

Mergers and acquisitions on the pharmaceutical market: global experience and Russian specifics

Aleksandr Evstratov
Volgograd State Technical University
Volgograd, Russia
evstratov.mail@gmail.ru

Irina Ezangina
Volgograd State Technical University
Volgograd, Russia
ezangirina@rambler.ru

Maria Shendo
Astrakhan State Technical University
Astrakhan, Russia
smasha76@mail.ru

Tatiana Luneva
Astrakhan State Technical University
Astrakhan, Russia
anfyz@bk.ru

Abstract — Formation and development of pharmaceutical market inevitably leads to situations that act as catalysts for structural market changes. These situations include mergers and acquisitions increasing market concentration and having positive or negative influence on all market participants. This is why such processes undoubtedly have the potential for research. Studying methods for assessing efficiency of merger and acquisition processes remains a relevant issue while implementation of existing approaches to practical business activities requires theoretical reasoning. The authors consider the analysis of M&A deals to be relevant because these processes result in change of balance between market participants, transformation of pricing and marketing strategies. Due to social significance of pharmaceutical market, its changes affect availability of medicines for consumers. This article studies methods for assessing efficiency of merger and acquisition deals and for assessing company value.

Keywords — *global pharmaceutical market, Russian pharmaceutical market, merger and acquisition deals, merger and acquisition deals motives*

I. INTRODUCTION

The pharmaceutical market is one of the most technologically developed markets in the world economy, represented by original and constantly updating production lines. Russian pharmaceutical industry can become one of the forces driving national economic development but its competitiveness requires sustainable financial support and innovations. Investments in pharmaceutical industry are capable to provide high profit rates. Due to social significance of the pharmaceutical market [1], its activities are closely supervised by the Government of the Russian Federation and decisions made by the authorities regulate the direction of Russian pharmaceutical market.

Formation and development of the pharmaceutical market inevitably leads to situations that act as catalysts for structural market changes. These situations include mergers and acquisitions increasing market concentration and having a positive or negative influence on all market participants. This

is why such processes undoubtedly have the potential for research. Studying methods for assessing efficiency of merger and acquisition processes remains a relevant issue while implementation of existing approaches to practical business activities requires theoretical reasoning. The analysis of merger and acquisition deals on the global pharmaceutical market is relevant because these processes result in change of balance between market participants, transformation of pricing and marketing strategies. Due to social significance of pharmaceutical market, its changes affect availability of medicines for consumers.

The M&A process related to pharmaceutical companies have been studied by multiple researchers. A. Balasov [2] and R. Ishulova [3] analyzed the value modeling of pharmaceutical companies, E. Chupandina and A. Bobina studied assessment of deals on pharmaceutical market [4], A. Izmaylova researched global pharmaceutical deals [5], D. Raspopova analyzed pharmaceutical M&A deals [6], I. Shirokova studied the largest M&A deals on the pharmaceutical market [7] and U. Stoehr covered affiliations of pharmaceutical companies on the global market [8].

Pharmaceutical market is highly competitive due to the large amount of various medicines, large number of suppliers (including importers), interchangeability of medicines within their groups and vast drugstore networks. Increase in pharmaceutical market competition forces a company to look for new development directions. As a result, pharmaceutical market is characterized by high intensity of merger and acquisition (M&A) deals granting companies new opportunities

II. MATERIALS AND METHODS (MODEL)

The method of scientific abstraction enabled us to distinguish key tendencies of mergers and acquisitions on the pharmaceutical market. The system analysis revealed the dynamics of large M&A deals on the pharmaceutical market for 2000-2016. The comparative analysis has been applied for studying main M&A systems taking into account horizontal,

vertical and conglomerate technologies. The statistical analysis has been used to describe company development strategies on Russian pharmaceutical market and structure of deal motives.

III. RESULTS AND DISCUSSION

A. Merger and acquisition processes on global pharmaceutical market

As estimated by Evaluate Pharma global analytical company, in 2016 the volume of global pharmaceutical market reached 1125 billion USD. Such positive dynamics is mainly determined by quick growth of US market, the largest pharmaceutical market. In 2015 its volume increased by 6% to 413 billion USD. The main accepting factor was the record growth of medication prices – the average growth in 2015 was 12.3%.

