



Corporate Strategies of Indian Pharmaceutical Industry To Become a Global Player

Saurabh Mishra

Department of Pharmacy, M.J.P. Rohilkhand University, Bareilly-243006, (Uttar Pradesh), India

saurabhmcm2002@gmail.com

Article History: Accepted 03.01.2021 Revised: 15.02.2021 Published 20.03.2021

Abstract

In the fast few years, there is a paradigm shift in pharmaceutical companies from the domestic to the international market. Indian pharmaceutical companies are now focusing on the global market for their growth strategies. The government of India is also facilitating the sector for enhancing export by a conducive policy environment. Pharmaceutical marketing in India is a highly competitive business. Though Indian Pharmaceutical industry caters about 16 percent of the world's population, it remains small, accounting for only one percent of global industry turnover. Indian pharma industry is trying to build the necessary infrastructure and enforcing mechanism and at the same time ensure affordability of medicines for chronic disease as life saving drugs. Markets are expanding their presence in domestic market and exploring global market for their growth strategy because of profitability. This article discusses about the strategic approach and commonly used business level strategies to become sound global presence in the pharmaceutical sector.

Key words: Pharmaceutical, Industry, Export, R&D, Mergers, Acquisitions, Strategies

DOI Number:10.48047/nq.2021.19.1.NQ21048

NeuroQuantology2021;19(1):367-378

367

Introduction

The foundation of Modern Indian pharmaceutical industry was laid down by Prof. P.C. Rai in 1910 by establishing a small factory "Bengal Chemical and Pharmaceutical works" at Kolkata. Before this the country was totally dependent on the export of drug from the third world. (IPG, 2012)The drugs and medicines were mainly imported from United Kingdom, France and Germany at that time. After independence in 1947 the Indian pharma sector has grown progressively to become self reliant not only to feed the domestic requirement but also to play a lead role in international market. Currently Indian pharmaceutical industry is having a significant stake in Indian economy and

is ranked second in fastest growing sector after software and IT in India. In past few decades after implementation of Patent amendment bill 2005 in compliance of TRIPS agreement the Indian pharma Industry have shifted the focus from domestic market to international business(Ghosal, S., 2007). This leads to infrastructure development in production plants, research & development facilities, Technical Know-how, product development and getting patents. The global vision and continues efforts of Indian pharmaceutical companies like Sun Pharma (Ranbaxy), Dr. Reddy's, Cipla, Zydus cadila, Aurobindo, Lupin and many others become the game changer and made a sound



presence with dominant figures in global pharma market(ORG-IMS 2010).

Today the pharmaceutical industry of India is one of the largest and most advanced among the developing countries by manufacturing the drugs as per global standards. The Indian pharmaceutical industry is the 3rd largest pharmaceutical market in terms of volume and 10th largest in terms of value in global pharmaceutical market. It is contributing 10% of global production of drugs and medicines (www.ibef.org).

The Annual Turnover of the Indian Pharmaceutical Industry is estimated to be about Rs. 1,85,388 crores during FY 2015-16 and Rs. 2197551 Crores during the year 2016-17. The share of export of Bulk Drugs, Drug Intermediates and Drug Formulations, Biologicals is Rs. 1076182 Crores for the year 2016-17. This segment of Industry has shown tremendous progress in terms of infrastructure development, technology base and wide range of products. The industry has developed excellent GMP (Good Manufacturing Practices) compliant facilities for the production of different dosage forms. The strength of the industry is in developing cost effective technologies in formulations, API and drug intermediates(Annual Report DOP ,2016-17,2017-18).

Top Indian Pharma companies are manufacturing the medicine for developed countries by having various international regulatory approvals for their manufacturing plants, from agencies like USFDA, MHRA-UK, TGA-Australia, MCC-South Africa etc. Outside USA, India has the highest number of USFDA approved plants for generic drugs manufacture more than 100 units. Major share of Indian Pharma exports is sourced to developed western countries especially USA(Annual Report Pharmexcil, 2016-17).

To exploit the business opportunity and face the competitive challenges, corporate are upcoming with more focused strategic approach to maximize the market share.

