MAKING DECISIONS ON SUBSTITUTION OF IMPORTED EQUIPMENT BASED ON THE ANALYSIS OF PATENT AND FINANCIAL INFORMATION*

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ABSTRACT

The technique of analysis of critical situations arising at many enterprises in connection with the imports of foreign products and materials is offered. The possible approaches to the problems of substitution of imported equipment, the method of development of administrative decisions on the basis of financial and patent information, their causal aspects are shown.

Keywords: transport, administrative decisions, system approach, import substitution, high technologies, patents, economic database.

Background. *The subject of our analysis is the situation at the enterprises producing high-tech products with a long supply chain, including foreign, connected with breaks of these chains because of the bans on imports, which could come from both the exporting country and the importing country. It should be noted that the ban on imports concern mainly food production, and export bans from European countries and the United States – products, usually related to defense. It is obvious that such bans are detrimental to producers and consumers, and become a shining example of deviations from rational economic behavior of decision-makers. The consequences of such decisions put economic actors in a new environment in which they must develop rational management strategies to ensure their survival. At the same time the development of long-term strategies is problematic due to a high degree of uncertainty of the future in times of crisis, as well as a large number and difficulty of the urgent tasks.*

It is almost impossible to quickly replace necessary items, even if there are alternative providers, as it will take time to make test and to conclude contracts, not to mention the launch of own production. Therefore, in these circumstances, it is advisable to conduct exploratory research in order to identify possibilities of import substitution.

* The article is based on the research accomplished with the the financial support of Russian state scientific foundation, project 16-02-00743 «Multicriteria analysis and forecasting of technical and economic conditions and trends of development of leading world aerospacel companies.

These studies include the following milestones:

1. Feasibility analysis of imported goods by the subject of technological complexity.

2. Patent search for analogues of imported products.

3. Research of license purchase options for the production of products in Russia.

4. Search for new suppliers of products on world markets.

5. Investigation of production capacity of products in Russia.

It should be noted that in this case any theoretical and statistical models are not suitable, and logic and analysis of empirical data, unfairly deprived of attention, are the only reliable scientific tools to solve problems.

Objective. *The objective of the authors is to consider decision-making process in relation to import substitution issues in Russia.*

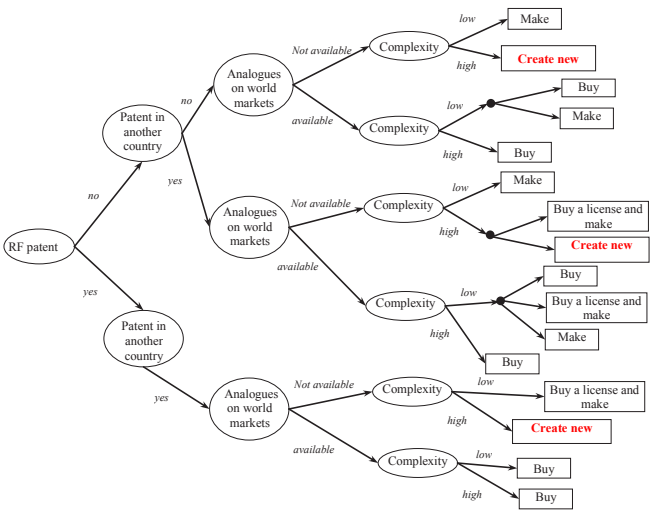
Methods. *The authors use general scientific methods, comparison, scientific description, economic evaluation.*

Results.

The general scheme of feasibility study

To conduct a feasibility study, it is necessary to involve patent engineers, economists, marketers and experts in the field of art to which the product belongs. Possible results of this analysis can be represented by a situation tree shown in Pic. 1.

If an import-substituted object has no patent protection on the territory of Russia, it is theoretically possible to manufacture it on its own, if there are resources for it. Such an outcome is presented in Pic. 1 by Make option, where it can be seen that it is



Pic. 1. Possible outcomes of a feasibility study (http://seves.ucoz.net/).

Pic. 2. Shock absorber SES5A (http://seves.ucoz.net/).

present in the tree branches with low technological complexity, and sometimes accompanied by competing alternatives. For example, in the case of availability of analogues on the market in the absence of patent protection it will be necessary to make a choice between the options Buy or Make, taking into account a time factor, as well as specific economic and technological opportunities of the enterprise. If the object in question or its close analog is patented abroad, then there is an additional possibility – Buy a license and make. With high technological complexity and the availability of analogues in the world markets the preferred option is Buy. Although there is a variety of issues related to the choice of supplier and contract options. At the same time the possibility of creating a domestic counterpart is not rejected, and can be implemented in parallel with the procurement of imported products for a certain period of time.

