand for specialists with the knowledge of the Chinese language.

German ranked not even third, but fourth, losing also to the Spanish language. This is due to the fact that in a number of "friendly countries" the state language is Spanish.

### Need for technical specialists (developers) with a good knowledge of foreign languages

	% of the total staff of all companies surveyed	% of the total staff of only those companies surveyed that have indicated a need
English	3.24%	9.01%
Chinese	0.30%	0.83%
Spanish	0.18%	0.50%
German	0.17%	0.46%
Arab	0.13%	0.36%
French	0.07%	0.19%
Japanese	0.05%	0.13%
any foreign language	4.1%	11.5%

### The need for technical specialists (developers) with a good knowledge of foreign languages, depending on the share of exports in the revenues of the company

	no export	exports accounts for less than 50% of turnover	exports accounts for more than 50% of turnover
English	3.66%	2.05%	7.24%
Chinese	0.37%	0.22%	0.56%
Spanish	0.23%	0.23%	0.03%
German	0.25%	0.11%	0.35%
Arab	0.33%	0.16%	0.01%
French	0.21%	0.06%	0.08%
Japanese	0.19%	0.06%	0.00%
any foreign language	5.3%	2.9%	8.3%

The total need for an additional number of specialists speaking foreign languages in the software industry is estimated at about 9 thousand people, of which almost 7 thousand people must be fluent in English.

The opportunity to mention another foreign language (except for those offered as a choice to the respondents) was taken by only two companies surveyed: Portuguese and Vietnamese were mentioned.

If we analyze the need for technical specialists (developers) with a good knowledge of foreign languages depending on the share of exports in the revenues of the company, we can note a fairly high demand from the part of companies that in 2021 did not have export revenues at all.

The rating of languages the knowledge of which is desirable for software promotion specialists is almost the same as the same rating for technical specialists. There is only one significant difference: the German language was in 5th place, losing to the Arabic language.

Specialists with the knowledge of the Arabic language turned out to be the most popular in companies that did not have export income in 2021 (most of them did not have experience in foreign markets at all), they were second in demand losing only to specialists with the knowledge of English. This suggests that a significant part of companies operating so far only in Russia is considering the start of foreign expansion from entering the markets of the Middle East. However, Chinese is almost as important to them.

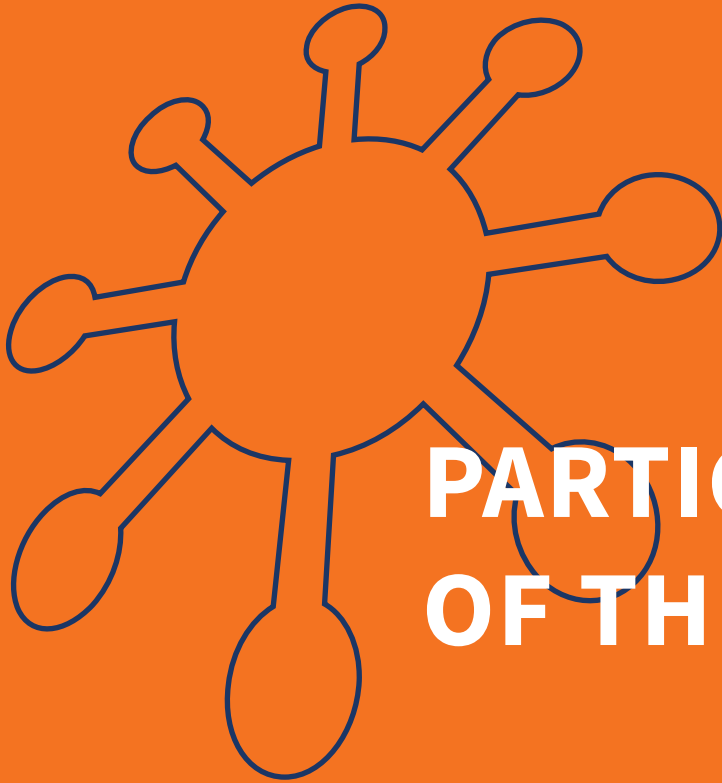
### Need for promotion specialists (marketers, sales managers, PR) with a good knowledge of foreign languages

% of the total staff of only those companies surveyed that have indicated a need

English	5.61%
Chinese	0.79%
Spanish	0.66%
Arab	0.46%
German	0.43%
French	0.33%
Japanese	0.13%
any foreign language	8.4%

### Need for promotion specialists (marketers, sales managers, PR) with a good knowledge of foreign languages, depending on the share of exports in the revenues of the company


	no export	exports accounts for less than 50% of turnover	exports accounts for more than 50% of turnover
English	6.40%	5.54%	5.83%
Chinese	0.85%	0.91%	0.42%
Spanish	0.66%	0.64%	0.73%
German	0.47%	0.37%	0.63%
Arab	0.94%	0.54%	0.21%
French	0.47%	0.37%	0.21%
Japanese	0.28%	0.14%	0.10%
any foreign language	10.1%	8.5%	8.1%




