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MERGERS AND ACQUISITIONS

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Introduction

Mergers and acquisitions (M&A) have become a common strategy for organizations seeking to expand their market reach, diversify their portfolio, or achieve greater economies of scale. While the potential benefits of M&A are substantial, so are the obstacles that come with integrating two distinct corporate cultures, systems, and operational frameworks. In the rapidly evolving pharmaceutical industry, M&A activities are particularly prevalent given the need for innovation, the imperative to access new markets, and the desire to capitalize on synergies that can drive scientific advancement. This research final degree project aims to offer an analytical study of the benefits and obstacles in the merger and acquisition process, focusing on the recent merger between AstraZeneca and Alexion Pharmaceuticals as a case study.

AstraZeneca, a British-Swedish multinational pharmaceutical and biopharmaceutical company, and Alexion Pharmaceuticals, an American pharmaceutical company specializing in rare diseases, announced their merger in December 2020. This merger, valued at approximately \$39 billion, was touted as a game-changer in the pharmaceutical world, promising to bring together AstraZeneca's strong presence in oncology, cardiovascular, and respiratory diseases with Alexion's expertise in rare diseases. However, as with any significant corporate amalgamation, the merger has had its share of critics and obstacles, including regulatory hurdles, shareholder scepticism, and challenges related to cultural integration.

This research final degree project is organized into three main chapters designed to offer a comprehensive look at the complexities of Mergers and Acquisitions (M&As), using the AstraZeneca-Alexion merger as a case study.

Chapter I lays the groundwork by examining the theoretical and contextual underpinnings of M&As. It explores the motivations behind such deals, their historical evolution, and prevailing scholarly theories, using past examples in the pharmaceutical sector to illustrate key points. Various graphs and tables will supplement the discussion.

Chapter II shifts the focus to an in-depth analysis of the AstraZeneca and Alexion Pharmaceuticals merger. In this chapter, we'll start by profiling each company, including their operational scope, product lines, market presence, and financial metrics. Next, we'll explore the strategic rationale behind their union, looking at the expected benefits and challenges. The aim of this chapter is to provide a nuanced view of the merger's impact on both companies.

The concluding Chapter III will integrate the theory discussed in the first chapter with the practical case analysis from the second. By comparing theory and practice, we aim to identify

overlaps and divergences, offering valuable insights that could be useful for further research and analysis of M&A transactions in the pharmaceutical sector.

Chapter 1. Introduction to Mergers and Acquisitions

Mergers and Acquisitions (M&As) serve as pivotal activities within the corporate landscape, offering avenues for growth, diversification, and increased market share. While mergers typically involve a more mutual agreement to combine two organizations into a new, single entity, acquisitions often involve one organization buying out another. These corporate actions aim for various strategic and financial goals such as growth, diversification, and economies of scale. M&A are often high-stakes moves with the power to shape industries and seriously influence stock markets ("Merger vs. Acquisition - Difference, Definitions." Corporate Finance Institute,

Various sources offer multiple interpretations of what mergers and acquisitions entail, and we will go through most accepted definitions in order to get clear understanding. A merger is generally defined as the amalgamation of one or multiple companies into another existing company, leading to the cessation of the merged company's independent existence. On the other hand, an acquisition involves the transfer of a company's share ownership to another organization, effectively meaning that one company purchases the assets or shares of another. Scott (2012) describes a merger as the unification or amalgamation of two or more companies of varying or similar sizes into a single corporate entity. In such cases, the acquiring company's trademark is often retained by investors. Legally, the company that is absorbed ceases to function as an independent entity after a merger. An acquisition is the act of purchasing either all or a portion of a company's shares or assets, which could include specific business divisions.

The practice of M&As dates back to the late 19th and early 20th centuries. During that industrial age, many companies opted for mergers and acquisitions to eliminate competition and create monopolies in sectors like oil and steel. Over time, motivations have diversified, and M&As have undergone several "waves," each characterized by unique economic conditions, industry trends, and regulatory landscapes. For example, the 1980s saw a boom in "hostile takeovers," whereas the early 2000s were marked by cross-border M&As driven by globalization ("A Historical Analysis of M&A Waves." Cleverism).

In today's globalized economy, M&As are influenced by numerous factors such as technological advancements, market saturation, and geopolitical tensions ("How Interest, Inflation and Uncertainty Affect M&A Valuation." BDO, <https://www.bdo.com/industries/technology/how-interest-rates,-inflation,-and-geopolitical-uncertainty-influence-tmt-m-a-valuations>). The rise of the digital age has led to a surge in

acquisitions targeting tech startups, while regulatory shifts, like those concerning environmental standards, have made many sectors less appealing for M&A activities. Innovations also created a trend when small and medium sized companies develop new technologies aiming to be eventually acquired by large multinationals.

M&As vary in nature, including horizontal mergers (companies in the same industry merging to achieve economies of scale and increased market share), vertical mergers (companies in different stages of the same supply chain merging for streamlined production and cost savings), and conglomerate mergers (acquiring companies unrelated to the acquirer's core business for diversification and risk reduction). Other forms include subsidiary mergers (the target company becomes a subsidiary of the acquiring company) and reverse mergers (the private company merges with a public shell company). (Classification of Mergers and Acquisitions <https://analystprep.com/study-notes/cfa-level-2/classification-of-mergers-and-acquisitions/>)

In pharmaceutical industry M&A deals are pretty common: 1100-1500 deals are announced yearly with total value varying between \$90bn. and \$240bn. Average deal value is about \$50 000m

There are several established theories, explaining practice of M&A and problems, associated with it. We will review the most prominent ones:

1.1 Synergy theory

One of the earliest theories explaining M&As is the Synergy Theory, which states that the value of the combined entities is higher than the sum of individual entities ($1+1=3$). This is often why companies aim to merge; they seek to exploit synergies, whether in the form of cost-saving, revenue enhancement, or even managerial efficiencies. Cost synergies imply cost savings achieved through economies of scale, streamlined operations, and the elimination of redundancies. This includes but is not limited to, consolidated administrative functions, shared technological infrastructure, and optimized supply chain management. Revenue synergies, on the other hand, refer to the potential for increased revenue post-merger, driven by cross-selling opportunities, expanded market reach, and enhanced product or service offerings. These synergies are predicated on the assumption that the merged entity can leverage complementary strengths and customer bases to drive growth. Strategic synergies could manifest in improved competitive positioning, access to new markets, enhanced innovation capabilities, and the acquisition of valuable intellectual property or human talent. However, the level of realization of

synergistic potential can be influenced by multiple factors, both internal and external. Essentially, synergy is not guaranteed ("Synergy." Corporate Finance Institute.

1.2 Agency Theory

This theory revolves around the potential conflicts between the interests of a company's management (agents) and its shareholders (principals). These conflicts can manifest in various forms, particularly in the decision-making process surrounding M&As. For example, management might pursue acquisitions to diversify the company's risk profile, but this may not align with shareholders' interests, who might prefer focused growth strategies. In order to mitigate these conflicts, effective management solutions are crucial. This includes mechanisms such as performance-based executive compensation, active board oversight, and transparent shareholder communication. External consultants are often employed to find optimal solution and way for M&A execution ("Agency Theory." Oxford University Press)

1.3 Resource-Based theory

This theory offers a strategic perspective for examining M&As, emphasizing the acquisition of valuable resources. These resources could range from tangible assets like technology and capital to intangible ones like brand reputation and organizational culture. The RBV suggests that successful M&As integrate complementary resources from both companies to create a competitive edge. AstraZeneca's acquisition of Alexion can be seen as a strategic move to incorporate Alexion's innovative rare disease treatments into AstraZeneca's broader product portfolio, potentially creating a synergy that neither company could achieve independently. This theory underlines the importance of thorough due diligence and strategic planning to ensure resource compatibility and integration capability (Oxford University Press. "Resource-Based View."

1.4 Transaction Cost Theory

Transaction Cost Theory provides a pragmatic view of M&As, focusing on the efficiency gains from internalizing market transactions. In an M&A context, this theory can be applied to understand how companies seek to reduce costs associated with market dealings, like supplier negotiations or customer acquisitions. For example, by acquiring Alexion, AstraZeneca might reduce costs related to research and development, procurement, or even marketing, as these functions can be more efficiently managed within a single organizational structure. This theory also highlights the need for a careful assessment of the costs involved in the merger or

acquisition process itself, including legal fees, integration costs, and potential regulatory hurdles. (Watkins, Thayer. "The Transaction Cost Approach to the Theory of the Firm.")

1.5 Market Power Theory

This approach states that firms engage in M&A activities to consolidate market influence, reduce competition, and increase pricing power. The primary focus in this theory is on horizontal mergers, where firms in the same industry combine to control a larger market share. Such consolidations can lead to increased market dominance, potentially resulting in monopolistic or oligopolistic market structures. AstraZeneca's acquisition of Alexion can be easily seen through this perspective. (Officer, Micah S. "Market Power Theory." The Review of Financial Studies)

1.6 Strategic Realignment Theory

This theory of M&A suggests that these transactions are instrumental for firms to adapt to shifting market landscapes, technological advancements, and regulatory changes. M&As are viewed as strategic responses to external stimuli, enabling firms to pivot their business models, enter uncharted markets, or acquire necessary technological capabilities. This theory places a premium on the strategic foresight of companies and their ability to proactively respond to environmental changes. The complexity lies in executing a merger or acquisition that aligns with long-term strategic goals while managing the immediate challenges of integration, stakeholder management, and cultural alignment. (McKinsey & Company "Digital disruption strategy and the role of M&A" by McKinsey & Company Article)

1.7 Game theory for mergers and acquisitions

In the context of mergers and acquisitions, game theory helps to address situations in which companies must make decisions by considering the potential moves and responses of their competitors, partners, or target companies. This is particularly relevant when multiple companies seek to acquire the same target company, creating a competitive situation similar to a zero-sum game where one participant's gain is another's loss.

