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IMPACT OF COVID-19 ON THE FORMATION OF STRATEGIC ALLIANCES OF PHARMACEUTICAL COMPANIES IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT (ON THE EXAMPLE OF EU AND RUSSIAN MARKETS)

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ABSTRACT

At the present stage of development of the pharmaceutical market, strategic alliances are beginning to play an important role, allowing optimizing R&D costs, achieving sustainable development goals and ensuring optimal access to foreign markets, which is relevant in the context of the COVID-19 pandemic.

The purpose of this article is to identify the possible impact of various factors on the formation of strategic alliances, including the impact of COVID-19 in the context of sustainable development. To achieve this goal, the global and Russian pharmaceutical markets were analyzed, trends in the formation and development of strategic alliances, including those influenced by COVID-19, were identified, trends in the development of the global and Russian pharmaceutical markets until 2026 were identified, and a model of consumer choice between original medicines and generics, which is especially important in emerging markets, including Russia, was developed as well as developed metrics for the sustainable development of strategic alliances.

It is assumed that at the moment there are objective prerequisites for increasing the growth of the number of strategic alliances and intensifying the intensity of their formation, influenced by such a global challenge as the COVID-19 pandemic. At the same time, for a strategic alliance, an important element of education is the choice of the most optimal and effective choice of the form of implementation of the alliance, including in the context of its sustainable development. To test this hypothesis, authors analyzed publicly available documents, including statistical data on changes in the indicators of the pharmaceutical market both on the international and Russian markets.

In general, it was proved that the COVID-19 pandemic at the present stage of the pharmaceutical market development gave a contradictory result on the process of forming and developing strategic alliances in the pharmaceutical industry. On the one hand, such a global challenge as a pandemic is pushing companies to pool resources for the fastest possible development and production of vaccines against coronavirus and other essential medicines. On the other hand, in the conditions when the pharmaceutical market in the world is seriously consolidated and represents a configuration of 4-5 largest transnational corporations, the competition has significantly increased and become even fiercer. The global COVID-19 pandemic has opened a

"window of opportunity" in this market, the market itself has become one of the fastest growing in the world, therefore, many companies are striving to independently raise their market share, to secure significant positions, especially in the promising segments that have opened. Therefore, the desire and motivation to form strategic alliances in such a market is weakening. The complex geopolitical situation in the world also influences this process.

As a result, strategic alliances retain their importance in modern conditions, but rather as an auxiliary tool of corporate strategy closely related to the national and geopolitical characteristics of the functioning of pharmaceutical companies. At the same time, the significance of the geopolitical factor is increasing in the context of the existing trend of the "block" configuration of world development.

Keywords: Pharmaceutical Market, Strategic Alliances, Generics, Pharmaceuticals, Sustainable Development, COVID-19, Responsible Consumption and Production

INTRODUCTION

The pharmaceutical market is of great importance for world trade, both due to the significant introduction of innovations, high profitability, science intensity, and due to the impact of the COVID-19 pandemic. At the same time, the pharmaceutical industry is an important component in the formation of sustainable development not only of countries and regions, but also of the world community as a whole, since it affects all its aspects: economic, social and environmental, which means that it requires increased attention of scientists.

The industry is characterized by key players such as multinational manufacturing companies, biotechnology companies, generic-production companies, distributors, etc. All participants in the pharmaceutical market seek to organize new models of business processes, forming various strategic alliances, thereby providing competitive advantages.

The world pharmaceutical market is one of the most consolidated, with 10 largest transnational companies leading it (Pharmaceutical market worldwide):

1. Roche (Switzerland)
2. Novartis (Switzerland)
3. Pfizer (U.S.)
4. Merck & Co. (U.S.)
5. Bristol Myers Squibb (U.S.)
6. Johnson & Johnson (U.S)
7. Sanofi (France)
8. AbbVie (U.S.)
9. GlaxoSmithKline (UK)
10. Takeda (Japan)

In the early 2000s, the global pharmaceutical market showed an annual growth rate in sales; however, starting in 2009, the industry began to be characterized by certain changes under the influence of the global economic crisis, and then the COVID-19 pandemic. At the same time, the shares of the pharmaceutical company are rapidly growing on the US and EU exchanges, the largest increase are shown by manufacturers of generics and biotechnologies, and the largest growth is shown by companies from the US and the EU (ITRE committee).

The pharmaceutical industry itself is divided into the market for prescription (Rx) and non-prescription (over-the-counter–OTC) drugs, each of which is also subdivided into the market for patented drugs and their generics (analogues). The most active prescription drug market is developing in the United States and currently accounts for about 40% of the total world market, the second and third places are taken by the EU and Japan, respectively.

The pharmaceutical market is also actively growing in emerging markets, including China, Russia, Brazil, etc., which are characterized by a high share of imported biotechnology with an

innovative component. Thus, large manufacturers of the pharmaceutical market, on the one hand, are competitors, especially in terms of development and implementation of innovations; on the other hand, companies are striving to occupy a certain niche in the market. The market has seen a linear growth in R&D implementation with stabilization of growth rates in 2025-2026. Accordingly, companies are the main players in the pharmaceutical market, are constantly looking for new opportunities and strive to improve the developments of their competitors, including through new mergers and acquisitions.

In general, the rise in prices in the pharmaceutical industry market is explained not only by the innovation component, but also by the growth in demand for drugs, which is explained by both the general aging of the population and the growth of chronic diseases. Nevertheless, the pharmaceutical market is influenced by the desire of countries to limit the growth of prices for drugs, including by setting a price band or maximum markup on the cost price, as well as the growth of the generics market and the expiration of patents for originator drugs.

During 2020, the COVID-19 pandemic has caused a significant impact on the development of biotechnology in the world, and in Russia, in particular. The need to find an effective vaccine and effective drugs has led to a high level of collaboration, *i.e.*, strategic alliances in the development and production of biotechnology, which led to the growth of their shares on world exchanges. At the same time, a feature of 2020 was that transactions that previously took several years were carried out over several months.

For example, Vir Biotechnology, which discovered two types of antibodies to the spike protein of the COVID-19 virus, has entered into deals with other companies Wuxi, Alnylam, Xencor, NIH and Biogen in the development of antibodies, RNA therapies and vaccines, and the latest deal with Glaxosmithkline concerned the two leading MAbs against the spike protein VIR-7831 and VIR-7832. Recent developments in the field of COVID-19 have made Vir Biotechnology a leading player in the biotechnology market, which in turn led to a 3-fold increase in the company's shares by the end of 2020, and the market capitalization reached 3.5 billion US dollars (Mega Trends). During 2020, strategic alliances were formed between X biotech and Bio bridge, as well as Amgen and Adaptive, to seek neutralizing antibodies from COVID-19 patients in order to obtain drugs to fight the disease. The strategic alliance between Ethris & Neurimmune seeks to obtain the information needed to develop therapies for mRNA.

Modern antiviral drugs cannot cope with the global pandemic, forcing leading pharmaceutical companies to seek new drugs. However, the search for new biotechnologies is a rather high-cost activity, which is possible either through the formation of strategic alliances or with government support. Also, biotechnology is characterized by high riskiness either due to the ineffectiveness of the drug, or its rapid obsolescence.