Having analyzed M&A deals on the global pharmaceutical market, we singled out the largest of them (costing over 5 billion USD). Table 1 demonstrates pharmaceutical M&A deals on the global market in 2000-2016.

TABLE I. M&A DEALS ON THE GLOBAL PHARMACEUTICAL MARKET IN 2000-2016 [9]

| Year | Buyer | Target company | Transaction cost, USD billion |
|------|----------------------|------------------------|-------------------------------|
| 2000 | Glaxo | SmithKline | 74 |
| | Pfizer | Warner-Lamberts | 88 |
| 2003 | Pfizer | Pharmacia | 61 |
| 2004 | Sanofi | Aventis | 66 |
| 2007 | Astra-Zeneca | Medimmune | 15.6 |
| | Schering-Plough | Organon | 11 |
| | MerckKgaA | Serono | 10.6 |
| 2008 | Novartis | Alcon | 10.4 |
| | Roche | Genentech | 46.8 |
| 2009 | Pfizer | Wyeth | 68 |
| | Merck&Co | Schering-Plough | 41 |
| 2012 | Bristol-Myers Squibb | Amylin Pharmaceuticals | 7 |
| | Astra-Zeneca | PharmassetInc | 11.2 |
| 2014 | Actavis | Allergan | 66 |
| 2015 | Teva | Allergan generics | 41 |
| 2016 | Shire | Baxalta | 32.03 |
| | AbbVie | Stemcentrx | 9.80 |
| | Mylan | Meda | 7.20 |
| | Pfizer | AnacorPharmaceuticals | 5.20 |

In 2015, the largest M&A deal on the global pharmaceutical market was the agreement between Teva and Allergan Generics Business, with total transaction cost of 41 billion USD. The acquisition of asset portfolio of Allergan, a US company, was a major deal for Pfizer company. Figure 1 shows the dynamics of largest M&A deals on the global pharmaceutical market, starting from 2000.

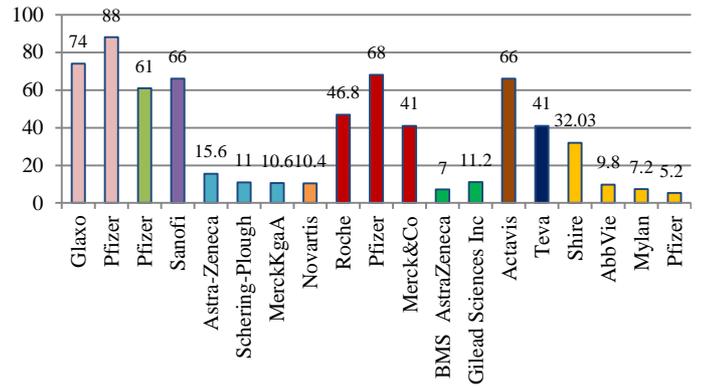


Fig. 1. The dynamics of largest M&A deals on the global pharmaceutical market in 2000-2016 (USD billion) [Acc. to Table1]

In 2000, 2009 and 2014-2015, during post-crisis periods of global economy, the total volume of M&A deals reached its maximum, as Fig. 1 demonstrates. As expected, in 2016 pharmaceutical manufacturers and biotech companies continued to actively participate in merger and acquisition transactions. The largest of them in 2016 was the acquisition of Shire company by Baxalta for more than 32 billion USD (Table 1). The deal was completed in 2016 in June. The second largest M&A deal of 2016 was the acquisition of Stemcentrx company by AbbVie for 9.8 billion USD, announced in April of 2016. As of July 19, 2016, the deal was completed.

Fig.2 reveals the dynamics of M&A deals on the global pharmaceutical market in 2011-2016.