Game theory allows us to model and analyse the various strategies of participants in the M&A process, including:

Target companies' strategies: How target companies can maximise their value in the merger or acquisition process by using tactics such as auctions or creating a competitive environment between potential buyers.

Buyer strategies: How acquiring companies can formulate their offers and negotiation strategies to increase the likelihood of a successful acquisition while minimising the purchase price.

Regulatory Engagement: Analysing potential regulatory actions that may affect M&A transactions and developing strategies to minimise regulatory risks.

1.8. Institutional theory

This perspective emphasizes the role of regulations, norms, and cultural factors in shaping how companies' approach, execute, and integrate M&As. Mergers and acquisitions do not occur in a vacuum but are deeply embedded within the regulatory, normative, and cognitive structures of the institutional contexts. The Institutional Theory suggests that the success and strategic approach to M&As are significantly dictated by these external factors, which can vary widely across different regions and countries.

Regulatory Environment

The regulatory environment includes laws and regulations that govern M&A activities. This encompasses antitrust laws, securities regulations, and cross-border investment policies, which can either facilitate or constrain the possibilities for mergers and acquisitions. Companies looking to engage in M&A activities must navigate this complex legal landscape, adapting their strategies to comply with regulatory requirements while pursuing their corporate objectives.

Normative and Cultural Aspects

Beyond the legal framework, normative and cultural aspects play a crucial role in shaping M&A strategies. Normative pressures come from the expectations of stakeholders, including investors, employees, and customers, who can influence the perceived legitimacy of an M&A deal. Cultural factors, on the other hand, pertain to the compatibility between the corporate cultures of merging entities and the broader societal culture in which they operate. The successful integration of companies post-M&A often hinges on the alignment of these cultural dimensions, underscoring the importance of cultural due diligence in the M&A process.

Institutional Patterns

In the context of M&As, companies may engage in mergers or acquisitions to align with the prevailing institutional norms and practices of their industry or region, thereby gaining

legitimacy and competitive advantage. This concept helps explain the waves or patterns of M&A activities that occur in response to changes in the institutional landscape.

Understanding the institutional theory's implications for M&As enables companies to better anticipate and navigate the challenges and opportunities presented by their institutional environments. By aligning their M&A strategies with the regulatory, normative, and cultural expectations, firms can enhance the legitimacy, acceptance, and ultimately, the success of their merger or acquisition initiatives.

1.9 Behavioural Finance Theory

This theory explores the influence of psychological factors on the financial behaviour of individuals and institutions, challenging the traditional assumption of rational decision-making. In the context of mergers and acquisitions, this theory provides a crucial lens through which to examine the often irrational and emotionally driven decisions that can impact the success of these transactions.

Psychological Factors and Decision-Making

Central to Behavioural Finance Theory is the understanding that cognitive biases and emotional responses can significantly distort decision-making processes. Key psychological factors that can affect M&A activities include:

Overconfidence: Executives might overestimate their ability to identify synergies, integrate different corporate cultures, or achieve projected financial outcomes, leading to overly optimistic assessments of M&A deals.

Confirmation Bias: Decision-makers may seek out information that confirms their preexisting beliefs or hypotheses about a merger or acquisition, while disregarding evidence that contradicts their views. This can result in a failure to accurately assess the risks and challenges associated with a transaction.

Herding behaviour: Companies might engage in M&A activities simply because it is seen as the industry norm or because competitors are doing so, rather than based on a sound strategic rationale. This "follow-the-crowd" mentality can lead to inflated prices and poor strategic fit.

Implications for M&A Strategy

Recognizing and mitigating the influence of psychological biases is crucial for firms engaged in M&A activities. Strategies to counteract these biases include:

Diversifying Decision-Making Teams: Incorporating diverse perspectives can help challenge overconfident forecasts and reduce the risk of confirmation bias.

Structured Decision Processes: Implementing structured analytical frameworks and decision-making processes can help ensure that all potential risks and benefits are adequately considered.

Post-Merger Integration Planning

Acknowledging the emotional and cultural aspects of mergers and acquisitions can improve the planning and execution of post-merger integration, addressing potential sources of resistance and conflict early on.

1.10 Life Cycle Cost theory

This theory states that companies at different lifecycle stages have varying motivations, resources, and goals, affecting their approach to M&As. For instance, start-ups or growth-stage companies may seek M&As for rapid expansion and access to new technologies, whereas mature companies might pursue them for market consolidation or rejuvenation through diversification. Recognizing these distinctions is crucial for tailoring M&A strategies that align with a company's lifecycle position, ensuring that the mergers or acquisitions are strategically sound and financially justifiable. This approach underscores the importance of considering a company's development stage in planning and executing M&As, as it profoundly impacts the strategic fit, integration challenges, and value creation potential of the deal.

Conclusion of Chapter I

In conclusion, in Chapter I has explored the multifaceted nature of M&As through the perspective of Synergy theory, Agency theory, Resource-Based theory, Transaction Cost theory, Market Power theory, Strategic Realignment theory, Game Theory, Institutional theory, Behavioural Finance Theory and Life Cycle theory. Each theory provides unique insights into the motivations, strategies, and implications of M&As. Theories such as the synergy theory highlight the pursuit of combined operational efficiencies and enhanced market capabilities, while the agency theory delves into the conflicts and alignments of interest between stakeholders, underscoring the governance structures essential for the merger's success. The resource-based view offers insights into the strategic consolidation of competencies and resources that aim to

foster a competitive edge in the pharmaceutical landscape. Concurrently, transaction cost economics emphasizes the importance of efficiency in the integration processes, suggesting that minimizing these costs is crucial for realizing the merger's value. Market power theory reflects on the merger's capacity to alter competitive dynamics, potentially leading to a more dominant position within the industry. The strategic alignment theory further elaborates on the necessity of aligning organizational structures, cultures, and strategies to ensure the seamless execution and realization of merger objectives. As the case of AstraZeneca and Alexion Pharmaceuticals merger unfolds in this final degree project, these theoretical frameworks will serve as tools for dissecting and understanding the complex dynamics at play. The following chapters will build upon this foundation, going deeper into the specific aspects of the AstraZeneca-Alexion merger, examining its strategic rationale, execution, and post-merger integration, thereby providing a comprehensive analysis of one of the most significant M&As in the pharmaceutical industry.

Chapter II: Case of AstraZeneca-Alexion Pharmaceuticals merger

Chapter II of this research provides an in-depth analysis of the AstraZeneca-Alexion Pharmaceuticals merger. We begin by profiling each company, looking into their operational scope, product lines, market presence, and financial metrics prior to the merger. Then we will look into strategic logic put into this merger, examining the expected benefits and challenges and examine long-term prospects of the merger.

2.1. AstraZeneca company profile

2.1.1 Historical Overview and Global Presence

Astra AB, the predecessor of AstraZeneca, was founded in 1913 in Södertälje, Sweden, by a collective of 400 doctors and apothecaries. This foundational step marked the beginning of a journey that saw Astra AB gradually cement its status in the European pharmaceutical market between 1913 and 1999. AstraZeneca itself came into being in 1999, born out of the merger of Astra AB and the British Zeneca Group. This merger was not merely a fusion of companies but a strategic integration that propelled the new entity to a leadership position in the biopharmaceutical industry on a global scale. From its global headquarters in Cambridge, UK, AstraZeneca has significantly extended its international presence, embodying a commitment to innovative medicine delivery worldwide.

In the years following its inception, particularly between 2005 and 2012, AstraZeneca aggressively expanded its portfolio through a series of mergers and acquisitions (M&As), targeting both established and emerging pharmaceutical companies. This period of strategic acquisitions underscored the company's commitment to growth and innovation, contributing to its robust portfolio across various therapeutic areas.

The year 2014 was a pivotal moment for AstraZeneca, as it received a merger offer from Pfizer valued at £55 per share, which would have placed the company's valuation at approximately £69.4 billion (US\$117 billion). Opting to reject this offer, AstraZeneca instead chose to continue its path of expansion and innovation, focusing on enhancing its portfolio with groundbreaking drugs from 2015 to 2020. This decision highlighted AstraZeneca's commitment to its independent strategic vision and its confidence in its pipeline and R&D capabilities.

AstraZeneca's approach to R&D and its series of strategic M&As have been central to its evolution into a global biopharmaceutical leader. The company's investment in research has led

to the development of leading treatments across various therapeutic areas, including oncology, cardiovascular diseases, and respiratory conditions. AstraZeneca's strategy, characterized by its selective acquisitions and focus on innovation, has not only diversified its product offerings but has also enabled the company to respond effectively to changing healthcare needs and challenges.

