

A Review Conducted On Requirements Of Modern Techniques in pharmaceutical Manufacturing

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Abstract- *The pharmaceutical industry has the reputation of being cautious about implementing new technology and slow to make changes. This conservatism is due, at least in part, to regulatory requirement to prove that any process modifications will not have a detrimental effect on product quality. Regulatory agencies and the industry have made a concerted effort over the past two decades, however, to adopt methods and technologies that will improve quality and manufacturing efficiency. There is also an awareness that more changes will be needed to further adapt to new manufacturing approaches, such as continuous manufacturing, Industry 4.0, and personalized medicine, as well as supporting technologies, such as process analytics and advanced process control. This paper will act as a base for the pharmaceutical and marketing researcher for further study on marketing and identified the gap in this article for further research.*

Keywords- Promotion, Pharmaceutical industry, Marketing, traditional methods, Promotion in 21st century.

I. INTRODUCTION

The pharmaceutical industry, which faces stringent regulatory challenges, will greatly benefit from technological advancements. Retail and outpatient pharmacies may use pharmacy technology to enhance their operations. Pharmacies can provide improved healthcare to patients by incorporating technology into their operations. This also aids in improving their organizational, compliance, clinical, regulatory, and financial results. Technology helps pharmacies improve their efficiency and access to important medical and patient information in their daily activities. The potential advantages are not the only factor in the adoption of pharmaceutical technologies; federal law also affects the adoption of pharmacy technology. It has rapidly evolved in the United States and abroad how medicines are administered, supplied, and regulated. Health information technology is an information technology applied to healthcare at the heart of this change to encourage the prescription, recommendation, supply, administration, or consumption of its pharmaceutical product(s) through all media, including the internet.

Pharmacists are responsible for immunization alongside physicians who play a crucial role in the well-being of society. State governments increase each year's number and types of vaccines offered to patients by local pharmacists. Drug promotion has a significant manner on the rational use of drugs, drug price- control mechanisms, the manufacture, availability, and use of essential drugs, the equity of drug distribution, and the cost of health care thus it becomes a public health issue of concern. According to Alastair Matheson, Pharmaceutical marketing is a curse to science, corrupting to medicine, wasteful to economies, and detrimental to patients because pharma itself has never truly acknowledged its underbelly of secrets, half- truths, corruption, power, and death and it flaunts the language of ethics when doctor relies more on promotion, prescribe less appropriately, prescribe more often or adopt new drugs more quickly. Hence, there are many rules and regulations, notably among them is the draft pharmaceutical policy which states that doctors are lured to recommend a particular brand. The drugs and cosmetic act and rules (1940, 1945) regulates the contents to print on the label by the pharmaceutical companies whereas the drugs and magic remedies act of 1954 control the direct-to-consumer advertising and prohibits any advertisement of a drug and educational conference which are used to circumvent and play the trick. Lack of drug promotion results in loss of sales which leads to less inking of resources for research and development and eventually puts the brake on drug discovery and development. Hence, pharmaceutical companies invest large sums of money promoting their products because it helps to increase sales.

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Pharmaceutical companies use a multifaceted tactic for drug promotion. For ease of understanding, they are divided into two types,

1. Traditional pharmaceutical promotion

Advertisement in journals, books, professional publications. Sponsorships Personal selling Branding

2. Pharmaceutical promotion in 21st century Electronic detailing
Email marketing
Electronic direct to consumer advertisement

II. EVOLUTION PHARMACEUTICAL PROMOTION

Traditional pharmaceutical marketing and promotion gain more reputation because it is imperious to figure relationships with the physician and further prescribe pharmaceutical products from sales representatives and encourage the common man to buy only recommended products. The pharmaceutical industry is still implementing the traditional marketing strategies in which the industry has revolved around the vigorous product marketing of the prescription drugs that the decision-makers will make money.

Marketing in journals, books, professional publications.

Major segments of Indian Pharmaceutical Industry include generic drugs, OTC medicines, bulk drugs, vaccines, contract research & manufacturing, biosimilars and biologics. India is a global leader in the supply of DPT, BCG, and Measles vaccines. India is one of the biggest suppliers of low-cost vaccines in the world. Pharmaceutical advertising in pharmaceutical journals has been criticized for being poor quality; hence an effective regulatory system is required to ensure that information provided in pharmaceutical journal advertising is hold up the quality use of medicines as information provided in journal advertising has the potential to change doctors prescribing behavior which is crucial for the patients. Robert Osborn states that "Advertising in the medical publication is highly regarded by pharmaceutical marketers because it can generate rapid awareness based on its cost and efficiency which increases prescriptions.

