Open University of Cyprus

Faculty of Economics and Management

Master in Business Administration (MBA)

Master's Dissertation

New Product Launch: How To Introduce Innovative Pain Medication in a High Competitive Market

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December 2021

Open University of Cyprus
Faculty of Economics and
Management

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Master Thesis

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This Master's Dissertation was submitted in partial fulfilment of the requirements for the award of the postgraduate title
on Master of Business Administration (MBA) English.
by the Faculty of Economics and Management
of the Open University of Cyprus.

December 2021

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Summary

The pharmaceutical industry is extremely fast-paced and competitive, especially among generic pharmaceutical companies where copying originators and price battles are the norm. Competition is becoming so intense in the generic pharmaceutical market that companies must pursue new and innovative forms of growth. This dissertation aims to explain why generic pharmaceutical companies operating in the highly competitive over-the-counter medication market should invest in the development of innovative products as an effective mean towards improving their market position and growth rates. Along these lines, this dissertation uses the example of Medochemie (a multinational generics pharmaceutical company) and its successful launch of DUOMAX (new product: pain medication) to demonstrate how generic pharmaceutical companies should develop and introduce innovative products in those markets. In particular, DUOMAX's development process and launch is reviewed and the most important stages of the development process are analysed. Based on the results of the analysis, a set of recommendations is developed discussing why and how companies in a very competitive market should introduce highly innovative.

DUOMAX is a new pain medication introduced by the Multinational Cypriot Pharmaceutical company Medochemie in Cyprus. Medochemie is the largest pharmaceutical manufacturing company in Cyprus operating since 1976 selling its generic medicines in Europe, the Middle East, Africa, the Far East and the Americas. The company has 21 core offices and a network of trusted agents and partners allowing it to operate in 107 countries. Today, Medochemie has thirteen manufacturing plants and facilities. Nine are in Cyprus, one in the Netherlands, and three in Vietnam. Medochemie operates in accordance with the strictest quality standards and in full compliance with European guidelines. In 2021, Medochemie decided to take a risk and launch DUOMAX in Cyprus, a new innovative pain medication. The new products' success in the Cypriot market, encouraged Medochemie to start plans of launching the new product in several other countries around the world and transform the product to a range of pain products with different forms. DUOMAX exceeded all the objectives for the first year, such as sales volume, market share and weighted distribution. This work studies the development and launch processes of DUOMAX, reviewing the key stages that made it a successful product.

Acknowledgements

I would like to thank my supervisor Mr. Konstantinos Chadjimichael for their consistent support and guidance during the running of this project. Furthermore, I would like to thank all my Professors during the course of the MBA programme for their professionalism, guidance and assistance. I would also like to acknowledge the Open University of Cyprus and its team for their all their help and support.

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Chapter 1

Introduction

Generic drugs account for a large percentage of prescription drugs sold worldwide. Despite this success, generic-drug makers face multiple legal and competitive hurdles to ensuring patient access to less costly, high-quality medicines. Tight profit margins on conventional generics discourage investment in modern manufacturing systems, resulting in contaminated and violative products that lead to recalls and shortages. Price hikes on established products, moreover, have generated a backlash and allegations of collusion and price gouging. The result is a financial and operational squeeze on the generic-drug industry. There are several examples of this squeeze such as Teva Pharmaceuticals, the largest Generic drug manufacturer worldwide, is undergoing a major corporate overhaul to address financial difficulties, involving massive layoffs and the shuttering of manufacturing and R&D facilities. Novartis' Sandoz division says that price pressures may lead to reductions in its US product portfolio and a greater focus on developing biosimilars and complex formulations.

Increasing needs to curb healthcare cost and growing public demands for self-medication have led to a major expansion of Europe's Over-the-Counter (OTC) drug market. Within Europe, Germany is the leading market for OTC drugs and is characterised by continuous growth. Between 2017 and 2018 alone the German market witnessed an 3% increase in revenue and is forecasted to depict a profitable growth path over the years ahead. At the same time, Germany, like most other EU member states, faces fiscal pressure regarding the long-term sustainability of its healthcare system, driven by high levels of public expenditure, increased prevalence of chronic disease and mounting demographic pressure. In light of this, many official institutions, both inside and outside the European Union (i.e., the European Parliament, the World Health Organisation, etc.), have emphasised the importance of an active and targeted promotion of responsible self-medication with OTC medicines as a critical building block for effective and efficient healthcare.
Generics, in particular, are regarded as the best way for patients to receive similar treatments at lower costs. They enter the market once the patent of a branded drug has expired, allowing for the market to change from a monopoly to oligopoly, where generics and branded drugs compete.

The price of generics is considerably lower as manufacturers do not bear the costs of research and development, whilst, for quality assurance and marketing authorisation, they must contain the same quantity of active ingredients and must have the same therapeutic effect on an average consumer as its proprietary counterpart. As a consequence, generics appear to constitute an effective tool for increasing self-medication whilst minimising consumers' and patients' out-of-pocket costs.

Economic theory suggests that a perfectly rational consumer would choose the least costly product in the pharmaceutical market. Indeed, evidence has shown a considerable shift in preference from expensive to cost-reduced OTC drugs when consumers were informed about the price of the different packages, as opposed to consumers choosing the most well-known OTC drug brand when price information was absent. Because the price of generic drugs is generally 10–80% lower than that of a branded OTC drug, price information may play a decisive role in consumer purchase behaviour.

More recent conceptual models argue that consumers do not simply perceive price as the cost of a product but also as a cue for various intervening external and internal constructs, including brand, price consciousness, and perceived quality, risk and value, respectively. Before generics enter the market, consumers become familiar with a brand through advertising, product displays in pharmacies or prior purchases. According to cue utilisation theory, the experiences with a product contribute to building a brand image, which influences consumers' evaluation of a product and, in turn, affects their purchase intention. Moreover, past experience and familiarity represent key constituents of brand loyalty, as they are often perceived to be of higher quality, lower risk and better value for money than unfamiliar products. Since well-known brands are generally highly recognised and considered to hold high credibility, consumers may prefer to maintain the status quo by selecting a familiar branded OTC drug at generic entry (Aufegger, L. et. All, 2021).

The largest Cypriot Multinational Generics Pharmaceutical Company, Medochemie, is part of the global generics struggle for excellence and market share, therefore, a case study on its latest OTC launch will be used as an example in this dissertation. Medochemie was founded in 1976 and has grown to become the biggest player in the pharmaceutical industry in Cyprus. It is now responsible for more than a third of total industrial products' exports from Cyprus. Medochemie started as a generics company, mainly copying originator medication. The pain medication range in Cyprus is one of Medochemie's core strengths and the company placed pain products in the market right

from the company's beginnings copying the originator Panadol. Due to extreme competitiveness in the generics industry and a growing price war in the market, in 2020, the company decided to change its vision and introduce a new and highly innovative pain medication. The launch of the new medication (DUOMAX) and its considerable success in Cyprus, made Medochemie extend the product to other countries where it is operating.