By rejecting Pfizer's merger offer and instead focusing on expanding its innovative drug portfolio, AstraZeneca underscored its resilience and strategic foresight. This move was emblematic of the company's determination to maintain its course towards becoming a powerhouse in the development of transformative medicines. Through these strategic decisions, AstraZeneca has continued to build on its own pharmaceutical “empire”.

2.1.2 Research and Development

A cornerstone of AstraZeneca's success is its emphasis on research and development (R&D). The company's hefty investment in R&D has fueled the creation of groundbreaking drugs and treatments, making a profound impact on the healthcare sector. This commitment is evident in AstraZeneca's dynamic R&D strategy, which is squarely aimed at addressing unmet medical needs and driving innovation.

In recent developments, AstraZeneca's R&D expenditure has seen a substantial increase, demonstrating the company's unwavering commitment to innovation. In 2022, AstraZeneca invested approximately 9.8 billion U.S. dollars in R&D, marking a significant financial dedication to advancing medical science. This investment underscores AstraZeneca's strategy to lead in the development of innovative therapies and its ambition to push the boundaries of science to deliver life-changing medicines.

One of the remarkable aspects of AstraZeneca's R&D efforts is its focus on precision medicine, particularly in oncology. The development of drugs such as Tagrisso, Imfinzi, and Lynparza highlights AstraZeneca's prowess in this field. Tagrisso, a leading treatment for non-small cell lung cancer (NSCLC) with specific genetic mutations, has set new standards in care, demonstrating AstraZeneca's capacity to lead in targeted therapies. Similarly, Lynparza, developed in partnership with Merck & Co., targets BRCA-mutated cancers across various indications, showcasing the potential of collaboration in achieving scientific breakthroughs.

AstraZeneca's R&D projects are not limited to oncology; the company has also made significant strides in cardiovascular and metabolic diseases, respiratory conditions, and more, maintaining a diversified and robust pipeline that promises to address a wide spectrum of medical challenges.

AstraZeneca's strategic approach to R&D is characterized by its openness to collaboration and innovation. Through its Open Innovation program, AstraZeneca shares its compounds, tools, technologies, and expertise with the scientific community, fostering a collaborative environment that accelerates drug discovery and development.

2.1.3 Financial Performance

From 2015-2020, AstraZeneca's financial stability was characterized by several key trends. Revenue initially declined from \$24.71 billion in 2015 to a low

of \$22.09 billion in 2018, before rising to \$26.62 billion in 2020. The debt-to-equity ratio fluctuated, reaching a high of 1.53 in 2017, indicating increased debt financing. The strategic elevation of the debt-to-equity ratio is considered to be a calculated manoeuvre aimed at harnessing the company's financial leverage to fund growth initiatives. Despite this, AstraZeneca maintained robust R&D investments, underscoring its commitment to innovation. The company's ROE and ROA varied but remained positive, reflecting effective asset and equity management.

Market reactions to AstraZeneca's strategic ventures initially were full of scepticism, as evidenced by increased stock price volatility. However, the results of strategic acquisitions and the successful commercialization of several flagship drugs gradually restored investor confidence, that resulted in positive mid- and long-term stock price dynamics. This period was marked by strategic efforts to stabilize and grow in a competitive market.

2.1.4 Product Portfolio and Market Impact

AstraZeneca's diverse product portfolio is a key component of its market success. The company offers a wide range of prescription medicines, with a strong emphasis on innovative treatments in oncology, cardiovascular and metabolic diseases, and respiratory illnesses. This diversity not only enhances AstraZeneca's market presence but also demonstrates its commitment to addressing a broad spectrum of healthcare challenges. The impact of its products on global healthcare is substantial, with many becoming standard treatments in their respective therapeutic areas.

Oncology

In the area of oncology, AstraZeneca has made significant strides with blockbuster drugs such as Tagrisso, Imfinzi, and Lynparza which have significantly advanced the treatment of various cancers, including non-small cell lung cancer (NSCLC) with specific genetic mutations. These drugs exemplify AstraZeneca's commitment to precision medicine, offering targeted therapies that have reshaped cancer treatment paradigms and driven substantial revenue growth for the company.

Tagrisso (osimertinib) has demonstrated exceptional efficacy in treating NSCLC with epidermal growth factor receptor (EGFR) mutations, offering patients a critical line of defense

against this prevalent form of lung cancer. Tagrisso's approval for the adjuvant treatment of early-stage EGFR-mutated NSCLC represents a major milestone, significantly improving disease-free survival rates for patients' post-surgery. The ADAURA Phase III trial's updated results show Tagrisso's sustained, clinically meaningful benefit, highlighting its role as a standard of care in its segment.

Imfinzi (durvalumab), another cornerstone of AstraZeneca's oncology portfolio, has shown promising results in treating patients with locally advanced, unresectable non-small cell lung cancer (NSCLC) following chemoradiation therapy. Its application has expanded into new indications, further underscoring its potential to meet unmet medical needs across different stages of cancer treatment.

Lynparza (olaparib), developed in partnership with Merck & Co., targets BRCA-mutated cancers across various indications. Lynparza's success in clinical trials has established it as a critical option for patients with ovarian, breast, pancreatic, and prostate cancers, showcasing the potential of PARP inhibitors in cancer care.

The strategic collaboration between AstraZeneca and Merck & Co. has not only accelerated the development of Lynparza but also emphasized the importance of partnerships in driving innovation in oncology. Together, these drugs underscore AstraZeneca's leading position in developing targeted therapies, which are reshaping the landscape of cancer treatment and offering new hope to patients worldwide.

Moreover, ongoing clinical trials and research efforts continue to explore the broader applicability of these therapies in various cancer types, promising to unlock new therapeutic possibilities and improve outcomes for cancer patients globally.

Cardiovascular and Metabolic Diseases

Forxiga (dapagliflozin), AstraZeneca's leading SGLT2 inhibitor, stands out as a cornerstone in the treatment landscape of cardiovascular and metabolic diseases, particularly for diabetes management and, more recently, heart failure. Its approval for heart failure treatment marks a pivotal development in medical therapeutics, addressing a significant unmet medical need and introducing new therapeutic avenues for AstraZeneca.

The significance of Forxiga's contribution extends beyond its clinical applications. It underscores AstraZeneca's commitment to pioneering solutions that significantly improve patient outcomes in diseases with high morbidity and mortality. The approval for heart failure, a condition with a high global burden affecting millions of individuals worldwide, highlights the

potential of Forxiga to change standard care practices, offering hope to patients with limited treatment options.

Forxiga's mechanism of action, which facilitates the removal of glucose from the body through the urine, represents a novel approach in the management of type 2 diabetes. This mechanism not only aids in glycemic control but also confers cardiovascular and renal protective benefits, which have been substantiated through rigorous clinical trials. These trials have demonstrated Forxiga's ability to reduce hospitalization for heart failure and to slow the progression of kidney disease, thus broadening its therapeutic implications beyond glucose lowering.

The inclusion of Forxiga in AstraZeneca's portfolio not only diversifies the company's offerings but also strengthens its position as a leader in the cardiovascular and metabolic disease space. This aligns with AstraZeneca's strategic vision to address critical areas of unmet medical need while fostering innovation in chronic disease management.

Respiratory and Immunology

The acquisition of Alexion Pharmaceuticals has bolstered AstraZeneca's portfolio in rare diseases and immunology, adding transformative treatments such as Soliris and Ultomiris for rare blood disorders. This strategic move not only diversifies AstraZeneca's portfolio but also reinforces its commitment to delivering life-changing therapies to patients with limited treatment options. The integration of Alexion's expertise in complement biology with AstraZeneca's global reach and R&D capabilities has poised the company to lead in new, rapidly growing therapeutic areas.

2.2 Alexion Pharmaceuticals company profile

2.2.1 Company Overview and Specialization

Alexion Pharmaceuticals, headquartered in Boston, Massachusetts, USA, represents a notable case in the pharmaceutical industry for its specialized focus on developing and marketing therapies for severe and life-threatening diseases. Before its acquisition by AstraZeneca in July 2021, Alexion carved out a niche for itself in the rare diseases market, with an emphasis on hematology, nephrology, neurology, metabolics, and cardiology. The company gained acclaim for its innovative treatments for a range of conditions, including atypical hemolytic uremic syndrome (aHUS), generalized myasthenia gravis (gMG), and paroxysmal nocturnal hemoglobinuria (PNH), among others.

Alexion's strategic approach to tackling rare diseases underscored its commitment to both innovation and patient care, establishing the company as a pivotal player within the pharmaceutical sector, particularly in the rare disease segment. The depth and impact of its product portfolio highlighted the significant strides Alexion had made in delivering hope and solutions to patients grappling with rare and severe conditions. This commitment not only improved the quality of life for these patients but also marked significant progress in the ongoing battle against rare diseases, reinforcing Alexion's critical role in the global healthcare landscape.

Product development at Alexion featured several flagship brands like Kanuma, Koselugo, Soliris, StrensiQ, and Ultomiris, targeting a spectrum of rare and severe conditions from hypophosphatasia (HPP) and lysosomal acid lipase deficiency (LAL-D) to neurofibromatosis type 1 plexiform neurofibromas (NF1 PN). This focus on rare diseases positioned Alexion as a key player in the pharmaceutical industry, emphasizing its commitment to addressing unmet medical needs within this niche market.