# **PARTICIPANTS OF THE SURVEY**


Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
<b>2Nova Interactive</b>	Saint-Petersburg	2nova.ru	hello@2nova.ru	(812) 318-4085	Custom software development	
<b>7bits</b>	Omsk	7bits.it			Custom software development	AR & VR Development; Artificial Intelligence; Big Data & BI; IoT; Smart City
<b>A7 Systems</b>	Saint-Petersburg	a7systems.ru	info@a7systems.ru	(812) 603-7137	Development of programming tools and database	Artificial Intelligence; Big Data & BI; IoT; Smart City
<b>Across Engineering</b>	Moscow	across.ru	info@across.ru	(495) 517-8033	Custom software development	
<b>Active Business Consult / VS Robotics</b>	Moscow	vsrobotics.ru	pr@vsrobotics.ru	(495) 136-5182	Embedded software (equipment, devices)	Artificial Intelligence; Big Data & BI
<b>ALAN-IT</b>	Yaroslavl	alan-it.ru	info@alan-it.ru	(485) 237-0303	Development of own analytical services	Artificial Intelligence; Big Data & BI; IoT; Smart City
<b>Alee Software</b>	Saint-Petersburg	alee.ru	info@alee.ru	(812) 309-7859	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other); Custom software development	
<b>ALPOM</b>	Saint-Petersburg	alpom.ru	inbox@alpom.ru	(921) 745-5069	Custom software development; Embedded software (equipment, devices)	
<b>Altcraft</b>	Ryazan	altcraft.com	contact@altcraft.com	(491) 290-1004	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Big Data & BI
<b>ALT-SOFT</b>	Saint-Petersburg	altsoft.spb.ru	altsoft@altsoft.spb.ru	(921) 956-7961	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence
<b>Alvion Europe</b>	Sevastopol	alvioneurope.ru	info@alvioneurope.ru	(978) 767-9890	Custom software development; Website designing	Big Data & BI; IoT; Smart City




Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
<b>Angels IT</b>	Voronezh	angelsit.ru	it@angelsit.ru	(473) 255-5007	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other); Embedded software (equipment, devices)	AR & VR Development; Artificial Intelligence; IoT; Smart City
<b>Arax Group</b>	Moscow	araxgroup.ru	info@araxgroup.ru	(495) 504-8263	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence; Blockchain Technology
<b>Arcadia</b>	Saint-Petersburg	softwarecountry.com	info@softwarecountry.com	(812) 610-5955	Custom software development	Artificial Intelligence; Big Data & BI
<b>A-Real Consalting</b>	Yaroslavl	xserver.a-real.ru	hello@a-real.ru	(800) 555-9297	Information security solutions	Artificial Intelligence
<b>Artezio</b>	Moscow	artezio.com	welcome@artezio.com	(495) 981-0531	Custom software development	Artificial Intelligence; Big Data & BI; Blockchain Technology
<b>ASys Soft</b>	Moscow	asys.ru	asys2007@mail.ru	(929) 539-7815	Custom software development	
<b>ATM</b>	Moscow	atm.moskba	mail@atm.msk.ru	(499) 490-2207	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Big Data & BI; IoT; Smart City
<b>Auriga</b>	Moscow	auriga.com	pr@auriga.com	(495) 713-9900	Custom software development	Embedded and system-level development; Big Data; ML; IoT
		<p>Established in 1990, Auriga is one of the top 100 leading outsourcing software R&amp;D providers worldwide. Headquartered in the U.S., with 600+ employees located across seven development centers and operating 13+ embedded testing R&amp;D labs, Auriga delivers 100+ projects yearly. We offer custom software development, product maintenance, re-engineering and porting, integration, testing and test automation services for medical device, automobile and construction tools manufacturers, industrial automation and power management companies, consumer electronics, retail &amp; logistics, software vendors (ISVs), semiconductors and hardware manufacturers (OEMs), like Chrysler, Draeger Medical, nVent and others.</p>				
<b>AV Soft</b>	Moscow	avsw.ru	konkurs@avsw.ru	(495) 988-9225	Information security solutions	Artificial Intelligence; Big Data & BI; IoT; Smart City

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
<b>AVS Consulting</b>	Moscow	avsconsulting.ru	avs@avsconsulting.ru	(925) 999-3071	Custom software development, Website designing	AR & VR Development; Artificial Intelligence; Big Data & BI; Blockchain Technology; Smart City
<b>AXELOT</b>	Moscow	axelot.ru	a.dolgikh@axelot.ru	(495) 961-2609	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
<b>Axilon</b>	Moscow	axilon.ru	info@axilon.ru	(916) 815-3499	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other), Custom software development	Big Data & BI
<b>BOBDAY</b>	Krasnodar	bobday.ru	info@bobday.ru	(800) 201-3375	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other); Custom software development	Big Data & BI
<b>Brain Systems Group</b>	Saint-Petersburg	brainsystems.ru	zakupki@brainsystems.ru	(800) 555-3107	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
<b>Celsus</b>	Kaluga	celsus.ai	celsus@celsus.ai	(965) 077-7705	Embedded software (equipment, devices)	Artificial Intelligence
<b>CenovikPRO</b>	Moscow region	cenovik.pro	info@cenovik.pro	(495) 215-5248	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence; Big Data & BI
<b>Cerebro</b>	Moscow	cerebrohq.com	info@cerebrohq.com	(499) 110-8234	Basic software development (DBCS, OS, office applications, virtualization tools, programming languages and tools)	
<b>Citrus</b>	Ioshkar-Ola	citrus-soft.ru	alex@citrus-soft.ru	(987) 702-7147	Website designing	
<b>CodeInside</b>	Penza	codeinside.ru	office@codeinside.ru	(8412) 636-736	Custom software development	Artificial Intelligence; IoT

