Czech University of Life Sciences Prague

Faculty of Economics and Management

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Diploma Thesis

Branding in the Pharmaceutical Industry

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

DIPLOMA THESIS ASSIGNMENT

SHAILESHKUMAR JOGANI

Business Administration

Thesis title

Branding in the Pharmaceutical industry

Objectives of thesis

The main objective of this thesis is to understand the importance of the branding in the pharmaceutical industry and focus on different branding strategy models used for the branding in the pharmaceutical industry. This thesis also analyses major challenges for pharmaceutical branding. The research mainly focuses on the different branding strategies used and analysis of problems faced and different business models used for the long-term viability of brand in the pharmaceutical industry. This thesis also describes the ways of communication of Pharmaceutical brand. And finally, also give some insight on the future of the pharmaceutical branding.

Methodology

This thesis involves the research secondary, through library book and internet search, and primary research that focuses on physicians' attitude toward branding and generics and their influence on prescription behavior and also eased by an answer to questions about how consumer perceived the generic versus the pharmaceutical brand.

Firstly, this paper discusses the concept of the brand in general and for the pharmaceutical industry. Next, the need for branding in the pharmaceutical industry and different branding strategies models and business models are used in Branding pharmaceutical company. The paper proceeds with an analysis of challenges for the pharmaceutical brand for the long-term viability of brand. The paper describes the generics as major issues for the pharmaceutical market and physicians and consumer perception of generic versus branded drugs. Lastly, give some insight on the future of pharmaceutical branding.

The proposed extent of the thesis

Approx 60 pages

Keywords

Branding, Pharmaceutical Branding, Branding Strategy, Business Model, Generics, Communication, Strategy

Recommended information sources

HOLT, D B. *How brands become icons: the principles of cultural branding.* Boston, Mass.: Harvard Business School Press, 2004. ISBN 1578517745.

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Declaration

I declare that I have worked on my diploma thesis titled "Branding In the Pharmaceutical Industry" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the diploma thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on _____ Signed_____

Shaileshkumar Jogani

Acknowledgement

I would like to thank Ing. Richard Selby, Ph.D. for his advice and support during my work on this thesis. And I would like to specially thank to my parents and wife, brother and sister for supporting me a lot for my education and giving me motivation.

"Branding In the Pharmaceutical Industry"

Abstract

The diploma thesis “Branding in the Pharmaceutical Industry” examine the different branding strategy used for the branding in the pharmaceutical industry. It is shown for several years that consumer good industry relied heavily on the branding strategy to market their products and followed particular structure to brand their products. While in recent time these branding models can be transferred and adapted to the pharmaceutical industry. This diploma thesis paper also discussed the different challenges facing the original brand in pharmaceutical industry and different branding strategy models used for the long-term viability in the market. These challenges include immense competition from the generics, decline in the discovery, approval and marketing of the new molecules. Regulatory pressure, pressure form the me-too and follow-in drugs. There are different communication ways used by the pharmaceutical companies to communicate their brand which are slightly different to the consumer products as the pharmaceutical industry is highly regulated.

Finally, research driven aspect of this paper the interviews conducted with the consumer and practitioners to get their personal views to get the insight about the difference between generics and branded drugs and factors influences while prescribing any brand, respectively.

Keywords: Branding, Pharmaceutical Branding, Branding Strategy, Business Model, Generics, Communication, Strategy

"Značka ve farmateutickem průmyslu"

Abstrakt

Diplomová teze na téma "značka ve farmateutickem průmyslu" zkoumá rudne "znackove" strategie pouzite ve farmateutickem průmyslu. Ukazuje, ze za posledních několik let, firmy velice spolehaji na jejich "značkovou" strategii aby prodávaly svoje produkty a také tuto strategii vyuzivaji urcitym způsobem aby "označily" své produkty. V posledních letech byly tyto způsoby jak "označit" produkty, prizpusobeny a využity ve farmateutickem průmyslu. Tato diplomová teze se také zaobira ruznymy problémy které mely firmy při svých "znackovacich" strategiích a ruznymy možnostmi které byly použity na dlouhodobé využiti na trhu. To mimo jiné zahrnuje obrovskou konkurenci od ostatních, pokles v objeveni, a souhlas a marketing těchto nových způsobu. Regulacni tlak, tlak z (me-too?) a nasledujicich léku. Ruzne způsoby predavani jejich "značky" které se lehce lisi od normalnich konzumacnich produktu, jelikoz je farmateuticky průmysl velice regulován.

V neposledni radě, výzkum kterým je veden tento papír, rozhovory delane se zakazniky a praktikanty aby se ziskal jejich osobní názor na těma typických léku a "znackovych" a faktory které je ovlivňuji při predepisovani těchto léku.

Klíčová slova: znackovani, farmaceuticke znackovani (lekarske), znackovaci strategie, Obchodní model, Generika, Komunikace, Strategie

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1 Introduction

The branding is the element use to distinguish one product or brand to other product or brand from different producer. From many decades, in consumer goods industry, companies have used different branding techniques to differentiate their brand from competitors and to achieve competitive advantage. While, in the pharmaceutical industry branding process came late. During the 1980s and 1990s by traditional method of marketing the pharmaceutical industry was achieving double digit growth on a consistent basis. As the time lapse the easy growth environment change and growth has been going slowing down and company have been searching and trying to innovative ways to maintain the growth.

From, past few years the pharmaceutical industry faces too much challenges from the generic medicine industry, pressure from the regulatory as well as from the me-too or following product competition to survive for long-term. Due to profound change in the pharmaceutical industry, pharmaceutical companies must adopt new way of marketing and branding strategies then they had in the past.

The pharmaceutical branding is an important way to create awareness amongst the potential customers about benefits and advantage of drugs and medicines. It is essential to understand brand equity in order to fully understand the branding in the pharmaceutical. Brand equity is an expression of present and future value of brand in terms of its business potential.

While the core principles and strategies for communicate, the pharmaceutical brand are same for any brand, there are some difference for the medical brand, as the pharmaceutical industry is highly regulated and differences in regulations and marketing of the pharmaceutical brand.

2 Objectives and Methodology

2.1 Objectives

The main objective of this thesis is to understand the importance of the branding in the pharmaceutical industry and focus on different branding strategy models used for the branding in the pharmaceutical industry. This thesis also analyses major challenges for pharmaceutical branding. The research mainly focuses on the different branding strategies used and analysis of problems faced and different business models used for the long-term viability of brand in pharmaceutical industry. This thesis also describes the ways of communication of Pharmaceutical brand. And finally, also give some insight on the future of the pharmaceutical branding

2.2 Methodology

This thesis involves the research secondary, through library book and internet search, and primary research that focus on physicians' attitude toward branding and generics and their influence on prescription behaviour and eased by an answer to questions about how consumer perceived the generic versus the pharmaceutical brand.

Firstly, this paper discusses the concept of the brand in general and for the pharmaceutical industry and proceed with the importance of the different elements of the branding like, brand equity, brand identity. Next, the paper describes the need for branding in the pharmaceutical industry and then different branding strategies models or business models are used in Branding pharmaceutical company. Some examples are given for branding strategies used by pharmaceutical companies.

The paper proceeds with an analysis of challenges for the pharmaceutical brand for the long-term viability of brand and different business models used as a defensive strategy for each challenge. The paper describes the generics as major issues for the pharmaceutical market and physicians and consumer perception of generic versus branded drugs.

This paper also discusses different way of communicating the pharmaceutical brand to their ultimate potential customers. While the core principles and strategies for communicate, the pharmaceutical brand are same for any brand, there are some difference for the medical brand, as the pharmaceutical industry is highly regulated and differences in regulations and marketing of the pharmaceutical brand.

In addition to the secondary research as collected form the different resources like library books, internet search discussed in this paper additional primary research is conducted to get answer for several questions pertaining to consumers view on branded versus generic drugs in term of price, different attributes affecting their purchase decision and advertising difference between branded and generic drugs. The primary research also involves interview of healthcare practitioner to get the answer on different attributes affecting their prescription behaviour while making choice between medication. Lastly, give some insight on the future of pharmaceutical branding.

3 Literature Review

3.1 Concept of Branding

According to American Marketing Association, brand is a "name, term, symbol, design, or a combination of them, intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of the competition" (Sarin, 2013). This means that brand essentially is a seller's promise to the buyers to deliver consistently a specific set of features, benefits, and service.

According to Moss, a brand is a name that will register the product in the consumer's mind as a set of tangibles, that is rational and intangible, that is irrational, benefits. A product on its own delivers tangible benefits, whereas a brand offers additional value that arc both the tangible and intangible benefits. (Moss G, 2004)

According to Kotler, a product is anything that can be offered to the market for use or consumption that might a need or want. (KOTLER, 2009) It may be physical good, service, retails store, person, and organization or place or idea. According to Kotler a brand can conveys up to six levels of meaning: attributes and features, benefits, values, culture, personality, users. The value, culture, and personality define the essence of brand. (KOTLER, 2009)

Levitt (As cited in Keller,2005) adds that brand is a product, but one that adds other dimensions that differentiated it in some way from other products designed to satisfy the same need. Additionally, the sum total of consumer's perceptions and feelings about the product's attributes and how it performs, about the brand name and what is symbolizes, and about the company associated with the brand, are the elements that distinguish a brand form it unbranded counterpart. (KOTLER, 2009). The goal of a brand is not just to be remembered, or to differentiated from the competitors, but to be only answer to what the audience needs. (Malone, 2014)

3.2 Function of branding

The function of branding is to create a distinction among entities that may satisfy a customer's need. A brand serves as an unmistakable and recognizable symbol for the product and service. A brand fulfils key functions for buyers and seller alike,

3.2.1 Buyer's benefit

- It helps buyers to identify specific products, thereby it reduces search costs and assure to buyer a level of quality.
- By purchasing brands that symbolize status and prestige, the customer reduces social and psychology risk associated with owing and using wrong product.

3.2.2 Seller's benefit

- It facilitates repeat purchase by making able to customer to identify and re-identify products.
- It facilitates market introduction of new product and promotional efforts
- It facilitates market segmentation
- It facilitates brand loyalty in customer mind.

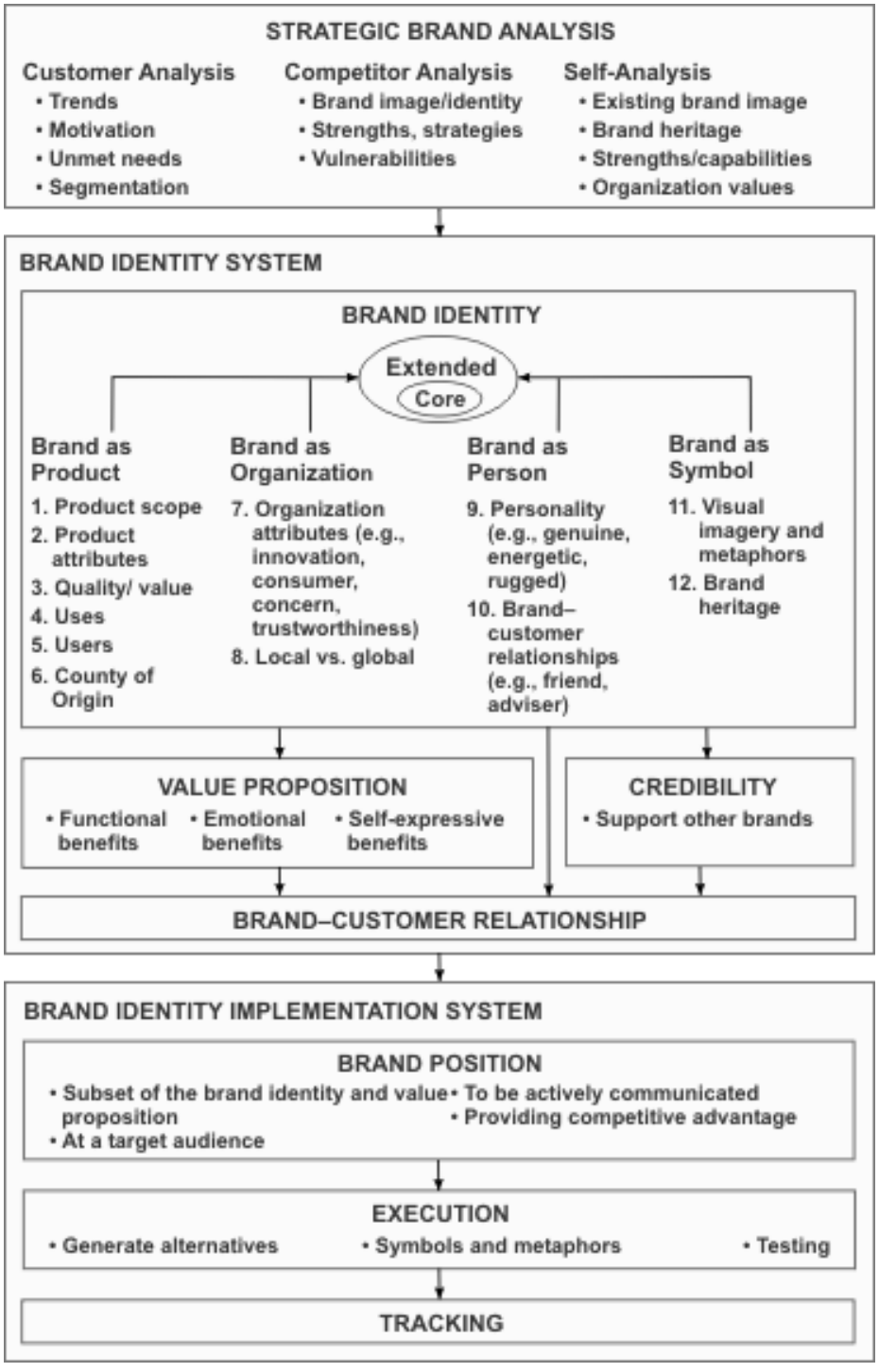


Figure1. The Brand Identity Planning Model
Source: (Aaker, 2010)

3.3 Brand Identity

There are several concepts and models for brand strategy planning and its execution. The most comprehensive is Aaker's Brand identity. The structure of Brand identity is summarized in Figure 1.

According to Aaker the brand identity is, "A unique set of Brand associations that the brand strategist aspires to create or maintain. These associations represent what the brand stands for and imply a promise to customer from organization member (Aaker, 1991)

Aaker advises brand strategist to consider the brand as:

1. A product
2. An organization
3. A person and
4. A symbol

The purpose of this Brand identity model is to help brand strategist consider different elements and patterns of brand that can clarify, enrich differentiate an identity.

Brand identity structure includes a core identity, an extended identity and a brand essence. The extended brand identity describes the brand's aspiration in six to twelve dimensions, the core identity comprises only the most important elements. Brand essence captures the soul of the brand and one of its key functions to communicate and energize people within the organization (Aaker, 2000). Externally brand identity is communicated as a value proposition that comprise Functional, Emotional and Self-expressive benefits.

3.4 Brand Equity

Brand equity is an expression of present and future value of brand in terms of its business potential. There are many approaches to brand equity measurement.

Aaker defines Brand equity as, "the set of brand assets and liabilities linked to the brand - its name and symbols – that add value to or subtract value from a product or service. These assets include brand loyalty, name awareness, perceived quality and associations." This definition stresses to 'Brand- added value' but it does not make clear distinction between added value for the customer and added value for the brand of brand owner or company.

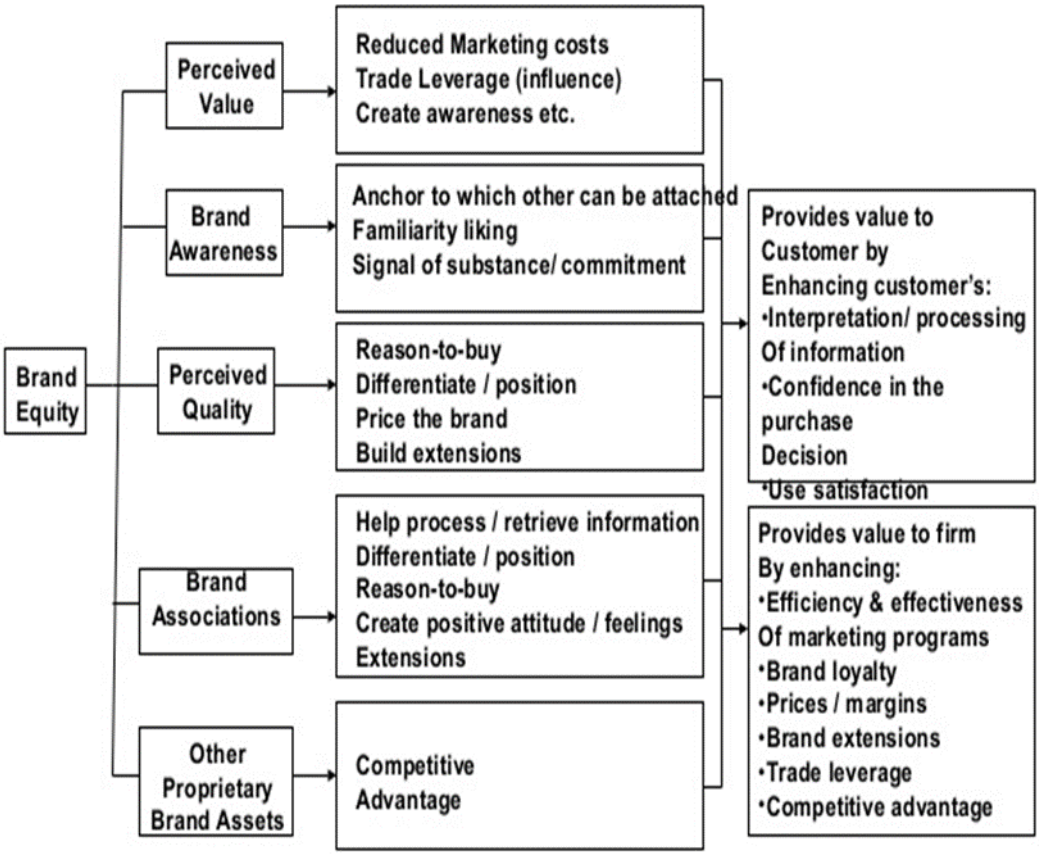


Figure 2. Brand equity Model
Source: (Aaker, 1991), (Kevin Lane Keller, 2008)

David A. Aaker (Aaker, 1991) identifies five equity components

- Brand loyalty
- Brand awareness
- Perceived quality
- Brand associations
- Other proprietary assets.