This dissertation:

- reviews DUOMAX's development process, launch and the most important stages of each process
- examines why companies should introduce highly innovative products in a very competitive market
- uses the example of DUOMAX and Medochemie's successful launch to draw lessons about how companies can introduce successfully innovative products in a highly competitive market.

In the next section, we perform a literature review of product extensions, new product development process including the risks associated with such developments as well as what influences the success of such a product. Following that, we will dive into a case study discussing a new product launch aimed at fighting pain in the Cypriot market. The case study will review the pharmaceutical market in Cyprus, the product development process of the launched product, the marketing strategy, launching and the results of the launch.

Chapter 2

Literature Review

The following chapter intends to describe important theoretical subjects related to the theme of this dissertation. The analysis of this literature review will permit a better understanding of the following case study.
The subjects have been reviewed from marketing books and articles from different prestigious journals. The articles were found using key research words, such as new product development, product line extensions, innovation and new product's success.

2.1 Product Line Extensions

Commonly, brand extensions and product line extensions are perceived as the same, but they are two different strategic moves. Brand extensions involve the use of a brand name established in one product category to launch a new product in another product category, like Honda does by using its name in its cars, motorcycles and lawnmowers. Line extensions use the established brand name for a new offering in the same product category, such as Coca-Cola launching Diet Coke (Mitchell, Edelman and Giles, 2012).

Most new-product activities are product line extensions. Companies introduce line extensions to take advantage of market opportunities, to meet consumer's desire for variety, to respond to a consumer need or to meet excess capacity (Kotler, Wong, Saunders, and Armstrong, 2005).

Product line extensions and brand extensions are common expansion strategies for many companies seeking growth. In addition to all the financial benefits of brand expansion and extra sales, product line extensions provide other advantages, such as reduced promotion expenditure per product, increased likelihood of gaining retail distribution, reduced consumer risk and the enhancement of parent brand equity (Singh, Scriven, Clemente, Lomax, Wright, 2012).

Nonetheless, product line extensions are risky. Added to the fact that the line extension might be

a failure, an overextended brand might lose its specific meaning and can cause consumer frustration and confusion (Kotler, Wong, Saunders, and Armstrong, 2005).

Additionally, sales of a new extension might cannibalise other products' sales. To reduce the risk of failure there are four dimensions that product line extensions should respect: maintaining brand standards and style, respecting brand heritage, preserving brand essence and avoiding brand exploitation (Spiggle, Nguyen, Caravella, 2012).

The principle of similarity simply states that when items share some visual characteristic, they are assumed to be related in some way. This is especially beneficial when you would like to influence the consumers from the patent line to the extension. This works especially well with highly regarded brands; consumers will most commonly transfer their positive associations when the original line and the extension boast similar nuances.

2.2 New Product Development and Innovation

In today's world, companies have to fight more than ever to remain competitive. They face faster changes in customers' tastes, needs and demands, constant technology evolution and more aggressive competition. Because of this, companies have to sustain growth and maintain profitability over the longer term through successfully developing and launching new products and services (Kotler, Wong, Saunders, and Armstrong, 2005).

Product innovation encompasses a variety of product development activities such as product improvement, development of entirely new products, and extensions that increase the range or number of lines of product the firm can offer. Product innovations are not to be confused with inventions. The latter are new technologies or products which may or may not be commercialised and may or may not deliver benefits to customers. An innovation is defined as an idea, service, product or piece of technology that has been developed and marketed to customers who perceive it as novel or new. New-product development is an act of innovation which entails a process of identifying, creating and delivering new-product values or benefits that were not offered before in the marketplace (Kotler, Wong, Saunders, and Armstrong, 2005). At the heart of innovation is a purposeful, focused effort to identify new ways to the serve the market (Dibb, Simkin, Pride and Ferrell, 2001).

Companies can obtain new products in two ways. One is through acquisition – by buying a whole company, a patent or a licence to produce someone else's product. Many large companies have decided to acquire existing brands rather than to create new ones because of the rising costs of developing and introducing major new products. The other route to obtaining new products is through new product development in the company's own research and development department. By new products we mean original products, product improvements, product modifications and new brands that the firm develops through its own research-and-development efforts (Kotler, Wong, Saunders, and Armstrong, 2005).

2.3 New Product Development Process

2.3.1 Strategy of a New Product

The strategy of a new product consists of four main parts:

(1) Gives direction to the new product team and focuses team effort
(2) Helps to integrate functional or department efforts
(3) It allows tasks to be delegated to team members
(4) The act of producing and getting managers to agree on a strategy requires proactive management, which increases the likelihood of a more detailed search for innovation opportunities (Kotler, Wong, Saunders and Armstrong, 2005).

2.3.2 Generating an Idea

Idea generation is the process by which companies and other organizations seek product ideas that will help them to achieve their objectives (Dibb, Simkin, Pride and Ferrell, 2001).

The purpose of idea generation is to create a large number of ideas because just a few will be good enough to be developed. Unexpected occurrences, incongruities, new needs, industry, market and demographic changes may all indicate new opportunities to generate ideas (Drucker, 1985).

Market analysis, customer feedback, customer needs, customer behaviour, new product launches

by competitors and new technologies could also be considered good external sources for generating ideas.

2.3.3 Developing a Marketing Strategy

When a product comes out of development, is fully test and selected for commercialisation, the marketing team must work on the marketing strategy.
The marketing strategy statement consists of three parts. The first part describes the target market, the planned product positioning, and the sales, market share and profit goals for the first few years. The second part of the marketing strategy statement outlines the product's planned price, distribution and marketing budget for the first year. The third part of the marketing strategy statement describes the planned long-run sales, profit goals and marketing mix strategy (Kotler, Wong, Saunders and Armstrong, 2005).

2.3.4 Business Analysis

Business analysis involves a review of the sales, costs and profit projections for a new product to find out whether they satisfy the company's objectives. To estimate sales, the company looks at the sales history of similar products and conducts surveys of market opinion. It then estimates minimum and maximum sales to assess the range of risk. After preparing the sales forecast, management can estimate the expected costs and profits for the product, including marketing, R&D, manufacturing, accounting and finance costs. The company then uses the sales and costs figures to analyse the new product's financial attractiveness (Kotler, Wong, Saunders and Armstrong, 2005).

2.3.5 Test Marketing

Test marketing gives the marketer experience with marketing the product before going to the great expense of full introduction. It lets the company test the product and its entire marketing programme – positioning strategy, advertising, distribution, pricing, branding and packaging and budget levels. The company uses test marketing to learn how consumers and dealers will react to handling, using and repurchasing the product. The results can be used to make better sales and profit forecasts. Thus, a good test market can provide a wealth of information about the potential

success of the product and marketing programme (Kotler, Wong, Saunders and Armstrong, 2005). This part of the process should be as short as possible in order to move to commercialisation as fast as possible.

2.3.6 Commercialisation

Commercialization is the last stage of the NPD process. Before commercialization, companies analyse the test marketing results to find out what changes in the marketing mix are needed (Dibb, Simkin, Pride and Ferrell, 2001).