If there is a patent protection in Russia, it is reasonable to assume the existence of a foreign patent. In this case, there are less alternatives: if the markets have available analogues, it is advisable to purchase them (Buy), otherwise there is an option of buying a license and option – Create new, possible in the case of high and low technological complexity. This option is the most difficult to be implemented, as it implies the creation of new production, from the stage of development work. It occurs as and when the product is not protected by patents of Russia in case of unavailability of analogues in the world markets.

Patent search for analogues

A patent search can be performed with the assistance of information from national patent offices or international patent resources, for example, Questel-Orbit, Thomson Innovation, etc. [1,2]. In practice, it is usually necessary to use all available sources of information, as the international patent resources allow fast search, sufficient to get an overall picture of patenting in the area of interest, but do not give an adequate idea of many patent holders because of distortion of names and frequent renaming. The first steps of the patent studies typically involve search for patents on the product imported by the name of the patent owner, if there is no accurate information on the availability and patent numbers. It should be borne in mind that the patent owner name can be different from the name of the manufacturer and the supplier of the product.

Patents of alleged patent holders found in international patent resources should be checked in the national patent offices. Patent protection may extend to certain parts of the product or the materials from which it is made. In such cases, it makes sense to carry out a series of searches in the international patent resources on the main functional and design features of the product to see what decisions and who patents in the field of art under consideration.

Table 1

Information about the company GAMMA SAS

Date of foundation, country	1948, France
Data of financial accounting	absent

The first step is to establish the existence of patent protection on the territory of the Russian Federation. If it does not exist in relation to the object in question, the results of this search allow us to determine the class of similar technical solutions protected by Russian patents and to identify patent holders. In the next phase it is advisable to perform a patent search on the main design and functional features of products without limitation to the area of protection, to identify the world's leaders.

Patent research results provide valuable information for marketing and financial analysis with the assistance of Russian and international information resources on financial statements and economic indicators. In particular, it is possible to analyze the direction of economic activity of identified patent leaders in Russia and in the world and to draw conclusions about the likelihood of interaction with them as suppliers, licensors and / or industrial partners. In addition, analysis of production and economic performance of Russian companies allows to evaluate the prospects of production of desired products on them.

In addition to possible producers the patent search results provide information about the inventors and institutional organizations-developers of new technical solutions, which is important when you select the option Create new (product) in Pic. 1. The main stages of the proposed methods of analysis are described below with reference to the specific problem at import substitution.

Example of substitution possibilities research

Let's consider the main stages of the developed method of technical and economic analysis by the example of the problems that arose for the manufacturers of aviation and automotive equipment as a result of termination of contracts with the French company GAMMA SAS for the supply of elastomer shock absorbers to protect the electronic equipment of vehicles.

The shock absorber SEA 5A (Pic. 2), produced by the company GAMMA SAS is made of elastic material and covered from opposite sides with a metal frame. The elastomer part is made from high quality silicone and fror-silicone rubber. The official website of the manufacturer specifies the following characteristics of a given series of shock absorbers:

- *shock absorbers operate in compression, tensile and shear;*
- *oscillation amplitude is up to ± 1,5 mm, the natural frequency is from 10 Hz;*
- *load range from 0,5 to 15 kg;*
- *standard embodiment of silicone;*
- *possible temperature for operation: from –55 to +150°C;*
- *shock absorber can damp dynamic loads with force coefficient of less than 4 at any surface;*
- *low natural frequency of oscillations allows the use of shock absorbers for helicopters.*

In the shock absorber as a damping element a resilient plastic – elastomer is applied. Such a shock absorber is more reliable, but has the temperature dependence – at a low temperature the elastomer

Table 2

Information about the company EFFBE

Date of foundation, country	1949, France
Information about the company	The company specializes in the production of (http://www.effbe-diaphragm.com/en/): • rubber-textile membrane fabric with high resistance to mechanical and chemical stress. The membrane is made of high quality rubber. • produces molded rubber products that are used in the production of anti-vibration equipment. • produces elastomeric spring. (Two types of elastomers: EFFBE295 – on the basis of chloroprene rubber and EFFBE URELAST – based on enriched polyurethane.
M&A	Since 2000 Effbe company is a part of production group of firms WOCO Gmbh & Co
Financial indicators (TR)	Revenue – 37 mln US dollars (2010), 36 mln US dollars (2012) Net income 3 mln US dollars (2010) Total assets – 23 mln US dollars (2010)

freezes and begins to operate differently. In this regard, the patent study material should be further carried out.