This brand equity model can be used to gain insight into the relation between the brand equity component and its future performance.

Kevin Lane Keller's (Kevin Lane Keller, 2008) Customer Base Brand Equity Model describes the process for building a strong brand. Keller defines as, the differential effect that the consumer's brand knowledge has on their response to the marketing of that brand.

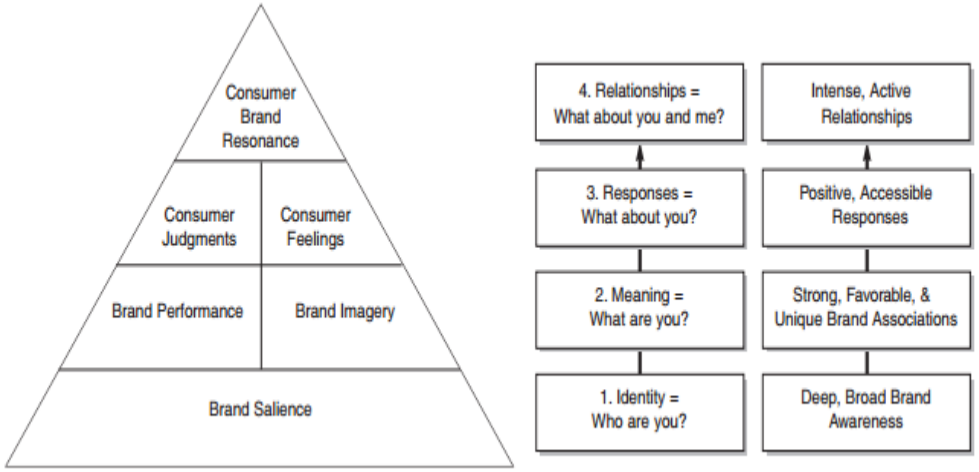


Figure 3. The customer based brand Equity model
Source: (Kevin Lane Keller, 2008)

This model describes six dimensions of brand equity, (Kevin Lane Keller, 2008)

1. Brand salience
2. Brand performance
3. Brand imagery
4. Consumer judgments
5. Consumer fillings and
6. Brand resonance.

In Keller view, resonance can attain when the consumer has a high level of awareness of brand and consumer holds some strong and unique brand associations in mind.

3.5 Need of branding in pharmaceutical

The branding process came late in pharmaceutical industry. During the 1980s and 1990s by traditional method of marketing the pharmaceutical industry was achieving double digit growth on a consistent basis. As the time lapse the easy growth environment change and growth has been going slowing down and company have been searching and trying to innovative ways to maintain the growth. The three traditional factors of the industry are less evident than in the past. First, company facing too much difficulty in finding any appropriate drug that gives high growth and product innovation become costly than ever in the past. Secondly, the patents of many of successful and growing drugs has going expire soon within next 5 years for more than half of the global top – 50 best sellers. Thirdly, as the industry consolidates the sales efforts are reaching to saturation level and will not possible in the future to get success just on increasing the number of the sales representative and promoting a product.

However, the past is increasingly becoming irrelevant in a world of constant disruption. Return on investment made in traditional models has become unviable. The pharma marketers are going to fail to make decisions based on intuition that was acquired a decade back. There is a clear need of design branding strategies so that give a unique advantage to sustain growth in the future. (AGARWAL, 2016)

The pharmaceutical industry has changed significantly in the last few years, not least in the sales arena, drug licensing is changing. In past, regulators prioritizing the licensing of innovative drugs that only fulfilled high unmet medical need for a small number of patients including cancer and HIV medicines. Now, this regulators and licensing agency forcing more to pharmaceutical industry for scientific and legal expectation and are demanding access to potentially life - saving drugs that meet unmet medical need. For decades, a pharmaceutical company's brand strategy was to just discover a drug that was needed and introduce to doctors via sales representative, and wait to get prescription filled. With several changes in medication marketing and advertising regulation force pharmaceutical company to find innovative way for brand strategy to get prescription from doctor.

Pharmaceutical company is facing many changes such as doctors being overwhelmed. Many employers are pushing the cost of healthcare on their employees through defined- contribution health plans and giving consumer more choice to spent. New MNCs are emerging, who are aggressively working around patents to launch branded generics before the expiration dates that giving more option to consumer to buy something over premium brand. With retail, brands are now competing with generic drugs, alternatives and complementary treatments, and FMCG healthcare.

Apart from this backdrop, the generic competition also developing an increasing threat for the pharmaceutical industry. At after the expiration of a patent, because of the generic competition the company forced to lower profit margins and price, revenue can quickly diminish.

Despite the lack of clear focus on the branding the industry does not realize that it is managing brand not a product and it has all the elements that make a brand.

Pharmaceutical branding creates awareness of potential benefits of drugs and medicines. During the new drug the branding remains under patent and once it expires the name of the drug must be changed. In pharmaceutical industry "positioning" is important element for prescribing the drug and to enhance its performance to physicians. Other elements companies using for branding are: name, slogans, logos, characters, symbols, and packaging.

Pharmaceutical company also using the ways of condition branding and corporate branding for market their products and to create brand awareness and loyalty. Some research shows that pharmaceutical branding not work. Because of the regulatory regime and the return on investment of direct –to – consumer advertising, the pharmaceutical company has had to re-think their advertising strategies.

3.6 Different Brand strategies model used for Branding

3.6.1 Brand Name Strategies

In pharmaceutical industry, pharmaceutical brands have two names;

1. The brand name and
2. The generic name.

The generic name is present throughout the development process and one will be used in scientific publication.

 Chemical derived names: This branding name strategy has been the traditional way of giving brand name to pharmaceutical products. In this branding name strategy, the scientific name of the substance used. For example, Captoten for Captopril, Cipro for Ciprofloxacin. The problem with this strategy is that brand name is too generic and may speed generic penetration and does not give unique name for international market. The name is more difficult to protect from legal point of view.

 Therapy names: These brand name strategies use the indication of the disease the product treats. For example, Procardia brand for the patients suffering from heart problems. The main difficulty with this brand is that the brand name can easily imitate and more difficult to protect from legal point of view.

 Use or indication name: This brand name easily describes a use or characteristics of a brand. For examples, Glucophage, Gardizem, Prilosec. The problem with this strategy is that it can be easily imitate.

 Family name or drug class name: This strategy give the name to new brand similar to other products in the same class and is registered by the same company. The name may be the semi descriptive of a drug class. (Anon., n.d.)

 Corporate name: The name may contain some identifiable portion of the corporate name. For example, Baycol or Glucobay(Bayer), Novarapid (Novo Nordisk). This brand name strategy is only powerful when the corporate name is well known and strong positive association. The big risk with corporate brand naming strategy is risk of failure of a product in the overall portfolio of brands.

3.6.2 Global Branding Strategy

Global branding offering brand that has standardized product to every international market and having standardized strategy and marketing mix to offer one standardized product.

In pharmaceutical industry because of the pressure financial community there is more difficult to achieve top-line growth and therefore there is pressure to cut cost to

maintain growth in profit. In that case, the globalization of brand is one way to benefit economies of scale.
The global brand is- Viagra from Pfizer, Vioxx from MSD, Keppra from UCB.

The course of action for the brand globalization considers that;

- Both doctors and patients (consumers) are similar in terms of their desires.
- There is no need to work so often with individual regulatory authorities.
- In reduction of costs at all levels will significantly improve returns on investments.
- One single image and positioning can be created worldwide.
- By communicating one massage with global organization more power can be achieved among consumers.
- Global brand reduces confusion and provides consistent information on a global basis.

The opponents to global branding strategies arguing that;

- The consumer needs vary significantly by markets.
- Identical drug compounds are sold under different names in different countries.
- Regulatory approval systems still can be influenced nationally.
- Pricing differs between markets.
- The perception of the disease and medicine practiced might be different from country to country.
- Problems with one product may affect other products within the company very quickly. (Schuiling & Moss, 2004)

3.6.3 Brand Extensions and Line Extensions

3.6.3.1 Brand Extensions

Brand extension involves the use of a brand name established in one product class to enter another product class. (Grime, 2005) Pharmacists are one of the key influencers in the naming process. They fear the increasing chances of a dispending mistake if brand names are extended.

Sometimes with the same brand name or with different brand name one product is marketed for numerous different diseases at the same time. Bupropion hydrochloride is one example-it is marketed by GSK as Wellbutrin for depression and as a Zyban for smoking cessation.

The problem with this brand extension strategy is that products have been associated with patient and doctor confusion about the products' ingredients, strength and concentration. This confusion has led to medication errors in which the wrong product or does was administrated or the product was used when contraindicated. (Michael J. Gaunt, 2014) The extension of the Allegra brand name increase the risk for a consumer to mistakenly believe that products that share a common proprietary name contain the same actively ingredients. If patients do not identify that these products contain diphenhydryamine that may use another topical or oral

diphenhydriamine product in addition to the Allegra product. The overuse of dyphenhydramine can have serious adverse effects including hallucinations, hyperthermia, tachycardia, and convulsions that may necessitate treatment or hospitalization.

3.6.3.2 Line extension

In line extension branding strategy, the brand manager uses the established product brand name for a new item in the same product category.

This strategy sometimes allows pricing flexibility, and more often improves the competitive dynamics a number of years after the original launch.

3.6.4 Co-Branding

In this concept two known brands are working together in developing or promoting a new product. These association can be short term and more related to co-promotion activities, or long term where both companies have long term agreements to develop, launch and promote a new product behind both brand names. The idea behind these strategies is to gain benefit from the awareness, image or technical excellence of two equally known brands.

3.7 Major challenges for pharmaceutical industry

3.7.1 Weakening patent protection challenges

The biggest disruption is the new influence of a familiar presence: generic drugs. In the past multinationals, pharmaceutical companies faced little competition for patented drugs, which in turn allowed the drug manufacturers to maintain high price and margins on each drug sold. Now, that is changing. The impact of over-the-counter and generics have more underlying now than it has ever been, it will be even more pronounced in the next few years. (Marcus Ehrhardt, 2012)

The rise of generics, turn with the high cost of drug development, places tremendous price pressure on products made by multinational pharmaceutical companies.
Generally, it is shown that when the patent for the branded drugs is expires, the generic manufactures enters into the market with equivalent drugs to the brand or innovator's drug. The generic drugs are entering into market with significantly lower price. The European commission's investigation shows that the average price of generic drugs 2 years after its entry is around 40 % below the price of the former brand name products (European commission 2009). These pricing strategies put immense pressure on the innovator company to reduces the branding drug price that leads to drastically falling revenues. The best-selling drugs in history, Lipitor® shows a drastically decrease in sales after exhaustion of its market exclusivity.

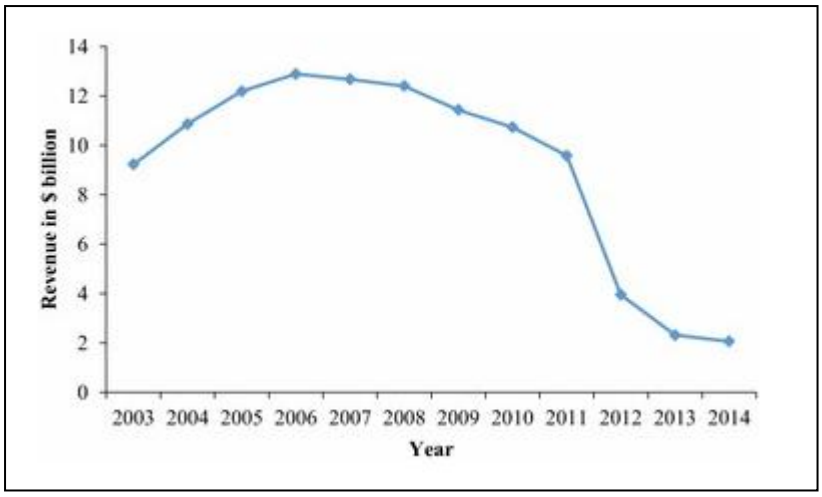


Figure 4: Worldwide revenue profiles of Pfizer's Lipitor® 2003–2014
Source: Annual and Financial report from Pfizer (Han, 2016)

The patent wave began in 2001 when the popular antidepressant drug Prozac (fluoxetine-Lilly) became available generically. Since then, it is estimated that more than $158 billion in bran sales has lost patent protection. In between 2013 and 2017 more than $78 billion in annual brand drug sales are at risk for losing patent protection. (Center Light Healthcare, 2013)

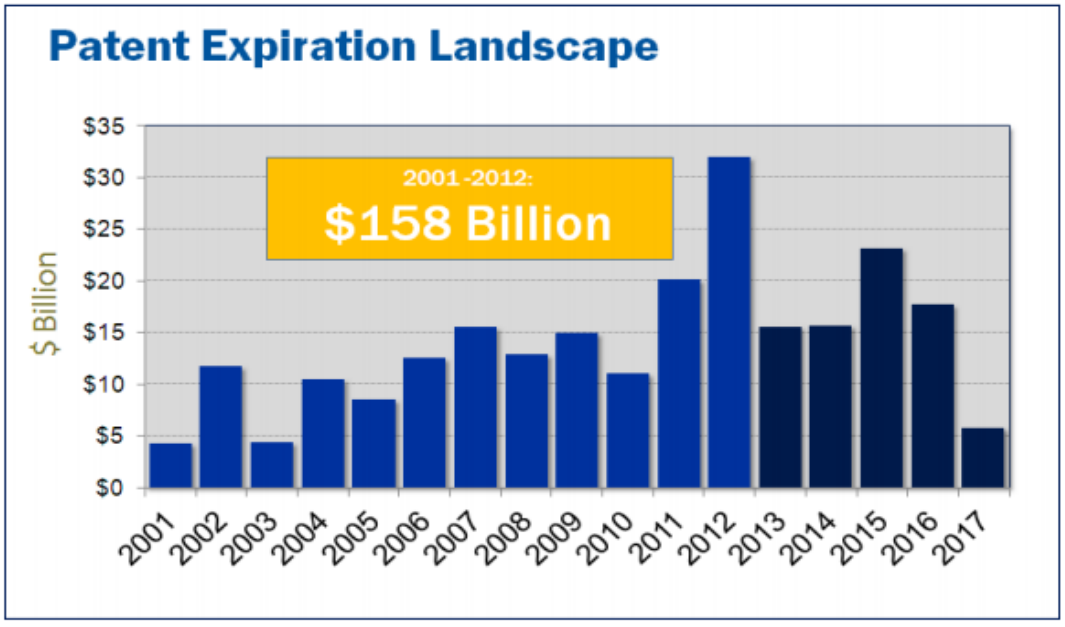


Figure 5: Patent Expiration Landscape
Source: Express Script Holding Company (Center Light Healthcare, 2013)

When patent for many highly growing drugs expired then the Hatch-Waxman Act of 1984 started to put into motion the infamous "patent cliff" era of 2010-2013 for the generic industry. The provision of this act was to give FDA approval to generic drug companies.

Some major drugs- like Plavix (clopidogrel), Singulair (montelukast), and Lipitor (Atorvastatin), - faced patent expirations in the US market for branded product and started to increase generic competition.

According to Evaluate Pharma, between 2009-2014 a $120 billion in sales was lost to patent expirations. Evaluate Pharma also forecast that $125 billion will be at risk due to patent expiration between 2015 and 2020.

Once drug patent expires the generics tend to acquire 80%-90% of total drug sales. According to data from IMS, in developed market between 2014 and 2018 small molecules product worth $121 million will lose patent protection. The IMS also forecast that biological products of worth $48 million will lose patent protection over the next three years. (VanEck, 2016)

According to estimation done by IMS, the generic drugs market will constitute 52% of global pharmaceutical expenditure growth against 35 % growth of branded drugs. The IMS also forecast that generic drug revenues will climb to $442 billion in 2018 from $27 billion in 2014.

The figure shows the list of major drugs going off-patent in 2016.