Following that, companies should possess the necessary information to take a decision regarding the timing of launch, geographical strategy and how to best promote and advertise the product. The commercialization of a new product is a very expensive process and companies must have sufficient funds for advertising, sales promotion and to gear up production to meet demand (Kotler, Wong, Saunders and Armstrong, 2005).

2.4 Risks in New Product Development

Companies strive to develop and produce exactly what customers want, when they want it and to accomplish all of that with no risk of overstocks. But such a manufacturing nirvana has become increasingly difficult to attain, given customers' quickly changing preferences, the heterogeneity of their demands and the resulting micro-segmentation of many product categories. Today, many consumer goods companies have been forced to accommodate smaller markets, as these niches often provide the only path to growth and escape from heavy price competition (Ogawa & Piller 2006).

At the same time, forecasting the exact specifications and potential sales volumes of new products is becoming more difficult than ever. Recent studies have confirmed the problems of new product commercialization,1 with newly launched products suffering from notoriously high failure rates, often reaching 50% or greater. The main culprit has been a faulty understanding
of customer needs. That is, many new products fail not because of technical shortcomings but because they simply have no market. Not surprisingly, then, studies have found that timely and reliable knowledge about customer preferences and requirements is the single most important

area of information necessary for product development. To obtain such data, many firms have made heavy, but often unsuccessful, investments in traditional market research (Ogawa & Piller 2006).

Failure rates prove that these risks are real, and that NPD process is not easy. For consumer package goods, the failure rate for new products is reported to be between 70% and 90% (Broening, 2005). Also, some research shows that the failure rate for "first movers" in the market is around 47% (Tellis and Golder, 1996). These failure rates are concerning products that were introduced onto the market, which is only about 35% of all the products that entered the NPD process (Booz, Allen and Hamilton, 1982).

Intensified international competition, diverse and rapidly changing technologies and demanding customer expectations have made the innovation process more complex and the possible outcome considerably less certain. Empirical research indicates that the success rate of major new product development (NPD) projects still is low (Crawford, 1979; Griffin, 1997; Stevens and Burley, 1997). Therefore, it is no surprise that identifying and managing risks have become increasingly important issues in the product innovation literature (Wheelwright and Clark, 1992; Cooper, 1993).

The literature about project management, success and failure in NPD and risk already has yielded important findings about critical issues within the NPD process. However, for at least two reasons the literature has failed to provide a comprehensive picture of the risks involved with product development. First, a vast majority of studies used survey methods across companies, involving only one person in each division or strategic business unit. Secondly, because most studies were retrospective, events occurring late in the process have a better chance of being recognized as major determinants of the outcomes of NPD projects than events earlier on. Market and business dominate the final stages of the NPD process (Wheelwright and Clark, 1992). Therefore, the role of technology-related risks can be underestimated. Moreover, as far as technology-related innovation risks are distinguished in literature, the focus is more on cost and time aspects than on feasibility of new technological solutions (Polk et al., 1996; Rosenau, 2002).

NPD is an extremely lengthy, expensive and risky process although critical for companies' success in the long run. If not done well, it can be very damaging to a company. Although companies can

dramatically shorten their development time, in many industries such as pharmaceuticals, biotechnology, aerospace and food, new-product development cycles can be as long as 10–15 years. For example, the new-product launch cycle of consumer product firms such as Gillette may be anything from two to ten years. The uncertainty and unpredictability of market environments further raise the risks of commercialisation (Kotler, Wong, Saunders and Armstrong, 2005).

Unexpected delays in development are also a problem. History is littered with grand pioneering engineering projects which have failed to satisfy the original expectations of bankers, investors and politicians. The £10 billion cost of the Channel tunnel, which opened on 6 May 1994, a year later than originally planned, was more than double the £4.8 billion forecast at the start of the project in 1987 (Kotler, Wong, Saunders and Armstrong, 2005).

New products continue to fail at a disturbing rate. Recent studies put the new product failure rate of new consumer goods at 90 per cent in Europe and the United States. Another study suggested that of the tens of thousands of new consumer food, beverage, beauty and healthcare products launched each year, only 40 per cent will be around five years later. Moreover, failure rates for new industrial products may be as high as 30 per cent. Still another estimates new-product failures to be as high as 95 per cent (Kotler, Wong, Saunders and Armstrong, 2005).

Notwithstanding the risks, companies that learn to innovate well become less vulnerable to attacks by new entrants which discover new ways of delivering added value, benefits and solutions to customers' problems.

2.5 Why do New Products Fail?

Why do so many new products fail? There are several reasons. Although an idea may be good, the market size may have been overestimated. There just wasn't the demand for the product. Perhaps the actual product was not designed as well as it should have been. It may be a 'me too' product which is no better than products that are already established in the marketplace. Or maybe it was incorrectly positioned in the market, priced too high, or advertised and promoted badly. A high-level executive might push a favourite idea despite poor marketing research findings. Sometimes the costs of product development are higher than budgeted and sometimes

competitors fight back harder than expected (Kotler, Wong, Saunders and Armstrong, 2005).

Some authors argue that product-based factors explain 49% to 87% of the variance in new product adoption rates (Rogers, 1995). The main factors are relative advantage, compatibility and complexity. Relative advantage is defined as the level to which the new product is perceived as better in any way than the product it replaces; compatibility is defined as the level to which a new product is seen as consistent with consumers' existing values, experiences and needs; complexity is defined as the level to which a new product is well perceived by consumers (John T. Gourville, 2005). Relative advantage is viewed as the critical, if not sufficient, condition for new product success (Cooper, 2000).

Additionally, most consumers are unwilling to change from their current product to a new one because the majority of them are loss averse, which means they value the potential loss of abdicating from their current product more than the potential gain of acquiring the new product (John T. Gourville, 2005).

Understanding the reasons of product failures is important for organizations to gain insight so that similar mistakes in future undertakes are avoided. However, the reasons may be specific to industry and may keep changing creating a daunting task for the companies due to dynamic market conditions. Notable failures can be seen in automobiles, computer, FMCG, photographic, food and beverages segments.

Another perspective on failures of NPD looks at organizational lapses (Cooper, R. G. 1993):

- A lack of market orientation
- Poor quality of execution
- Hurrying through the tasks
- Poor market and product definition
- Lack of product differentiation
- Dispersed attention due to handling of many projects

A different point of view is that too many firms "innovate" without real insight about the market and their customers, hence, the following ten important reasons why most innovative new products and services fail (Mootee, I. 2013):

(1) Consumers not being informed of the applications.

(2) New technologies not addressing market opportunity correctly.
(3) Incorrect positioning within any product category.
(4) Insufficient knowledge and resources for marketers to drive consumer adoption.
(5) Core functions only work as features.
(6) Not providing enough customer value.
(7) Distribution through the wrong channel.
(8) Perform only a small function which the competition could also offer.
(9) The expectation of consumers is over estimated.
(10) Ineffective communication to a sceptical customer group on perceived risks.

