Creating value in pharma through M&A:
The case of Watson Pharmaceuticals

Sebastian Zweiphenning

Dissertation written under the supervision of *Susana Frazão Pinheiro*

Dissertation submitted in partial fulfilment of requirements for the MSc in Business Administration, at the Universidade Católica Portuguesa, June 2016.

Table of contents

Abstract:

This paper analyses the motives for mergers and acquisitions (M&A) in the pharmaceutical sector and whether these M&A's create value. In order to give an industry perspective and let the reader experience the situation wherein managers of pharmaceutical companies operate, a case-study on Watson Pharmaceuticals is done. It provides a detailed perspective into the company's M&A rationale. Through the literature review as well as the case-study the changes in the pharmaceutical industry are described as well as findings that indicate that shareholder value is created through M&A. Finally, similar motives for M&A are uncovered in the case-study as found in previous studies and current industry changes are described.

Resumo:

Este trabalho analisa as razões que motivam as fusões e aquisições no setor farmacêutico e o reflexo de tais fusões e aquisições na criação de valor. De modo a fornecer uma perspectiva industrial e permitir que o leitor experimente a realidade na qual os gestores de companhias farmacêuticas operam, foi realizado um estudo casuístico da companhia Watson Pharmaceuticals, fornecendo um panorama detalhado acerca da lógica de fusões e aquisições da companhia. Por meio da análise literária, bem como do estudo casuístico, são descritas as alterações na indústria farmacêutica, assim como as conclusões que indicam que a criação de valor acionário se dá através das fusões e aquisições. Por fim, razões similares para fusões e aquisições são reveladas no estudo casuístico, como visto nos estudos prévios e nas descrições das alterações atuais da indústria.

Introduction

Several deals between big pharmaceutical companies have crossed the newspapers in the last few years, with as of late (6th of April 2016) the busted deal between Pfizer and Allergan. Whenever combinations such as these hit the news, media commentators and (self-proclaimed) industry experts comment on the supposed benefits and challenges encompassing the new combined corporate entities. Most of the world's top pharmaceutical companies (based on sales) since 1995 that remained so until 2012 have done so through large acquisition(s) ((Cha & Lorriman, 2014). In general, the industry has become much more concentrated throughout the years. In 1985 for example, the 10 largest pharmaceuticals based on sales made up 20 percent of global sales while in 2002 the top 10 global companies contributed 48 percent of sale (Danzon, Epstein, & Nicholson, 2004). Most of the consolidation has been achieved through mergers and acquisitions (M&A). Often several revenue synergies and cost savings are expected to be achieved, while commentators warn for a decrease in research and development (R&D) productivity and the risk of an unsuccessfully implemented integration.

The pharmaceutical industry is experiencing notable structural challenges after New Molecular Entities (NME's) output has grown only slightly, while costs of R&D increased. For example, based on year 2000 price levels, average R&D costs per NME based on clinical testing costs increased from $40 million in the 1980s to $280 million in the 1990s and rising currently (Scherer, Pharmaceutical innovation, 2010). While also the introduction of new drug discovery techniques and the emergence of the biotechnology industry changed the traditional R&D process. Finally, due to the loss off patents on top-selling drugs (so called "blockbusters"), insufficient replacement products and increased competition from generics (and indirectly their resulting price competition after patent loss) the pharmaceutical industry is changing structurally. As a response to these challenges, several pharmaceutical companies became involved in M&A in order to overcome the headwinds (Comanor & Scherer, 2013).

In this paper we aim to outline the historic motives for mergers and acquisitions in the pharmaceutical industry and identify factors that potentially increase or decrease the new combined company's value as a result of the M&A. More specifically, the

aim is to clarify the merits and feasibility of an M&A strategy for a Pharmaceutical company in comparison to the more traditional R&D based business model. In order to uncover this, we first analyze the development of the pharmaceutical sector to give a good overview. Secondly, we look into M&A motives given in the past and how these relate to value creation, also taking into account traditional M&A theory. Finally, through a case study of Watson Pharmaceuticals, a company that has grown into a notable player in the pharmaceutical sector through M&A, we gain a more practical perspective into the motives and objectives of M&A in the pharmaceutical industry and its feasibility in the future.

This paper now proceeds as follows: Chapter 1 provides the literature review, Chapter 2 discusses the methodology used, in Chapter 3 the case-study is provided, Chapter 4 are the teaching notes and finally in Chapter 5 the conclusion, limitations and suggestions for future research are discussed.

Chapter 1 - Literature Review

The nature of the Pharmaceutical Industry and Key Developments

The pharmaceutical industry consists out of several aspects that are important to understand the key developments that happened.

Coming into existence

The industry came into existence towards the end of the nineteenth century as sections of European chemical firms (e.g. Bayer, Sandoz and Roche) that used their know-how from the chemicals business. US companies (e.g. Merck, Pfizer and Lilly) joined in later and depended on European technology until after WWI. They were either producing and selling EU over the counter (OTC) drugs with a patent or making prescription drugs to sell to pharmacies and hospitals. In this period, there was little R&D activity in the sector.

Due to the start of WWII, R&D experienced an uptick. Especially US and UK based companies received financing and other resources during and after the war to develop drugs such as antibiotics. After the war, national governments started to finance national health research programs or programs that benefited the greater good (e.g. the National Institute of Health (NIH) in the US or universities). As a result, knowledge in the pharmaceutical industry rose drastically but output of new drugs remained relatively low (Malerba & Orsenigo, 2015). Since drug manufacturers did research by randomly looking through combinations to find something that worked without any prior knowledge or reasoning why it should work. As firms started to run several similar tests in a large quantity, developed databases of potential fruitful molecules and the R&D process become more standardized, new drugs reached the market. Due to the little amount of drugs that existed, the ability to patent new drugs and growing demand for the drugs coming to market, it became a very profitable undertaking. As a result of the large markets available and low amount of new drugs coming to market, revenue and growth was centralized in a few products called "blockbusters".

The growth of the industry

Demand was rapidly increasing as a result of higher living standards, growing populations, the installment of Welfare states in Europe or healthcare insurance in

the US and the potential needs new drugs could solve. At the time, generics were also not a threat to the branded drugs manufacturers, as until the 1984 Hatch Act was passed in 1984 in the US, generic drugs had to undergo a stringent amount of clinical trials similar to a new branded product before they reached the market. The combination of all these factors caused the pharmaceutical industry to change into a R&D intensive, soaring industry. R&D relative to sales increased from 3.7% in 1951 to roughly 10% in the 60s, while averaging 18% in the pharmaceutical sector compared to a mere 4% in the overall US manufacturing industry during 1988-2001 (Danzon, Epstein, & Nicholson, 2004). Economies of scope and iterative growth of knowledge were however little for pharmaceutical companies. As a result, it was relatively though to gain a long-term competitive advantage in the R&D process. Although successful new drugs launched did give those firms the opportunity to invest their resources in future R&D which gave them a higher chance of success in the future. Also, due to the nature of drugs, dominance in the market for one drug did not benefit presence in other markets except for company reputation. By now, US companies had also entered the drug manufacturing market by bringing innovations to the market.

In the 1970s, efforts to increase sales and marketing also started to take place. In order to make sure drugs on the market were safe and available to everyone if required, governments introduced legislation into the market. Regulators designed a distinction between drugs which could be sold over the counter and drugs that required a prescription from a specialist. This caused the larger pharmaceutical companies to invest heavily in R&D and salesforces. As prescription drugs became more prevalent, the drug manufacturers started to market their products directly to the prescribing specialists with focused marketing & sales personnel. To keep drugs affordable to everyone nations also implemented some form of price regulation and to remain safety standards high the drug approval process became more stringent.
In the 1970s, the companies also started to expand beyond their home markets in order to lower the costs per unit of their products and spread R&D, sales and marketing costs better. Besides international expansion, this was also done through licensing and other commercial agreements. In general, the firms benefited more direct from the public health research that was done which caused a more systematic research design to take place.

Towards the 1980s, the biotechnology industry came into existence. The developments in themes such as genomics, combinatorial chemistry, and high-throughput-screening drastically changed the research process and economics of drug discovery (Schweizer, 2002). These companies were focused on commercializing scientific research with the funding of venture capital investors and strong patent protections. They did this by working closely with universities, transferring knowledge through academic spin-offs to biotechnology ventures aiming to discover potential new products. While the large pharmaceutical companies first waited on the sidelines, later they tapped into the knowledge of these biotechnology ventures through the creation of alliances and sharing relationships and buy-outs. It was necessary to participate in gathering the access to the biotechnology ventures knowledge and expertise for the pharmaceutical companies' survival as it seen as competence-destroying move (Tushman & Anderson, 1986) .Due to the capabilities and costs associated with being a large pharmaceutical company which was vertically integrated, they bought the successful biotechnology ventures to commercialize it.

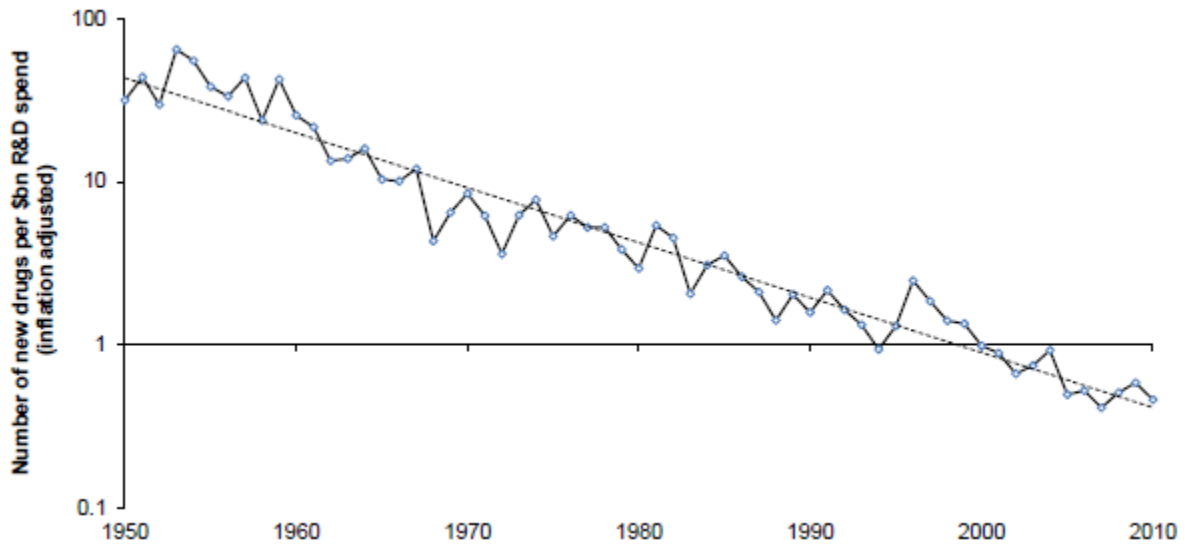
The rise of the biotechnology industry was caused by a change in intellectual property rights (IPR). The new legislature slowly coming available in the 1980s reduced costs and the timespan of the patent process, extended patent's lives for some products and supported non-profit or publicly funded research to apply for patents and market the technology.

Headwinds in the industry

General pharmaceutical products have strong demand because they are often a necessity. As result, the industry has a strong foundation, pricing power and is less susceptible to recessions (Ganguin & Bilardello, 2005). However, by the 1990s, increases in drug prices and growing aging populations caused expenses to the pharmaceutical industry to increase and headwinds to arise. As it was becoming a growing expense for the public and government, pressure emerged to contain the costs. In addition, criticism towards the patent protection systems emerged as it focused mostly on R&D for drugs in rich markets that were unaffordable or not needed in poorer countries. The inability of access to some drugs or affordable drugs

became an important political topic. Up to the 2000s advances in science and technology drove new innovative products to markets. As patents were coming off going forward and competition from generic manufacturers was increasing, big pharmaceuticals were in need for a new pipeline of successful products. By now, R&D productivity was decreasing since the mid 1990s (Malerba & Orsenigo, 2015) (see figure 1 below). Instead of focusing solely on internally driven R&D, they started to look for other options to fill their pipeline. They did this through M&A and by increasingly partnering with biotechnology firms and universities for new research through licensing and collaboration and a more focused approach.

Figure 1: Pharmaceutical R&D Productivity Trend

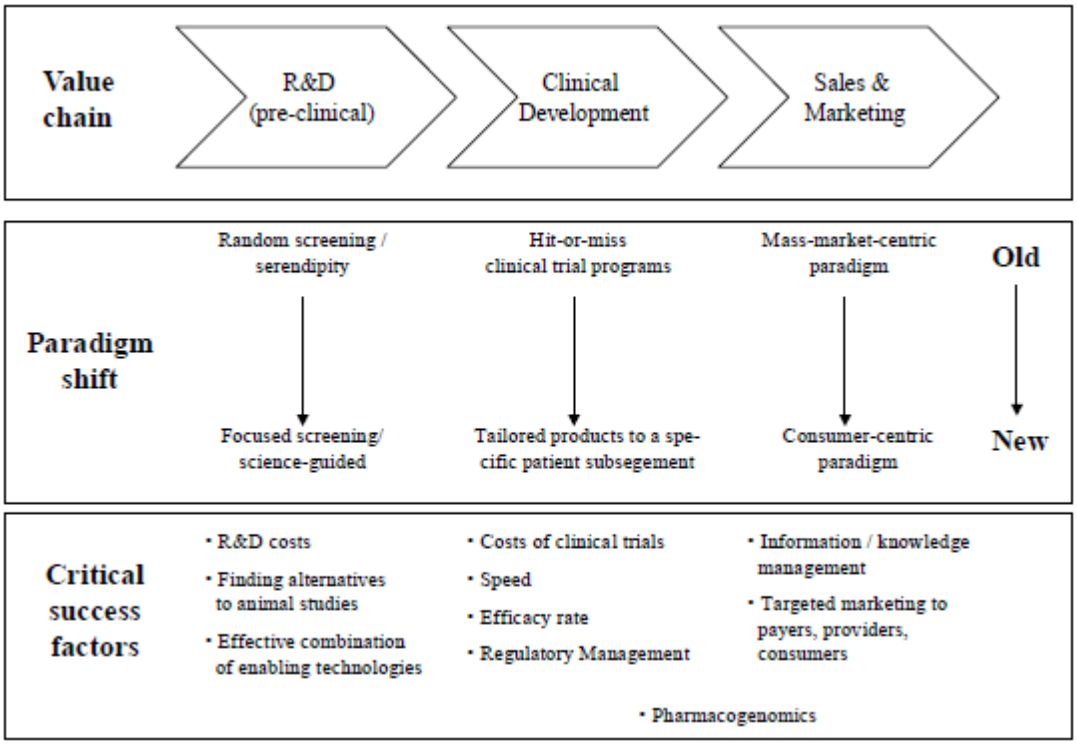


Source: (Upadhyay, 2015)

As the low hanging fruit had already been picked, companies were now attempting to discover increasingly difficult drugs but full with cash from past blockbusters they were able to buy companies faster than doing the internal research. From 1950 to 2008, the US Food and Drug Administration (FDA) had approved 1222 drugs that improved the public's health. However, towards the beginning of the 21st century costs were increasing quickly (R&D spending increased by roughly 7 percent per year (Scherer, R&D costs and productivity in biopharmaceuticals, 2013)), innovation was decreasing, competition was increasing and sales growth flattening. The industry is increasingly caught in new drugs output that is linear while costs of

producing them are rising exponentially (Munos, 2009). Figure 2 below shows the shift in the pharmaceutical industry and the changing skills required to succeed.

Figure 2: Developments in the pharmaceutical industry



Source: (Schweizer, 2002)

M&A motives and value creation

The main motivation for M&A is that it increases profits and thus shareholder wealth (Gugler, Mueller, Yurtoglu, & Zulehner, 2003). As pipelines have started to slim down, and no new blockbuster products are found to replace revenue streams, M&A has often been used as an option in the pharmaceutical industry. There has however been a debate whether bidding firms actually gain shareholder value through M&A (Bruner, 2002).The big pharmaceutical companies are trying to replace the decreasing revenues and internal growth by acquiring competitors with promising products in their pipeline (Jarvis, 2010). Besides from building a pipeline internally or through licensing and partnerships, M&A is one of the only options to smoothen near-term earnings cycles and improve operational performance next to acquiring knowledge and the new capabilities required. It offers the opportunity to run combined operations more cost effective, fill uneven or lumpy pipelines, add capabilities and fill earnings downturns. Cost savings come from economies of scale

or scope, reductions in excess capacity and removal of inefficiencies. On the other side, revenue is enhanced by expanded global reach, a wider set of products, more application of winning technologies and the sharing of skills, knowledge and best practices (Ravenscraft & Long, 2000). Danzon, Epstein and Nicholson (2004) find that large pharmaceutical firms do mergers in response to excess capacity because of anticipated patents coming off and gaps in the product pipeline (measured by Tobin's Q ratio). One can see the patent-expiration having a similar effect as technological or regulatory shocks that prompt mergers in other industries. For small firms, mergers serve mostly as an exit strategy for firms in financial distress.

General economic research has listed several reasons for mergers such as economies of scale and scope, acquisition of specific assets and the corporate control market (Danzon, Epstein, & Nicholson, 2004). However, they cannot explain the reason they happened in waves historically. Pharmaceutical firms have been involved in merger waves since the end of the 20th and start of the 21st century. The waves took place in the late 1980s/early 1990s, mid 1990's, start of the 21st century and finally the 2010s and changed the industry set-up drastically. Before this period, the industry landscape had been relatively stable and not changed drastically. In the first M&A wave, Bristol-Myers Squibb and Smith-Kline Beecham merged. The second one consisted out of American Home Products combined with Ayerst and later Wyeth. Then Glaxo and Wellcome, Pharmacia and Upjohn, Hoechst AG and Marion Merrell Dow and Novartis Sandoz. In the third wave Pfizer combined with Warner Lambert (Koenig & Mezick, 2004). Finally, more recently in 2009 with the large mergers between Pfizer and Wyeth Laboratories and the combination of Schering-Plough and Merck and in 2011 the union of Novartis with Alcon and Sanofi-Aventis and Genzyme, one could opine a new wave has started. Hall (1999) and Andrade, Mitchell and Stafford (2001), suggest shocks as a result of technological disruption or deregulation efforts specific to industries as reasons that create excess capacity or other inefficiencies that cause M&A activity. Their studies however do not explain the within-industries pick-ups in M&A activity. As to value creation, Andrade, Mitchell and Stafford (2001) find improvements in efficiency as a result of mergers and announcement abnormal returns are in line with future expectations of cash flows. Hall (1999) finds that firms that have a high inclination to merge, experience a higher growth after they do M&A.

Ravenscraft and Long (2000), found positive abnormal returns of 0.59 percent for the newly combined firm plus 13.31% and -2.12% for target and bidder firms during the period 1985 to 1996 for 65 pharmaceutical deals with a value over $500 million. The 0.59 percent market value weighted combined company return was however insignificant. When looking more specifically at Ravenscraft and Long's sample, one sees high significant abnormal returns of 9.84, 4.97 and 7.6 percent for target, bidder and combined firms for large horizontal mergers. They define horizontal as being M&A between two top thirty pharmaceutical firms. For cross-national mergers, returns were also found to be positive and significant.

An often cited reason to oppose mergers in the pharmaceutical industry was because research of Comanor (1965) found diseconomies of scale in R&D for pharmaceutical companies. The research had been influential in opposing proposed mergers such as the Warner Lambert combination with Parke Davis in 1970. However, later research by Koenig and Gans (1975) suggested pharmaceutical R&D did benefit from economies of scale. Their different conclusions might be derived from other measures: Comanor's based on sales while Koenig and Gans looked at number of new drugs (NCEs). Schwartzman (1976) concluded similarly that NCEs increased with scale. However, Jensen (1987) found no economies of scale and later Graves and Langowitz (1993) found diseconomies of scale using a NCE approach similar to Koenig and Gans'. Together these studies suggest that increases or decreases in R&D productivity as a result of M&A are not yet clear while for industry participants it's no reason to stem their M&A activity. Barrret and Capell (2002) could not find correlations between the return on investment and size for pharmaceutical firms. Finally, more recently Koenig and Mezick (2004) concluded that pharmaceutical companies that engaged in M&A activity achieved more favorable post-merger R&D productivity scores than before. Regarding biotech acquisitions by pharmaceutical companies, Schweizer (2005) find in a limited size and scope sample no know-how transfer but the positioning as a center of R&D excellence, in essence they want access to the knowledge and R&D capabilities within the biotech company. Higgins and Rodriguez (2006), suggest that pharmaceutical firms with more rapid worsening pipelines and sales are more "desperate" and as a result show a higher chance of engaging in M&A.

Although the rationale for M&A in the pharmaceutical sector can be made from a shareholder's perspective, it could have negative social implications and negative influence on the new company's creativity and entrepreneurship. Scale effects, improvements in efficiencies and arguably more effective R&D (see the debate above) as well as tax inversions (transferring operations to a lower corporate tax jurisdiction) will drive shareholder value. However, social implications might be less pretty by employee lay-offs and business closures and transfers to other countries. Finally, individuality and small team spirit that drives teams plus discovery and innovation might be reduced as processes get standardized and departments and teams grow in size (Kanavos & Angelis, 2014).

Chapter 2 - Methodology

The study is primarily based on qualitative analysis and compilation of secondary resources such as annual reports, academic articles, newspaper items, SEC filings, Investor presentations, transcripts of investor earnings calls, industry reports, transcribed interviews, official company announcements and topic related websites. Mostly qualitative research has been done, as it is intended to grasp and explain the specific real-life situation in our case study.

The literature review was constructed with the use of academic literature databases and search engines such as Science Direct and Google Scholar.

The case study was primarily built upon information out of the Watson Pharmaceuticals, Actavis and Allergan annual report in addition to their official company announcements and SEC files. The combination of the gathered data and information has been used to develop the case-study and accompanying teaching notes. In addition, secondary quantitative data is retrieved from official government statistics (e.g. FDA.gov), Industry associations (e.g. PhRMA) and commercial data providers (e.g. EvaluatePharma). An interpretive approach is used to build a holistic understanding of the phenomenon under investigation in the case-study. The case-study design should prove to be useful for answering "how" and "why" questions (Yin, 2003) , at which we aim in this study.