So, at one time, after the outbreak of swine flu, the world giants Glaxo & Baxter canceled multimillion-dollar contracts, due to a decrease in the threat of the spread of this type of virus. The same situation may apply to vaccines and drugs for COVID-19. That is why global pharmaceutical companies are striving to enter into strategic alliances. Thus, strategic alliances were formed in the direction of "research on the use of antibodies": Glaxosmithkline/Vir, Glaxosmithkline/Vir, Vir/Biogen, Vir/WuXi, Eli Lilly/Abcellera. Vaccination-Dynavax/Clover, Akers/Premas, Johnson & Johnson with Beth Israel Deaconess Medical Center, Generex & Epivax, Applied DNA Sciences with Takis Biotech, Sanofi/Translate Bio, Pfizer/Biontech, Biontech/Fosun, Emergent Biosolutions/Noavax, Glaxosmithkline/Clover. Other areas: Xbiotech/Biobridge, Amgen/Adaptive Biotechnologies, Ethris/Neurimmune, Vir & Alnylam, Iktos & SRI, Immunoprecise & EVQLV, Kleo/Green Cross Labcell, Sorrento/Mabpharm.

By the beginning of the pandemic, four large international companies had objective prerequisites for the development and production of a vaccine against COVID-19, which had a significant accumulated base for the development of vaccines. These are Pfizer, which gets 90% of

vaccine sales from the pneumococcal vaccine Prevnar, Merck & Co, which makes more than half of the revenue from HIV vaccine, and Glaxosmithkline & Sanofi (Russian Pharmaceutical Market Results, 2020).

Nevertheless, despite the significant role of these companies in the global pharmaceutical industry, in reality, in the global market for COVID-19 vaccines at the beginning of 2021, the situation was significantly different. In the interview of the leading publishing house "Kommersant" "Money" magazine, Patrick Bell, an analyst of the healthcare market at the American financial and analytical company S&P Global (a subsidiary of the Standard & Poor's rating agency), assesses the situation on the global COVID-19 vaccine market as follows. He predicts that by the end of 2021, sales of the American Pfizer vaccine, developed in conjunction with the German BioNTech, will amount to about $ 15 billion (the planned production volume is about 2 billion doses). American Moderna-$ 10 billion (600 million doses) and Novavax ($ 10 billion, 1 billion doses)-will fight for second place at the end of the year. They are followed by manufacturers of easier-to-store and more affordable Russian and Chinese vaccines-Patrick Bell estimates the total sales of vaccines from the Russian Sputnik V Center named after Gamaleya and the Chinese Sinopharm this year at $ 5-10 billion. They are followed by the British-Swedish AstraZeneca ($ 2-5 billion) and the American Johnson & Johnson ($ 2-5 billion), which were somewhat delayed in completing the third part of clinical trials and obtaining licenses in the EU and the USA. Another Chinese manufacturer, Sinovac ($ 1-2 billion), closes the group of leaders. ("Money" Appendix No. 3 of February 25, 2021, p. 20)

It can be stated that out of 8 world-class COVID-19 vaccine manufacturers, two operate within the framework of international strategic alliances, and three manufacturers represent China and Russia, which have never before been among the developers able to rise to the level of recognized giants of the pharmaceutical market such as Pfizer.

These results reflect broader trends related to the specifics of the global pharmaceutical market, which have been traced over the past 7-10 years.

Problem Set Up

The growth in the global pharmaceutical market in recent years, especially accelerated after the outbreak of the COVID-19 pandemic, has led manufacturers to use aggressive or selective strategies to enter new markets with drug pricing adjustments. Companies from the United States are actively paying attention to the countries of the Asia-Pacific region, which enter this region within the framework of the Transatlantic and Trans-Pacific Partnership. And the unification of pharmaceutical standards with the EU will allow American companies to more actively enter the markets of European countries.

Global pharmaceutical market players are actively investing in emerging markets that show stable sales growth, for example, the markets of the CIS countries, BRICS, Africa, Southeast Asia, etc. At the same time, the conduct of its activities in such markets is carried out by licensing the production, production and sale of generics, the production of vaccines against diseases characteristic of a particular region. However, regional manufacturers account for a significant share of production, especially of generics.

Thus, world pharmaceutical companies usually use two directions in their activities:

1. Development of biotechnology and innovation in drug development for complex diseases in developed markets to maintain its position.
2. Active growth in emerging markets through methods such as generic production, acquisitions, mergers and/or acquisitions with national manufacturing companies, expert advice, the use of a "service provider" model, *i.e.,* provision of services and services to local manufacturers and consumers.

International pharmaceutical companies are actively using the cluster system for the development of such a capital-intensive and innovative business as pharmaceuticals. For example, in the United States, such clusters are-Boston and San Francisco, in the UK-London and

Cambridge, in Asia-Shanghai. International companies create their own research centers (GSK and AstraZeneca), merge with contract research centers (Pfizer with Parexel, Icon & PPD AstraZeneca with Wuxi AppTec & Pharmaron), etc. In emerging markets, in the process of activation of international pharmaceutical companies, one can expect a reduction in the number of manufacturing companies due to the formation of joint ventures, contract manufacturing alliances, and mergers and acquisitions.

In the Russian Federation, as in many developed and emerging markets, the pharmaceutical market is actively demonstrating its development. Compared to January 2020, January 2021 has grown by 6.6%. At the same time, the structure of the market itself began to change in favor of an increase in the share of expensive drugs, which amounted to 47.7%, demonstrating an increase of 5% (category “price above 500 rubles”). The average cost category ("price from 150 to 500 rubles") showed a drop to 39.3%, down 3.5%. The share of cheaper drugs "price from 50 to 150 rubles" and cheap drugs "price up to 50 rubles" also decreased to 10.2% and 2.8%, respectively.

At the same time, drugs localized in Russia accounted for 65.2% in volume terms and 45.7% in value terms. This difference in percentage is explained by the rather low cost of localized drugs, including due to the production of generics. Thus, there is an increase in the level of market attractiveness for manufacturers of localized industries focused on expensive drugs.

Unlike the EU and US markets, the Russian market is less represented by prescription drugs (36.8%) and more degree of non-prescription (63.2%), which is primarily due to the peculiarities of the regulatory and legal regulation of the pharmaceutical market.

At the beginning of 2021, the Russian pharmaceutical company “OTISPharm” began to lead in terms of sales value, while foreign companies-Bayer and Novartis. At the same time, in terms of sales in January, antiviral drugs Arbidol (1.5%) and Ingaverin (1%) and the drug for the prevention and treatment of thromboembolism and thrombosis "Ksarelto" (1%) are leading on the Russian market which could be explained by impact of the COVID-19 virus. The ratio of localized (produced on the territory of the Russian Federation) and imported drugs sold in pharmacies is shown in the Figure 1.