2.6 What Influences New Product Success?

Because so many new products fail, companies are anxious to learn how to improve their odds of new-product success. One way is to identify successful new products and find out what they have in common. Various studies suggest that new-product success depends on developing a unique superior product, one offering customers better quality, new features and higher value in use. Another key success factor is a well-defined product concept prior to development, in which the company carefully defines and assesses the target market, the product requirements and the benefits before proceeding. New products that are better than existing products at meeting market needs and delivering what customers really wanted invariably to do well. Other success factors have also been suggested – senior management commitment, relentless commitment to innovation, smooth functioning and proficiency in executing the new-product development process. Thus, successful commercialisation of new products requires a company to have a clear understanding of its consumers, markets and competitors and to develop products that deliver superior value to customers (Kotler, Wong, Saunders and Armstrong, 2005).

Another key success factor is related to a company's actions before it starts the NPD process. This "homework" is about the definition and assessment of the target market, consumer requirements and product positioning. Then, the product concept must be defined, including its benefits and features (Cooper and Kleinschmidt, 1995).

Well-known studies show the dramatic impact of product superiority. For example, such products (the top 20%) when compared to those with the least degree of differentiation (the bottom 20%)

(Cooper et al., 2010):

- have an exceptional commercial success rate of 98.0%, versus only 18.4% for undifferentiated ones
- have a market share of 53.5% of the defined target market, versus only 11.6% for ‘‘me too’’ new products
- have a rated profitability of 8.4 out of 10 (versus only 2.6 out of 10 for undifferentiated products; here 10 = exceptional profits, far exceeding the company’s minimum hurdle)
- meet company sales and profit objectives to a greater degree than do undifferentiated products

The same studies show, however, that reactive products, undifferentiated products, and technically driven products that lack customer benefits are the rule rather than the exception; and the majority fail (Cooper et al., 2010). What do these superior products with unique customer or user benefits have in common?

These winning products:

- feature good value for money for the customer, reduce the customer’s total costs (high value in use), and boast excellent price/performance characteristics
- provide excellent product quality relative to competitors’ products, in whatever manner the user measures quality
- are superior to competing products in terms of meeting users’ needs, offer unique features not available on competitive products, or solve a problem the customer has with a competitive product
- offer product benefits or attributes easily perceived as useful by the customer, and benefits that are highly visible

Chapter 3

Case Study – Introducing a New Way to Fight Pain in the Cypriot Market

Medochemie pain treatment range in Cyprus is very well established and recognised by most Health Care Professionals as well as consumers. One of the first products Medochemie ever launched in Cyprus back in 1976 with the active substance Paracetamol was aimed at fighting pain. Since then, Medochemie's pain medication portfolio has grown to include more than 15 different molecules all aimed at fighting pain. Several of these molecules are prescription only but most of them are Over the Counter (OTC) medications.

3.1 The Company

Medochemie was established in 1976 in Cyprus. The journey has seen the company's active expansion into promising markets across the world – from the base in Europe, to the Middle East & Africa, through to the Far East and the Americas. Outside Medochemie's 21 core offices, the company developed a network of trusted agents and partners allowing the company to operate in 107 countries.

Today, Medochemie Ltd has thirteen manufacturing plants and facilities. Nine are in Cyprus, one in the Netherlands, and three in Vietnam. The company has acquired and maintains 4,355 marketing authorisation licences for 630 different pharmaceutical products, classified in over 10 therapeutic categories. Medochemie operates in accordance with the strictest quality standards and in full compliance with European guidelines.

The driving force behind Medochemie is its 1880 multinational, talented, quality-focused

employees, who work in our manufacturing plants and offices worldwide. Medochemie is also a founding member of the Medicines for Europe (former EGA).

According to IQVIA MIDAS Quarterly Sales Audit, Medochemie's sales between Q1 2018 and Q4 2020 had an upward tendency until the COVID-19 pandemic as can be seen in figure 1 below. The figure also shows that the overall increase in sales globally, although tends upwards, is not increasing dramatically and this is mainly because the company focused its NPD on mainstream generic medication instead of focusing on something new and different.

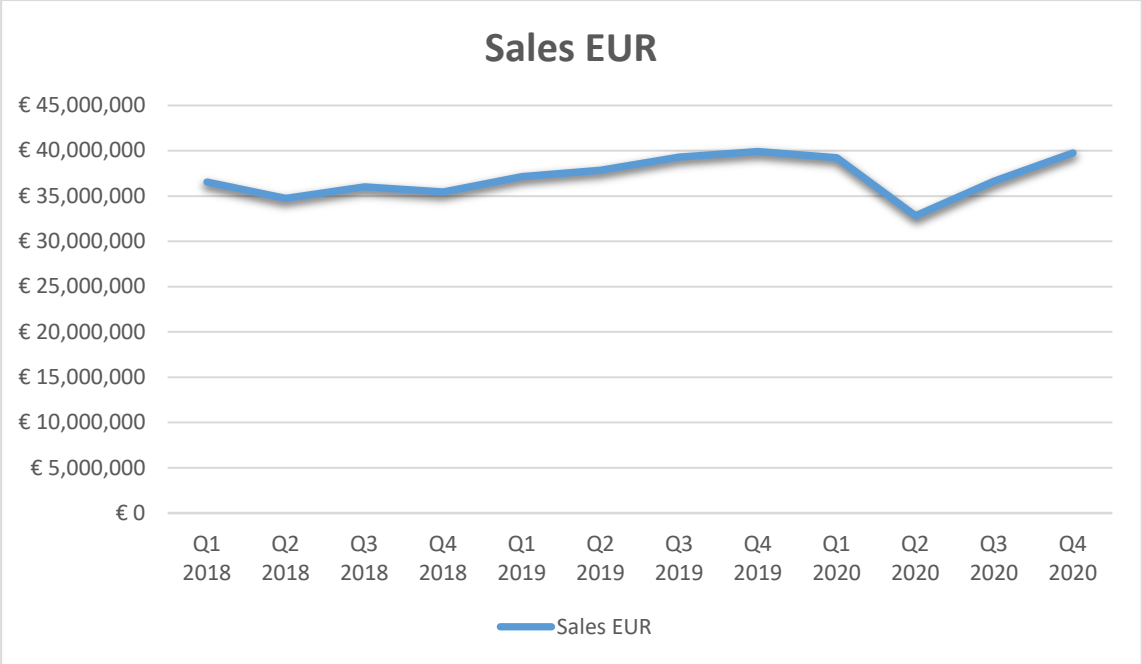

Figure 1: Medochemie sales worldwide Q1-2018 up to Q4-2020

3.2 The Pharmaceutical Industry

The global pharmaceutical market will exceed $1.5 trillion by 2023 growing at a 3–6% compound annual growth rates over the next five years – a notable slowdown from the 6.3% seen over the past five years. The key drivers of growth will continue to be the United States and pharmerging markets with 4–7% and 5–8% compound annual growth, respectively. In the developed markets, the top-five European markets will slow to 1–4%, compared to 3.8% in the past five years, while Japan's top line growth of -3 to 0% is partly due to forecast exchange rate dynamics and masks a more favourable dynamic for branded products. China is the largest pharmerging market, reaching

$140–170 billion by 2023, but its growth is expected to slow to 3–6%. All pharmerging markets will see slower growth in the next five years than in the past five as the economic growth and healthcare access expansions of the past contribute less to growth (IQVIA Therapy Prognosis Report, IQVIA Institute, 2018).