Chapter 3 - Case-study

Growth pharma in question

On Wednesday 6 April 2016 Pfizer Inc. and Allergan plc announced that their $160 billion merger deal, which would create the world's largest drugmaker in the world, had been terminated. Allergan CEO Brenton Saunders commented as follows:

"While we are disappointed that the Pfizer transaction will no longer move forward, Allergan is poised to deliver strong, sustainable growth built on a set of powerful attributes. Leading therapeutic franchises with strong brands across seven therapeutic areas provide the foundation for continued strong growth in 2016 and beyond. Our pipeline is one of the strongest in the industry, loaded with 70 mid-to-late stage programs including 14 expected approvals and 16 regulatory submissions in 2016 alone." [1]

[1] Allergan reiterates Strong Standalone Growth, accessed May 2016, Allergan (2016)

Saunders, had made his rise by managing integrations throughout his career in the pharmaceutical industry, transforming Actavis (the company's name preceding the acquisition of Allergan) into a top ten global pharmaceutical company. Known as a skeptic of in-house drug discovery, he followed his self-coined "growth pharma" strategy. Now, the world's largest ever healthcare deal to be, was terminated after the US treasury department changed a rule that took away many of the tax-based benefits of the deal. As the termination basically barred similar future deals, investors and the media were wondering how Allergan's growth story might continue in light of some internal and external challenges going forward.

Creating a leading global generics company

After nearly 24 years at the helm of Watson pharmaceuticals, founder Allen Chao, Ph.D. decided in 2007 to name industry veteran Paul Bisaro as new CEO (Exhibit 5: CEO biographies). The leadership change signaled the next phase of the company towards "Watson 2.0". The Watson left by Chao was a well-positioned specialty pharmaceutical company, operations consisted out of a broad portfolio of generics, brands and distribution in the US and India. The differentiated products in the brand portfolio were high-margin products with attractive revenue opportunities. The company selected therapeutic areas, such as a growing urology franchise, based on growth opportunities and the size of the physician audience. The 27 branded products were distributed by roughly 330 sales professionals in two specialized sales groups: specialty products (e.g. the urology franchise) and nephrology (Exhibit 1B: Key metrics of Allergan). Although only providing for 19% of revenue, these helped to offset potential market fluctuations in their broad generics portfolio which accounted for the bulk (59%) of Watson's business (Exhibit 1A: Key financials of Allergan). Watson claimed a leader position in oral contraceptives and pain management products and boasted 150 product families. It's focus was primarily on complex generics or pharmaceuticals that complemented the existing product lines. Most of Watson's generics were distributed in its key market the US by its Anda distribution business to approximately 50000 ship-to locations over 200 suppliers, providing the company a direct link to customers in pharmacies and medical buying centers worldwide. With the 4th largest distribution operations in the US, the company was unique among US pharmaceutical companies.

Watson 2.0 primarily aimed at growing the company's international presence through offshore expansion via strategic alliances and synergistic acquisitions while simultaneously increasing profitability of the branded segment up to a similar contribution to earnings as the generics business and enhancing efficiencies throughout the company.

In 2009, Bisaro made great inroads towards Watson 2.0 by acquiring generic drugmaker Arrow Group for $1.75 billion (Exhibit 2A: Allergan M&A activity), stating: *"The acquisition of Arrow will mark a significant milestone in realizing our strategic vision to expand our global footprint and leverage our assets across many developed and emerging markets around the world,"*[2]

The combined company would go from operations in the US, India and China to over 20 countries, including Arrow's key markets Canada, France and the UK (Exhibit 3: Evolution of countries active). The expanded footprint would allow Watson to market its products in many established and emerging countries. While also strengthening and diversifying the company's product portfolio and pipeline. The newly obtained global infrastructure and product portfolio had little overlap with Watson's, creating a platform for long-term growth. The now global company marketed roughly 170 generic and 30 brand product families (focused on Urology and Women's Health) in the US, while offering 250 different products in the UK under Arrow Generics. The acquisition also gave entry into Eden Biodesign, a biotechnology company through a minority stake, which it acquired completely by January 2010.

In the following two years, Watson reduced its debt and integrated its global operations while also investing to expand its product portfolios. In 2011, it strengthened its commercial presence and generics portfolio in key European markets while adding product development capability with the $562 million acquisition of Specifar Pharmaceuticals.

"We got the beachhead established but now we needed the firepower to go out and expand that beachhead, and that's what this does." - Bisaro[3]

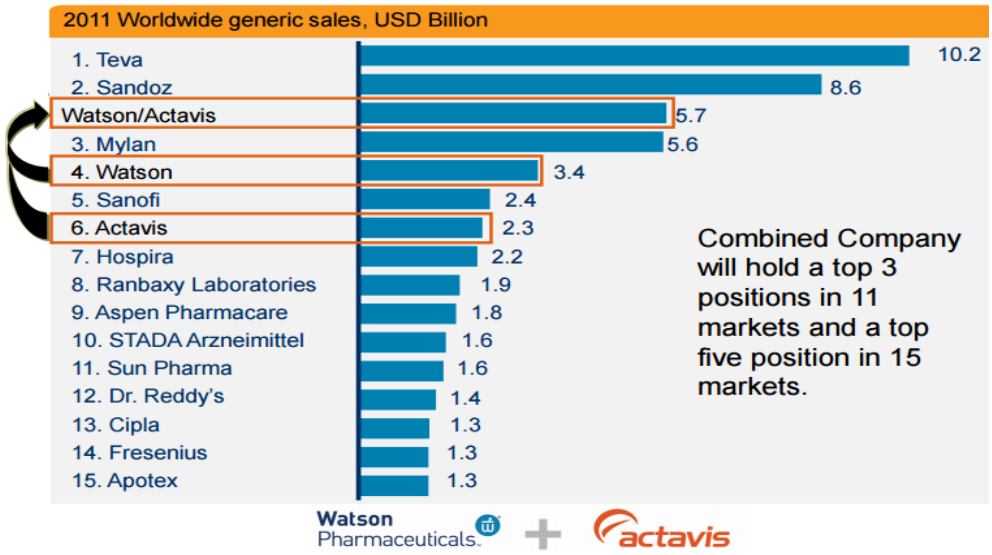
[2] Watson to Acquire Arrow Group, accessed May 2016, Allergan (2009)

Shortly thereafter the expansion story continued by gaining strong presence in key southeast asian markets while vaulting into the number five position for generics in Australia through the January 2012 acquisition of the Australian Ascent Pharmahealth.

By November 2012, the company became the world's third-largest generics company behind Teva Pharmaceutical and Novartis by a €4.25 billion merger with Actavis. The merger allows it to compete more effectively and signified the completion of Watson's transformation to Watson 2.0: a global generic company. It also changed its name to Actavis to represent itself worldwide under one trademarked and protected name. Bisaro stated the rationale for the merger as following:

"In a single, commercially compelling transaction, we more than double Watson's international access and strengthen our commercial position in key established European markets as well as exciting emerging growth markets, including Central and Eastern Europe and Russia. The transaction achieves Watson's stated strategic objective of expanding and diversifying our business into a truly global company. Once the transaction is completed, approximately 40% of our generic revenues will come from markets outside of the U.S."[4]

Figure 1: Impact of Watson Pharmaceuticals and Actavis combination



source: Watson pharmaceuticals investor presentation, (Actavis, 2012)

[3] Watson Pharma buys Greece's Specifar for $562 million, accessed May 2016, Krauskopf (2011)
[4] Watson to Acquire Actavis Group for EUR4.25 Bilion, accessed May 2016, Actavis (2012)

Actavis as a separate company was well positioned with presence in more than 40 countries and approximately 1000 products marketed worldwide, added to Watson it transformed the company's commercial position and added complementary products to its portfolio and pipeline. The combined company held the top 3 position in 12 markets and a top 5 position in 16 markets and was active in more than 60 countries.

Creation of a specialty pharmaceutical powerhouse

The merger also highlighted a shift in strategy to not only play on a global stage but also build up a branded drug and biotech business to supplement the less profitable generics. Bisaro stated in a telephone interview:

"We will be focusing even more heavily on brand acquisitions and brand-licensing deals to diversify our business."[5]

The strategic objective to become a global specialty pharmaceutical company, set five years ago, was achieved. A new goal was to become a premier global specialty pharmaceutical by 2018. The merger with Actavis helped towards this objective as it broadened the company's product portfolio and expanded the development pipeline (over 185 Abbreviated New Drug Applications ("ANDAs") pending with the FDA). It had gained core leadership positions in modified release, solid oral dosage and transdermal products into semi-solids, liquids and injectables. Only two months later Actavis already followed through on its brand growth strategy with a small bolt-on acquisition of Uteron Pharma for $150 million to add to their Women's Health portfolio.

In 2013 Actavis made a bold move towards its new strategic objective with the acquisition of Warner Chilcott. Bisaro saw compelling commercial and financial benefits in the combination: *"The combination of Actavis and Warner Chilcott creates a strong specialty brand portfolio focused in therapeutic categories with strong growth potential, and is supported by a deep pipeline of development programs".*[6]

[5] Watson CEO eyes cost cuts, brand growth as Actavis deal closes, accessed May 2016, Station (2012)

[6] Actavis to Acquire Warner Chilcott, accessed May 2016, Actavis (2013)

By combining, he created a powerful global player with a top three position in the US specialty pharmaceuticals market that was strong in Women's Health, Gastroenterology, Urology and Dermatology (Exhibit 4A: Therapeutic categories evolution). According to investment bank Jefferies analysts the enhancement of Actavis' branded business was very beneficial in this transaction, as the company itself had shown relatively little advancements in bolstering its specialty pharmaceuticals division. The addition would increase the marketed specialty brands products offering by 125% (4B: Branded products pipeline evolution). The acquisition would provide the ability for in-licensing opportunities within key therapeutic categories and the introduction of a broader portfolio of products to Actavis' worldwide markets, creating better coverage. In the new combination specialty brand sales would jump from roughly 7% to 25% in 2013, while reducing the US sales force from approximately 1100 professionals to 750.

Figure 2: Impact of Actavis & Warner Chilcott combination

Source: Actavis investor presentation, (Actavis, 2013)

In addition to the operational benefits, the combination also relocated headquarters to Dublin as an Irish plc. This created a favorable tax structure by lowering the company's tax rate overnight from about 28% to 17%. According to Bisaro, the tax inversion as part of the combination with Warner Chilcott was "icing on the cake…

What we're trying to do is level the playing field"[7]. Industry analysts were happy with the incorporation in Ireland, David Maris of BMO Capital Markets was already looking towards the future: "the longer-term benefit of a lower tax rate is that it allows you to acquire other companies at even better price,"[8] expecting more (potentially bigger) deals going forward.

To fulfill the desire set by the board to become a premier player in specialty pharmaceuticals, the company continued with its biggest deal ever. In 2014 Actavis was to acquire Forest Laboratories for $25 billion, combining two of the world's fast specialty pharmaceuticals. Bisaro noted:
"In addition to being financially and commercially compelling, this transaction fundamentally transforms Actavis, positioning it for a new and even more exciting future. In five short years, my management team has transformed Watson, and now Actavis, from a U.S. generics company to a leader on the global specialty pharmaceutical stage. Brent and his team, in a short period, have made dramatic progress in rejuvenating Forest into a leader in North American brands."[9]

The acquisition enhanced Actavis' size and scale in addition to being less focused on generics going forward with specialty brand revenues contributing roughly half to the combined company's revenue. It also brought Forest's brand portfolio and pipeline to additional markets while creating stronger and new therapeutic categories.

New leader, new model

As part of the combination, CEO Bisaro became executive Chairman while Brent Saunders, former CEO of Forest Laboratories, took place as new CEO. Saunders had successful experience with integrating and turning-around companies while being involved as CEO in two big acquisitions with a combined value of $33,5 billion before. According to Bisaro the appointment reflected the increased size and complexity of the combined business and the exceptional and complementary expertise of both company's management teams. It was Saunders' job going forward

[7] Actavis Lowers Tax Rate to 17% After Warner Chilcott Deal, accessed May 2016, Armstrong (2013)
[8] Actavis to buy Warner Chilcott in $5 billion stock deal, accessed may 2016, Humer & Pierson (2013)
[9] Actavis to Acquire Forest Laboratories for $25 in an Equity and Cash Transaction, accessed May 2016, Forest Laboratories (2014)

to integrate Actavis' generics business with Forest Laboratories' more specialized prescription-drugs operation while also eying for brand drug acquisitions. Saunders saw an innovative new model for the global specialty pharmaceutical:
"Our business model is driven by a broad portfolio of strong brand, generic and OTC products, a commitment to development-focused, results oriented research and development and the size and scale needed to efficiently and cost-effectively meet the needs of our global customer base. The new Actavis is uniquely positioned to deliver exceptional long-term financial performance and expand access to pharmaceutical products for patients around the world."

However, Canaccord Genuity analyst Corey Davis noted that marketing both brand and generics on such a balanced scale was not common:
"Generics are all about being savvy with patent litigation and settlements, [while] branded drugs are something else altogether. Generic drugs don't need much marketing; price does that, as do relationships with distributors and pharmacies. Brands require expensive sales support, focused on physicians and payers--not to mention DTC advertising. They are almost polar opposite business models." [10]

Saunders started just three months after again with a relatively small $675 million bolt-on acquisition of Durata Therapeutics for its DALVANCE product, a targeted investment that strengthened Actavis' emerging infectious disease therapeutic category. Saunders commented: *"DALVANCE is a novel antibiotic that can be used in multiple sites of care. It complements our Teflaro product and ceftazidine-avibactam, currently in late-stage development, which are intended for use in the inpatient setting. DALVANCE is also a highly differentiated product with documented efficacy, safety and tolerability, and its acceptance by healthcare providers will be enhanced by Actavis' best-in-class commercial infrastructure and complementary product line. With the addition of DALVANCE, we deliver on our commitment to build an anti-infective franchise with true scale."*[11]

The acquisition fitted perfectly in the new business model as the investment could be developed to its ultimate potential within Actavis' infrastructure. With Actavis'

[10] Not for sale, says new Actavis CEO. We're buying instead, accessed May 2016, Staton (2014)
[11] Actavis to Acquire Durata Therapeutics, Inc., accessed May 2016, Allergan (2014)

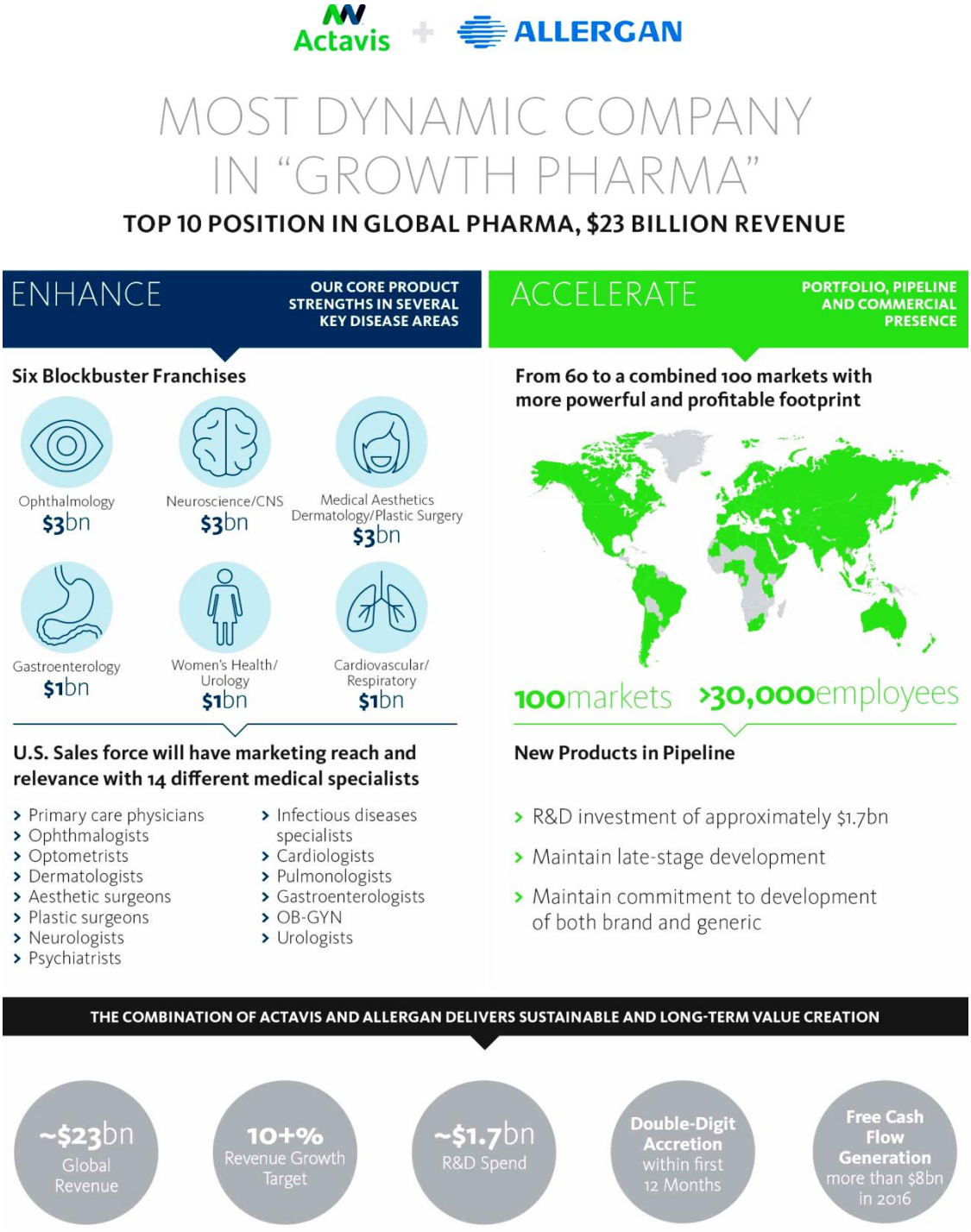
resources, commercial reach and scale DALVANCE gained maximum access to patients worldwide. by may 2015, he also expanded the company's presence in the UK generics market in a similar fashion by buying niche generics company Auden Mckenzie for $495.9 million. The acquisition gained Actavis the top generic supplier spot in the UK and number three place for pharmaceuticals in the UK in general.

The beginning of Growth Pharma

In 2015, Saunders played white knight in a heated takeover-battle by preventing hostile suitor Valeant Pharmaceuticals from taking over Allergan (Exhibit 6: Actavis acquisition of Allergan timeline). By acquiring Allergan for $65.6 billion Saunders saw "a once-in-a-lifetime, unique opportunity to transform our industry."[12] At the time, transaction was the largest recorded transaction ever in the pharmaceutical sector. "This acquisition creates the fastest growing and most dynamic growth pharmaceutical company in global healthcare, making us one of the world's top 10 pharmaceutical companies. We will establish an unrivaled foundation for long-term growth, anchored by leading, world-class blockbuster franchises and a premier late-stage pipeline that will accelerate our commitment to build an exceptional, sustainable portfolio."[13] said Saunders. The combination doubled the brand segment and international revenue and would transform the growth profile to a minimum of 10% for the foreseeable future. Allergan would add blockbuster franchises in Ophthalmology, Neurosciences, and Medical Aesthetics/Dermatology/Plastic Surgery which could now be extended to a total of 100 markets. The addition strengthened presence notably in Canada, Europe, Southeast Asia and Latin America while also adding to China and India. The combination created a pharmaceutical giant with an unparalleled growth profile in comparison with other big pharmaceutical companies.

[12] Actavis Agrees to Buy Botox Maker Allergan, accessed May 2016, Rockoff (2014)
[13] Actavis to Acquire Allergan to Create Top 10 Global Growth Pharmaceutical Company, accessed May 2016, Allergan (2014)

Figure 3: Impact Actavis & Allergan combination



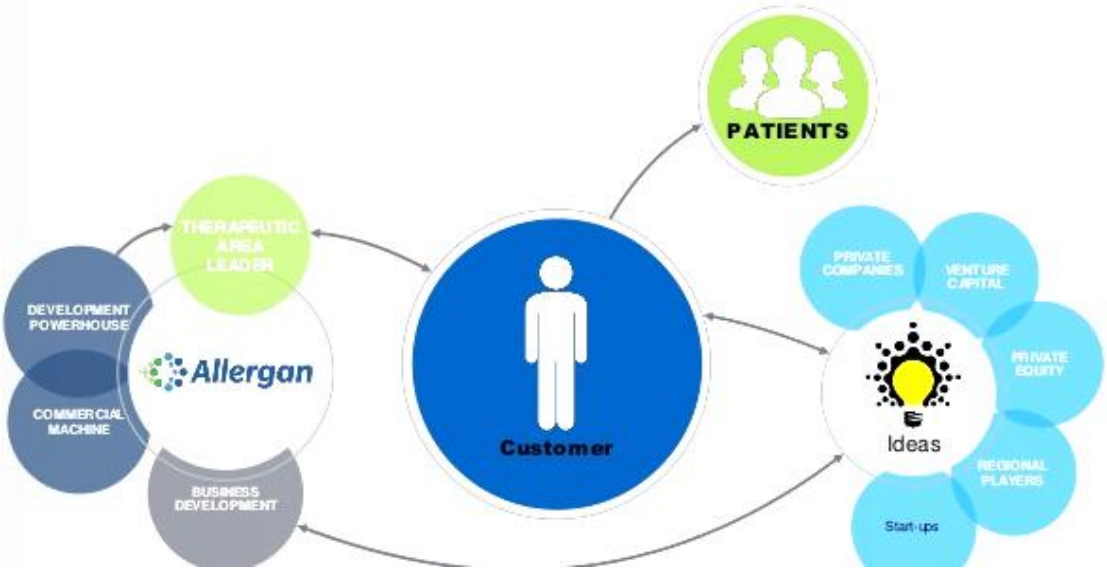
Source: Allergan investor presentation factsheet, November 2014

To reflect the evolution of the company, Saunders decided to adopt Allergan's name for the dynamic new breed of pharmaceutical he had created: "growth pharma". Growth pharma was to rival big pharma in size but have considerably higher growth margins and Allergan was going to be a leader in this. It was going to achieve this by a bigger contribution of branded drugs sales, strong pipeline, highly efficient salesforce, sustainable therapeutic brand categories and strong worldwide commercial presence.