Strategies are corporate level planning to equilibrate the external environment with internal resources for achieving the set goals. It is a well defined plane to achieve the corporate objectives by positioning company among the current and future prospects. Strategic approach is a never ending process. It starts with strategic planning and ends on implementation, monitoring and evaluation of results through feedback system(Porter E M., 2004).

The domestic Pharma Industry has recently achieved some historic milestones through a leadership position and global presence as a world class cost effective generic drugs manufacturer for lifesaving drugs used for life threatening diseases for eg. AIDS, cancer etc. Along with Brazil & China, India has carved a niche for itself by being a top generic Pharma player. Many Indian companies are copartnering with foreign voluntary organizations for making available cheap generic drugs to lesser developed countries like Mozambique, Rwanda, South Africa and Tanzania which have about 33% of all people living with AIDS in Africa(Annual Report DOP,2017-18).

The strategic outlook of the most of Pharma companies is now to become global player (Krishna S., 2002). Many Indian companies become multinational company in true sense by establishing the production and R&D infrastructure across the globe along with their strengthened in-house infrastructure in India. Corporate are exploring the different strategies for achieving maximum ROI in global market. Indian pharmaceutical companies are designing the corporate strategies for globe presence through mainly three routes.

- Explore the Export ways
- Strengthen the Research and Development pipeline
- Mergers and Acquisition for immediate presence

Explore the Export ways

Exploring the global market through export was first and most common strategy of Indian

pharmaceutical company(Sleigh, S.H.,2010).An export of pharmaceuticals and chemical has registered a significant growth and advancement in last few decades. Today not only the Bulk drug but also finished formulations, generic and branded drug are exported from Indian pharmaceutical companies to Middle East Asia, Africa and South East Asia together with developed countries like U.S., U.K., Germany etc. Today more than 300 companies are present in organized sector which are engaged in production and export of bulk drugs and new entrants are joining the industry due to its potential and export opportunity.

India mainly exports its basic drug and generic formulations to developed countries, while main markets for finished formulation were the developing countries. Drugs of vegetable origin

account for an appreciable share in the export of pharmaceuticals from the country. So drug export from India consists of 3 main categories:

- Fine chemicals, intermediate and bulk drugs
- Finished formulations
- Crude drugs

Global Pharma market size in 2016 was estimated at \$1100 billion (as per IMS) with a growth rate of 3%. India's total exports of Pharmaceuticals (APIs, Generics and Alternative system of medicine) during 2016-17 was \$16.84 billion. Global generic market is estimated to be of size \$ 294 billion. India, a predominant player in Global Generic market has clocked \$ 12.7 billion of Exports out of a total \$ 294 generic market with a growth of 0.42%during the year 2016-17(Annual Report Pharmexcil, 2016-17).

Category	2014-15	2015-16	2016-17	Changes %
Bulk drugs and Intermediates	3665	3597	3401	-5.47
Drug Formulations and Biological	11214	12648	12701	0.42
AYUSH	118	111	124	11.65
Herbal Products	236	253	280	10.66
Surgicals	299	303	334	10.37
Total	15433	16912	16840	-0.43

369

Table No.1- India's exports of Pharmaceuticals to world in \$ mn

India has a market share of almost 42% of Generic market size of Africa and Middle East put together. Region of North America has contributed over 34% to India's pharmaceutical exports and has grown by a 1.25% in Fy-2017(Annual Report Pharmexcil, 2016-17).

Region	2014-15	2015-16	2016-17	Change % 2016-17	Contbn% 2016-17
North America	4518	5715	5787	1.25	34.35
Africa	3220	3491	3209	-8.07	19.06
EU	2445	2548	2533	-0.60	15.04
Asean	1056	1030	1088	5.59	6.46
LAC	1077	1035	995	-3.80	5.91
Middle East	825	833	828	-0.57	4.92
South Asia	616	636	723	13.73	4.30
CIS	701	613	633	3.22	3.76
Asia Excluding Middle East	512	512	567	10.82	3.37
Oceania	263	294	297	1.00	1.76
Other European Countries	140	137	130	-4.79	0.77
Other America	59	64	48	-24.41	0.29