Research and development pipelines are growing while success rates are continuing at historic levels, resulting in more new products launching in the next five years. An average of 54 new active substance (NAS) launches per year are expected over the next five years up from 46 in the past five years. New products will also contribute a larger average annual spending on an absolute dollar basis but will account for a lower percentage of brand spending, as the market for brands will grow overall. Nearly two-thirds of launches over the next five years will be specialty products, up from 61% in the past five years, lifting specialty share of spending to near 50% by 2023 in most developed markets. (IQVIA Therapy Prognosis Report, IQVIA Institute, 2018).

Pain treatment is the 5th Leading Therapy Areas Spending and Growth in Select Developed and Pharmerging Markets. Spending on pain medication in 2018 was $39.7 Mil. with a CAGR of 0.9% between 2014 and 2018. Spending is expected to increase in the coming period leading to 2023 by 0-3% with the estimated cost ranging between $40 Mil. and $48 Mil. surpassing spending on other life-threatening therapeutic areas such as Hypertension and Immunology (Figure 2).

THERAPY AREAS	2018 CONST US$ SPENDING	2014-18 CAGR CONST US$	2023 CONST US$ SPENDING	2019-2023 CONST US$ CAGR
Oncology	99.5	13.1%	140-150	6-9%
Diabetes	78.7	15.2%	115-125	7-10%
Respiratory	60.5	5.7%	70-80	2-5%
Autoimmune	53.5	15.4%	70-85	6-9%
Pain	39.7	0.9%	40-48	0-3%
Antibiotics and Vaccines	40.6	2.3%	40-48	0-3%
Mental Health	35.5	-2.6%	32-40	(-2)-1%
Blood Coagulation	39.8	13.1%	55-65	7-10%
Hypertension	29.9	-3.6%	27-31	(-2)-1%
Immunology	34.2	11.7%	45-55	6-9%
All Others	392.7	4.8%	440-470	1-4%

Source: IQVIA Therapy Prognosis, Sep 2018; IQVIA Institute, Oct 2018
Notes: Includes eight developed countries (United States, France, Germany, Italy, Spain, United Kingdom, Japan, Canada) and six pharmerging countries (China, Brazil, Russia, India, Turkey, Mexico). CAGR = Compound Annual Growth Rate.

Figure 2: Leading Therapy Areas Spending and Growth in Select Developed and Pharmerging Markets

3.3 The Pharmaceutical Industry in Cyprus

The pharmaceutical market in Cyprus is small compared to other European countries and until recently, most sales were coming from the private market. According to the latest data from Pharmatrack (Synopsis), which a company tracking sales in the Cypriot market, the total Moving Annual Total (MAT) of the private market in 2021 was just over €200 Mil.

The market is dominated by six pharmaceutical companies with their 2021 MAT amounting to approximately 41% of total private sales. The top two positions were taken by local manufacturers followed by multinational pharmaceutical companies for the remaining four positions.

Pain medication and more specifically Non-Steroidal Anti-Inflammatory drugs (NSAIDs) is a very competitive segment in the Cypriot market with sales of the top performing company amounting to approximately €140,000. The NSAID market is dominated by a multinational company and until recently, Medochemie was in third place.

3.4 Market Analysis and Competitive Environment

3.4.1 Porter's Five Forces

Medochemie's procedures dictate that when the BD team has a new product idea it must develop and present a market analysis to identify opportunities and to forecast product profitability. A task force comprising of BD together with the local sales team in Cyprus was created to perform market analysis and identify the potential opportunity.

A five forces design and model were created by Harvard Business School professor Michael E. Porter to strengthen companies' performance, solve various problematic issues, measure the industry's competitive nature, and develop corporate strategies appropriately. The Porter framework lets the business to analyse and explore the major forces that influence and determine the industry profitability (Albrecht Enders, et al., 2009).

The design framework of Porter's model of Five Forces performs a basic starting point to drive the Four Forces on the basis of Back Casting machinery, indicates the process of transformation from the existing unsustainable progress to future expectations of sustainable development through the application of a greening force, environmental degradation, and greening process. These five basic transformations are processed based on the theory of cause and effect (Gandhi, et al., 2006).

Using this model Porter elaborated how the competition plays the role in the resulting in attractiveness and profitability and of a company. Using corporate strategies, a company should aim to shape all the forces to strengthen its position in the market (Gupta, & Nanda, 2015). In any industry, there exist certain forces that compel to drive strategy formation, which is difficult to determine, and that increase or decrease company profitability (Delgado, Porter, & Stern, 2014).

Porter's Five Forces (Figure 3 below) are:

(1) Rivalry Among Existing Competitors
(2) Threat of New Entrants
(3) Threat of Substitutes
(4) Bargaining Power of Buyers
(5) Bargaining Power of Suppliers

The Five Forces help Shape Industry success by overcoming competition.

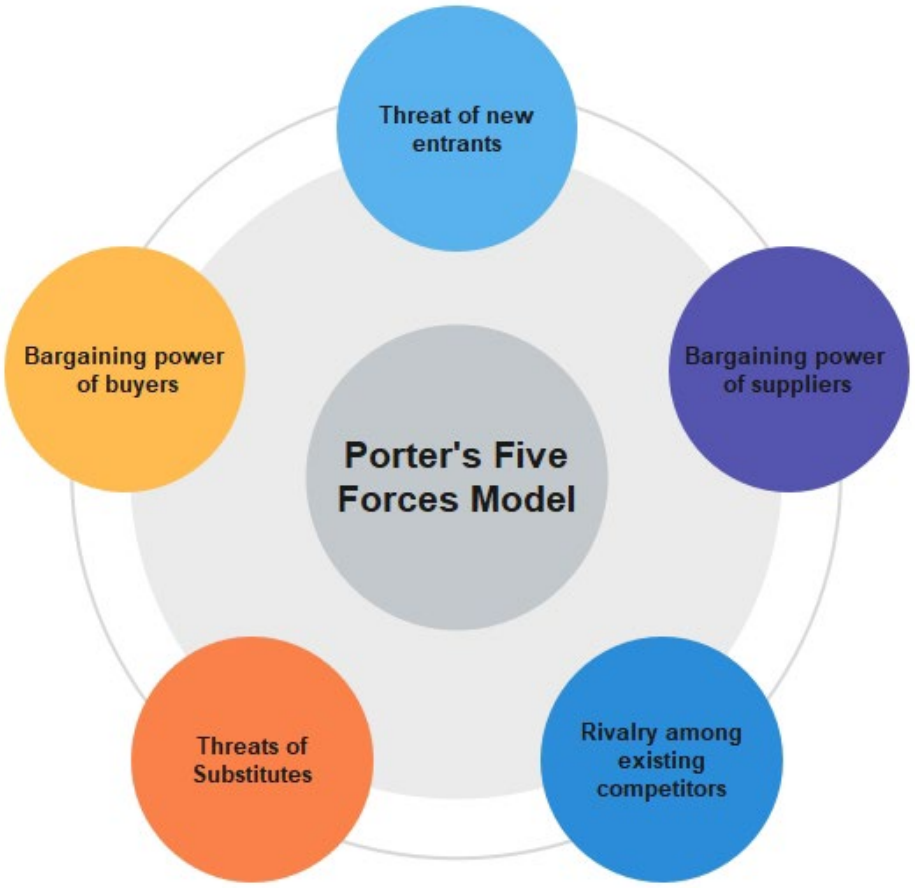

Figure 3: Porter's Five Forces Model

(1) Rivalry Among Existing Competitors

This vital force that Porter elaborates indicates the intensity of rivalry in the prevailing companies. In case any additional companies compete, it will result in more competitive pressure that will affect prices and profits; hence the strategies will change (Baptista, & Preto, 2010). Due to a selection choice offered for many quality products in the market, there prevails a direct competition, whereby the customers get an option to simply select the best product they prefer from a different company very easily.

