Chapter 2

PHARMACEUTICAL INDUSTRY

2.1 Introduction

India enjoys an important position in the global pharmaceuticals sector. Indian pharmaceutical sector accounts for about 1.4 per cent of the global pharmaceutical industry in value terms and 10 per cent in volume terms. This makes the Indian pharmaceuticals market third largest in terms of volume and thirteenth largest in terms of value. The Indian pharmaceuticals market increased at a CAGR of 9.4 per cent in 2013 from USD6 billion in 2005, and is expected to expand at a CAGR of 23.9 per cent to USD55 billion by 2020. By 2020, India is likely to be among the top three pharmaceutical markets by incremental growth and sixth largest market globally in absolute size. India has a huge market potential for Pharmaceuticals. Indian pharmaceutical industry is famous in international fraternity for making medicines at comparatively low-price. India’s cost of production is significantly lower than that of the US and almost half of that of Europe. It gives a competitive edge to India over others.

India has also maintained its lead over China in pharmaceutical exports with a year-on-year growth of 7.55 per cent to US$ 12.54 billion in 2015, according to data from the Ministry of Commerce and Industry. Overall drug approvals given by the US Food and Drug Administration (USFDA) to Indian companies have nearly doubled to 201 in FY 2015-16 from 109 in FY 2014-15.

![Figure 2.1 Revenue of Indian Pharmaceutical Sector](image)

*Source: Department of Pharmaceuticals, PwC, McKinsey, Aranca Research, F= Forecast*

Figure 2.1 Revenue of Indian Pharmaceutical Sector
2.2 Structure of Pharmaceutical Industry

The Indian pharmaceutical industry is fragmented with more than 10,000 manufacturers in the organised and unorganised segments. The products manufactured by the Indian pharmaceutical industry can be broadly classified into bulk drugs (active pharmaceutical ingredients - API) and formulations (Figure 2.2). Of the total number of pharmaceutical manufacturers, about 77% produce formulations, while the remaining 23% manufacture bulk drugs. Bulk drug is an active constituent with medicinal properties, which acts as basic raw material for formulations. Formulations are specific dosage forms of a bulk drug or a combination of bulk drugs. Drugs are sold as syrups, injections, tablets and capsules.

The Indian API manufacturing segment is divided into two sectors – innovative or branded and generic or unbranded. In 2009, the global generic drug market was estimated to be US$ 84 billion, of which the US accounted for 42%. India’s generic drug industry is estimated to be US$ 19 billion and it ranks third globally, contributing about 10% to global pharmaceutical production.

Source: Dun & Bradstreet, Aranca Research

Figure 2.2 Structure of Pharmaceutical Sector in India
Figure 2.3 Revenue Share of Sub Segments in Pharmaceutical Sector in India

Generic drugs form the largest segment of the Indian pharmaceutical sector with 70 per cent of market share (in terms of revenues). India also supplies 20 per cent of global generic medicines market exports in terms of volume, making the country the largest provider of generic medicines globally. Over the Counter (OTC) medicines and patented drugs constitute 21 per cent and 9 per cent, respectively, of total market revenues of US$ 20 billion. Presently over 80 per cent of the antiretroviral drugs used globally to combat AIDS (Acquired Immuno Deficiency Syndrome) are supplied by Indian pharmaceutical firms. The UN-backed Medicines Patent Pool has signed six sub-licences with Aurobindo, Cipla, Desano, Emcure, Hetero Labs and Laurus Labs, allowing them to make generic anti-AIDS medicine Tenofovir Alafenamide (TAF) for 112 developing countries.

The global API market can broadly be divided into regulated and semi regulated markets. The semi regulated markets like India offer low entry barriers in terms of regulatory requirements and intellectual property rights. The highly regulated markets, like the United States and Europe, have high entry barriers in terms of intellectual property rights and regulatory requirements, including facility approvals. As a result, there is a premium for quality and regulatory compliance along with
relatively greater stability for both volumes and prices. The regulatory process by which API manufacturers generally register their products for commercial sale in the U.S. and other similarly regulated countries is via the filing of a Drug Master File (DMF). DMFs are confidential documents containing information on the manufacturing facility and processes used in the manufacture, characterization, quality control, packaging and storage of an API. The DMF is reviewed for completeness by the FDA, or other similar regulatory agencies in other countries, in conjunction with applications filed by finished dosage formulation manufacturers, requesting approval to use the given API in the production of their drug products. For European markets, companies need to submit a European Drug Master File (EDMF) and, where applicable, obtain a certificate of suitability (CoS) from the European Directorate for the Quality of Medicines.