Saunders wanted Allergan to be Number 1 or number 2 in each core therapeutic area. Allergan's R&D organization focused on late-stage development in its therapeutic areas to market durable products that deliver long-term growth. To achieve this, it formed an "ecosystem where everybody wants to bring us their ideas, their innovations, so that we can continually source new things," Saunders said (see figure 4 below). This was part of his newly introduced Open Science model for research & development (R&D) wherein innovation would flow into Allergan from the healthcare ecosystem (Exhibit 10B: Shift of Pharma innovation ecosystem). *"Over the past 15 years, the pharmaceutical innovation ecosystem has shifted. Where global pharma companies had previously driven the lion's share of new product revenue, now the driving source of innovation is coming from smaller biotechnology and specialty pharma companies, as well as academia. Open Science defines our position in this new ecosystem – as a magnet for game-changing ideas and innovation. We bring these programs into our best-in-class product development and commercialization platform to build a sustainable R&D portfolio that enables Allergan to continue to be a leader in Growth Pharma. Through our Open Science model, we seek to continue to drive strong R&D productivity by delivering innovative therapies that create long-term shared value for Allergan, for customers and for patients."*[14]

[14] Allergan Outlines Open Science Model and Highlights Key Development Programs at R&D Day, accessed May 2016, Allergan (2015)

Figure 4: Allergan's Open Science model



Source: Allergan presentation at OIS (Saunders, 2015)

Saunders stressed that his "Open Science" model did not mean he was an opponent of R&D in big pharma: *"I'm pro-R&D, but I don't believe that any single company can corner the market on innovation in even one therapeutic area. It doesn't mean they shouldn't do basic research where they have special insights, but even then they need to be open to the ideas of others. Innovation in healthcare is more important than ever. Other companies have had success with different models based on different capabilities, and we applaud every new drug approval."* [15]

By recognizing and welcoming great innovations from outside Allergan, he believed the company could strategically invest in innovation from outside to increase R&D efficiency and fulfill unmet needs for patients (Exhibit 8D: R&D productivity). It wanted to be the preferred partner in current and new development collaborations.

As part of Allergan's "Open Science" model and value creation strategy it acquired Kythera Biopharmaceuticals, Naurex and Aquisis in the latter half of 2015 for a combined $2.96 billion. The Kythera acquisition added a list of differentiated products such as the non-surgical KYBELLA injection (treating double chin) and development programs to Allergan's aesthetics business. Keith Leonard, CEO of Kythera saw value joining forces:

[15] Allergan CEO Brent Saunders: Here's what I really thiank about R&D, accessed May 2016, Herper (2015)

"Allergan's world-class medical aesthetics, global footprint, history and commitment to developing leading aesthetic products makes them ideally suited to realize the maximum commercial potential of KYBELLA™."[16]

Naurex would build on the company's leadership position in their mental health portfolio. Saunders saw to strengthen Allergan's development pipeline and growth while progressing Naurex's pipeline to commercialization: *"Naurex's unique pipeline comprises compounds that utilize a new mechanism to target areas of significant unmet medical need in Major Depressive Disorder (MDD), including severe and/or treatment-resistant depression. These highly differentiated compounds will immediately bolster our exceptional mental health pipeline."*[17]

Finally, the AqueSys acquisition added to Allergan's eye care category. David Nicholson, president of Global Brand R&D saw AqueSys' potential: *"The XEN45 program has been shown to provide a robust efficacy profile with minimal side effects, and if approved in the U.S., would provide an exciting new treatment option for patients, and one that is highly complementary to our ongoing portfolio and development programs in this critical treatment area."*[18]

Transformation to branded growth pharma

While the deals to extend Allergan's branded drugs portfolio and development pipeline were being made and pending in the latter of 2015, it took another bold action: the divestiture of Allergan's global generics business. By selling its generic pharmaceuticals business to Teva for $40.5 billion, it would remain as a more focused branded growth pharma. The branded business that would remain was focused on their seven key therapeutic categories with strong double-digit growth prospects (Exhibit 4C: Allergan 2015 core therapeutic areas & new product sales estimates) and a solid development pipeline. The brand-focused company would reduce operational complexity by going from 40 to 12 plants worldwide and magnified its "Open Science" R&D strategy. Saunders' reasoning was the following:

[16] Allergan to Acquire KYTHERA Biopharmaceuticals, accessed May 2016, Allergan (2015)
[17] Allergan to Acquire Naurex, accessed May 2016, Allergan (2015)
[18] Allergan to Acquare Glaucoma Treatment Company AqueSys, accessed May 2016, Allergan (2015)

"While we were not actively seeking a buyer for our generics business, Teva presented an offer at a very compelling valuation that reflects and recognizes the significant value that our global generics team has generated in creating and managing a world-class generics business. As a result of the transaction, we will also obtain a minority equity interest in Teva, to share in the upside of the generic R&D pipeline we are transferring in this combination."[19]

The pending transaction was expected to be closed by the first quarter of 2016. However, antitrust clearance from mostly EU and US regulatory bodies had delayed the progress as Teva had to divest $1 billion in assets in order to proceed. Teva now expected it to take until June 2016 as required divestitures in the US were more extensive and thus required more time and negotiations with the Federal Trade Commission (FTC) than expected.

Industry overview

The global pharmaceutical industry can be split up in generic drugs and branded drugs manufacturers (Exhibit 7: Top 30 global pharma firms in 2014 and 11B: global spending on drug classifications). In general, generics have spent less on R&D than branded drugs manufacturers due to their targeting of off-patented drugs. Generics accounts for 80% of the prescriptions written in the US drug market and the global top 5 generic manufacturers generate 47.4% of global generics sales in 2014[20].

The global pharmaceutical industry has undergone significant changes during the period of Watson's transformation.The industry, the branded manufacturers faced a "patent cliff" from roughly 2010 to 2015 (see Exhibit 8A and 8B) wherein a notable amount of successful patented drugs from the 90's lost their exclusivity, while there had been relatively low R&D output (see Exhibit 8E and 8F) and costs per output increased. As a result, the bloated cost-structure of most big (branded) pharma companies became visible as sales declined (see Exhibit 9: margins of comparables). The new stream of patent-expired drugs to come on the market was a boon for generic manufacturers (see Exhibit 11A), who depended much more on their ability to reach customers through distribution to increase revenues. To capture

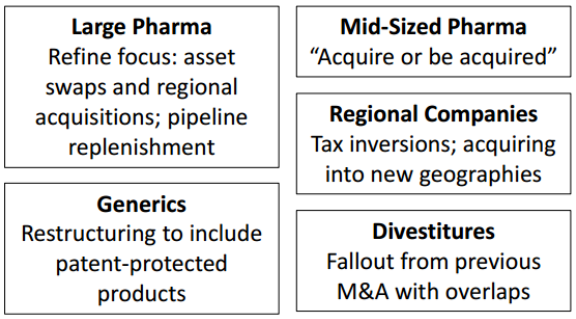
[19] Allergan Accelerates Transformation to Branded Growth Pharma Leader, accessed May 2016, Allergan (2015)
[20] Top 20 Generics companies by 2014 revenue, accessed May 2016, Palmer (2015)

future growth, pharmaceutical companies had undertaken several measures in the last decade to stay relevant in the changing business environment. This was mostly accomplished through internal cost-cutting or via M&A. Savings on every expense were targeted: sales & marketing, costs of goods sold and even R&D.

The industry increasingly focused on running efficient internal operations to reduce costs in anticipation of the patent cliff and increase scale. While the focus was initially on internal cost-cutting, towards 2009 it became clear that more extreme measures were necessary: in 2003 Schering-Plough lost its patent on the blockbuster Caritin and Pfizer failed the product approval of Torcetrapib and launch of Exubera in 2006-2007. As a result the firms orchestrated mergers targeting synergies of roughly 30% of target expense and 25% in target sales while reducing workforce[21].

M&A became increasingly important to achieve the company's goals by expanding reach of the current portfolios, grow internationally, deepen or broaden the product portfolios and enhance buying power of inputs while simultaneously eliminating redundancies in the workforce (see Figure 5 below**).** In addition, relocating headquarters to lower tax-rate countries fueled M&A as it allows enhances net profits and future deals. However, valuations were rising as companies were competing for targets making it less sustainable (Exhibit 2C: Top pharma M&A deals in 2015 and 2014). Companies also became increasingly focused, divesting or reducing insignificant side operations.

Figure 5: M&A rationale



source: (Wang, 2014)

[21] Data estimates from Mizuho financial industry report p6, accessed May 2016, Wang (2014)

As a result of the decrease in R&D productivity (Exhibit 8C: Declining R&D productivity), pharmaceutical companies also started to focus more on certain therapeutic categories that fit the company's legacy business and strength to gain leadership in the therapeutic area. By focusing, big pharma could uphold innovation leadership in the category and increase the effectiveness of its marketing and salesforce. The increased focus on certain categories also contributed to the uptick in M&A as big pharma started to pool resources through M&A, licensing and asset swaps to create leadership areas.

Specialty pharma companies followed a similar strategy targeting several therapeutic areas with a lesser focus given the limited amount of products in the specialty pharma industry. Instead of focusing on a few blockbuster products, its salesforce offers several (e.g. 5) medium market-size products in a therapeutic area that combined give a similar sales potential. Just like big pharma this increased the effectiveness and relevance of the marketing and salesforce to customers, although less impact of patent expiration.

The source of innovation within the pharmaceutical world had also changed since more venture capital firms started to fund biotech startups with innovative R&D projects (see Exhibit 10A). While in 1998 big pharma contributed 62% of all New Molecular Entities (NME's) by 2013 this had decreased to 22% (see exhibit 10B). As a result of this trend and the hope to acquire innovation at a better cost, several big pharma companies started to change their R&D methods from a closed in-house model to an open-source or networked model (see Exhibit 8G and 8H). Within this model, big pharma taps into external sources for research and development of its pipeline. This model gives potential access to more innovations early in the process while spreading the accompanied risks and costs of the R&D (see figure 6 below).

Figure 6: Overview of R&D model on R&D/sales ratio and % pipeline externally sourced

Source: Allergan R&D presentation (Schaison, 2015)

To conclude the industry overview, during the period and even more so in the future, the share of prescription drug sales coming from international markets is growing. Global prescriptions sales in general are expected to grow by 4,8% per year from 2014 to make it a $987 billion market by 2020 according to EvaluatePharma (see Exhibit 11C). Generics will also continue to grow at a faster pace than branded pharmaceutical products. The share of sales coming from biotechnology products (bioengineered vaccines and biologics) had also tremendously increased and will continue to do so, making up 27% in 2020 according to EvaluatePharma (see Exhibit 11D).

Looking ahead

While the $160 billion merger was cancelled, shareholders were wondering what Saunders was going to do next. As the supposedly largest deal of 2015, it was heavily followed and commented on in the media. By some seen as a deal to redomicile Pfizer to Ireland to lower taxes, it sounded the warning bells with suggestions similar to this:

"companies are increasingly pursuing financial engineering to fix troubled core businesses, a trend that in previous booms has ended poorly for investors".[22]

[22] Pfizer's Deal for Allergan is a Dubious Milestone, accessed May 2016, Cox (2015)

The merger would have brought Pfizer roughly $1.7 billion in tax savings by 2018 based on analysts' estimates[23]. In addition, the media highlighted Allergan's record of employee layoffs in past M&A transactions and was wary that it was not always productive for R&D. Firing staff could demotivate the remaining workers and cause key researchers to leave. Also, lab productivity didn't always scale, resulting in a lackluster development pipeline.

Shareholders also started to worry about the sustainability of Allergan's business model, as its competitor Valeant Pharmaceutical who from a distance appeared to follow a similar playbook, had faltered. Both firms had grown through an acquisitive style with less focus on R&D, done tax inversions and increased the prices of drugs. Valeant had come in the spotlight after it was accused of fraud at one of its distributors, aggressive sales techniques (e.g. channel stuffing) and ludicrous drug price hikes. Democrats' presidential contender Hillary Clinton addressed Valeant Pharmaceuticals in her campaign, saying: "This is predatory pricing. It is unjustified. It is wrong." 2016 presidential candidates from both sides had addressed drug costs in their campaigns making shareholders worried about the future of some pharmaceutical companies.

Saunders had proposed the combination with Pfizer as another transformation: *"This bold action is the next chapter in the successful transformation of Allergan allowing us to operate with greater resources at a much bigger scale. Joining forces with Pfizer matches our leading products in seven high growth therapeutic areas and our robust R&D pipeline with Pfizer's leading innovative and established businesses, vast global footprint and strength in discovery and development research to create a new biopharma leader."*[24]

[23] Pfinancial Engineering, accessed May 2016, Cyran (2015)
[24] Pfizer and Allergan to Combine, accessed May 2016, Allergan (2015)

Now that the deal was aborted by mutual agreement after new rules by the US treasury department prevented much of the tax benefits for Pfizer, shareholders grew more critical towards Allergan's model of creating value.

Figure 7: Allergan's shareholder performance and M&A activity from 2007-HY2015

Source: Allergan website; Investor relations, May 2016

Shareholders were wondering how the future would look like. Could Saunders replicate the success he had created since 2007 (see figure 7 above)? Firstly, would the company still do large deals in the future now that the US treasury department had taken away some of its merits? Was Saunder's "growth pharma" strategy still possible going forward now they were one of the biggest pharmaceutical companies based on revenues and market capitalization? Was Allergan's R&D style sustainable going forward or would it shift to the more traditional style? Was the business model it had used in the past actually sustainable or would it halt like Valeant's, especially now that Valeant's supposedly similar practices had come to light in the US presidential elections and tax benefits had been barred by the US treasury department?

Exhibits

Exhibit 1A: Key financials of Allergan from 2007-2015

source: company annual reports & SEC 10-K files

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Generics segment	(x1000 000)								
Net revenues	1.501,9	1.474,3	1.668,2	2.338,4	3.367,2	4.446,1	6355,9	6747,2	6375,3
cost of sales	917,9	883,8	947,1	1.198,9	1.817,8	2.430,9	3294	3198,6	3048,1
R&D generics	102,4	119,2	140,4	194,6	227,7	256,3	425,1	480,2	422,2
Selling and marketing	55,4	55,2	53,8	111,9	156,0	281,2	638,3	679,9	557,7
Generics contribution	426,2	416,1	526,9	833,0	1.165,7	1.477,7	1998,5	2388,5	2347,3
Brands segment									
Net revenues	482,7	455,0	461,0	397,8	441,0	482,4	1124,8	4631,4	12835,5
cost of sales	99,9	107,1	89,3	88,4	94,4	116,8	372,2	1649	1607,3
R&D brands	42,4	50,9	56,9	101,5	67,7	146,2	191,8	605,7	2358,5
Selling and marketing	108,0	118,2	144,5	137,8	168,6	175,5	269,5	1057,5	2536,7
Brands contribution	178,4	178,8	170,3	70,1	110,3	43,9	291,3	1319,2	6333
Distribution segment									
Net revenues	566,1	606,2	663,8	830,7	776,2	986,4	1196,9	1683,7	2225,4
cost of sales	487,0	511,9	560,4	711,2	652,7	846,6	1024,5	1456,2	1905,3
R&D	-	-	-	-	-	-	-	-	-
Selling and marketing	52,0	59,5	64,8	70,3	77,2	89,8	112,5	112,6	146,9
Distribution contribution	27,1	34,8	38,6	49,2	46,3	50,0	59,9	114,9	173,2
Total contribution	631,7	629,7	735,8	952,3	1.322,3	1.571,6	2349,7	3822,6	6506,2
General and administrative	205,7	190,5	257,1	436,1	353,1	625,3	1027,5	1743,2	3283,7
Amortization	176,4	80,7	92,6	180,0	354,3	481,1	842,7	2597,5	5453,4
asset sales/impairments	(6,1)	0,3	2,2	30,8	78,7	149,5	902,7	749,6	783,6
Operating income	255,7	358,2	383,9	305,4	536,2	315,7	-423,2	-1267,7	-3014,5
Total other income	(31,5)	0,1	(21,3)	(54,8)	(80,2)	(70,6)	-215,2	-444,4	-1415,7
Provision for income taxes	83,2	119,9	140,6	67,3	196,9	146,8	112,7	81,9	1561,9
Net income	141,0	238,4	222,0	184,4	260,9	97,3	-750,4	-1630,2	-2868,3
Net income from discontinued generics operations									6787.7*
Diluted weighted avg. shares outstanding	117,0	117,7	116,4	124,2	126,5	128,4	142,3	219,7	367,8
Financial position									
Total assets	3.472,0	3.677,9	5.903,5	5.686,6	6.698,3	14.114,8	22725,9	52529,1	135840,7
Total debt	905,6	877,9	1.457,8	1.016,1	1.033,0	6.433,3	9052	15543,7	42726,2
Total stockholders' equity	1.849,5	2.108,6	3.023,1	3.282,6	3.562,5	3.856,4	9537,1	28335,5	76589,3
									*5487.3 in tax be

Exhibit 1B: Key metrics of Allergan 2007-2015

source: company annual reports, presentations & SEC 10-K files

Key metrics:	2007	2008	2009	2010	2011	2012	2013	2014	2015
Generics:									
# US generic product families	150	150	170	160	160	250	250	250	n.a
# US sales & marketing professionals generic	25	27	21*	21*	22*	n.a*	n.a*	n.a	n.a
# new generic product launches	16	11	8	7	16	13***	6***	n.a***	n.a
# pending approval (ANDA's)	60	60	100	120	130	185	195	200	200
# new filed ANDA's	21	0	36	30**	30**	0			
Branded:									
# branded product families	27	27	30	30	30	40	45	80	n.a
# US sales & marketing professionals branded	330	380	350	350	400	430	n.a	n.a	n.a
# new brand product launches	0	1	2	4	3	1	n.a	n.a	n.a
# pending approval (NDA's)	0	4	7	3	4	7	14	4	9
# new filed NDA's	0	2	2	0	0	0		4	1
Other:									
# SKU	8000	8000	8000	8500	9960	11450	12725	12650	13200
# suppliers	200	200	200	200	360	260	400	340	340
# of employees	5640	5070	5830	6030	6686	17700	19200	21600	31200
# R&D employees	640	670	850	830	990	2000	1775	2070	3700
# countries active	2	2	20	20	20	60	60	60	100
market cap (x1000)****	$3.039,04	$2.561,27	$ 3.891,83	$5.775,44	$8.189,61	$10.894,28	$21.845,18	$52.880,69	$103.017,10
enterprise value (x1000)****	$3.740,09	$2.931,59	$ 5.148,23	$6.508,74	$9.013,31	$17.008,58	$30.568,18	$68.174,39	$144.647,30

*globally: 126 in 2009, 126 in 2010, 392 in 2011, 2000 in 2012 and 3500 in 2013 **global applications: 145 in 2010 and 175 in 2011*** launched globally: 1000 in 2012, 700 in 2013 and 550 in 2014
**** based on year-end average amount of shares outstanding and average share price of year high and low price

Exhibit 2A: Allergan M&A activity from 2009-2015

announced	Completed	company name	value	transaction details	strategic intent
17-06-2009	12-02-2009	Arrow Group	$1.75 billion	$1.05 billion cash + $500 million Watson stock issued + $200 million preferreds	- expand commercial footprint - expanded portfolio of marketed products (minimal portfolio overlap)
	25-05-2011	Specifar Pharmaceuticals	$562 million	€400 million cash	- expand commercial presence in Europe (notably in greece) - add pan-european generic development business
	24-01-2012	Ascent Pharmahealth	$393 million	AU$375 million cash	- expand commercial presence in Southeast Asia - Become #5 generics company in Australia
26-04-2012	02-11-2012	Actavis	$5.5 billion	€4.15 billion in cash + €100 million in debt	- dramatically enhances international presence - expanded portfolio & pipeline
	23-01-2013	Uteron Pharma	$150 million	$150 million cash + up to $155 in potential future milestone payments	-expands Women's health products
20-05-2013	01-10-2013	Warner Chilcott	$8.5 billion	0.16 shares of the combined company for each Warner Chilcott share.	- expands portfolio and pipeline in core areas of women's health and urology - adds gastroenterology and dermatology to portfolio -Tax savings
18-02-2014	01-07-2014	Forest Laboratories	$27.7 billion	$20.6 billion in stock + $7.1 billion in cash	- expands and adds to brand portfolio with blockbuster franchices and new therapeutic categories
06-10-2014	17-11-2014	Durata Therapeutics	$675 million	$675 million cash + potential milestone payment	- expands emerging Infectious Disease portfolio - Leverages Actavis' sales and marketing capabilities
17-11-2014	17-03-2015	Allergan	$66 billion	$129.22 in cash + 0.3683 Actavis share per Allergan share	- Addition and strengthening of branded therapeutic categories - expand commercial presence
26-01-2015	29-05-2015	Auden Mckenzie	$ 495.9 million	$495.9 million in cash and a two year royalty on a % of gross profits for a product	- #1 supplier of generics in the UK and #3 in overall UK pharmaceutical market
17-06-2015	01-10-2015	Kythera Biopharmaceuticals	$2.1 billion	$2.1 billion cash	- addition to Facial Aesthetics brand portfolio - enhances long-term growth profile
26-07-2015	31-08-2015	Naurex Inc.	$560 million	$460 million cash + $100 million potential milestone payments	- Enhances mental health category development and pipeline
27-07-2015	Pending	Divesture of Allergan Generics to Teva Pharma	$40.5 billion	$33.75 billion cash + $6.75 in Teva shares	- focus on branded therapeutic areas - Divesture of Allergan generics business - raise cash
03-09-2015	19-10-2015	AqueSys Inc.	$300 million	$300 million cash + potential milestone payments	- Addition to eye care portfolio
23-11-2015	Failed	Pfizer	$160 billion	11.3 shares of new co per Allergan share	- enhanced growth profile - broadens R&D pipeline

source: official company announcements

Exhibit 2B: Pharma annual M&A deal count & value

Count of Pharma M&A Deals vs. Total Pharma M&A Value (2005-2014)

Source: EvaluatePharma® 22 May 2015

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Deal Count	153	154	180	187	177	217	239	199	196	204
% Chg.		1%	17%	4%	-5%	23%	10%	-17%	-2%	4%
Deal Value ($bn)	70	96	88	71	189	76	93	59	62	116
% Chg.		37%	-8%	-19%	167%	-60%	23%	-37%	5%	88%

Exhibit 2C: Top pharma M&A deals 2015 & 2014

Top Pharma M&A Deals in 2015

Rank	Target	Acquirer	Completion date	Deal value ($bn)
1	Pharmacyclics	AbbVie	26-05-2015	20,8
2	Hospira	Pfizer	03-09-2015	16
3	Salix Pharmaceuticals	Valeant Pharmaceuticals International	01-04-2015	16
4	Pall	Danaher	31-08-2015	13,6
5	Synageva	Alexion Pharmaceuticals	22-06-2015	8,9
6	Par Pharmaceuticals	Endo International	25-09-2015	8,1
7	Receptos	Celgene	27-08-2015	7,6
8	NPS Pharmaceuticals	Shire	21-02-2015	5,2
9	Auspex Pharmaceuticals	Teva Pharmaceutical Industries	05-05-2015	3,5
10	ZS Pharma	AstraZeneca	17-12-2015	2,7
			Total:	102,4