High competitive rivalry exists when:

- Similar type products are available in one market
- The competitor companies maintain similar strategies
- The products have identical features, offering similar benefits
- Industrial growth is slow

- Low barriers exist for the new entry (Llusar & Mercedes, 2006).

When Medochemie decided to launch the product in 2021, the market was dominated by two brands: Nurofen with the active ingredient Ibuprofen and Panadol with the active ingredient Paracetamol. These two brands were the market leaders in each of the active ingredients.
Given that Medochemie was also present with both monotherapy ingredients in the market, there was also the potential of cannibalising its own products. The marketing and sales teams were aware of this risk and even if a consumer changes from a monotherapy Medochemie product to the new combination product, they both prefer if customers are loyal to Medochemie products than lose them to a competitor.

The molecules (Paracetamol & Ibuprofen) have been available in the market as monotherapies for many years and commercialised by many companies both originator and generic, however, the product is considered innovative because it combines two molecules in one tablet for the first time in Cyprus.

To differentiate the new product from other pain products in the market, several clinical studies had to be conducted to assess the effectiveness of the combination's pain relief. The studies also tackled speed of relief and the safety profile of the combination. The results were astounding. The clinical studies concluded that the combination is clinically proven to be at least 32% more effective on pain relief against either paracetamol or ibuprofen on their own, has a faster onset of action than equivalent doses of ibuprofen or paracetamol alone and there was no increase in the incidence of adverse events when compared to monotherapy.

Growth in the pharmaceutical industry pain management sector is very slow especially in over-the-counter medication segment because available therapies are cheap and effective so there is a very small incentive for companies to invest in finding new molecules.

(2) Threat of New Entrants

The competitive threat is not merely from the prevailing business players but can come from probable new entrants (Alonso & Kok, 2018). When the industry shows profits, it attracts new companies. Hence, it compels to improve with long term marketing and business strategies. Unless the barrier to entry prevails, new companies can easily enter the market and change the industry dynamics The specific industry dynamics can restrict the new entry of companies and

they are known as barriers to entry (Martin, 2014).
The entry barriers can stem from various things like:

- Knowledge gained from patents and proprietary rights
- Having access to innovative infrastructure and technology
- Government drive on obstacles or economies of scale
- Need for very high initial investment
- Large costs for switching of loyal consumers
- Problems in securing raw materials and problems to access effective distribution channels (Dobbs, 2014).

In the over-the-counter pain medication area, the threat of new entrants is always present. A competitor company with the same molecules but with cheaper prices can enter the market forcing the other players to lower their prices. Another competitor company decides it is time to embark on a massive marketing campaign to try and switch as many customers as possible to their products.
In the case of Medochemie's new product, the company filed patents in place stopping competitors of entering the market with a similar combination with the same strength. These patents should, theoretically, protect the company's investment for a period of ten years following launch which is ample time to recover the investment and generate profits.

(3) Threat of Substitutes

The substitute products of another industry may meet the same needs. The additional substitutes of any product indicate bigger competitive environment, means less probability for profits. Additionally, lower substitute prices can increase sales and attract more consumers, reducing the sales of existing companies.

Medochemie's product doesn't currently have an over-the-counter substitute. The only other products that can be considered substitutes are pain medication that include opioids which are not over-the-counter and are generally viewed as a less favourable alternative by doctors due to the risk of dependency.

(4) Bargaining Power of Customers

When buyers carry less power to meet product prices, it becomes an important issue for the company to consider (Rajasekar & Raee, 2013).

The potential sales price was tackled by the task force. Here, the idea was simple; the new product had to be more expensive than the most expensive paracetamol or ibuprofen on their own but cheaper than if the cheapest versions of both were bought together. The pack size also had to be convenient for both physicians and consumers and had to be close to other pack sizes available on the market from competitors.

(5) Supplier's Bargaining Power

The raw material suppliers provide the required goods and services. It indicates that there is an acute need to keep good and steady rapport with suppliers. Based on the industry vigour and dynamics, suppliers remain in the position to command their terms, establish prices and decide timeline availability. Strong suppliers can increase raw material costs without changing the volume of their own sales or decrease sale quantity (Dobbs, 2014).

The product is being manufactured by Medochemie; therefore, the main supplier of the product is the same company selling the product. On the other hand, Medochemie requires several raw materials to be able to proceed with the manufacturing process. the task force recommended having several suppliers for each of the raw materials especially because the main ingredients are old and established products with many available suppliers.

Following that, a potential sales forecast for at least three years was created. The local sales team used total sales of both molecules separately in the market and visited doctors and pharmacists to identify the number of patients that could be switched to a single tablet combination of the molecules.

This forecast will give the company the bargaining power needed with the suppliers of raw materials.

3.4.2 Pestel Analysis

Pestel Analysis is a widely accepted as a comprehensive method used for industry and market assessment (Kolinos & Read 2013). It is the acronym for Political, Economic, Social, Technological, Environmental, and Legal factors (dimensions) that can influence organizational success and/or its failure. It is an approach to the estimation of the external business environment (Gupta 2013).