Alexion's global expansion strategy was both strategic and patient-centric, focusing on entering markets with an acute need for rare disease treatments. This involved not only launching products in new countries but also working closely with local healthcare systems and regulatory bodies to ensure accessibility to their therapies. Alexion's efforts to expand the availability of Soliris and Ultomiris have been pivotal in treating patients with PNH and aHUS globally, showcasing the company's proactive approach to global healthcare challenges.

Strategic acquisitions have also played a critical role in bolstering Alexion's global presence and enhancing its R&D capabilities. The acquisition of Synageva BioPharma, for example, brought in Kanuma for the treatment of LAL-D, expanding Alexion's rare disease portfolio and its market presence. Similarly, the acquisition of Achillion Pharmaceuticals provided Alexion with additional assets in complement-mediated diseases, further strengthening its position in the rare diseases market.

Alexion's emphasis on collaborations and partnerships, spanning academic institutions, research organizations, and biotechnology companies, has been instrumental in fostering innovation in drug development and delivery. A notable collaboration with Moderna Therapeutics to develop mRNA therapies for rare diseases exemplifies Alexion's commitment to leveraging cutting-edge technology to address unmet medical needs.

2.2.2 Product Development and Market Impact

Alexion Pharmaceuticals' diverse product lineup, including Kanuma, Koselugo, Soliris, StrensiQ, and Ultomiris, exemplifies its pioneering approach to targeting rare and severe conditions. This array of treatments spans various rare diseases, such as hypophosphatasia (HPP), lysosomal acid lipase deficiency (LAL-D), and neurofibromatosis type 1 plexiform neurofibromas (NF1 PN), showcasing Alexion's dedication to addressing underserved medical needs.

Kanuma, a recombinant human lysosomal acid lipase, treats patients with LAL-D, a rare genetic disorder that can lead to serious health problems like liver disease and dyslipidemia. Koselugo, approved for pediatric patients with NF1 and symptomatic, inoperable plexiform neurofibromas, represents a significant advancement in managing this complex genetic condition. Soliris, the first complement inhibitor approved for clinical use, continues to dominate its therapeutic area with applications expanding into new indications over the years. StrensiQ, a recombinant form of the enzyme alkaline phosphatase, addresses HPP, providing patients with a much-needed treatment option. Ultomiris, introduced as a next generation complement inhibitor, has quickly gained market acceptance with a more convenient dosing regimen, contributing to Alexion's revenue diversification and growth.

One of Alexion's notable products is Soliris (eculizumab), which revolutionized the treatment of paroxysmal nocturnal hemoglobinuria (PNH) and atypical hemolytic uremic syndrome (aHUS). Soliris, as the first complement inhibitor approved for clinical use, has continued to dominate its therapeutic area, with its application expanding into new indications over the years.

Following Soliris, Ultomiris (ravulizumab) was introduced as a next generation complement inhibitor with a more convenient dosing regimen. Ultomiris quickly gained market acceptance, contributing to Alexion's revenue diversification and growth. The strategic launch and lifecycle management of Ultomiris underscore Alexion's ability to not only innovate in drug development but also effectively navigate market dynamics to maximize the commercial potential of its innovations.

Alexion's efforts in expanding the availability of these drugs have been pivotal in treating patients with PNH and aHUS globally. The company's global presence has been significantly bolstered by its previous strategic acquisitions, which have expanded its pipeline and enhanced its R&D capabilities. The acquisition of Synageva BioPharma, for example, brought in Kanuma

(sebelipase alfa) for the treatment of lysosomal acid lipase deficiency (LAL-D), broadening Alexion's rare disease portfolio and its global market presence.

Furthermore, the acquisition of Achillion Pharmaceuticals has provided Alexion with additional assets in complement-mediated diseases. This acquisition strategy has not only involved launching their products in new countries but also working closely with local healthcare systems and regulatory bodies to ensure access to their therapies.

At the moment of merger Alexion had in portfolio 11 new molecules at different stages of R&D and clinical trials:

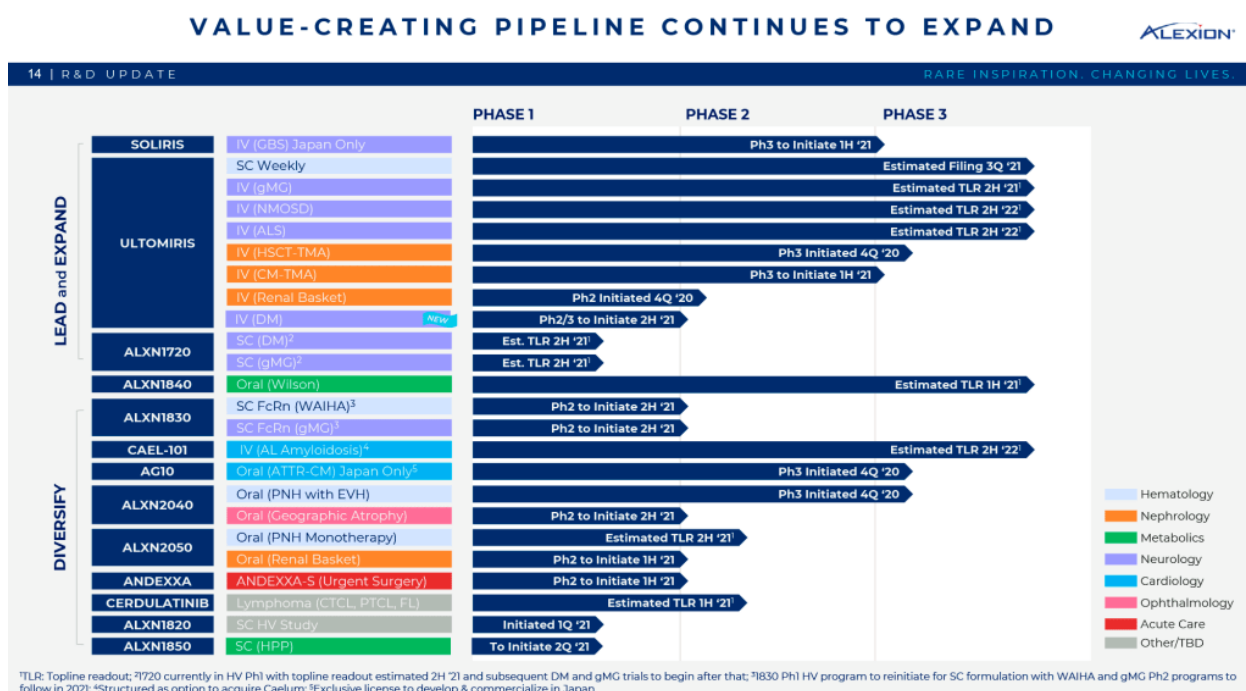


Image 1. Alexion pipeline at the moment of merger.¹

2.2.3 Global Presence and Collaborations

Operating across various regions, including Europe, the Middle East, North America, Latin America, and the Asia Pacific, Alexion has established a significant global footprint. The company's collaborative approach, working with research organizations and other pharmaceutical companies, has been instrumental in developing treatments for rare and severe diseases.

Alexion's approach to global expansion has been both strategic and patient-centric, entering markets where there is an acute need for rare disease treatments. This strategy not only involves launching their products in new countries but also working closely with local healthcare

¹ <https://biopharma.media/astrazeneca-alexion-rescue-of-both-companies-1401/>

systems and regulatory bodies to ensure access to their therapies. For instance, Alexion's efforts in expanding the availability of Soliris (eculizumab) and Ultomiris (ravulizumab) have been pivotal in treating patients with paroxysmal nocturnal hemoglobinuria (PNH) and atypical hemolytic uremic syndrome (aHUS) globally.

Alexion's global presence has been significantly bolstered by its previous strategic acquisitions, which have expanded its pipeline and enhanced its R&D capabilities. The acquisition of Synageva BioPharma, for example, brought in Kanuma (sebelipase alfa) for the treatment of lysosomal acid lipase deficiency (LAL-D), broadening Alexion's rare disease portfolio and its global market presence. Similarly, the acquisition of Achillion Pharmaceuticals has provided Alexion with additional assets in complement-mediated diseases.

An important part of Alexion's success in enhancing its global reach has been its emphasis on collaborations and partnerships. These alliances span academic institutions, research organizations, and biotechnology companies, focusing on innovation in drug development and delivery. A notable collaboration includes the partnership with Moderna Therapeutics to develop mRNA therapies for rare diseases, showcasing Alexion's commitment to leveraging cutting-edge technology to address unmet medical needs.

2.2.4 Financial Performance and Employee Base

Between 2015 and 2020, Alexion Pharmaceuticals demonstrated quick growth, a result of its strategic R&D focus and excellence in the biopharmaceutical domain. This period marked a transformative phase for Alexion, with its annual revenue growing from \$2.6 billion in 2015 to a remarkable \$6.1 billion by 2020, showcasing an impressive compound annual growth rate (CAGR) that significantly outpaced industry averages. This revenue growth was primarily fuelled by the strategic positioning and global expansion of its flagship products, Soliris (eculizumab) and Ultomiris (ravulizumab), which have become synonymous with life-altering therapies in the rare disease market.

Soliris, the first complement inhibitor approved for clinical use, continued to dominate its therapeutic area, with its application expanding into new indications over the years. Ultomiris, introduced as a next generation complement inhibitor with a more convenient dosing regimen, quickly gained market acceptance, contributing to Alexion's revenue diversification and growth. The strategic launch and lifecycle management of these products underscore Alexion's ability to not only innovate in drug development but also effectively navigate market dynamics to maximize the commercial potential of its innovations.

