

Strategic Development Trends in the World Pharmaceutical Industry

Dragan Kesič

The main purpose of the paper is to research and evaluate the strategic development trends in the world pharmaceutical industry in the period 1996–2006. We aim to find that mergers and acquisitions prevail as a vital strategic development option in the world pharmaceutical industry. The research examines the exploratory hypothesis that the intensive globalization process, increased competitiveness and changed structure of competitors, strongly influence the consolidation development trends in the world pharmaceutical industry which result in an increased number of mergers and acquisitions. The intensive consolidation of the world pharmaceutical industry is a market driven process and conditioned by several strategic issues, such as lack of brand new products, increased competitiveness, fast globalization process, intensive global marketing and sales activities, changed structure of competitors, fight for global market shares and customers' loyalty. There is clear evidence that the world pharmaceutical industry and market are both becoming more oligopolistic and monopolistic.

Key Words: world pharmaceutical industry, globalization, consolidation, mergers and acquisitions

JEL Classification: F23, I11, L12, L65

Introduction

We may define the major characteristics of the world pharmaceutical industry as follows:

- increased globalization,
- changing structure of competition and increased competitiveness,
- lack of brand new products, despite increased investments into R&D (Research & Development) activities,
- increased importance of regulatory issues (registrations, intellectual property rights, litigations),
- fast consolidation and concentration of the world pharmaceutical industry,

Dr Dragan Kesič is an Associated Professor at the Faculty of Management Koper, University of Primorska, Slovenia.

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- development of new therapeutic fields and technologies (biotechnology, pharmacogenomics),
- ageing of the world population and opening up of new, not yet covered therapeutic fields,
- quick development of world generic markets.

The world pharmaceutical market has undergone fast, unprecedented, tremendous and complex changes in the last several years. The pharmaceutical industry is today still one of the most inventive, innovative and the most lucrative of the world so-called 'high-tech' industries, however we may speak at the same time of the period of great and profound changes in this industry sector. We may say that the pharmaceutical industry has been adapting itself more to the market trends and market demands. The pharmaceutical industry today probably unites the biggest of all the humankind potentials. Development of a brand new drug (NAS – New Active Substance) is today estimated to need investment over 1.2 billion USD and takes over 12 years to bring it as a finished, legally registered and approved product to the market place (World Review 2007). This is at the same time a very complex, comprehensive and highly risky job with no final guarantee that a new product might succeed on the market and bring revenues back. If a pharmaceutical company wants to achieve market success, with a brand new product, it needs to invest heavily into marketing and sales activities. As we may observe, the basic research and development activities (R&D), together with marketing and sales activities, are two of the most important activities of the world pharmaceutical industry. Here the biggest investments of the pharmaceutical industry are being poured in. Having analysed these figures, we have found that the biggest, inventive pharmaceutical companies invest on average around 16% of their sales into R&D and even more, around 25% or even more, into marketing and sales activities (Kesic 2006). However, these ratios, especially those for R&D investments, are even higher with specialists, like biotechnology and pharmacogenomic pharmaceutical companies, and much lower with generic pharmaceutical companies (Kesic 2006). As mentioned, the world pharmaceutical industry is structurally not unique, as pharmaceutical companies differ according to their basic performances, vision and strategic development. In our research we found that there are three different groups of world pharmaceutical companies:

- pharmaceutical companies which work on basic research, devel-

TABLE 1 World pharmaceutical market from 2004–2008

| Year | Value in billion USD | Growth in % |
|------|----------------------|-------------|
| 2004 | 422 | 9 |
| 2005 | 601 | 7.5 |
| 2006 | 643 | 7 |
| 2007 | 684 | 6.4 |
| 2008 | 715 | 4.5 |

NOTES Adapted from World Review 2009.

opment and marketing and sales of brand new, inventive, original pharmaceutical products (so-called originators),

- pharmaceutical companies which work on development and sales of generic products (so-called generic producers),
- pharmaceutical companies which work on basic research and development of biotechnology and pharmacogenomic products and technologies of new delivery systems (so-called specialists).

The world pharmaceutical market has been growing steadily in the last years. In the year 2006, the world pharmaceutical market achieved total sales of 643 billion USD and a growth rate of 7% (World Review 2007). The fastest growing world markets and regions are the markets of China, Central East European region (Russia, Poland and Romania) and certain markets of Latin America (Brazil, Mexico and Chile).