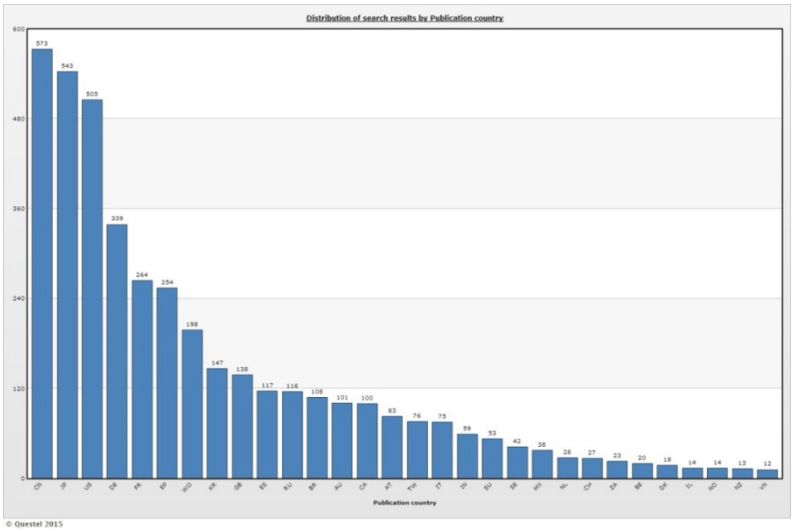
Shock absorbers of GAMMA SAS are fault tolerant and are primarily designed to provide effective vibration insulation of electronic devices, communications, navigation, various displays (shock absorbers are fixed on the dash board of aircraft, marine vessels, all-terrain vehicles and dampen fluctuations that occur during the movement); electronic circuits and small electronic devices with a high natural frequency; flight control systems, orientation and stabilization systems, weapons systems, inertial systems, and heading.

In this case the situation requires from manufacturers to take urgent decisions on replacement of such products, because without them, the products cannot pass tests and be transferred to the buyers. The complexity of the products is low, so the study of branches of the tree in Pic. 1 corresponding to such a situation leads to the option Make (analog, copy), if the product is not protected by RF patent. That is at the first stage of the study it is advisable to search for patents, by which a shock absorber can be protected, if such information is not available in the technical documentation prepared by the manufacturer from the supplier. When the number of patents are known and have not expired, then the best solution is Buy (product) from a new supplier, subject to the availability on the world markets. If it is impossible to find a new supplier, it is advisable to Buy a license to manufacture or Create new (private) product. This option corresponds to a high complexity in Pic. 1 and option Buy a license – low that, generally speaking, is conditional, because both of them can be viewed at any complexity, as their position in Pic. 1 corresponds to the case where the acquisition of licenses for production of complex products is not meaningful due to the impossibility of organizing such production in Russia in the foreseeable future.

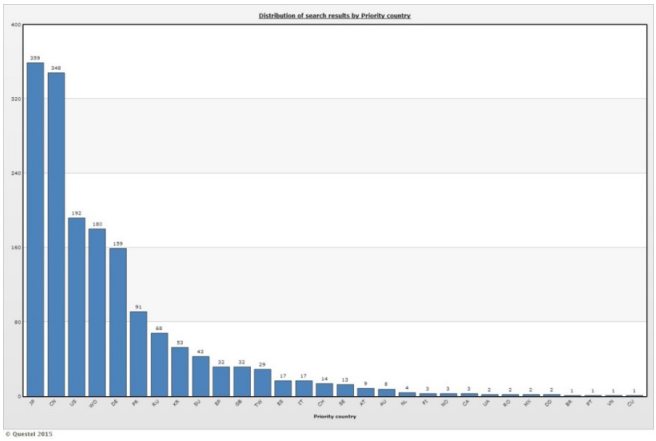
Search for patents by the right holder name

In this example, information on patents for supplied elastomer (rubber) shock absorbers was absent, so the necessary action is to search for patents on the specified device in the territory of the Russian Federation. It is reasonable to start with a search for patents by the name of the supplier, it should be borne in mind that merger, acquisition and renaming of companies occur constantly in the global market.