Others	0	4	1	-76.95	0.01
Grand Total	15433	16912	16840	-0.43	100.00

Table No. 2- Region wise performance of India’s Pharma Export in \$ mn

India’s drug exports grew at a CAGR of 11.9 per cent during the decade ending 2015-16. In recent past, the patent of several blockbuster drugs was expired and this will give Indian companies an opportunity to supply bulk drugs and formulations to international markets. Companies are boosting on their marketing efforts along with R&D, and F&D to stimulate export. Balance sheet data of different companies shows that Indian pharmaceutical industry's dependence on exports is steadily rising. Indian companies are increasing their share in world’s pharma market by increasing its exports of generic drugs to regulated market and branded formulation to less regulated market.

Exports form a vital component of the growth strategy of most Indian pharmaceutical companies. The industry has made rapid strides in this area in the last few years and export sales of companies such as Sun Pharma have been growing at a faster rate than their domestic sales. Some of the leading Indian Pharma companies derive about 50% of their turnover from International market. Sun Pharma is a key player in exports, which contribute about 70% of its total sale. Dr Reddy's Laboratories' export sales, also contributed to 56 per cent of its annual sales which are growing by 12%. The Biocon, ranks among the fastest growing exporters in the market. Other companies like Aurobindo Pharmaceuticals, Orchid Pharmaceuticals, Wockhardt, Lupin too have reported healthy growth in exports. Lupin's contribution from exports has increased from 39 per cent of sales to 47 per cent of sales, growing by 40 per cent. Nearly three fourths of Orchid's sales are from overseas markets. (Annual Report of Sun Pharma, 2016-17, Dr. Reddy’s, 2016-17). The compounded annual growth rate of pharmaceutical exports over the last five years has been more than 20 per cent.

Indian companies have different strategies for export in which some targeting the generic market for drugs about to go off patent, yet other taking the more difficult patent challenge route, while some are supplying bulk drugs to generic manufacturers abroad. But the underlying strategy is to drive exports growth and reduce dependence on domestic markets. Initially, the US was the target side for every company. But now even Western Europe and Indeed even less regulated markets are strategically focused by different pharmaceutical company.

The first step of Govt. to promote exports in pharmaceuticals was establishment of export promotion council for chemical, pharmaceutical and other allied Products (Chemixil). Chemixil was constituted to provide support the Indian industry, to boost the export. Council organized different beneficial activity like seminar, workshops, sponsored tour to different countries for delegates. After that for promoting the export and global business of pharmaceuticals Pharmaxil was constitution by Govt of India making headquarter at Hyderabad. Pharmaxil is also supporting the companies on legal issues like, approval of formulation to USFDA and other such regulating body. There was sweeping changes in bulk drugs export of Indian pharma industry. India is thesecond largest manufacturer in the world after China. Indian bulk drugs are making the good place in global pharma trade due to its quality and marginally cheaper rates than other competing countries products.

The industry has been able to build up an export market for Indian pharmaceuticals in the face of fierce competition from manufacturing in foreign countries with a long record of technological growth than others. Industry has more range of product and facilities to be able to cater to a growing share of international market but it has not been able to realize this export potential fully. The volume of export is



modest so far as compare to total production in the country.

Favorable Factors for Pharma Exports

Factors which favor the growth in pharma export and motivate the entrepreneur to explore the new market throughout the world are:-

- **Global generic market:** This is estimated that about US\$100 billion value drugs was become off-patent during last 10 year period of time. So there lies an immense potential for Indian manufacturer having approved manufacturing facilities to penetrate the regulated market by exploring high value generics.
- **Cost efficiency:** Indian players are among the lowest cost producer in the world, due to less investment of infrastructure and manpower is available at cheaper prices as compare to other country
- **Innovative research in production:** Industry has excellent process reengineering skills, by which they develop different method to produce the bulk drug at lower cost by different process which shows cost effective process innovation.
- **Competitive domestic market:** due to many players, price war in fierce domestic competition and less growth rate compels the industry to explore the new market outside the country to register the growth.
- **Health care need in developed countries:** health care cost in developed country is very high. Even conditions are such that government and Health Management Organization (HMO) of countries like US, Europe, Japan, is forcing to curtail the cost. Many of the companies from these countries are looking to outsource their bulk drug requirements (up to some extents Formulation) from India either through their subsidiaries or contract manufacturing.