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
<b>CommuniGate Systems</b>	Moscow	communigate.ru	russia@communigate.ru	(499) 271-3154	Development of unified communications technologies	
<b>Cortex</b>	Krasnodar	cx.technology	info@cx.technology	(988) 245-9945	Custom software development; Scientific researching	Artificial Intelligence; Blockchain Technology
		<p>Cortex Technology is an international software group focused on digital commodity trading, agritech, biotech, and digital transformation of state authorities.</p> <p>Our key practices:</p> <ul style="list-style-type: none"> <li>– Digital commodity markets for metals and chemicals, trade platforms integration (Nasdaq, CQG, public blockchains), real-time data exchange, blockchain technologies (custom blockchain, dAps, smart-contracts);</li> <li>– MedTech and BioTech: end-to-end product lifecycle automation, procurement and contract management, bioinformatics, machine learning for biological and medical data, telemedicine SaaS;</li> <li>– Incident management in casinos;</li> <li>– Regional decision support and incident management systems.</li> </ul>				
<b>Crosstech Solutions Group</b>	Moscow	ct-sg.ru/	info@ct-sg.ru	(495) 741-8864	Information security solutions	Artificial Intelligence; Big Data & BI
<b>CVisionLab</b>	Taganrog	cvisionlab.com	info@cvisionlab.com	(903) 464-7047	Custom software development	Artificial Intelligence
<b>Cyberprotect</b>	Moscow	cyberprotect.ru	info@cyberprotect.ru	(903) 203-2299	Information security solutions	
<b>Data East</b>	Novosibirsk	dataeast.com	support@dataeast.com	(383) 332-0320	Navigation and geographic information systems	Artificial Intelligence; Big Data & BI; Smart City
<b>DDoS-Guard</b>	Rostov-on-Don	ddos-guard.net	info@ddos-guard.net	(495) 215-0387	Information security solutions	Artificial Intelligence
<b>Development Center SAPR "GeoS"</b>	Nizhny Novgorod	k3info.ru	sale@k3info.ru	(831) 435-2539	Replicated enterprise (institution) management, document of 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
<b>Diasoft</b>  	Moscow	diasoft.ru	pr@diasoft.ru	(495) 780-7575, (495) 789-9339	<b>Software development for the financial and other industries; custom software development; enterprise resource planning (ERP platform); development of basic software (DBMS, programming tools)</b>	<b>Business processes management, visual analytics, Big Data, AI, ML</b>
<p>Diasoft is one of the largest Russian providers of IT solutions. During its 31-year history, it has accumulated a unique experience in development, implementation and support of comprehensive IT systems for customers from different industries, with the main focus on financial institutions.</p> <p>Diasoft is recognized as a systemically important company for the Russian information and communications industry. Its products are listed in the Unified Register of Russian Programs for Electronic Computers and Databases, and are recognized by Gartner, IDC, Forrester, BIAN and other global experts.</p> <p>The company is headquartered in Moscow, has branches in Saint Petersburg, Yaroslavl, Cheboksary, Perm, Novosibirsk, a representative office in Germany and a subsidiary in Vietnam.</p>						
<b>Digital Design</b>	Saint-Petersburg	digdes.ru	info@digdes.com	(812) 346-5833	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other); Custom software development	Artificial Intelligence; Digital Workplace
<b>DZ SYSTEMS</b>	Moscow	dzsystems.com	sales@dz.ru	(495) 225-7693	Mobile applications; Custom software development	Artificial Intelligence; Big Data & BI; Smart City
<b>Econophysica</b>	Tomsk	econophysica.com	contactus@econophysica.com	(3822) 900-601 ext: 1003	Custom software development; Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence; Big Data & BI; Smart City
<b>EC-Tavrida</b>	Simferopol	ec-tavrida.ru	ec-tavrida@yandex.ru	(978) 780-6700	Custom software development	
<b>Edelink</b>	Saint-Petersburg	edelink.ru	info@edelink.ru	(812) 507-3804	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	PropTech

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
<b>e-legion</b>	Saint-Petersburg	e-legion.ru	anna.krasavtseva@e-legion.com	(981) 844-4060	Mobile applications; Custom software development	Big Data & BI; IoT; Smart City
<b>ErmineSoft ltd.</b>	Novosibirsk	erminesoft.com	denis@erminesoft.ru	(913) 926-2697	Custom software development; Website designing	AR & VR Development; Artificial Intelligence
<b>Etton Grup</b>	Kazan	etton.ru	info@etton.ru	(800) 100-0815	Custom software development	Artificial Intelligence; Big Data & BI; Blockchain Technology; Smart City
<b>Evavision</b>	Ekaterinburg	evavision.tv	sales@evavision.tv		Development of a broadcasting control system for a network of video monitors of a new generation	IoT; Smart City
<b>FAYGROUP</b>	Moscow region	faygroup.ru	info@faygroup.ru	(964) 786-6003	Custom software development	IoT
<b>Fidesys LLC</b>	Moscow	cae-fidesys.com	v.a.levin@mail.ru	(495) 177-3618	Scientific researching; Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence; IoT; Smart City
<b>FlexSoft</b>	Moscow	flexsoft.com/about	info@flexsoft.com	(495) 788-0325	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Big Data & BI
<b>Fogstream</b>	Khabarovsk	fogstream.ru	org@fogstream.ru	(4212) 909-809	Custom software development	Blockchain Technology; Smart City
<b>Foresight</b>	Moscow	fsight.ru	info@fsight.ru	(495) 137-5498	<b>BI-systems</b>	<b>Artificial Intelligence, Big Data &amp; BI, IoT, Smart City</b>
<b>foresight.</b>	<p>Foresight is one of the largest Russian BI vendors. The company delivers to the market native and mature solutions for data analysis and corporate mobility development – Foresight Analytics Platform and Foresight Mobile Platform.</p> <p>Foresight Analytics Platform features high performance, supports various data types and their data sources, includes machine learning, big data, modeling and forecasting technologies.</p> <p>The company has also developed such products as Foresight Budgeting, Foresight Investment Management, and FlyBI used for business analysis on-the-go. Company products are used by companies in corporate, state and banking sectors. The Foresight partner network includes more than 60 Russian IT companies.</p>					

