

**PEDTR 2019****18<sup>th</sup> International Scientific Conference “Problems of Enterprise Development:  
Theory and Practice”****HOW TO ESTIMATE QUANTITY INNOVATIVE LAUNCHES IN A  
COUNTRY: RUSSIAN CASE**

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***Abstract***

This paper offered to the reader is a reflection of the current situation in the field of startups with innovation component. The criterion of innovation was a new product or service in the market. One of the key criteria for information search was the startup period of life as counted from the start of sales — not more than one year. We paid no attention to the life expectancy of the startups, but rather considered the gross indicator of the number of launches during the year. The analysis of publications available in the Internet has shown that the quantitative assessment of the number of startups is of interest to a wide range of stakeholders. But at the same time almost all experts agree that such statistics virtually don't exist. The assessments by those involved in the discussion are not without approximations and lack of specific data that can be trusted. To achieve the goal, the study included the assessment of the number of startups in the Russian Federation from different points of view, based on comparative estimates for individual countries and the world as a whole, based on the shares of the world market, applying proportions of ratios, calculating the share of innovative startups in the total number of emerging companies, by the number of companies implementing innovations. As a result, all received estimates were arranged in statistical series, which provided the median estimate of the number of innovative startups in Russia.

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## **1. Introduction**

Startup launch refers to the start of sales of a new product which contains some form of novelty using new technologies or a new model of work organization. The launch is the initial phase of the product life in the market. The study did not divide the innovations into disruptive and non-disruptive or interrupting and improving ones. Our goal was to estimate the total number of startups that contain innovative elements and that were implemented in Russia within the calendar year.

The study was complicated by several significant factors. Firstly, it is the uncertainty of startups life expectancy. Globally, projects of different duration can be called startups. For innovative startups, the period when they are called this way, is between one and three-five years, and sometimes up to ten years. Our research is aimed at the quantitative assessment of startups launches lasting up to one year, annually. Secondly, we do not know the actual sources of information containing objective data about company startups and the launch of sales of their innovative products. Thirdly, there are no available technologies that could automatically classify and register startups launches.

## **2. Problem Statement**

At the beginning of the study, an attempt was made to follow obvious logic, requesting the required information in the official office of Russian Federal State Statistic Service on the number of startups annually. But they replied that such official data is not available. As it turned out, Russia is not unique in this sense. Such situation is typical for all countries without any exception, which is confirmed by the quote from the EU startup monitor report: "There is no European central register of startup businesses and national registries commonly do not consider the degree of innovativeness, the aim to grow, or the sources of financing during the business creation" (Bosma & Kelley, 2019, p.6). Neither the authorities nor the participants themselves have any understanding of the real situation in the startups market.

The next logical step was an attempt to obtain data from the legal entities registration chamber EGRUL which carries out the official registration of legal entities and controls the database of companies implementing the activities in the territory of Russia. However, they don't keep any separate statistics on startups, more precisely, they don't identify innovative ones, but show only the total number of established organizations, without any classification by innovative component.

## **3. Research Questions**

The collective opinion of venture entrepreneurs and startupers is that there no market for startups in Russia. Market is not formed and not structured. All players try to work with ready-made projects, which are very few, however you need to work at the foundation of this pyramid. Venture investor A. Rumyantsev in his interview to RBC said that according to his understanding Russia has about 20 thousand startups (Lyubimova, 2017). Deputy General Director of Russian Venture Company G. Bikkulova expressed her view that the total number of launch startups in Russia is about 200-300. This is an unacceptably large spread of values (Panin, 2016).

## **4. Purpose of the Study**

All discussed above creates real problems for the study. The attempt to find an answer to the question has eventually brought the author to the task of startup market research in Russia. The purpose of the study is to determine the annual number of startup launches with innovations in country.

## **5. Research Methods**

The methodology of the research is similar to the assessment of market volume (Tokarev, 2018). The obtained indicators of the innovative startups market situation are presented in the sources with some limitations and can be interpreted differently. The direct attempt to find indicators of the number of innovative startups both globally and in Russia has not led to any success, despite numerous reports and publications. In some cases, the data contradict each other. The information about startups is fragmented and incomplete.

## **6. Findings**

The presentation of the research results will be started with the assessments of Russia by international organizations studying startup markets.

### **6.1. Estimation of the number of launches in the world**

Startup Ranking resource (Startupranking, 2019) informs that the number of innovative startups in Russia is 575. StartupBlink ranking (StartupBlink, 2019) together with BCG determined that there were 962 startups in Russia in 2017 (Holkin, 2016).

The analysis of these data shows that in 35 countries that took part in the analysis a total of about 50 thousand innovative startups are introduced annually. Hence, on average in each ranking country is a little over 1,400 startup launches.

These excerpts from international comparisons reveal significant methodological problems of counting innovative startups. Apparently in some countries of the world, such as the USA, Great Britain, Germany, Japan and some others the situation looks better, but in most countries, including Russia, there is a clear information gap.

Despite the significant inconsistencies in the data presented, some benefits can be derived from there, namely: the proportions of countries comparison are obvious. It is obvious that the leader by the total number of startups and innovative launches is the United States. And the rest can be estimated as a share of the leader. Note that this method of market assessment using proportions is quite reasonable in the situation of uncertainty.

Let's look at the following reasoning. Angel Connolly (2014) makes a similar attempt to quantify innovative startups in comparison. Referring to the data of The PWC MoneyTree Report, the author used the example of Australia to determine that about 2,500 new technological companies were registered in the USA in 2013 (PwC & RVC, 2019). Analyst suggested that since the venture capital market of Australia comprised 4-5% as compared to the same market in the US, the number of technological startups there was about 120.