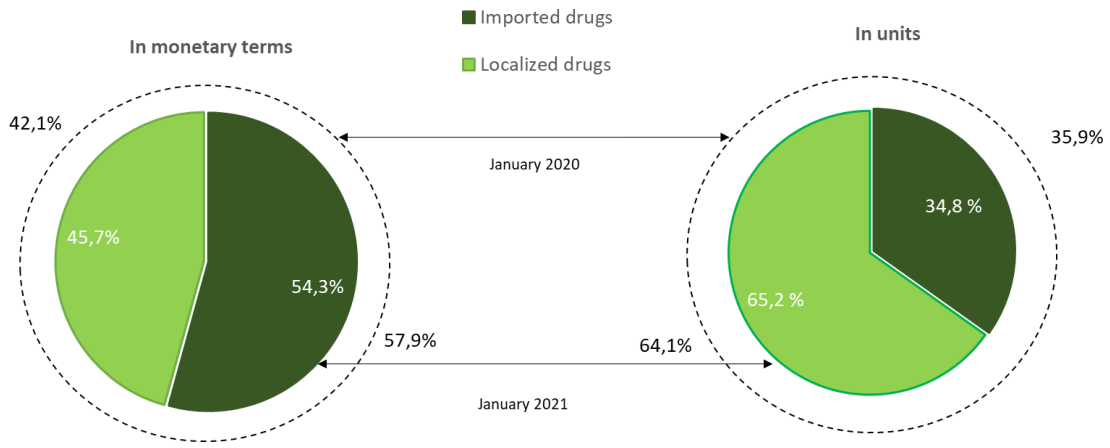

FIGURE 1
THE RATIO OF SALES VOLUMES OF IMPORTED AND LOCALIZED DRUGS (PRODUCED IN RF) IN THE COMMERCIAL PHARMACY MARKET OF RUSSIA IN JANUARY 2021

Source: «Analytical Report Russian Pharmaceutical Market Results of 2020.

Thus, the share of localized drugs increased by 3.6% in value. and by 1.1% in physical terms, the share of imported drugs decreased by 0.02% and 9.5%, respectively. At the same time, the average cost of a pack of localized drugs was 174.3 rubles in January 2021. (An increase of 21.7%), and imported-387.3 rubles. (an increase of 10.5%).

It should be noted that, traditionally for an emerging market, the share of generics significantly exceeds the share of original drugs. Their relationship is shown in the figure 2.

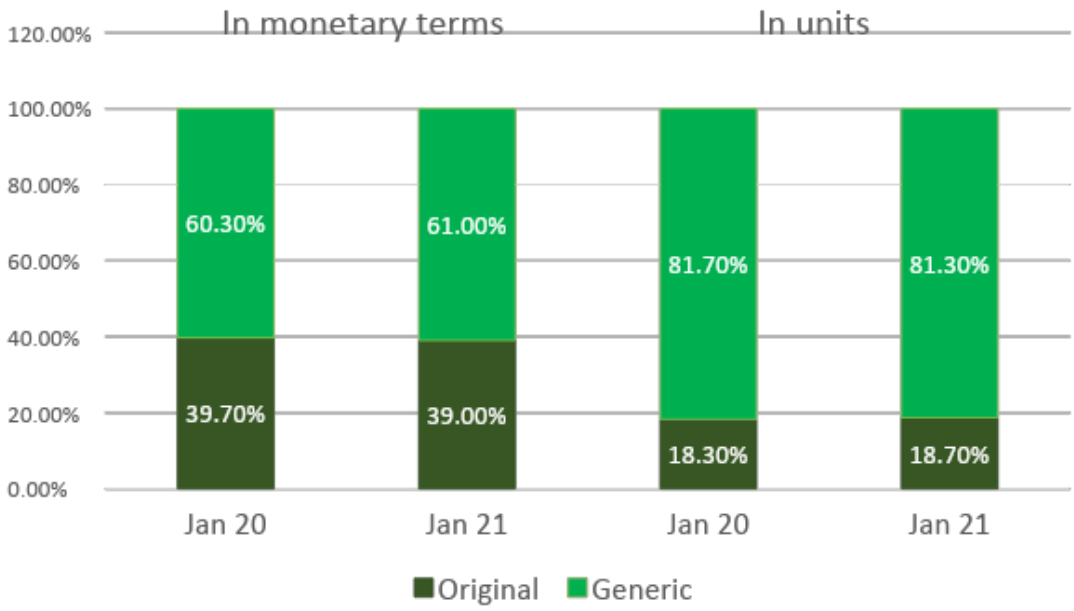

FIGURE 2
THE RATIO OF SALES OF ORIGINAL AND GENERIC DRUGS IN THE RUSSIAN PHARMACY MARKET IN JANUARY 2020-2021

Source: «Analytical Report Russian Pharmaceutical Market Results of 2020.

Such a significant gap between generics and original drugs is primarily due to the cheapness of generics and the availability of their production. About half of the sales of all generics are accounted for by “drugs affecting the digestive tract and metabolism” (share of 20.2% in the sales value), “drugs for the treatment of diseases of the nervous system” (14.9% of the sales value) and “Drugs for the treatment of diseases of the cardiovascular system” (14.9% of the total cost). The structure of original medicines also includes “drugs affecting the digestive tract and metabolism” (17% share in the ex-value), “drugs for the treatment of diseases of the cardiovascular system” (14.1% of the ex-value), and also “drugs for the treatment of diseases of the respiratory system” (11.7% of the value excluded). There is also a fairly pronounced tendency to switch from original drugs to generics in such categories as Antineoplastic and immune modulating drugs (+6.2%) and Hormonal drugs for systemic use (excluding sex hormones) (+2.9%).

Thus, we can conclude that the Russian pharmaceutical market is promising for localized drugs, including those produced on the meringue of strategic alliances, in the context of generics and expensive drugs in the categories “drugs affecting the digestive tract and metabolism" and "drugs for the treatment of diseases of the nervous system." But the global relative success of the Russian vaccine against COVID-19, the Russian Sputnik V, which for the first time allowed a Russian developer to enter the "major league" of world pharmaceutical companies developing innovative drugs of global importance, shows the process of change in this market that has begun, the strengthening of the role of local or regional centers of development and production.

Analysis of the global pharmaceutical market shows that the introduction and production of in-demand innovations is a key feature of the industry (see Figure 3).

FIGURE 3
TOTAL WORLD SPENDING ON R&D IN PHARMACEUTICALS IN 2012-2026

Source: Evaluate Pharma World Preview 2020, Outlook to 2026. July 16, 2020.

Stable R&D growth, including under the influence of COVID-19, has led to the current and projected growth of biotechnology.

Table 1
GLOBAL SALES OF PRESCRIPTION AND OTC DRUGS BY TECHNOLOGY (2012-2026)

Indicaters	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Biotechnology, %	20	21	22	23	24	26	28	29	30	31	32	33	34	35	35
Simple, %	80	79	78	77	76	74	72	71	70	69	68	67	66	65	65
Total volume, %	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Biotechnology, USD billions	149	162	174	179	197	215	242	266	284	312	344	378	416	461	505
Simple, USD billions	443	435	447	440	446	447	461	469	476	505	536	566	606	644	681
Other sales, USD billions	170	177	181	171	175	177	176	175	180	183	191	201	212	228	256
Total volume, USD billions	762	774	802	791	818	839	879	910	940	999	1071	1145	1235	1333	1432

Source: composed by authors using data of Evaluate Pharma World Preview 2020, Outlook to 2026. July 16, 2020

Thus, the share of biotechnologies in the total volume of manufactured drugs by 2026 is projected at 35% of the global sales level and at the level of 55% of the total sales of the top 100 drugs (see Figure 4)