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
<b>Format Koda</b>  	Saint-Petersburg	formatkoda.ru	info@formatkoda.ru	(812) 336-5533	Custom software development; Mobile applications	Artificial Intelligence, Big Data & BI, IoT, Smart City
<p>FormatKoda is a premier provider of software engineering, software enablement, and digital transformation advisory services.</p> <p>The company leverages its agile technological excellence to efficiently deliver complex projects in retail digitalization, web content management &amp; eCommerce, healthcare IT &amp; real world evidence and data, machine learning and enterprise data management. Software engineering services include Mobile and IoT Dev, Test Automation, and Big Data Implementation.</p>						
<b>GDC Services</b>	Usady town (Tatarstan)	icl-services.com	pr@icl-services.com	(800) 333-9870	Custom software development; Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	AR & VR Development; Artificial Intelligence; Big Data & BI; IoT
<b>Gektor</b>	Moscow	gektorstroi.ru	support@gektorstroi.ru	(495) 510-1545	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
<b>GEOCAD plus</b>	Novosibirsk	geocad.ru	info@geocad.ru	(383) 352-1333	Navigation and geographic information systems	AR & VR Development; Smart City
<b>Geoscan Group</b>	Saint-Petersburg	geoscan.aero	info@geoscan.aero	(812) 363-3387	Professional unmanned technologies; Embedded software (equipment, devices)	AR & VR Development; Artificial Intelligence; IoT
<b>Global Rus Trade</b>	Moscow	globalrustrade.com/ru	info@globalrustrade.com	(495) 256-2625	International trade Marketplace	
<b>GLOLIME LTD</b>	Saint-Petersburg	glolime.ru	info@glolime.com	(812) 334-9384	Specialized tablet computers and development of a management system for enterprises and organizations on their basis	IoT
<b>GS Labs</b>	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
<b>HARMAN Connected Services</b>	Nizhny Novgorod	harman.ru, harman.com	Olga.Sheinfeld@harman.com	(905) 664-1155	Custom software development	AR & VR Development; Artificial Intelligence; Big Data & BI; IoT; Smart City

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
<b>IBS InfiniSoft</b>  	Moscow	ibs-infinisoft.ru	ymaksimenko@ibs.ru; info@ibs-infinisoft.ru	(495) 967-8080; (495) 967-8081	Custom software development; Mobile applications; Website designing	
		<p>IBS InfiniSoft is a development hub of IBS group of companies with global 30 years' experience and big number of projects providing technology solutions and drive business change for customers in Russia and abroad. We focus on the business landscape with industry knowledge and digital capabilities, combining strategy and results-driven software development. IBS InfiniSoft operates efficiently with an agile workforce of 1000+ developers and other IT specialists. It combines a unique mixture of development excellence and deep industry expertise, helping our clients innovate in the areas of State administration, Automotive industry, Financial services, Healthcare, Media and Telecommunications, Retail, Oil and Gas, Energy, and other industries. We offer software, SAP, mobile, 1C and web development, as well as UI/UX design, UX-research, architecture &amp; consulting services.</p>				
<b>Ideas World</b>	Simferopol	iw-group.pro	info@iw-group.pro	(800) 301-0762	Custom software development; Mobile applications	
<b>INEC-IT</b>	Moscow	inec.ru	support@inec.ru	(495) 786-2230	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
<b>InetPartners</b>	Moscow	callpy.com	business@inetpartners.ru	(926) 613-4870	Custom software development	Big Data & BI; IoT
<b>Infinity Video Soft</b>	Tomsk	videograce.ru	contact@videograce.com	(903) 953-3424	Basic software development (DBCS, OS, office applications, virtualization tools, programming languages and tools)	
<b>INFOPRO</b>	Moscow	info-pro.ru	post@info-pro.ru	(800) 600-2401	Custom software development	Artificial Intelligence; Big Data & BI; Blockchain Technology; IoT; Smart City
<b>Information Systems and Services</b>  	Novosibirsk	isands.ru	info@isands.ru	(800) 775-1986	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence; Big Data & BI; IoT; Smart City
		<p>Information Systems and Services, LLC is a company that uses its own low-code development platform IS.PROMETHEUS to create applications quickly and easily. The company's products are based on microservices architecture to show solid performance in handling the growing number of requests and are used by a variety of large enterprises.</p>				