The growth in the Indian industry is mainly driven by Contract Manufacturing, and latest estimates show that India has submitted the most Drug Master Files (DMF). The merchant API industry in India has traditionally catered to the domestic as well as export markets with their supply largely restricted to manufacturers of generic drugs. This is because sourcing of APIs for patented drugs is maintained inhouse by majority of the innovator companies in order to maintain greater flexibility and quality control.

In recent years, many of the large domestic pharmaceutical companies such as Lupin Limited and Dr. Reddy's Laboratories have increased backward integration into bulk drugs especially for some of their key product segments in order to maintain control over quality and costs. Furthermore, with many of the domestic pharmaceutical companies present in the highly competitive US generic formulation market, the requirement for in-house API supply is gaining prominence.

2.3 Evolution of Indian Pharmaceutical Industry

The Indian pharmaceutical industry has come a long way since the time of independence when multinational corporations dominated the industry. The industry, in addition to meeting domestic demand, is in a position to export significant volume of pharmaceutical products to various destinations, including the developed markets of US, European Union and Japan. Evolution of Indian pharmaceutical industry can be classified into the following three periods:
1) Pre-1970

Till 1970, the size of the Indian pharmaceutical industry was very small in terms of number of firms as well as production capacities. Bengal Chemicals and Pharmaceutical Works in Kolkata and Alembic Chemicals in Baroda, set up in around 1910 were the first two Indian firms to start pharmaceutical production. During this period, the patent regime, based on The Indian Patents and Designs Act, 1911, recognized both product and process patents. Between 1947 and 1957, 99% of the drugs and pharmaceutical patents in India were held by foreign MNCs. Naturally prices of drugs were very high and to combat with such monopoly two public sector company were set up. One of them was Hindustan Antibiotic Ltd. (HAL) established in 1954, with the help of W.H.O. and UNICEF. The other one - The Indian Drugs and Pharmaceutical Limited (IDPL), was established in 1961.

2) From 1970 To 1995

Government of India introduced a new Patent Act, which came into effect in 1972, recognizing only process patent and not product patent. The Act enabled Indian firms to use reverse engineering process’, to manufacture drugs, without paying royalty to the original patent holder. The Act, along with Drug Price Control 1995 to Present Order, provided little incentive for MNCs to introduce new pharmaceutical products in India. During this period, the number of domestic pharmaceutical firms increased considerably, from around 2000 units in 1970 to 24,000 units in 1995. Production of bulk drugs increased from Rs. 18 crores in 1965-66 to Rs. 1518 crores in 1995, while that of formulations increased from Rs. 150 crores to Rs. 7935 crores during this period. Share of exports as a percentage of total production showed significant increase from 3.22% in 1980-81 to 24% in 1994-95.

3) 1995 Onwards

The year 1995 recorded another milestone for the Indian pharmaceutical industry. One of the Agreements under the World Trade Organization was complying with the Trade Related Intellectual Property Rights (TRIPS) provisions. The TRIPS Agreement reintroduced product patent in India. Further, during this period, tariff and non-tariff measures came down. Such developments worked in favor of Indian
pharmaceutical industry to undertake activities such as clinical research and new drug development. Indigenous producers dominated the market accounting for more than 70% of the market share. Exports also continued to increase during this period, due to strong R&D process and low manufacturing cost.

2.4 Current Scenario

The Indian Pharmaceutical industry is experiencing phenomenal growth in recent years. This demand is not only driven by rising consumption but also by strong demand from export markets. India is among the top five emerging markets in the world. The immense demand from exports market has been due to the ability of Indian Pharmaceutical companies to produce cost effective drugs with world class manufacturing facilities. The present pharmaceutical industry is comparable to all the developed markets like US, Japan and China. The growth in Indian pharmaceutical industry is due to increasing consumer spending, rapid urbanization and also increasing healthcare insurance.

