The methodology for the development of enterprise competitive strategy

IOP Conf. Series: Earth and Environmental Science **315** (2019) 052078 doi:10.1088/1755-1315/315/5/052078

The methodology for the development of enterprise competitive strategy

V V Kukartsev[1,2], N V Fedorova[1,2], V S Tynchenko[1,2], E V Bekusheva[2], D K Gek[1] and N V Sokolovskiy[2]

[1] Reshetnev Siberian State University of Science and Technology, 31, Krasnoyarsky Rabochy Av., Krasnoyarsk, 660037, Russian Federation
[2] Siberian Federal University, 79, Svobodny pr., Krasnoyarsk, 660041, Russian Federation

E-mail: vadimond@mail.ru

Abstract. The article is about achieving and maintaining advantages over competitors in the agrarian and rocket and space industry, which activities are a powerful generator of innovation. The mission of a large strategic enterprise for the agrarian and the rocket and space industry is creation, manufacturing, selling and after-sales service of competitive science-intensive products for military and civil purposes on the basis of advanced scientific and technological developments, efficient production and developed services in different interests. In order to reach this goal a full methodology for competitive strategy was developed, which is used in many organizations. This technique is presented as a step-by-step algorithm for the development and implementation of a competitive strategy, which is based on some management methods. The implementation of this algorithm requires the most up-to-date and accurate information to perform all the stages in the most productive and fast way. The algorithm itself is simple and provides an opportunity to get a positive economic effect due to the fact that the organization occupies a stronger position.

1. Introduction

During the analysis of management methods, we have adapted the algorithm of the development and implementation of a competitive strategy for the rocket and space industry. According to the algorithm presented in figure 1, the development and implementation are carried out through the consistent realization of 8 main stages:

- Mission and general corporate strategy of the enterprise development.
- Formulation of tasks in competition in the market.
- Collection and analysis of information about the external and internal environment of the enterprise.
- Choice of competitive strategy of the enterprise in the market.
- Analysis of the chosen strategy.
- Implementation of competitive strategy through the developed plan.
- Result analysis.
- Adjustment of the existing strategy or development of a new more effective strategy that will be able to implement the tasks set by the corporate strategy of the enterprise.