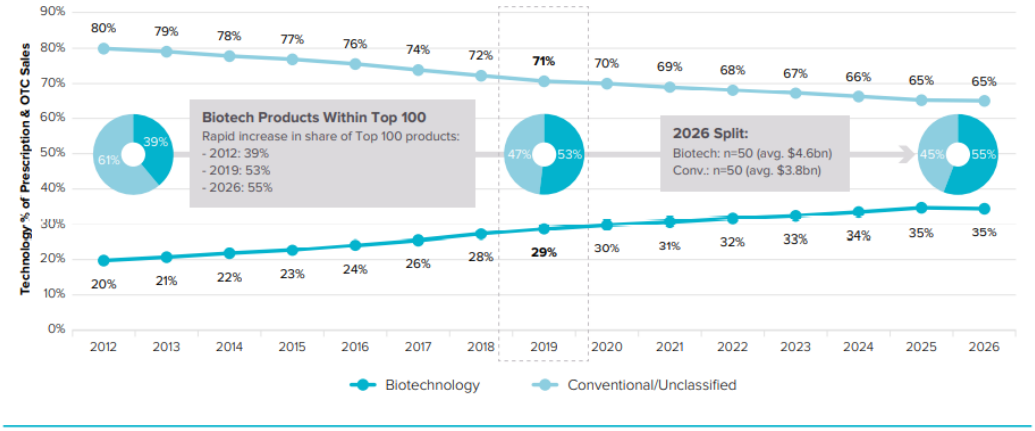

FIGURE 4
GLOBAL SALES OF PRESCRIPTION AND OTC PHARMACEUTICALS: BIOTECHNOLOGY VERSUS TRADITIONAL TECHNOLOGIES

Source: Evaluate Pharma World Preview 2020, Outlook to 2026. July 16, 2020.

Table 2
WORLDWIDE SALES OF PRESCRIPTION DRUGS FROM THE TOP 100 PRODUCTS

Technology	USD billions			%		
	2012	2019	2026	2012	2019	20026
Biotechnology	99	167	230	39	53	55
Simple	158	151	189	61	47	45
TOTAL	257	318	419	100	100	100

However, due to the high level of risk and costs, the growth rate of R&D spending is starting to decline. So, according to studies, the growth in R&D expenditures in the period from 2019 to 2026 will amount to 3.2%, and in the period from 2012 to 2019-it amounted to 4.6%, while there is a shift in emphasis from investing in the treatment of global diseases to the treatment of more highly specialized patients. Nevertheless, the share of production of conventional drugs remains significant and shows sufficient demand in the market. Moreover, the growth of generics is observed and projected, especially in the markets of developing countries, which is primarily due to economic considerations (see table 3).

Table 3
GLOBAL R&D EXPENDITURE FOR PHARMACEUTICAL AND BIOTECH COMPANIES (2012-2026)

Indicators	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
R&D spends, USD billions	136,1	138,6	144,8	149	159,4	168,4	180,6	186	187,8	195,3	201,9	211	221,1	226,7	232,5
Yearly growth %	-	1,8	4,5	2,9	7	5,6	7,3	3	0,9	4	3,4	4,5	4,8	2,5	2,6
Prescription drug, USD billions	725	735	763	756	781	802	840	872	904	963	1033	1106	1195	1293	1390
Generics, UDS billions	66	69	75	78	80	82	80	79	82	85	88	91	94	97	101

Among the most sought-after categories in the global pharmaceutical market are oncology, antidiabetic, immunosuppressive drugs, vaccines, antirheumatic drugs and antiviral drugs. At the same time, the growth rate for antirheumatic drugs is projected to decrease by 1.9% due to the entry into the market of drugs Enbrel, Remicade and Humira, the latter of which will lose its exclusivity in the United States in 2023 (see table 4).

Table 4
GLOBAL SALES OF RX AND OTC DRUGS BY AREA OF THERAPY ASSESSMENT (2019 AND 2026): 15 MAIN CATEGORIES AND TOTAL MARKET

Treatment type	Sales, USD billions			Sales, %		
	2019	2026	Change in %	2019	2026	Change in p.p.
Oncology	145,4	311,2	+11,5	16	21,7	+5,8
Anti-diabetic drugs	51	66,9	+3,9	5,6	4,7	-0,9
Immunosuppressants	24	61,3	+14,3	2,6	4,3	+1,6
Vaccines	32,5	56,1	+8,1	3,6	3,9	+0,3
Antirheumatic drugs	56,9	49,7	-1,9	6,3	3,5	-2,8
Antiviral drugs	38,8	42,9	+1,5	4,3	3	-1,3
Treatment of the senses	23,8	35,1	+5,7	2,6	2,4	-0,2
Bronchodilators	27,8	32,2	+2,1	3,1	2,3	-0,8
Dermatological preparations	13,8	32	+12,7	1,5	2,2	+0,7
Multiple sclerosis treatments	22,7	25	+1,4	2,5	1,7	-0,7
Antihypertensive drugs	23,4	22,4	-0,6	2,6	1,6	-1
Anticoagulants	21,3	22	+0,5	2,3	1,5	-0,8
Antipsychotics	11,2	21	+9,5	1,2	1,5	+0,2
Antifribrinolytics	13,4	19,7	+5,7	1,5	1,4	-0,1
Serum and gammoglobulins	11,5	19,5	+7,8	1,3	1,4	+0,1
Total prescription and over-the-counter, incl.	910	1431,5	+6,7	100	100	-
Generics	79,5	100,7	+3,4	8,7	7	-1,7
Over-the-counter drugs	38,3	41,4	+1,1	4,2	2,9	-1,3

LITERATURE REVIEW

The purpose of this review is to study the opinions of other authors on the topic. So, the pharmaceutical market is one of the most important markets and therefore it is interesting for analysis, research and forecasting. A lot of authors reviewing this topic in Russia & abroad. The main issues considered by Russian and foreign authors on the topic of pharmacology can be divided into several groups, according to the topics studied:

1. Partnership options for companies (clusters, alliances, collaborations, mergers and acquisitions)
2. Integration trends of pharmaceutical companies
3. Strategic management of the integrated entities
4. Impact of the pandemic on the pharmaceutical industry
5. Forecasting the development of the pharmaceutical industry

Both Russian and foreign authors note that the creation of a drug is a rather long and expensive process, therefore one of the solutions to this problem is the creation of various types of partnerships both between the pharmaceutical companies themselves and between all participants in the development, production and marketing of a product. Suleymankadieva, Petrov, Mitina &Tumarov (2021) in the article "Modern trends of integration processes in the pharmaceutical industry: particularities and prospects of strategic partnerships and alliances" come to the conclusion that the most popular form of integration is the purchase of companies (hereinafter

referred to as M&A) and the creation of strategic partnerships. These integration processes are most active in the pharmaceutical and biotechnological industries, which is due to the high-tech nature of production and the sufficiently dynamic development of the industry. Integration processes are an inherent part of the corporate strategy of a pharmaceutical company. The complexity of research and the invention of new drugs require joint efforts and interaction of enterprises from different sectors of the economy (Suleymankadieva et al., 2020).

The pharmaceutical market leaders are American and European companies with significant R&D budgets. It should also be noted that among all industries, the pharmaceutical industry makes the most significant investments in product development (COVID-19, 2019).

The pharmaceutical market has high growth rates, which attracts competitors, however, the old players in the pharmaceutical industry are strong enough, and so new companies enter this market mainly through innovation (Bulgakov, 2018; Biopharma, 2020).