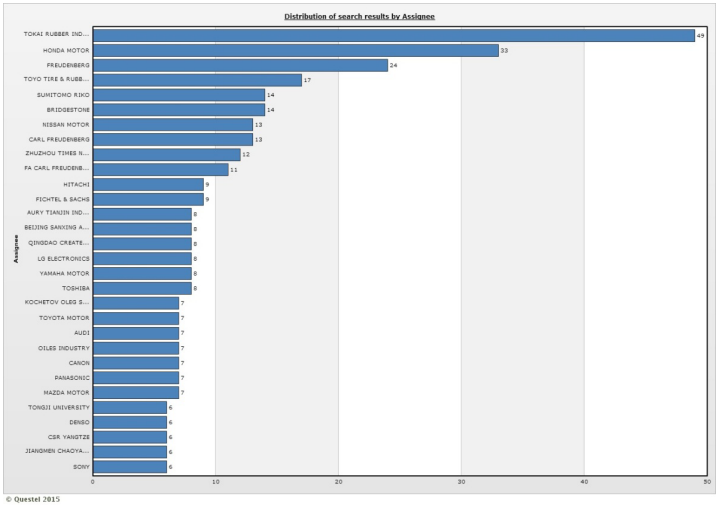
GAMMA SAS company was founded in 1948 in France. To date, it has many years of experience in the application of its own know-how in the development and production of anti-vibration and vibration-damping shock absorbers for military and civil equipment. Due to the high quality of its products the company is involved in numerous international projects.



Pic. 3. Distribution of patents by publication countries (http://seves.ucoz.net/).



Pic. 4. Distribution of patents by priority countries (http://seves.ucoz.net/).



Pic. 5. The leading patent holders (http://seves.ucoz.net/).

In 1993, according to Thomson Reuters [3], GAMMA SAS was acquired by EFFBE. In 2000, it became a part of WOCO group (Germany). In the early 1990s EFFBE began serial deliveries of its products to the Russian market. Now in Russia there are more than 30 regular consumers of its products in various industries. It is noteworthy that, after 90ies the number of domestic producers of elastomeric shock absorbers decreased steadily [4], i.e., the domestic market was given to EFFBE and other foreign firms. Data on companies EFFBE and WOCO group [5] are shown in Tables 1 and 2.

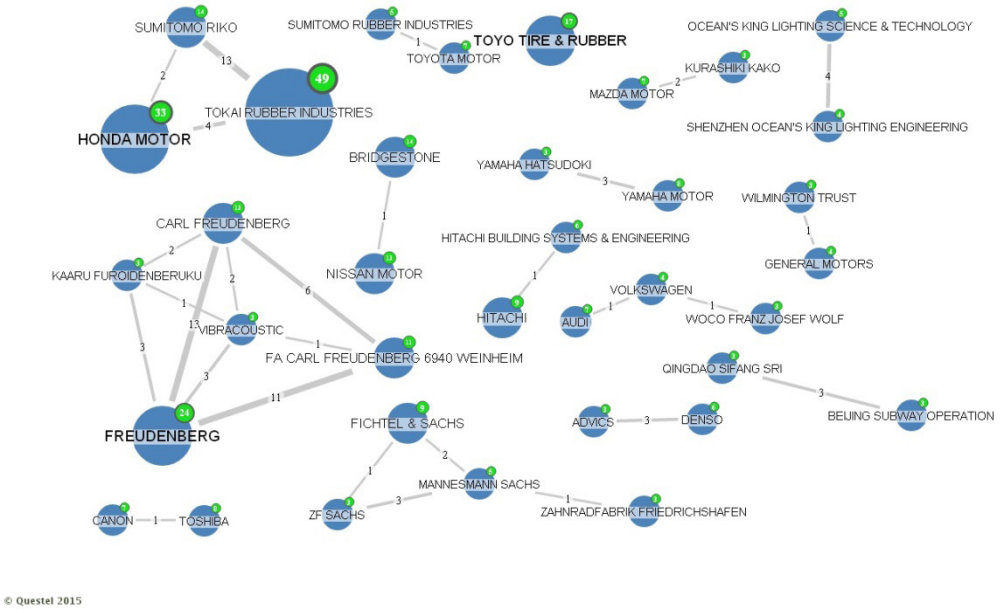
Patent search by the name of the right holder was conducted on all known names (GAMMA SAS, EFFBE, WOCO Group) and gave results, indicating that they have no Russian patents. This conclusion is based on research in the international patent resources and data base of Rospatent [6]. Therefore, further steps of the study will be determined by the top part of the tree in Pic. 1. Lack of patents by the supplier does not give full confidence in the fact that they are absent. If it is decided to Make the domestic analogue, it is necessary to clarify the idea what and by whom is patented in the art under consideration.