We may argue that products are the main growth drivers for the world pharmaceutical companies. Pharmaceutical companies strongly compete on products' characteristics and tend to invest heavily into marketing activities in the endeavour to gain prescribers'/patients' loyalty and to compete also directly with other pharmaceutical companies. According to this, it is no surprise that the biggest world multinational pharmaceutical companies invest over 25% of their sales into marketing and sales activities in the endeavour to gain considerable global market shares.

We may define a generic product as bioequivalent product with the same active ingredient as an inventive, original one and it is subject to standard registration procedure as is the original one, too. Nevertheless, it is only legally allowed for a generic product to be launched upon final expiration of all pending intellectual property rights (patents expiry). According to this aspect, and taking into account the fact that generic producers do not need to invest huge sums of money into basic R&D

activities, they compete only on the lower prices of their products. Development of a particular world generic market is in strong connection with the existing legislation, which may favour or not the development and growth of the same.

The world pharmaceutical industry has undergone deep changes in the last decade. Most notably, the strong process of consolidation and concentration has been going on, practically in all three defined pharmaceutical sectors; numerous mergers and acquisitions have occurred, resulting in the forming of complete new companies. We may mention just the most significant ones to illustrate the current situation for a better understanding (Kesic 2003):

- in the group of inventive companies the several acquisitions of the USA Pfizer (Warner Lambert, Pharmacia), the merger of GlaxoWellcome and SmithKlineBeecham to create GlaxoSmithKline, the merger of Astra and Zeneca to create AstraZeneca, the merger of Ciba Geigy and Sandoz to form Novartis,
- in the group of generic companies the leading Israeli company Teva has performed over 15 big acquisitions in the last decade, having acquired the USA generic company Ivax as the last one; as well Swiss Sandoz, which is a generic group, owned by Novartis, has acquired likewise several generic companies worldwide, including Lek in Slovenia, Hexal from Germany and Eon Labs. from the USA as the last ones; in the year 2006 the USA Barr Pharmaceuticals acquired the Croatian pharma company Pliva and recently the USA major generic player Mylan acquired the German generic entity Merck Generics,
- in the group of specialists, the USA biotech company Amgen has been greatly acquisitive, predominantly in the USA, having acquired four specialists in the same group segment.

Theoretical Background

We may say that globalization is almost a synonym for the modern economy. Globalization could not be possible without fast and profound technological achievements and changes. Nowadays the global competition is mostly based on the knowledge and technology and ability to serve the customers properly, swiftly and repeatedly. Globalization has become almost a synonym for an economic liberalisation and foremost opening of the world economies. However, alongside the market, compe-

tition has changed as well. The previous meaning of internationalization has been replaced by a globalization domain and the previous meaning of the world economy has been replaced by a global economy. OECD defines globalization as 'Spreading and deepening of companies' performance with the target to produce and sell goods or services on multiple markets' (OECD 1993). The later definition of globalization from OECD (1994) says that 'More precisely we may define globalization as a developing pattern of international business cooperation, which includes investments, trade and contractory ways of cooperation, and targets the development of products, production, procurement and marketing. Such kind of international performance enables the companies to conquer new markets, use their technological and organisational advantages and to lower the costs and risks.' Globalization is strongly related with the increased mobility and competition. We underline that the main drivers of globalization are transnational or multinational companies. We may argue that the following characteristics are significant for their performance; especially taking into consideration the performances of the multinational companies in the pharmaceutical industry, we aim to research in our paper the following effects:

- multinational pharmaceutical companies have had a strong market position on the most important and strategic world markets with holding of considerable market shares,
- they globally integrate and connect their business performance, so national identity is no longer important,
- they perform a flexible purchasing management strategy,
- have had a global network structure of production,
- have had a global network organisation of research and development activities,
- have built a global marketing organization structure which supports a dedicated market orientation and a strategic priority focus on customers.