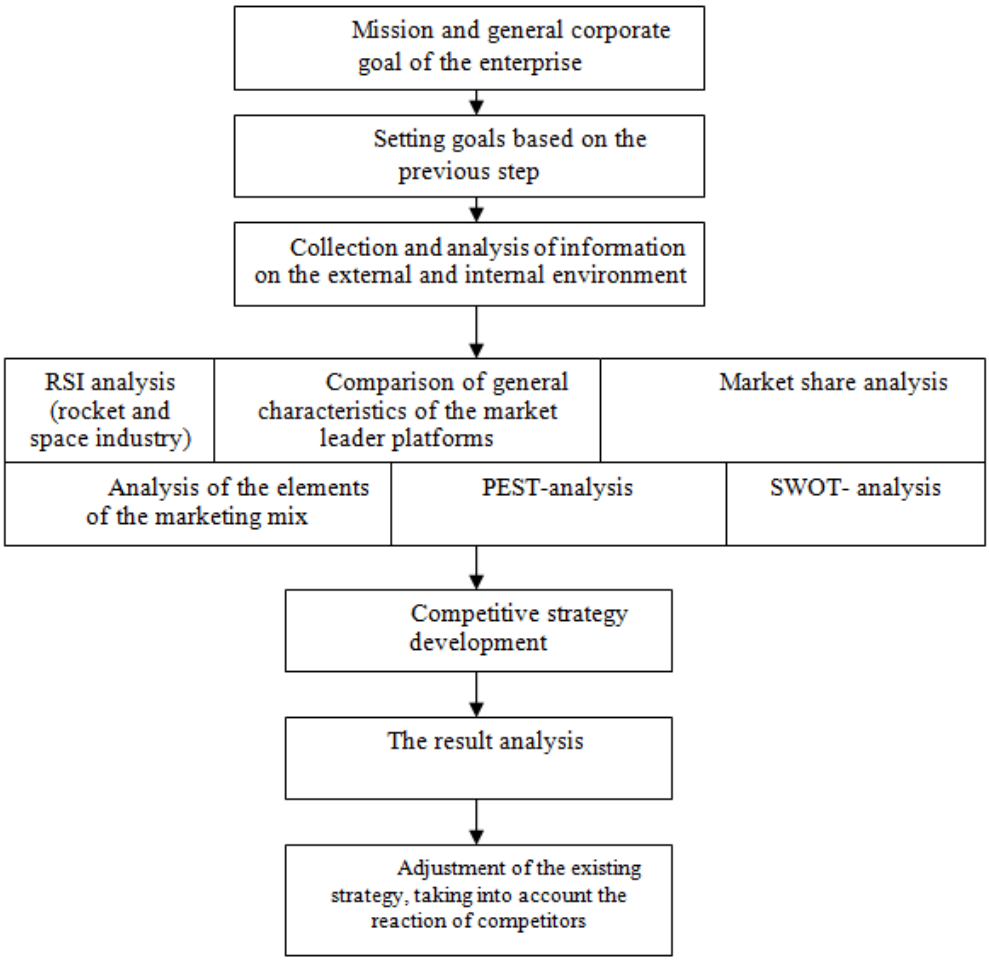

Figure 1. The proposed diagnostic algorithm adapted to the RSI.

2. Relevance

Today, in conditions of intensive changes in the external environment, characterized by numerous, complex and dynamic factors, the key to success and long-term survival and maintaining a leading position in the market is the rapid creation and implementation of effective strategies, so it would be difficult for competitors to imitate [1].

The economy of space activities is not just a part of the national economy, but also serves as its innovative core, the engine of development [2]. The development of space activities, while allowing strengthening the defense power, to accelerate the process of modernization of the economy, to ensure the effective development of science, technology and social sphere, is one of the key factors in the economic and social development of the country, the growth of living standards and national security [3, 4].

3. Problem analysis

Space facilities make it possible to solve many economic, scientific and political problems at a fundamentally new level [5].

Firstly, the production of complex high-tech space technology requires significant financial expenses for R & D. The means accumulated for space production make it possible to conduct large-scale research and testing, which make an invaluable contribution to the development of both fundamental and applied science. For example, thanks to the Hubble space telescope program (a joint project of NASA and ESA),

launched in 1990, modern astrophysics is still experiencing an avalanche-like growth of discoveries. But it is especially important that the discoveries made during such tests are used not only in the space industry, but also apply to other industries. They improve methods of production of materials and equipment; provide higher performance of electronics, etc.

Secondly, the range of goods and services derived from space activities is expanding. In a few years, most of the means of transport, communication, navigation and home appliances will use space information or navigation and time signal from the satellite for their work. Currently, space activities play a key role in the development of information and communication industries. The results of space activities are manifested in almost all sectors of the economy: rural, forest, road, water, oil, gas, energy complexes, ecology, etc. This leads to an increase in the level of life of the population. Additionally, it contributes to the return (direct or indirect economic effect) of funds invested in space programs. All this makes space activities extremely important, socially significant and economically profitable. Table 1 shows the economic return on investment in the space industry.

Table 1. Economic return on investment in space programs.

Country	Year	Return per unit of invested funds in national currency
Belgium	2010	1,4
Germany	2008	3,7 - 4,5
Ireland	2012	3,63
Norway	2013	4,75
Portugal	2011	2
United Kingdom	2010	1,91

At the end of the last century, the purposeful transfer process of space technologies to other industries began in the advanced countries of the world. The promotion of the spin-offs of space technologies is a priority in the space programs of many States, as they contribute to the introduction of innovative technologies and thus contribute to economic development and the improvement of the quality of life. In Russia, it is legislated that one of the main objectives of space activities is to promote the economic development of the state, improve the welfare of the population through the rational and effective use of space materials and space technologies, as well as the expansion of their use.

At present, space activities are an area of intense competition between States and transnational corporations for leadership in its use for economic purposes, for the longest possible monopolization of markets for new goods and services. The position of the Russian space industry in the world market of space products and services cannot be called fully consistent with the scientific and technical potential of the great world power. According to the Futron report, the competitiveness of the Russian rocket and space industry is much higher than the average, but almost two times less in comparison with the competitiveness of the leader of the world space industry-the United States. The indicators of the competitiveness index for RSI are clearly shown in Figure 2.