2.5 Pharmaceutical Manufacturing Units in India

The Indian pharmaceutical industry is fragmented with more than 10,000 manufacturers in the organised and unorganised segments. Pharmaceutical manufacturing units are largely concentrated in Maharashtra and Gujarat. These states account for about 45% of the total number of pharmaceutical manufacturing units in India. According to the Confederation of Indian Industries (CII), there are around 8,000 small and medium enterprises (SME) units, accounting for about 70% of the total number of the pharmaceutical units in India.
Figure 2.4 State wise Pharmaceutical Manufacturing Units in India

Source: Department of Pharmaceuticals, GoI

Figure 2.5 Concentration of Pharmaceutical Manufacturing Units in India (%)

Source: Department of Pharmaceuticals, GoI
2.6 Investment in the Indian Pharmaceutical Industry

100% foreign direct investment (FDI) is allowed under automatic route in the drugs and pharmaceuticals sector, including those involving use of recombinant technology. Also, FDI up to 100% is permitted for brownfield investments (i.e. investments in existing companies), in the pharmaceuticals sector, under the Government approval route. The drugs and pharmaceuticals industry attracted foreign direct investment to the tune of US$ 9.17 billion for the period between April 2000 and January 2012. The Indian pharmaceutical industry enjoys certain advantages, which attracts FDI in the country: 1) low cost of innovation and capital expenditure (to operate good manufacturing practices-compliant facilities) which provides leverage in pricing of drugs 2) transparency in the regulatory framework 3) proven track record in bulk drug and formulation patents 4) strong domestic support in production, from raw material requirements to finished goods and 5) India emerging as a hub for contract research, bio-technology, clinical research and clinical data management.

2.7 Employment Generation by Indian Pharmaceutical Industry

Low cost of skilled manpower and innovation are some of the main factors supporting this growth. According to the Department of Pharmaceuticals, the Indian pharmaceutical industry employs about 340,000 people and an estimated 400,000 doctors and 300,000 chemists.

2.8 Factors Influencing Growth of the Pharmaceutical Industry

The Indian pharmaceutical industry ranks 14th in the world by value of pharmaceutical products. With a well-established domestic manufacturing base and low-cost skilled manpower, India is emerging as a global hub for pharmaceutical products. Some of the major factors that drive growth in the industry are as follows:

**Increase in domestic demand:** More than half of India’s population does not have access to advanced medical services, as they usually depend on traditional medicine practices. However, with increase in awareness levels, rising per capita income, change in lifestyle due to urbanisation and increase in literacy levels, demand for advanced medical treatment is expected to rise. Moreover, growth in the middle class population would further influence demand for pharmaceutical products.
Rise in outsourcing activities: Increase in the outsourcing business to India would also drive growth of the Indian pharmaceutical industry. Some of the factors that are likely to influence clinical data management and bio statistics markets in India in the near future include: 1) cost efficient research vis-à-vis other countries 2) highly-skilled labour base 3) cheaper cost of skilled labour 4) presence in end-to-end solutions across the drug-development spectrum and 5) robust growth in the IT industry.

Growth in healthcare financing products: Development in the Indian financial industry has eased healthcare financing with introduction of products such as health insurance policy, life insurance policy and cashless claims. This has resulted in increase in healthcare spending, which in turn, has benefitted the pharmaceutical industry.

Demand in the generics market: During 2008-2015, prescription drugs worth about US$ 300 billion are expected to go off patent, mostly from the US. Prior experience of Indian pharmaceutical companies in generic drugs would provide an edge to them.

Demand from emerging segments: Some of the emerging segments such as contract research and development, biopharma, clinical trials, bio-generics, medical tourism and pharmaceutical packaging are also expected to drive growth of the Indian pharmaceutical industry.

2.9 Swot Analysis: Indian Pharmaceutical Industry

The SWOT analysis of the industry reveals the position of the Indian pharmaceutical industry in respect to its internal and external environment.

Strengths

- Low cost of innovation, manufacturing and operations
- Low cost of skilled manpower and proven track record in design of high technology manufacturing devices.

Weaknesses

- Stringent pricing regulations affecting the profitability of pharmaceutical companies
• Presence of more unorganised players versus the organised ones, resulting in an increasingly competitive environment, characterised by stiff price competition.

**Opportunities**

• Opening of the health insurance sector and increase in per capita income - the growth drivers for the pharmaceutical industry
• India, a potentially preferred global outsourcing hub for pharmaceutical products due to low cost of skilled labour.