- **Communication Advantage:** Due to explosion of IT and improvement in communication barrier Indian pharma market is able to considerably reduce the time-lag between global launch of products and its launch in India. Over a period of time, Indian companies have enhanced their process development skills to a level that they are able to launch even difficult to replicate drugs.
- **Manufacturing of quality product:** Outside the developed countries like Europe, Japan and United States, most of the US FDA approved pharmaceutical facilities are located in India (More than 100 pharmaceutical manufacturing plants are US FDA approved in Indian for production of different dosage forms to sale in US and EU) indicate high product quality and immense export potential.

All these favorable factors help the Indian player to price these products competitively in global market and due to that they have emerged as competitive suppliers in the world of a large number of generics, they are now outside the patent protection. Thus industry has evolved from being highly import dependent to one that generating increasing export surplus for country.

Strengthen the Research and Development Pipeline

In a country where research and innovation have traditionally been neglected by domestic industry, the pharmaceutical industry is realising the importance of R&D. In India R&D of drugs and pharmaceuticals are carried out in about 143 in-house R&D units in industry recognized by the department of sciences and industry research, 6 labs of CSIR and several labs of ICMAR and nearly 50 university (Annual report OPPI, 2015-16). The successes enjoyed by a few companies such as Ranbaxy and Dr Reddy's in the R&D field have shown the way for others. Several Indian pharmaceutical companies including Cipla, Lupin, Wockhardt, Nicholas Piramal and Torrent are today engaged in R&D activities. Pharmaceutical industry being



a knowledge base industry is among the most highly R&D intensive industry because of following reasons:

- Continuous demand of better and superior medicines and pharmaceuticals with higher efficacy and least side effect.
- Products are rapidly obsolete and replaced continuously because complexity and severity of disease increases with the time.
- Because of changing environment and life style, newer mode of disorders and diseases are coming into picture which requires new therapy or new treatment modalities.
- Research are needed on different end to understand the physiology of disease and to develop the suitable pharmacological active principle, i.e. complete process involved research on human physiology, patho-physiology, basic chemistry. medicinal chemistry, pharmacology, toxicity etc.
- For a single molecule to become a commercially used medicine (Drug) big path of research are to be carried out with different discipline, many scientisttogether work on same molecule and it is an approximation atleast 10 years are required to drug molecule to become commercialized.
- Continuous social pressure to reduce the cost of therapy and drugs.
- Approach to permanent prevention of disease and improving the social life.
- Quench the thrust of querries of human physiology and disease.
- Provide a better health care system.

A global innovation survey by the Economist Intelligence Unit identified India as an R&D hotspot and defined it as a place where:

- Companies are able to tap into existing scientific and technical expertise networks,

- There are good links to academic research facilities,
- The environment supports innovation and
- It is easy to commercialize.

R&D activity is very expensive in drug industry. Large research based multinationals invest on R&D about 10-15% of its sales turnover. The attrition rate of new substance is extremely high. A general estimation suggests only one compound out of every 5,000-10,000examination reach in market. However average R&D expenditure by Indian pharmaceutical industry is around 2-3% of turnover. In the developed countries R&D in pharma are in very advance stage because of large input of industry, in terms of funds, equipments and facilities etc. Being applicability of product patent necessitate a well equipped R&D center for each pharma origination in developed countries.

R&D not only helps in giving the new product but also the existing products may be modified in new dimension or in new use of some products can be found. Investment in R&D not only helps in generating profit but also build the corporate image of company. In case of India companies having its own R&D setup have their own identity and market image(Suman, S., 2002). This is one of the most successful strategy of Indian pharmaceutical companies to capture the Indian market and also to become globalize eg. Sun Pharma (Ranbaxy), Dr. Reddy's, Cipila. All these companies are having most powerful USP of their R&D. In case of MNC like Pifzer, Aventis, Glaxo getting the maximum market share on commercialization of in house research products. In past decades R&D was most devoted to process development in India which leads to excellent growth in bulk drug manufacturing.