Sponsorship

Industries are primarily keen on sponsoring group activities by making direct payments to the doctors in various indirect ways i.e., for clinical trials, national and international conferences and symposia sponsorships, free medical camps, and opinion leaders for healthcare professionals are likely to lead to more sales. Research sponsored by the drug industry is more likely to produce results favoring the product made by the company. According to the results of clinical drug trials that are funded by pharmaceutical companies are favorable to the products of the sponsoring company. In 2016 pharmaceutical companies paid physicians and teaching hospitals \$58.95 million for disease awareness education and education not related to specific products. Some manufacturers acknowledged that they fund unbranded

informational demonstrations to promote disease state awareness to health care professionals. Pharmaceuticals can influence physicians and patients through professional workshops, seminars, and conferences to seek more attention towards the product, which is a great chance to interact with physicians directly and get appropriate advice which becomes more feasible to tune in with professionalisms and to apply this marketing to a wider audience of physicians and also free samples of products are handled out directly to the patients wherein they can use it without any risk which is one of the traditional sponsorship methods and remain widespread. The receipt of industry-sponsored programs is associated with an increased rate of prescribing the promoted brand name medication and is likely to lead to more sales.

Personal Selling

Personal selling is one of the oldest and most suitable methods of business promotion defined as a management process that involves the assessment of customer wants and needs, and the performance of all activities connected with the development, pricing, provision, and promotion of product solutions that satisfy those wants and needs. Therefore, personal selling is a communication process that helps salespeople fulfills customers' needs. It has been an advantage that it incorporates real-world in-person communication plays a vital role in marketing pharmaceutical products to inform clients about the products offered in marketing and it is often used with representatives in marketing known as medical representatives who sell the pharma product through details about the product to the doctor. It also creates awareness and encourages the non-users to try the products of the firm which enhances the competitiveness of the firm, maintains a superior standing in the industry, and enhances profit maximization. According to a well-structured and continuous personal selling sustains a distinct marketing position. Thus, personal selling plays a vital role to increase the sales of the pharmaceutical industry. But the disadvantage is that personal selling is a high-cost endeavor because people serving as the medium of communication are expensive to need the usual resources of salaries, benefits, supervision, training, and soon. According to a mascot, to promote the products in the market, pharmaceutical companies have to primarily depend on personal selling. There is a influence of personal selling on prescription behavior,if medical representatives have established good relations with physicians, there are more chances of doctor's prescription for the promoted certain drug or brand which automatically increase sales. The core business of every pharmaceutical company is manufacturing, marketing, and distribution of pharmaceutical products but the sales lead of the products is mostly generated by the contribution of medical representatives. The survey among

physicians and pharmacists reveals that medical representatives are physician's most preferred marketers-controlled information source.

Branding

The pharmaceuticals industry typically speaks of a brand and a brand strategy when an active ingredient is given a brand name and sold with the aid of marketing. However, that is only one of several ways how a pharmaceuticals company can use a brand.

During the 1980's a product suffering patent loss could still expect to have 60% of its sales turnover 12 months later and in the 1990's, that figure dropped to 40% and in certain cases, it has been further exceeded. Hence a strong base of loyal consumers is required to maximize return on investment. According to Aakes 1991, Kapferer 2001, to sustain sales after the patent has expired, the brand should be in a better position. To lengthen the life of the product after patent expiry, companies must use corporate branding techniques as it would be beneficial to associate the company name with good ethics, corporate social responsibility, and another non-profit organization the company may support Building loyalty, credibility, and trust with consumers is paramount in creating longer-term success. Brand name contributes significantly to consumer purchase decisions especially in the area of product identification, selection and positioning, and product differentiation, to differentiate their products from companies using packaging symbols, trademarks, and logos among others. There are many benefits of branding in the pharmaceutical industry that help in enhancing the image of the products which increases the sales of the products.

III. PHARMACY PROMOTED IN 21ST CENTURY

To bridge all the gaps in the limitations of traditional marketing, the use of digital marketing strategies is proposed by the pharma industry, engaging all the stakeholders towards maximizing incomes and gaining more market share. In addition to that, the ongoing development of internet-related technologies provides new opportunities for pharmaceutical manufacturers to influence consumer expectations of health care and prescribing practices with the quality use of medicines and evidence-based education. There is a strong opportunity to integrate online and social media with traditional marketing strategies to meet the expected business objectives. Direct marketing involves the use of the internet, which is defined as the conveyance of messages via mail, the internet, and similar routes directly to consumers is used broadly by healthcare organizations to attract and inform

current and prospective health and medical offerings opportunities. Examples of direct marketing include straight mail marketing, telemarketing, and internet marketing which includes e-detailing.