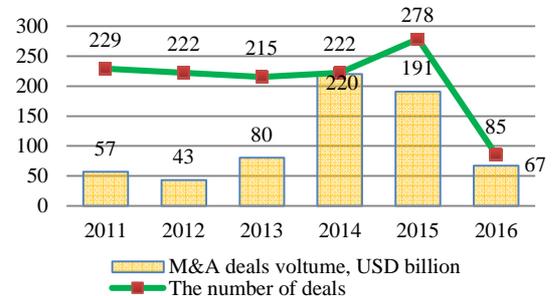


Fig. 2. M&A deals on the global pharmaceutical market in 2011-2016 [9]

In February 2016 the third largest deal of the first half of the year was announced: Mylan company intended to buy Meda company for 7.2 billion USD. This transaction would enable Mylan to enter new markets with more attractive and diverse product range including over 2000 original products, generics and OTC medicines.

It should be note that Mylan already attempted to purchase Meda in 2014, however, the latter rejected the deal because none of its main shareholders approved it. In May 2016 Pfizer announced its acquisition of Anacor Pharmaceuticals at the cost of 99.25 USD for a share (the total transaction cost was 5.2 billion USD), while Jazz Pharmaceuticals declared it was

intending to buy its competitor, Celator Pharmaceuticals, for 1.5 billion USD (30.25 USD per share). The average sum of M&A transactions in the first half of 2016 was reduced compared to the similar period of 2016 due to a decrease of pharmaceutical companies' activity related to mergers and acquisitions.

Besides, M&A processes on the global pharmaceutical markets are primarily caused by attempts of the companies to intensify development of original medications thus cutting R&D expenses.

B. Merger and acquisition processes on Russian pharmaceutical market

The tendency for increase of M&A deals between Russian pharmaceutical companies follows global trends in the industry. In the long-term perspective, the number of M&A deals involving national and foreign pharmaceutical companies is expected to increase.

The acquisition of foreign pharmaceutical companies by Russian companies is determined by national legislative initiatives on import substitution. It seems reasonable to expect mergers and acquisitions in production and retail segments. However, Russian pharmaceutical market has few serious objects for acquisition because potential buyers are more interested in plants than in portfolios. This means Russian pharmaceutical market demonstrates both excessive production capacities and deficient R&D activities.

While studying the dynamics of M&As on Russian pharmaceutical market it is necessary to take into consideration the fact that nowadays mergers and acquisitions of drugstores is more profitable and convenient than establishing a new drugstore network. Creating a new network requires conversion of facilities for storing medications, staffing expenses and providing conformity with the licenses thus causing significant expenses. This is why the market representation of large networks like Rigla and Aptechnaya Set 36,6 is increased by acquisition of smaller pharmacy organizations and networks.

Each company has to determine its own development strategy: either natural growth by increasing the potential of its assets or its market share or growth through merger or acquisition. The first way is more effect in the long-term perspective while the second one provides fast growth and is extremely relevant. The market is growing faster than the company itself and in case there is no time for natural progress, the companies expand their activities by M&A deals. Table 2 shows key differences between a merger and an acquisition.

TABLE II. DIFFERENTIATING FEATURES OF MEREGERS AND ACQUISITIONS ON THE PHARMACEUTICAL MARKET [10]

| Merger | Acquisition |
|--|----------------------------|
| Establishing control over the company | |
| Legal independency | No legal independency |
| Contractual agreements on certain activities | No contractual agreements |
| Average financial interpenetration level | Single financial structure |

Basing on Table 2, it is evident that both merger and acquisition are aimed at establishing control. Nowadays, there are many qualifications of mergers and acquisition. For instance, they can be classified by integration type, tax residency of companies of by management attitude to the upcoming deal. Table 3 shows main stages of a pharmaceutical company merger or acquisition.

TABLE III. MAIN STAGES OF MERGER AND ACQUISITION OF A PHARMACEUTICAL COMPANY [10]

| Stage | Name | Specifics |
|-------|---------------------------------------|--|
| 1. | Agreement of intent | The parties negotiate to reach a consensus. |
| 2. | Due diligence | Legal checkup of the company (initial stage of M&A) |
| 3. | Investment object assessment | Company value assessment (market; investment; liquidation) |
| 4. | Accounting and taxation records audit | Tax profits and risks are estimated, the company is audited. |

The results of inspection, which stages are demonstrated in Table 3, are included in the report analyzing the structure of company's gains and losses for a specific period of time, internal documentation control, main operating means, accounts receivable (including unconfirmed) and payable, obligations (fines, penalties), possible taxes and risks.