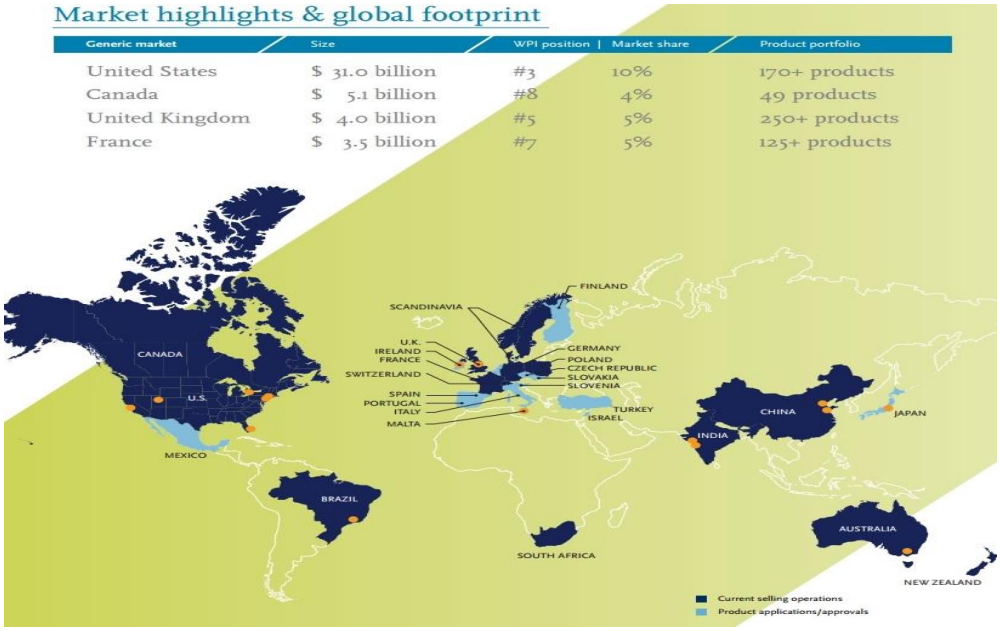
Top Pharma M&A Deals in 2014

Rank	Target	Acquirer	Completion date	Deal value ($bn)
1	Forest Laboratories	Actavis	01-07-2014	28
2	Intermune	Roche	29-09-2014	8,3
3	Questcor Pharmaceuticals	Malinckrodt	14-08-2014	5,6
4	BMS Diabetes Business	AstraZeneca	01-02-2014	4,3
5	ViroPharma	Shire	24-01-2014	4,2
6	Idenix Pharmaceuticals	Merck& Co	05-08-2014	3,9
7	Galderma	Nestlé	08-07-2014	3,6
8	Rottapharm	Meda	10-10-2014	3,1
9	Algeta	Bayer	06-03-2014	2,9
10	Aptalis Holdings	Forest Laboratories	03-02-2014	2,9
			Total:	66,8

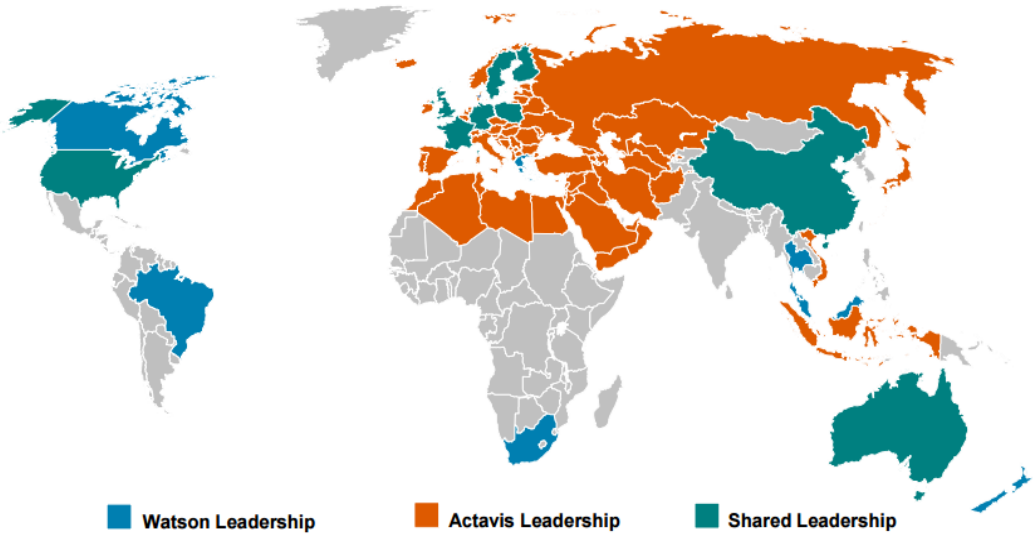
Sources: own construction, bloomberg, EvaluatePharma

Exhibit 3: Evolution of countries active

After Arrow combination



After Actavis combination



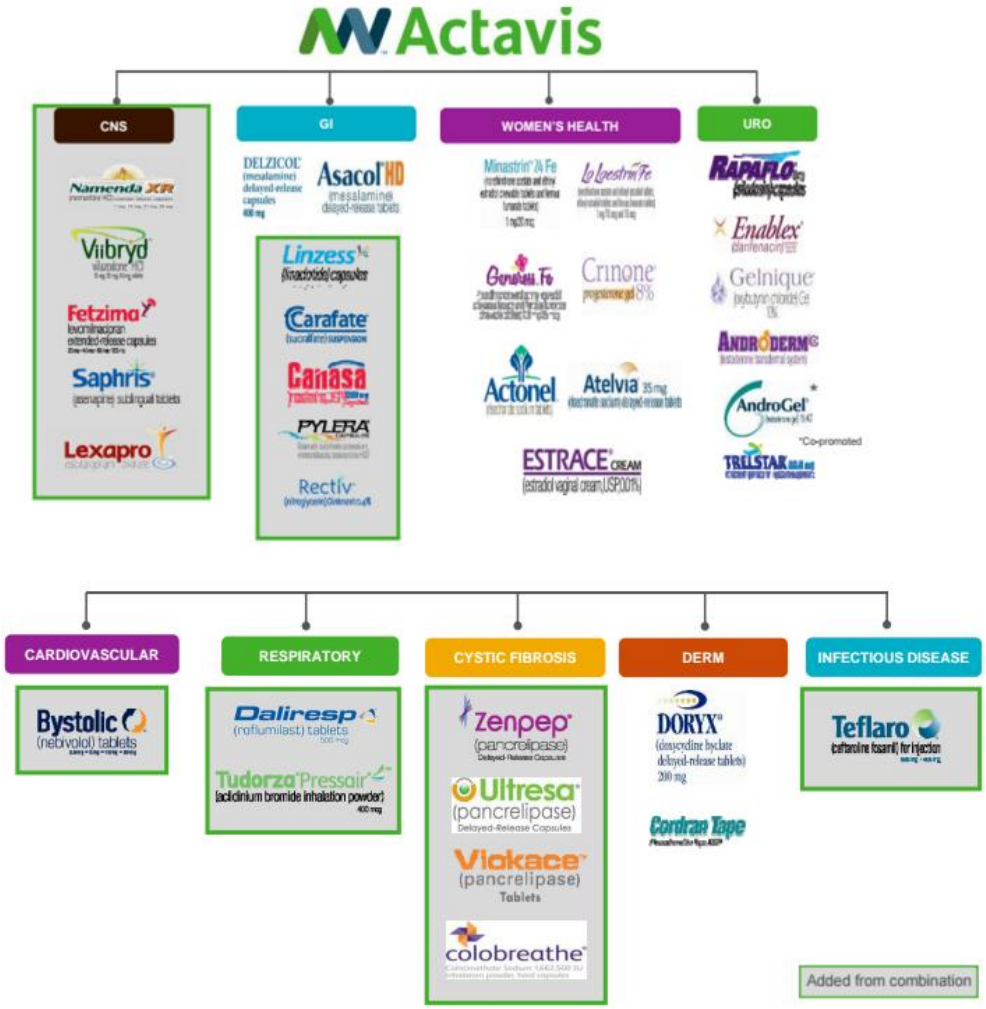
After Allergan combination

Sources: Watson Pharmaceuticals annual report and Actavis/Allergan investor presentations

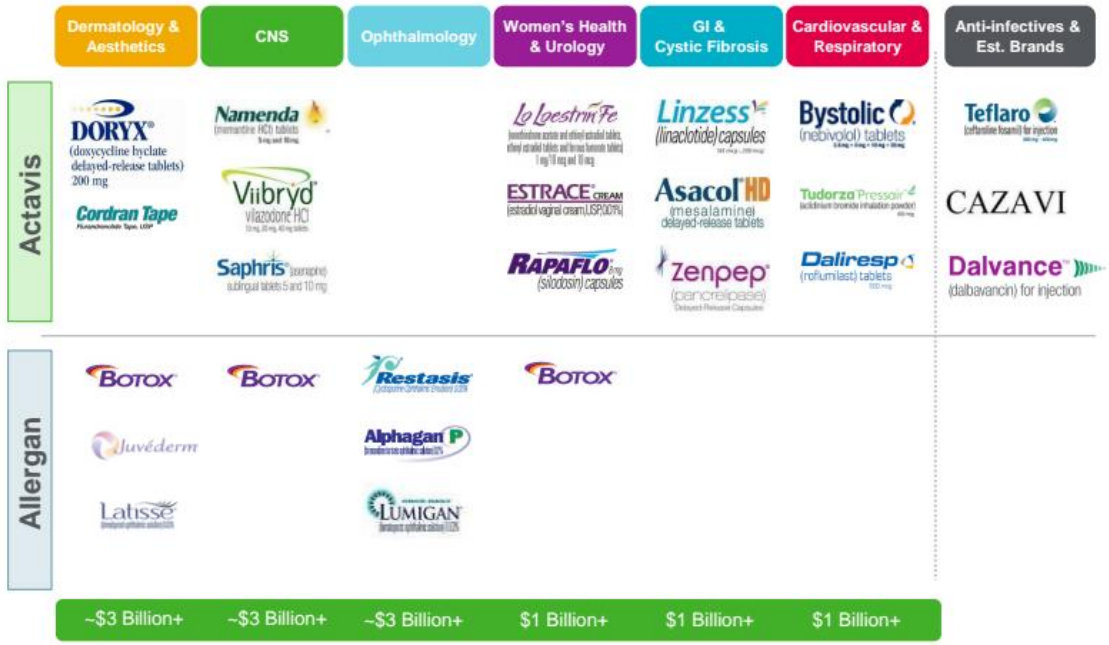
Exhibit 4A: Therapeutic categories evolution

Product portfolio per Therapeutic Franchise with Warner Chilcott addition:

Product portfolio per Therapeutic Franchise with Forest Laboratories addition:



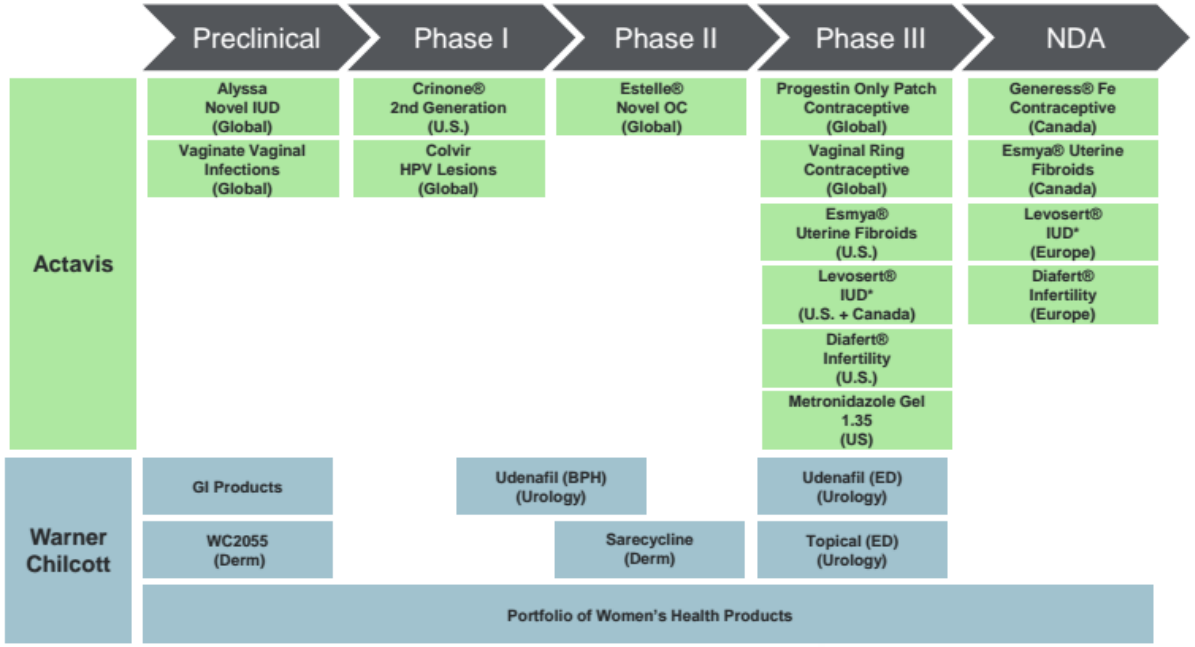
Product portfolio per Therapeutic Franchise with Allergan addition:



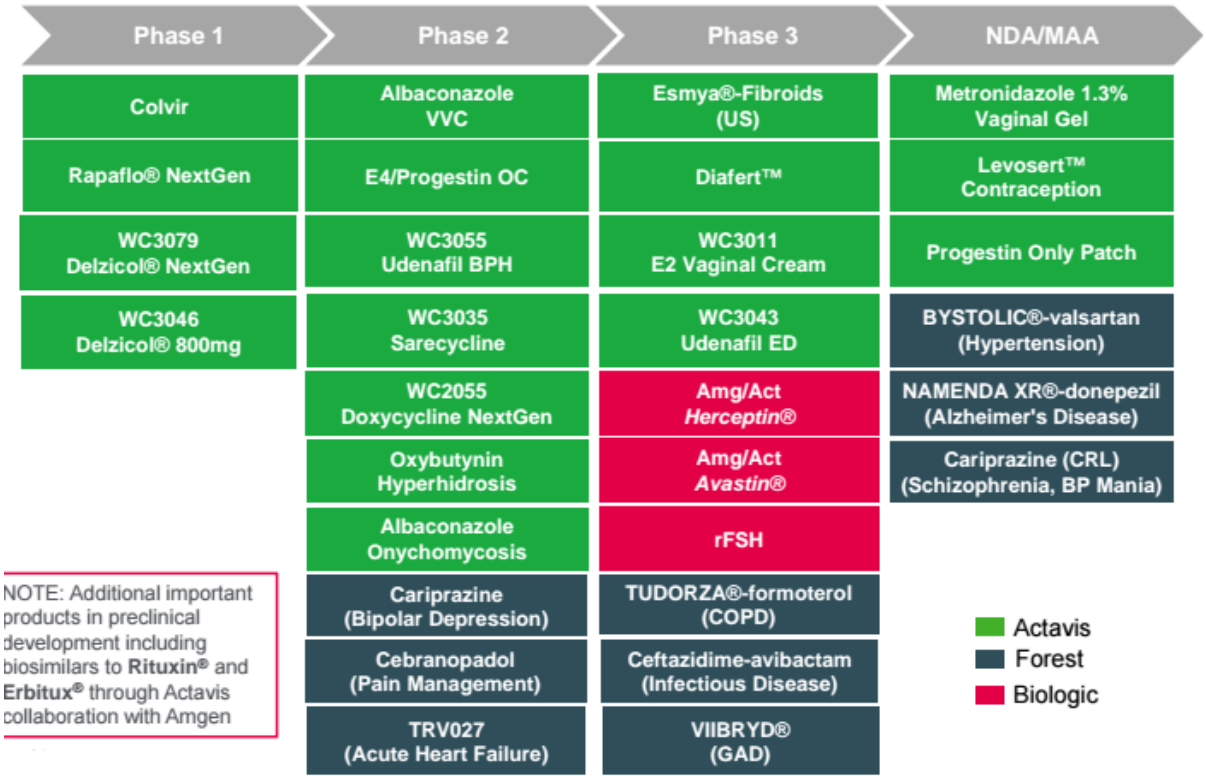
Sources: Allergan Investor presentations on combinations

Exhibit 4B: Branded products pipeline evolution

Branded pipeline addition by Warner Chilcott:



Branded pipeline addition by Forest Laboratories:



Branded pipeline addition by Allergan:

Actavis Brands

- *Bystolic + valsartan*
- *Namenda + donepezil*
- *Lilleta*
- *CAZ-AVI*
- *Viibryd Low- Dose*
- *Eluxadoline*
- *Cariprazine*
- *Esmya*
- *Sarecylcline*

Actavis Generics

Industry-leading Generics Pipeline

- *60+ First to Files, 228 pending ANDAs*
- *1,200+ Pending MAAs Internationally*

Allergan

- *BOTOX CFL Asia*
- *BOTOX Forehead Lines*
- *BOTOX Spasticity Adult LL, Adult UL, Ped LL, Ped UL*
- *RESTASIS® EU*
- *Bimatoprost SR*
- *DARPin® AMD*
- *"SEMPRANA®" Headache*
- *LATISSE® Brow*
- *Oxymetazoline Rosacea*
- *ACZONE® X*
- *SER-120*
- *OZURDEX® RVO China*
- *LASTACAFT® Japan*

Sources: Allergan Investor Presentations

Exhibit 4C: Allergan 2015 core therapeutic areas & new product sales estimates

Allergan 2015 core therapeutic areas:

	Ranking	2015 Rev ($B)[1]	Growth Vs PY (Actual Rates)	Growth Vs PY (Excluding Fx)
EYE CARE	2 global position	$3.4	6%	13%
CNS [2]	1 in Alzheimer's	$2.5	30%	32%
AESTHETICS	1 global position	$2.7	5%	11%
GI	3 global position	$1.6	17%	17%
WH	1 in US	$1.0	26%	26%
UROLOGY	6 global position	$0.3	9%	12%
AI	1 in US	$0.2	76%	76%

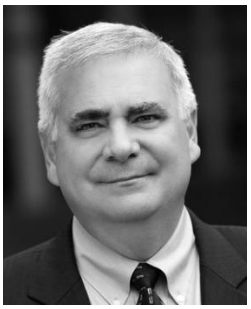
Allergan peak sales of new products:

Product	TA	Indication	Expected Launch	Preliminary Peak Sales
ABICIPAR	Eye Care	Age Related Macular Degeneration	2020	~$1,000–2,000+
RAPASTINEL	Psychiatry	Depression	2020	~$1,000–2,000+
BOTOX PIPELINE	–	–	–	~$1,000–2,000+
ORAL CGRP	Neurology	Migraine	2019	~$1,000–2,000
VIBERZI	GI	IBS-D	2015	~$750–1,000
ESMYA	WH	Uterine Fibroids	2017	~$500–1,000
RELAMORELIN	GI	Gastroparesis	2018	~$500–1,000
VRAYLAR	CNS	Bipolar Schizophrenia	2015	~$500–1,000
KYBELLA	Aesthetics	Chin Fullness	2015	~$500–1,000
BIMATOPROST SR	Eye Care	Glaucoma	2018	~$500–750
XEN45	Eye Care	Glaucoma	2016	~$500–750
TAVILERMIDE	Eye Care	Dry Eye	2019	~$500–750
SARECYCLINE	Derm	Severe Acne	2017	~$250–300

Sources: Allergan 2015 R&D day presentation & 2015 investor presentation

Exhibit 5: CEO biographies

Paul M. Bisaro, Executive Chairman of Allergan and the Company's board of directors



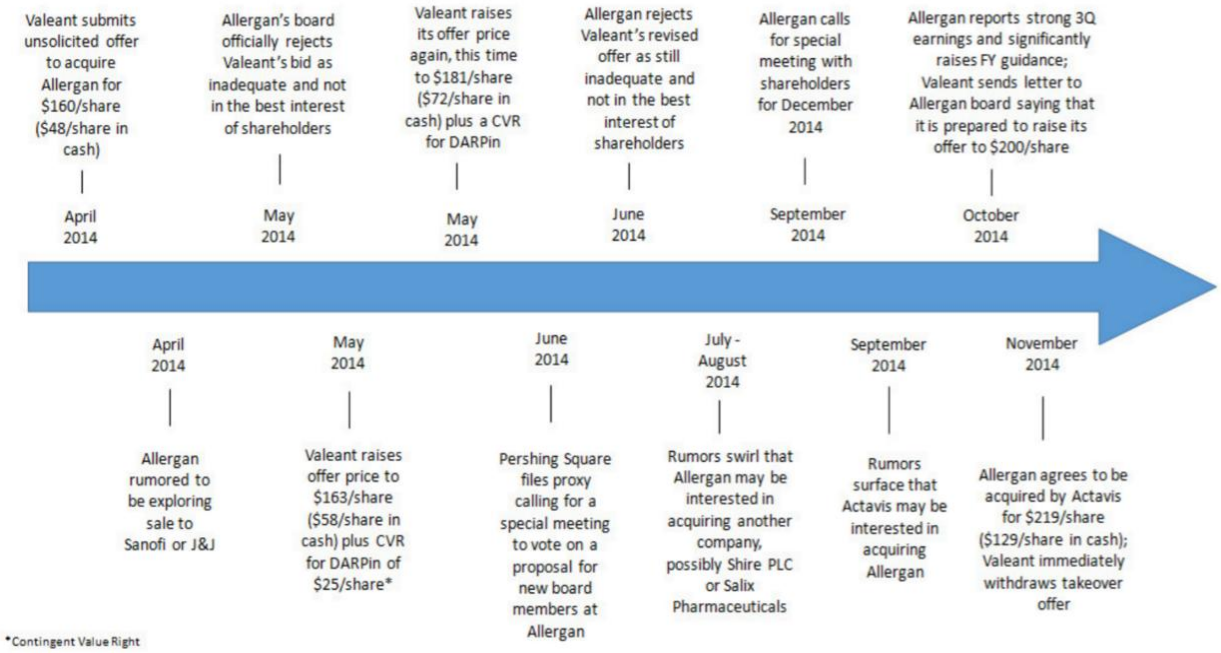
Paul M. Bisaro served as the Chief Executive Officer of Actavis from September 2007 to July 2014. Prior to joining Actavis (then Watson), he was President and Chief Operating Officer of Barr Pharmaceuticals, Inc. ("Barr") from 1999 to 2007. Between 1992 and 1999, Mr. Bisaro served as General Counsel and from 1997 to 1999 served in various additional capacities including Senior Vice President — Strategic Business Development at Barr. Prior to joining Barr, he was associated with the law firm Winston & Strawn and a predecessor firm, Bishop, Cook, Purcell and Reynolds from 1989 to 1992. He also served as a Senior Consultant with Arthur Andersen & Co. Mr. Bisaro received his undergraduate degree in General Studies from the University of Michigan in 1983 and a Juris Doctor from Catholic University of America in Washington, D.C. in 1989.