According to colleagues' opinion, it does not exist a certain universal version of partnership, which would allow for unambiguous success and stable growth of the company, but the fact that multilateral partnerships are the way out of the crisis and, unambiguously, are working schemes when it is necessary to invent a new drug in a short time, many authors admit. Regarding the Russian pharmacology market, the authors agree that at present the Russian pharmaceutical industry is not competitive, since completely depends on imports (the share of imports is 70%). It should be noted that despite this fact, the Russian pharmaceutical industry is growing at a rapid pace, surpassing the growth of the rest of the economy as a whole, however, since 2010, the growth rate has slowed down due to the localization of foreign production. Another key problem of the Russian pharmaceutical industry is that the only significant source of innovative drugs is also the products of foreign manufacturers (Nezhnikova & Maksimchuk, 2019; Andreeva et al., 2019; Mamedyarov, 2020; Balakin & Aiginin, 2020).

The authors note that the state seeks to increase its interference in organizing the work of strategic industries and enterprises, regulates drug prices, which also affects the need creation of various types of partnerships in the pharmaceutical sector (Zvonova, 2020).

It is impossible not to note the impact of the pandemic on global supply chains, which forced companies to reconsider logistics and make the chains shorter to ensure the reliability of product delivery to the market. This will reduce profits in the short term, but will make the entire economy more reliable. Also, the pandemic may have an impact on the content of future trade agreements. In the context of the introduction of export restrictive measures, shortening supply chains is one of the principles of effective business (Yu et al., 2020; Alekanov, 2021).

The authors note the success of China in the development of the pharmaceutical industry, in connection with the measures taken, namely: the state policy of China aimed at the development of national production by liberalizing the domestic market and entering the global market, accession to the WTO and the adoption of a program for the innovative development of the pharmaceutical industry, as well as health care reform have created conditions for the expansion of the activities of foreign pharmaceutical companies in China (Klochko & Chugunova, 2019).

So, based on the analysis of the works of many authors, we believe that Russia has the potential for the development of the pharmaceutical industry by creating a partnership and we will consider this hypothesis in our article.

METHODOLOGY

The favorable environment of the global and Russian pharmaceutical markets allows predicting the positive effect of a possible strategic alliance between Russian and Hungarian pharmaceutical companies, especially for the Russian market.

To analyze a possible forecast, data from the global and Russian pharmaceutical markets were studied. The research used methods such as a systematic approach, comparative and statistical

research methods. The main research methods are such as search, systematization, evaluation and analysis of the data obtained on the main macroeconomic indicators and subsequent conclusions on the development of strategic alliances with the introduction of responsible production and consumption.

Table 5 shows the indicators of the pharmaceutical market, including sales per capita, which make it possible, using a comparative analysis, to assess the prospects for the development of the market and the favorable environment for the development of strategic alliances.

Using the linear trend formula, you can identify the trend for subsequent years:

$$Y_t=a_0+a_{1t}$$

Accordingly, the parameters of the linear trend can be calculated as follows:

$$a_0=y=\sum yn$$

$$a_1=ytt2$$

Table 5
MAIN INDICATORS OF THE GLOBAL AND RUSSIAN PHARMACEUTICAL MARKET

Indicators	2016	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F
Global pharm-market, USD billions	1108,0	1139,0	1204,8	1245,0	1310,0	1379,0	1454,0	1526,0	1597,8	1669,2
growth %	3,3	2,8	5,8	3,3	5,2	5,3	5,4	5,0	4,7	4,5
Russian pharm-market, USD billions	22,5	28,1	26,9	28,5	28,0	30,3	33,0	35,6	38,4	41,3
growth %	9,1	24,8	-4,5	6,0	-1,7	8,4	8,6	8,1	7,8	7,6
Share of Russian pfarm-market in global pharm-market, %	2,0	2,5	2,2	2,3	2,1	2,2	2,3	2,3	2,4	2,5
Average sales per capita, USD (in the TOP-ZO of global markets)	382	400	446	462	481	493	503	514	527	549
Average sales in the Russian pharmaceutical market, USD/capita	154	191	183	194	191	207	224	243	262	282
Import of pharmaceutical products, USD billion	8,9	10,8	10,6	14,1	11,9	12,8	13,6	14,4	15,2	16,0
Medicines imports, USD billion	7,0	8,4	7,8	10,2	7,8	9,2	9,7	10,2	10,6	11,1
share in imports%	78,1	77,5	74,1	72,2	65,6	72,1	71,4	70,7	70,0	69,3
growth %	2,40	20,9	-6,7	29,6	-23,2	17,9	5,4	4,9	4,6	4,4
Import of substances, USD billion	0,77	1,11	1,37	1,81	1,8	2,1	2,5	3,1	3,4	3,8
share in imports%	8,7	10,2	12,9	12,9	14,8 '	16,3	18,7	21,5	22,6	23,7
growth %	-0,6	43,4	23,4	32,5	-2,7	17,9	22,4	21,8	11,0	10,7
Import of substances into the Russian Federation, million kg	13,4	15,3	14,3	16,6	14,4	16,5	20,6	25,5	28,6	32,0
growth %		14,2	-6,5	16,1	-13,2	14,6	24,7	23,9	12,1	11,8
Import of substances/made in RF	5,7	6,4	8,4	12,6	11,0	11,8	13,1	14,6	14,8	15,0
Medicines exports, USD billion	0,422	0,459	0,496	0,524	0,570	0,649	0,765	0,888	1,015	1,150
growth %		8,7	8,0	5,7	8,7	14,0	17,8	16,1	14,2	13,3

Source: Grishunin S., Sulima M., Tegin M. Russian pharmaceutical market-Will the state help us?-M .: National rating agency.

The world pharmaceutical market from year to year, as already noted, shows growth, including an additional impetus given by the development of the COVID-19 pandemic. The Russian market also saw growth with some stabilization in 2020 and significant growth in 2021. At the same time, the main impulses, in addition to the pandemic, are the implementation of the Pharma-2030 strategy, which provides for an increase in the export of Russian medicines and stimulation of consumer demand, including through the growth of the public sector of the Russian pharmaceutical market. And the focus on the localization of foreign manufacturers on the territory of the Russian Federation, including for entering the public sector, leads to an increase in the import of substances for the production of both original medicines and generics. In the context of the growing importance of national manufacturers in general, and in Russia in particular, due to, among other things, actively pursued in many developing countries, primarily in Russia and India, the strategy of consolidating and developing leading pharmaceutical companies in such markets in the long term can be successful only within the framework of various strategic alliances.

Thus, objectively strategic alliances of European-Russian companies will have significant competitive advantages, both in the Russian market and in the global pharmaceutical market. To form a strategic alliance, it is necessary to take into account the following key elements that should be considered when building a model of a strategic alliance in the pharmaceutical market, paying respect to the active development of biotechnology and the introduction of responsible production:

- Growth rates of the pharmaceutical market (Initial setting-a);
- Gaining competitive advantages, not only through the introduction of innovative biotechnologies, but also through the production of generics, which increase their demand in the global and Russian markets (Goal-b);
- Increase the growth rates of production and sales, including through entering the public sector (Criterion-c);
- Achieving sustainable development goals at the micro level, including responsible production (Impact on sustainable development-d).

Thus, the level of competitive advantages of a strategic alliance can be described using the following functional dependence:

CA (competitive advantage)=f (a, b, c, d)

For the consumer, the choice between original drugs and generics will be described by the following model, which has a budgetary constraint.