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<b>INFORM-TEKHNIKA</b>	Moscow	minicom.ru	inf@infotek.ru	(495) 662-7321	Developer and manufacturer of modern means of communication	
<b>Inline Group</b>	Voronezh	inlinegroup-c.ru	contacts@inlinegroup-c.ru	(910) 749-8328	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	AR & VR Development
<b>Innotech</b>	Moscow	inno.tech	info@inno.tech	(800) 500-3333	Custom software development	Artificial Intelligence; Big Data & BI
		<p>Innotech Group (part of Group T1) is a fast-growing high-tech IT company. Since 2020 we have been providing cutting edge software solutions for business digitalization. Innotech Group builds partnerships with leading companies in the financial sector, offering them comprehensive solutions for front and back offices, modern fintech products and big data systems. Moreover, Innotech Group carries out custom-made technological projects of any complexity, helping its clients on the path of digital transformation.</p>				
<b>Inostudio Solutions</b>	Taganrog	inostudio.com	russoft@inostudio.com	(8634) 320-318	Custom software development	AR & VR Development; Artificial Intelligence
<b>INOVENTICA Technologies</b>	Moscow	inoventica-tech.ru	info@inoventica-tech.ru	(495) 646-7308	Information security solutions	
<b>Inreco LAN</b>	Vladimir	inrecolan.com	sergey.pyatigorskiy@inrecolan.com	(492) 244-4090	Custom software development	
<b>Integral</b>	Saint-Petersburg	integral.ru	eco@integral.ru	(812) 740-1100	Stationary software for environmental calculations	
<b>ISGneuro</b>	Moscow	isgneuro.com	info@isgneuro.com	(495) 232-2233	Development, support and development of our own product line of analytical software	Artificial Intelligence; Big Data & BI; IoT
<b>iSpring</b>	Ioshkar-Ola	ispring.com	buh@ispring.ru, valentina.bulygina@ispring.com	(960) 099-0074	Online Training Software	
<b>ISPsystem</b>	Irkutsk	ispsystem.ru	e.lavrenteva@ispsystem.com	(963) 305-0563	Embedded software (equipment, devices); Basic software development (DBCS, OS, office applications, virtualization tools, programming languages and tools); Replicated enterprise (institution) management, document of 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
<b>IT Pro</b>	Moscow	biqube.ru	dp@itprocomp.ru	(952) 056-1199	Custom software development	Artificial Intelligence; Big Data & BI
<b>ITB LLC</b>	Saint-Petersburg	itb.spb.ru	manager@itb.spb.ru	(812) 335-0145	Information security solutions	
<b>ITC Solutions</b>	Sevastopol	itcsolutions.ru	dm@itcsolutions.ru	(989) 836-9939	Outsourcing/ outstaff architecture, development, system and business analysis, software testing	
<b>ITConstruct</b>	Novosibirsk	itconstruct.ru	office@itconstruct.ru	(383) 375-1277	Website designing	
<b>ITPS</b>	Perm	itps.com	info@itps-russia.ru	(495) 660-8181	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence; Big Data & BI; IoT
<b>IVA Technologies (IVKS)</b>	Innopolis	iva-tech.ru	info@iva-tech.ru	(495) 134-6677	Developers of innovative IT solutions for building a modern digital infostructure	Artificial Intelligence
<b>IZZIO</b>	Moscow	izzz.io/ru	info@izzz.io	(905) 520-3080	Custom software development	Artificial Intelligence; Big Data & BI; Blockchain Technology; IoT
<b>KAMIS</b>	Saint-Petersburg	kamis.ru	info@kamis.ru	(812) 274-3522	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Smart City
<b>KODEKS</b>	Saint-Petersburg	kodeks.ru	nishonov@kodeks.ru	(812) 740-7887	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	AR & VR Development; Artificial Intelligence
<b>LANIT-TERCOM</b>	Saint-Petersburg	lanit-tercom.ru	contact@lanit-tercom.com	(812) 922-2091	Custom software development	AR & VR Development; Artificial Intelligence; Big Data & BI; Blockchain Technology; Smart City
<b>Lartech</b>	Saint-Petersburg	lar.tech	info@lar.tech	(812) 339-4501	Embedded software (equipment, devices)	IoT; Smart City