That is largely due to the uncompetitive current state of the Russian RSI. Currently, Russia is carrying out an organizational reform of the rocket and space industry, aimed at modernizing its structure. However, along with the planned modernization, it is necessary to simultaneously identify possible favorable competitive areas for Russia in the global space market, determine the entry strategies and conditions for maintaining competitive positions, which will be a powerful factor in the long-term sustainable development of the industry.

Russia lags far behind in terms of ERS (earth remote sensing), satellite communication systems, retransmission, and other space applications. This has a negative impact on its competitiveness in this segment. In addition, the state is forced to purchase a significant part of space services abroad, thereby indirectly financing the development of space activities of foreign competitors. The lag was formed in technologies that provide programs for the development of deep space, too. These areas need to be tightened to maintain Russia's status as a leading space power and maintain the innovative potential of its economy.

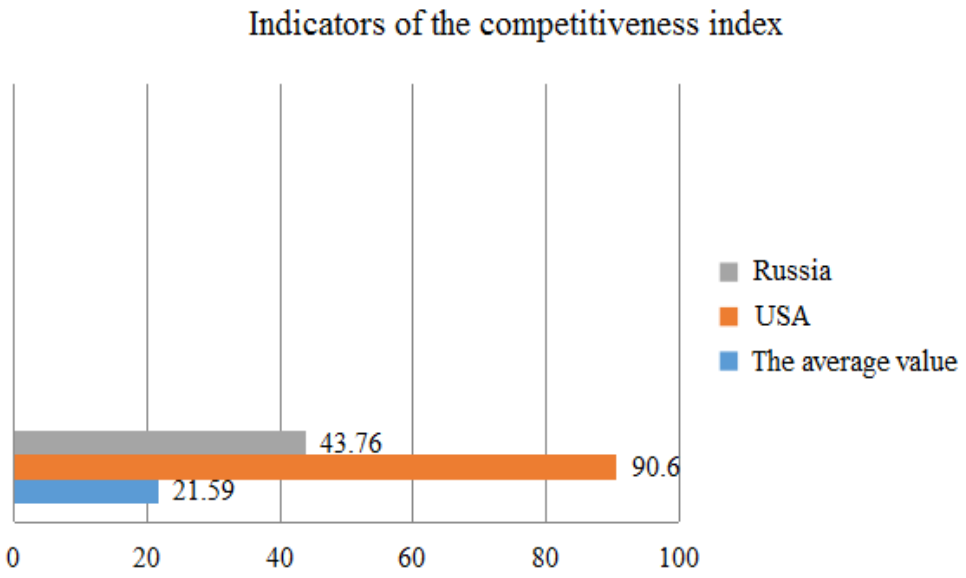

Figure 2. Indicators of the competitiveness index of Russia and the United States in the rocket and space industry and the average value.

Based on the identified prospects of the development of the world space market, it can be concluded that in the near future, significant growth is possible in new types of space activities - in space tourism, the elimination of space debris, repairs in orbit, which will require the growth of production of both launch vehicles and spacecraft, as well as services for their launch. For the Russian RSI, the development of these new directions makes it possible to conquer new markets with ready or significantly developed solutions (in particular, the availability of developments to create a return manned spacecraft, the construction of a new spaceport). Traditionally, Russia's strong position in the implementation of the transport function in space allows it to claim key positions in such projects.

A promising direction for Russia is the spread and potential commercialization of the GLONASS system. For Russia, the strategic task should be the early deployment of this system, the creation of a single navigation and information space based on GLONASS, as China and Europe have already launched programs to develop their own navigation systems. It is necessary to provide GLONASS with a scale effect as soon as possible to reach hundreds of millions of consumers. For this purpose, it is expected to enter into alliances with foreign companies - leaders of their national markets and technology segments. Navigation markets of Belarus, Kazakhstan, Armenia are important for GLONASS. In these countries, Russian experts are involved in the creation of national operators, negotiating programs on models of Russian emergency response systems in case of accidents and toll roads for heavy transport.

In order to preserve and further build competencies, Russia should continue to support those spheres of space activity in which Russia has competitive advantages and has already gained market niches. First of all, it concerns the provision of services for placing payloads, rocket engine building and manned cosmonautics into orbit [6].