$U(G_tDo_t) \rightarrow max$

$Pg_tG_t+P_t^{do}Do_t<I_t$

Thus,

G_t – consumption of generics for the period t

Do_t-consumption of original drugs for the period t

Pg_t – consumption price of generics for the period t

P_t^{do}-цена потребления оригинальных лекарственных препаратов за период t

I_t – budget for the consumption of original drugs and generics during the period t

$U(G_tDo_t)$-a utility function that is increasing and convex in both arguments.

The introduction of additional competitive advantages will allow the strategic alliance to use the following model:

$(P^g_tG_t+P_t^{do}Do_t)$* abcd, where the influence of each element can be taken as equal, and its weight will be determined by expert judgment.

The use of this model for a strategic alliance operating in different markets will optimize the ratio of generics and original medicines production for a specific target audience, and the opening of localized sites in the Russian Federation will allow obtaining competitive advantages in the form of entering the public procurement market.

In 2019, a study was conducted among 66 Russian and foreign manufacturers, both original medicines and generics. Of these, the annual revenue is more than 30 billion rubles had 14% of

respondents, from 10 to 30 billion rubles -18%, from 1 to 10 billion rubles -47%, and less than 1 billion rubles-21%. At the same time, representatives of Russian companies accounted for 56%, foreign companies -23%, representatives of strategic alliances -21%. As we can see, strategic alliances are comparable in scale to the sales of foreign companies themselves.

The respondents identified factors that have a positive effect on the development of the pharmaceutical market in the Russian Federation:

- Introduction of mandatory labeling of drugs -28%;
- Price preferences in public procurement -27%;
- Strengthening control -26%
- Changing the procedure for certification of medicinal products from November 29, 2019-23%.

Neutral factors included-Restriction of access to public procurement of goods produced outside the EAEU

Negative factors include:

- Introduction of a new methodology for calculating the maximum selling prices for life-saving drugs-10%
- Introduction of mandatory re-registration of the maximum selling prices for life-saving drugs-18%.

The weighted average value of the influence of factors will be 12.6%, which will increase the competitive advantage by this value. Thus, the model for the Russian market will look like this:

$U(G_tDo_t) \rightarrow max$

$(P^g_tG_t+P^{tdo}Do_t)* 1,126*abcd$

The weighted average should be calculated annually, taking into account the experts' assessment of the impact on the development of the pharmaceutical industry. A similar assessment can be carried out in other countries of the world.

To calculate the level of sustainable development of a pharmaceutical company, one can take as a basis the sustainable development metrics of the pharmaceutical industry in the Russian Federation, which should comprehensively cover the elements of sustainable development of the company, represent a system and have the ability to verify.

Depending on the key factors of sustainable development, the metrics can be grouped into the following groups:

1) Metrics of the structure of the pharmaceutical strategic alliance:
- the alliance's share in the total market sales;
- the share of the alliance's products in the total contribution of the national pharmaceutical industry of the country in the GDP;
- the share of the alliance's products in the total export of the pharmaceutical industry;
- The share of biotechnologies in the total volume of the pharmaceutical market.

2) Metrics of the productive forces of the pharmaceutical strategic alliance:
- the share of sales among localized industries;
- the degree of depreciation of the main x funds;
- availability of production capacities that meet the GMP standard or their share in the total volume of production capacities;
- share of distributors cooperating with the alliance;
- concentration factor of the presence of drugs in pharmacy segment.

3) Security metrics for the development of the pharmaceutical strategic alliance:
- the share of sales among localized industries in monetary terms;
- the share of sales among localized industries in physical terms;
- share of localized production from substances of local production;
- share of biotechnology in the total production of the alliance;
- share of alliance sales in public procurement;
- share of complaints about the effectiveness of drugs in the total volume sales of the alliance.

4) Metrics of social sustainability of the pharmaceutical strategic alliance:
- physical availability of the alliance medicines for the population;
- economic accessibility of the alliance medicines for the population;
- coverage drugs of the alliance in the state and insurance system of cost recovery.

5) Metrics of the development potential of the pharmaceutical strategic alliance:

- growth rate of the strategic alliance;
- annual volume of investments in biotechnology;
- number of drugs drugs that are in phase 1-2 clinical trials;
- the proportion of specialists in innovative specialties in the alliance.

This system of indicators will allow assessing the activities of a strategic alliance with localized production within the framework of the concept of sustainable development.

RESULTS

When creating a strategic alliance, it is important to take into account the key factors affecting the development of the pharmaceutical market:

The beginning of the implementation of the Pharma-2020 program (2011);

- Adoption of the RF Government Decree No. 102, introducing the “Third superfluous" (restricting access to public procurement of goods manufactured outside the EAEU) in relation to medical devices and pharmaceuticals (2015);
- Adoption of Federal Law No. 365, introducing measures of state support for companies investing in production in Russia:
  - offset contracts (guaranteed government procurement of products after the start of production);
  - special investment contract (SPIC) (the status of the only supplier in public procurement) (2016);
- The possibility of using electronic prescriptions and the introduction of telemedicine (2018);
- Entry into force of the RF Government Decree No. 1207, changing the pricing method for life-saving drugs (2018);
- Adoption of Federal Law No. 290 introducing new parameters for special investment contracts (SPIC 2.0) (2019);
- Introduction of mandatory labeling for drugs from the list high-cost nosology (2019);
- Maintenance of a new procedure for the certification of medicines (2019);
- Introduction of mandatory labeling for all medicines (2020);
- Introduction of online drug trade (2020);
- Devaluation of the ruble, which entails an increase in the cost of equipment and raw materials (2020)
- the impact of the COVID-19 pandemic, including a decrease in purchasing power and a shift in sales towards an increase in the level of e-commerce (2020);
- Implementation with Systems for monitoring the movement of medicines (2020);
- Introduction of a price regulation system for vital and essential drugs (2020);
- Strengthening the role of sustainable development, including through responsible production (2021).
- The structure of the Russian pharmaceutical market (see table 6).
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Table 6
THE STRUCTURE OF THE PHARMACEUTICAL MARKET OF THE RUSSIAN FEDERATION

In monetary terms				**In unit terms**			
Indicators	%	Indicators	%	Indicators	%	Indicators	%
Generic drugs	59,8	Original drugs	40,2	Generic drugs	85,5	Original drugs	14,5
Imported drugs	70	Domestic drugs	30	Imported drugs	39,5	Domestic drugs	60,5
Rx drugs	67,3	OTC drugs	32,7	Rx drugs	44,5	OTC drugs	55,6
Non-VEDs	50,8	VEDs	49,2	Non-VEDs	48,7	VEDs	51,3

In the course of the study, respondents expressed a high interest in government support, including SPIC 2.0 (49%), interest in an offset contract (42%), in public-private partnerships (38%). At the same time, already localized foreign companies on the territory of the Russian Federation express even greater interest -70% of respondents. State support of the pharmaceutical market in the form of public procurement and access to them, as well as tax incentives will allow the introduction of new biotechnologies to the market, the growth of localized production facilities, and a decrease

in import purchases. The perception of the current state of the pharmaceutical market is positively perceived by 86% of localized industries, and 50%-by manufacturers of generics.

The high share of generics and its growth allows focusing on their production to ensure profitability. At the same time, the share of domestic drugs is also increasing, both in volume and value terms. Also, during the COVID-19 pandemic, the share of sales of over-the-counter drugs increased.