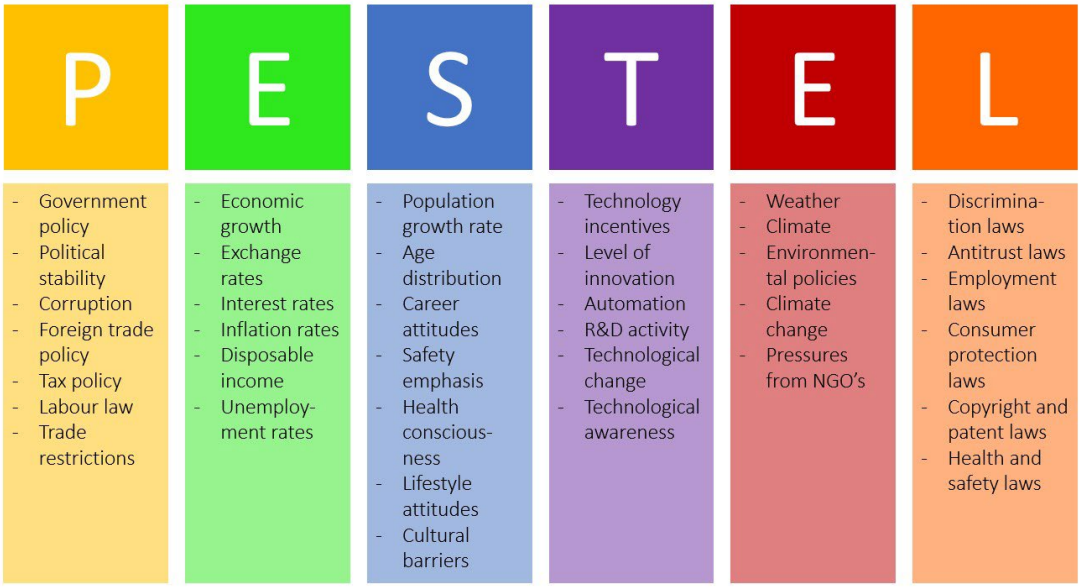

Figure 4: PESTEL Analysis

(1) Political

Most countries maintain frameworks that include guidelines about safety standards, certifications, etcetera. They also mark the banned drugs, which may cause health hazards. If a pharmaceutical company fails to follow those regulations, its business may suffer severely. Administrations of most countries try to gain control over the price of the drug to make it affordable for people. It may toll on the growth of pharmaceutical companies. Governments of some countries subsidize the pharmaceutical companies to keep the essential drugs within the commoners' reach. It helps the companies to survive in the competitive market.

The over-the-counter medication segment in Cyprus has not been "touched" by the government. Pricing is not controlled by the government and regulations are according to European Union's laws so a potential political effect on launching DUOMAX was minimal.

(2) Economic

Level of economic growth could be one of the key economic factors (Cadle, Paul, & Turner 2010), and some other factors in this group are GDP, GNP, inflation, and exchange rates (Ritson 2008). As the economic conditions of the countries are developing with time, the household income of people is also increasing. It may allow them some essential drugs. They may have the urge to buy costlier drugs, which were previously out of reach for many people. The researchers are constantly working on drug modification, resulting in more beneficial and potential drug production. As people are buying those drugs, the pharmaceutical industry is also flourishing.

The average healthcare spending of the families is increasing. If there are aged people in a family, there are more chances of high healthcare expenses. It also includes the cost of medicines. It is also giving the pharmaceutical companies to earn better profit even after following Government guidelines about pricing.

The potential sales price was tackled by the task force and set at €4.00 per pack which was more expensive than the most expensive paracetamol or ibuprofen on their own but cheaper than if the cheapest versions of both were bought together.

(3) Social

Social factors include cultural, demographic and other social influences (Ho, 2014). In other words, social factors are values, the culture, and residents (Song, Sun, & Jin 2017). Socio-cultural factors of any country can impact the industries within the periphery of the country. The pharmaceutical industry is not an exception, and the sociological conditions dominate it gravely. Here are some sociological conditions which can impact the growth of the pharmaceutical industry:

- The lifestyle of people has people incredibly fast yet stagnant. As a result, more people are moving towards obesity. Thus, facing health conditions like diabetes, thyroid, hypertension. The patients need continuous medication to deal with this.
- As the healthcare system has improved all over the country, the number of the aging population is also growing. Hence, there is a need for more medicines for them than for the younger ones.

The social factors were deemed favourable by the task force for launching a new medicine that tackles mild to moderate pain.

(4) Technological

Technological factors are usually of two kinds. These are development in IT and improvements of technology related to industry and marketing (Cadle, Paul, & Turner 2010). The results of technological improvement and upgrade are product innovations, applications of knowledge, and new communication technologies (Hitt, Ireland, & Hoskisson 2007).

DUOMAX was the perfect product focusing on the new technology of having two molecules together in a single tablet.

(5) Environmental

Environmental influences include ecological issues, cyclical weather, disposal of materials, etc. (Team FME 2013). Due to the weather in Cyprus which is dominated by high temperatures in the

summer and recently dusty conditions, migraines and headaches are very common and DUOMAX would be a perfect new medicine to tackle these conditions.

(6) Legal

The major legal factors are consumer and competition laws, health and safety legislation, and employment laws (Gillespie 2016).

The pharmaceutical sector laws in Cyprus are following the European Union and is very clear in terms of launching an over-the-counter medication.

3.5 DUOMAX – New Product Development

In 2018, the Business Development (BD) Team in Medochemie noticed a new trend in pain treatment methodology of physicians in Cyprus. Until then, pain treatment methodology was mainly directed towards prescribing Paracetamol for mild pain. In case of moderate pain, the physician would prescribe a NSAID with the most common being Ibuprofen. Paracetamol and Ibuprofen are amongst the most popular analgesics on the market, but physicians were sometimes also adding codeine to amplify the analgesic effect. But codeine is an opiate and health authorities around the world express concerns about its potential for misuse.

To avoid prescribing an opiate, a new trend was born amongst physicians which is to prescribe patients suffering from mild to moderate pain both Paracetamol and Ibuprofen with different dosing regimens.

Medochemie already sold Paracetamol and Ibuprofen on the market and the BD noticed this increasing trend. At that moment, the team thought they could complement their pain portfolio if a product which includes both active substances was created.

The BD team immediately informed the New Product Development Team (NPD) about their idea, and they found that NPD already had a formula which was created years ago but the sales and BD team never took advantage of. The formula combined 500mg of Paracetamol and 150mg of Ibuprofen in a single tablet.

3.6 Marketing Strategy

The Marketing Mix strategy was defined by the assigned marketing team to launch the product and was split in the standard four Ps: Product, Price, Place and Promotion.

Product: Medochemie wanted to really differentiate the product from the rest of the competitors so a stylish and fresh design for the pack together with a strong brand name and brand strategy had to be created. The design had to be very different than all other analgesics on the market and the brand name had to be unique, yet simple enough to make it clear to both physicians and consumers that the product had two active ingredients and provided max relief at the same time. The result was DUOMAX in a very interesting design for the pack (Figure 5). The number of tablets in the pack was an important point to consider. Most competitors in the market either had pack sizes of 18 or 24. The choice of 20 tablets in a pack was proposed by the sales team and justified by several main points such as: being different than the competition, give customers more value when compared to 18 packs and at the same time keep the product more premium when compared to packs of 24.

Figure 5: The design of DUOMAX pack

Price: The potential sales price was set at €4.00 per pack which was more expensive than the most expensive paracetamol or ibuprofen on their own but cheaper than if the cheapest versions of both were bought together.

Considering total pain market size in Cyprus, such a price would create potential sales of around 100,000 packs over a three-year period which would translate to approximately €400,000 of sales.

The opportunity was huge. No other pain product in Medochemie's portfolio had similar sales to date.

Place: In order to build fast product awareness and segment penetration, Medochemie decided that the product must be available in as many pharmacies as possible. Because of Medochemie's position as a market leader in the Cypriot Pharmaceutical market, it used its leverage and made it mandatory for all pharmacies to display the product in a prominent position on their most shelves.