In Blackbird Ventures blog by G. Zilberman the estimate is provided as of mid-2017; the author suggested that in the United States the share of high-tech innovative startups is not more than 5%. Let's focus on the figure of 5%, which is often found in the estimates of different participants.

The variance of the given estimates indicates a high tolerance in the result of studies and indicates that either the estimates are shown for different time periods (for a quarter or for the whole year), or these estimates take into account and ignore different indicators. For example, some experts count only the number of startups who survived for at least one year, and some experts include everything that was launched into the calculation. In some sources, the estimates are presented as accumulated total, and in others — as the number of new companies annually, which creates additional problems in calculating startups per year. The lack of data that can be trusted requires other means of achieving the result.

## **6.2. Estimation of the number of launches in Russia**

K. Varlamov, the director of IIDF, in his interview shared: "In 2013, about 700-1000 new projects appeared in the market. We've been observing the growth until 2015, and in 2016 we noticed a slowdown. There's no growth right now" (Odintsova, 2018, p.9). So, it is possible to apply an approximate ratio between the declared projects and those reaching the sales launch as 10:1 in the field of Internet startups. If we use the results of the Startup Barometr 2019 survey, which showed that about 45% of startups representatives declared the presence of prototypes and the first sales, we can estimate the proportion as 4,500.

The research of the ecosystem of RVCA technological startups, which is an integral part of the global study, showed that in Russia in 2017 there were about 700 technological startups at different stages of development. Since the statistics of startup "deaths" is available, we can assume that the optimistic estimate of the number of startups is one half, and the pessimistic estimate is 1/5. That is from 350 to 140 startups.

As an intermediate result, we defined a possible interval of values of the number of innovative startups in the Russian Federation: from 200 to 20 thousand. Such a gap of two orders is simply unacceptable. We will try to verify these values using other approaches. If we rely on the data on new organizations registration in Russia annually, knowing the share of innovative companies, we can estimate approximately the number of startups. According to the results of the study in the European Union (Steigertahl, Mauer, & Say, 2018) the vast majority of startups are implemented in the format of small enterprises and partly medium-sized enterprises, which are called Small Medium Enterprises (SMEs).

In Russia, according to the existing classification, companies launching a startup are mainly microenterprises with up to 15 employees, which adequately reflects the situation with startups whose number of employees does not exceed this value. According to official statistics, microenterprises with up to 15 members constitute the most number of registered companies - 95.5%. This is evidenced by the electronic magazine Inc. (Incorporated), which publishes information about small businesses and startups: out of a little more than 6 million registered enterprises in the Russian Federation 5,729 million are microenterprises, about 250 thousand are small enterprises, and about 19 thousand are medium ones.

RAEC found that 5% of entrepreneurs are involved in the development of new products or services. Global employment study (Bosma & Kelley, 2019) shows that the indicators of entrepreneurial activity in

the Russian Federation at the early stages of startups among the population show an innovative share of 5%.

This is done by real startupers and they are not many, unfortunately - not more than 5%, shared a venture market experts all over the world. Thus, the indicator of registered new companies in the country can serve as an assessment, and the share of startups will not exceed 5%. The calculation shows that out of 290 thousand newly registered businesses in the country 5% will make 14,500 companies that are innovative startups. Such assessment seems quite optimistic. A pessimistic estimate can be a share of 1%, i.e. 2,900 startups.

The materials published by Russian Startup Rating show that the average number of startup founders is 2.7 persons. A third of the surveyed entrepreneurs started their business alone, 40% of Russian startups have more than one founder, 29% have more than two. These indicators are confirmed by MoneyTreeTM (PwC & RVC, 2019). So, about 70% of startups have 1-2 people, probably they are the founders.

According to Startup Barometer 2019 (2019), 45% of the surveyed entrepreneurs declared the presence of a prototype and the sales launch. Therefore, out of 14,500 startups at different stages, this share will comprise 6,535 startups.

The blog published the results of the analysis using the SPARC system, and it is stated that as of March 2017 6,422 projects were registered in Spark, whereas two years earlier in March 2015 4,222 projects were registered (Debaka, 2017). The author applied a filter by which he singled out really newly created companies, whose proposals contained innovation, who created a website.

StartupBlink rating of the cities of the world (StartupBlink, 2019) shows that the number of startups in Moscow in 2015 was estimated in the range of 2,300-3,800 companies. A similar report for 2019 has shown that 4,500 startups took place in Moscow in 2018.

RAEC study of the ecosystem of technological startups (RAEC, Google & OC&C Strategy Consultants, 2018) based on a survey of a large sample of startups, found that 79% of all Russian startups are located in Moscow. This gives us reason to estimate the number of startups based on the proportion of comparison with the capital with 5,700 launches.

In a sense, the data of research innovations in Russia proved relevant. This information proved useful as it contains the percentage distribution of innovative and non-innovative companies, the share of companies that introduce new technologies. It is impossible to derive a direct answer to the question about the annual number of innovative startups from there.

According to the Innovation Activity Indicator, the indicators of innovation activity in industries make on average 10%. Technological innovations, according to statistics, are launched by 2% of small companies, which makes 5,800 innovative startups in Russia. Using the world average estimate of 1.35% of technological startups published in (Bosma & Kelley, 2019) above, the direct calculation for Russia amounted to 3,915 technological startups.

## **7. Conclusion**

The conducted research allowed to obtain estimated values of the number of startups in Russia per year, based on various data sources published officially and announced by experts, as well as available in

the public domain. The quantitative estimates of startups in the Russia received in the study and mentioned in the text are summarized in a statistical series for the purpose of calculating the median value:

(140-350); (200-300); (700-1000); 2900; 3915; 4500; 5700; 6422; 6525; 14500; 20 000

In the obtained statistical series of estimates, the median takes the mean from the estimates in the series, leads to the estimated result of 4500 innovative startups in Russia.

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