In sync with its revenue growth, Alexion's employee base experienced substantial expansion, growing to approximately 3,000 by the end of 2020. This increase in manpower was not merely an organizational scaling but a part of strategy to bolster its R&D efforts and enhance global commercial presence while maintaining famous operational excellence. The growth in Alexion's talent pool reflected its evolving needs as a one of global leaders in rare diseases, with significant investments made in recruiting and developing top-tier talent across all functions, but especially in R&D.

This period also saw Alexion enhancing its operational infrastructure and capabilities to support its growing product portfolio and global footprint. Investments in cutting-edge research facilities, state-of-the-art manufacturing sites, and advanced digital platforms enabled Alexion to maintain its competitive edge, ensuring the delivery of high-quality therapies to patients worldwide.

Acquisition and Development History

Alexion Pharmaceuticals' strategic trajectory has been significantly shaped by a series of strategic acquisitions and expansions, underpinning its growth and diversification within the rare disease market. The acquisitions of Proliferon in 2000, Enobia Pharma in 2011, Synageva in 2015, Wilson Therapeutics and Syntimmune in 2018, Achillion Pharmaceuticals in 2019, and Portola Pharmaceuticals in 2020, each played a pivotal role in enhancing Alexion's research and development (R&D) capabilities and extending its reach within the rare disease space.

The acquisition of Proliferon, which was later restructured into Alexion Antibody Technologies, laid the groundwork for Alexion's foray into advanced antibody technologies. This move was strategic, allowing Alexion to harness the potential of monoclonal antibodies in targeting complex diseases. The subsequent acquisition of Enobia Pharma expanded Alexion's portfolio with innovative treatments for metabolic disorders, marking a significant step in its mission to address unmet medical needs in the rare disease domain.

The purchase of Synageva BioPharma was particularly noteworthy, bringing into Alexion's fold Kanuma (sebelipase alfa) for the treatment of lysosomal acid lipase deficiency (LAL-D), further broadening its rare disease portfolio. Similarly, the acquisition of Wilson Therapeutics and Syntimmune in 2018 enhanced Alexion's capabilities in addressing Wilson's disease and autoimmune disorders, respectively.

In 2019, the acquisition of Achillion Pharmaceuticals endowed Alexion with additional assets in complement-mediated diseases, showcasing Alexion's commitment to solidifying its presence in this therapeutic area. The acquisition of Portola Pharmaceuticals in 2020 further underscored Alexion's strategic intent to expand its portfolio and R&D pipeline, particularly in the area of haematology.

2.3 Expected benefits

The AstraZeneca-Alexion merger is a strategic initiative aimed at amplifying AstraZeneca's influence in the fields of immunology and rare diseases. This amalgamation is expected to significantly augment AstraZeneca's revenue streams, primarily buoyed by Alexion's robust sales, especially from its flagship rare disease medication, Soliris. Nonetheless, merging the distinct focus areas and managing the financial intricacies associated with such a grand acquisition presents its set of challenges. This strategic consolidation is poised to deliver multiple benefits:

1. **Strengthened Position in Immunology and Rare Diseases:**

By assimilating Alexion, AstraZeneca markedly bolsters its foothold in the immunology and rare diseases arena. Alexion's specialized knowledge in these sectors is a perfect complement to AstraZeneca's diversified portfolio, thereby enhancing the company's competitive edge in these crucial therapeutic areas.

2. **Revenue Enhancement:** The integration of Alexion is anticipated to significantly contribute to AstraZeneca's revenue growth. Alexion's impressive sales metrics, particularly from Soliris, its rare disease treatment, are expected to positively impact AstraZeneca's financial health, driving substantial top-line growth.

3. **Commercial Strategy:**

The successful migration of patients from Soliris to Ultomiris underscores Alexion's strategic commercial acumen. This transition not only demonstrates effective market strategy but also promises to be beneficial for the unified entity, ensuring continued growth and market penetration.

4. **Experienced Strategic Mergers and Acquisitions (M&A):** Alexion's history of strategic acquisitions, despite their varied outcomes, brings a wealth of experience and a track record of identifying growth opportunities. This experience is invaluable for AstraZeneca, offering potential avenues for expansion and diversification.

5. **Expansion of Value-Creating Pipeline:** The merger between AstraZeneca and Alexion notably accelerates the expansion of a value-creating pipeline, underlining the

commitment of the combined entity towards fostering innovation and delivering cutting-edge treatments. This strategic amalgamation significantly enhances the research and development (R&D) prospects.

6. Long term growth fuelled by patented drugs:

Combined portfolio of AstraZeneca and Alexion ensures that company has effective patented drugs with substantial market demand at least up to 2030.

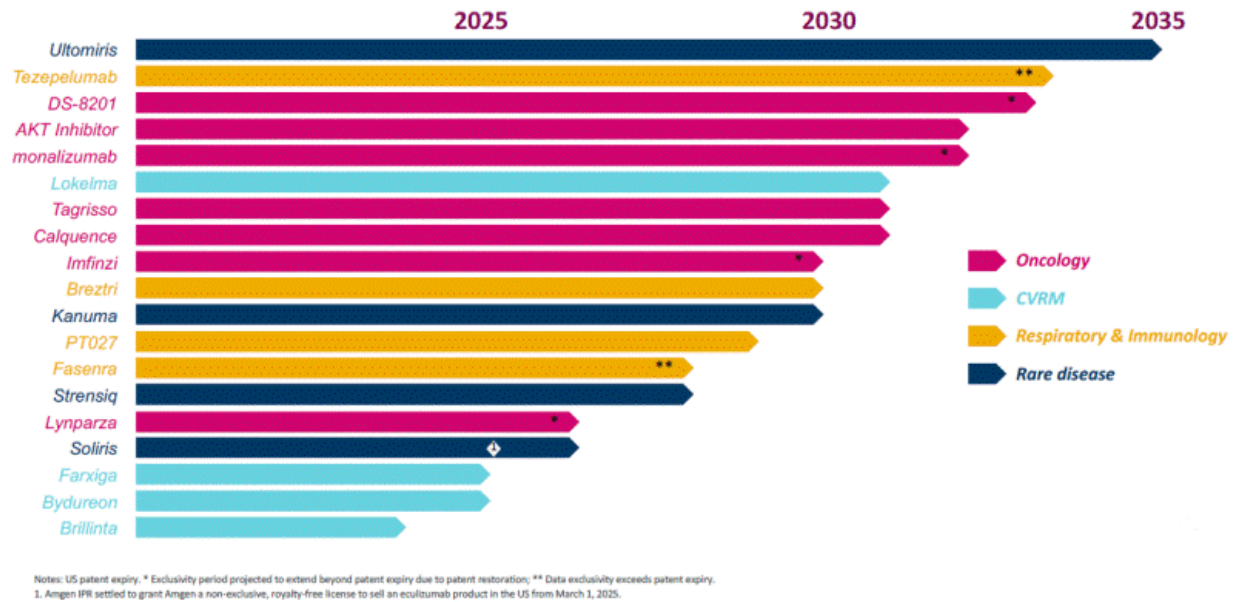


Image 2. Exclusivity periods for patented pharmaceuticals from combined portfolio.²

2.4 Expected challenges and risks.

The merger between AstraZeneca and Alexion, while strategic, posed several challenges:

- Integration of Different Focus Areas:** The merger combined two companies with different areas of focus. AstraZeneca had a strong position in cancer and other diseases, while Alexion specialized in rare diseases and immunology. Successfully integrating these diverse portfolios is a significant challenge.
- Shareholder Concerns:** Alexion investors had doubts about the company's over-reliance on the Soliris-Ultomiris franchise, which though successful was vulnerable to potential new innovative drugs.
- Commercial Execution:** Alexion's history of M&A moves, including some less successful acquisitions, posed a challenge for AstraZeneca in leveraging these assets effectively.

² https://www.sec.gov/Archives/edgar/data/899866/000110465920135240/a20-38431_1425.htm

4. **Financial Investment and Market Response:** The deal involved a considerable financial investment from AstraZeneca. Managing this alongside existing debts and investments was a notable challenge.

The acquisition, therefore, required careful management of these challenges in order to satisfy both companies' stakeholders and investors.

2.5 Operational Efficiency

The merger of AstraZeneca and Alexion Pharmaceuticals was a major step in AstraZeneca's strategy to expand beyond oncology into immunology and rare diseases. The deal, valued at \$39 billion, was completed in the third quarter of 2021.

Operational Changes

The integration of Alexion into AstraZeneca's operations brought about significant changes. These changes were aimed at leveraging the strengths of both organizations to create a more efficient and comprehensive operation. AstraZeneca aimed to capitalize on Alexion's expertise in rare diseases, complementing its own extensive experience in oncology, cardiovascular, renal, metabolic diseases, and more recently, in COVID-19 vaccine development.

The operational integration of Alexion Pharmaceuticals into AstraZeneca post-merger introduced several significant changes within both organizations, aimed at enhancing their collective operational efficiencies and market reach. This integration process focused on aligning and leveraging the complementary strengths of both entities to forge a more cohesive, efficient, and comprehensive operational framework. Here are some detailed aspects of the operational changes that ensued from the merger:

Consolidation of Research and Development (R&D) Efforts: The merger enabled the pooling of R&D resources, combining AstraZeneca's broad-based expertise in oncology, cardiovascular, renal, and metabolic diseases with Alexion's specialized focus on rare diseases and immunology. This consolidation aimed to accelerate the drug development process, fostering innovation, and expanding the combined entity's therapeutic portfolio.