Drug (trade name)	Date of expiration/country	Company	Application area
Alimta®	2016/US	Eli Lilly	Cancer
Benicar®	2016/US	Daiichi Sankyo	Blood pressure medication
Benicar HTC®	2016/US	Daiichi Sankyo	Blood pressure medication
Crestor®	2016/US	Astra Zeneca	Lowering LDL cholesterol
Cubicin®	2016/US	Merck	Bacterial infection
Zetia®	2016/US	Merck	Lowering LDL cholesterol
Baraclude®	2016/JP	Bristol–Myers Squibb	Antiviral medication (hepatitis B virus)
Glivec®	2016/EU	Novartis	Myeloid leukemia
Vfend®	2016/EU	Pfizer	Antifungal medication

Figure 6: Patent expiry of branded drug in 2016
Source: (Han, 2016), IMS 2012

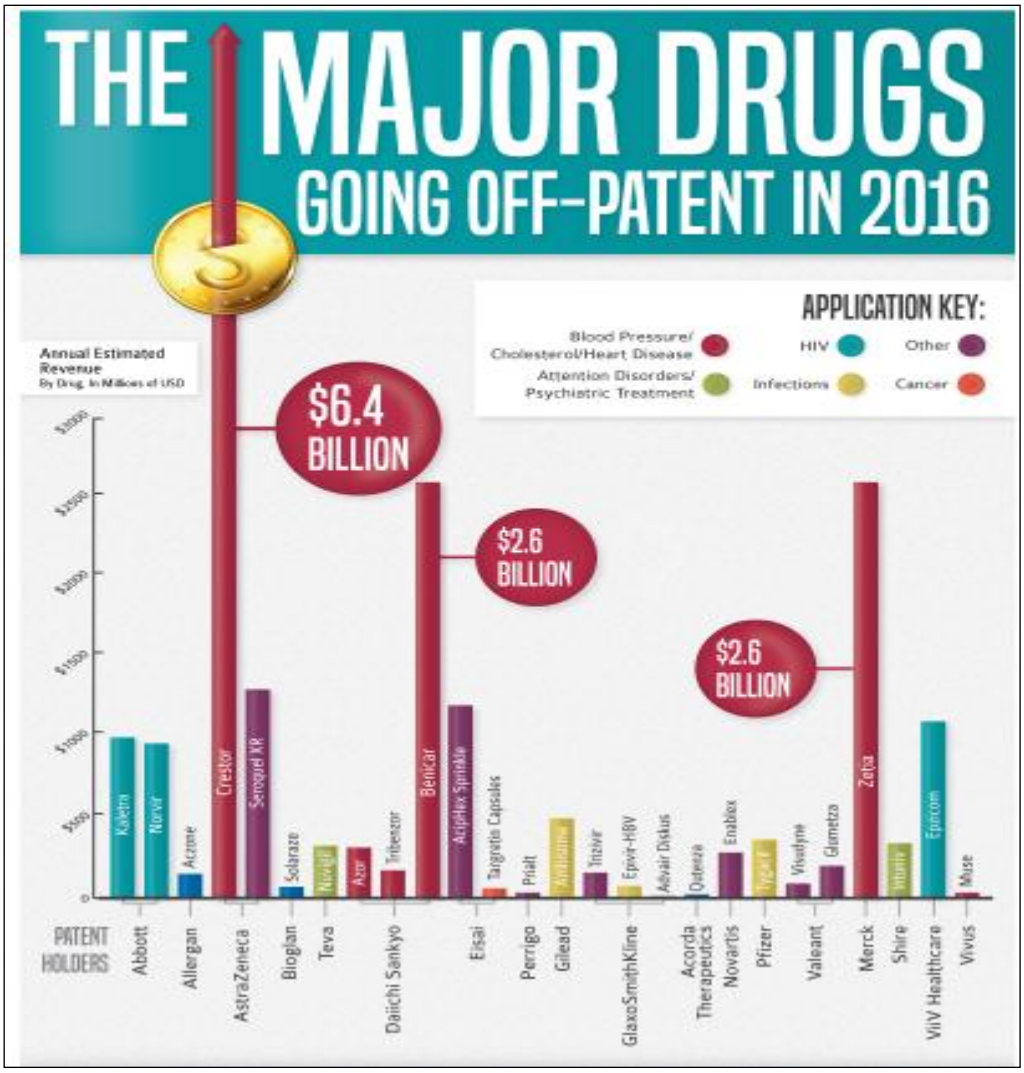


Figure 7: The major going-off Patent in 2016
Source: Dickson Data (Renoe, 2015)

3.7.1.1 The Branding Business Model to defense generic competition

Today, there is an explosive growth of generic industry. As we seen that the combination of generics industry growth and patent expirations hinders braded drug companies' success since the brand team must organize and develop patent defense strategies against generic drugs, even before launch of the generic drugs. In line with of growing threats of generic industry, an ever-expanding menu of patent and generic defense strategies have been evolved. To avoid loss of profit their management team of branded drug companies prepare early and quickly in the product life cycle of the brand drugs. To defend against generic competition the teams of branded drugs companies trying to develop and implement their anti-generics strategies as early as possible.

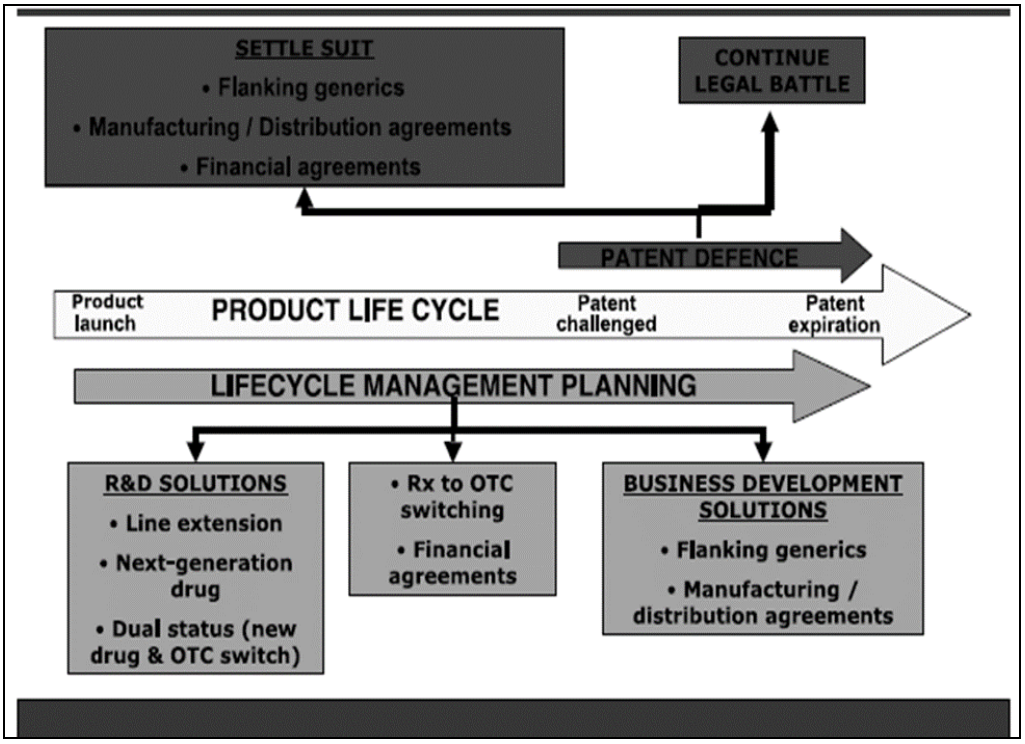


Figure 8: Generics Defense Strategies
Source: Combating Generics: Pharmaceutical Brand Defense1 © Cutting Edge Information (Litalien, 2005)

When developing generic defending strategies plans, brand teams may choose from the following commonly used strategies:

- Defensive pricing
- Increased marketing and promotion
- Approval for additional indications
- Next generation product launches
- Patent litigation
- Authorized generics and corporate generics subsidiaries
- Paediatric extensions
- Rx to OTC switching
- Measure resource levels against other companies' budgets and staffing support for anti-generics efforts, and review case studies of anti-generic battles, discussions

3.7.1.1.1 Defensive pricing

The defensive pricing strategy is one of short-term strategies and have been the most popular counter-generics tactics for pharmaceutical brand teams to pursue over the last four years.

3.7.1.1.2 Increased marketing and promotion

Defensive companies will invariably respond to new generics enters in their ad campaigns. A better advertising strategy is to reposition the product, stressing the features that the generics is weak on or doesn't have. Such advertising can work without changing the product. However, in other cases, the marketing strategy will also involve some kind of product improvement.

3.7.1.1.3 Approval for additional indications

Most of the brand drug companies try to use line extension strategies as generic defence strategy with a greatest indigenous hope for success lies in the use of and approval for additional indications of older therapies. A good example of these strategies is the therapeutically potential of thalidomide in the treatment of multiple myeloma.

3.7.1.1.4 Next generation product launches

This strategy of next generation product launch is one of the most successful strategies for retaining the market share as a defend strategies. To keep the evergreen life cycle of the branded drugs it is crucial tactic to switch patients from a successful, yet threatened, branded product, to its next generation drug. For branded drug companies transfer of their existing franchise of patients to a next generation drugs shows millions of upsides. For example, AstraZeneca made Naxium purple and very similar looking to the original Prilosec as next generation product launch.

3.7.1.1.5 Patent litigation

Amongst the generic defence strategies, the patent litigation strategy remains one of the most commonly used strategy.

According to report of Lex Machina, a LexisNexis company and creator of Legal Analytics® ANDA patent litigation has risen sharply. Between 2009 and 2013, the average number of ANDA cases filled each year was 269, but over the last two years the average number of filling rose to 451- a 60% increase.

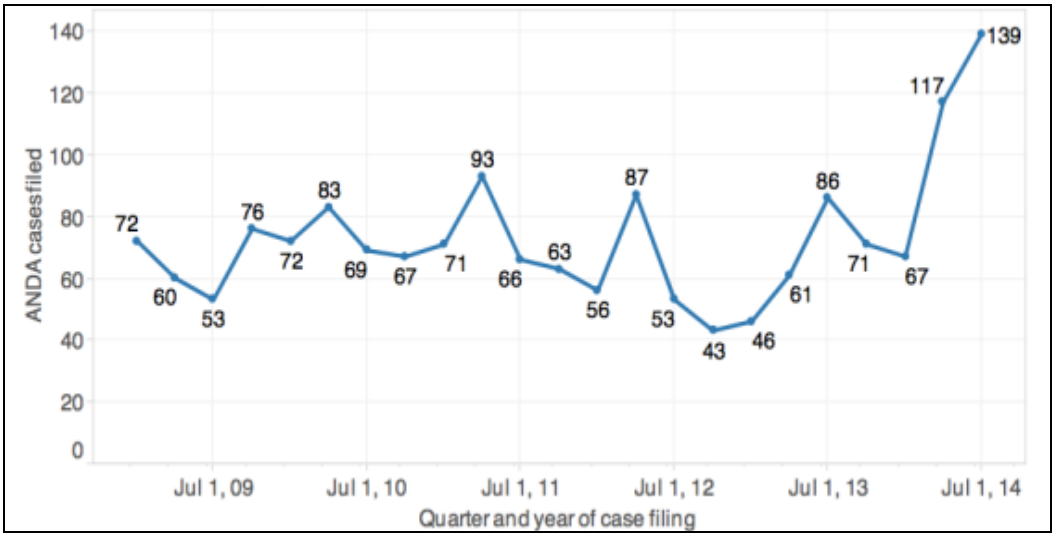


Figure 9: ANDA case
Source: Lex Machina, a LexisNexis company and creator of Legal Analytics® (Park, 2016)

As an example, Teva settles Patent litigation with AstraZeneca allowing Teva to commercialize its generic version of BYETTA® (exenatide injection) in the United State. (BusinessWire, 2016)

3.7.1.1.6 Authorized generics and corporate generics subsidiaries

According to this strategy authorized generics leg up on competitor generics which are similar to the brand-name product and they can bypass a competitor generic's 180-days exclusivity period.

According to a credit rating agencies Authorized generics and Corporate Generic subsidiaries are becoming increasing important and common strategies for protecting market share and competing with the generics drugs. In the past, few years the number of authorized generics that enters in the market has increased significantly.

AstraZeneca has used this approach with Toprol-XL (metoprolol succinate). When the Eon Labs launched generic version the brand maker had introduce its own generic version under an agreement with Par Pharmaceutical.

Novartis launched generic Lotrel (amlodipine besylate/benazepril HCl) through its Sandoz division as a generic defending strategy.

According to study by cutting Edge Information companied earned more than $230 for every dollar spent on their authorized generic strategies.

Figure 10: The Breakdown of return on investment for various lifecycle management
Source: (CuttingEdgeInfo, 2013)

3.7.1.1.7 Pediatric extensions

According to the FDA's Modernization Act, pharmaceutical brands can get an additional six-month marketing exclusivity period in case if company can provide detailed pediatric data. During the prolonged exclusivity period the brand manufacturer will have right of the sole supplier and prevents any generic competitors from reaching the market. Simply conducting the agreed upon pediatric focused trials will earn a brand the additional six months' exclusivity even though the pediatric data does not reveal positive efficacy.

The highly-prescribed drugs such as ranitidine and ibuprofen were the first drugs that benefited from the extra six-month exclusivity period.

In March 2010, by conducting trials for the product, Taxotere for use in children, Sanofi-Aventis earned an additional six months of patent protection for its cancer therapy. Through the extension Taxotere earned revenues of at least $1 billion With sales of over $2 billion. In a written request for pediatric trials, the FDA asked Sanofi-Aventis for three studies.

The letter detailed the studies as follows:

“Types of studies needed:

- Study 1: A dose-finding Phase 1 study of Taxotere® monotherapy in patients with relapsed refractory solid tumours, including pharmacokinetics, with doses determined for all appropriate age groups. (CuttingEdgeInfo, 2011)

- Study 2: A Phase 2 single-arm study to determine the response rate and safety of Taxotere monotherapy in patients with relapsed/refractory Ewing sarcoma, rhabdosarcoma and undifferentiated sarcoma, osteosarcoma, neuroblastoma, medulloblastoma, and astrocytoma. (CuttingEdgeInfo, 2011)

- Study 3: A randomized study to evaluate the addition of Taxotere® to the combination of cisplatin-5-fluorouracil (CF) versus CF in the induction treatment of nasopharyngeal carcinoma (NPC).” (CuttingEdgeInfo, 2011)

3.7.1.1.8 Rx to OTC switching

Because of increasing the pressure from patent losses and generic entrants and increasing R& D costs most of branded pharmaceutical companies are considering the feasibility of the switching drugs from prescription to over-the counter(OTC). This marketing strategy has been getting popularity over the past few decades. The companies like Sanofi and Eli Lilly are collaborating to develop an OTC version of the erectile dysfunction pill Cialis.

The switching to over-counter (OTC) strategy helps companies to provide reasonable and safe priced to legitimate drugs, and helps to gain control over generic rivals and protect consumers. The OTC product may help the companies to combat counterfeit and falsified medicine sold illegally via the Internet.

OTC provides access to another market and offers an add-on to remaining in the prescription market battling low cost generics.

The data from FDA shows that 110 ingredients or doses were approved as an OTC drug between 1976 and 2014. The most product category were antihistamines and drugs used to treat heartburn or acid indigestion.

Recently this strategy is used by AstraZeneca for its Prilosec b(omeprazole) that used for heartburn treatment and a number of other allergy treatments including Schering-Plough’s Claritin (loratidine), Sanofi’s Allegra (fexofenadine) and UCB’s Zyrtec (cetirizine).

There is some another issue like population ages and level dementia, cancer, diabetic diseases and cardiovascular disease are increases and drug makers are increasingly getting pushback on pricey drugs from private and public insurers. Pressure from international health systems motivates pharmaceutical companies to convert prescription to OTC products.

3.7.2 Regulatory Challenges

As we already know that the pharmaceutical industry operates in one of the most regulated environments. The pharmaceutical company must comply with a highly complex set of laws and regulations associated with license to operate and maintain. The pharmaceutical company must adhere to commercial compliance like Anti-bribery and Corruption (ABAC), off-label promotion and industry specific compliance obligations, like Good Clinical Practice (GCP), Good Vigilance Practices (GVP) and Good Manufacturing Practice (GMP) over the life cycle of the brand.

If ant pharmaceutical company fail to comply with these compliances and other regulatory obligations, the reverberation can be significant. The regulatory failures can be very damaging to trust and the agendas that companies have invested so heavily in over recent years.

Many Indian pharmaceutical companies have paid a heavy price for regulatory compliances, regulatory inspections, data falsification and quality issues in recent times. For an example in April 2016 Ipca, Emcure and Shri Krishna Pharmaceuticals all were cited for various GMP violations by the USFDA. It is showing that all small, mid-sized and large- sized pharmaceutical companies of varying ages are still struggling with the compliance issues. As another recent example is with Anuh pharma. The French regulator(ANSM) and subsequent withdrawal of a GMP Certificate at Anuh Pharma and WHO has removed two API produced by the company from its pre-qualified supplier list.

The failure to comply with the regulatory requirement and other compliances can adversely impact a company's reputations that leading to lost customers and reduces the capacity to win future work and decrease the market share of the company. Other long-term losses include delays to product approval and market uptake. invalidation of clinical trial results, import bans, loss of control of manufacturing facilities and decrease in the market share.

According to pharmaceutical industry experts, IMS Health, in 2011, the global pharmaceutical market was worth $880 billion, growing at 5-7% per year. Accountants Pricewaterhousecoopers (PWC) forecast a golden era for the global pharmaceutical industry, expecting it to be worth nearly $1.6 trillion by 2020

The government across the all-over the globe is trying to tighten up pharmaceutical regulations because the counterfeit drug market is growing rapidly. One institute estimates that 100,000 people in Africa lose their lives each year only because of the counterfeit medication. According to accountants Deloitte currently the market of counterfeit is value between $75 billion to $200 billion. According to estimation of The World Health Organisation (WHO) over 25% of medicines available in developing countries and 50% of products ordered online are counterfeit. (Leon, 2014)

In 2012, the Good Vigilance Practices (GVP) regulations were introduced. To comply with this Good Vigilance Practice(GVP) regulations the pharmaceutical company has had to respond by not only technology and process of brand development changes but also need to evaluate roles and responsibilities and to redesign organizational structure. The Good Vigilance Practices (GVP) regulations were seen to strengthen the safety monitoring of drugs, increase the use of post marking studies, improve transparency and strengthen generally the ability of regulatory authorities to further protect public health and clarify roles and responsibilities for branding. There has been a need for a significant investment in resource to promote compliance, which has placed a greater burden on pre-existing legal and compliance groups.

3.7.2.1 Pharmaceutical company's responses to new regulations

Regardless of location, size, sales revenues and where does company rightly exist in its growth continuum one of the most challenge it faces is of managing regulatory compliance. Every pharmaceutical company must adhere and continuously adapt to changing regulatory compliances over the lifecycle of the brand or product while managing cost and resources that are required to fulfil those requirements.

When company trying to develop new business models and going to develop new markets, completely new regulations come into play and the pharmaceutical company need to be fully understand these regulations and new regulatory system. The company must have developed a new system of in-house standards and procedures and the staff should fully have trained as the new standards are established throughout the business.

As an example, an Indian pharmaceutical company is familiar with good Manufacturing practice(GMP) will most likely now need to understand and implement Good Laboratory Practice(GLP) and Good Clinical practice(GCP)in a such way that meet the regulatory requirements for the perspective customers in multiple countries, internationally and globally.

So, if any pharmaceutical company need to develop new market for its products and services it has to manages the compliance requirements and need to understand the regulations in each and every country of operation, regardless of language. The pharmaceutical company must to balance all the regulatory requirements with often conflicting demand and pressures caused by the market, competition and changes in technology.