We may even emphasize that globalization is in its core meaning a complex, market conditioned process, which is related to and driven by a whole palette of elements of the market way of thinking and performing, sudden, fast changes and ever-changing ways of doing business, alongside an increasing competition and competitiveness, in striving to optimally identify changing needs of the world customers and to be able

to satisfy their longterm needs. In this way we underline that globalization is a market driven process. Thus, in the process of globalization it is essential to be fast, to be strongly market oriented, to have loyal customers, to be innovative, to have proper knowledge, to be able to learn fast, to have proper information and to take quick decisions. Drucker (1992) mentioned five of the most important elements of development which would influence greatly the strategies, structure and performance of future companies:

- economic relations would be performed in the direction among trade blocs instead of countries,
- business performance would be more and more a matter of strategic alliancing, which would be integrated into the world economy,
- restructuring of business would be intensifying and more globalising; it would be important to have information and knowledge,
- strategic management of companies would be decisive for a competitive success,
- intensive market orientation of companies would be a core advantage for achieving competitive advantage over competitors.

Svetličič (1996) defined globalization as:

- a multidimensional process, which includes economic, political, legal and cultural contents, which together create a new quality,
- globalization means the global internationalisation or at least internationalisation of activities such as trade, foreign direct investments (FDI), contractual ways of international economic cooperation in the most important markets,
- globalization supports common alliancing, which needs the global coordination and integration of activities in a brand new manner,
- globalization means production, on the basis of the same products, for domestic consumption and foreign markets as well; the products are able to satisfy local needs and habits,
- globalization means a high share of components from foreign suppliers in the products for domestic consumption and for export as well.

Globalization is a non-return process, and without intensive internationalisation performance of companies in the modern world, it would not progress. Bartlett and Ghosal (1989) underlined that ‘Successful companies of today and tomorrow are those ones who are able to satisfy local

needs, increase global effectiveness and strive for a constant innovativeness and global learning at the same time.’

Research Questions – Exploratory Hypothesis

The main purpose of paper is to research and evaluate the strategic development trends in the world pharmaceutical industry in the period 1996–2006. The pharmaceutical industry is chosen as it is quite complex, highly inventive and regulated, competitive and has been changing profoundly, concentrating and consolidating strongly in the last decade. Besides that, there are a relatively small and limited number of research papers on the pharmaceutical industry available worldwide as well. We aim to find out what are the core reasons for the huge and increasing number of mergers and acquisitions in the world pharmaceutical industry. According to our knowledge, there are no research papers with this complex content yet available in the world literature.

There are three main research questions – exploratory hypotheses we would like to study with regard to the research work we aim to perform:

- H1 *The globalization process, lack of new products and fight for global market shares supports the concentration and consolidation in the world pharmaceutical industry which is becoming more oligopolistic.*
- H2 *Concentration and consolidation is evident in all three sectors of the world pharmaceutical industry.*
- H3 *Increased competitiveness and the changed structure of competitors further influence concentration and consolidation in the world pharmaceutical industry.*

Methodology and Data

We aim to evaluate the strategic development trends of the world pharmaceutical industry in the period 1996–2006, as we make the exploratory hypothesis that the world pharmaceutical industry has been consolidating strongly in that period and we would like to find out what are the main reasons for such a development trend. In our research work we endeavour to use the analytical, comparative, descriptive methods and a method of strategic analysis, strategic diagnosis and strategic prognosis to determine the development trends in the world pharmaceutical industry in the analysed period. We plan to use in our research work a variety of all literature, different sources and publicly available data and information, predominantly on the business strategies and performances

of world pharmaceutical companies, world pharmaceutical markets and development trends within the pharmaceutical industry. Nevertheless, it should be strongly emphasized that there is relatively scarce and limited literature and data at our disposal on the world pharmaceutical industry, especially taking into account the research objectives, as only very limited world literature, sources, information and data on the world pharmaceutical industry are indeed publicly available.

Data Analysis and Findings

In our research we found that competitiveness in the world pharmaceutical industry has been increasing tremendously in the analysed period. We found that the pharmaceutical industry has been in the intensive processes of concentration and consolidation for a period of over 15 years. We found, and thus may argue, that research & development and marketing&sales activities are two of the most important and strategic priorities of the pharmaceutical companies and into which the greatest part of funds are being invested as well. According to our research work, we may say that the main strategic reasons for the intensive consolidation processes of the world pharmaceutical industry, which result in M&A (Mergers and Acquisitions) activities, are the following:

- fast globalization processes of the world economy,
- lack of brand new products to drive sales growth further,
- huge investments needed for R&D activities,
- global marketing and sales activities which need large investments as well,
- increased competitiveness,
- changed structure of competitors,
- increased importance of regulatory issues (registrations, intellectual property rights, litigations).