Now after implementation of product patent protection act, Indian pharma industry is compelled to focus on basic research of drug discovery or development of new molecule for pharmaceutical use. Few new molecules

developed by Indian companies are undergone in clinical trials and is expected to give successful results. Impact of this act is that now Indian pharma industry requires to compete globally for their existence, so industry has to raise their research standards for the same. This will also require a quantum jump in investment in R&D, from the present level of 2-3% of industry's turnover. Government has also recognized the importance of R&D in Pharma sector which is reflected through continuous improvement in Drug Policy and giving the various facilities and subsidies to R&D establishment. Government has also constituted a committee of different ministry under the chairmanship of secretary (chemicals and petrochemicals) to formulate the strategy and recommend measures to give further impetus to R&D, in drug industry. Council of Scientific and Industrial Research (CSIR) has also initiated its program to equip the industry to face new challenges of Patent regime.

Investment in pharmaceutical R&D has been raising steadily, from Rs.220 crores in 1997-98, R&D expenditure Rs.320 crores in 1999-2000. There was a further jump in R&D expenditure due to implementation of patent in last decade. R&D expenditure of industry reach to Rs. 23.5 billion (U.S. \$ 520 million) which accounts for 6.6% of its total turnover. Still the R&D expenditure, of Indian pharma companies are required a big leap along with quality output. As per industry experts R&D costs in India are much less than those in the developed world and it is possible to conduct both New Drug Discovery Research and Novel Drug Delivery System programmes at competitive rates. The Investigational New Drug stage may cost U.S. \$100 to 150 million overseas but costs only around Rs.40 to 60 crores in India, while clinical trials cost approximately \$300 to 350 million abroad, they cost about Rs. 100 crore in India (Mashelkar Committee report, 2003).

Apart from comparative cost advantage, Indian R&D efforts are also aided by the presence of a well-established network of research laboratories and a skilled pool of scientific

personnel. These need to be leveraged and utilized in an effective manner. Greater collaboration between Industry, Government and academia in this area is required to achieve this. Most Indian companies realise that it will be difficult for them to commercialise their discoveries on an international basis of their own. Therefore they are entering into licensing deals and strategic alliances with international companies. This way their development costs will get shared and returns will accrue faster.

Contract Research

The new dimension in Pharmaceutical research and development is contract research. Indian research companies and RD houses are conducting the research in of collaboration between Indian and foreign firms for domestic and international market, in a wide variety of areas such as collaborative R&D (including drug discovery and clinical trials), biotechnology and vaccine sectors. As per Frost & Sullivan (analysts) India and China's drug outsourcing discovery markets combined are currently worth around \$7.3 billion and driven by government initiatives to diversify the drug discovery portfolio and develop infrastructure, are set to reach \$19.8 billion in 2011(www.frost.com).

Clinical Research

One of the boom research area in Pharma Industry is clinical trials. India is suppose to be hub of clinical trials for new drugs because of various strategic advantages like low cost R&D, wide spread disease area, easily available men power etc. Costs of pharmaceutical innovation in India are estimated as low as one-seventh of their levels in Europe, and the country's clinical research industry is currently worth 5100 million and growing around 40 to 50 percent annually.

Costs of clinical trials in India are around one-tenth of their levels in the U.S., and it is estimated that they could be worth \$300 million to India (in 2010). Major drug producers that are already conducting trials in India include Pfizer, estimated to have some 20 ongoing clinical trials, GSK, with 7 trials; Eli Lilly, with 17 trials; along with AstraZeneca and

Novartis. As well as, leading contract research organizations (CROs) such as Quintiles, SFBC International and ICON Clinical Research have extensive operations in India. AstraZeneca is conducting research into tuberculosis (TB) at the AstraZeneca Research Foundation India in Bangalore. 8.5 million TB patients are estimated in India, mean clinical trials can be conducted easily and economically. Although the revenue potential for anti-TB drugs is limited as the disease mainly affects poorer nations, the reduced research costs of developing the drug in India and the goodwill associated with helping to eradicate a major disease in developing countries still present a good business opportunity for AstraZeneca. Pfizer is exploring the establishment of an R&D facility and setting up an academy for Clinical Research in Mumbai.