At the moment, the share of exports is small, but there has been a certain increase. However, the Russian Federation still remains a net importer, since imports exceed exports by almost 13 times. At the same time, imports from the EU countries make up 79%, of which Germany accounts for 21%, France -8%, Italy -6%. Exports are mainly designed for Kazakhstan -16%, Ukraine -15% and the Republic of Belarus -13%. The only exception was the export-oriented sales strategy of Sputnik-V, which, as already noted, is capable of generating from 2 to 5 billion dollars in export earnings. Taking into account that vaccination against COVID-19 will become regular (at least 1-2 times a year), the observed mutation of the coronavirus, and such competitive advantages of the Russian vaccine as the relative cheapness and ease of storage and transportation, the export volume of Russian vaccines may be even greater.

It is important to note that the Strategy for the Development of the Pharmaceutical Industry of the Russian Federation for the Period up to 2030, which replaced the Pharma-2020 program, replaces the key tasks regulated and supported by the Government of the Russian Federation. So, to replace such tasks as the development of Russian production, the localization of foreign manufacturers, the stimulation of high-tech industries, import substitution for the transition from import-substituting production to export-oriented.

It should be noted that in March 2020, a plan of priority measures (actions) was approved to ensure sustainable economic development in the face of a worsening situation due to the spread of a new coronavirus infection. Thus, strategic alliances with localized production and the implementation of the concept of sustainable development are one of the goals of the implementation of the state program. The main such alliance can be the production of generics with a certain share of the introduction of biotechnology.

To implement the concept of sustainable development of the strategic alliance, it is necessary to focus on solving the following tasks:

- Good health and well-being-to develop and produce modern original drugs or generics for the treatment of major chronic noncommunicable diseases, contributing to the achievement of objectives facing the Russian health care system, the main of which is increasing the life expectancy of Russians (SDG 3);
- Decent work and economic growth-ensuring decent working conditions for employees (SDG 8);
- Responsible consumption and production-implementation of modern solutions for the efficient use of natural resources and waste management (SDG 12);
- Combating climate change-striving to minimize its impact on the environment (SDG 13);
- Partnership in for sustainable development-adhere to the principles of responsible partnerships in all aspects of alliance (SDG 17).

One of the key objectives of such a strategic alliance in the field of environmental protection should be to limit the impact of production activities on the environment. For example, using various types of ventilation and dust and gas treatment plants, as well as specialized equipment for biological wastewater treatment. Another task of such an alliance in the field of ecology should be the search for innovative solutions for the efficient use of natural resources and responsible consumption, for example, through the use of energy-saving technologies, the implementation of a phased transition to biodegradable materials.

The introduction of responsible consumption should lead to the elimination of disposable plastic tableware and the introduction of an effective waste management system in production and in the office.

The strategic alliance should promote the best practices of responsible consumption and production, conduct awareness-raising events and actions for employees and local

Taking into account the plans of the pharmaceutical company "Avexima" in the second quarter of 2021 to begin construction of a new enterprise in the industrial park "Esipovo" in the Moscow region, it can be considered as one of the possible partners within the framework of the strategic alliance. This enterprise will produce drugs for the treatment of malignant neoplasms and HIV infection, immunomodulators, as well as cardiological, neurological and other drugs, while producing generics.

The second partner of the strategic alliance may be the Hungarian company EGIS, which is one of the leaders in the field of pharmaceuticals in Central and Eastern Europe, is present on the Russian market without opening production. The company is developing rapidly, including in the context of strategic alliances. Thus, Servier owns 50.9% of the shares. At the same time, Servier is already present on the Russian market and has localized production.

Such a strategic alliance would strengthen the company's position in the Russian market and, possibly, become one of the companies that are the basis for sustainable development of the Moscow region, which advantages in the pharmaceutical market.

DISCUSSION

The activities of companies in the pharmaceutical market are most effective when using strategic alliances, since the industry is characterized by high R&D costs, high barriers to market entry, certain geographic specifics, a high level of demand for pharmaceutical specialists, etc.

Research of the pharmaceutical market is characterized by the constant creation and functioning of strategic alliances, which differ depending on the objectives:

1. R&D implementation. On average, it takes about 10 years and $ 2.5 billion to withdraw a new drug. USA, due to strict regulatory restrictions and increased competition. TOP-50 leading pharmaceutical companies actively cooperate, including with young companies to diversify their risks at the early stages of R&D development. Abbvie has partnered with BMS in three collaboration programs and has entered into a strategic alliance Shanghai Pharmaceuticals to carry out clinical development in the PRC.
2. Entering new markets. Strategic alliances, especially with regional pharmaceutical companies, allow us to quickly enter emerging markets, since the localization of production makes it possible to bypass the obstacles of regulatory authorities, gain access to infrastructure and a local distribution network, etc. Pfizer entered into an alliance with China's Zhejiang Hisun in 2017 and invested $ 250 million to develop, manufacture and market generic drugs in the PRC.
3. The need for complex solutions. At the current stage of development of the pharmaceutical market, pharmaceutical companies are moving beyond the "production of drugs" and strive to offer integrated solutions for the diagnosis of diseases. In 2017, Amgen France (a manufacturer of drugs for the treatment of colorectal cancer) formed a strategic alliance with Biocartis, the creator of a molecular diagnostics platform that provides biomarker data throughout the day. This collaboration has enabled Amgen France to promptly offer doctors therapies with Vectibix.

   Patients on the pharmaceutical market are in demand for various mobile applications that monitor patient compliance with the treatment regimen and record the side effects of treatment, especially in the treatment of oncology, diabetes, and cardiovascular diseases. Thus, the Onduo company, created as a result of a strategic alliance (the result of interaction between Sanofi and Google Life Sciences), allows regular monitoring of glycemia in patients, combining software, drugs and professional assistance of specialists.
4. The need for new competencies. Strategic alliances need new competencies, such as attracting experts in the field of "artificial intelligence". At the same time, a simple acquisition of companies operating in the field of artificial intelligence is a rather risky investment, since it may not be in demand and cause significant losses. This means that a strategic alliance is the best solution in this area, since innovative companies will provide a technological shell, and a partner in the pharmaceutical field will take into account the specifics in the regulatory framework and the specifics of the target audience (doctors, clinics and hospitals).
5. An increase in the weight of responsible production and consumption, both at the macro level and at the micro level. Thus, the strategic alliance of the pharmaceutical company "Zdorovye" and JSC "Sitno-Holding" made it possible to carry out not only international certification and ensure the compliance of production with international GMP requirements, but also to provide the orphanage with the latest

equipment for a dental office, a major overhaul of the canteen was carried out, as well as to promote healthy lifestyle among children and youth through the annual tournament for wrestlers.

Despite the need to create strategic alliances, quite often they do not pay off, since the following factors are not taken into account in the process of creation:

- there is no possibility of failure in the plans, which means that in the event of its occurrence the actions of companies will not possibly planned to adjust;
- lack of clear and understandable goals for all partners;
- lack of mutual understanding between partners, including due to differences in the values of business philosophy.