We have precisely studied all available published pharmaceutical companies' data on their merger and acquisition activities and reasons for such a chosen strategy. According to our research study and findings, there have been more than 10,000 various alliances formed in the world pharmaceutical industry in the last decade (Datamonitor 2005). We have found that consolidation processes have been carried out practically in all three sectors (innovative – original pharmaceutical companies, generic producers and specialists) of the world pharmaceutical industry.

TABLE 2 Overview of the major strategic mergers and acquisition in the world pharmaceutical industry from 1995–2005

| Year | Strategic mergers and acquisitions |
|------|--|
| 1995 | Glaxo – Wellcome/GlaxoWellcome (A) |
| 1995 | Pharmacia – Upjohn/Pharmacia&Upjohn (M) |
| 1995 | Hoechst – Marrion Merrell Dow/HMR (A) |
| 1995 | RPR – Fisons/RPR (A) |
| 1995 | Ranbaxy – Ohm Laboratories/Ranbaxy (A) |
| 1995 | BASF – Boots/BASF (A) |
| 1997 | Ciba – Sandoz/Novartis (M) |
| 1997 | Roche – Boehringer Mannheim/Roche (A) |
| 1998 | Pharmacia&Upjohn – Sugen/Pharmacia & Upjohn (A) |
| 1998 | Johnson & Johnson – Centocor /Johnson & Johnson (A) |
| 1999 | Astra – Zeneca/AstraZeneca (M) |
| 1999 | HMR – RPR/Aventis (M) |
| 1999 | Sanofi – Synthelabo/Sanofi-Synthelabo (M) |
| 2000 | Pharmacia&Upjohn – Monsanto (Searle)/Pharmacia (M) |
| 2000 | GlaxoWellcome – SKB/GlaxoSmithKline (M) |
| 2000 | Pfizer – Warner Lambert/Pfizer (A) |
| 2000 | Abbott – BASF Pharma – Knoll/Abbott (A) |
| 2000 | Teva – Lemmon, Biogal, ICI, APS/Berk, Biocraft, Pharmachemie, Copley, Novopharm (A) |
| 2000 | Watson Pharm. – Schein Pharm./Watson Pharmaceuticals (A) |
| 2000 | Ranbaxy – Bayer Basics/Ranbaxy (A) |
| 2000 | Elan – Dura Pharmaceuticals/Elan (N) |
| 2000 | Novartis/Novartis Generics – BASF Pharma Generics – Knoll Generics; Apothecon Inc./ Novartis/Novartis Generics (A) |
| 2001 | Novartis/Novartis Generics – Labinca, Lagap Pharmaceuticals/Novartis/Novartis Generics (A) |
| 2001 | AlmirallProdesfarma – Prarfarma, Pharmafarm/AllmiralProdesfarma (A) |
| 2001 | Johnson&Johnson – Alza/Johnson&Johnson (A) |
| 2001 | BMS – DuPont Pharmaceuticals/BMS (A) |
| 2001 | Barr Laboratories – Duramed Pharmaceuticals/Barr Laboratories (A) |
| 2001 | Roche – Chugai Pharmaceuticals/Chugai Pharmaceuticals – Roche (A) |
| 2002 | Amgen – Immunex/Amgen (A) |
| 2002 | Chinoin/Sanofi-Synthelabo – Pharmavit/Chinoin/Sanofi-Synthelabo (A) |

Continued on the next page

TABLE 2 *Continued from the previous page*

| Year | Strategic mergers and acquisitions |
|------|---|
| 2002 | Schering AG – Collateral Therapeutics/Schering AG (A) |
| 2002 | Johnson & Johnson – Tibotec-Virco NV/Johnson & Johnson (A) |
| 2002 | Teva – Bayer Classics/Teva (A) |
| 2002 | Serono – Genset/Serono (A) |
| 2002 | Pfizer – Pharmacia/Pfizer (A) |
| 2002 | Novartis/Novartis Generics – Lek/Novartis/NovartisGenerics (Sandoz) – Lek (A) |
| 2003 | Johnson&Johnson – Scios/Johnson&Johnson (A) |
| 2003 | IDEC Pharmaceuticals – Biogen/Biogen IDEC Inc. (A) |
| 2003 | Ranbaxy-RPG (Aventis)/Ranbaxy-RPG (A) |
| 2003 | Novartis – Mead Johnson/Novartis – Mead Johnson (A) |
| 2003 | Teva – SICOR/Teva – SICOR (A) |
| 2003 | Novartis/Sandoz – Amifarma/Novartis/Sandoz – Amifarma (A) |
| 2003 | Pfizer – Esperion Therapeutics/Pfizer – Esperion Therapeutics (A) |
| 2004 | Roche – Igen/Roche (A) |
| 2004 | Sanofi-Synthelabo -Aventis/Sanofi – Aventis (A) |
| 2005 | Pfizer – Vicuron Pharmaceuticals/Pfizer (A) |
| 2005 | Teva – IVAX/Teva (A) |

NOTES A – acquisition, M – merger.