Brenton L. Saunders, Chief Executive Officer and President of Allergan

Brenton L. Saunders previously served as Chief Executive Officer and President of Forest Laboratories and had served as a Director of Forest since 2011. Mr. Saunders has significant healthcare industry expertise and a proven track-record leading business transformations and integrations. Prior to Forest, he was chief executive officer of Bausch + Lomb, a leading global eye health company, serving in this capacity from March 2010 until August 2013. Mr. Saunders also held a number of leadership positions at Schering-Plough, including the position of president of Global Consumer Health Care and was named head of integration for the company's merger with Merck & Co. and for Schering-Plough's acquisition of Organon BioSciences. Before joining Schering-Plough, Mr. Saunders was a partner and head of Compliance Business Advisory at PricewaterhouseCoopers LLP. Prior to that, he was chief risk officer at Coventry Health Care and senior vice president, Compliance, Legal and Regulatory at Home Care Corporation of America. Mr. Saunders began his career as chief compliance officer for the Thomas Jefferson University Health System. Mr. Saunders serves on the Board of Trustees of the University of Pittsburgh. He is also the former Chairman of the New York chapter of the American Heart Association. He is a member of the Business Council and PhRMA. Mr. Saunders, 45, earned his MBA from Temple University School of Business, his J.D. from Temple University School of Law and his bachelor's degree from the University of Pittsburgh

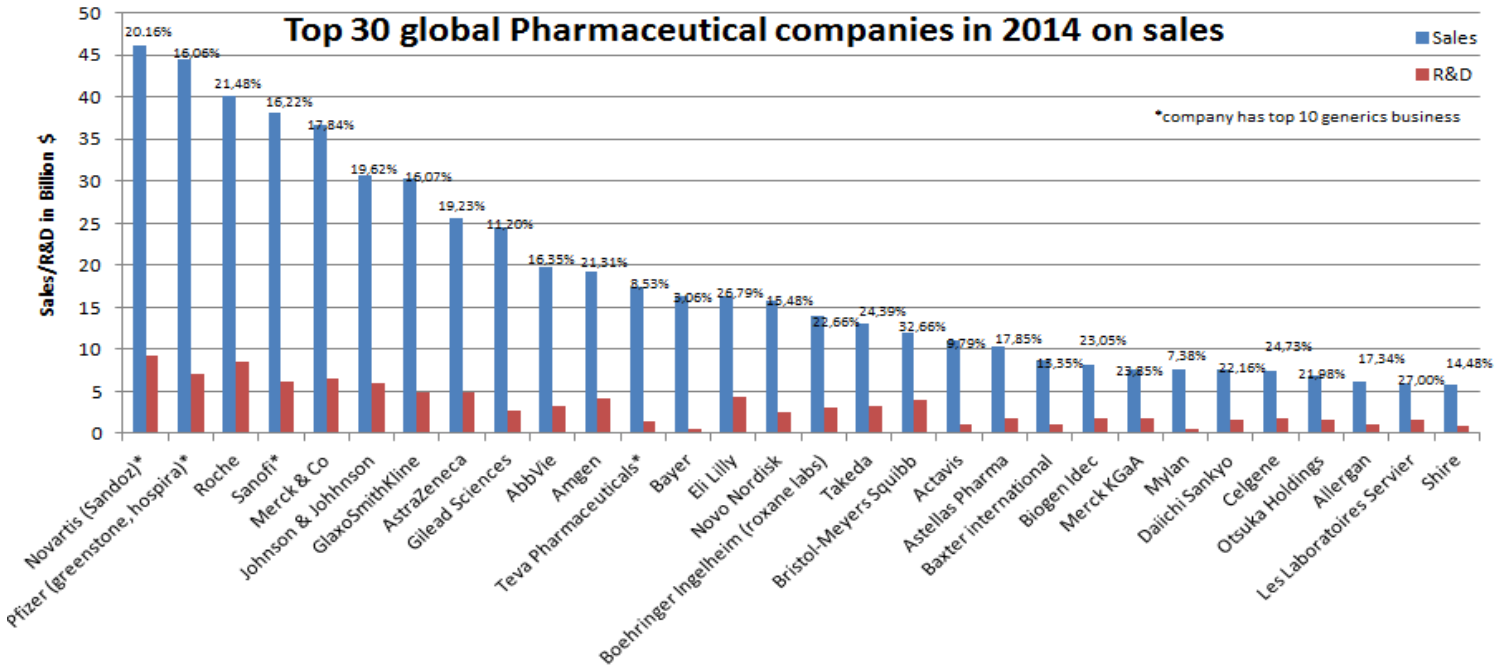
Source: company website

Exhibit 6: Actavis acquisition of Allergan timeline



Source: Polen Capital report

Exhibit 7: Top 30 global pharma firms based on revenue with R&D spent included



Source: Statista.com, own compilation

Exhibit 8: Patent expiration and decrease in R&D productivity

8A: Wordwide sales at Risk from Patent Expiration from 2006-2020

Patent Analysis: 'Total Sales at Risk' represents the worldwide product sales in the year prior to patent expiry but allocated to the year of expiry. E.g. Plavix had sales of $7.1bn in 2011, this is shown above as 'At Risk' in 2012.

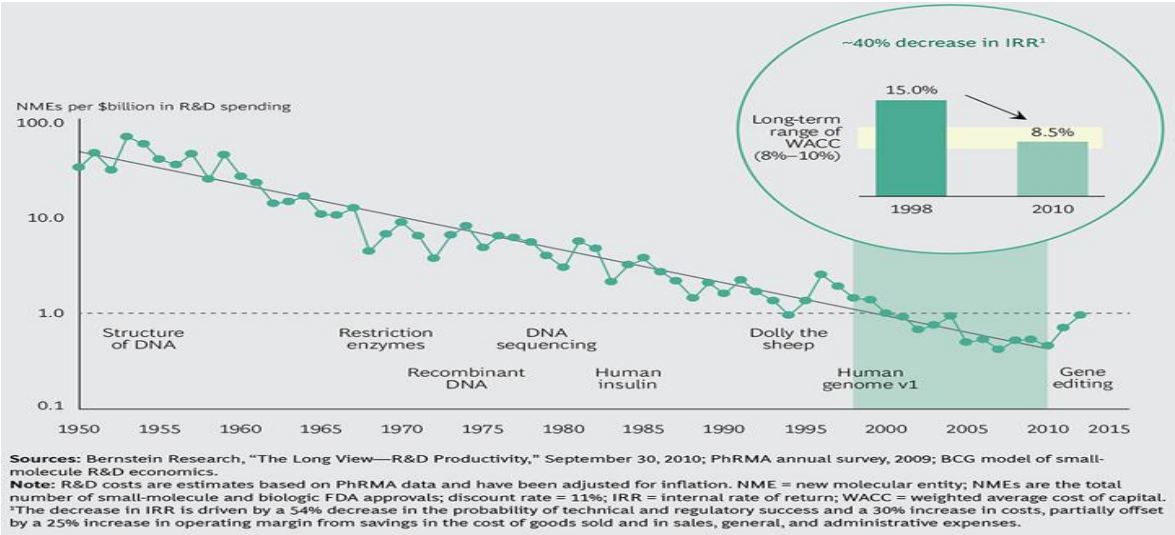
Source: EvaluatePharma 2015 report

8B: Global blockbusters by Revenue & Patent Expiration

Rank	Drug	Indication	Current Manufacturer	Revenues (Billions US$)	Patent Expiration Dat
1	Nexium	GERD, Dyspepsia, Peptic Ulcers	AstraZeneca	5.276	2019*e*
2	Lipitor	High cholesterol	Pfizer	5.272	2011
3	Plavix	Blood Clots	Bristol-Myers Squibb	4.675	2012
4	Advair Diskus	Asthma, COPD	GlaxoSmithKline	3.655	2010
5	OxyContin	Pain relief	Purdue Pharma	3.554	2013
6	Abilify	Depression, Schizophrenia, Bipolar disorder	Bristol-Myers Squibb	3.514	2015
7	Singulair	Asthma	Merck & Co	3.324	2012
8	Seroquel	Schizophrenia, Depression	AstraZeneca	3.222	2012
9	Crestor	High cholesterol	AstraZeneca	2.922	2016
10	Cymbalta	Depression, Fibromyalgia	Eli Lilly & Co	2.638	2013

Source: Bioassociate Consulting & Management Ltd powerpoint

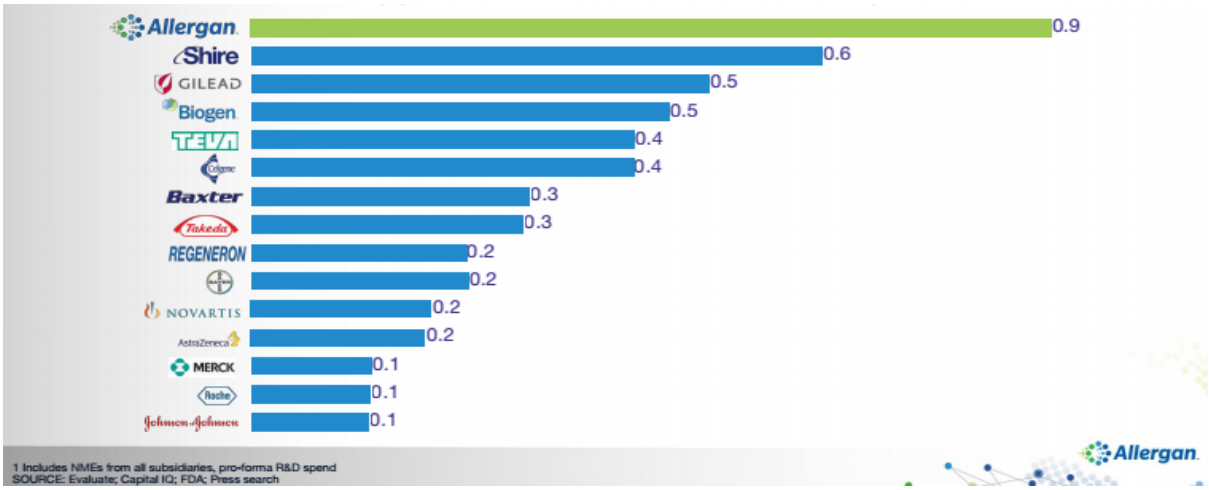
8C: Declining R&D Productivity



Sources: Bernstein Research, "The Long View—R&D Productivity," September 30, 2010; PhRMA annual survey, 2009; BCG model of small-molecule R&D economics.
Note: R&D costs are estimates based on PhRMA data and have been adjusted for inflation. NME = new molecular entity; NMEs are the total number of small-molecule and biologic FDA approvals; discount rate = 11%; IRR = internal rate of return; WACC = weighted average cost of capital.
¹The decrease in IRR is driven by a 54% decrease in the probability of technical and regulatory success and a 30% increase in costs, partially offset by a 25% increase in operating margin from savings in the cost of goods sold and in sales, general, and administrative expenses.

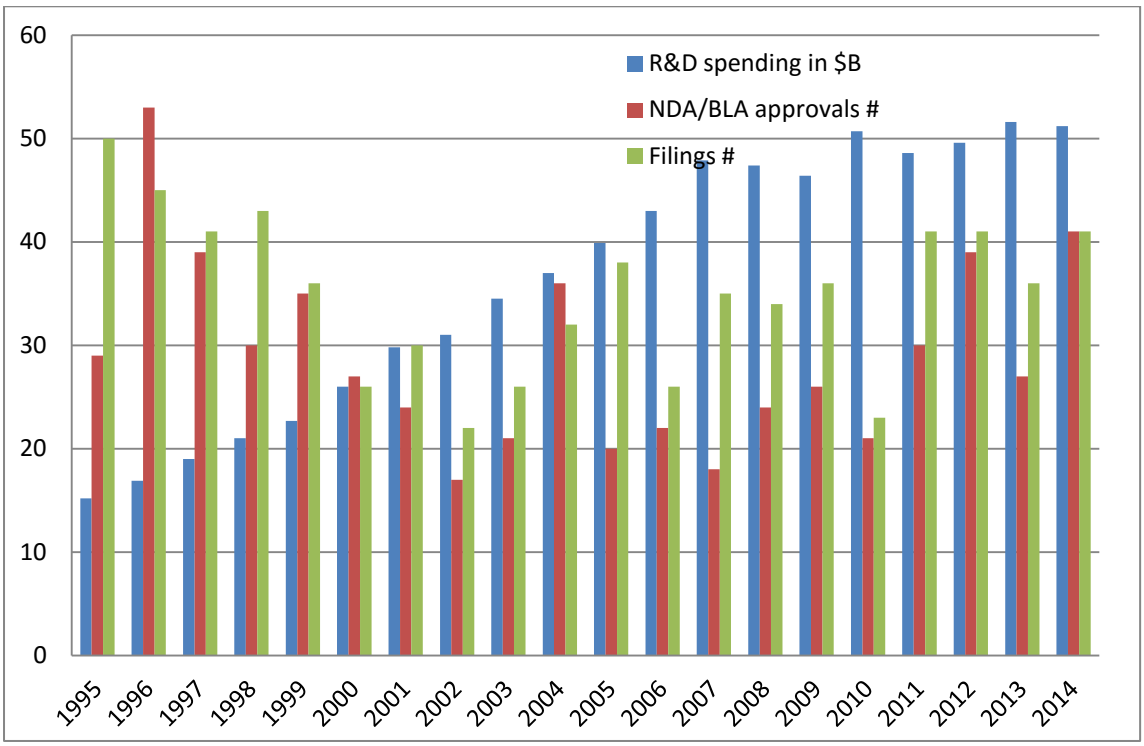
Source: BCG website, Unlocking productivity in Biopharmaceutical R&D

8D: R&D productivity by # of NME/BLA approvals per $B spent on R&D in 2009-2014



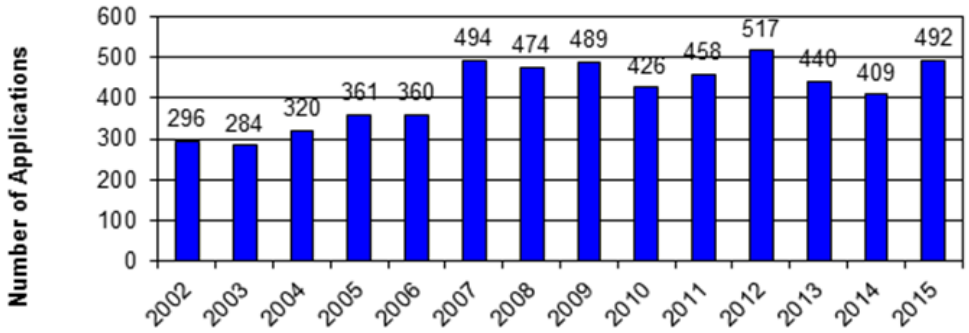
Source: Allergan R&D investor presentation

8E: R&D Developments and spending in US pharma market from 1995-2014



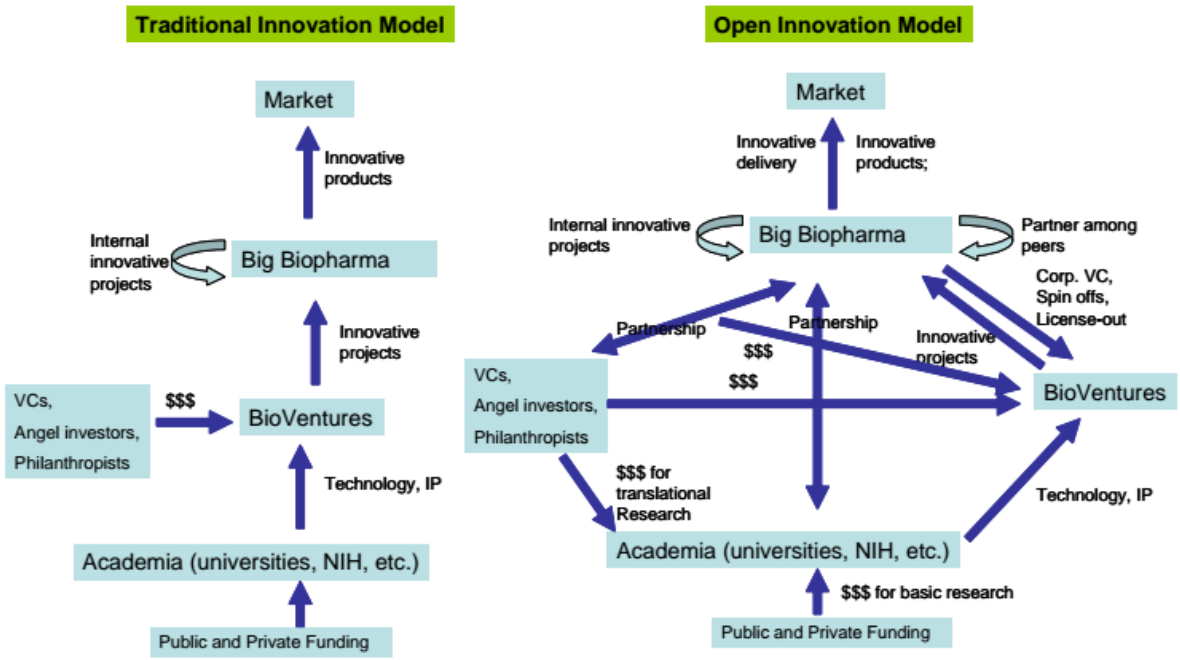
Source: Data from PhrMA and FDA website; US pharma market proxied by PhrMA members

8F: ANDA Approvals by Fiscal Year from 2002-2015



Source: FDA website

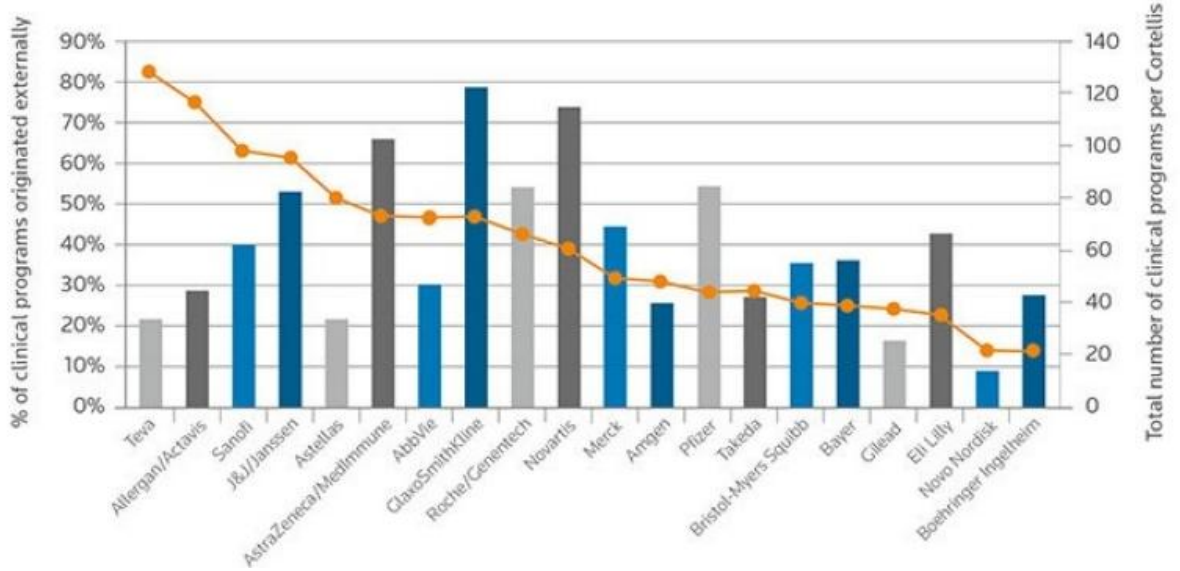
8G: Description of traditional and Open innovation model for drug discovery



Note: Illustrated by MHBK/IRD

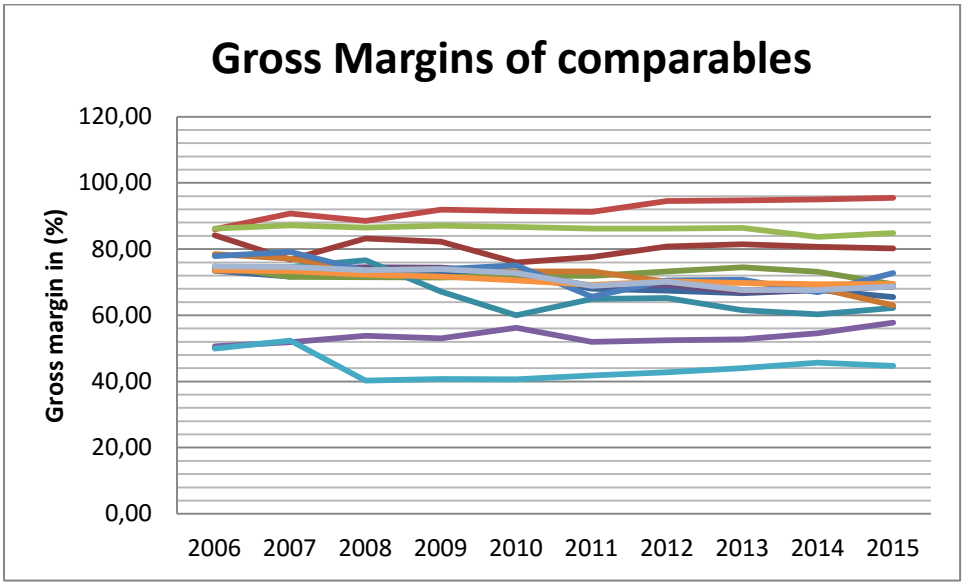
source: Mizuho Industry Focus vol. 155; May 2014, p.31