Streamlining of Production and Distribution Channels: By integrating Alexion's production and distribution systems with its own, AstraZeneca sought to optimize the supply

chain for both companies' products. This effort was directed towards achieving cost efficiencies, reducing time-to-market for new drugs, and enhancing global distribution capabilities.

Unified Global Marketing and Sales Strategy: The merger necessitated the unification of marketing and sales strategies to leverage the expanded product portfolio effectively.

AstraZeneca capitalized on Alexion's strong market presence in rare diseases, integrating it with its own extensive global marketing network to enhance product reach and patient access across different therapeutic areas.

Human Resource Management and Cultural Integration: One of the operational challenges tackled in the merger was the integration of human resources, aiming to blend the distinct corporate cultures of AstraZeneca and Alexion. This involved harmonizing employment policies, benefits, and corporate values to foster a unified organizational culture conducive to collaboration and innovation.

Financial Operations and Investment Strategy Alignment: The integration process also encompassed the alignment of financial operations and investment strategies, aiming to optimize the combined entity's financial performance and growth trajectory. This included the management of acquisition-related costs, debt consolidation, and the strategic allocation of resources towards high-growth areas of the combined portfolio.

Regulatory Compliance and Product Approval Processes: Given the global nature of both companies, the merger required careful navigation of the regulatory landscapes across different markets. Operational changes were made to ensure that the combined entity's product development, approval, and commercialization processes adhered to diverse regulatory standards, thereby minimizing disruptions, and maintaining compliance.

Technology and Information Systems Integration: The merger also involved the integration of technological and information systems to support the combined operational and strategic objectives. This included the consolidation of R&D databases, clinical trial management systems, and customer relationship management platforms to enable more efficient data sharing and decision-making processes.

Expansion of Global Footprint: Post-merger operational strategies included targeted efforts to expand the global footprint of the combined entity, particularly in emerging markets and areas where rare diseases are underserved. This involved assessing and entering new geographic markets, leveraging Alexion's rare disease expertise, and AstraZeneca's global presence.

In summary, the operational integration following the AstraZeneca-Alexion merger was a comprehensive effort aimed at creating a more efficient, innovative, and globally competitive pharmaceutical entity.

Financial and Strategic Benefits

The financial projections associated with AstraZeneca's acquisition of Alexion Pharmaceuticals highlighted the expectation of substantial benefits. Specifically, AstraZeneca anticipated a significant revenue increase of \$6 billion in the short term, supported by a growth forecast of 9% annually up to 2023. This anticipated revenue growth was part of a broader financial strategy aimed at capitalizing on the strong sales performance of Alexion's products, notably Soliris and Ultomiris, which are critical in the treatment of rare blood disorders.

In addition to revenue growth, AstraZeneca projected pre-tax synergies exceeding \$500 million, reflecting the financial benefits of integrating Alexion's operations. These synergies were expected to stem from various sources, including operational efficiencies, cost reductions, and the optimization of combined research and development efforts. However, it's important to note that these financial benefits were to be balanced against the one-time cost of \$650 million associated with the integration process. This cost was an investment in merging the operational, cultural, and business systems of the two companies to achieve a unified and efficient operation.

The anticipated operational efficiencies and cost reductions were integral to enhancing the overall financial health and competitiveness of the newly merged entity. By combining Alexion's specialized focus on rare diseases with AstraZeneca's extensive R&D and global operational scale, the merger aimed to create a powerful platform for sustained growth and innovation in the pharmaceutical industry.

Moreover, the strategic benefits of the merger extended beyond immediate financial gains. By acquiring Alexion, AstraZeneca not only diversified its product portfolio but also reinforced its presence in the lucrative rare disease market. This strategic move was expected to transform significant R&D expenditure into a broader revenue stream, leveraging Alexion's pipeline of 20 clinical development projects.

Long-term Strategic Advantages

The merger between AstraZeneca and Alexion Pharmaceuticals represents a strategic manoeuvre to broaden AstraZeneca's product offerings and penetrate new areas in therapeutics. The acquisition provided AstraZeneca with immediate entry and significant influence in the rare disease market, primarily through Alexion's key products, Soliris and Ultomiris, which are treatments for rare blood disorders.

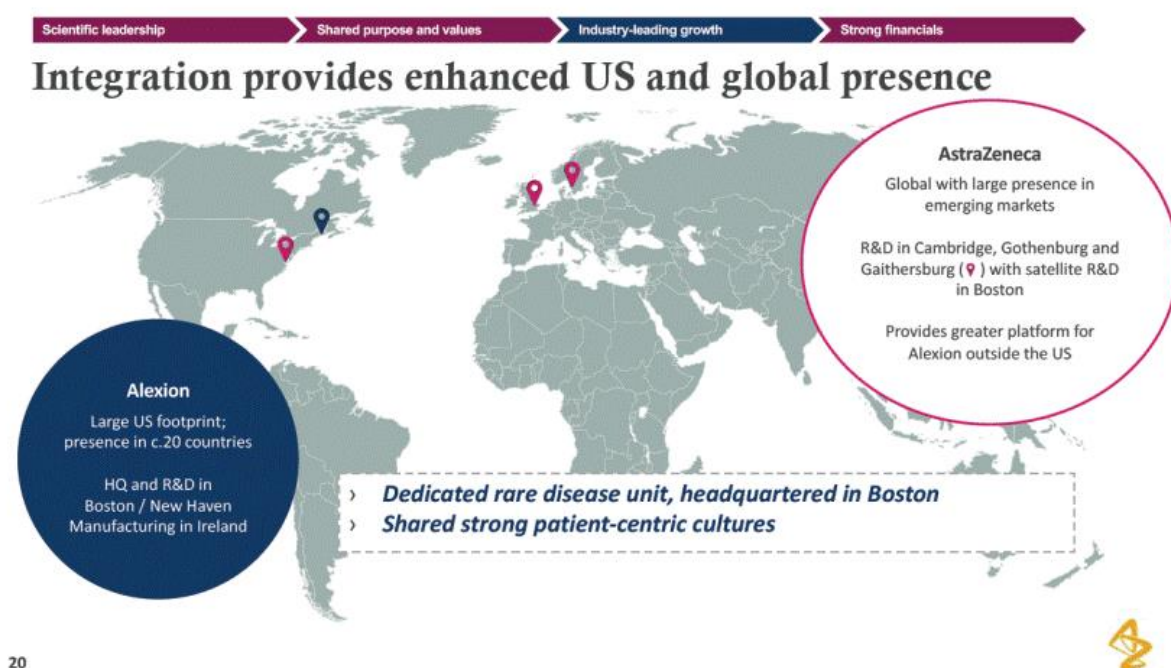


Image 2. Merger global presence enhancement³

By incorporating Alexion's ongoing clinical development initiatives, including 20 projects at various stages, AstraZeneca aimed to enhance its research and development capabilities significantly. This move aligns with AstraZeneca's strategy to convert substantial research and development expenditures into revenue streams, thereby broadening its portfolio and strengthening its position in the pharmaceutical industry.

The transaction was not just about expanding AstraZeneca's product line; it was a calculated step towards diversifying into specialized, high-value areas of medicine. The merger highlights a strategic fit, combining AstraZeneca's global operational scale and extensive R&D

³ https://www.sec.gov/Archives/edgar/data/899866/000110465920135240/a20-38431_1425.htm

infrastructure with Alexion's niche expertise in rare diseases, thereby setting the stage for enhanced patient care and innovative treatments.

Furthermore, this merger underlines a shift towards targeting diseases with high unmet medical needs, leveraging Alexion's robust pipeline to accelerate the delivery of novel therapies. The integration of these pipelines is poised to bolster AstraZeneca's growth, not just in terms of immediate financial performance but also in long-term value creation through advancements in healthcare and medicine.

In essence, the acquisition of Alexion by AstraZeneca reflects a strategic initiative aimed at expanding the company's therapeutic reach, diversifying its portfolio, and enhancing its R&D capabilities. The focus is on transforming R&D investments into valuable revenue-generating opportunities, thereby reinforcing AstraZeneca's commitment to innovation and leadership in the pharmaceutical sector.

Risks and challenges

While the merger between AstraZeneca and Alexion Pharmaceuticals aimed to create significant strategic and financial advantages, it also brought forth a range of challenges that required meticulous management. The integration of two large corporations, particularly those with distinct therapeutic focuses, necessitated a detailed plan to ensure seamless operational transitions. AstraZeneca's expertise in oncology, cardiovascular, and respiratory diseases complemented Alexion's specialization in rare diseases and immunology. However, merging these diverse portfolios required a sophisticated approach to integration, aiming to combine the strengths of both companies without compromising their individual successes.

Financial challenges were also at the forefront of this merger. AstraZeneca's significant investment in acquiring Alexion, coupled with its existing financial commitments, posed a complex scenario that required strategic financial planning. The need to balance the immediate financial outlay with long-term debt reduction and investment in new ventures was critical. This balancing act was pivotal in ensuring that the merger did not adversely affect AstraZeneca's financial stability but instead propelled the combined entity towards sustained growth and market leadership.