The concentration process has practically created brand new pharmaceutical players; however some previously well-known pharmaceutical firms have practically disappeared from the global market place. For example, the world leading pharmaceutical company Pfizer has been created from 5 big international players, including Pfizer itself, Warner Lambert, Upjohn, Searle and Pharmacia. GlaxoSmithKline has been formed as well from 5 companies, including Smith, Kline, Beecham, Glaxo and Wellcome. The leading generic global player, Teva from Israel, has acquired so far over 15 generic companies worldwide to form today's Teva.

We found in our research study that the transactions value in some acquisitions having been performed in the world pharmaceutical industry exceeded several dozen of billions USD, which supports our research outcomes that particular pharmaceutical companies still tend to invest heavily in endeavouring to get strategic control over sales, products, marketing and sales activities, market shares and R&D capabilities of the acquired pharmaceutical company.

TABLE 3 Overview of the largest merger & acquisition deals in the pharmaceutical industry

| Year | Acquirer – target | Transaction value in billion USD |
|------|--------------------------------------|----------------------------------|
| 2000 | Pfizer – Warner Lambert | 89 |
| 2000 | GlaxoWellcome – SKB | 79 |
| 2009 | Pfizer – Wyeth | 68 |
| 2004 | Sanofi-Synthelabo – Aventis | 66 |
| 2003 | Pfizer – Pharmacia | 61 |
| 2009 | Roche – Genentech | 48 |
| 1999 | Zeneca – Astra | 32 |
| 1999 | HMR – RPR | 28 |
| 1996 | Sandoz – Ciba Geigy | 28 |
| 2000 | Pharmacia&Upjohn – Monsanto (Searle) | 27 |

TABLE 4 Overview of the latest pharmaceutical alliances in 2006–2007

| Target – taken-over company | Acquirer | Creating of synergies |
|--------------------------------------|---------------------------|--|
| Schering AG, Germany | Bayer, Germany | R&D, markets, marketing&sales |
| Serono, Switzerland | Merck KGAA, Germany | R&D, markets, marketing&sales |
| Schwarz Pharma, Germany | UCB, Belgium | R&D, products, markets, marketing&sales |
| Altana Pharma, Germany | Nycomed, Denmark | R&D, markets, products, marketing&sales |
| Hospira, USA | Mayne Pharma, Australia | products, markets, sales |
| Pliva, Croatia | Barr Pharmaceuticals, USA | markets, products, R&D (biogenerics), sales |
| Kos Pharmaceuticals, USA | Abbott, USA | R&D, products |
| Organon BioSciences, the Netherlands | Schering-Plough, USA | R&D, markets, products, marketing&sales |
| MedImmune, USA | AstraZeneca, UK | R&D, markets, products (vaccines), marketing&sales |
| Merck Generics, Germany | Mylan, USA | markets, products, sales |
| Adnexus Therapeutics, USA | BMS, USA | R&D, products |

We found in our research that consolidation processes are still continuing to even speed up as pharmaceutical companies try to follow their competitors' strategy of M&A (Mergers and Acquisitions) in endeavour-

ing to maintain their global market position and long-term competitiveness. Recent acquisitions of several pharmaceutical companies performed afterwards in the years 2006 and 2007 further confirm our conclusions of a fast consolidation and oligopolization of the world pharmaceutical industry. This confirms properly our third postulated exploratory hypothesis.

In our research we found that the leading ten world pharmaceutical companies currently command an over 43% market share of the global pharmaceutical market. For a comparison reference, this figure was only 30% ten years ago (World Review 2007). This is a clear sign and proof of how intensive market consolidation and concentration of the world pharmaceutical industry has changed the world pharmaceutical market in the analysed period. We also found that the number of new pharmaceutical products having been launched in the world market dropped significantly in the analysed period (from 34 in the year 1996 to only 21 in 2006 (World Review 2007)), thus supporting further consolidation and concentration of the world pharmaceutical industry, as products are key drivers for sales growth of pharmaceutical companies. Thus they are forced to search for new products by merger and acquisition strategies.