In each and every stage of product or brand life cycle and each and every country of operation the company need to understand, compare and contrast the regulations to develop the most effective strategy to maintain long term viability of the brand. The company constantly need to access up to-date regulatory requirements repository that are issued by each regulatory agency. The company must also seek the guidance of local regulatory expert of each country of operation in order fully understand the intent of regulations.

The regulatory requirement is under constant change in each and every country of operation and company need to struggle to dedicate the right level of resource to monitoring these changes. The problem is much complex when the documents must be translated into the local languages or English in operating country without losing the intent of the regulatory requirement.

The pharmaceutical company must act on the regulatory updates in a timely manner and also should provide training to all stakeholders to ensure company-wide compliance. Each staff members also should be trained in such a way that that ensure that they not just appreciate hoe of what they must do but also, they appreciate why of what is being demanded by the regulation agency and who of the person that are responsible for the ensuring the regulatory compliance in each operating business process.

Before and during the regulatory compliance inspection by the any regulatory agency the company must provide regulatory input to minimize the risk of future non-compliance.

The company need to develop a standard process that may transparently and clearly communicate product safety risk and efficiency to regulatory agency that will help company to re-establish a working relationship with stockholders and will built trust and openness.

The company should develop partnership with the FDA and other regulatory agencies to use technology to make more efficient approval process that leading to quicker and earlier approval and discovery of risk and safety issues that will help company to make the process better by and wait period for valuable resources can be decrease.

In recent years, many pharmaceutical companies are trying to develop a process to implement ‘New Commercial Models’ that changing the way to interact with the customers and other stakeholders including governments and regulatory agencies, doctors and patients. There is also more emphasis on launching ‘me too’ products that being approved to encourage pharmaceutical company to be more innovative and to invest in therapeutic area where healthcare and medicines solutions are lacking. These are the areas where company can add more value to FDA and other regulatory agencies by proving technology help to assess safety and efficacy concerns.

Regulatory process and the challenges can vary widely by product and geographically. Each and every company’s regulatory experience, expertise and investment will vary depending on work the company focused. For example, a company that is primarily working at late preclinical and early clinical phase research will be more focused on clinical trial protocols as compared to an organization that is working at late stage development and preparing to register a new product.

The 2015 saw some significant changes in the pharmaceutical industry. The added complexity means also add new challenge for the operating pharmaceutical company in the industry. The company must document all products and all process to be able to identify and trace products and should stay in tune with suppliers, manufactures and distributes.

Careful planning and any smart strategy may help the company to manage new complexities associated with regulatory compliances and to keep customers safe while protecting their brands. (LaTorre-Snyder, 2016)

3.7.3 Challenges for R& D

The actual challenges for the pharmaceutical industry is comes when we are putting pharmaceutical R & D cost in context to the output in term of numbers of New Molecules Entities(NME) launched to the market. It has seen that over the last 10 years pharmaceutical R&D expenditure has increased dramatically, while the approvals of the new medicine have decreased and many approvals of the mix of product has been shifted towards specialties, with lower commercial potential. This has led to a "productivity drought" in the sector.
This problem led to an increase in the number of new drugs from Phase 1 trials but despite this the attrition rate is higher than it was previously before 10 years and the probabilities of success is lower than it was previously.

It is shown that although outputs from some researched based pharmaceutical companies are remarkable like Novartis has launched 13 New Molecules Entities (NMEs) in the period of 2006-2014, contrasting the output per company to their R&D expenditure is up to 80 billion USD during the period of 20006-2014. This result shows that the company is really facing the challenges.

Figure shows that Abbott/AbbVie and Eli Lilly had invested more than 10 billons per NME while Boehringer Ingelheim, BristolMyers Squibb, Takeda and GSK all had spent 3–4 billion USD per NME. And Amgen, Novartis, AstraZeneca, Pfizer, Merck & Co., Sanofi and Roche each invested up to 8 billion USD per new drug approved by the FDA

Company Name	Total R&D expenditures (USD million) (2006–2014)	Number of FDA approved NMEs (2006–2014)	R&D efficiency (USD million/NME) (2006–2014)
Abbott/Abbvie	31,292	1	31,292
Amgen	30,437	6	5073
AstraZeneca	45,081	7	6440
Boehringer Ingelheim	22,920	7	3274
Eli Lilly	40,232	4	10,058
GSK	47,109	12	3926
Merck & Co.	62,745	9	6972
Novartis	72,100	13	5546
Pfizer	72,125	11	6557
Roche	78,340	9	8704
Sanofi	42,948	6	7158
Takeda	23,361	6	3893
Eli Lilly	40,232	4	10,058

Figure 11: R&D efficiencies of research-based multinational pharmaceutical companies (2006-2014)
Source: own made table from the Annual company reports, (FDA, 2008)

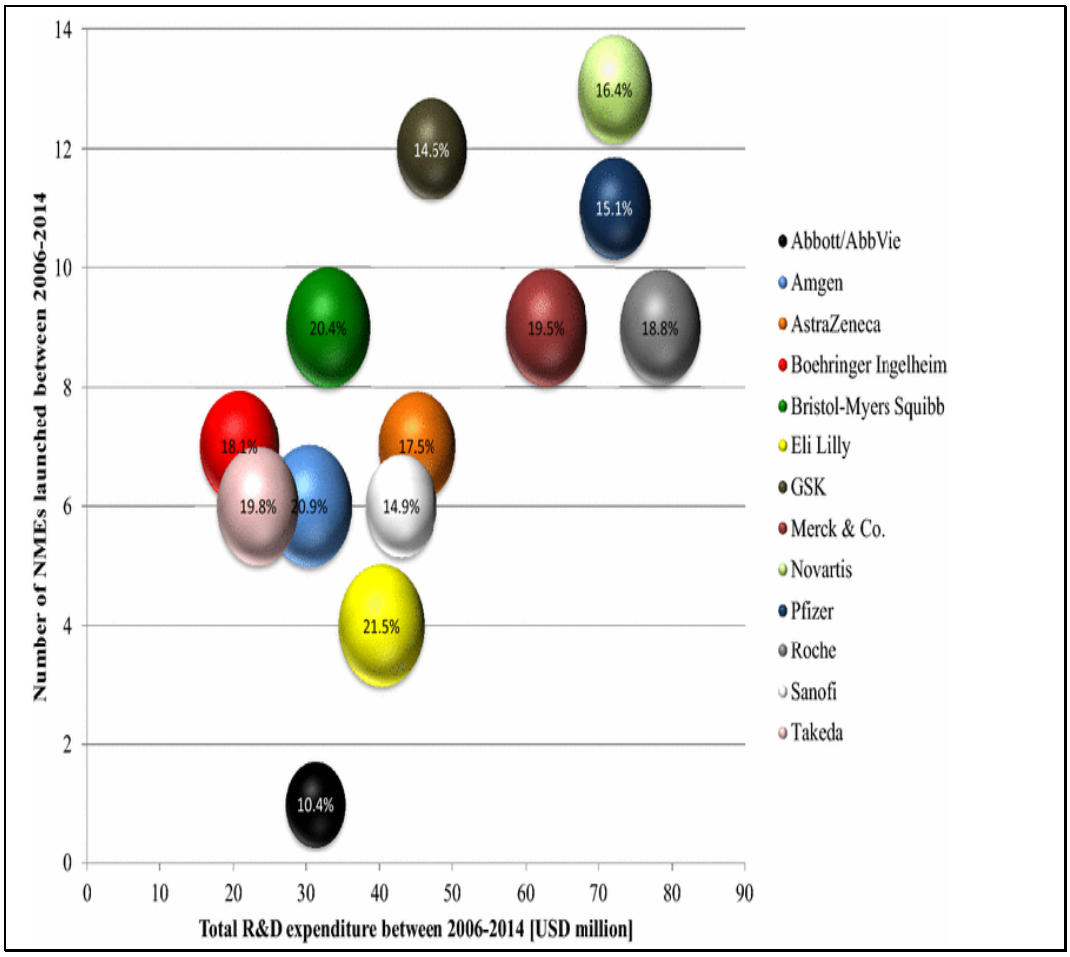


Figure 12: R&D efficiencies of research-based multinational pharmaceutical companies (2006-2014)
Source: Annual company reports, (FDA, 2008)

There are other reasons than attrition rates cause R&D efficiency negatively are,
• High burden for approval and reimbursement of New Molecules Entities in case of already approved drugs,

• There are high numbers of Mergers and Acquisitions(M&As) that have been reduce the productivity of Research and Development for the research based multinational pharmaceutical companies.
• The numbers of research based pharmaceutical companies taking the high financial risk of R&D is decreasing,

• A negative effect of licensing and joint venture on the clinical development and approval duration may produce negative impact on the efficiencies of the R&D productivity.

In the last few years, many pharmaceutical companies realized to change their R&D ecosystem as their low R&D efficiencies and productivity. Analysis of various research shows that 73% of investigated companies were making process changes in R&D.

Most of the pharmaceutical companies are using opportunities along the whole R&D value chain and access external innovation.

It is shown that AstraZeneca, Sanofi and Novartis uses the traditional collaboration and partnering types including corporate venture capital funds. There are so many other researched based pharmaceutical companies have use alternative open innovation models like innovation centre, open source innovation to virtual R&D and crowdsourcing.

Nowadays researched based pharmaceutical companies use more and more collaboration to get access to set of skills and technologies, like, the novel drug targets, animal model, validation model, disease expertise, etc. As an example, GSK is spending almost half of its R&D budget to collaboration partner from academia or biopharmaceutical industry. (Regalado, 2012)

Many companies are closing their own traditional R&D sites and opening a new research site which has close location with world class academic institutions to get better profit from their competences and excellences. The best example for this collaboration is with the Pfizer who has opened a new research site in Cambridge, Massachusetts, in 2014. (Pfizer, 2014-2017). In short collaboration in different forms between different pharmaceutical companies and biotechnology companies or different academic institutions are the normal today.

After the financial crisis of 2007, M&A strategy has become increasingly important in the pharmaceutical industry sector. By the Merger and Acquisition(M&As) strategy Pharmaceutical companies try to compensate revenue losses after the patent expirations, to access strategically important intellectual property (IP), to exploit technology based treatment innovations, to develop new core competencies, or to fill R&D pipeline gaps. (Schuhmacher A, 2013)

Thus, the R&D challenge is a multi-faceted problem that cannot be reduced to a single explanatory variable. However, the following five contributory factors have been particularly significant:

- Industrialization of the R&D process
- Duplication of efforts
- Risk aversion
- Consolidation of the industry
- Regulatory requirements

3.7.4 Emerging Market

The emerging market are expected to experience double-digit growth for the healthcare companies and it account for 30% of the global pharmaceutical companies spend by the end of the 2016. According to the report of Technavio's the emerging markets will be worth $600.7 billion by 2020. (Jain, 2015)
Although the Emerging market present a vast and untapped areas for any pharmaceutical companies but there is also potential risk and uncertainty are present to explore in this market that need to be considered before investing in this market for new development or the long-term viability of the any brand and business. The western pharma markets are becoming challenging to get growth. Not only drug pipelines are decreasing but the risk to develop innovative products for the regulated markets are constantly increasing.

There are manifold challenges that pharmaceutical companies face to develop their brand in the emerging market. Among that one challenges stand out above the rest is the Market Access for the particular brand. The other challenge that come into present is the 'patient cliff' the end of the patent expiration and entry of the generics is reaching in the emerging market and putting a significant share of sales at risk. Although this challenge is already discussed in the topic of the challenge of the patent expiration in the mature market, it will also hit the emerging market. The patent cliff has put sales at risk of total worth of $21.4 billion in the Asia-Pacific region, that corresponds to about 10 percent of the Asia-Pacific market.

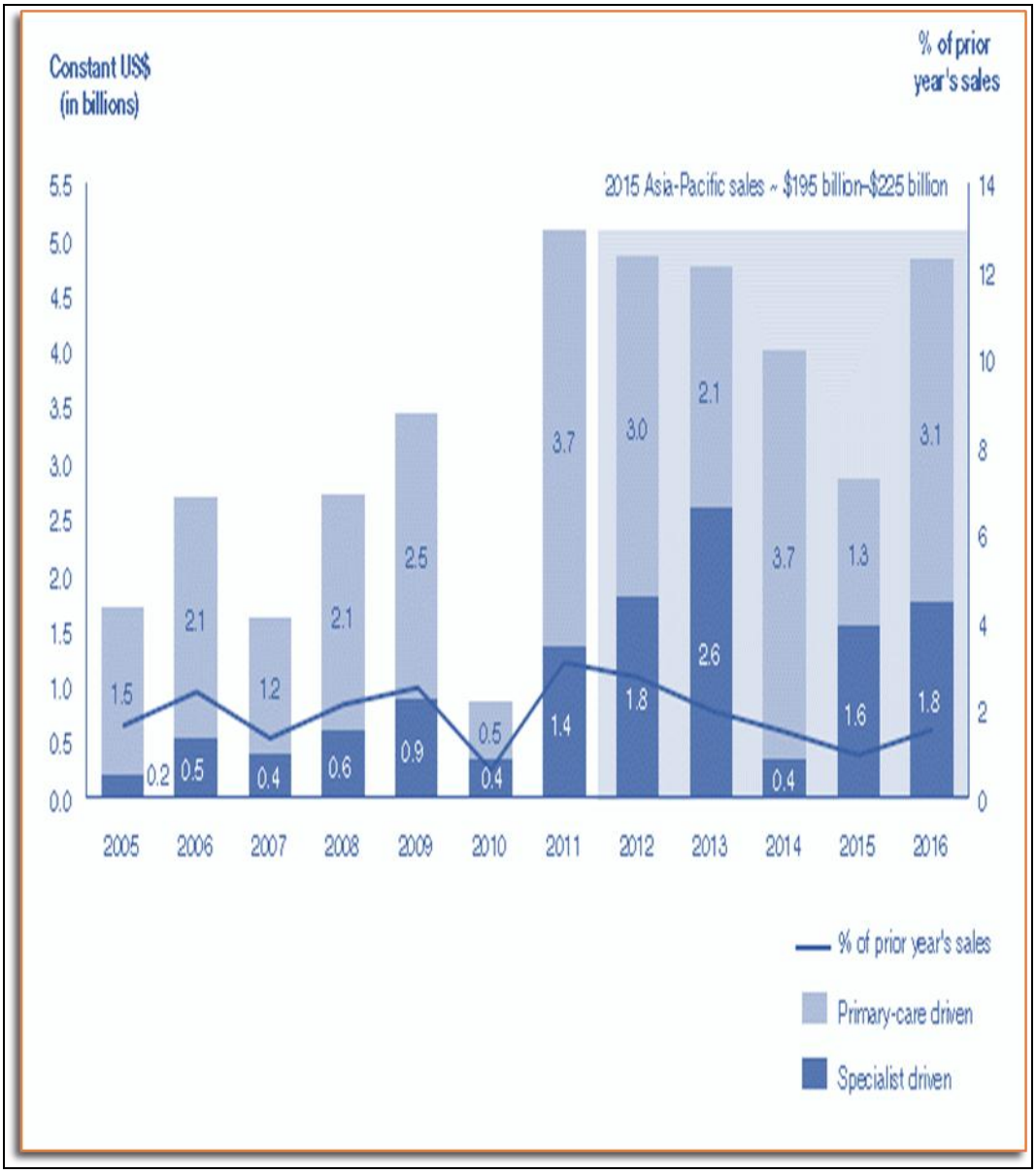


Figure 13: Value of product at risk,2005-2016 (Example: Asia-Pacific)
Source: IMS Asia-Pacific Insight, Issue 2, 2012 (Management Centre Europe, 2012)

The government in the emerging market are expected to extend the use of generic medicines to newer treatments which are increasing competition and price pressure on ethical brand pharmaceutical companies with a mature portfolio.

Another challenge to develop brand and to grow business includes lack of public funding, a lack of affordability and a weak healthcare infrastructure. As an example of this issues is the China particularly in the rural area of the country in the area of treatment of diabetic patients. In the rural area, due to the lack of basic healthcare infrastructure the patient need to travel a long distance to visit a hospital and due to this the number of undiagnosed diabetes cases is high. Many physicians haven't received even basic training in the treatment of the diabetic patients and mostly Chinese patient cannot afford the insulin treatment in the diabetics, so many diabetic patients either received treatment with oral antidiabetics or are not treated at all.

Thus, a lack of healthcare infrastructure and affordability are expected to be a bigger challenge for the pharmaceutical companies who produce expensive branded drugs for specialty care than for those companies that manufacture primary-care products.

In the emerging market, the price pressure on the brand medicine pharmaceutical companies is aggravated by the domestic competition, as the local competitors typically received support from their governments. The local companies are typically generic manufactures that are benefiting from approaching patent cliff.

The legal and regulatory issues associated with absence of transparency, lengthy processes surrounding tendering and contracting, and compliances are also challenging factors in the emerging market. India is the good example of this issues regards to intellectual property protection. In order to provide affordable medication to the Indian population the subcontinent is shown to provide legal support to generic local companies, even when it goes against existing patent laws and corresponding rules of the World Trade Organization of compulsory licensing.

Instead of valid patent protection, Bayer's Nexavar, a treatment for hepatocellular carcinoma, is facing competition from Natco Pharma. Due to the unaffordability of Nexavar among the general Indian population, the Indian government granted manufacturing and marketing rights for the drug Natco. Natco will pay 6% of net sales of its drug to Bayer as a royalty. Natco's version of sorafenib is priced at 97% less than the Nexavar. Natco able to provide therapy cost of drug around at Rs. 8,800 (US$171) a month, while Bayer's Nexavar costs each patient some Rs. 280,000 (approximately US$5,500) a month. (Wharton University of Pennsylvania, 2012)

According to, Technavio strategic alliances, mergers, and acquisition will be key for big pharmaceutical companies in pharmerging market growth through 2020. Big pharmaceutical companies are increasingly adopting partnership with local vendors to develop their new products.