Research and Development Plans of Some Pharmaceutical Companies

The country's five top drug makers together spent a record Rs 8,025 crore in R&D in FY17, data from Bloomberg (www.bloomberg.com). The R&D expenses constitute 9% of the cumulative revenues of the companies.

Research and Development is a thrust area for most of Indian companies, which want to become a global leader in future. Strategies are different but objectives are clear to get the leadership status in development of innovative products.

- **Sun Pharma:** is currently undertaking drug discovery and development in four therapeutic areas: metabolic disorders (diabetes, dyslipidemia, obesity and associated disorders), cancer, inflammation and anti-infective. The company has received government permission to begin phase 2 clinical trials for its Benign Prostatic Hyperplasia (BPH) molecule and also plans to begin phase 1 clinical trials for its asthma molecule. Sun Pharma has a strong pipeline for the US market, with 157 ANDAs and 5 NDAs awaiting approval with the US FDA (Annual Report of Sun Pharma, 2016-17).

- **Dr Reddy's Laboratories** has identified drug discovery as one of its long-term strategy. The research focus has been in the therapeutic areas of metabolic disorders, cancer, inflammation and bacterial infection, apart from process research. At Dr Reddy's Research Foundation, hundreds of molecules have been synthesized over the last year and promising ones have been chosen for further evaluation and testing. The company's total expense on R&D is approx 8 per cent of its turnover. During 1999-2000, its first anti-diabetic compound, DRF-2593, licensed to Novoi Nordisk entered phase-2 clinical trials and the second lead compound, DRF-2725 entered Phase 1 clinical trials. The company filed for 28 product patents and 13 process in India, US and PCT countries (Annual Report DRL, 2015-16).
- **Glenmark Pharma** spends 12% of its revenues on R&D. The company has a pipeline of seven new molecular entities in the areas of oncology, respiratory and dermatology, and three specialty products targeting respiratory indications (Annual Report Glenmark, 2014-15)
- **Wockhardt Ltds** : R&D spend is approx 7 percent of its turnover and it expects its annual R&D expenditure in the coming years to be in the region of Rs. 40 crores to Rs. 50 crores. The NDDs segment constitutes a major thrust area in R&D for the company. It plans to file ten ANDAs for launching NDDs based generic products in the international markets (Annual Report Wockhardt, 2015-16)

Mergers and Acquisition

Mergers and Acquisition are among the most effective and efficient strategies to become globalised (Busfield, J, 2003). The cross



border Mergers and Acquisition helps the company in many ways (Sahu, S. K., 2015) likes

- To build up strong portfolio.
- Immediate market presence.
- Direct access to established market.
- Float the product on established distribution channel.
- Helps in product approval through regulatory agencies.

The pharmaceutical industry typically is a research driven industry. Discovery and innovation has become the major growth drives for the industry by the late 1950s. Cost-intensive research into new drugs and their marketing created greater pressure for consolidation in the industry as the cost of innovation is increased. In the early 1990s, the pharmaceutical sector was swept by a wave of mergers and acquisition (Beena, P.L., 2008). Companies across the world were merging to achieve critical mass and economies of scale in all departments (Vyas, V. K., 2012).

Domestic Mergers and Acquisition of Indian Pharma companies

The major M&A deals in Indian Pharmaceutical Industry for boosting domestic business are:

- Ranbaxy Laboratories was acquired by Daiichi Sankyo, Japan's third-largest pharmaceutical company in \$4.6bn in 2008.