Operational efficiencies and financial benefits were key objectives of the merger. The acquisition was projected to boost AstraZeneca's revenue significantly, with expectations of enhanced growth through Alexion's strong sales, particularly from its rare disease medications Soliris and Ultomiris. Additionally, pre-tax synergies from operational efficiencies were

anticipated to contribute to cost savings, further enhancing the financial health of the combined entity.

Strategically, the merger allowed AstraZeneca to diversify its product portfolio and enter new therapeutic areas, marking a significant step towards becoming a leader in rare diseases. Leveraging Alexion's clinical development pipeline was expected to transform substantial R&D expenditure into valuable revenue streams. However, the integration process and management of financial commitments required careful oversight. The successful merging of two distinct yet complementary portfolios presented opportunities for growth but necessitated a comprehensive strategy to overcome the challenges posed by integration and financial management.

The AstraZeneca-Alexion merger brought together two distinct yet complementary portfolios, creating opportunities for operational efficiencies and financial growth. However, it also required careful management of the integration process and financial commitments.

2.6 Financial Stability

The financial impact of the AstraZeneca-Alexion merger is an important aspect of the entire M&A process. One of the primary financial impacts of the merger was the expected boost in revenue. AstraZeneca projected a significant increase in its revenue stream, partly due to the strong sales of Alexion's products like Soliris and Ultomiris. The financial forecasts suggested a growth in annual revenue by 9% through to 2023, driven by the expanded product portfolio and entry into new therapeutic areas.

The merger was expected to yield significant cost synergies, estimated to be more than \$500 million in pre-tax savings. These savings were anticipated from the combined operational efficiencies, reductions in overlapping functions, and streamlined processes. The integration costs, although substantial, were seen as a one-time investment that would pay off in the long term through improved financial performance.

AstraZeneca's financial management post-merger was a key factor in maintaining stability. The company took on a significant financial burden to fund the acquisition, including a \$17.5 billion bridge loan. Managing this debt, while continuing to fund R&D and other business activities, was a crucial aspect of their financial strategy. The company's focus was on achieving rapid debt reduction while maintaining investment in key areas.

The merger initially led to a mixed reaction in the market, with AstraZeneca's share price experiencing a drop, reflecting investor concerns about the high acquisition cost and its immediate financial implications. However, the long-term view of the merger was more

optimistic, with expectations of increased market capitalization as the combined entity capitalized on its expanded product portfolio and market reach.

The long-term financial outlook of the combined entity was generally positive. The diverse and expanded portfolio was expected to lead to a more robust financial position, with steady growth in revenue and profitability. Additionally, the strategic entry into new therapeutic areas promised future growth opportunities.

We may definitely say that AstraZeneca-Alexion merger presented immediate financial challenges for AstraZeneca, particularly in terms of debt management and integration costs, but the long-term prospects are promising.

2.7 Acquisition Overview

The acquisition was finalized at a 45% premium, with a purchase price of about \$175 per share compared to the then-current rate of around \$120 per share, resulting in a total cost of \$39 billion for the acquisition. Shareholders were compensated with \$60 per share in cash and 2.1 AstraZeneca shares for each share they held, which equated to roughly \$115 in cash and stock per share or \$13.3 billion in cash with the remaining balance paid in stock.

The financing of this acquisition involved several hundred million dollars in annual interest due to the debt incurred and about \$700 million annually in dividends obligations.

This strategic move has significantly boosted AstraZeneca's research and development efforts, emphasizing the company's dedication to advancing science and innovation. It has spurred growth in specialized and rare disease care segments, with AstraZeneca's comprehensive global sales experience providing substantial support.

Following the acquisition, AstraZeneca experienced double-digit revenue growth through 2025, affirming the substantial synergies, estimated at \$500 million annually, which effectively justified the roughly \$12 billion premium paid. The merger led to double-digit core earnings per share (EPS) growth in the first three years after completion, showcasing its financial viability. With the realization of strong free cash flow and maintaining a solid investment-grade rating, the post-acquisition financial outlook has been positive.

The company, already known for its strong cash flow, aimed to quickly increase its dividend, which was already over 2.5%, and swiftly reduce its debt portfolio. The immediate financial benefits of the acquisition became apparent, attracting investor interest. Further

financial benefit included a \$13.5 billion cash component and just under \$26 billion in stock. With the deal's closure, Alexion shareholders came to own approximately 15% of the combined company. The acquisition, anticipated in the third quarter of 2021, was successfully completed with shareholder approval obtained in the second quarter of 2021. With annual profits at approximately \$2.3 billion, the combined entity, along with \$500 million in synergies and a strengthened pipeline in exchange for Alexion's 15% stake, presented a good offer, expected to deliver significant rewards to shareholders.

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Conclusion for chapter 2

The merger between AstraZeneca and Alexion Pharmaceuticals represents a strategic consolidation aimed at enhancing both companies' competitive positioning within the global pharmaceutical landscape. By merging, AstraZeneca and Alexion are expected to leverage their complementary strengths—AstraZeneca's extensive research and development capabilities and global operational scale, coupled with Alexion's niche expertise in rare diseases and immunology—to create a more diversified, innovative, and financially robust entity. The strategic logic underpinning this merger rests on the potential to realize significant synergies, notably in expanding the combined product portfolio, accelerating drug development timelines, and achieving cost efficiencies across operations.

However, the merger also poses challenges and risks, including the integration of distinct corporate cultures, the management of a combined larger and more complex organizational structure, and the need to maintain momentum in product innovation and market expansion. Despite these challenges, the merger is poised to provide a platform for long-term growth, fueled by a strong pipeline of patented drugs and a broader therapeutic presence.

Chapter 3. Comparative Analysis of Theoretical Expectations and Practical Outcomes

Chapter I of this research was focused on the foundational theories of M&A, including synergy theory, agency theory, resource-based theory, transaction cost theory, market power theory, and strategic realignment theory, laying the groundwork for understanding the multifaceted nature of these corporate actions. Following this theoretical foundation, in Chapter II we presented a detailed case study of the AstraZeneca and Alexion merger, an important event in the pharmaceutical industry that impacted competitive landscape and, especially regarding innovative drugs. In this chapter we will conduct comparative analysis in order to highlight the similarities and differences between theory and practice, providing understanding of how theoretical principles manifest in real world. The purpose of this comparative analysis is twofold. Firstly, it seeks to evaluate the extent to which existing theories of M&A accurately predict and explain the outcomes of the AstraZeneca and Alexion merger. Secondly, this analysis aims to derive practical insights and lessons from the AstraZeneca and Alexion case study, contributing to further research and/or M&A in pharmaceutical industry.

3.1 Outline of Expected Outcomes of M&As in the Pharmaceutical Industry based on different theories

1. Synergy Theory

- **Expected Outcome:** The primary expectation from the synergy theory is the realization of value greater than the sum of the two companies' separate parts. In the pharmaceutical industry, this could manifest as cost savings from operational efficiencies, combined R&D efforts leading to accelerated drug development and expanded product portfolios. The theory suggests that the merger would result in enhanced revenue generation and reduced costs, leading to increased shareholder value.
- **Actual Outcome:** The AstraZeneca and Alexion merger reportedly achieved significant synergies, particularly in research and development (R&D) and global operational efficiencies. The combined entity benefited from a more robust pipeline of drugs in development and a broader portfolio of treatments, especially in rare diseases where Alexion specialized. This aligns well with synergy theory, showcasing enhanced value creation post-merger.

2. Agency Theory

- **Expected Outcome:** Agency theory focuses on resolving conflicts of interest between shareholders and management. In the context of M&A, the expected outcome is the alignment of interests through the restructuring of incentives for management. This could lead to more prudent decision-making, with a focus on value creation for shareholders. For pharmaceutical companies, this may involve strategic decisions that prioritize long-term growth and innovation over short-term gains.
- **Actual Outcome:** The merger allowed AstraZeneca to access Alexion's unique resources, particularly its expertise in rare disease treatments and complement-based therapies. This access aligns with the resource-based theory's expectation of acquiring rare and valuable resources to gain a competitive advantage. The combined company's enhanced capabilities in these areas suggest a successful outcome in terms of resource acquisition.

3. Resource-Based Theory

- **Expected Outcome:** According to the resource-based theory, M&As are expected to enable companies to access valuable, rare, inimitable, and non-substitutable resources, leading to a competitive advantage. For pharmaceutical firms, expected outcomes include access to unique research capabilities, proprietary technologies, and specialized knowledge, which can enhance drug discovery and development processes, leading to a stronger market position.
- **Actual Outcome:** The merger allowed AstraZeneca to access Alexion's unique resources, particularly its expertise in rare disease treatments and complement-based therapies. This access aligns with the resource-based theory's expectation of acquiring rare and valuable resources to gain a competitive advantage. The combined company's enhanced capabilities in these areas suggest a successful outcome in terms of resource acquisition.

4. Transaction Cost Theory

- **Expected Outcome:** This theory suggests that M&As can lead to reduced transaction costs through internalization of activities that were previously conducted through the market. In the pharmaceutical industry, this might mean reduced costs associated with outsourcing research and development (R&D), marketing, or distribution. The expected outcome is a more efficient operation with lower overhead costs and improved profitability.