In 2010, Pfizer did deal partnership with Laboratório Teuto Brasileiro company to develop its generic drug in Brazil.

In order to provide high-quality generic medicine in China, Eli Lilly expanded its strategic partnership with local manufacturer Novast Laboratories in 2011.

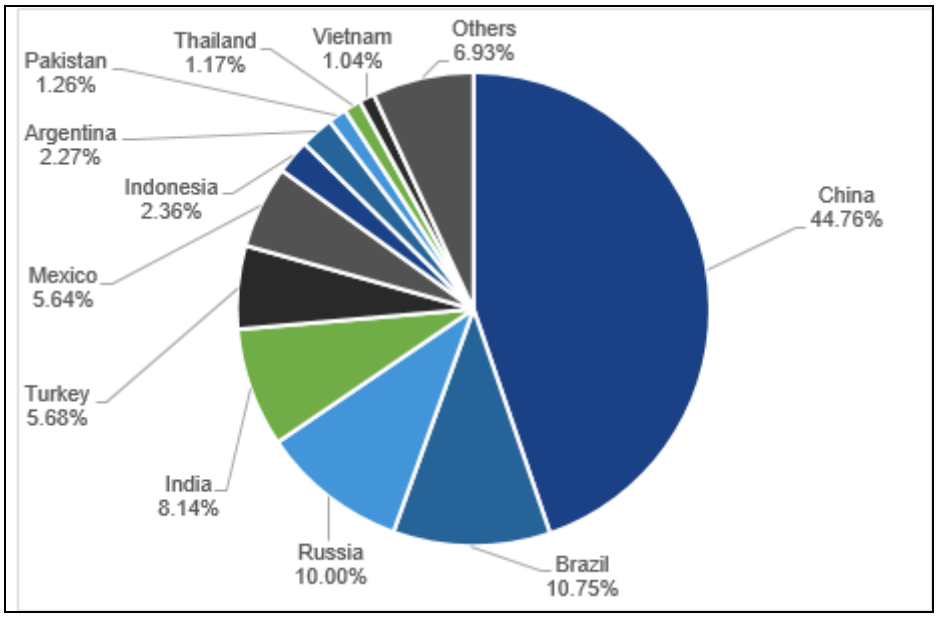


Figure 14: Pharmerging market share by country, 2015
Source: Technavio (Jesse, 2015)

In 2012, Roche had entered a partnership with Emcure Pharmaceutical in India to increase easy access and affordability for its breast cancer drug Herceptin and its lymphoma and rheumatoid arthritis treatment MabThera. (Jesse, 2015)

In lower-tier markets, pharmaceutical companies are likely to collaborate with local partners as the role of distributors in lower-tier markets is differs from that in more mature emerging market. In developed markets, pharmaceutical companies have been focusing for improving efficiency and driving out costs by significant layoffs, particularly in sales and marketing department. This savings was used to build up local operations in the emerging markets.

In Russia, GlaxoSmithKline supplies bulk vaccines to Binnopharm. The agreement includes pneumococcal vaccines, medication for rotavirus, and oncological drugs. Since 2011, Pfizer provides technology transfer and expertise to NPO Petrovax Pharma to increase production quality among local producers.

It comes from annual report of Nipro Corporation for 2015 that in Vietnam, Nipro generic producer in Japan, has announced plans to build a wholly owned generics production facility.

In November 2012, Sanofi laid the foundation in Saudi Arabia and it would be the first global pharmaceutical company having manufacturing plant with 100% foreign direct investment in the Saudi Arabia. This project highlights the importance rapid expansion in the emerging market for the Sanofi in order to maximize revenue-earning opportunities. (News, 2012)

There are several other examples that show that collaboration with government and quasi-government institution can take on many different forms. Specific examples are:

• Sanofi produces generic medicine for local market in Algeria by forming joint venture with a firm owned by Algerian government.

• GSK have been done deal with Brazilian government for set price and set volume for its pneumococcus vaccine for children by exchanging knowledge and technology transfer. (WHALEN, 2009)

• Bayer entered into an R&D collaboration with Tsinghua University in China. (University, n.d.)

• MSD initiated a research program with St. Petersburg State University.

3.7.5 Threats of Late Entrant: Me-too and Follow-on Drug; Changing the Market

Although patent protection and exclusivity, many pioneer brand do not remain the only player in "game in town" for a long time. Other branded drugs also known as me-too and follow-on drugs, can make incursion over the pioneer brand, even before the generics enter in the market.

Me-too Drugs: me-too drugs are minor variations of the original drug as they possess the same or similar mechanism, or have a related chemical structure. A me-too drug is a market follower as compared to pioneer brand, and it is the late entrant that offering a therapeutic solution that is very close to that of the pioneer drug. These drugs are either replicate or may provide a minor improvement over the products in their class. They are priced at same level of the pioneer brand or slightly lower than the price of the pioneer brand.

The entry of me-too drug is threats for the pioneer brand pharmaceutical companies as that diminished the incentives of for the costly breakthrough innovation. The market dominance of the pioneer brand can be reducing by the closely positioned, yet differently formulated me-too alternatives, despite the regulatory protection conferred upon FDA approval. The me-too drug can find a way of mandated exclusivity as it has relatively minor differences in formulation or in action that may encourage the generics and can place the pioneer drug under intense competitive pressure much sooner, diluting its sales and marketing share. (Min Ding)

Some historical studies show that the effective period of marketing exclusivity that was enjoyed by the pioneer drug in a specific class has declined dramatically—from a median of 10.2 years in the 1970s to a mere 1.2 years in the late 1990s—due to the market entry of me-too alternatives. (Dimes JA, 2004)

Follow-on drugs. In contrast to me-too drugs the inception of follow-on drugs is rather intentionally and their launch is timed to occur after the pioneer drug. Even some drugs that have gained FDA approval may have clinical shortcomings which is just not serious enough to terminate the project, but may also nevertheless be improved upon by introducing minor alterations to the chemical structure of the breakthrough drug. Such incremental improvements are called follow-on drugs.

An improved follow-on drug may surpass the pioneer drug through enhanced effectiveness, weaker side effects, or greater convenience, as done by Zocor ®, Lipitor ®, Symbicort ®, and Xyzal ® in their respective markets.

The me-too drugs and follow-on drugs can cumulatively raise the standard of patient care in the category, if me-too drugs are sufficiently well-differentiated, and if follow-on drugs present incremental innovations and may yield substantive treatment benefits, and enhance the value to patients. The presence of many drugs in a same category may not only increasing price sensitivity in the market, but can foster intense rivalry. The availability of too many alternatives in a same category can also provide leverage to health insurance companies to extract higher rebates from the drug manufacturers.

The branded drug pharmaceutical companies become more vulnerable to each other's fate. The loss of patent protection or market exclusivity by one member in the category can have a ripple effect on all competitors if their brands are close substitutes in terms of indications, applications, side effects, and dosage.

3.7.5.1 Defensive Strategy against Me-too and Follow-on Drugs

It has examined over a 10 years' horizon that these two strategies like breakthrough invention with relatively short-lived first-mover advantages, and late entry with differentiated or incremental innovations can be equally effective as a defensive strategy against me-too or follow-on drugs.

It is shown that over time, many breakthrough drug innovations are undergoing drastic changes in market share as they tend to start with a systematic above-average growth and may even they create a new market that can effectively dominate for a while, but they also will experience a steep decline not too long after their release as other alternatives emerge. In opposite, the sales of their follow-on counterparts can be more stable overall and may quickly reach their long-term market position.

3.8 Ways of communication(Promotion) of Brand in Pharmaceutical

In today's scenario, mostly pharmaceutical companies are adapting 'me-too' strategies to communicate their brands that results in high noise level.in such situation, companies need to create its own identity via adapting competitive and innovative strategies to promote their brands and capture the market. The brand communication in pharmaceutical marketing is mainly based on personal communication in comparison to non-personal communication like adverting, publicities, etc.

There are mainly four marketing communicators to communicate the brand in the pharmaceutical marketing, which give rise to a synergistic effect to communicate the product to its ultimate user and to gain a competitive advantage. They are as follows:

- Company
- Medical Representative
- Media
- Trade Channels
- Company:

The company is a group of people which having its own created credibility reliability and honesty. Most pharmaceutical companies are turning to strategically driven corporate brands to improve their financial returns. A better positioned, more highly trusted corporate brand result in company's positive image and good will into market that has an advantage in shaping the complex decisions of regulators, get positioning in consumer's mind.

- Medical Representative:

Medical representative is the pharmaceutical missionary sales representative who provides important information on drugs, product or brand to the physicians and also provides samples of drugs or product to physicians.

Medical Representative (Sales Representatives) are the best communicators of the brand to the end-user. It is always seen that Medical Representative of well-known company with good image get more response than the Medical Representative of unknown company with less image to the physician's mind. So, goodwill and image of a company play an important role and help company in long run especially for a new product launch.

- Media:

To communicate the brand in pharmaceutical media is another source of marketing communication. Pharmaceutical companies use outsource media like newsletters, magazines, national and international media journals, etc to communicate the massage to its customers.

According to Dr. Kevin Campbell MD, FACC, in his tweet, the social media is an ideal channel for pharmaceutical and device firms to educate, communicate and connect with customers, patients and physicians. Social media can help pharmaceutical industry to build trust and commitment to develop new and better treatments for a particular disease process. And social media can be also help as another channel to share press releases on new drugs, features, clinical trial results. (Belbey, 2016)

- Trade:

Trade channels in pharmaceutical industry play an important role to build and reinforce image and trust of the pharmaceutical brand company by giving quality and prompt service to its customers, physicians and pharmacist.

3.8.1 Promotional Mix in Pharmaceutical Marketing to communicate the Pharmaceutical Brand

The different elements used in different marketing management also has significant use in the pharmaceutical industry. They are as follow:

- Personal Selling
- Advertising
- Sales Promotion
- Public Relation
- Personal Selling:

Personal selling has a significant role in the communication of brand to the physician as it influences all steps of buying process in term of physicians. Personal selling is vital because of the business to business(B2B) nature of the pharmaceutical marketing. Companies' major objective with this promotional strategy is to convince to customers(physicians) to prescribe companies' product to their ultimate customers(patients).

Personal selling is the most effective and commonly used way of brand communication. Personal selling adopts medical detailing in combination with many other tools of promotion to communicate brand. The medical detailing is the direct communication between the sellers and the customers. Medical detailing is and approved, regulated and widely accepted way of personal sampling and promotional work amongst the physicians and other professional persons in order to secure goodwill or prescription of the product. (MASOOD I, 2009)

The medical detailing in pharmaceutical brand communication is like personal selling in any other industry, so it generally all about to provide sales support. Thus, Medical Representative (Sales Representative) is main resource for applying most of the techniques of the personal selling between and sellers and prescribers. Medical Representative is involved in providing prescription decision support of the physician, dealing with the dissatisfaction issues between prescriber and organization, and constantly enhancing the relationship between the companies and the physician or other organizational buyers.

The adopted tools for the personal selling are brand samples, medical literatures, brand information brochures, personalized gifts, sweepstakes in workshops and conferences and many other tools. (MASOOD I, 2009)

- Advertising

Advertising is a non-personal paid form of communication adopted by identified sponsored. Thus, in case of brand communication pharmaceutical marketing, advertising increase awareness, interest, evaluation and encourage customer for repeated use of brand.

In pharmaceutical advertisement is done by the following ways:

- Direct to Consumers Pharmaceutical Advertisement(DTCPA):

Direct-to-consumer pharmaceutical advertising (DTCPA) is now-a-day most prominent type of brand communication that the public encounters and has grown rapidly during the past several decades. (Kuehn, 2010)

By the Direct-to-consumer pharmaceutical advertising (DTCPA) tools of brand communication the pharmaceutical company directly promote its prescription products to patients usually via popular media. The U.S. and New Zealand are the only two countries that legally allowed for advertised in the mass media.
(Abel GA, 2006)

 Advertisement in professional publications, books, journals and conferences electronic media.

 Advertisement through Continuous Medical Education (CME)

In recent year, this Advertisement through Continuous Medical Education (CME) tools of pharmaceutical brand communication is very popular by which the pharmaceutical company organize educational events by investing on the physicians as paid speakers, lectures excursions or educational events. By using the CME strategy as a promotional tools a pharmaceutical industry may get double benefits. At one end company oblige their customers(physician) and as return it get increased prescription of the brand. On the other end company promote its image as responsible organization of the society to use corporate social responsibility (CSR) concept. (MASOOD I, 2009)

 Sales Promotion:

Sales promotion is a pre-planned component of the overall promotional mix and should be used with the strategic promotional objectives. Some of the most commonly used sales promotional methods in the pharmaceutical industry are: sample distribution, product demonstrations (physicians, nurses, patients), sponsored events, specialty printing, promotional fulfilments, etc.

The main objectives behind different sales promotional strategies are: to encourage trials by providing free samples of the brands to physicians, to increase usages of the brand by encouraging to physicians, to improve companies' image and reputation in customer's mind and to build brand loyalty. The sales promotional strategies also used to encourage physicians to switch to new formulations, and to satisfies customers' price consciousness.

 Public Relation:

Public relation is adopted by many pharmaceutical companies to develop and manage its goodwill in the market. The primary aim of public relation is to create a suitable environment for the company. Pharmaceutical brand manager view public

relations as an important part for their broader marketing activities. If effectively managed, this strategy of public relations may create unique opportunities for pharmaceutical brand manager to provide consumers and other healthcare professionals with immediate and thorough drug and healthcare information about the brand.

There are variety of public relation tools that are used by the various pharmaceutical companies to communicate their brands. Some of them are commonly used public relation tools are as follows:

• Written materials like annual reports, corporate brochures, corporate magazine and patented articles, etc
• Events like seminars, conferences, symposia, etc
• Exhibitions like trade exhibition, foreign lobby shows, international commercial expos, etc
• Audio-visual material like corporate video and corporate multimedia CD ROM.
• Press Relations, press kit, press conferences, press briefing and press reception, etc

Pharmaceutical marketing has also adopted modern techniques to communicate their brands to physicians and customers. Few of them are adopted independently and some of them are used in combinations. Few of them are as follows:

- Internet Based Drug Promotion:

Now a day Pharmaceutical companies are focusing more on taking advantages of use of internet and other development of new media form to communicate their brand to customers. They are using Corporate Blogs, Social Network Webs and Many Other Online Methods to promote their product or brand. (Othman N, 2009)

In recent years as the technology developed, many existing methods of brand promotion has been either replaced or modified in combination with technologically developed methods of communication of brand.

Amongst technologically developed methods, an electronic detailing (e-detailing) is one of the methods of brand promotion introduced few years in pharmaceutical industry. The E-detailing is a new communication channel for the promotion of brands among the physicians adopted by many pharmaceutical companies. Various digital technologies like internet, video conferencing, and interactive voice response are used for e-detailing to interact with prescribers(physicians). (Alkhateeb FM, 2008).

The E-detailing is getting popularity and gaining acceptance among physicians because the physicians can access the information of pharmaceutical company's brand anytime at their convenient time. It is shown that the E-detailing has the potential to reduce marketing cost and increase accessibility to physicians and also offer many other advantages of face-to-face communication of the brand. (ID, 2007)

- Direct to Consumer Advertisement of Prescription Drugs

As we know, the pharmaceutical industry is one of the most advertising-intensive industries than other industries. The promotional expenditures often amount to 20–30

percent of sales of product, and sometimes exceeding expenditures on research and development (R&D) (Brekke KR, 2006).

As already discussed in previous topic that the Direct-to-consumer advertising of prescription drugs (DTCA) is legal in two industrialized countries, the United States and New Zealand. There was no any other new legislation was introduced to allow this form of advertising; both United State and New Zealand laws were silent with respect to the target audience for prescription drug advertising. (MASOOD I, 2009)

4 Practical Part

4.1 Primary Research Objective and Methodology

In addition to the secondary research as collected form the different resources like library books, internet search discussed in this paper, the additional primary research is conducted to get answer for several questions pertaining to consumers view on branded versus generic drugs in term of price, different attributes affecting their purchase decision and advertising difference between branded and generic drugs. The primary research also involves interview of healthcare practitioner simply called physician in this paper to get the answer on different attributes affecting their prescription behaviour while making choice between medication.

4.1.1 Consumer survey

Although the secondary research discussed in this paper has discussed the importance of branding, the different strategies used by the different pharmaceutical companies for the long-term survival of the brand against the generic competition and other challenges, some of the question's remains unanswered thus far.

So, the author has conducted a survey to twenty-nine respondents. The objective of the survey is to know whether people are price sensitive or not, and which attributes influences their purchase decisions of medicine.

The following research questions the authors is hoping to answer from the result of the survey.

1. Viagra is manufactured by which Company? Which company first comes in your mind?
2. When you are going to purchase cold medicine which drugs come first to your mind?
3. How much difference do you think about effectiveness of the branded verses generic medicine?
4. How much more (in Terms of %) are you willing to pay for the branded verses generic medicine?
5. After reading or seeing a medicine advertisement, how likely are you to purchase that medicine next time when you need that drug?
6. During the past 12 months, how often you purchase PRESCRIPTION and NON-PRESCRIPTION medicine?
7. Your opinion of the importance of the following attributes while purchasing PRESCRIPTION and NON-PRESCRIPTION medicine: Brand Name, Price, Physician Prescription, Your past experience, In store Promotion, Pharmacist Recommendation, Family/Friend Recommendation, Advertisement.

A survey of consumer is conducted to answer the research questions above and it consists of eleven questions, involving nominal and interval scales.

The first is asked to confirm that very few people know about the manufacturer of the brand Viagra. The second question is asked to know choice of consumer for generic over branded medicine while they are going to purchase any cold medicine. This question also answer the effectiveness of branding caring out by any pharmaceutical company. Another question is to answer the what consumer believe about the effectiveness of the branded versus generic medicines. The next question is asked to know whether the consumers are price sensitive when they are going to purchase any branded drug and how much more are they wanted to pay for that particular brand. Following these other questions are to know frequency of purchase of prescription and non-prescription drugs and to determine perception of respondents between branded and generics based on given attributes.