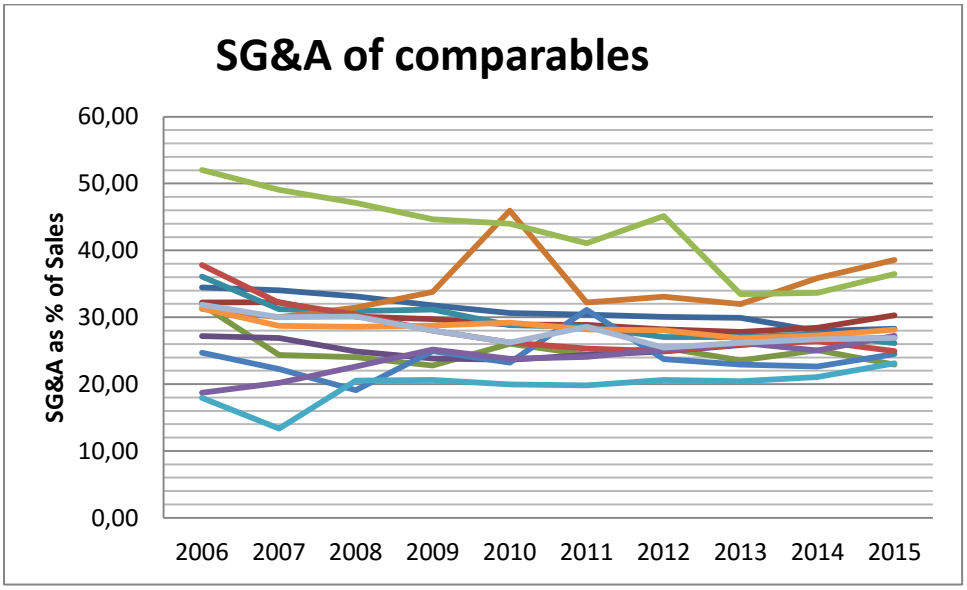
8H: Clinical pipeline sourcing for top 20 pharmaceuticals in 2014

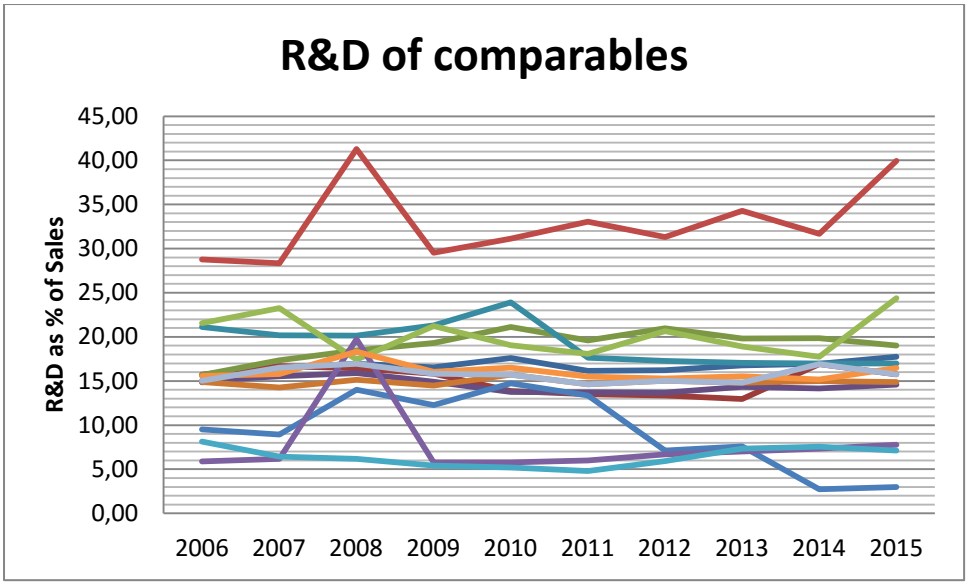


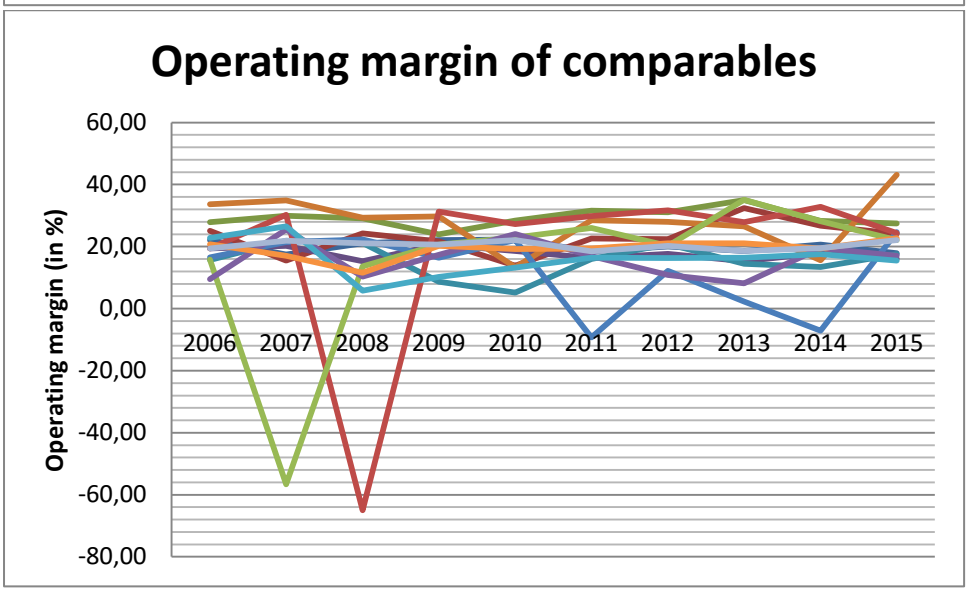
Source: Thomson Reuters Recap Deals Database and Cortellis

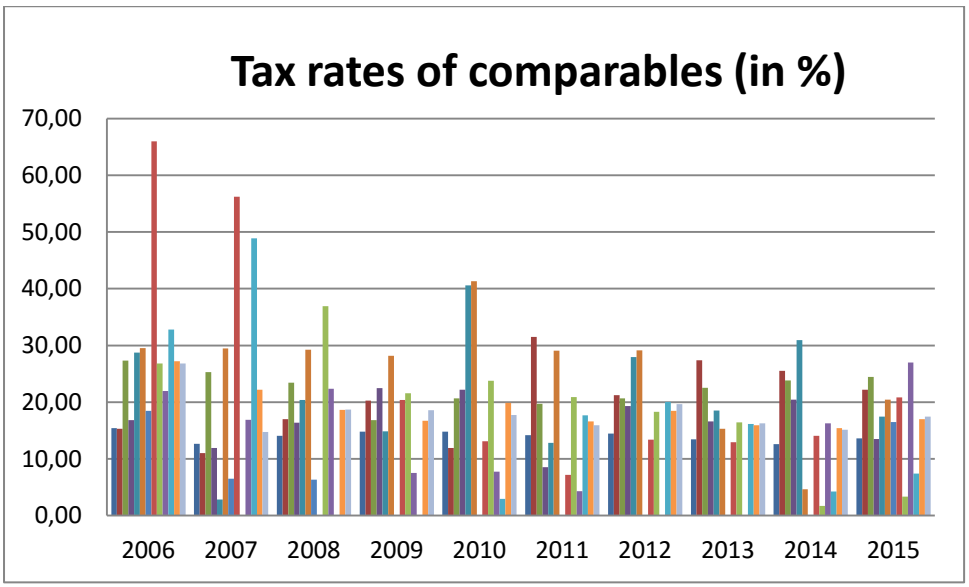
Exhibit 9: Margins as % of sales for comparable pharmaceutical firms

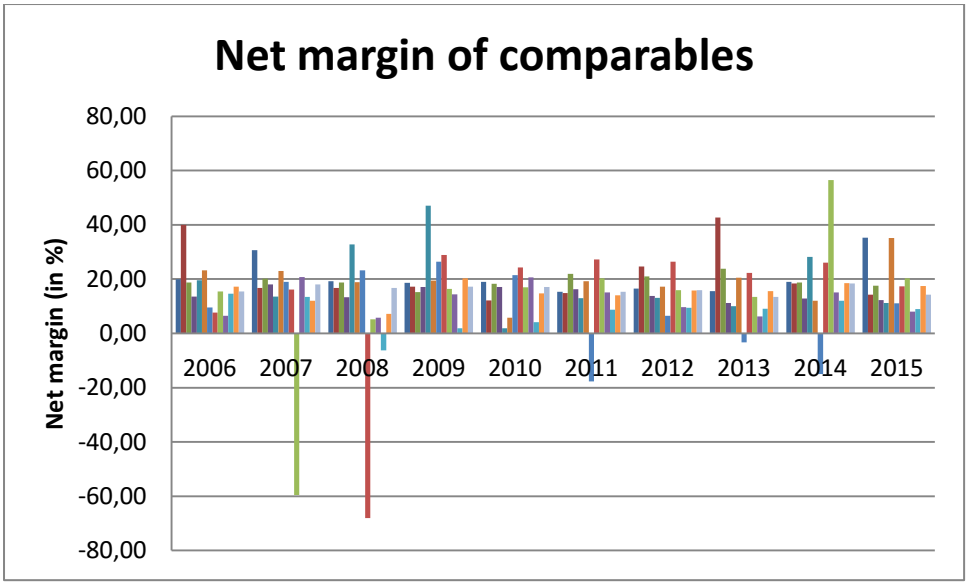


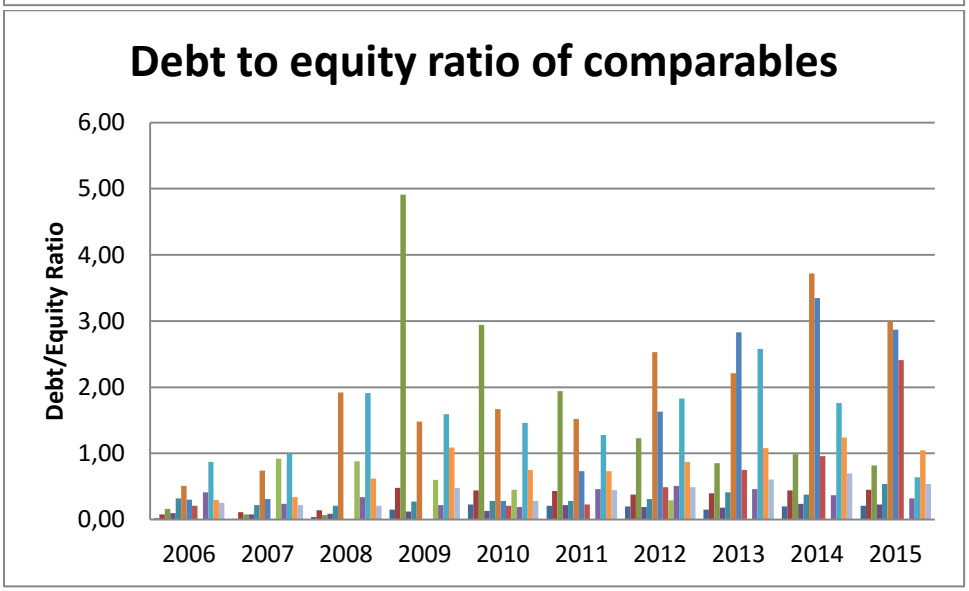



R&D of comparables
R&D as % of Sales
45,00
40,00
35,00
30,00
25,00
20,00
15,00
10,00
5,00
0,00
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015


Operating margin of comparables
Operating margin (in %)
60,00
40,00
20,00
0,00
-20,00
-40,00
-60,00
-80,00
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015


Tax rates of comparables (in %)
70,00
60,00
50,00
40,00
30,00
20,00
10,00
0,00
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015





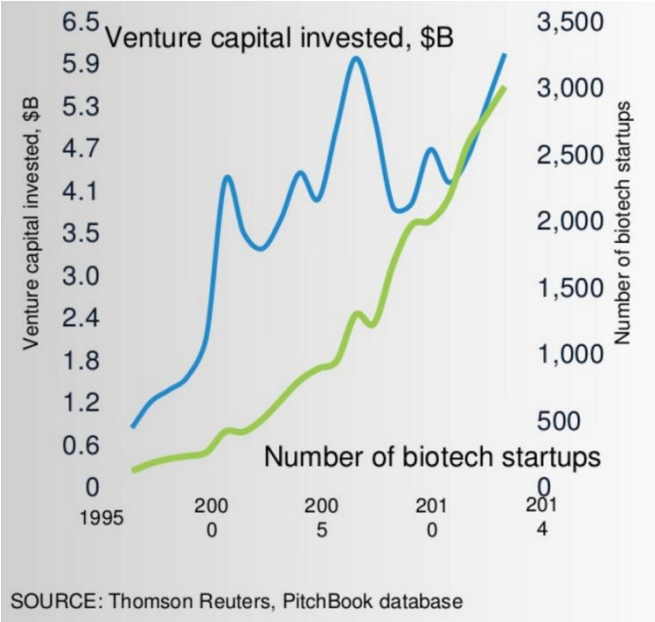
Legend for all graphs:

- Novartis
- Pfizer
- Roche (in CHF)
- Sanofi (in EUR)
- Merck & Co
- GlaxoSmithKline (in GBP)
- Valeant Pharmaceuticals
- Celgene
- Shire
- Teva Pharmaceuticals
- Mylan
- Average
- Median

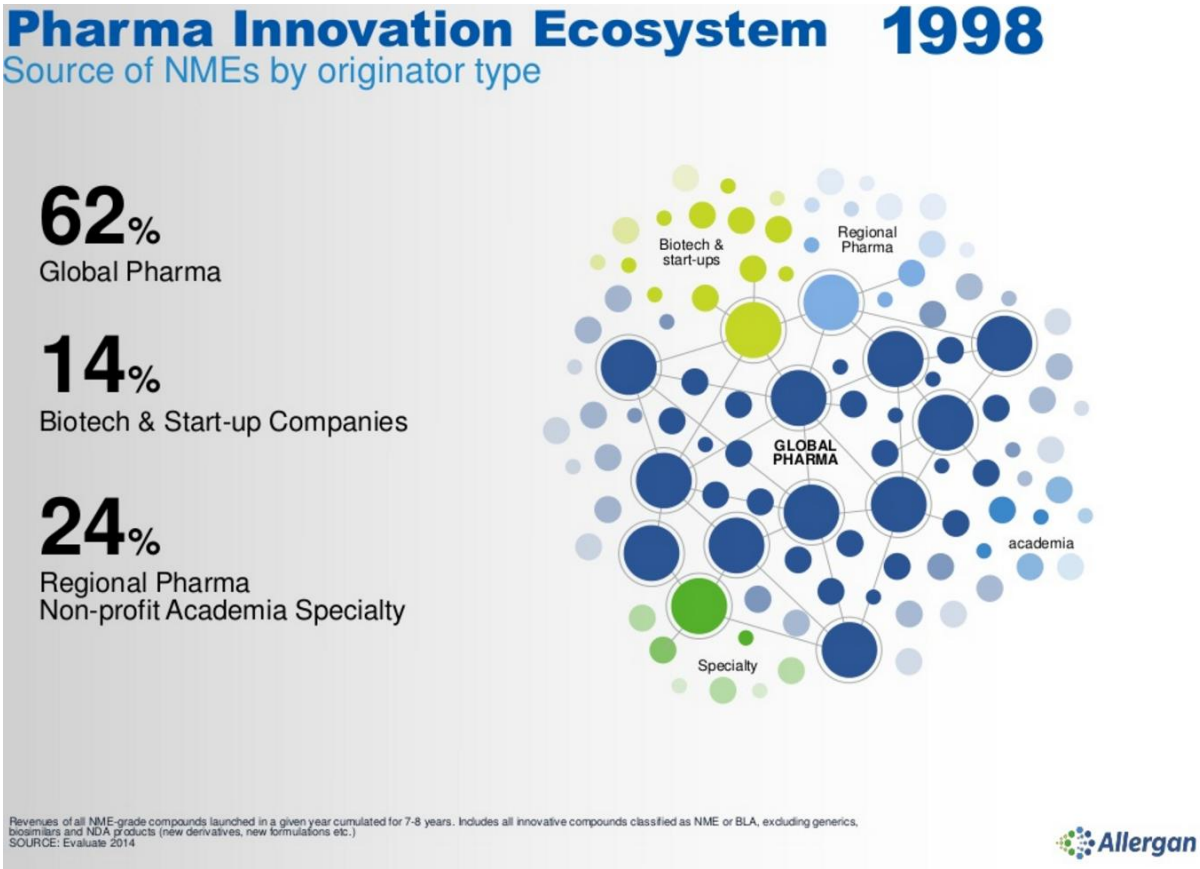
source: Morningstar financial key ratios

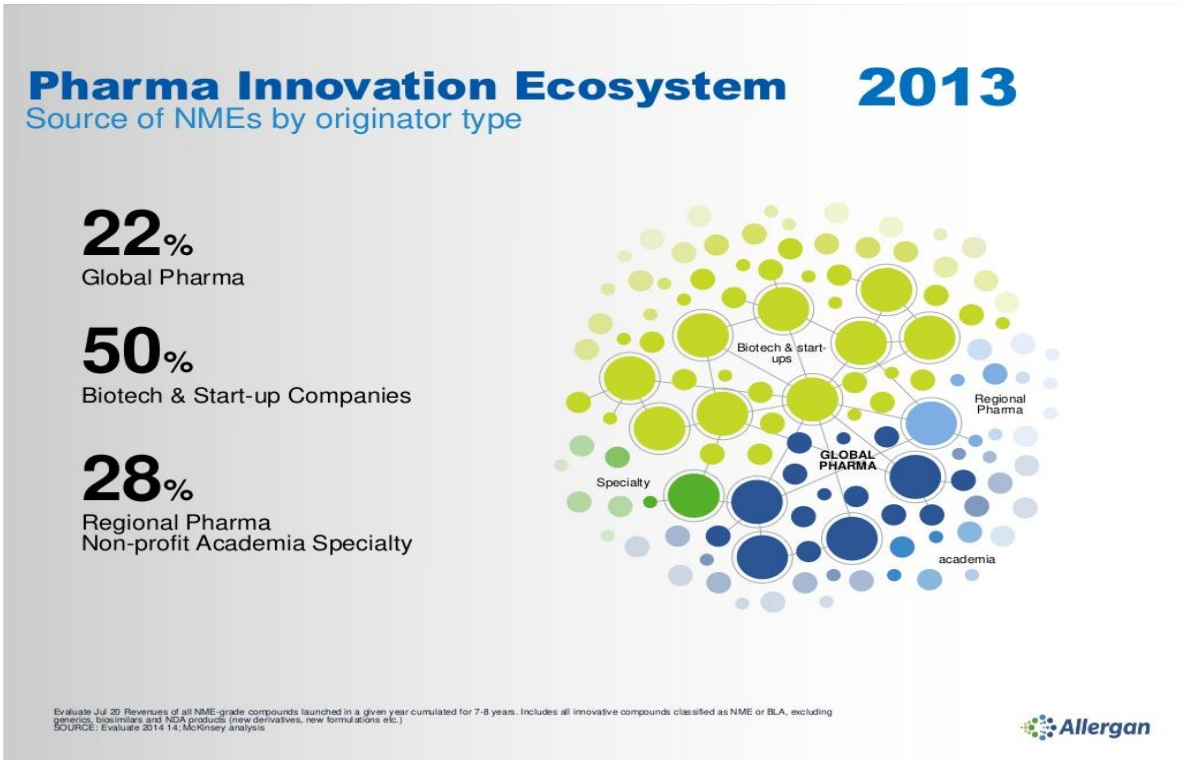
Exhibit 10: Evolved pharmaceutical innovation system

10A: Increases in VC funding and resulting biotech startups



10B: Shift of Pharma Innovation ecosystem from 1998 to 2013

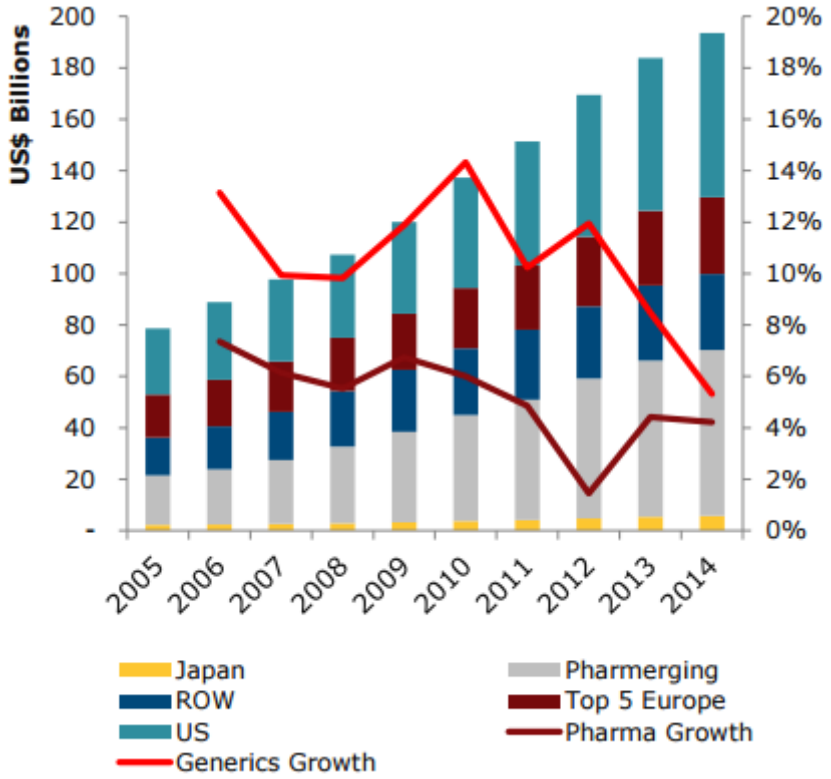




source: Allergan R&D presentation

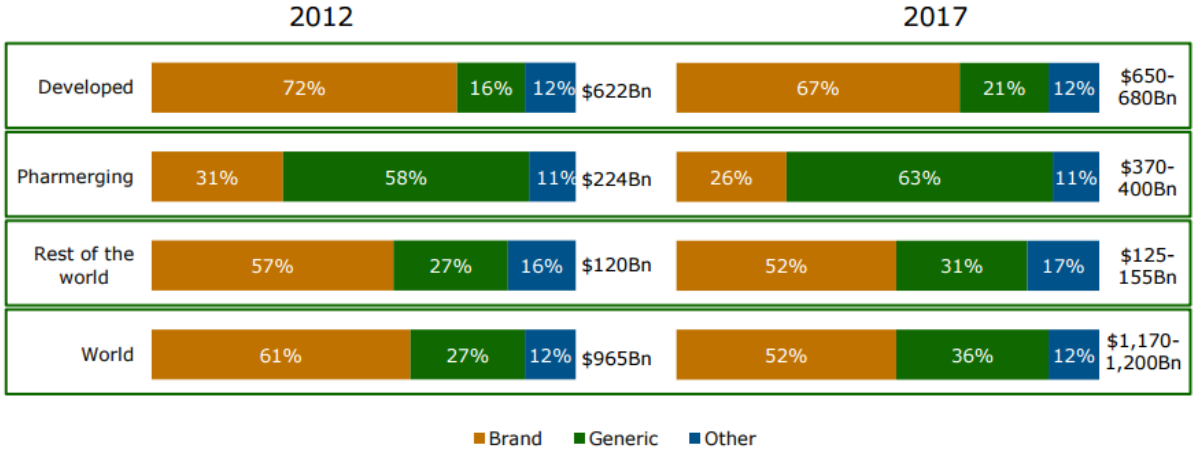
Exhibit 11: Generic drugs data and trends