Very similarly, we found that the currently leading ten world generic pharmaceutical companies achieve together an over 37% market share of the world generic market. For a comparison, this figure was only 18% ten years ago (Datamonitor 2005). This is yet another proof of how intensive consolidation of the world pharmaceutical industry has changed both the world pharmaceutical industry and the market as well. Thus we confirmed our first two postulated exploratory hypotheses.

We also found that the world pharmaceutical industry has become more and more oligopolistic. We may support and refer this argumentation with the Knickerbrocker theory of oligopolistic reaction (Knickerbrocker 1973), which says that 'Oligopolistic companies, as minimizers of taking risks in avoidance of destroying effects of competition follow each other to new markets to protect their own interests. It is significant that the action of one player creates a reaction of the other competitors, an action creates a reaction and so the story of oligopolisation is going on.' We may conclude that Knickerbrocker's theory perfectly illustrates and explains a consolidation process of the world pharmaceutical industry. By that we confirmed our third postulated exploratory hypothesis.

It is evident that some stand-alone pharmaceutical companies are not able to satisfy longterm and ever-changing market needs and customers'

expectations, to invest heavily into R&D and marketing activities in the endeavour to bring new products to global markets and materialize them properly. We can argue that this process enables pharmaceutical companies to generate new development circles and their long-term development and growth. If a particular pharmaceutical company is not able to perform the development circle on its own, it has to look for a suitable partner with whom to form a kind of strategic partnership. Formation of partnerships for the sake of maintaining long-term competitiveness is today one of the most usable strategies in the world pharmaceutical industry. We may argue that pharmaceutical companies make alliances in endeavours to create common synergies and to better exploit their common assets, knowledge, product life cycles and moreover to upgrade their management strategies.

Pharmaceutical companies tend to internationalize and globalize their business activities sooner than in the past, due to market liberalization, increased competitiveness and the need to react properly to strategic consolidation and concentration activities of competitors.

According to that, Svetličič (1996) stipulates that modern ways of internationalisation with an aid of network formation and strategic alliances enable internationalisation without a growth of companies. Today companies decide for internationalization and alliances in order to:

- be closer to customers,
- increase effectiveness,
- gain better access to technologies and knowledge (know-how),
- protect them from competitors (strategic reasons).

We may say that, in a certain way, the concept of the strong market oriented management clearly designates a company's business philosophy, respectively. We may agree with Corstjen's (1991) estimation that the 'Sector of the pharmaceutical industry, despite being very specific in all aspects, is an ideal case, how a practice and usage of the marketing management concept directly relates to a very successful business performance of this industrial sector.'

According to our research work, we found that the most important and strategic activities of creating common synergies for pharmaceutical companies are the following:

- research and development (R&D), due to creating of brand new products,
- products, due to driving sales growth and gain in market shares,

TABLE 5 Main strategic reasons for creating mergers and acquisitions in the world pharmaceutical industry

| Key elements for creating longterm competitiveness | Originators (inventive pharmaceutical companies) | Generic companies | Specialists (biotechnology, pharmacogenomics) |
|--|--|-------------------|---|
| Sales growth | yes | yes | yes |
| New products | key factor | key factor | key factor |
| New markets | key factor | key factor | key factor |
| Marketing and sales activities | key factor | key factor | key factor |
| Research & Development | key factor | yes, if possible | key factor |
| Creating of common synergies | yes | yes | yes |
| Stronger market position-increased competitiveness | key factor | key factor | key factor |
| Shareholders impacts – financials | yes | yes | yes |
| Coordination of management and cultures of the companies | yes | yes | yes |
| Power of globalization | key factor | key factor | key factor |

- markets, due to creating geographic and market expansion,
- marketing and sales, due to enforcing marketing and sales activities in order to compete on global markets and to drive further sales growth.

These are the main reasons for strategic and intensive consolidation trends in the world pharmaceutical industry. These facts clearly support and confirm our first two proposed exploratory hypotheses.