4.1.2 Physician survey

The aim of the primary research from physicians (Doctors) is to study the impact of potential influencers on physician's attitudes and believes towards pharmaceutical products as well as the impact on their prescribing behavior.

The following research questions the authors is hoping to answer from the result of the survey.

1. Which Factors influence to decide between Products?
2. How difficult for you to switch the Pharmaceutical Brand? (Importance of brand to Patients)
3. Prior the Brand's arrival to the market, which attributes influences to your opinion on the Brand and future prescribing behavior?
4. Early (< 6 Months) after the Brand's arrival to the market, which attributes influences to your opinion on the Brand and future prescribing behavior?
5. Lately (> 6 Months) after the Brand's arrival to the market, which attributes influences to your opinion on the Brand and future prescribing behavior?

The first question is aimed to examine the way respondents decide between the Pharmaceutical products.

The second question is aimed to get patients' (Final Consumer) attitudes towards pharmaceutical Brand. This question was asked to physician in regard to difficulty felt to switch any medication from already has been taken by the patients.

The third, fourth and fifth questions are aimed to answer which factors influences respondents' opinion and future prescribing behavior in three separate phases of product life cycle: pre-lunch phase, launch phase & early post-launch and late post-lunch.

4.2 Data Collection

4.2.1 Consumer Survey

The survey form consumer is conducted randomly in through google form in India over the span of fifteen days of febuary'2017. There are 29 responses received from which 23 are

male and 6 are women. Approximately 31 percent of the respondents are between the ages of 18-29, 51.7 percent are between 30-39, 6.9 percent between 40-49, 6.9 between 50-59 and 3.4 percent are over the age of 60.

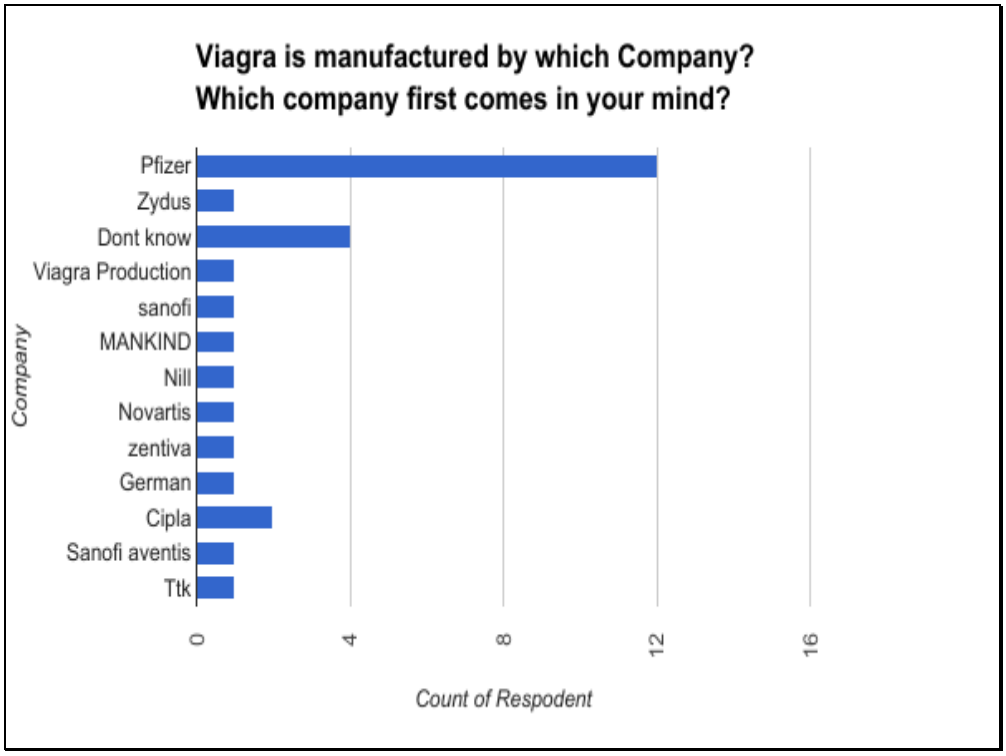
4.2.2 Physician Survey

The survey form physician is conducted telephonically in India in febuary'2017. In the survey, there are 12 respondents involved, from which there are 3 Cardiologists, 3 Gynecologists, 3 Orthopedics, and 3 Dermatologist.

5 Results and Discussion

5.1 Analysis and Discussion (Consumer Survey)

The following graphs are analyses based on the answers and feedback from questionnaires fulfilled by respondents.

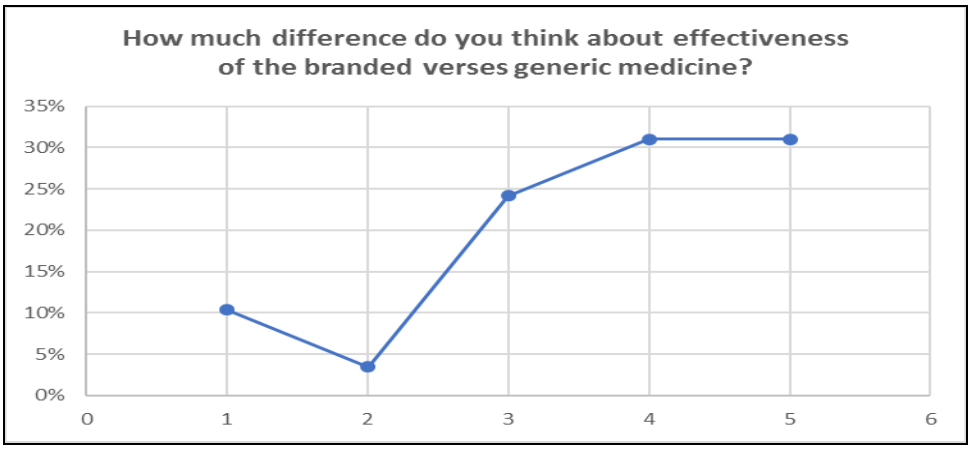


Graph 1: Existence of the Viagra brand.
Source: Own Work

When asked for the manufacturer of the Viagra, less than 50 percent knows it is Pfizer. The reason for this is that Pfizer has not associated its corporate name with the Viagra brand name in its advertisement. However, it is interesting to note that most of the respondents are aware of Viagra's existence in the market it shows success of Viagra branding.

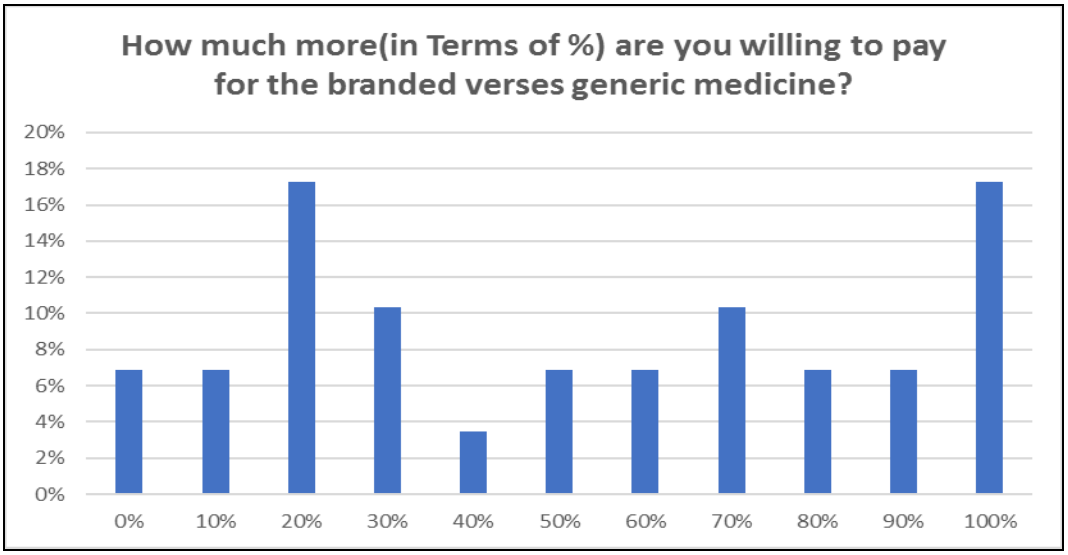
Graph 2: First Brand of cold medicine in Respondent's mind.
Source: Own Work

From the result of the respondent's response for what brands come to respondents' mind when going to purchase cold medication it is shown that most of the respondents are thinking about the generics medicine like cetirizine over branded drug for non-prescription drugs. Some respondents also preferred drugs with brand name like Coldrex which is because of the branding for that particular product.



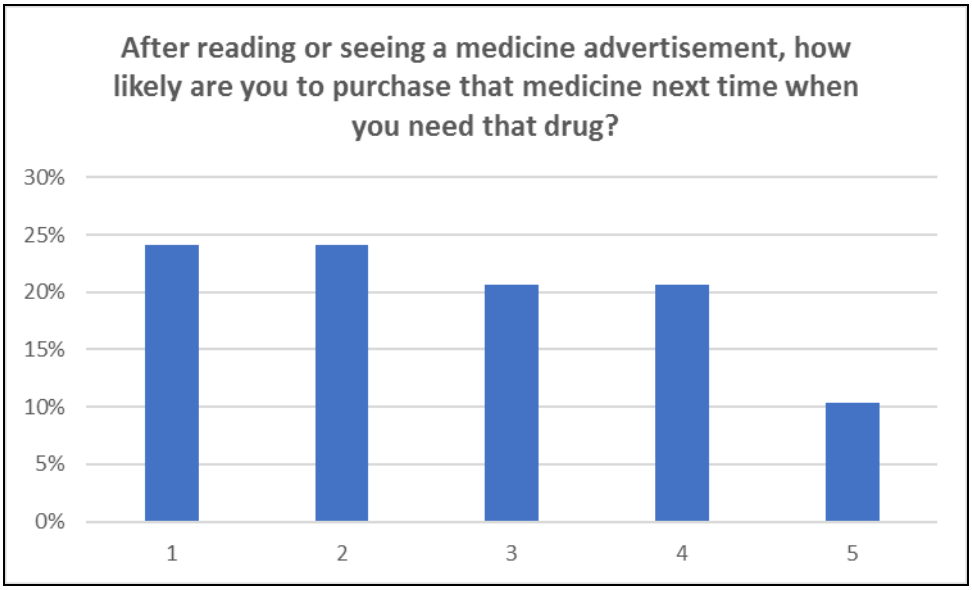
Graph 3: Perception of the effectiveness of brand verses generic medicine. .
Source: Own Work
Scale: 1= No difference
5= A lot of Difference

From the graph 3, it is confirmed that most of respondents are thinking that there is lots of difference between the effectiveness of the branded verses generic medicine. Almost 62 percent perceive the difference between the branding drugs and generics. This may be because of the advertisement. The generic medication is not advertise



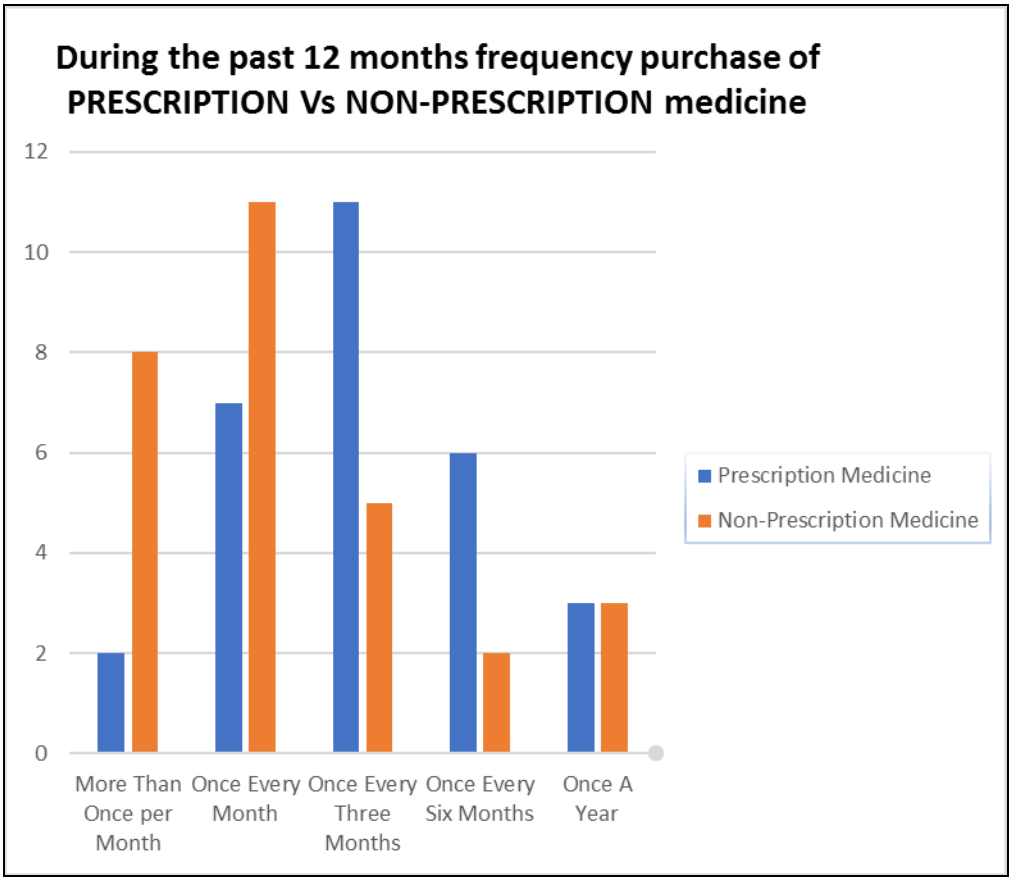
Graph 4: Willing to pay more for branded verses generic medicine.
Source: Own Work

When asked about the how much are respondents willing to pay for branded drugs over the generics then from the answers it is shown that almost all respondents are willing to pay more for branded drug over generics. More than 17 percent customers are willing to pay 100 percent more for branded drugs. This may be because of respondent's perception for effectiveness difference between the branded drug over the generics as already discussed in the previous question.



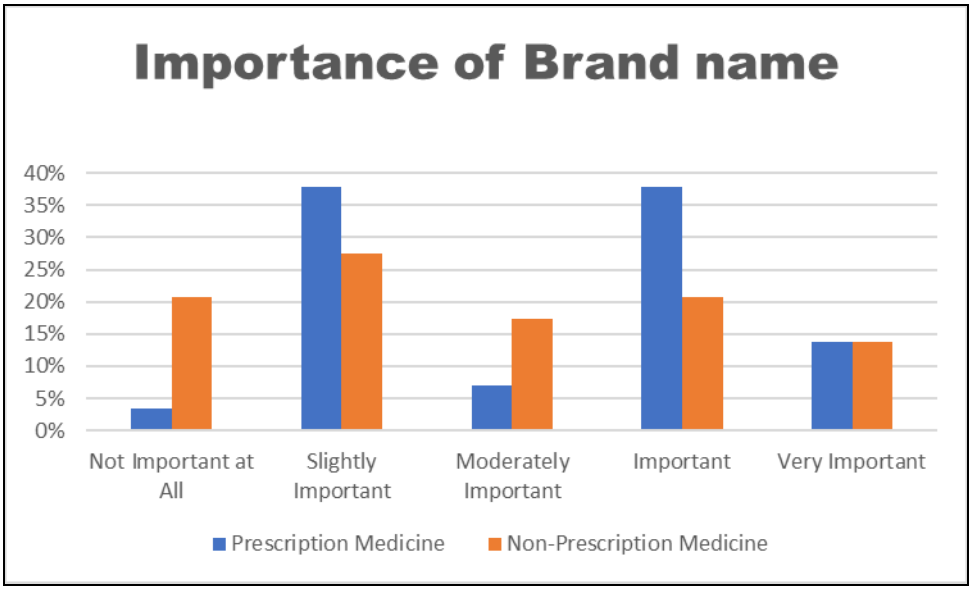
Graph 5: Purchase of medicine after seeing medicine advertisement
Source: Own Work
Scale: 1= Not Likely at All
5= Very Likely

From the graph 5, it is confirming that most of the respondents do not like to purchase the medication after hearing it on the advertisement. Moreover, 20 percent of respondents are likely and 10 percent respondents are very likely to purchase the medication next time after seeing it on advertisement. This may be because of the trust of that particular medication.