- **Actual Outcome:** By merging with Alexion, AstraZeneca likely achieved efficiencies related to reduced costs, especially in R&D and market access. Integrating Alexion's operations likely led to cost savings by reducing the need for external contracts and partnerships. However, detailed financial data regarding the costs in question is unavailable, making this comparison somewhat an “educated guess”.

5. Market Power Theory

- **Expected Outcome:** The market power theory posits that M&As can lead to increased market share and enhanced bargaining power with suppliers, distributors, and payers. For pharmaceutical companies, this could result in better pricing power, improved placement of drugs in formularies, and greater influence in negotiations, potentially leading to higher revenues and market dominance.
- **Actual Outcome:** The merger significantly boosted AstraZeneca's market power, especially in the niche market of rare diseases. This increased market presence and enhanced bargaining power with stakeholders. However, the full extent of market dominance and its impact on pricing power and negotiations may vary by region.

6. Strategic Realignment Theory

- **Expected Outcome:** Strategic realignment theory focuses on the realignment of business strategies to adapt to changing market conditions. The expected outcome of M&As under this theory is the enhanced ability of pharmaceutical companies to quickly adapt to industry trends, regulatory changes, and technological advancements. This might involve diversifying product lines, entering new markets, or discontinuing unprofitable segments, ultimately leading to sustained growth and competitiveness.
- **Actual Outcome:** The merger with Alexion allowed AstraZeneca to realign its strategic focus towards rare diseases and immunology, areas where Alexion excelled. This strategic shift demonstrates the merger's role in facilitating adaptation to market trends, supporting the strategic realignment theory. However, the long-term success of this realignment depends on the integration process and market response.

7. Game Theory in Mergers and Acquisitions

- **Expected Outcome:** According to game theory, the strategic interaction among companies during mergers and acquisitions should lead to decisions that consider potential moves and responses from competitors, partners, or target companies. This could result in companies adopting strategies to maximize their value in the merger or

acquisition process, effectively navigating competitive bids, and mitigating hostile takeovers.

- **Actual Outcome:** The AstraZeneca-Alexion merger demonstrated strategic negotiation and decision-making reflective of game theory principles. Both companies engaged in a strategic assessment of the competitive landscape, optimizing their negotiation tactics to achieve a merger that promised substantial value creation without succumbing to competitive or hostile pressures. This strategic foresight enabled the successful navigation of the complex M&A landscape, aligning with game theory's expectations.

8. Institutional Theory

- **Expected Outcome:** Institutional theory posits that the regulatory, normative, and cultural environment significantly influences M&A processes. Companies are expected to adapt their M&A strategies to align with these institutional demands, ensuring compliance and legitimacy in various jurisdictions.
- **Actual Outcome:** In executing the merger, AstraZeneca and Alexion meticulously navigated the institutional landscapes of their respective operational geographies. They complied with regulatory requirements, respected cultural norms, and aligned their integration strategies with stakeholder expectations. This careful consideration and adaptation to institutional contexts underscored the merger's success, reflecting the anticipated outcomes of institutional theory.

9. Behavioral Finance Theory

- **Expected Outcome:** Behavioural finance theory suggests that psychological factors and cognitive biases, such as overconfidence and herd behaviour, significantly influence M&A decisions. These non-rational influences can lead to misjudgements and suboptimal outcomes, such as overvaluation or strategic misalignments.
- **Actual Outcome:** The AstraZeneca-Alexion merger highlighted the potential for cognitive biases to influence decision-making. However, through diversified decision-making teams and structured processes, both companies managed to mitigate the impact of these biases, ensuring a well-considered and strategic merger decision. This approach helped in overcoming the pitfalls identified by behavioural finance theory, leading to a successful outcome that emphasized rational and strategic decision-making.

10. Life Cycle Cost Theory

- **Expected Outcome:** Life cycle cost theory anticipates that a company's stage in its life cycle significantly impacts its M&A strategy and needs. Startups and growth-stage companies might seek mergers or acquisitions for expansion and resource acquisition, while mature companies may pursue them for consolidation or rejuvenation.
- **Actual Outcome:** The merger between AstraZeneca, a mature company, and Alexion, a company with specialized capabilities in rare diseases, reflects life cycle cost theory. AstraZeneca leveraged the merger to diversify and strengthen its portfolio, addressing a strategic need for rejuvenation and growth in new therapeutic areas. This strategic move aligns with the expected outcomes of life cycle cost theory, demonstrating how companies at different life stages can pursue M&As to fulfill distinct strategic objectives.

This analysis revealed that while theories provide valuable insights into the mechanisms of mergers and acquisitions, real-world scenarios often present complexities that require nuanced understanding and flexible application of these theories.

The concept of synergy, which suggests creating more value together than separately, was clearly demonstrated in the AstraZeneca and Alexion merger. The combined strengths in research and market reach supported the theory's premise.

Agency theory's emphasis on aligning management's decisions with shareholder interests was pertinent to this merger. It underscored the importance of governance and incentive structures in ensuring decisions that enhance shareholder value.

The resource-based theory's focus on acquiring valuable resources was validated through the merger, especially with Alexion's niche in rare disease treatments. Integrating these resources, however, called for a strategic approach to leverage combined capabilities effectively, illustrating the complexities of merging distinct knowledge bases and cultures.

Transaction cost theory's potential for cost savings through internalization was observed mainly in R&D area, though the actual realization of these savings was moderated by integration expenses. This demonstrates the practical challenges of achieving cost reductions through M&A.

Increased market power, as expected from market power theory, was a notable outcome, enhancing AstraZeneca's position in the rare diseases market and in USA market.

Strategic realignment theory helped explain AstraZeneca's move towards focusing more on rare diseases and innovative treatments through the merger. This is a good example of strategic foresight in M&A deals.

In summary, the AstraZeneca and Alexion merger serves as a practical case study that illustrates the application and limitations of M&A theories. It shows that merging companies can lead to significant benefits, provided there are areas for potential synergy or strategic vision of combined value of merging companies. We may say that all main M&A theories demonstrated substantial explanatory power, but only in conjunction they provide full picture of benefits and problems, associated with M&As.

Conclusion for chapter 3

The comparative analysis conducted in Chapter III illustrates that while theoretical frameworks provide a foundational understanding of mergers, the practical outcomes are influenced by a complex interplay of strategic, operational, and financial factors. The AstraZeneca-Alexion merger demonstrates the realization of synergies anticipated by synergy theory, through the combination of complementary assets and elements of competitive advantage, leading to enhanced operational efficiencies and a more robust product pipeline. This aligns with the expectations of the resource-based view and synergy theory, highlighting the strategic value of accessing unique resources and capabilities to secure a competitive advantage in the pharmaceutical industry.

Moreover, the merger reflects considerations central to agency theory and strategic realignment theory, showcasing the importance of aligning management and shareholder interests and the necessity for firms to adapt to evolving market dynamics and regulatory landscapes. The transaction cost theory's emphasis on reducing external market transaction costs through internalization is partially validated, though the real-world application demonstrates that integration costs can offset these savings, highlighting the complexities of achieving operational efficiencies in practice.

The practical outcomes of the merger also resonate with the market power theory, as the combined entity is positioned to exert greater influence in the pharmaceutical market, particularly in the niche area of rare diseases.

Conclusion

In this final degree project, we conducted an analysis of the merger between AstraZeneca and Alexion Pharmaceuticals, aiming to identify benefits and problems associated with the process. We overviewed multiple theoretical frameworks to dissect the strategic, operational, and financial underpinnings of this significant corporate transaction. By evaluating the merger through the prisms of synergy, agency, resource-based view, transaction cost economics, market power, and strategic realignment theories, the final degree project aims to bridge the gap between theoretical expectations and real-world outcomes, offering a perspective on the problems and opportunities involved in mergers and acquisitions.

Analysis of theoretical frameworks brings strategic rationale behind the merger, emphasizing the pursuit of enhanced competitive positioning, diversification of product portfolios, and bolstering of research and development capabilities. It underscores the criticality of identifying and leveraging synergies to drive value creation, while also acknowledging the challenges posed by agency conflicts, integration processes, and the need for strategic flexibility in the face of regulatory and market dynamics.

Further we explore the implications of transaction cost economics in the context of the merger, analyzing how the companies aimed to minimize costs associated with market transactions through vertical integration and more efficient organizational structures. Additionally, the market power theory was considered, assessing how the merger could alter competitive balances and market dynamics within the pharmaceutical industry.

According to available sources and data, AstraZeneca and Alexion sought to adapt their business strategies, operational practices, and corporate cultures to realize the full potential of their combined capabilities. AstraZeneca would benefit from R&D expertise and innovative drugs, while Alexion got access to AstraZeneca world presence. In the examination in chapters 2 and 3 we analyze the practical challenges and opportunities presented by the AstraZeneca-Alexion merger but also contributes to the broader discourse on mergers and acquisitions by highlighting the intricate interplay between theory and practice.

In conclusion, this final degree project states that while mergers and acquisitions offer pathways to significant strategic and financial benefits, their success is contingent upon a deep understanding of the theoretical frameworks, meticulous planning, and agile execution. The AstraZeneca-Alexion merger serves as an example of complexity of corporate mergers, emphasizing different frameworks on the strategic foresight, operational efficiency, and the capacity to harness synergies amidst the challenges of integration. This research not only

enriches the academic discussion on mergers and acquisitions but also provides valuable insights for practitioners in the field of M&A, especially in pharmaceutical industry.

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