Electronic Detailing

Virtual live e detailing and scripted e detailing Virtual live e detailing is defined as the face to face-based video conferencing between a physician and a pharmaceutical Electronic detailing (e-detailing) is a new communication channel introduced by the pharmaceutical industries to promote pharmaceutical products to physicians which is a recent trend because it increases the effectiveness of promotion of prescription products to a physician in a less expensive way than traditional detailing. E detailing was limited to the US when it was introduced in 1996, but after that many countries adopted this technique and now it is popular in many developed nations. Medent Media has identified two main types of e-detailing, where the video image of the representative is displayed while audio communication is conducted over the telephone or microphone. Pharmaceutical companies describe the physicians with the help of the vendor to participate in e detailing programs. Another type of detailing is scripted e detailing which consists of a series of interactive screens with multimedia information that enables the physicians to learn about the promoted product including research evidence, clinical practice guidelines, prescribing information, and patient advice. It consists of a well-structured message that is five to ten times extended than the normal face-to-face sales rep call, but at a lower cost and shows authentic increases in the prescribing of the drug.

If one pharmaceutical company wants to launch an e detailing program, an email newsletter about the product information is sent to a targeted physician group through a vendor. They also target physicians through the mail, email, or by their PSRs. Target physicians create a personal account with an invitation number from the invitation received and then the participants can watch the interactive presentation, e detailing, or speak directly with a PSR through video e detailing.

Electronic Effect on consumer advertisement

Direct to consumer advertisement is defined as any unsolicited promotional endeavor by a pharmaceutical company to present information about medicine or medical services to the public in the popular media that includes television, radio advertisement newspapers, magazine advertisements, billboards, and direct mailings. In the early

1990s, some drugs manufacturers began targeting consumers as there is an increase in their own health care decisions. Since then, DTC advertising has become a popular promotional tool. Patients' demand medicine increases due to which physicians prescribe demanded medicines but were indecisive about the choice of the treatment and correctness of prescribing may grieve but the sales of the medicine increases.

There are currently several types of direct to customer (DTC) advertisements. One kind is the "help-seeking ad," in which medical information is provided to encourage patients to contact their physician but products information is not mentioned. Another category is the "reminder ad," in which the product's information is mentioned but the indication is not mentioned. The third type is the "product claim ad," which includes the efficacy or safety claims of a drug. Since the FDA released new guidelines on direct-to-consumer advertising in 1997, the prevalence of direct-to-consumer advertising of prescription drugs has increased exponentially and each category of advertisement should be subjected to different FDA regulations. Direct-to-consumer advertising of prescription drugs (DTCA) is legal in 2 industrialized countries, the United States and New Zealand and it is not legal in India. However, patients today increasingly flock to websites to find health-related information including those related to drugs. Hence, internet healthcare websites have rendered this law as merely a paper-feast.

Email Marketing Systems

One of the most widely used systems by many pharma companies. This system can be used for sending information related to various products and brands in detail to HealthCare professionals. Pharmaceutical direct mail is the perfect way to educate and persuade physicians and enables companies to directly interact with consumers because it showcases your company's brand offers detailed information and benefits about the product. There has been a massive growth in direct mail campaigns over the last decade representing 11.8% of advertising expenditure. Direct mail allows an organization to use its resources more effectively by allowing them to send publicity material to named persons within its target segment.

There is a positive impact of covid 19 on email marketing. Lockdowns and social distancing norms due to covid 19 have reshaped the role of reps and other face-to-face communication. In this situation, an email marketing campaign can share important information with Health care Professionals and the general public who is a wonderful potential audience for pharma email marketing because

pandemic generated panic, fear, and worry among them. Hence, they are looking for relevant and timely information from credible sources. These circumstances grant the way for email marketing which provides a powerful means for promulgating information related to the pandemic, preventive measures, medicines, treatment methods, vaccines, etc.

IV. CONCLUSION

Pharmaceutical promotional strategies are the key to successful pharma marketing. Pharmaceutical promotion has both informative and persuasive elements which are more effective at broadening the market, educating consumers, persuading physician contact, increasing drug treatment, and encouraging adherence among existing users hence promotion is very important to expand the sales of the pharmaceutical companies. This study has also explored the various techniques and tools of promotion followed in the pharmaceutical companies. We hope that practitioners can benefit from our analysis in order to better understand the various techniques and tools of promotion. We conclude that health information technology improves patient's safety by reducing medication errors, reducing adverse drug reactions, and improving compliance to practice guidelines. There should be no doubt that health information technology is an important tool for improving healthcare quality and safety.

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