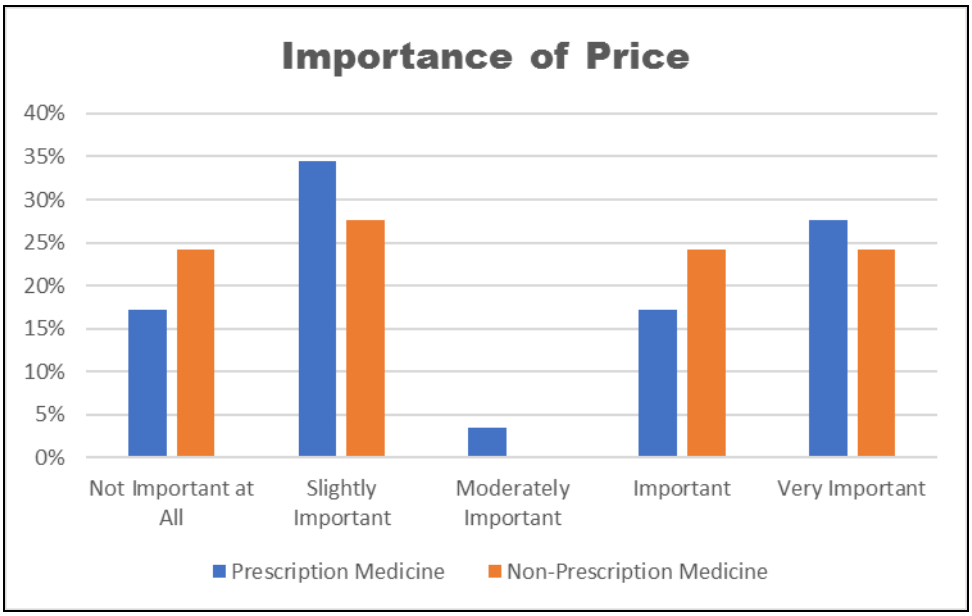
Graph 6: Frequency of Purchase Medication
Source: Own Work

From the graph 6, it is shown that frequency of non-prescription medication within the short period means more than once per month or once every month is higher than the prescription medication, while frequency of purchase of prescription medication higher in once every three or and six months. This confirm that need of the non-proscription for the respondents is higher than the prescription medication. It makes sense that the pharmaceutical companies advertise more non-prescription medicine than prescription medicine



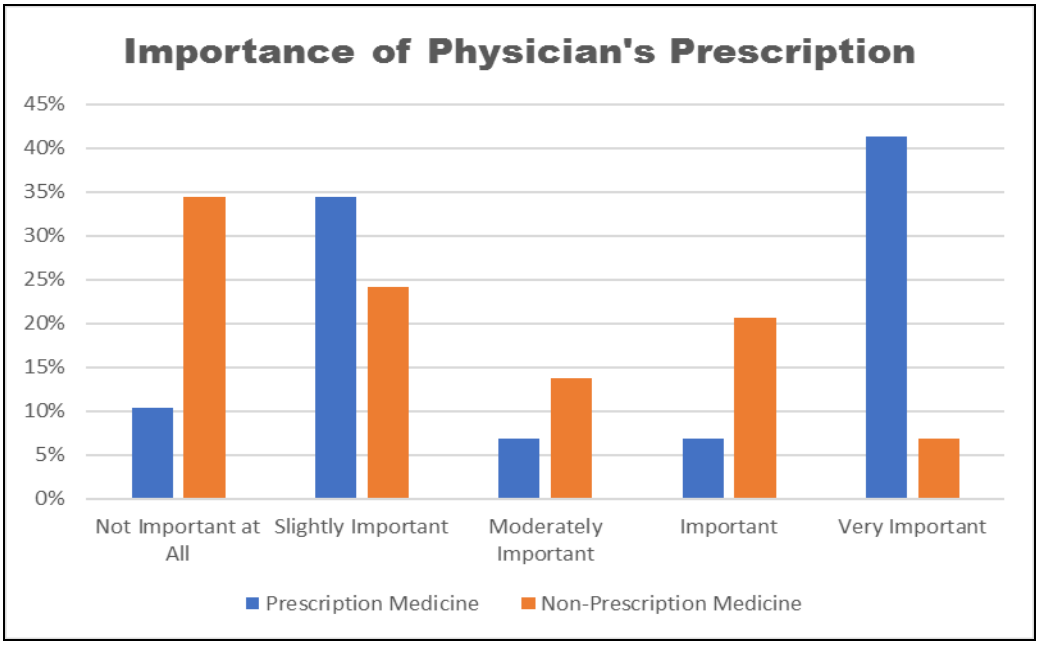
Graph 7: Importance of the Brand Name for the purchase of the Medication
Source: Own Work

From the graph 7, it comes to know that 38 percent respodents consider the importance of the brand name for the prescription medicicne. This mean that consumer place more importance on the brand name for the prescription medicine that the non-prescrieption medicine.



Graph 8: Importance of the price for the purchase of the Medication
Source: Own Work

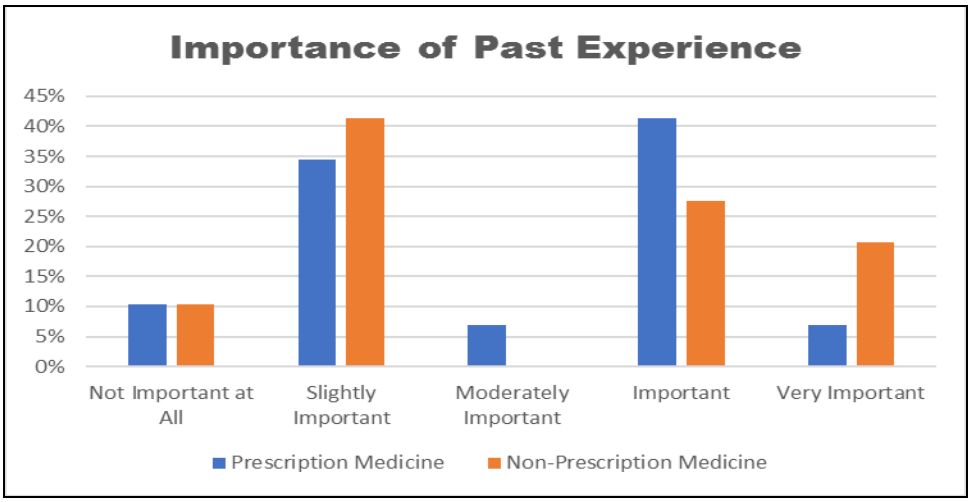
For the price, it is shown that slightly more importance placed on price of non-prescription medicine than the prescription medicine. This may be due to the more option available to choose from different non-prescription medicine.



Graph 9: Importance of the Physician's Prescription for the purchase of the Medication

Source: Own Work

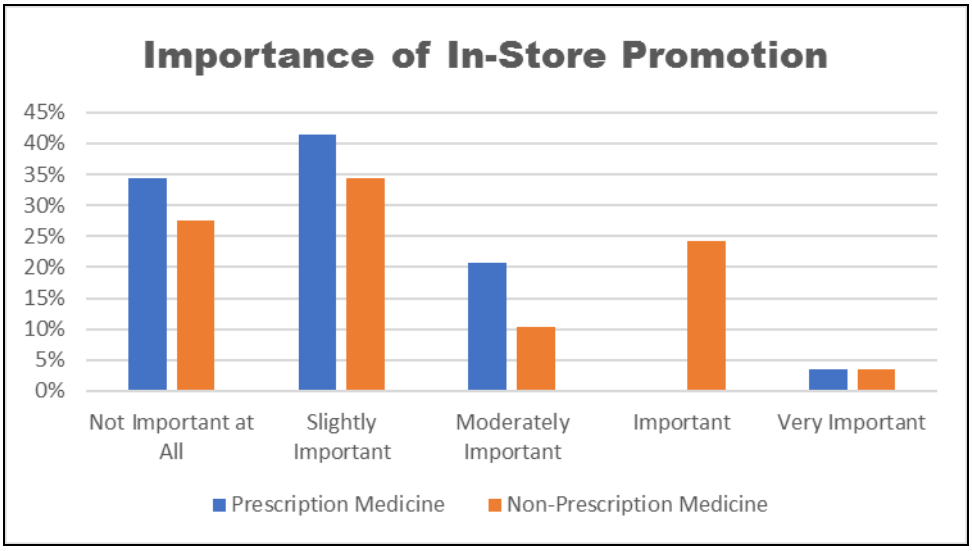
It is obvious that there much more importance of the physician's prescription for the purchase decision making for prescription medicine than the non-prescription medicine.41 percent respondents placed very important for the physician's prescription for the prescription medicine.



Graph 10: Importance of the Past Experience for the purchase of the Medication

Source: Own Work

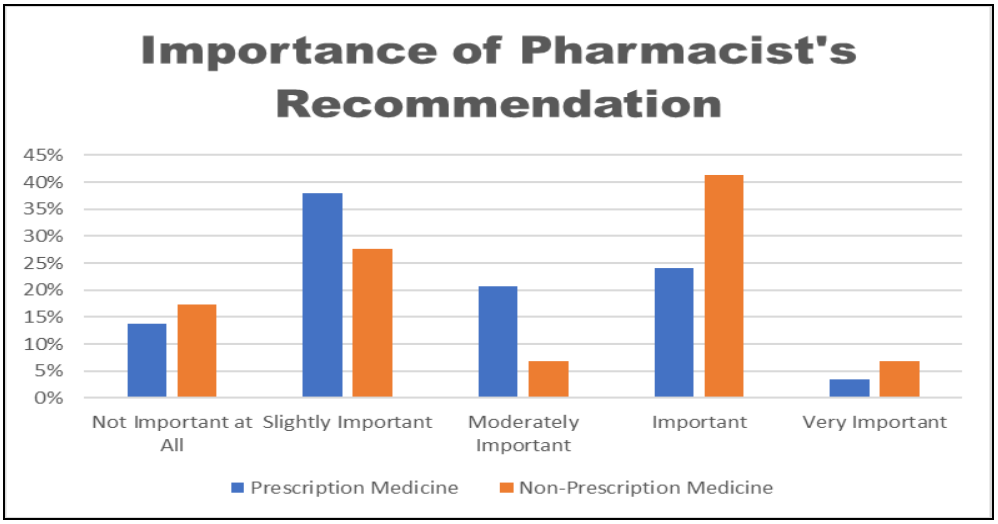
The past experience for the prescription and non-prescription medicine are equally important for the respondents.



Graph 11: Importance of the Past Experience for the purchase of the Medication

Source: Own Work

From the graph, it is shown that the in-store promotion is not that much importance for the both prescription and non-prescription medicine, however there is some importance of in-store promotion placed by respondents for non-prescription medicine. This may be because most people decide to buy the non-prescription medicine when they get to the store; in-store promotion may help them to make purchase decisions.

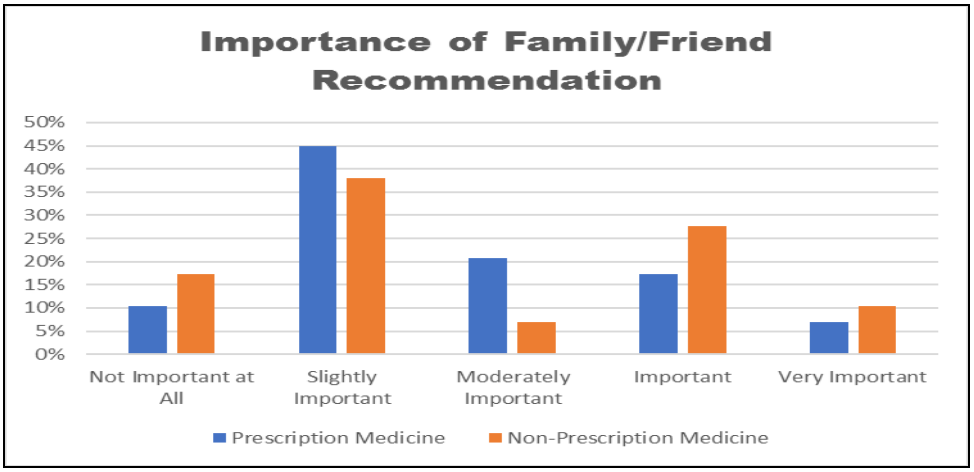


Graph 12: Importance of the Pharmacist's Recommendation for the purchase of the Medication

Source: Own Work

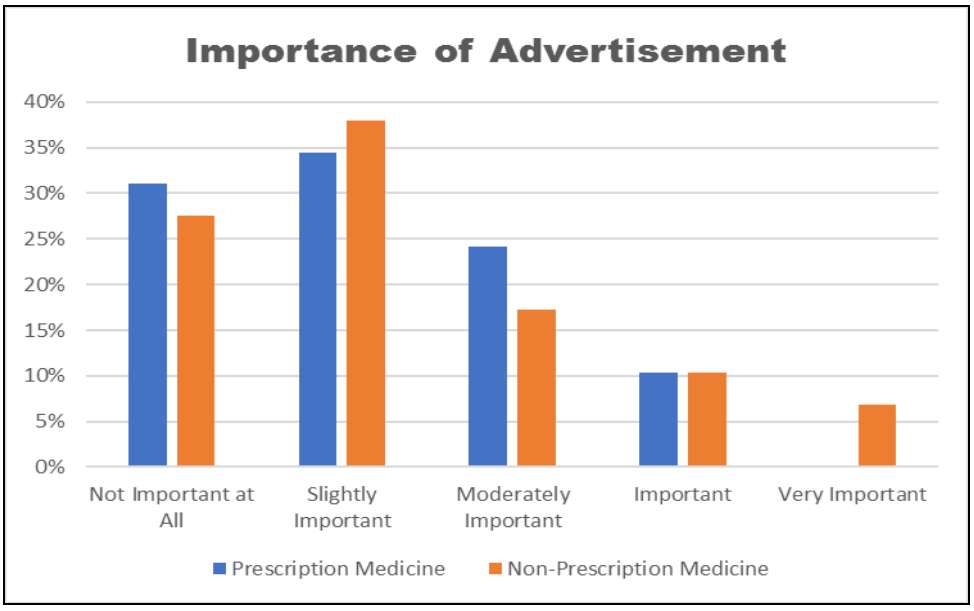
For the pharmacist's recommendation for the purchase decision making, 41 percent respondents are placed more importance for the non-prescription medicine than the prescription medicine. This may be due the pharmacist may help them to make the decision of purchase of non-prescription medicine, while for the

prescription medicine physician's prescription may help them to make purchase decision as already discussed.38 percent respondent also say that pharmacist's recommendation is slightly important for the prescription medicine for decision making.



Graph 13: Importance of the Family/Friend's Recommendation for the purchase of the Medication
Source: Own Work

From the analysis, it is analyzed that family or friend's recommendation are not that much of important for the making purchase decision for the prescription as well as non-prescription medicine, although some respondents answer that the sometimes family or friend's recommendation important more for the non-prescription medicine than the prescription medicine.



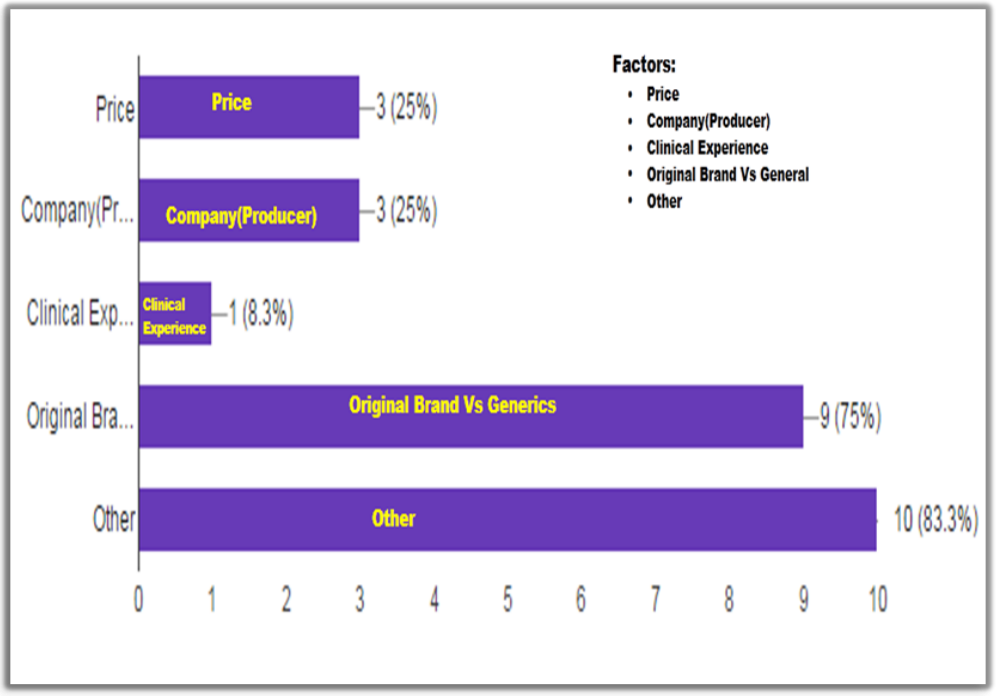
Graph 14: Importance of the advertisement for the purchase of the Medication
Source: Own Work

From the Graph 14, it is shown that advertisement not making that much of important for making the purchase decision for prescription as well as non-prescription medicine. However, according to some of respondent advertisement are very important for making purchase decision of non-prescription medicine.

In conclusion for the prescription medicine physician's recommendation is more important for making the purchase decision. While, for non-prescription medicine, pharmacist's recommendation, in-store promotion, and family or friend's recommendation plays important role in making the purchase decision

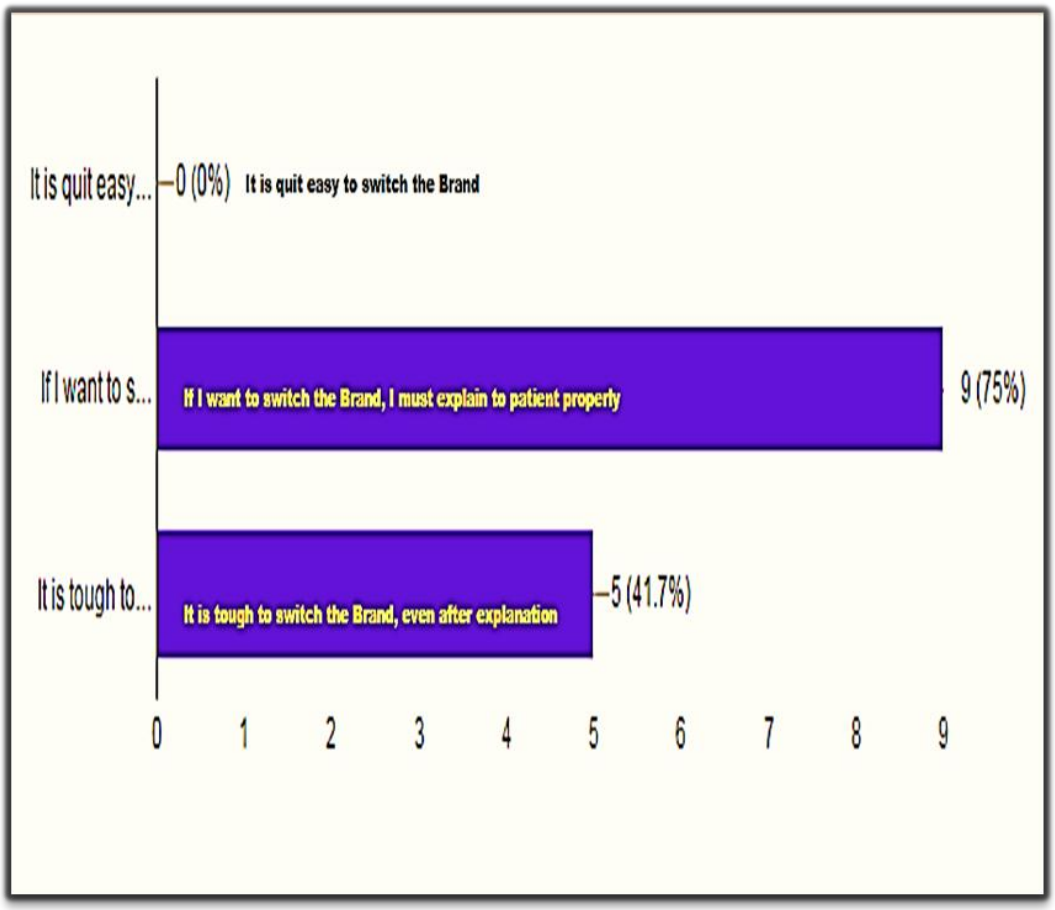
5.2 Analysis and Discussion (Physician Survey)

The following graphs are analyses based on the answers and feedback from questionnaires fulfilled by 12 respondents by physicians (3 Cardiologists, 3 Gynecologists, 3 Orthopedics, and 3 Dermatologist) in the India.