Enterprises in this industry in the course of their activities in market conditions need to provide for various options for the development of production and business activities in the context of the chosen direction. Strategic management involves determining the key positions of the enterprise for the future, depending on the priority of the goals [7].

Currently, the competitive advantage of Russia in the launch market is the low price and price-quality ratio, in other words, the corresponding reliability of Russian launch vehicles. The main «workhorses» of Russian cosmonautics are the «Soyuz» and the «Proton» rockets, developed a few decades ago and now modernized.

Both launch vehicles are characterized by high reliability characteristics and relatively low launch cost.

But technology does not stand still; all new countries are engaged in the development of launch vehicles, so the competition in this sector is increasing. The characteristic features of the global rocket industry are simplicity of design and low technical risk of development with optimal economic profitability. It is particularly important to ensure a combination of relatively low launch costs and maximum coverage of all possible areas of the potential market of payloads, reusability, as well as the operation of launch vehicles on environmentally friendly fuel components [6].

4. Algorithm for the development and implementation of competitive strategy

Currently, Russia is implementing a number of programs for the development of advanced launch vehicles. Competitiveness in the international launch services market was one of the most important factors taken into account in the development of a unified range of «Angara» launch vehicles. The main idea of the development is the creation of a universal missile module, on the basis of which missiles of various classes will be built. Like a bunch of pencils, they will be recruited from the missile modules: one «pencil» - a light rocket for small satellites, three «pencils» - an average rocket, five «pencils» - a heavy rocket. Theoretically, this could reduce the launch cost by producing universal modules in large series. In 2014, the «Angara - 1.2 PP» light class launch vehicle and the heavy version of the «Angara - A5» launch vehicle were successfully tested. Experts believe that the «Angara» launch vehicles have a great future, and they will occupy a worthy place on the world launch market.

In the development phase, the tasks that have been formulated by the management of the enterprise reach the functional unit responsible for marketing and sales. Further, analysts of this division analyze the market, while the key positions of the analysis are the intensity of competition in the market and the competitive position of the enterprise (stage 3). On the basis of the analysis is the choice of an appropriate competitive strategy (step 4). Further, this strategy is analyzed from the point of view of compliance with the corporate objectives, which were formulated by the management, as well as from the point of view of the enterprise's capabilities. Marketing competitive strategy, as noted above, is determined on the basis of external factors (analysis of environmental conditions) and internal factors (available resources of the company). In order to get a clear assessment of the internal capabilities of the enterprise and the market situation, one can conduct a SWOT-analysis.

Application of SWOT-analysis is necessary for systematization of available information and subsequent management decisions. Therefore, SWOT-analysis can be called an intermediate link between the formulation of a competitive strategy of the enterprise and the development of a competitive plan (step 5). Everything happens in the following sequence:

- Determination of the main competitive strategy of the enterprise in the planned period.
- Comparison of the company's internal forces and market situation to understand whether the company will be able to implement the selected competitive strategy, and how it can be done (SWOT-analysis).
- Formulation of goals and local tasks, taking into account the real possibilities of the enterprise (development of a competitive plan). Below is a diagram in figure 3 showing the place of SWOT-analysis in the development of competitive strategy.

As another criterion for assessing and adjusting the chosen competitive strategy, managers need to consider the corporate goals of the enterprise, which are based on the mission and the overall development strategy. This agreement is necessary to ensure that the chosen competitive strategy in a particular market does not have a negative impact on the development of the enterprise as a whole. For example, an attack on competitors (for the purpose of displacement from the market) or the absorption of some of them can significantly increase the share of the enterprise in the market, but at the same time exceed the standards of Antimonopoly legislation or the costs incurred will not pay off.