The main objective of all stages is legal inspection of all foundation documents, assessment of risks related to company purchase. It is necessary to evaluate the company's main contracts and point out potential negative consequences for the buyer. Generally, these stages take place simultaneously optimizing the inspection processes and avoiding their delay. The acquisitions systems can be divided into vertical, horizontal and conglomerate. Table 4 describes main M&A system types.

TABLE IV. MAIN SYSTEMS OF PHARMACEUTICAL MERGERS AND ACQUISITIONS [10]

| Name | Characteristics | Exceptions |
|------------------------|--|---|
| Horizontal integration | Used when large players purchase smaller regional ones. | Used by other companies |
| Vertical integration | Manufacturers purchase companies dealing with management and distribution of medicals. | Pharmacy networks purchase the manufacturer for selling trademarked products. |
| Conglomerate M&As | Consolidation of companies belonging to different industries | Exceptions during vertical and horizontal integration. |

Basing on Table 4 data we can conclude that M&A systems existing on Russian pharmaceutical market are insufficient for Russian and under the global economy conditions, alongside domestic M&A system, an international option appears that involves participation of foreign companies. It must be noted that in foreign practice mergers and acquisitions are understood as transactions involving

several companies in order to join legal entities, while in the Russian federation M&A is understood as purchasing a capital participation in a legal entity or reorganizing a legal entity through merger or acquisition.

C. Potential direction for Russian pharmaceutical market development

The Government of the Russian Federation Pharma 2020 strategy is aimed at increasing national production of medicines and medical items. Since 2011, several multinational pharmaceutical majors opened their enterprises in Russia and signed cooperation agreement with Russian manufacturers including Novartis, Takeda, Teva, Novo Nordisk, Astra Zeneca, Glaxo Smith Kline, Pfizer and Bayer. According to Russian pharmaceutical market M&As efficiency estimations, the companies that formed due to M&A processes cut down approximately 17-18% of their expenses and save resources for “related” medicines thus increasing their R&D potential.

The leading Russian pharmaceutical market strategy is release of new medicines. This is why many Russian companies eventually have to decide whether to merge with another national or foreign company in order to increase their market share. According to statistical data taken from Russian and foreign research, in 2017 Russian companies demonstrated their interest in mergers and acquisitions with national or foreign companies (56%) but the rate was lower by 4% compared to 2016. The interest in R&D processes reached 28% and in production localization reached 23%, thus demonstrated the invigoration of Russian pharmaceutical market. Table 5 provides the specifics of pharmaceutical market strategies in 2017.

TABLE V. DEVELOPMENT STRATEGIES ON RUSSIAN PHARMACEUTICAL MARKET [10]

| Strategy | Interested companies, % |
|--|-------------------------|
| Merger of companies and market release of new products | 62% |
| Building new production facilities in the Russian Federation | 32% |
| Merger and introduction of new medicines, R&D | 82% |
| Creation of a joint venture | 23% |

Basing on Table 5 data, we can conclude that merger strategy is more preferable for generic manufacturers comprising 88% and for foreign companies that do not localize their production in Russia comprising 71%. Constructing a new production facility is of greater interest to companies that already have production capacities available in the Russian Federation.

Merger and introduction of innovative products can be of interest for companies producing generics. Such business subjects tend to develop new products more often (35%), while the share of original medicaments manufacturers comprises only 24%. 48% of companies expects an improvement of their position on Russian pharmaceutical market and considers merger deals and most prominent

development strategy. Foreign companies consider establishing joint ventures with (29%) or without (25%) localizing their production in the Russian Federation compared to 11% of Russian companies. Russian companies are more interested in M&A deals for business development and market expansion. Summing up, merger and acquisition strategy is complex and costly and in certain cases results of M&A transactions between pharmaceutical and biotech companies are significantly below expectations.

But despite all difficulties Russian pharmaceutical market is facing, companies that want to become market leaders are actively expanding their business and consolidating pharmaceutical market in general. Obviously, the most preferable for M&A deals pharmaceutical companies are the ones that actively develop innovational technologies and have the potential for entering developing markets.