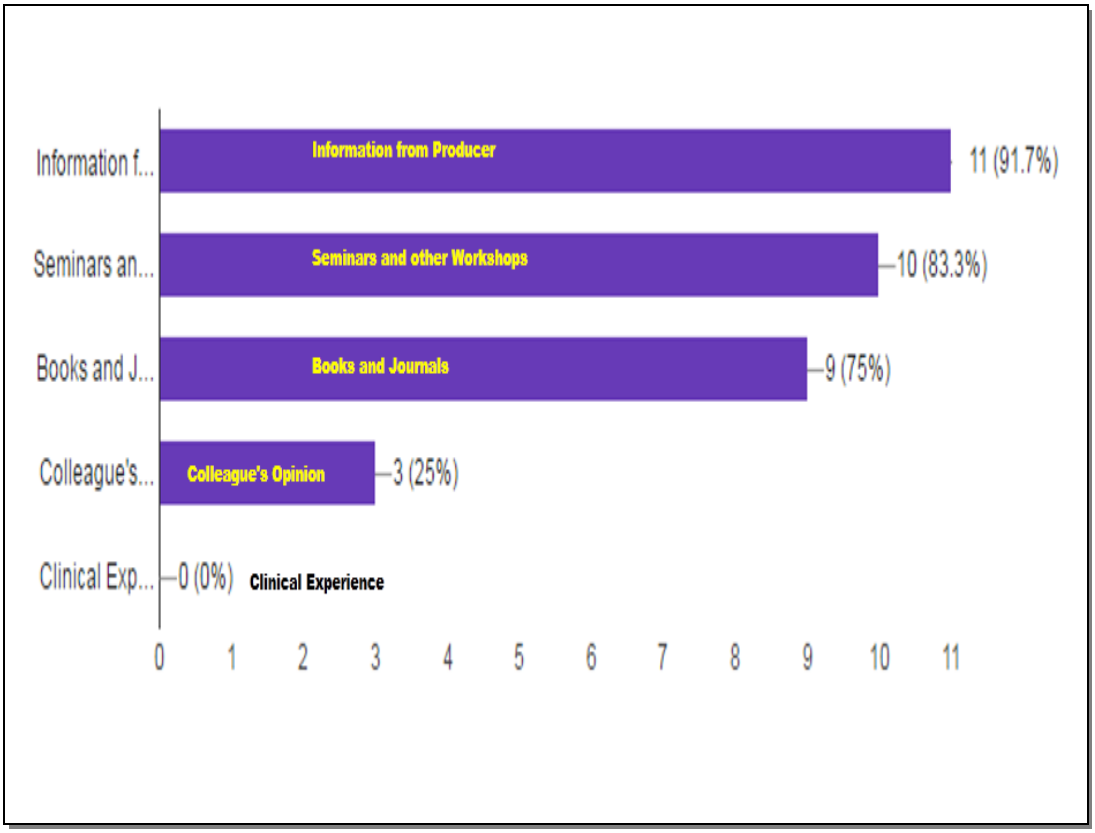
Graph 15: Factors influence to decide between Products
Source: Own Work

From the Graph 15, it is shown that most of respondents preferred original to generic products. Some of them consider price and image of the company are the important factors to decide between the products. The clinical experience not seem to play an important role as they show all the products are identical. There are many other different reasons for making a decision between the products are the pioneer Brand, easy and catchy brand name, friendly medical representative and by change, etc.



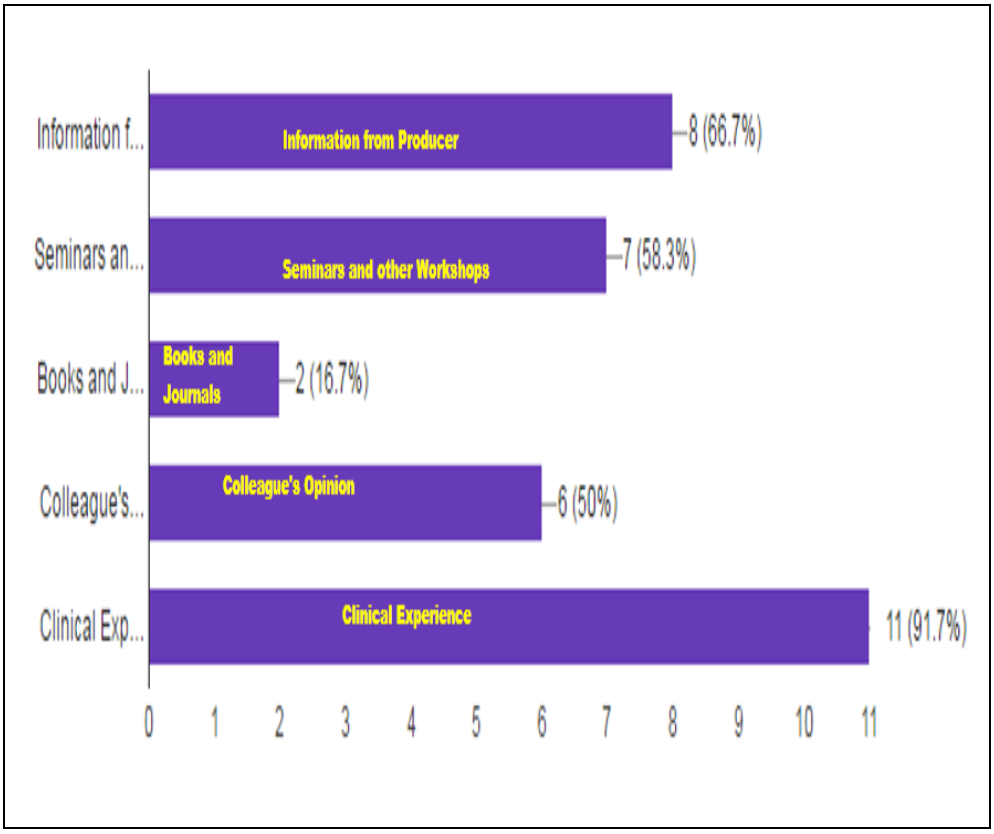
Graph 16: Importance of brand to Patients
Source: Own Work

Majority of respondents believe that in the 21st century the brand is important for the patients because the patients has become an educated and they easily get the knowledge from the internet. They say that they must explain properly if they want to switch the brand that the patient trust. And in some cases, switch can be difficult even after the explanation.



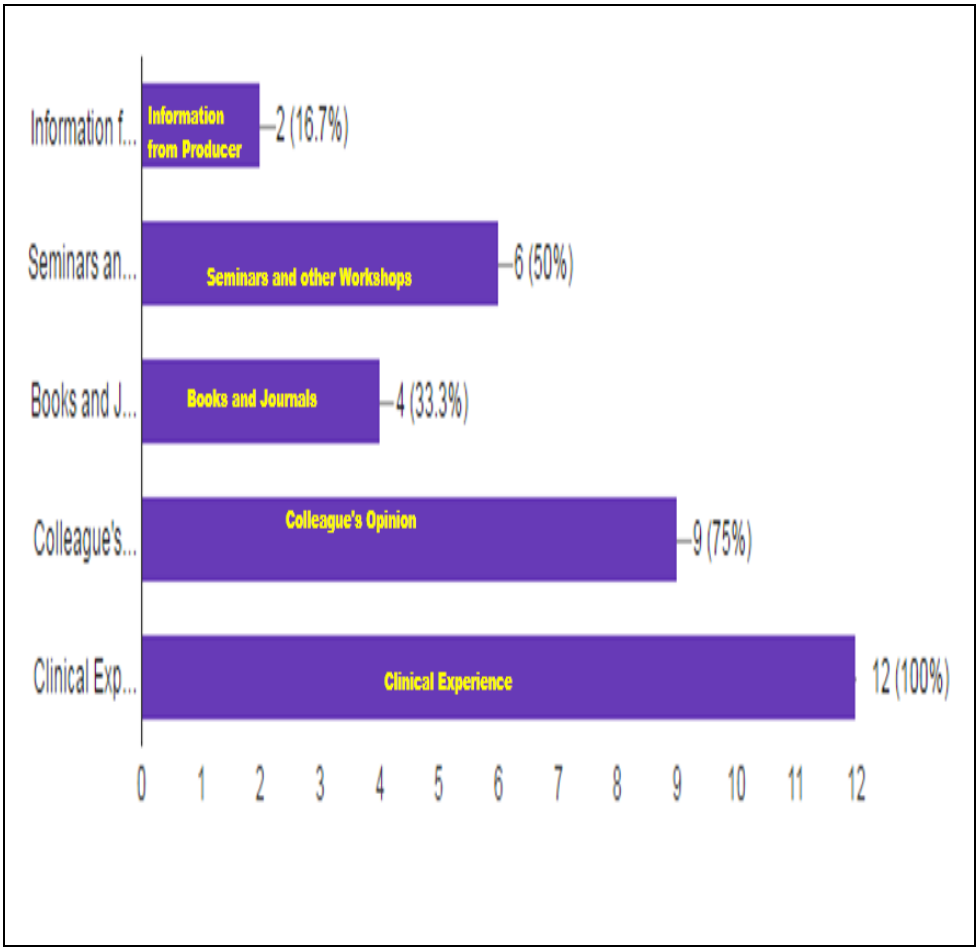
Graph 17: Attributes influences to opinion on the Brand and future prescribing behavior of Physicians, Prior the Brand's arrival to the market.
Source: Own Work

From the graph 17, it is shown that before the pharmaceutical product or brand arrives in the market and the physician have not ant experience with the product or brand, their opinion is formed by the information they get from the producer. Most of the respondents stated that get the information from the companies' Medical Representative calling on them during the pre-lunch phase of the product or brand. Respondents say that the Medical Representative is the first contact that make them enable to know about the products. Some of them also get to know about the brand from seminars, workshops and books or journals and can be also very important for them.
Some respondents also say that they can influenced by their colleagues although they have not any opportunities to try the product- probably because they see them as more knowledgeable and better. Thus, professional group also play important role to influence the prescription behavior.



Graph 18: Attributes influences to opinion on the Brand and future prescribing behavior of Physicians, Early (< 6 months) of the Brand's arrival to the market.
Source: Own Work

It is shown that during the early phase after the arrival of the pharmaceutical brand in the respondent are navigated by their own clinical experience. Respondents say that the expectation created by the information may be or not match by their clinical experience. The negative experience in the early phase can harm the product in physician's mind. The result information from the producer is preferred over books and journal, and influence of colleagues is more important in early lunch phase than the pre-lunch phase of the product or brand in pharmaceutical.



Graph 19: Attributes influences to opinion on the Brand and future prescribing behavior of Physicians, Lately (> 6 months) of the Brand's arrival to the market.
Source: Own Work

It is shown that in late post- lunch phase almost all respondent is influence by their own clinical experience. Majority of respondent stated that influences of company and journal, literature and books is low. Amongst these influences, they also agreed that the Medical Representative of the respected pharmaceutical may influence to some extent as he remind them the product and may suggest ways how to use the product and also inform them about new indications.

6 Limitation and Future research

The author recognises that the results of this survey are based on an extremely small segment of the population in just two cities in India. Only a small sample can be obtained due to interest of time resource, which make it difficult to present the whole Indian population and generalize the result across the whole country. Future research should address issues such as computer literacy, and willingness to respond to surveys, as well as targeting a wider segment of the population and greater age distribution.

Another limitation of survey from consumer is in question asked about how often respondents purchase prescription or non-prescription medication. In this question, they are not given the option "never". As a result, respondents may have obliged to pick the answer from the given option only. A future research may give all possible choice so respondents may have choice to choose an answer that is really true for them. Additionally, this survey does not consider purchase volume purchase during the purchase of any medication. Some may purchase the medication with high volume only once in a year than who purchase medication on a monthly basis. So, future research may also mention that.

Finally, the future research from consumer may categorize between the prescription and non-prescription branded drugs and or prescription and non-prescription generics drugs, which are not mention in this paper.

7 Conclusion and Recommendation

Based on the result form the secondary as well as primary research discussed in this paper, it is confirmed that the branding is an essential step for successful marketing and selling the product for the pharmaceutical companies. It is important for the pharmaceutical companies to implement effective branding strategies for long-term survive of their brand even after patent expiry and generics competitions. In order to face the challenges many pharmaceutical companies are on the way to changing their original organizational strategies. It is discussed in the secondary research that Merger and acquisitions and some other form of partnership have been profound part in these changes.

To be success in the future, pharmaceutical companies will have to find different another way to communicate, deliver and provide solutions that are needed to meet disease of todays as well as in future and to meet solution need in the emerging markets. It is important for the pharmaceutical companies to listen their customers and other stakeholders and should spent sufficient time in assessing their branding strategies and understanding the long-term needs of the patients.

From the result of survey, it is clear that patient trust physician for the prescription medicine. So, the pharmaceutical companies should support physician by providing continuous medical education, sponsorships, etc to build loyalty with them. From the survey, it is concluded that in-store promotion, advertisement and family or friend's recommendation not making that much of importance for prescription medicine than the non-prescription medicine while making purchase decision about the medication. As a result, companies could conduct promotion as in-store promotion through distributing flyers so that consumer can make decision about the product purchase before entering into the store. Pharmaceutical companies also should create good advertisement campaign while stick to the advertisement regulation and should build effective brand loyalty in consumer mind in order to induce word of mouth advertising. This approach also can help the company in competing against generic drugs.

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9 Appendices

9.1 Appendix 1: consumer's survey questionnaires

Note: Respondent can choose only one answer for each question

1. **Gender**
   Male/Female

2. **Age Group**
   18-29 30-39 40-49 50-59 >60

3. **Viagra is manufactured by which Company? Which company first comes in your mind?**
   Short answer text

4. **When you are going to purchase cold medicine which drugs come first to your mind?**
   Short answer text

5. **How much difference do you think about effectiveness of the branded verses generic medicine?**
   Linear scale: 1 to 5
   1= No Difference
   5= A lot of Difference

6. **How much more (in Terms of %) are you willing to pay for the branded verses generic medicine?**
   0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100% other

7. **After reading or seeing a medicine advertisement, how likely are you to purchase that medicine next time when you need that drug?**
   Linear Scale: 1 to 5
   1= Not likely at All
   5= Very Likely

8. **During the past 12 months how often you purchase PRESCRIPTION medicine?**
   - More Than Once per Month
   - Once Every Month
   - Once Every Three Months
   - Once Every Six Months
   - Once A Year

9. **During the past 12 months how often you purchase NON-PRESCRIPTION medicine?**
    - More Than Once per Month
    - Once Every Month
    - Once Every Three Months
    - Once Every Six Months
    - Once A Year

10. **Your opinion of the importance of the following attributes while purchasing PRESCRIPTION medicine.**

Row 1: Brand Name	Column 1: Not Important at All
Row 2: Price	Column 2: Slightly Important
Row 3: Physician Prescription	Column 3: Moderately Important
Row 4: Your past experience	Column 4: Important
Row 5: In store Promotion	Column 5: Very Important
Row 6: Pharmacist Recommendation	
Row 7: Family/Friend Recommendation	
Row 8: Advertisement	

11. **Your opinion of the importance of the following attributes while purchasing NON-PRESCRIPTION medicine.**

Row 1: Brand Name	Column 1: Not Important at All
Row 2: Price	Column 2: Slightly Important
Row 3: Physician Prescription	Column 3: Moderately Important
Row 4: Your past experience	Column 4: Important
Row 5: In store Promotion	Column 5: Very Important
Row 6: Pharmacist Recommendation	
Row 7: Family/Friend Recommendation	
Row 8: Advertisement	

9.2 Appendix 2: Physician's(Doctors) survey questionnaires

Note: Respondent can choose more than answer for each question

1. **Specialty**
    Short answer text

2. **Gender**
    Male/Female

3. **Which Factors influence to decide between Products?**
    - Price
    - Company(Producer)
    - Clinical Experience
    - Original Brand Vs Generics
    - Other

4. **How difficult for you to switch the Pharmaceutical Brand? (Importance of brand to Patients)**
    - It is quite easy to switch the Brand
    - If I want to switch the Brand, I must explain to patient properly
    - It is tough to switch the Brand, even after explanation

5. **Prior the Brand's arrival to the market, which attributes influences to your opinion on the Brand and future prescribing behavior?**
    - Information from Producer
    - Seminars and other Workshops
    - Books and Journals
    - Colleague's Opinion
    - Clinical Experience

6. **Early (< 6 Months) after the Brand's arrival to the market, which attributes influences to your opinion on the Brand and future prescribing behavior?**
    - Information from Producer
    - Seminars and other Workshops
    - Books and Journals
    - Colleague's Opinion
    - Clinical Experience

7. **Lately (> 6 Months) after the Brand's arrival to the market, which attributes influences to your opinion on the Brand and future prescribing behavior?**
    - Information from Producer
    - Seminars and other Workshops
    - Books and Journals
    - Colleague's Opinion
    - Clinical Experience