Promotion: Medochemie's marketing team decided on the main brand strategy message for the product: DUAL ACTION MAX RELIEF. The message was clear and simple. It would outline that the product had two active ingredients by using "DUAL" and would also emphasize the fact that DUOMAX is at least 32% more effective on pain relief against either paracetamol or ibuprofen on their own. Then, the team had to create a visual symbol for the product that would accompany all promotional materials. The symbol was an X, the last letter from the product's name in two colours identifying the two different active substances (Figure 5 above).

The promotional brand strategy was a twofold approach. In the first stage, Medical Representatives from the sales team would provide pharmacists and physicians with a Teaser during their visits. The Teaser would include the brand message and would also include the monotherapy tablets currently available in Medochemie's portfolio, Paracetamol and Ibuprofen in a simple adding formula. The addition would result in the brand's symbol (Figure 6). The point of this teaser was to pique the interest of health care professionals and to inform them that something new and innovative is coming. This first stage would start a month before product placement in pharmacies and would end as soon as the product is distributed.

Figure 6: The teaser prepared by the marketing team for the DUOMAX campaign

The second stage starting as soon as the product hits the shelves, would include a product brochure distributed to physicians and pharmacies which highlights product benefits and has a potent visual (Figure 7). The brochure would be followed up later by Radio and TV adverts.

Figure 7: DUOMAX visual and brochure

Several lessons can be observed and learned from the case study of DUOMAX and Medochemie's launch:

- Several departments are always involved to successfully create and launch a new product
- A good and talented team including the correct individuals are necessary to construct and manage the launch plan
- A good market analysis and competitive environment review are paramount when it comes to entering the market with a new product
- The right product with the right price and the suitable characteristics can be successfully launched and generate profit even in a competitive and crowded environment

3.7 Communication Strategy

The pain over the counter market is considered to be mature and saturated, in terms of the products variations that brands offer. This means that if a brand wants to introduce a new product to the market it should be innovative and offer something new for consumers. That is what DUOMAX does. It is a very innovative product, and it provides new benefits in its segment. So, Medochemie

had to communicate this innovation and educate consumers to the benefits of using DUOMAX vs other monotherapy products.

In order to develop consumer education, a television campaign was produced because generally speaking, television campaigns are the fastest way to reach as many consumers as possible. This campaign communicated the main benefits of DUOMAX such as more effective pain relief, speed of action and its safety profile.

Brochures and banners were also introduced in pharmacies to communicate the product's launch and its benefits (Figure 7). This was an important communication tool because consumers could consult the brochure in pharmacies and the banners encouraged consumers to ask the pharmacists for more details.

Notepads (Figure 9) and Tissue Boxes (Figure 10) were also created and distributed to physicians and pharmacists to increase brand awareness.

Figure 8: DUOMAX Point of sales banner

Figures 9 & 10: DUOMAX Notepad and Tissue Box

3.8 Test Marketing

Following launch in Cyprus, Medochemie BD Team presented the product to other affiliates in the European region in countries like Romania, Bulgaria, Czech and Slovakia and asked them for a market analysis to assess the product's viability. After the market analysis, Medochemie decided to launch DUOMAX in all four countries, however, with a different brand name due to country specifics. Before full market introduction in these countries, Medochemie decided to test marketing the product in Romania due to larger market size and Medochemie's strong presence in the market. DUOMAX results were satisfactory, confirming Medochemie's intention to extend the full product introduction into the four abovementioned markets.

3.9 Commercialisation

Every time an NPD process is started in Medochemie, a timetable is set to every department involved outlining the deadlines of the process. Any delay during the NPD process may postpone product launch and cost the company sales.

A general timeline for NPD in the pharmaceutical industry is roughly five years for development and at least a further year for registration activities. Since NPD already had a formula which was created years ago, the whole process was ahead of schedule and in January 2021 DUOMAX was launched

in the Cypriot market. Following the distribution strategy, the product was shortly in every pharmacy across the country.

Chapter 4

Main Results and Conclusions

A new product launch for a pharmaceutical company is a complex and risky process. The literature review in Chapter 2 focuses on reviewing and analysing the theories applied in product line extensions, new product development and innovation, the new product development process as well as the risks associated with new product development. The chapter also analyses the potential reasons for new products failures and what potentially influences the success of new products.

Looking at the example of Medochemie and its launch of the new product DUOMAX in Cyprus outlined in Chapter 3, one can recognize how the business development team in the company identified a potential product that could be considered a new and innovative product as well as a line extension of the company's current pain treatment portfolio. The market analysis performed by the company shows how even though the competitiveness in the market is very high, success is likely if the new product in unique and faces low threat of identical products entering the market that can eat its market share or substitute it altogether. The company also assured that there will be limited to no competition being able to enter the market with an identical product by filing patents to protect its interests. These reasons helped make DUOMAX's launch in Cyprus an astounding success due to better analgesic efficacy, speed of action and no increase in potential side effects. The launch revolutionized the way Medochemie sells its over-the-counter pain medication in Cyprus.

Commercialization of any new product launch is key to its success. Advertising, sales promotion and having a solid production and supply chain to back the launch up are also key factors. Despite Medochemie's confidence in the product and marketing strategy, the company had its concerns about the results of the launch due to the increased price of the product compared to monotherapies and due to the fact, the product was launched in a less than ideal economic situation within the country. These concerns initially limited the quantities manufactured by the company to only 30,000 packs. One must remember that even if an idea of a product is good, the risk of failure increases with product price increase compared to competitors. In the case study from Chapter 3, the

company decided on a price that positioned the product as high value for customers which contributed to product success. Price is a very sensitive element for consumers as they do not simply perceive price as the cost of a product but also as a cue for various intervening external and internal constructs, therefore, companies launching new products ought to perform appropriate market due diligence studies and analyses and price their products in a way that intelligently communicate to the customers what are they paying for and why they should choose the certain product.

Within three months of launch, the product was so well received that all manufactured quantities were sold out and the company had to boost its production capabilities to meet up with the newly created demand. Nine months after launch, the product already sold more than 90,000 packs which is very close to the total number of forecasted sales over three years. The commercialization of a new product is a very expensive process and companies must gear up production to meet demand. If production can't keep up, out of stock situations can appear which can damage product sales in the long run and in some cases even damage the company's image and reputation.

The sales figures of DUOMAX in Cyprus demonstrate that the development and launch process of DUOMAX were very well executed and Medochemie had reason to be confident in the product and continue to support it with strong communication and promotion to improve the product's results in the coming years, therefore, Medochemie decided to invest more in the brand and to create additional forms to support the brand such as oral solution and sachets.
Such a new launch also evidences that the pharmaceutical industry and more specifically over-the-counter medication segment can be very lucrative for companies if they come with the right product and the appropriate execution and launch plan.

Following DUOMAX's success in Cyprus, Medochemie decided to revamp its entire product range of pain products in Cyprus and change packs to make them similar to DUOMAX so that a whole pain range with similar characteristics is created. The principle of similarity simply states that when items share some visual characteristic, they are assumed to be related in some way and therefore, the success of DUOMAX could potentially pass on to other Medochemie pain medications from the company's range.

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