Few important cross border acquisitions in Indian pharma industries are as follows:

S. No.	Company	Focus Area	Transaction Date	Target	Transaction value
1	Dishman Pharma	Contract manufacturing and research services	April 2005	Synproec (UK)	US\$ 3.5 million
2	Dr Reddy's	US generics, specialty products, API, Formulations	May 2004 n/a November 2006 February 2006	Trigenesis (USA) BMS Laboratories and meridian Healthcare (UK) Roche's API Business (Mexico) BETA Pharma (Germany)	US\$ 1.1 Million US\$ 16 Million US\$ 5.9 Million US\$ 576

- Abbott Laboratories (US-based multinational) acquired the domestic formulations business of Primal Health care at a consideration of \$3.72 billion (Rs 17,500 crore) under a Business Transfer Agreement ("BTA") in 2010. The acquisition was part of Abbot's strategy of penetrating into new emerging markets in the pharma sector and moving beyond its patented product business.
- Torrent Pharma acquired the branded domestic formulations business of Elder Pharma in India and Nepal at a cost of Rs. 2,004 crore (around USD 324 million) in 2014. Torrent Pharma also acquired domestic business of Unichem laboratories.
- The Sun Pharma emerges as one of the biggest pharma companies in India after acquisition of Ranbaxy in 2015 with a deal valued at US\$4 billion. The Sun Pharma and Ranbaxy had merged in February 2015 in a cashless share transaction worth \$3.2 billion.
- Dr Reddy's Laboratories acquired UCB (Belgium-based pharma company) business in India at (\$128.38 million (Rs 800 Cr) in 2016.



					million
3	Glenmark Pharma	Drug discovery research formulations	April 2004 March 2005 October 2005	Klinger Lab (Brazil) Uno-Ciclo (Brazil) Servycal SA (Argentina)	US\$ 5.2 million US\$ 4.6 million n/a
4	Hikal	APIs contact manufacturing	September 2004	Marsin (Denmark)	US\$ 6 million for 50.1% stake
5	Jubilant Organosys	CRAMS, Pharma specialty chemicals, intermediates formulations, medical chemistry and clinical services	June 2004 July 2005 October 2005	PSI (Belgium) Trinity Laboratories (along with subsidiary Trigend Laboratories) (US) Traget Research Associates (US)	US\$ 16 million US\$ 20.25 million for 75% stake US\$ 33.5 million
6	Matrix Labs	CRAMS, generic APIs, Intermediates and formuations	March 2005 June 2005 September 2005 n/a	MCHEM (China IV)\ Docpharma (Belgium) Explora Laboratories (Switzerland) Fine Chemicals Corp. (South Africa)	N/A US\$ 26.3 Million N/A N/A
7	Nicholas Pirantal	CRAMS space - Contract manufacturing APIs branded formulations	July 2004 December 2004 July 2005 October 2005	Dobultrex brand acquisition (USA) Rhodia's inhalations business (UK) Biceytech (Canada) Avecia Pharma (UK)	N/A US\$ 14 Million US\$ 6 Million US\$ 16.9 Million
8	Cipla	Generic Drug market of US	2016	InvaGen and Exelan	\$550 million
9	Sun Pharmaceutical Industries Ltd	Formulation marketing	2007	Alkaloida Chemical Co	US \$60 million
10	Lupin	To enter Russian pharmaceutical market	July 2015	"Biocom	
11	Lupin	\$880 million,	July 2015	GAVIS Pharmaceuticals LLC and Novel Laboratories Inc. (Gavis)	\$880 million,

Table No 3: Indian Pharmaceutical Sector Cross Border Acquisitions



Indian Pharmaceutical industry is continuously exploring M&A strategy for growth, and diversification and to become global player. Now Indian companies are moving globally to acquire the pharma business in other country for technological upgradation, Brand building and value addition to stake holders.

Conclusion

The Pharmaceutical industry, which is a subset of the healthcare industry, is the lifeline industry in any economy. It contributes towards the growth and development of the economy, along with building a strong human capital and intellectual property rights in a country. The Indian pharmaceutical industry, has been contributing to the social well being of the country by playing a multi-faceted role of discovering, developing, manufacturing and also distributing quality medicines. The tremendous role played by this industry is explicit from the improvement of the life expectancy, a leading health and economic indicator and decrease in mortality rate due to the increased in quality and availability of medicines and healthcare facilities.