D. The structure of M&A deal motives on Russian pharmaceutical market

Figure 3 demonstrates structure of M&A deal motives on pharmaceutical market in 2000-2014. Nowadays the most prominent tendency on Russian pharmaceutical market is merger and acquisition. This can be explained by willingness of Russian companies to minimize their expenses, join capitals with their partner company for efficient financing and eventually increase their market share.

As it has been mentioned above, for Russian pharmaceutical market offers of cooperation and joint R&D activities are more common than actual M&A transactions. The statistical data show that in 2013-2017 companies that followed M&A strategy faced interchangeably rapid decreases caused by crises and rapid increases caused by economic stability periods.

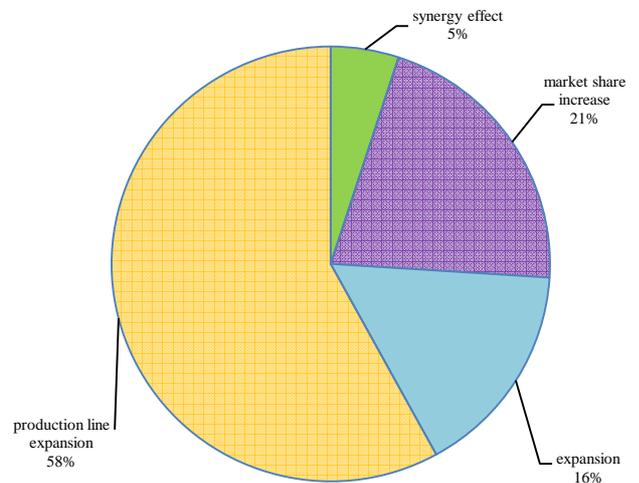


Fig. 3. The structure of M&A deal motives on Russian pharmaceutical market [10].

Russian pharmaceutical market is rapidly growing and M&A transactions in this industry are intensifying. It is obvious that companies want to find their place on the market and gain advantage over competitors, thus, they need to merge

into larger companies. The number of M&A deals is steadily growing: now it is easier and faster for companies to join their efforts than independently attempting to expand to new markets and design new products by their R&D departments. M&A transactions are actively consolidating the market – 30 years ago, in 1987, 10 largest pharmaceutical manufacturers controlled only 12% of sales. However, in 15 years, by 2000, this amount reached almost 50%. This means each second medication was produced by one of ten largest pharmaceutical giants, mainly European and North American corporations [11].

Evidently, the M&A tendency indicates the dynamic development of companies and their global market competitiveness. Besides, it must be noted that the share of original product portfolios of large pharmaceutical manufacturers is decreasing and some companies gain almost half of their profits by selling 2-3 original medications [12].

IV. CONCLUSIONS

Summing up, we can conclude that the increasing role of multinational corporations highlights the globalization processes in global pharmaceutical practice. Leading companies are becoming more important than leading nations. The large share of production capacities belongs to large pharmaceutical companies with over ten billion dollars sales volume, high capitalization indicators and progressive market shares on pharmaceutical markets. Thus, M&A transactions are common in Russian business practice and are aimed at expanding business and gaining access to new markets.

Previously, merger and acquisition deals were typical for developed economies only. However, the dynamic growth of pharmaceutical industry in the Russian Federation led to an increase in acquisition transactions done by Big Pharma companies having a constant demand for new technologies and developments. On the other hand, because the growth of pharmaceutical industry is accompanied by lack of prominent local development, global leaders tend to secure their positions by investing financial assets in the production and creation of joint ventures with key Russian players. Nevertheless, the sums provided by Russian pharmaceutical market leaders for R&D are growing resulting in an increase of Russian innovations that have commercial potential on regional and global levels.

The merger and acquisition strategy is complicated and costly; sometimes it fails to meet expectations in pharmaceutical and biotechnological industries. However, reaching leading positions in the industry, permanent efficiency improvement through business expansion mediate the significance of this strategy for Russian companies. This is especially relevant for companies actively developing

innovative technologies and preparing to enter prospective developing markets.