Search by functional and design features

The main function of a shock absorber is vibration isolation; basic element of the structure is an elastic rubber. Let's search for patents that contain these characters in the title and description of the invention. On 27.06 2015 the query on these features in Questel-Orbit gave 1436 documents, almost half of them were acting (47,5%). The average number of filed patent applications from 1990 to 2015 grew about four times (from 20 to 80). Distribution of patent documents for the publication countries and priority countries is shown in Pic. 3, 4. According to the number of patent publications the first place is occupied by China (573), followed by Japan (542) and the USA (505). The second echelon of leaders – European countries: Germany with 339 patents and France with 264. In Russia 116 patent documents with the desired features are published.

Distribution of patent documents by publication countries and priority countries differ. The first place in the number of initial applications is occupied by Japan (66,1% of all published), slightly ahead of China (60,7%). The USA, Germany and France have more than double backlog of Asian leaders in the number of priority applications, and also have a smaller share of the priority applications in the total number of patent publications (USA – 38%, Germany – 46,9%, France – 34,5%). This evidences particularly mass movement of production facilities to China and the concomitant rapid growth of patenting rates in this country, and that the US and European patent holders may give preference to international patent protection (WO, EP). More accurate conclusions can be made after a detailed analysis of the patent holders.

The analysis of the level of capitalization of companies in the industry «Car parts» has shown that



Pic. 6. The graph of cooperation of patent holders (http://seves.ucoz.net/).

the first place belongs to the European countries with the absolute leadership of Germany, followed by Japan, China and the United States. The number of companies in Europe is much less.

Comparison of rankings of capitalization and patent activity led to the conclusion that there is no direct link between them; patent leaders (in this case the countries) occupy high positions in the economic rankings, but economic leaders may have a low patent activity. It turns out that in the industry high patent activity of the subjects does not provide economic leadership in the world markets.

The leading patent holders in the study sample are shown in Pic. 5, where it is possible to see the famous Japanese, European and American companies, as well as lesser-known Chinese representatives. The only representative of Russia in the top 30 is the inventor O. S. Kochetov.

The graph of cooperation of patent holders in Pic. 6 shows which companies co-patent their developments. The numbers on the arcs correspond to the number of joint patents of patent holders. For example, Honda Motor has them in the field of vibration isolation with known chemical companies Sumitomo Riko and Tokai Rubber Industries, Toyota Motors – with Sumitomo Riko, etc. Such patents describe likely shock absorbers with rubber elastic elements designed for cars. The sought-for French firm (EFFBE, GAMMA) in the test sample is not determined, and representatives of WOCO Group are presented with a joint patent with Audi, Volkswagen and WOCO Franz Josef Wolf.

Ten leading groups of International Patent Classification (IPC) in the study sample are presented in Table 3 and Pic. 7 shows the «cloud of concepts» – key words with the frequency of their occurrence in

Table 3

Leading groups of IPC

Group code	Group name	Number of documents
F16F-015	Vibration damping in systems	170
F16F-009	Springs, dampers, shock absorbers, that use a liquid or gas as an absorbing medium for amortization	128
F16F-013	Devices, including elastic elements of non-hydraulic type, as well as dampers for vibration damping, shock absorbers or hydraulic shock absorbers	124
F16F-001	Springs (hydraulic and pneumatic)	108
F16F-007	Dampers for vibration damping; shock absorbers	72
B60K-005	Location or installation of internal combustion power plants or jet-propulsion	62
B60G-015	Elastic suspension, different in location, layout or types of shock absorbers, combined with dampers, for example, of a telescopic type	53
B60G-011	Elastic suspension, different in location, layout or type of shock absorbers	51
F16F-003	Spring devices, composed of several springs, for example, to get the desired characteristic of elasticity	44
B61F-005	Structural elements of railway bogies	44

Distribution of search results by Concepts

Elastic rubber (151) | Shock absorber (140) | Damping (120) | Vibration (237) | Vibration isolation (55) | Vibration damping (62) | Elastic body (57) | Damper (72) | Engine mount (34) | Vehicle body (76) | Elastic material (62) | Vulcanization (54) | Vibration isolator (28) | Elastic member (54) | Rubber elastic (20) | Elastic deformation (60) | Resilient rubber (35) | High frequency vibration (20) | Elastic rubber member (16) | Vibration input (20) | Equilibrium chamber (15) | Shock (70) | Rubber elastic material (18) | Vibration frequency (38) | Vibration damper (23) | Non compressible fluid (17) | Damping property (25) | Vibration transmission (28) | Fluid filled vibration (11) | Elasticity (67) | Damping effect (21) | Orifice passage (17) | Vibration amplitude (31) | Pressure receiving chamber (11) | Damping element (24) | Axial direction (100) | Statement vibration proof (10) | Rubber material (27) | Spring constant (21) | Low frequency vibration (13) | Damping fluid (16) | Shock absorption (21) | Idling vibration (11) | Piston rod (51) | Fluid chamber (31) | Wheel suspension (18) | Vibration proof (16) | Flexible rubber (18) | Rubber member (14) | Rubber (25) | Rubber layer (22) | Elastic element (27) | Hydraulic shock absorber (14) | Elastomer (58) | Engine vibration (17) | Hydraulic damper (14) | Vibration absorbing (16) | Partition member (19) | Damping force (18) | Circumferential surface (40) | Elastic (35) | Automobile suspension (11) | Riding comfort (13) | Damping material (14) | Circumferential direction (53) | Outer peripheral (47) | Damping action (11) | Elastomeric material (35) | Mounting member (30) | Damping performance (10) | Car body (25) | Spring element (28) | Suspension (44) | Spring rigidity (10) | Resonance (43) |