The pharmaceutical industry of India was transformed after opening up of the economy and post patent era. From manufacturing to marketing every aspect of industry was changed with fast pace. According to a study by the Associated Chambers of Commerce and Industry (ASSOCHAM) the patent expiration on the branded product was substantially contributed to the growth of the Indian Pharmaceutical industrial, so the export was grown in great deal, particularly in the generic market because of low production cost in India, which given the India an edge over other countries. The Indian Pharmaceutical export still has tremendous potential to grow. Indian Pharmaceutical industry can leverage their strength in term of low cost of production and availability of quality manpower, as domestic production costs are almost 50% less as compared to the developed countries. The Signing of GATT (World Trade Organization) has induced a series of changes in the industry and

continues to guide the growth and development of the industry. Under WTO requirement, the country introduced the product patent regime and provides legal protection to Trade related Intellectual Property Rights (TRIPs) from Year 2005. Drug marketing in India had changed after implementation of product patents in year 2005. Globalization has opened up new vistas to trap resources and opportunities not only in domestic market but all over the world, in terms of human resources, market potential, technological progress of developing countries, growing awareness of health and hygiene and accessibility and affordability of latest medical facilities. There is a major shift in focus in recent time to address the welcome trends in all areas of pharmaceutical industry like, Marketing, Manufacturing, Research and Development (R&D), Emerging and Innovative Technologies, Regulatory Environment, legal and Ethical issues, Intellectual Property Right and Corporate Social Responsibilities.

Technology is greatly facilitating in ensuring privacy, accessibility and information on drug which enable the patients to make an informed choice. New manufacturing technologies, by developing latest state-of-art manufacturing facilities in Indian are growing fast together with getting USFDA approval for production plants and developing new drug delivery system. They are redefining the industry standard with regards to quality and regulatory compliances. Mergers, acquisition and alliances for drug development (CRO's), Clinical trials and marketing specific products (CSO's) are the growth strategies to counter the challenges posed due to product patents. Not only is this there is a change in R&D outlook of Indian pharmaceutical companies. R&D effort have changed from reverse engineering process to drug discovery model but still no major lead is development by the country. Biotech research is also new avenue, which is developing fast in India but on the other has R&D is having threat of drying pipeline, increase cost and lack of major leads.

Reference

1. Annual Report GlanmarkPharma , 2014-15
2. Annual report of Department of Pharmaceuticals, Ministry of Chemicals & Fertilizers, Government of India, 2016-17
3. Annual report of Department of Pharmaceuticals, Ministry of Chemicals & Fertilizers, Government of India, 2017-18
4. Annual report of Dr. Reddy's Laboratories Ltd. 2015-16
5. Annual report of Organization of pharmaceutical producer of India (OPPI) 2015-16
6. Annual report of Pharmaceuticals Export Promotion Council Of India (Pharmexcil). 2016-17
7. Annual Report of Sun Pharma Ltd. 2016-17
8. Annual Report Wockhardt Limited, 2015-16
9. Available From: <https://www.bloomberg.com>
10. Available From: <https://www.frost.com>
11. Available From: <https://www.ibef.org/industry/pharmaceuticals>
12. Beena, P.L. " Trends and perspectives on corporate mergers in contemporary India", Economic and Political weekly, 2008, 43(39), 48-56
13. Busfield, J, Globalization and the pharmaceutical industry revisited, International Journal of Health Services, 33-3, 2003
14. Ghosal, S. "Global footprints" Business India, Sep-23,2007
15. Indian Pharmaceutical Guide (IPG), Kangposh Publication House 2012
16. Krishna S., Indian pharmaceutical companies trends and opportunity, Business Standard, oct 5-6, 2002
17. Market Intelligence report ORG-IMS 2010
18. Mashelkar Committee report, 2003.
19. Porter E Michael, Competitive Strategies- Techniques for analyzing Industries and competitors, free press, 192, 2004.
20. Sahu, S. K. and Agarwal, N. " Mergers and Acquisition in Indian Pharmaceutical sector", Madras School of Economics; 2015,1-34
21. Sleigh, S.H., Barton, C.L., Repurposing Strategies for Therapeutics, Pharm Med, 24, 2010
22. Suman, S. "R&D Management: Issues and Challenges" IIMB management Review, June-2002
23. Vyas, V. K. Narayanan and A. Ramanathan, "Determinants of mergers and acquisitions in Indian Pharmaceutical industry" Eurasian journal of Business and economics, 2012, 5(9), 79-10.