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
<b>Lexema</b>	Ufa	lexema.ru	info@lexema.ru	(347) 284-7000	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence; Big Data & BI
<b>Lotsiya</b>	Moscow	loodsen.ru	welcome@loodsen.ru	(495) 730-2023	Custom software development; Mobile applications; Website designing	Big Data & BI
<b>Luxms Group</b>	Saint-Petersburg	luxmsbi.com	sales@luxmsbi.com	(812) 974-7403	Basic software development (DBCS, OS, office applications, virtualization tools, programming languages and tools)	Artificial Intelligence; Big Data & BI; IoT; Smart City
<b>Makves</b>	Moscow	makves.ru	marketing@makves.ru	(495) 150-5406	Information security solutions	
<b>MATSBKT-SEZ</b>	Moscow	interpolymech.com	nnevskaya@global-rc.ru	(916) 609-0790	Custom software development; Embedded software (equipment, devices)	AR & VR Development; Artificial Intelligence; IoT
<b>Megaputer Intelligence</b>	Moscow	megaputer.ru	info@megaputer.ru	(499) 753-0129	Basic software development (DBCS, OS, office applications, virtualization tools, programming languages and tools)	Artificial Intelligence; Big Data & BI
<b>Microolap Technologies</b>	Tatarstan	microolap.ru	formal@microolap.ru	(926) 326-9277	Information security solutions	Network Traffic Analysis (NTA)
<b>Monolit-Info</b>	Saint-Petersburg	monolit.com	alex@monolit.com	(921) 937-8542	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other); Custom software development	Big Data & BI
<b>Motiware</b>	Belgorod	motiw.ru	office@motiw.ru	(472) 278-0000	Custom software development; Replicated enterprise (institution) management, document of 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
<b>Moy Klass</b>	Ekaterinburg	moyklass.com	info@moyklass.com	(495) 108-5239	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Big Data & BI
<b>New space</b>	Moscow	newspacecorporation.com	info@newspacecorporation.com	(928) 165-3302	Custom software development; Website designing	Big Data & BI; Blockchain Technology; IoT; Smart City
<b>Nexign</b>	Saint-Petersburg	nexign.com/ru	Yekaterina.Petrova@nexign.com	(812) 326-1299	BSS solution provider	IoT
<b>NitrosData</b>	Moscow	nitrosdata.ru	info@nitrosbase.com	(495) 101-4324		Big Data & BI
<b>NooSoft</b>	Bryansk	noosoft.ru	lv@noosoft.ru	(913) 271-3993	Custom software development	Artificial Intelligence; Big Data & BI
<b>Nord Clan</b>	Ulyanovsk	nordclan.com	welcome@nordclan.com	(499) 404-0943	Custom software development; Mobile applications; Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence
<b>NotiSend</b>	Tomsk	notisend.ru			Marketing platform for business	
<b>Novosibirsk Scientific and Technological Center</b>	Novosibirsk	nntc.pro	ematveeva@nntc.pro	(923) 248-2615	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence; Big Data & BI
<b>NTP-DIP</b>	Saint-Petersburg	ntp-dip.ru	dip_zenit@mail.ru	(911) 928-8478	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
<b>OFT</b>	Bryansk	oft32.ru	oft@inbox.ru	(920) 602-3335	Replicated enterprise (institution) management, document of 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
<b>Open Solutions</b>	Penza	osinit.com	info@osinit.com	(800) 250-9669		AR & VR Development; Artificial Intelligence; Big Data & BI; Blockchain Technology; IoT; Smart City
<b>Piter-Soft</b>	Saint-Petersburg	piter-soft.ru	info@piter-soft.ru	(812) 333-0860	Custom software development	
<b>POWWWER</b>	Novosibirsk	powwwer.io	a.mitasov@powwwer.io	(383) 318-1043	Custom software development; Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Blockchain Technology; IoT
<b>Project</b>	Moscow	project-llc.ru	sdmitriy@project-llc.ru	(985) 890-0000	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence; Big Data & BI
<b>PROMT</b>	Saint-Petersburg	prompt.ru	julia.epiphantseva@prompt.ru	(812) 655-0350	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence; Big Data & BI
<b>Prostorlab</b>	Moscow	prostorlab.com	korolev@enersys.ru	(926) 296-0502	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	IoT; Smart City
<b>PROTEI</b>	Saint-Petersburg	protei.ru	sales@protei.ru	(812) 449-4727	Embedded software (equipment, devices)	Big Data & BI; IoT; Smart City
<b>RAIDIX</b>	Saint-Petersburg	raidix.ru	request@raidix.com	(812) 622-1680	Basic software development (DBCS, OS, office applications, virtualization tools, programming languages and tools)	Artificial Intelligence; Big Data & BI; IoT; Smart City

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
<b>Raketa</b>  	Moscow	raketa.world	hello@raketa.travel	(925) 655-9007	<b>Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)</b>	<b>Big Data &amp; BI</b>
<p>“Raketa” Company is a developer of the digital platform and the mobile application for business trips and expense management. Our solution helps commercial and government companies save up to 30% of business travel budgets and up to 90% of employees' working time, makes the process of organizing business trips and expense management fully digital and automated.</p> <p>“Raketa” is the winner of the prestigious Buying Business Travel Awards in the Technology category in 2022 and the best Online booking tool in 2018.</p> <p>The company's offices are located in Moscow, Vladivostok, Yekaterinburg, Novosibirsk, Almaty, Nur-Sultan, Bishkek. The staff has 100 employees. Now we have more than 300 largest companies from Russia and abroad in our portfolio.</p>						
<b>RDTEX</b>	Moscow	rdtex.ru	marketing@rdtex.ru	(495) 995-0999	IT Services	Artificial Intelligence; Big Data & BI; IoT
<b>red_mad_robot Tomsk</b>	Tomsk	redmadrobot.ru	ee@redmadrobot.com	(909) 542-2169	Custom software development; Website designing; Mobile applications	Blockchain Technology; IoT
<b>Redline</b>	Tomsk	redlg.ru	info@redlg.ru	(999) 619-7912	Website designing; Mobile applications	IoT
<b>Reksoft</b>	Moscow	reksoft.ru	info@reksoft.ru	(495) 926-1771	Custom software development	Artificial Intelligence; Big Data & BI; Blockchain Technology; IoT; Smart City
<b>Relex</b>	Voronezh	relex.ru	market@relex.ru	(473) 271-1711	Basic software development (DBCS, OS, office applications, virtualization tools, programming languages and tools)	Big Data & BI
<b>Renga</b>	Saint-Petersburg	rengabim.com	info@rengabim.com	(812) 703-1011	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
<b>RNDSOFT</b>	Rostov-on-Don	rnds.pro	es@rnds.pro		Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other); Custom software development	Big Data & BI; Blockchain Technology; Smart City