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Pic. 7. Cloud of concepts (http://seves.ucoz.net/).

Pic. 8. The patent landscape in the field of elastic vibration isolation devices (http://seves.ucoz.net/).

patent documents of the sample. Such information indicates the relevance of the found documents according to the query, but in order to understand whether there are patents among them that are close to the product in question, it is necessary to analyze the texts of patent documents. Teh analysis carried out by an expert in the art of vibration-proof equipment shows that in the considered sample patents have very little resemblance to the specified device. This is due to the simplicity of the latter and, consequently, low patentability, as the solution is standard [7], and the novelty can be possessed by material, of which the elastic element is made.

Patent landscape of studied art field is shown in Pic. 8 as a map ThemeScape that allows to select classes of patent documents most similar in occurrence of concepts. On the map it is possible to see the class Damping-Elastic Body-Vibration damping, containing 57 documents, to the greatest extent corresponding to the query. It can also be noted that the technical field, we are interested in, is characterized by a low patent activity when compared to some others, which are on the map (Engine, Magnet Rotor Electrical, etc.).

Elastomeric shock absorbers are a special class of devices, as closely related to the materials used, and hence patent subclasses from the section C (chemistry), in particular C08L – the composition of high molecular compounds (based on polymerizable monomers). At the same time, most complex inventions in the field of vibration protection do not fall here, because the improvement of these devices involves the use of hydraulic, pneumatic, electro-pneumatic, hydraulic, and other dampers, magnetic fluids and engineering solutions of a combined character.

The quality of the inventions described in the patents is taken to be assessed by their citation. The analysis of citation of patents by elastomeric dampers revealed the most reputable producers (developers) of materials (Tokai Rubber Industry, Freudenberg) and devices (Porche, Honda Motor).

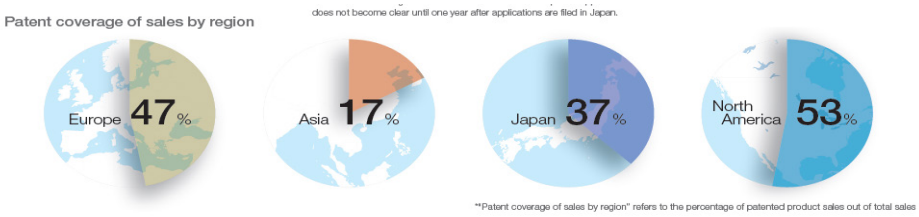
Analysis of activity of leaders

As a result, patent research revealed companies that develop, patent and produce the devices of a specified class, so it is advisable to analyze their economic performance. Patent leaders are Japanese companies Tokai Rubber Industry, Sumitomo Riko, Honda Motor and the German company Freudenberg SA.

Table 4 provides information on Tokai Rubber Industry and Sumitomo Riko, which are now merged [8]. The company Sumitomo Rubber Industry, a member of the industrial group Sumitomo Riko, over the past five years, twice fell into the top 100 global innovators, determined by Thomson Reuters according to patent resource Thomson Innovations [9]. The Group has over 80 subsidiaries, many of which are foreign representatives, and supplies its products all over the world, providing its patent protection, which is demonstrated in Pic. 9.

Financial indicators show an innovative company profile, which can certainly be considered as a potential supplier of the right shock absorber.

Table 5 shows a summary of the transnational industrial group Freudenberg [10], which has offices



Pic. 9. Patent protection of exported products by regions (http://seves.ucoz.net/).