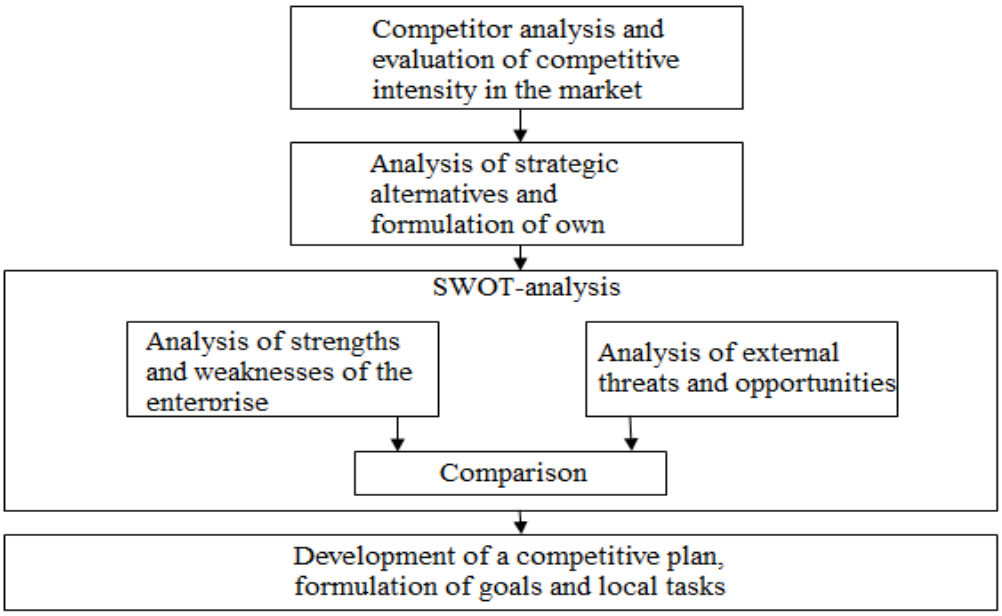

Figure 3. Place of SWOT analysis in the development of competitive strategy.

If the competitive strategy meets all the requirements, the process of developing a competitive strategy goes into the implementation phase. It should be noted that in order to improve competitiveness, an enterprise should adhere to only one competitive strategy, and not try to use several at the same time. If the company does not carry out its activities in one of the areas considered, it may be at a strategic disadvantage. The desire to become a leader on the basis of low costs and on the basis of product differentiation at the same time will not allow the company to create sustainable competitive advantages and, accordingly, increase its competitiveness [8]. In this phase, the developed strategy is implemented - marketing and sales specialists of the company operate in the market according to the approved strategy (stage 6). The main difficulty at this stage is that it is necessary to correctly implement the developed strategy and then evaluate its effectiveness. The implementation plan of the competitive strategy, the structure of which is proposed below, can help to implement this task:

- Summary. This section of the competitive plan should be the latest and begin with the formulation of goals, description of the strategy and a brief action plan to achieve the goal and implementation of the strategy. Summary, which helps management to quickly understand the main provisions of the plan.
- Description and analysis of the current market situation - a brief political and economic situation of the market in the region/country, market analysis and consumer goods in the region/country.
- Description and analysis of competition in the market - analysis of competitors, analysis of competitive positions of the enterprise in the market, evaluation of the intensity of competition in the market.
- Results of the previous period - actual and planned results of the previous period, analysis of the results of the previous period, a description of the reasons for non-fulfillment or over-fulfillment of the plan.
- Goals and description of the chosen strategy - competitive strategy is determined by the results of the study of the competitive environment and the position of the enterprise in the market.
- Evaluation of the chosen competitive strategy. Evaluation of the chosen strategy is based on the analysis of the external environment and internal capabilities of the enterprise (SWOT-analysis). In addition, the chosen competitive strategy should be considered for compliance with corporate goals. It is also necessary to characterize the chosen competitive strategy, to describe

the necessary conditions for the successful implementation of the competitive plan and possible reasons that can prevent its implementation.
- Implementation plan of the selected competitive strategy.
- Budget for the planned period.

In this section, it is necessary to state:

- Quantitative goals that determine absolute sales figures and relative growth rates. At the same time, these indicators should be expressed both in the number of units of goods (new customers) and in monetary terms. Another important benchmark of the planned period is the company's market share, which is planned to be occupied by the end of the period.
- A set of activities and actions to achieve the goals. Competitive strategy is considered in accordance with the marketing mix (four "P" - product, price, promotion, place). This fact allows it to be successfully implemented by accurately distributing tasks and functions between different departments of the company, as well as to subsequently analyze the effectiveness of the competitive strategy after the planned period. The events should take into account such issues as the need for testing, standardization, presentations, secondment of specialists with specific goals (market research, negotiations, participation in exhibitions, provision and development of service, etc.). Each event is assigned a deadline, as well as specific performers.

The necessary amount of funds allocated for the implementation of the competitive strategy is analyzed.