We may say as well that, due to the complexity of the pharmaceutical industry, it is not unusual that the pharmaceutical companies tend to form partnerships and even to compete at the same time. They can cooperate on some particular projects (for example R&D projects), however they compete strongly for particular market shares. We have found in our research that this is the so-called ‘C and C phenomena’, as we may even

call it 'Co-opetition' (cooperation and competition at the same time) (Zineldin 2004).

Svetličič (1996) properly underlined that the 'Forming of alliances has become attractive for companies due to:

- rising costs of innovation and entrance to new markets,
- reinforcing of cost reduction competition,
- pressure towards the enlarged gaining of synergistic technologies and economies of scale and synergy with the help of alliances and acquisitions,
- the endeavour to protect existing market shares and to conquer new ones,
- the rising need to shrink time needed from an innovation till entry onto the market with a product.'

According to our research work, we may argue that a dedicated strategic management with a strong market orientation is by no doubt, besides the R&D function, the most important function of the innovative company's business performance in the pharmaceutical industry. Changes of today's, even of tomorrow's world, are so fast and profound that it is quite difficult for the companies to follow them entirely. Nevertheless, this is especially significant for the world pharmaceutical industry. However, changes do indeed represent new challenges and create new business opportunities. Thus, it is important to react and act quickly, and to be proactive. The urgency of fast adaptation is not just the strategy for smaller companies and countries, but it is also a valid strategy of victorious success for the bigger firms.

We may forecast that, taking into account the mentioned factors, further consolidation and concentration of the world pharmaceutical industry is quite realistically expected. We may foresee the formation of even bigger pharmaceutical concerns in all three sectors of the pharmaceutical industry. In addition, a further lack of brand new products is expected with highly increased competitiveness and a furious fight for market shares and global customers' loyalty.

Discussion and Conclusion

In our research work we found that the world pharmaceutical industry has been changing profoundly over the last couple of years and that an intensive globalization process definitively influences and reinforces a consolidation of the world pharmaceutical industry. In order to explain

this phenomenon properly, we have analysed in detail the trends in the world pharmaceutical industry and key reasons for such movements. We provide empirical evidence that the intensive processes of concentration and consolidation have been continuing in all three sectors of the world pharmaceutical industry. Our research work shows that mergers and acquisitions prevail more and more as a viable strategic orientation for numerous world pharmaceutical companies. Further on, we may argue that increased competitiveness and the amended structure of competitors, which is conditioned by a merger and acquisition process, impact the strategic orientation of particular world pharmaceutical companies. By creating new alliances, they tend to create strategic synergies in the endeavor to be even more successful, competitive and able to continue with further development circles.

We may conclude that all four research questions/exploratory hypotheses put forward at the beginning of our research are entirely confirmed. We found that the intensive globalization process influences the concentration and consolidation in world pharmaceutical industry, which is becoming more oligopolistic and tending to be even more monopolistic in the future. Besides that, the lack of new products, fight for global market shares, increased competitiveness and changed structure of competitors further supports the concentration and consolidation in the researched industrial sector, and moreover, concentration and consolidation is evident in all three defined sectors of the world pharmaceutical industry. By that we have confirmed all three postulated exploratory hypotheses.

Thus we may forecast that intensive consolidation processes in the world pharmaceutical industry are to continue to form even bigger pharmaceutical firms and to speed up an oligopolization and even higher degree of monopolization of the global pharmaceutical industry further on. Based on our research findings, we may even forecast that in the future there will be only three major groups of world pharmaceutical companies: huge-mega inventive pharmaceutical companies, transnational generic companies and focused specialists (biotechnology, pharmacogenomics). We may point out that the fast consolidation of the world pharmaceutical industry is a market driven process and conditioned by typical strategic management issues, such as a lack of new products, intensive and increasing competitiveness, fast globalization process, increased global marketing and sales activities, a fast changing structure of global competitors, and a furious fight for the global market shares and cus-

tomers' loyalty. We may emphasize that a focused, straight-on strategic management is going to play an even more important and especially a decisive role in the future globalization and concentration processes of the world pharmaceutical industry. We may further conclude that future strategic development of the world pharmaceutical industry will be predominantly dependent on the strategic management issues that the pharmaceutical companies will be capable of understanding, developing and implementing properly in their operational and strategic business performances. We may argue that strong market oriented management practices are urgently needed for successful business performance today, not to mention tomorrow and months and years to come, in this highly globalized, transparent, complex, demanding, uncertain and competitive world.

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