References

- [1] Gushina E.G. Problems and Prospects of Internet Marketing in Russia / E.G. Gushina, L.A. Sizenova N.V. Orlova, E.P. Likkovidova. *Mediterranean Journal of Social Sciences*. – 2015. – Vol. 6. – No. 5. – pp. 322-334.
- [2] Balashov, A.I. Otsenka vliyaniya finansovykh parametrov na stoimost sdelok slyaniya i poglosheniya farmatsevticheskikh kompaniy [Assessing impact of financial parameters on the cost of mergers and acquisitions of pharmaceutical companies] / A.I. Balashov, S.V. Podtsikyna // *Ekonomichesky analiz: teoriya i praktika* [Economic analysis: theory and practice], 2015, No. 22 (421), pp. 15-26.
- [3] Balashov, A.I. Modelirovaniye stoimosti farmatsevticheskoy kompanii v protsessakh slyaniya i poglosheniya / A.I. Balashov, R.R. Ishkulova. // *Menedzhment v Rossii i za rubezhom* [Management in Russia and abroad], 2015, No. 1, pp.97-104.
- [4] Boldyreva, E.V. Protessy slyaniya i poglosheniya na farmatsevticheskom rynke: sostoyaniye, otsenka: materialy 4-y Vserossiyskoy s mezhdunarodnym uchastiyem konferentsii "Farmobrazovaniye 2010" [Mergers and acquisitions on pharmaceutical market: situation and assessment: materials from Farmobrazovaniye 2010 4th National science conference with international participation] / E.V. Boldyreva, E.E. Chupandina, A.A. Bobina. Voronezh State University. – 2010. – pp.70-74.
- [5] Evstratov, A.V. Sliyaniya i poglosheniya kompaniy na farmatsevticheskom rynke: mirovoy opyt i rossiyskaya spetsifika: monografiya [Mergers and acquisitions on the pharmaceutical market: global experience and Russian specifics: a monography] / A.V. Evstratov, A.M. Izmaylov, Volgograd State Technical University. – Volgograd, 2016. – 156 pp.
- [6] Raspopov, D.T. Sliyaniya i poglosheniya na mirovom farmatsevticheskom rynke [Mergers and acquisitions on the global pharmaceutical market] / D.T. Raspopov // *Mezhdunarodnaya ekonomika* [Global economy]. – 2014. – No. 8. – pp.69-74.
- [7] Shirokova, I. V fokuse - slyaniya i poglosheniya [Focusing on mergers and acquisitions] / I. Shirokova // *Remedium*. – 2014. – No. 10. – P. 91.
- [8] Stoehr, U. Kto est kto v mire farmy ili zagadochniye perepleteniya interesov mirovykh farmatsevticheskikh kompaniy [Who is who in the pharmacy world: intricate interweaving of interests of global pharmacy companies] / U. Stoehr // *Retsept* [Receipt]. – 2012. – No. 1. – pp.49-56.
- [9] Evstratov, A.V. Issledovaniye protsessov sliyaniya i poglosheniya kompaniy na mirovom farmatsevticheskom rynke [Studying mergers and acquisitions of companies on the global pharmaceutical market] / A.V. Evstratov // *Samara State University Bulletin*. – 2016. – No. 3 (137). – pp.32-37.
- [10] Evstratov, A.V. Osnovniye tendentsii i perspektivy razvitiya farmatsevticheskogo rynka v Rossiyskoy Federatsii: monografiya [Main tendencies and prospects for Russian pharmaceutical market development: a monography] / A.V. Evstratov, Volgograd State Technical University. – Volgograd, 2018. – 192 pp.
- [11] Evstratov, A.V. Mergers and acquisitions of companies in the global pharmaceutical market in 1999-2012 / A.V. Evstratov // *World Applied Sciences Journal*. – 2014. – № 32 (7). – pp.1400-1403.
- [12] Ezangina, I.A. Challenges and perspectives for development of banking credit infrastructure in Russia / I.A. Ezangina, A.V. Evstratov, T.G. Jovanovic. *International Journal of Economics and Financial Issues*. – 2016. – Vol. 6. – No. 2. – pp. 58-64.