Table 4

Information about the company Tokai Rubber Industry

Date of foundation, country		1929, Japan	
Name change		Since 2014 is a part of Sumitomo Riko Group	
Directions of activity		• production of rubber, polymers and flexible materials for shock absorbers; • manufacture of various rubber and plastic parts for automobiles; • manufacture of electronic equipment.	
Financial indicators (bln yen)		2013 FY (the tax period from 01.04.2013 to 31.03.2014)	2014 FY
	Total assets	383.005	406.777
	Intangible assets	34.326 (9%)	26.39 (6,5%)
	Revenue	369.093	400.93
	Net profit	4.076 (1,1%)	4.429 (1,1%)
	Costs of R&D	11.673 (3,16%)	12.821 (3,2%)

Table 5

Information about Freudenberg group

Date of foundation, country		1870, Germany	
Information about the company		Freudenberg group designs and manufactures filters, seals, technological components for vibration control, non-woven materials, chemical products for surface treatment, lubricants, medical and mehatronic products. The product range includes thousands of titles in 30 market segments. The group consists of almost 500 companies in 57 countries, employing more than 30000 employees.	
Financial indicators (mln euro)		2013	2014
	Total assets	5872.6	6666.5
	Intangible assets	786.7 (13,4%)	860.6 (12,9%)
	Revenue	5646.1	5982.3
	Net profit	398.8 (7,0%)	477.8 (8,0%)
	Costs of R&D	270.3 (4,8%)	246.3 (4,1%)

in Russia and can be considered as a potential supplier of elastomeric dampers.

Authoritative patents for devices of this class are also owned by Honda Motor and Porsche.

Leaders of the industry, who are not patent-leaders, may hold high positions in the market, which is confirmed by the ranking of countries in terms of capitalization of companies in the industry «Spare parts of cars». Therefore, along with the patent studies it is necessary to conduct also marketing studies. As a result of the market analysis of elastomeric dampers the following potential suppliers of the required products were identified:

• The company Hutchinson (France), which is included in the Total group that brings together nearly 100 companies. The main activities – development and production of new materials for protection against noise and vibration, thermal insulation, production of insulation materials, seals, hydraulic systems, etc.

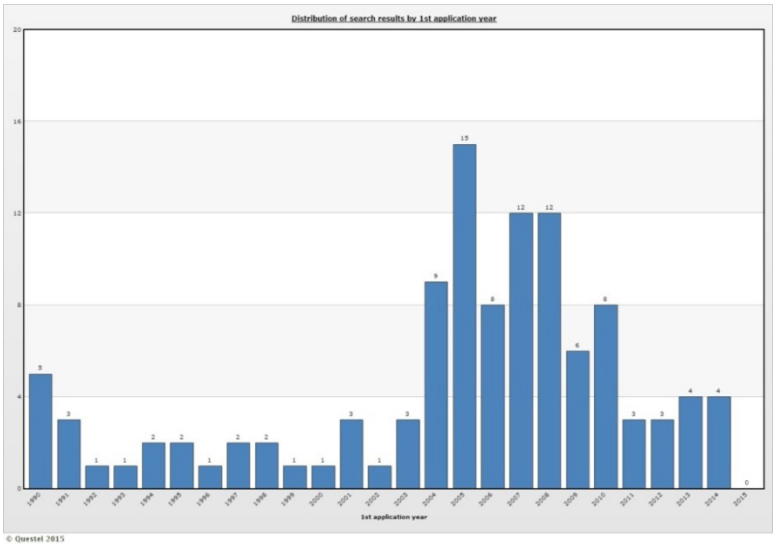
• Transnational corporation LORD (USA) with a wide range of products, consisting of elastomeric shock absorbers for aviation.

Possibilities to purchase a license

Purchase of a license for production in Russia is especially important in the event that a patentee has a Russian patent, and therefore it makes sense to carry out a detailed analysis of Russian patents from the described sample. From 1436 documents only 116 are published on the territory of the Russian Federation; their distribution by year of filing the application is shown in Pic. 10, where it can be seen that the publication peak falls on the period from 2004 to 2010.

Analysis of the distribution of patent documents by the country of publication and country of priority leads to the conclusion that in this field more than 40% of Russian patents are owned by foreign right holders. However, the analysis of that resource is complicated by the problem of resource names in international databases. Leading patent holders are shown in Table 6, where we can see foreign companies, Russian enterprises, universities and inventors directly. It should be noted that the leaders in the considered art shown in Pic. 5, 6, practically do not patent their inventions in Russia.

The results of the analysis of Russian patents of foreign patent holders provide a basis for decisions



Pic. 10. Distribution of Russian patents by year of publication of the first application (http://seves.ucoz.net/).