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
<b>RTC ARGUS</b>	Saint-Petersburg	argustelecom.ru	t.stakanova@argustelecom.ru	(921) 781-2612	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Big Data & BI
<b>S.C.A.T</b>	Krasnodar	skat-vending.com	info@skat-vending.com	(918) 199-3891	Custom software development	Artificial Intelligence
<b>SatvaSpace</b>	Tver	satvaspace.com	s.abdulova@satvaspace.com	(921) 655-6958	Custom software development	Artificial Intelligence; IoT
<b>SDI SOFT</b>	Moscow	sdisoft.ru	info@sdisoft.ru	(499) 495-1042	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	NRI – Network Resource Inventory
<b>SearchInform</b>	Moscow	searchinform.ru	info@searchinform.ru	(495) 721-8406	<b>Information security solutions</b>	<b>Artificial Intelligence; Big Data &amp; BI</b>
	<p>SearchInform is a leading Russian developer of information security solutions. The company's list of products includes instruments for complex internal threats protection: SearchInform Risk Monitor, SearchInform DLP, SearchInform SIEM, SearchInform FileAuditor, SearchInform ProfileCenter and TimeInformer as well as information security services using its own products.</p> <p>SearchInform products are suitable for companies of all industries, where data is stored, processed and transferred. 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, as well as by licenses from the Federal Service for Technical and Export Control of Russia.</p>					
<b>Secret Technologies</b>	Moscow	secretgroup.ru	info@secretgroup.ru	(495) 109-2950	Information security solutions	
<b>SETERE</b>	Saint-Petersburg	setere.com	info@setere.com	(812) 921-0977	<b>Basic software development (DBCS, OS, office applications, virtualization tools, programming languages and tools); Custom software development</b>	<b>Blockchain Technology</b>
	<p>SETERE (LLC "TBI") is a software development company for users of domestic operating systems based on LINUX. At the moment, the company has released two of its own products: a software package for the rapid deployment of remote workstations "ISU Terminal" and "SETERE OCR optical text recognition system".</p> <p>SETERE is also engaged in import substitution projects, carries out complex deliveries of software and equipment of its partners.</p>					
<b>Sibedge</b>	Tomsk	sibedge.com	contacts@sibedge.com	(382) 270-1841	Custom software development	Artificial Intelligence; IoT


Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
<b>SIGMA messaging</b>	Saint-Petersburg	sigmasms.ru	integration@sigmasms.ru	(904) 615-4608	Content provider for A2P text and multimedia messaging	
 	Ulyanovsk	simbirsoft.com	request@simbirsoft.com	(800) 200-9924	Custom software development	Artificial Intelligence; Big Data & BI; Blockchain Technology; IoT
<p>SimbirSoft provides custom software development and testing services. Since 2001, we have created more than 1000 IT products for business growth and development in fintech, retail, healthcare, logistics, industry, etc. We develop IT solutions for work automation, high-load systems, mobile apps, machine learning and data science systems for customers from Russia, Europe and the USA. We provide all services with our own staff of 1300 employees.</p> <p>SimbirSoft is listed among the largest IT companies in Russia and in the Software 500 global rating. Growth rates and service quality are confirmed by international awards and Global Outsourcing 100, RAEX, RUSSOFT AWARD, CNews, Tadviser, and Tagline ratings.</p>						
<b>SIMETRA</b>	Saint-Petersburg	simetragroup.ru	moscow@simetragroup.ru	(812) 702-1335	Custom software development; Navigation and geographic information systems; Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Smart City; Big Data & BI; Artificial Intelligence
	Ulyanovsk	simtechdev.ru	sales@simtechdev.org	(800) 550-8510	Custom software development	
<p>Simtech Development is a developer of eCom solutions for the transitioning of business to a new level of digitalization.</p> <p>We have been converting sales to online for more than 17 years. Since then, we have implemented more than 5,000 projects, including the launch of highly loaded online stores and marketplaces “from scratch”, as well as modifications of existing complex eCom projects. We work with corporations, financial and trading companies, manufacturing enterprises and local businesses.</p> <p>We work in the in-house development format, implementing projects by specialists of our own.</p> <p>Furthermore, our operation is in accordance with the requirements of the international standard ISO 9001:2015.</p>						
<b>SKB Kontur</b>	Ekaterinburg	kontur.ru	pr@skbkontur.ru	(800) 500-5080	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other); Basic software development (DBCS, OS, office applications, virtualization tools, programming languages and tools)	Artificial Intelligence; Big Data & BI

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
<b>SkyDNS</b>	Ekaterinburg	skydns.ru		(812) 385-7421	Information security solutions	Big Data & BI
<b>Smart Analytics</b>	Perm	sm-analytics.com.ru	eugenia.shadrina@sm-analytics.com	(964) 190-3412	Custom software development	Big Data & BI
<b>Smart Design</b>	Saint-Petersburg	smddev.com	vitaly.tishkov@smddev.com	(921) 932-7150	Custom software development	Artificial Intelligence; Big Data & BI; IoT
<b>Smartilizer Rus</b>	Saint-Petersburg	smartilizer.ru	evgeny.filippov@smartilizer.ru	(921) 323-1370	Custom software development	Artificial Intelligence
<b>SMS-Information technologies</b>	Samara	sms-it.ru	info@sms-it.ru	(846) 205-7900	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	IoT
<b>Soft Company</b>	Moscow	softwarecom.ru	info@softwarecom.ru	(495) 983-0548	Custom software development	Big Data & BI; Blockchain Technology
<b>SoftLab-NSK</b>	Novosibirsk	softlab-nsk.ru	administration@softlab-nsk.com	(383) 363-0462	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other); Custom software development	AR & VR Development
<b>SOLVO</b>	Saint-Petersburg	solvo.ru	sales@solvo.ru	(812) 606-0555	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence; Big Data & BI
<b>Sopos</b>	Saint-Petersburg	einsur.ru	info@einsur.ru	(812) 507-6780	Custom software development; Tender platform; Health insurance expertise	
<b>SPC KRUG</b>	Penza	krug2000.ru	krug@krug2000.ru	(841) 249-9775	Development of software and hardware complexes and industry solutions in the field of industrial automation	IoT
<b>Speech Technology Center</b>	Saint-Petersburg	speechpro.ru	stc-spb@speechpro.com	(812) 325-8848	Embedded software (equipment, devices)	Artificial Intelligence; Big Data & BI; Smart City
<b>SPHAERA</b>	Moscow	sphaera.ru	info@sphaera.ru	(495) 672-7076	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Big Data & BI; Smart City