11A: Global Generic market in US$ at ex-manufacturing price



source: IMS Health Midas Q2 2014

11B: Global spending in 2012 and expected in 2017 on certain drug classifications



source: IMS Health Though Leadership, September 2013

11C: Global prescription sales and estimates from May 2015 onwards to 2020

Worldwide Prescription Drug Sales (2006-2020)

Source: EvaluatePharma® 22 May 2015

	WW Sales ($bn)														
Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Prescription (Rx)	542	599	650	665	687	728	716	723	743	734	772	816	872	926	987
Growth per Year		+10.5%	+8.5%	+2.3%	+3.3%	+6.0%	-1.6%	+1.0%	+2.8%	-1.2%	+5.1%	+5.8%	+6.8%	+6.2%	+6.6%
Change vs. June 2014 ($bn)									-6	-55	-64	-65	-54	-46	-31
Generics	40	47	53	53	59	65	66	69	74	79	86	93	99	105	112
Generics as % of Rx	7.4%	7.8%	8.2%	7.9%	8.6%	9.0%	9.2%	9.6%	10.0%	10.8%	11.2%	11.4%	11.4%	11.4%	11.3%
Rx excl. Generics	502	552	597	612	627	662	650	654	669	655	685	724	772	821	875
Growth per Year		+10.0%	+8.0%	+2.6%	+2.5%	+5.6%	-1.9%	+0.6%	+2.3%	-2.1%	+4.6%	+5.6%	+6.7%	+6.2%	+6.6%

Source: EvaluatePharma report May 2015

11D: Global prescription & OTC sales in % by technology estimated from May 2015 onwards to 2020

Worldwide Prescription Drug & OTC Sales by Technology (2006-2020)

Source: EvaluatePharma® 22 May 2015

Technology	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Biotechnology	14%	15%	16%	17%	18%	18%	20%	22%	23%	24%	25%	25%	26%	26%	27%
Conventional/Unclassified	86%	85%	84%	83%	82%	82%	80%	78%	77%	76%	75%	75%	74%	74%	73%
Total Rx & OTC Sales	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: EvaluatePharma report May 2015

Chapter 4 - Teaching Notes

Objective

The case study aims to clarify the merits of an M&A strategy for a pharmaceutical company in comparison to the traditional heavily R&D based business model. The case addresses M&A in a format which it is not often done by focusing on M&A as part of a business model and as a substitute for R&D in an industry heavily reliant of it. In addition, it intends to highlight how Watson Pharmaceuticals evolved from a relatively small generics manufacturer towards a global branded pharmaceutical player (Allergan) throughout a changing and challenging period for the pharmaceutical industry. Finally, it desires to show the increased M&A rationale in the sector through the perspective of one company.

Suggested Teaching Questions

The following questions should guide the students to analyse the case in such a way that the teaching objectives are met. An instructor can use these questions for the case discussion. With the help of the case and its exhibits, students should be capable to give well-thought-out answers or contribute to the case discussion.

1. **How did Watson Pharmaceuticals change its strategic position throughout the period to remain competitive?**

2. **What current competitive strategies can be identified in the pharmaceutical industry?**

3. **How does Allergan's competitive strategy distinguish itself from other traditional pharma strategies?**

4. **Why was there increasingly more M&A activity in the pharmaceutical industry?**

5. **What key risks can you identify for Allergan?**

6. **Was Allergan's strategy successful in creating shareholder value?**

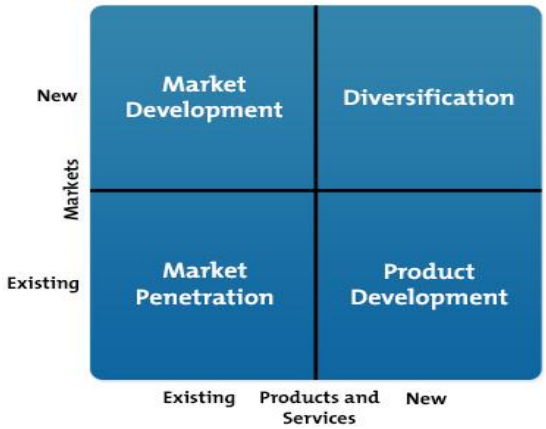
7. **Is Allergan's strategy sustainable going forward if not, how should it adjust?**

TQ1: How did Watson Pharmaceuticals change its strategic position throughout the period to remain competitive?

From its founding in 1983, Watson Pharmaceuticals was engaged as a manufacturer and marketer of off-patent (generic) pharmaceuticals. Through organic growth and synergistic acquisitions, it had grown into a diversified pharmaceutical company primarily active in the US that marketed 27 branded and more than 150 generic pharmaceutical products by the end of 2007. In addition to that it also operated a distribution division with 8000 stock-keeping units (SKU's) (see Exhibit 1B for the key metrics).

The first major acquisition that started a shift in the company's strategic position was the 2009 acquisition of Arrow Group. It expanded the company's footprint to more than 20 countries, giving it the ability for long-term revenue and profit growth. From now on, not only could the company grow by launching new products on the US market, but also market current existing and future products on its markets overseas. In addition, it offered exposure to emerging countries (see Exhibit 11B), where per capita use of medicine would grow and manufacturing could potentially be cheaper.

Figure 1: Ansoff's growth matrix



Source: www.mindtools.com

This move was diversifying Watson's business through several leeways for future growth according to the Ansoff Matrix (see figure 1 above). Instead of growing only by market penetration of (mostly) its generics business and product development for primarily the US market. Now, it was able to develop new markets for its generics and brand products in all the new countries it had access to. The efforts to increase market penetration in the home-market such as increased sales & marketing

activities and competitive prices, also strengthened the efforts and offering in its new markets.

Several smaller bolt-on acquisitions such as Specifar Pharmaceuticals and Ascent Pharmahealth strengthened the transition towards a global player in generics (see Exhibit 2A for the M&A activity and strategic intent). The 2012 merger with Actavis completed the strategic repositioning of Watson, a local generics manufacturer towards Actavis (the new combined company name). Following the rationale of the previous acquisitions towards market development, the company now gained more than 40% of generic revenues from outside the US and sold roughly 1000 products in more than 40 countries. By now, generics had also climbed to roughly 75% of revenues by 2012 (see Exhibit 1A).

As margins on brand products were much higher, Actavis started to reposition itself towards a more balanced branded-generics operator delivering more stable revenue growth going forward. With the acquisitions of Warner Chilcott and Forest Laboratories, the company increased its branded portfolio (see Exhibit 4A & B). With Actavis' global reach and experienced salesforce there was growth potential to offer the newly added branded products in more markets by an experienced sales and marketing team. The addition of Warner Chilcott for example, expanded the branded product offering by 125% and added the Gastroenterology and Dermatology therapeutic areas to the portfolio. With the later acquisition of Forest Laboratories, the company's brand portfolio now delivered about half of total revenue. The company aimed to combine the worldwide reach and efficient distribution of its generics business infrastructure with the higher margins available in branded pharmaceuticals.

The acquisitions that followed either expanded the generics business or added new brand products to the company's portfolio or pipeline. The most notable was the transformative acquisition of Allergan with which it not only strengthened current therapeutic categories but added Ophthalmology, Neurosciences and Medical Aesthetics while also expanding commercial presence to 100 countries (see figure 3 from the case-study). The addition doubled the brand segment and international revenue and diversified revenue away from the US and generics segment.

Finally, by 2015 the company started repositioned itself towards a pure-play branded drugs manufacturer by shedding its generics business built over the past period to Teva Pharmaceuticals if US regulators would approve. As a result of the divestiture, operations will be less complex, the number of active plants will for example decrease by 28. What will remain is a global branded pharmaceuticals company with a strong position in seven therapeutic areas.

TQ2: What current competitive strategies can be identified in the pharmaceutical industry?

Although the business environment was gradually changing over time, pharmaceutical companies have only recently started to adjust their business models towards the new environment. The traditional branded pharma model of betting on blockbusters by investing heavily in R&D and the related selling ability is not feasible anymore. More and more innovations are coming from other participants than big pharma (see Exhibit 10A), patents are coming off (see Exhibit 8B) and the product pipeline is relatively empty while the costs of R&D increase (see Exhibit 8C & 8E). Instead of doing the integrative approach from R&D up to commercialisation, Big pharma will have to focus, as doing everything it self requires too large investments. Several shifts in strategy can be identified:

First, the healthcare field is becoming increasingly fragmented as smaller firms backed by venture capital are able to dominate small niches. In order to succeed, big pharma has to focus on some therapeutic areas of an increasingly fragmented market instead of a product and R&D portfolio based solely on legacy business. As a result of this, products and R&D pipelines in non-key therapeutic categories are up for sale or divested while key therapeutic categories are strengthened by acquisitions and licensing deals. This focused approach intends to drive value through innovations in a therapeutic area where the pharmaceutical firm is leader. Most value in the therapeutic area is derived by the leading company that drives innovations in the area the fastest. An intense legacy R&D focus could be an advantage in this approach.

Specialty pharma companies take a more opportunistic approach shifting away from the crowded therapeutic areas where several aim for leadership. These firms shift to smaller, niche therapeutic areas with a broader selection of products but no or relatively less blockbusters. Having a broader focus, they buy the unwanted products and pipelines from big pharma that prioritizes therapeutic category leadership

For generic manufacturers, there has not been a drastic shift in strategy. As more drugs have come off patents, generic manufacturers continue to deliver an alternative generic variant. Low costs, efficiency and expansive distribution networks have been more important criteria for success. This has partly been achieved by consolidation between generic manufacturers where the focus has been on expanding reach and removing duplications in staff and factories.

Finally, branded pharma has been revising and rediscovering its approach to R&D. As R&D has become costlier relative to output and pipelines at major drug firms itself have become less filled, branded pharma aims to integrate and capture innovations in the market earlier. This is done by opening inhouse R&D centers to the market and facilitating drug invention (see Exhibit 8G & 8H). By allowing for external research and facilitating the development of this inhouse, more innovations and value thereof can be captured. As a result of this, the costs and risks of a drug development are more spread out and access to more innovative drugs is achieved. This approach has been called an open R&D model wherein the big pharma companies team up with universities, venture capital, private equity and early stage biotech companies to gain access to innovations early.

TQ3: How does Allergan's competitive strategy distinguish itself from other traditional pharma strategies?

Although Allergan's strategy had a different focus throughout time, shifting from a positioning of generics towards branded drugs, it was primarily achieved by M&A throughout the period. Other than big pharma, Allergan has driven its business growth strategy and strategic repositioning by successful M&A execution. Instead of an R&D driven approach wherein it aims for therapeutic category leadership and new blockbusters, it has blossomed by successfully integrating acquisitions. This has driven the operations from a US generic focus towards a leading global branded pharma by smart acquisitions and disposals. The business is structured in a manner that facilitates the integration of new businesses (as well as future divestitures), as a result it can quickly adapt to a changing environment.

By focusing on M&A for growth and (future) products, it was able to spend relatively less for R&D in comparison to R&D driven pharmaceutical companies (see Exhibit 7). Throughout the period the company spent a total of $ 5.99 Billion on R&D while it paid $114.69 in M&A (see Exhibit 1A & 2A). In addition, the lower corporate taxrate gained through Actavis and later Warner Chilcott stimulated an acquisitive strategy until this was barred for the future with the Pfizer deal aborted.

The biggest value driver for the company was successful integration of nimble acquisitions and resulting increases in operational efficiency while adding companies and their products to a global platform. Mitchell and Stafford (2001), also concluded this from their research towards increased expected future cashflows after M&A. The growth through M&A strategy gave the company the scale, competence and reach that is essential for playing on a global stage. The increased revenues from synergies and increases in efficiency fueled a growing cashflow for future M&A. In the latter stage, it allowed the company to build a strong global presence in several therapeutic areas.

As growth through M&A becomes increasingly challenging going forward because of the company's size and competition by other pharmaceutical companies for acquisitions, the company developed another novel approach to capture growth going forward. It adopted an open R&D model to facilitate pipeline and product

growth for its branded pharma categories as they recognize that not all (the best) innovations come internally (see figure 4 in the case). Allergan utilizes external sources and capital to gain new products (in their pipeline) through an open R&D model, where their emphasis is on the development of the sourced product (pipeline). Not only does this reduce the cost of failure because R&D costs are spread over the participants, it also reduces the costs of acquisitions since more insight is gained early in the process. As a result, the company has less competition for the sourced product pipeline and a longer leeway for internal growth which requires their development operations but reduces the valuation. The open R&D model also gives Allergan a broader area to create its product pipeline from with a stronger or wider focus while allowing it to leverage its in-house capabilities and the commercialisation of products better.

TQ4: Why was there increasingly more M&A activity in the pharmaceutical industry?

Branded pharmaceutical companies faced several challenges in the period described throughout the case. These partly drove towards more M&A activity as a response to the issues. Firstly, as exhibit 8B shows, pharmaceutical companies were facing a so called “patent cliff” wherein many of their top sales drugs were going off patent in a relatively short timespan. Revenues were going to decline as their blockbuster products were going to be replaced partly by generic comparables and prices had to be reduced to compete. Exhibit 8A show the sales at risk for every year. As a result of this patent cliff, many companies were reducing costs and improving overall efficiency to counter this headwind and remain profitable. By doing a smart acquisition, a big pharmaceutical company could in one turn increase its product pipeline for the future which would entail more visibility and with less risk than internally generated R&D.

In addition, due to some extreme price hikes by several pharmaceutical players, the whole sector had come in the spotlight of the 2016 presidential elections. Both democrat and republican candidates suggested in their election programs that they would reduce the increasing healthcare costs and ban pricing malpractices (e.g. by price caps or similar mechanisms). By growing in size through an acquisition, it could not only increase efficiency by leveraging R&D, sales force and distribution

capabilities, it would also retain higher margins for a longer period if the target has patented drugs.

Also, the traditional method of creating value through putting new innovative drugs on the market was less effective. Exhibit 8C shows the reduced effectiveness of new drug approvals relative to R&D spent. Going forward, improvements to drugs would be mostly incremental instead of groundbreaking new drugs.

Finally, many pharmaceutical players did not have the optimal geographic exposure for their products or reverse. This created opportunities for market expansion or product expansion/diversification. Many established players had relatively small operations in the growing emerging markets or exposure to other pharmaceutical areas, where the pharmaceutical markets would grow the fastest (see Exhibit 11B & 11D). These markets are however challenging to navigate through as a branded pharmaceutical manufacturer, as for example emerging markets are heavily dominated by generics sales which requires a different corporate focus.

The combination of the challenges mentioned above, put a pressure on the traditional branded pharmaceuticals business model and drove them towards M&A, next to internal changes, to reposition the company as an effective player. M&A could achieve efficiency gains through scale, strengthen therapeutic areas, increase the R&D product pipeline, open new markets and gain access to new technology (see figure 5 in the case). Besides these internally driven incentives for M&A, the urge to participate in consolidation toward therapeutic area leaders, cheap financing availability and potential tax inversions also bolstered M&A activity. See figure 2 below for M&A aims for large pharma deals for 2005-2011.

Figure 2: Pharma M&A rationale by categories 2005-2011

Source: BCG website (Kronimus, Nowotnik, Roos, & Stange, 2011)

TQ5: What key risks can you identify for Allergan?

Several risks can be identified for Allergan's business taking into account the case-study and literature review. As a high percentage of Allergan's revenue comes from outside the US, it is subject to geographic risk. This means demographic, economic or regulatory changes in the countries wherein it is active could drastically affect those markets and thus indirectly Allergan. However, the company mitigates this risk by wide diversification over several countries.

Related to the geographic risk, the company's revenues could be affected by fluctuations in the currency exchange rates in the countries wherein it is active. This could indirectly influence the company's profitability and is reduced through diversification and currency hedges through derivative contracts.

As a result of Allergan's acquisitive strategy, the company is subject to integration risk of its acquisitions. There could be issues, costs and delays with integrations. When an acquisition is not integrated as planned, synergies, cost savings or sales growth will not materialize or its operations could decrease value of operations. It requires the management's time and resources to successfully integrate complex operations. The management team has however a proven track-record in M&A and heavily focused on paying down debt as a result of M&A. The acquisitions have also diversified the company's product portfolio and pipeline.

Also, the company's branded pharmaceutical products can face increased competition from generics when the market exclusivity has expired. This could result in a decline in revenues when a competing generic product is introduced.

Finally, as any other pharmaceutical company, Allergan is exposed to product pipeline risk. The product pipeline could be reduced or delayed by internal issues or delayed regulatory approval if not completely rejected. This could negatively affect the company's future revenues as it plans to commercialize these products in the pipeline. As the company uses and Open Science R&D model, it is dependent on enough quality sources through it, to foster internal development and a product pipeline that can deliver growth for the future. Current product portfolio expirations are after 2020 giving the company good revenue visibility until then. Pipeline failures for top pipeline drugs could however drastically affect the company's future growth potential.

TQ6: Was Allergan's strategy successful in creating shareholder value?

The effects of Allergan's acquisitive growth strategy, coined "growth pharma" by management are best recognized through its increases in market value and enterprise value during the period (see Exhibit 1B and figure 7 in the case). In a period wherein big pharma in general was struggling with revenue growth and decreasing margins due to several industry headwinds (e.g. patent cliff, political pressure), the company delivered high growth in market values. Margins were also better than peers (exhibit 1A and 9) and improved over time, suggesting a good operational performance.

The company had done this through smart acquisitions that added products to its portfolio and pipeline while delivering these in many markets through its broad geographic reach. In addition, acquisitions were effectively integrated and value was created by cross-selling, product/market expansion, cost savings and R&D optimization. Also, the companies it took over were in general to benefit from tax-savings due to the company's domicile in Ireland.

Management has done a smart strategic repositioning of the business towards areas with attractive return prospects (see Exhibit 4C). First, by acquiring niche generic

opportunities and later towards branded specialty drugs. The sales of its generics business to Teva pharmaceuticals proves the company's nimble M&A strategy, divesting at a high value. While the company had paid $114.686 billion in acquisitions from 2009 until 2015, enterprise value had increased by $138.139 billion, as a result they have created $23.45 billion in value and transformed the company to a major pharmaceutical player.

TQ7: Is Allergan's strategy sustainable going forward if not, how should it adjust?

Although tax inversions of which Allergan was a beneficiary will not be possible going forward, its acquisitive strategy still has merits. It has a strong product portfolio in several therapeutic areas combined with a filled product pipeline for future growth. Through acquisitions, Allergan should maintain and increase its future growth potential by buying product portfolios that add to their current key therapeutic areas or diversify into others where there is potential. Acquisitions should also fill the product pipeline for future growth and allow for the ability to create value through its marketing & sales and worldwide distribution capabilities and cost synergies.

As a result of tax inversion not anymore being possible in the future, management should look more critically towards other synergies and the ability to realize these. Allergan's experience from previous integrations and management's track record adds credibility towards the ability to integrate acquisitions successfully in the future.

Also, as a result of its size acquisitions should be increasingly large in order to make impact on Allergan's business. Since integrating acquisitions and leveraging in-house capabilities is Allergan's strength, management made a smart move to divest its generics business to Teva pharmaceuticals. Not only did this give the company cash to reduce its debt and give it funds for future acquisitions, it also magnifies the relative value these acquisitions will deliver relative to the smaller overall business size. The branded segment also has higher barriers to entry due to complexity and patents while it now is give management's full attention.

Moreover, it seems that management recognized that doing value creating acquisitions will be more difficult going forward due to increased competition and

valuations and has adjusted appropriately by sourcing deals more early. They do this under Allergan's Open Science R&D model by partnering early on with many R&D bodies and source promising projects or complete pipelines to Allergan relatively early on. By doing this, competition is not yet existent or cannot spot the value in the project as accurately thereby lowering valuations while also development should still be done for a longer period inhouse, thereby reducing acquisition costs.

Finally, one could argue that Allergan has adjusted its growth strategy by focusing on branded pharma going forward and sourcing product portfolios and pipelines not only through acquisitions but also through its Open Science R&D model going forward. This is in line with Allergan's capabilities and will increase its salesforce productivity. The proceeds from the sale of Allergan's generics business will strengthen the branded portfolio where it will have the ability to leverage new products into the therapeutic franchises with little additional costs or diversify it.

Chapter 5 - Conclusion, Limitations and suggestions for future research

Conclusion

This study has taken an extensive look towards the growth of Watson Pharmaceuticals into a leading global pharmaceutical player through an unfamiliar business strategy in the pharmaceutical industry. Through the literature review, case-study and teaching notes, a better understanding of the pharmaceutical industry and specifically about Watson Pharmaceuticals has been acquired.

Through the literature review the emergence and changing environment in the pharmaceutical industry is described. Starting as a relatively small industry at the end of the 19th century, soaring from the 1970s and finally slowly experiencing headwinds from the 1990s towards today. In addition, the motives for M&A are listed such as scale and scope gains, corporate control, global expansion and R&D pipeline replacement. With regards to value creation due to M&A, previous research concludes that M&A's deliver abnormal returns for stockholders and that these are in line with operational efficiency gains. There is however an ongoing debate of the merits of M&A on R&D in the pharmaceutical sector as some studies point to decreasing R&D productivity or total R&D output while others find the opposite.