Name of a patent holder	Quantity
KOCHETOV OLEG SAVEL'EVICH	7
VORONEZH STATE UNIVERSITY OF ENGINEERING TECHNOLOGIES	3
FEDERALNOE GUP NPP PROGRESS FGUP NPP PROGRESS	2
OOO ATR KHOLDING	2
AQUATIC	2
EIFELER MASCHINENBAU	2
GATES	2
GATES MECTROL	2
WILMINGTON TRUST	2
LANXESS	2
VOENNO MORSKAJA AKADEMIJA IM. ADMIRALA N. G. KUZNETSOVA	2
KHODAKOVA TATJANA DMITRIEVNA	1
NATIONAL RESEARCH UNIVERSITY – MPEI	1
KLEIN IBERICA	1
OILES INDUSTRY	1
MAN TRUCK & BUS	1
MANCA STOCK	1
GOSUDARSTVENNOE OBRAZOVATELNOE UCHREZHDENIE VYSSHEGO PROFESSIONALNOGO OBRAZOVANIJA MIET	1
DO PLANT OF MINE RESCUE EQUIPMENT OPEN JOINT STOCK	1
LA NACION MINISTERIO DE DEFENSA FUERZA AEREA COLOMBIANA	1
LG ELECTRONICS	1
TOYO TIRE & RUBBER	1
GERRESHEIMER REGENSBURG	1
MAKITA	1
SHAPE	1

Pic. 11. Leading holders of Russian patents (based on a screenshot).

about the appropriateness of acquisition of licenses for the product. The question of the existence of a patent on an elastic material of a shock absorber requires a separate study and is not affected.

The information in Table 6 demonstrates, among other things, some features of patenting in Russia, in particular, the prevalence among patent holders of individuals and institutions of higher education over the patent holders – manufacturers of products.

The possibility of organizing production

The studies provide information on Russian inventors and companies with patents in the studied art. The greatest interest among right holders amounts to organizations with production capabilities.

Table 6

Brief information about LLC «ATR-Holding»

Name, adress	LLC «ATR-Holding», Saratov region, Balakovo, Sadovaya street, 119/1
Manufactured products	• Manufacture of spare parts and belongings of cars and their engines • Manufacture of rubber and plastic products • Manufacture of other rubber products
Financial indicators	Revenue – 157 mln rubles (2013), 160 mln rubles (2012) Fixed assets – 16,5 mln rubles (2013), 17,6 mln rubles (2012) Current assets – 38,8 mln rubles (2013), 29,4 mln rubles (2012) Stocks – 19,7 mln rubles (2013), 19,0 mln rubles (2012)

Table 7

Brief information about FSUE «Progress»

Name, address	FSUE SPE «Progress», Omsk region, Omsk, 5-ya Kordnaya, 4
Manufactured products	• Molded rubber products • Shock absorbers rubber-metal plated ARP-150 (for drilling platforms) • Conveyors, feeders, transporters • Production of tires, cameras • Production of other rubber products.
Some financial indicators	Revenue – 497 mln rubles (2013), 420 mln rubles (2012) Fixed assets – 298,5 mln rubles (2013), 249,9 mln rubles (2012) Current assets – 1477 mln rubles (2013), 404 mln rubles (2012) Stocks – 339,1 mln rubles (2013), 136,0 mln rubles (2012)

In Pic. 11, we can see the company FSUE «NPO Progress» and LLC «ATP-Holding», which are useful to be analyzed as both potential producers of relevant products. Information about them obtained from the database SPARK [11], is shown in Tables 6, 7 and suggests that two companies could be considered as potential producers, but their patents and manufactured products are substantially different from the imported device, so for decision-making more complete information and negotiations are required.

Patents of individuals and universities can be useful when selecting the option Create new (product) in Pic. 1.

Databases of financial accounting of Russian companies [4, 11] allow us to find manufacturers of shock absorbers, which either have not patented their development, or are not included in the sample under study for various reasons. This search allowed to form a very broad list of possible manufacturers, which requires clarification by means of negotiations, analysis of manufactured products and patent activity.

The studies lead to the conclusion that the production of the desired product in Russia is possible.

Conclusion. *Extraordinary situations, that require urgent decisions, often occur in the economy. It is known that theoretical and statistical models in such cases do not work, so these are usually the leaders of enterprises, who are forced to make decisions without any scientific support, using only their own experience and intuition. This is difficult under high uncertainty. Reducing its extent is necessary and possible through the involvement and analysis of empirical data from available sources, which include patent databases and financial information.*

Application of the method proposed in the article provides a systematic approach to the development of managerial decisions in difficult situations, and can significantly reduce the degree of uncertainty, taking into account various aspects of decisions, generate alternative solutions, obtain quantitative data for evaluation of the options under consideration.

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Article received 27.06.2016, accepted 26.08.2016.