It is well known that any activity must begin with planning, long before the first step in the chosen direction is taken. The main task of the competitive plan is not only to specify the direction, but also to describe the route, the procedure for achieving the goals - to conduct research of competitors, preparation of responses and their implementation. Thus, the above competitive plan is an applied tool for the development and implementation of competitive strategies in the enterprise.

At the end of the reporting period, the results obtained during the implementation of the competitive strategy are analyzed, and the resulting effect is determined (stage 7). At this stage, the main role is played by the competitive plan, which, in fact, is a source of experience of the enterprise. Analyzing its activities in the past, the company can constantly improve and expand its field of activity, adequately respond to market changes, strengthen its market position and win new markets. Main questions to be answered:

- Correctness of the chosen strategy.
- Reaction of competitors.
- Correctness of the planned activities and produce the correlation of the obtained results and planned.
- Effectiveness of the tasks.
- Highlight successful and unsuccessful approaches, methods, ideas.

If the competitive strategy proved to be effective and has positive results for the company, the issues of its adjustment and relevance in the next reporting period are considered [9]. After that, an updated competitive plan with new goals is developed (stage 8). If the competitive strategy did not have a positive effect or had negative consequences, the reasons are determined and a new competitive strategy is developed [10]. Strategic superiority of competitors over rivals is expressed primarily in the presence of strategically advantageous competitive positions in the market – positions in strategic areas of the industry [11].

Often, competitive strategy is something separate in the strategic planning of the enterprise, while it is directly integrated into it and is an integral part of it. The presented step-by-step algorithm of development of competitive strategy and the plan of implementation of the developed strategy allow adjusting a closed cycle of competitive strategic planning.

5. Conclusion

Effective space activities of various countries of the world are the most important element of innovative economic development, creating new scientific, technological and technical directions. The development of new space projects and programs, the emergence of new countries participating in space activities, stimulate the progressive development of space activities, opening up new areas of its application, developing high-tech technological developments and increasing its commercial potential.

Today, strategic leaders have a number of important objects that are less effective for different activities and different enterprises in the relevant situation. It is very important to choose the right ones in time. The methodology for the development of competitive strategy proposes a string of methods, procedures and tools in the process of creating and choosing the right strategy for the company. However, the availability of reliable and up-to-date information about the requirements of customers, the market and the organization of this market is of particular importance for making the right strategic decisions.

It should be noted that the methodology of competitive strategy can have an impact on the welfare of not only individual organizations, but also on the economic development of the country as a whole.

References

[1] Guryashina I I 2017 Development of the competitive strategy of the organization *Scien. J.* **10** 117-21
[2] Hudson R 2014 Thinking through the relationships between legal and illegal activities and economies: Spaces, flows and pathways *J. of Econ. Geog.* **4** 775-95
[3] Tiesdell S and Slater A M 2006 Calling time: Managing activities in space and time in the evening/night-time economy *Plan. Theory and Prac.* **7** 137-57
[4] Walter-Range M, Borowitz M J and Faith G R 2011 Growth in the global space economy and its impact on emerging space countries *62nd International Astronautical Congress* **11** 9349-52
[5] Crawford I A 2016 The long-term scientific benefits of a space economy *Sp.Pol.* **37** 58-61
[6] Makarova D Yu and Khrustaliov E Yu 2015 Conceptual analysis of global and Russian rocket and space industries and markets *Econ. anal.: theory and prac.* **28** 323-8
[7] Tishin I V 2016 Competitiveness and competitive strategies for small businesses *Prob. of Econ.and Man.* **6** 211-21
[8] Yakovlev A A 2007 On the problems of increasing the efficiency of restructuring of Russian commercial enterprises *Scientific research in education* **1** 161-9
[9] Rubin Yu B 2007 Strategies and tactics of competitive behaviour *Mod. Com.* **3** 43-9
[10] Boyko A A, Kukartsev V V, Lobkov K Y and Stupina A A 2018 Strategic planning toolset for reproduction of machine building engines and equipment *J. of Phys.: Conf. Ser.* **4** 042006
[11] Boyko A A, Kukartsev V V, Tynchenko V S, Chzhan E A and Stupina A A 2018 Algorithm for managing investment resources for enterprises' fixed assets reproduction *Advan. in Econ., Bus. and Man. Res.* **61** 188-93