When looking specifically at Watson Pharmaceuticals in our case-study, similar changes and motives in line with the industry trends are found. First of all, the company was active in acquisitions to acquire scope and scale as well as market expansion in the earlier phase of the studied period up to the 2012 merger with Actavis. From then on, in addition to the previous motives, focus shifted more towards the acquisition of branded products and pipelines for their capabilities and cross-selling benefits in bigger therapeutic categories.

Through the case-study we find how the shift in innovation is changing the way existing pharmaceutical companies operate. As more innovation is coming from small players in the industry, the market is becoming increasingly fragmented. As a result, large pharmaceutical firms are forming a more focused approach on several therapeutic areas which they believe they are leaders in. As a result of this more focused approach they aim to maintain category leadership through economies of scope and R&D knowledge gains. Others, called specialty pharmaceutical companies, take a more opportunistic approach and aim to maintain or grow revenues by serving several smaller therapeutic categories and niche markets by participating in areas the large pharmaceutical players wish to get out or do not pay attention to. In general, a different approach towards R&D is developing wherein the large pharmaceutical players open up their in-house R&D departments to allow input from outside and in return capture more innovations. Although perhaps too early to conclude, it points to increased R&D productivity as a result.

Finally, we believe Watson Pharmaceuticals' transformation throughout the studied period in the case-study to be successful. The company shifted from primarily a US generics manufacturer, where scale and reach was becoming more important, towards a leading global branded pharmaceutical firm called Allergan. In the process it had created approximately $23.45 billion in shareholder value from 2009 until 2015. It has done this by successfully growing the business towards seven growing therapeutic categories with satisfactory product pipelines by M&A. Although tax inversion are likely no longer possible, by adjusting its growth strategy to incorporate its Open Science R&D model in combination with smart M&A going forward. The company has created a sustainable business model leveraging the company's internal strength in reach and core therapeutic areas.

Limitations of the study

Due to time constraints and no response to interview requests in the latter stage of the study, no insider's perspective through an interview has been incorporated into the case-study. Furthermore, due to the use of secondary data the study could not go into detail towards in which segments or business departments most value was created and how exactly. As a result, we see through top-down view the general movements but the details are more or less excluded. Also, shareholder value is only measured since it can be done quantitatively but arguably value could better be measured following a different approach. Finally, by relying on one company only in the case-study, the findings could be too company-specific to draw a conclusion from them for the industry as a whole.

Future Research

For future research, it could be interesting to compare the performance of pharmaceutical firms that grow primarily through M&A with those that grow mostly by internal R&D to market new products. This is possible since due to the success of Watson Pharmaceuticals several other smaller pharmaceutical companies such as Endo International and Horizon Pharma have followed a growth through M&A strategy as well. Also, M&A at other individual companies in the industry could be analysed. If a large enough sample can be created, future research could look at whether there is one specific shareholder value driver in these type of companies which they have in common and research whether it is really the strategic (re-) positioning through M&A that drives the value, their efficient management and integration of the added companies or something completely different (e.g. tax inversions). In addition, it would be interesting to compare the (financial) performance and R&D productivity of pharmaceuticals that have an open R&D model and those who do not. Finally, a more complete view would be achieved by incorporating variant perceptions regarding the impact of M&A in the industry through interviews and surveys.

References

Actavis. (2012, November 2). *Watson Completes Actavis Acquisition.* Retrieved May 21, 2016, from Actavis: http://www.actavis.co.id/id/news/Watson+completes+Actavis+acquisition.htm

Actavis. (2013, October 1). *Actavis Completes Warner Chilcott Acquisition.* Retrieved May 21, 2016, from PRNewswire: http://www.duratatherapeutics.com/news-media/press-releases/detail/7374/actavis-completes-warner-chilcott-acquisition

Actavis. (2015, January 26). *Actavis to Acquire Auden Mckenzie for £306M.* Retrieved May 21, 2016, from Actavis: http://www.actavis.co.uk/en-gb/news/news/actavis-to-acquire-auden-mckenzie-for-%C2%A3306m

Actavis. (2013, May 20). *Actavis to Acquire Warner Chilcott*. Retrieved May 18, 2016, from PR Newswire: http://www.prnewswire.com/news-releases/actavis-to-acquire-warner-chilcott-to-create-premier-11-billion-revenue-global-specialty-pharmaceutical-company-208127181.html

Actavis. (2014, February 17). Creating a New Model in Specialty Pharmaceutical Leadership. *Actavis Investor Presentation* .

Actavis. (2014, November 16). Creating the Most Dynamic Company in “Growth Pharma”. *Actavis Investor Presentation* .

Actavis plc. (2013). *annual 2013.* Retrieved from sec.gov: http://www.sec.gov/Archives/edgar/data/1578845/000119312514066242/d648811d10k.htm

Actavis plc. (2014). *annual report 2014.* Retrieved from sec.gov: http://www.sec.gov/Archives/edgar/data/1578845/000119312515052898/d842874d10k.htm

Actavis. (2013, May 20). The Combination of Actavis and Warner Chilcott. *Actavis Investor Presentation* .

Actavis. (2012, April 26). *Watson to Acquire Actavis Group for EUR4.25 Bilion*. Retrieved May 18, 2016, from http://www.actavis.co.id/id/news/Watson+to+Acquire+Actavis+Group+for+EUR+4.25+Billion.htm

Actavis, Inc. (2012). *annual report 2012.* Retrieved from sec.gov: http://www.sec.gov/Archives/edgar/data/884629/000119312513082059/d448020d10k.htm

Aileen. (2015, December 9). *Allergan: The M&A Machine.* Retrieved May 21, 2016, from Harvard Business School Open Knowledge: https://rctom.hbs.org/submission/allergan-the-ma-machine/

Allergan. (2015, February 18). *Actavis Announces Intention to Adopt "Allergan" Corporate Name.* Retrieved May 21, 2016, from Allergan: http://www.allergan.com/news/news/thomson-reuters/actavis-announces-intention-to-adopt-allergan-corp

Allergan. (2014, July 1). *Actavis Completes Forest Laboratories Acquisition.* Retrieved May 21, 2016, from Allergan: http://www.allergan.com/NEWS/News/Thomson-Reuters/Actavis-Completes-Forest-Laboratories-Acquisition

Allergan. (2014, November 17). *Actavis to Acquire Allergan to Create Top 10 Global Growth Pharmaceutical Company*. Retrieved May 18, 2016, from Allergan: http://www.allergan.com/NEWS/News/Thomson-Reuters/Actavis-to-Acquire-Allergan-to-Create-Top-10-Globa

Allergan. (2014, October 6). *Actavis to Acquire Durata Therapeutics, Inc.* Retrieved May 6, 2016, from http://www.actavis.com/news/news/thomson-reuters/actavis-to-acquire-durata-therapeutics-inc

Allergan. (2015, July 27). *Allergan Accelerates Transformation to Branded Growth Pharma Leader*. Retrieved May 18, 2016, from PR Newswire: http://www.prnewswire.com/news-releases/allergan-accelerates-transformation-to-branded-growth-pharma-leader-by-divesting-global-generics-business-to-teva-for-405-billion-300118860.html
Allergan. (2015, July 27). *Allergan Accelerates Transformation to Branded Growth Pharma Leader by Divesting Global Generics Business to Teva for $40.5 Billion.* Retrieved May 21, 2016, from allergan: http://www.allergan.com/investors/news/thomson-reuters/allergan-accelerates-transformation-to-branded-gro
Allergan. (2015, November 4). *Allergan Outlines Open Science Model and Highlights Key Development Programs at R&D Day*. Retrieved May 18, 2016, from Reuters: http://www.reuters.com/article/allergan-rd-day-idUSnPn1HfQ50+94+PRN20151104
Allergan. (2016, April 6). *Allergan Reiterates Strong Standalone Growth*. Retrieved May 18, 2016, from http://www.allergan.com/news/news/thomson-reuters/allergan-reiterates-strong-standalone-growth-profi
Allergan. (2015, September 3). *Allergan to Acquare Glaucoma Treatment Company AqueSys*. Retrieved May 18, 2016, from http://www.allergan.com/news/news/thomson-reuters/allergan-to-acquire-glaucoma-treatment-company-aqu
Allergan. (2015, June 17). *Allergan to Acquire KYTHERA Biopharmaceuticals*. Retrieved May 18, 2016, from http://www.allergan.com/news/news/thomson-reuters/allergan-to-acquire-kythera-biopharmaceuticals
Allergan. (2015, July 26). *Allergan to Acquire Naurex*. Retrieved May 18, 2016, from http://www.allergan.com/news/news/thomson-reuters/allergan-to-acquire-naurex
Allergan. (2015, November 23). *Pfizer and Allergan to Combine.* Retrieved May 18, 2016, from Businesswire: http://www.businesswire.com/news/home/20151123005580/en/Pfizer-Allergan-Combine
Allergan. (2015, November 23). *Pfizer and Allergan to Combine.* Retrieved May 21, 2016, from alleragn: http://www.allergan.com/news/news/thomson-reuters/pfizer-and-allergan-to-combine
Allergan plc. (2015). *annual report 2015.* Retrieved from sec.gov: http://www.sec.gov/Archives/edgar/data/1578845/000119312515052898/d842874d10k.htm
Allergan. (2009, June 17). *Watson to Acquire Arrow Group*. Retrieved May 18, 2016, from http://phx.corporate-ir.net/phoenix.zhtml?c=65778&p=irol-newsarticle&id=1299872
Armstrong, D. (2013, May 21). *Actavis Lowers Tax Rate to 17% After Warner Chilcott Deal*. Retrieved May 18, 2016, from Bloomberg: http://www.bloomberg.com/news/articles/2013-05-21/actavis-lowers-tax-rate-to-17-after-warner-chilcott-deal
Atkins, S. (2015, June). Allergan: A High Quality Compounder. *Polen Capital Thought Leadership* .
Barrett, A., & Capell, K. (2002). Big pharma: Getting too big for its own good? *Business Week* , 16-19.
Beasley, D. (2016, January 28). *Clinton targets Valeant price hikes in campaign appearance.* Retrieved January 28, 2016, from Reuters: http://www.reuters.com/article/us-usa-election-clinton-valeant-pharms-idUSMTZSAPEC1SOMIOHM
Bruner, R. (2002). Does M&A Pay? A survey of evidence for the decision-maker. *Journal of Applied Finance* , 46-68.
Cha, M., & Lorriman, T. (2014, February). *Why pharma megamergers work*. Retrieved May 04, 2016, from www.mckinsey.com: http://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/why-pharma-megamergers-work

Comanor, W. (1965). Reserach and technical cange in the pharmaceutical industry. *The Review of Economics and Statistics* , 182-190.
Comanor, W. S., & Scherer, F. (2013). Mergers and Innovation in the pharmaceutical industry. *Journal of Health Economics* , 106-113.
Cox, R. (2015, December 1). Pfizer's Deal for Allergan is a Dubious Milestone. *The New York Times* .
Credit Suisse. (2016). US Pharmaceuticals. Credit Suisse Securities Research & Analytics.
Cyran, R. (2015, November 23). *Pfinancial engineering.* Retrieved May 18, 2016, from Breakingviews: http://www.breakingviews.com/21226266.article?version=meter+at+null&module=meter-Links&pgtype=article&contentId=&mediaId=&referrer=&priority=true&action=click&contentCollection=meter-links-click
Danzon, P. M., Epstein, A., & Nicholson, S. (2004). Mergers and Aquisitions in the Pharmaceutical and Biotech Industries. *NBER working paper series* .
EvaluatePharma. (2014, June). World Preview 2014, Outlook to 2020. EvalutePharma.
EvaluatePharma. (2015, June). World Preview 2015, Outlook to 2020.
Forest Laboratories. (2014, February 18). *Actavis to Acquire Forest Laboratories for $25 in an Equity and Cash Transaction*. Retrieved May 18, 2016, from http://investor.frx.com/press-release/business-development-news/actavis-acquire-forest-laboratories-inc-25-billion-equity-an
Ganguin, B., & Bilardello, J. (2005). *fundamentals of Corporate Credit Analysis.* New Jersey: John Wiley & Sons Inc.
Grabowksi, H., & Vernon, J. (1996). Longer patents for increased generic competition in the US. *PharmacoEconomics* (110-23).
Graves, S., & Langowitz, B. (1993). Innovative productivity and returns to scale in the pharmaceutical industry. *Strategic Management Journal* , 593-605.
Gugler, K., Mueller, D., Yurtoglu, B., & Zulehner, C. (2003). The effects of mergers: an International comparison. *International Journal of Industrial Organization* , 625-653.
Helfand, C. (2015, January 13). *Big Pharma vs. 'growth pharma'? Let Actavis chief detail the differences.* Retrieved May 21, 2016, from FiercePharma: http://www.fiercepharma.com/financials/big-pharma-vs-growth-pharma-let-actavis-chief-detail-differences
Herper, M. (2015, November 19). *Allergan CEO Brent Saunders: Here's what I really think about R&D*. Retrieved May 18, 2016, from forbes: http://www.forbes.com/sites/matthewherper/2015/11/19/brent-saunders-heres-how-i-think-drug-companies-should-approach-rd/#167e6094476c
Higgins, M., & Rodriguez, D. (2006). The Outsourcing of R&D through Acquisitions in the Pharmaceutical Industry. *Journal of Financial Economics* , 351-383.
Humer, C., & Pierson, R. (2013, May 20). *Actavis to buy Warner Chilcott in $5 billion stock deal*. Retrieved May 18, 2016, from Reuters: http://www.reuters.com/article/us-warnerchilcott-offer-idUSBRE94J0AU20130520
Jarvis, L. M. (2010). Pharmaceuticals: big firms will fight the patent cliff. *Chemical and Engineering News* .
Jensen, E. (1987). Research expenditures and the discovery of new drugs. *Journal of Industrial Economics* , 83-95.
Kanavos, P., & Angelis, A. (2014). Acquiring Pharmaceutical Industry Assets in the UK: 1 + 1 = 1? *Pharm Med* , 245-248.

King, S. (2013, May 20). *Three Reasons Actavis Is Buying Warner Chilcott.* Retrieved May 21, 2016, from Forbes: http://www.forbes.com/sites/simonking/2013/05/20/three-reasons-actavis-is-buying-warner-chilcott/#53f34a725937
Koenig, M., & Gans, D. (1975). The productivity of research effort in the U.S. pharmaceutical industry. *Research Policy* , 331-349.
Koenig, M., & Mezick, E. (2004). Impact of mergers & acquisitions on research productivity within the pharmaceutical industry. *Scientometrics* , 157-169.
Krauskopf, L. (2011, May 25). *Watson Pharma buys Greece's Specifar for $562 million*. Retrieved May 18, 2016, from Reuters: http://www.reuters.com/article/us-watson-idUSTRE74O59R20110525
Kronimus, A., Nowotnik, P., Roos, A., & Stange, S. (2011). *M&A: Using Uncertainty to Your Advantage.* BCG Europe: BCG.
Malerba, F., & Orsenigo, L. (2015). The evolution of the pharmaceutical industry. *Business History* , 664-687.
mindtools. (n.d.). *The Ansoff matrix.* Retrieved from mindtools: https://www.mindtools.com/pages/article/newTMC_90.htm
Munos, B. (2009). Lessons from 60 years of pharmaceutical innovation. *Nature Review* , 959-968.
NexBio Inc. (2010, January 19). *Dr. Allen Chao, Founder & Former CEO of Watson Pharmaceuticals, Joins NexBio Board of Directors.* Retrieved May 21, 2015, from PR newswire: http://www.prnewswire.com/news-releases/dr-allen-chao-founder--former-ceo-of-watson-pharmaceuticals-joins-nexbio-board-of-directors-82057617.html
Palmer, E. (2015, October 16). *Top 20 generics companies by 2014 revenue*. Retrieved May 18, 2016, from FiercePharma: http://www.fiercepharma.com/special-report/top-20-generics-companies-by-2014-revenue
Pennente, K., Lyle, J., & Gardocki, B. (2015, November). Global Medicines Use in 2020: Outlook and Implications. IMS Institute for Healthcare Informatics.
Ravenscraft, D. J., & Long, W. F. (2000). *Paths to Creating Value in Pharmaceutical Mergers.* University of Chicago Press.
Relations, A. I. (2016, April 4). *Allergan Reiterates Strong Standalone Growth Profile and Strategy Following Termination of Pfizer Transaction*. Retrieved May 18, 2016, from www.allergan.com: http://www.allergan.com/NEWS/News/Thomson-Reuters/Allergan-Reiterates-Strong-Standalone-Growth-Profi
Rockoff, J. (2014, November 17). *Actavis Agrees to Buy Botox Maker Allergan*. Retrieved May 18, 2016, from WSJ: http://www.wsj.com/articles/actavis-agrees-to-buy-allergan-1416233901
Sario, N. (2015, March 31). *Actavis Emerges As a Top 10 Global Pharmaceutical Company.* Retrieved May 21, 2016, from Market Realist: http://marketrealist.com/2015/03/actavis-emerged-mergers-and-acquisitions/
Saunders, B. (2015, February 4). *Open Science Growth Pharma.* Retrieved May 26, 2016, from slideshare: http://www.slideshare.net/Healthegy/brent-saunders
Schaison, P. (2015). 2015 R&D Day Allergan. Allergan.
Scherer, F. (2010). Pharmaceutical innovation. In A. Culyer, *Handbook of the Economics of Innovation* (p. chapter 12). Amsterdam.
Scherer, F. (2013). R&D costs and productivity in biopharmaceuticals. *Encyclopedia of Health Economics, Elsevier* .
Scherzer, G., Li, J., & Garcia, J. (n.d.). Actavis plc. Sontag Solutions.

Schwartzman, D. (1976). Innovation in the Pharmaceutical Industry. *Johns Hopkings University Press* .
Schweizer, L. (2002). The key drivers and success factors for M&A strategies in the biotecnological and pharmaceutical industry. *Pharmaceuticals Policy and Law* (5), 41-62.
Stanton, D. (2016, January 13). *Pfizer and Alleragn to mull splitting up again in 2018 say CEOs.* Retrieved May 21, 2016, from in-Pharma technologist.com: http://www.in-pharmatechnologist.com/Processing/Pfizer-and-Allergan-to-mull-splitting-up-again-in-2018-say-CEOs
Staton, T. (2014, July 2). *Not for sale, says new Actavis CEO. We're buying instead*. Retrieved May 18, 2016, from FiercePharma: http://www.fiercepharma.com/financials/not-for-sale-says-new-actavis-ceo-we-re-buying-instead
Staton, T. (2012, November 1). *Watson CEO eyes cost cuts, brand growth as Actavis deal closes*. Retrieved May 18, 2016, from FiercePharma: http://www.fiercepharma.com/story/watson-ceo-eyes-cost-cuts-brand-growth-actavis-deal-closes/2012-11-01
Steele, A. (2016, March 15). *Teva Acquisition of Allergan Generics Unit Delayed.* Retrieved May 21, 2016, from wsj.com: http://www.wsj.com/articles/teva-acquisition-of-allergan-generics-unit-delayed-1458053808
Szustek, A. (2015, March 12). *Actavis CEO Brent Saunders Has a Vision for Growth.* Retrieved May 2016, 21, from Institutionalinvestor.com: http://www.institutionalinvestor.com/article/3435335/banking-and-capital-markets-corporations/actavis-ceo-brent-saunders-has-a-vision-for-growth.html#/.VvK2QCDhCVM
Tushman, M., & Anderson, P. (1986). Technological discontinuities and organizational environments. *Administrative Science Quarterly* , 439-465.
University of Oregon Investment Group. (2014, October 24). Actavis PLC.
Upadhyay, K. (2015). *R&D Productivity and M&A in the Pharmaceutical And Biotech Industries.* New York: Stern School of Business.
Vault. (n.d.). *Actavis LLC.* Retrieved May 21, 2016, from vault.com: http://www.vault.com/company-profiles/pharmaceuticals-and-biotechnology/watson-pharmaceuticals,-inc/company-overview.aspx
Wang, T. (2014). *Mizuho Industry Focus: Restructuring the Pharmaceutical Industry vol. 155.* Global Corporate Advisory Americas: OneMizhuo.
Waterhouse, M. (2016, May 10). *Following the generics segment sale, additional M&A for wide-moat Allergan look certain.* Retrieved May 21, 2016, from morningstar.com: http://analysisreport.morningstar.com/stock/research/c-report?t=XNYS:AGN&region=usa&culture=en-US&productcode=MLE&cur=USD
Watson Pharmaceuticals. (2012, January 24). *Watson Acquires Ascent Pharmahealth for AU$375 Million.* Retrieved May 21, 2016, from PRNewswire: http://www.prnewswire.com/news-releases/watson-acquires-ascent-pharmahealth-for-au375-million-137942008.html
Watson Pharmaceuticals. (2011, May 25). *Watson Acquires Specifar Pharmaceuticals.* Retrieved May 21, 2016, from PRNewswire: http://www.prnewswire.com/news-releases/watson-acquires-specifar-pharmaceuticals-122578058.html
Watson Pharmaceuticals. (2013, January 23). *Watson Acquires Uteron Pharma SA.* Retrieved May 21, 2016, from PRNewswire: http://www.prnewswire.com/news-releases/watson-acquires-uteron-pharma-sa-188022271.html
Watson Pharmaceuticals. (2007). *Watson Pharmaceuticals 2007 Annual Report.* Corona, California: Watson Pharmaceuticals.

Watson Pharmaceuticals, Inc. (2007). *annual report.* Retrieved from sec.gov: http://www.sec.gov/Archives/edgar/data/884629/000095013408003261/a38293e10vk.htm
Watson Pharmaceuticals, Inc. (2008). *Annual report 2008.* Retrieved from sec.gov: http://www.sec.gov/Archives/edgar/data/884629/000095013409003509/a51348e10vk.htm
Watson Pharmaceuticals, Inc. (2009). *annual report 2009.* Retrieved from sec.gov: http://www.sec.gov/Archives/edgar/data/884629/000095012310019241/a55319e10vk.htm
Watson Pharmaceuticals, Inc. (2010). *annual report 2010.* Retrieved from sec.gov: http://www.sec.gov/Archives/edgar/data/884629/000095012311015948/a58052e10vk.htm
Watson Pharmaceuticals, Inc. (2011). *annual report 2011.* Retrieved from sec.gov: http://www.sec.gov/Archives/edgar/data/884629/000095012311015948/a58052e10vk.htm
Yin, R. (2003). *Case study research: Design and methods* (3rd edition ed.). Oaks, California: Sage.