For effective functioning strategic alliance, it is necessary to follow a certain algorithm and methodology for managing the strategic alliance:

1. Consideration of all elements of the strategic alliance:

- the alliance project should be clearly discussed-the object, starting point, development conditions, duration and purpose of the alliance project;
- to form a financial case-to determine the business potential, financial resources and the contribution of each company, determination of the principles of transparency of income and expenses of the alliance;
- determination and distribution of operational and executive levels of management of the alliance;
- formation of a monitoring mechanism and determination of exit conditions.

2. Providing a structured negotiation process, which will include:

- operational phase (1-2 months), which includes a partnership project, exchange of necessary information, selection of the best partner, conclusion of an agreement of intent;
- approval of the key factors of the alliance's activities (2-3 months)-joint project development, selection of the type of strategic alliance, discussion of conditions between partners, exchange of information and conclusion of a partnership protocol;
- contract conclusion phase (3-4 months)-determination of all parameters of the partnership, signing a contract and launching a partnership within the framework of a pilot project.

Contract manufacturing is the form with which strategic alliances in the pharmaceutical market function. This form is quite beneficial for a company that changes the structure of its product portfolio, due to the fact that a certain product, although it occupies a high share of sales, nevertheless began to lose value. For example, Pfizer formed a strategic alliance with Catalent to make esomeprazole (Nexium) when it became an over-the-counter drug and Pfizer focused on higher value-added products. A similar situation has developed between Antares Pharma and Teva Pharmaceutical Industries for the production of a migraine drug, sumatriptan. For a pharmaceutical company, having surplus production space is a high risk of downtime, which is minimized in the case of a strategic alliance. Moreover, this form allows you to localize production in the exit market, which gives certain preferences from the point of view of the state. Thus, Sanofi Pasteur and the Russian company Nanolek formed a strategic alliance in 2015 to produce Pentaxim vaccine for production and sale in Russia, and Bayer HealthCare in 2012 entered into a partnership with the Russian company Medsintez for the production and sale of drugs for the treatment of nervous disorders and infections.

Among the main types of implementations of strategic alliances, we can single out those possible for the pharmaceutical market:

1. Service fees. Large companies use a variety of payment-for-service mechanisms when transferring low-margin products, products that have lost exclusivity, and products that are in the "weak cash cow" or "lame ducks" stage. Payment is made on the basis of the cost of the batch with a slight discount or no volume discount. Strategic alliance agreements often include fixed volumes for specific products, which entails constraints when decisions are made to add products or increase or decrease production as needed. This condition can lead to a shortage of supply, which can lead to the search for new manufacturers. There may be a second scenario for the development of events-an overabundance of supply, which leads to the write-off of unsold products. Nevertheless, the advantage of this form is the low capital investment of partners.
2. Take-or-pay principle. An alliance partner acquires a certain amount of production capacity for a certain period. If the agreed volume is not selected, then the partner is penalized. This type is suitable when the minimum level of demand can be predicted. Such a mechanism is more flexible than the first, since it

allows you to replace products or change the production schedule, which reduces the risk of a shortage or oversupply in the market. This type is also characterized by low capital investment, but requires detailed relationship management. This type is suitable for those pharmaceutical companies that produce large volumes.

3. The “Condo” principle implies the construction or relocation of an existing partner enterprise to a separate complex with the formation of a certain “condominium” that includes several partners, which provides tighter control over products, production and timing. The "Kondo" view is interesting for those pharmaceutical companies that plan to produce large volumes.
4. A joint venture that involves joint investment of partners in a specialized facility that meets GMP requirements by building a new or expanding an existing production. This type is interesting for entering the markets of developing countries or in the case of forecasting significant growth for certain products both in the short and short term. The joint venture allows for lower capital costs through greater flexibility, agility and tighter control. However, this requires a higher capital investment, high oversight and strict management of the organization.
5. The global enterprise is used when the demand in the markets (forecasted for high and medium demand) varies or the company needs high volume and capacity for several products. A global enterprise requires high capital investment and tight control, while providing access to a global supply chain, more products and different markets. This type of strategic alliance has the least demand in the pharmaceutical market.

The COVID-19 pandemic objectively requires accelerating the pace of creating strategic alliances in the field of pharmaceuticals, primarily on vaccines and drugs for the treatment of coronavirus infections. On the other hand, the formation of strategic alliances is negatively influenced by geopolitical processes, an increase in confrontation between the leading pharmaceutical companies themselves), a sharp increase in recent years of administrative barriers associated with the activities of national and regional bodies for the supervision of the pharmaceutical market. The authorization of specific vaccines and related drugs is becoming critical to the successful marketing of these products in specific national markets. In our opinion, all these risks, more generally, are caused by the geopolitical turbulent processes of recent years. The controversial experience of using vaccines against COVID-19 within the framework of the agreed strategy of the BRICS countries is very indicative. According to Luanda Mpungose, a leading researcher at the South African Institute of International Relations, "... the vaccine diplomacy of the BRICS countries is stalled." In her review, published in Spanish El Pais, she concludes that the five BRICS countries-Brazil, Russia, India, China and South Africa, which account for more than 20% of global GDP and the world's largest number of cases from COVID-19-more than 60 million people missed to jointly respond to the challenges of the pandemic. First of all, in the form of joint recognition and certification of vaccines developed by the BRICS countries.

This does not mean that there was no such cooperation at all. But it was mostly two-sided, not multilateral. The most famous example of such a bilateral strategic alliance was the agreement between Russia and India and the transfer of the production technology of the Russian Sputnik-V to the respective Indian vaccine manufacturer, which enables it to produce 5 million doses of Sputnik-V in the first phase. In the future, a strategy is planned for the formation of a Russian-Indian production center for Sputnik-V for its growing export to Asian countries.

CONCLUSION

Increasing competition in the pharmaceutical market and the need to introduce biotechnology to combat the COVID-19 pandemic are significantly changing the balance of power in the pharmaceutical business as a whole. In conditions when this market is becoming one of the noticeable drivers of the world economy, the role of national and regional players is increasing, government regulation of this strategic market for many countries is objectively more demanded strategy of companies for the formation of strategic alliances. Moreover, in all main and related areas of the pharmaceutical business.

A new trend is the formation of strategic alliances that work in related, service areas. Such as software, distance learning, the use of artificial intelligence capabilities. For example, Dassault

acquired Medidata, which developed big data analysis software from trials of the largest 18 pharmaceutical companies.

The active development of strategic alliances at the current stage of development of the global pharmaceutical market is influenced by the following trends:

- growth in R&D costs for the treatment of rare and intractable diseases, including COVID-19;
- implementation innovation is an extremely costly process for companies;
- the development of personalized medicine for a narrow segment;
- expiration of patents, which attracts competitors to the market;
- pressure is applied, as with from the side of the state and from the side of society, non-profit organizations;
- geopolitical factors, the degree and level of political contacts between countries, their participation in sanctions policy, regional or international integration communities.

Since 2014 by 2019, according to Global Data, 1,300 strategic partnerships and 1,000 licensing agreements were registered in the global pharmaceutical industry. 2020 showed an acceleration in the growth rate of the number of strategic alliances. However, the bulk of these strategic alliances are formed on a relatively narrow, bilateral basis, with companies from countries entering or gravitating to one or another global political community. The number of multilateral strategic alliances is limited. Taking into account these contradictory trends, strategic alliances of Russian and European companies are possible, but mainly on local projects on a bilateral basis. At the same time, the choice of a company of an EU member state with which there are no large-scale political contradictions, historical negativity will be of key importance.

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