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<b>SSP SOFT</b>  	Moscow	ssp-soft.com	sales@ssp-soft.com	(495) 975-9390	Custom software development	<p>SSP SOFT is a service company and a reliable IT service provider for the implementation of complex, large-scale business digital projects in banking and financial sector, retail, telecommunications, transport and logistics, power engineering and other areas.</p> <p>The company was awarded by the «RUSSOFT AWARDS 2021» prize in the category of fast-growing service companies that have made significant progress in the field of software development and IT-services export.</p> <p>Access to more than 1500 highly qualified specialists, high quality requirements, quick response to customer`s requests and modern management approaches allow SSP SOFT to provide services that meet international standards.</p> <p>SSP SOFT operates in the Russian Federation, Republic of Belarus, Republic of Kazakhstan and other EAEU countries.</p>
<b>Statanly Technologies LLC</b>	Saint-Petersburg	statanly.com	sergey@statanly.com	(921) 875-2396	Custom software development	Artificial Intelligence; Big Data & BI; Smart City
<b>Supl.biz</b>	Tomsk	supl.biz	info@supl.biz	(800) 600-5831	Services based on our own business platform Supl.biz	Artificial Intelligence
<b>SWDC RTSOFT</b>	Moscow	rtsoft.ru	rtsoft@rtsoft.ru	(495) 967-1505	Embedded software (equipment, devices); Custom software development	AR & VR Development; Artificial Intelligence; IoT; Smart City
<b>SWTECNN LLC</b>	Nizhny Novgorod	swtec.group	Artem.Kalachev@swteconn.com	(960) 173-8444		
<b>Syncretis</b>	Saint-Petersburg	Syncretis.com	info@syncretis.com	(812) 611-0686	Custom software development	Artificial Intelligence; Big Data & BI; Blockchain Technology
<b>T1</b>	Moscow	t1.ru	info@t1.ru	(495) 727-0985	Custom software development; System integration; Consulting	Big Data & BI; IoT
<b>TEAM FORCE</b>  	Moscow	teamforce.ru	welcome@teamforce.ru	(495) 646-8040	Custom software development; Mobile applications; Website designing	Human capital
						<p>TEAM FORCE is the pioneer of SmartStaffing and the leader of the TEAM FORCE Alliance, where IT teams have been strengthening each other via project-based rearrangement of required competencies since 2008. Our Alliance, as an industry partnership, is focused on solving the challenges of the largest corporate customers.</p>

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
<b>Technoservice</b>	Moscow	techsrv.ru	info@techsrv.ru	(499) 704-3425	Custom software development	Big Data & BI; IoT; Smart City; AMS (Association Management Software); ESB (enterprise service bus)
<b>TERMIKA</b>	Moscow	olimpoks.ru	info@termika.ru	(495) 956-2101	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	
<b>TLK</b>	Novosibirsk	youlk.ru	info@youlk.ru	(383) 209-3430	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence; IoT; Smart City
<b>Tract-Soft</b>	Saint-Petersburg	tract-soft.ru	ns@tract.ru	(812) 490-7799	Embedded software (equipment, devices); System for broadcasting automation and planning the radio content	
<b>Transset</b>	Moscow	transset.ru	inform@transset.ru	(499) 649-4668	Custom software development; Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	Artificial Intelligence; Big Data & BI; IoT; Smart City
<b>TRONIC</b>	Moscow	tronicint.ru	info@tronicint.ru		Supply of technological solutions for the production of microelectronics and relevant IT solutions for various sectors of the economy	Big Data & BI; Smart City
<b>Unlim-Soft</b>	Tyumen	unlim.group/ unlim-soft	m.zemlyanoy @unlim.group	(345) 228-5052	Custom software development	Artificial Intelligence; IoT
<b>Usetech</b>	Moscow	usetech.ru	info@usetech.ru	(495) 660-5048	Custom software development	Artificial Intelligence; Big Data & BI; Blockchain Technology; IoT

Company	Head office location	Web	E-mail	Phone	Specialization	Expertise in areas corresponding to global technological trends
<b>Vinteo</b>  	Krasnodar	vinteo.ru	info@vinteo.ru	(800) 333-4016	<b>Basic software development (DBCS, OS, office applications, virtualization tools, programming languages and tools)</b>	
<p>Vinteo is a Russian producer of professional videoconferencing software and endpoints (telepresence) and a provider of video engineering services. The Vinteo products are based on the international ITU-T standards and H.323 and SIP protocols and provide the maximum compatibility with third-party videoconferencing solutions. Vinteo products are used for holding conference calls at the highest government level, organizing national programs on distance education, telemedicine, etc.</p> <p>The company's developments are included both in the Unified Register of Russian Software and in the official list of analogues recommended by the Russian Ministry of Digital Development, Communications and Mass Media for replacement of popular foreign video communication services.</p>						
<b>VR Concept</b>	Moscow	vrconcept.net	info@vrconcept.net	(495) 212-1147	Replicated enterprise (institution) management, document of automation, design and production process systems (ERP, CRM, ECM, EDMS, CAD, APCS and other)	AR & VR Development; Smart City
<b>Web3 Integrator</b>	Moscow	wavesenterprise.com	sales@wavesenterprise.com		Custom software development	Blockchain Technology; IoT
<b>Webpraktik Ltd</b>	Rostov-on-Don	webpraktik.ru	info@webpraktik.ru	(863) 303-2038	Custom software development; Website designing	Artificial Intelligence; Big Data & BI
<b>WESMA</b>	Moscow	wesma.agency	manager@wesma.ru	(495) 118-2474	Website designing	