**Threats**

• Other low-cost countries such as China and Israel affecting outsourcing demand for Indian pharmaceutical products
• Entry of foreign players (well equipped technology-based products) into the Indian market.

The SWOT analysis shows that the opportunities for pharmaceutical industry are immense with respect to new businesses and new markets. Many pharmaceutical companies have created different strategies to cater to different customer types. However, the following challenges must be addressed: Decline in production, stringent regulations, high development costs, stringent regulations, government regulations in price control and expensive research and development practices. The number and quality of medical representatives as well as less time given by doctors for sales call are other issues.

**2.10 Future Growth Prospects**

In the past, the pharmaceutical industry has grown at 12-15 rate of growth. It has been predicted that it will maintain its growth in double digits in future too. India may rank among top 5 global pharmaceutical markets by 2030. The Indian pharmaceutical industry has seen a large number of acquisition and mergers. The growth of the pharmaceutical industry will be driven by the fastest growing segments of diabetes, skincare and eye care.
2.11 Importance of Salespeople in Pharmaceutical Industry

Personal selling is one of the oldest and most reliable methods of business promotion in pharmaceutical companies. It is often indispensable due to increasing competition and growing sophistication of both customers as well as products. In pharmaceutical industry where most companies offer similar products, the person behind the product (salesperson) makes the difference.

The fact that personal selling is the single most promotional method used in pharmaceutical industry has resulted in unique situation. As salesperson in pharmaceutical industry is in constant contact with the customers, markets and competitor activities, he is in best position to effectively incorporate the marketing orientation in his/her sales function.

2.12 Role of Medical Representatives in Pharmaceutical Industry

A medical representative is someone who conveys information about company’s products to the doctors, ensures their availability in the market and is expected to ensure timely payments from the marketing intermediaries. Job responsibilities of MR are as follows:

- Arranging appointments with doctors, pharmacists and hospital medical teams which may include pre – arranged appointment or regular cold calling.
- Making presentations to doctors, pharmacists in the retail sector, hospital doctors.
- Organizing conferences for doctors and other medical staff.
- Keeping detailed records of all the contacts and reaching annual sales targets.
- Planning work schedules and weekly and monthly time tables.
- Regularly attending company meetings, technical data presentations and briefing.
- Keeping up with the latest clinical data supplied by the company and interpreting, presenting and discussing this data with health professionals during presentation.
• Monitoring competitor activity and competitor’s products.

• Maintaining knowledge of new development in the national health service, anticipating potential negative and positive impacts on the business and adopting strategy accordingly.

• Developing strategies for increasing opportunities to meet and talk to contacts in the medical and healthcare sector.

• Staying informed about the activities of healthcare services in a particular area.

2.13 Profile of top Pharmaceutical Companies in India

1. Cipla

Cipla Limited is an Indian multinational pharmaceutical company. It is headquartered in Mumbai. It was founded by Dr. Khwaja Abdul Hamied as 'The Chemical, Industrial & Pharmaceutical Laboratories' in 1935 in Mumbai. The name of the Company was changed to 'Cipla Limited' on 20 July 1984. Cipla has more than 20,000 employees. It has a turnover of USD 2 billion. It is listed on BSE and NSE of India. Cipla primarily develops medicines to treat cardiovascular disease, arthritis, diabetes, weight control and depression; other medical conditions. Cipla’s mission is to be a leading global healthcare company which uses technology and innovation to meet every day needs of all the patients. Cipla has over 35 state-of-the-art manufacturing facilities for API and formulations across 8 locations across India and has presence in 170 countries. In India, the manufacturing facilities are in Goa, Bengaluru, Baddi, Indore, Kurkumbh, Patalganga and Sikkim along with field stations in Delhi, Pune, and Hyderabad. In 1994, Cipla launched Deferiprone, the world’s first oral iron chelator. In 2001, Cipla offered medicines (antiretrovirals) for HIV treatment at a fractional cost (less than $350 per year per patient).

The commitment to high quality standards has made Cipla the most trusted brand among healthcare professionals. Cipla is a market leader in three therapies — Respiratory, Urology and Antiretroviral (ARV) with seven brands in the top 100 list. In the fiercely competitive Indian pharmaceutical industry environment, Cipla scores over with strong brand equity, product range, unique dosage forms, pioneering work
across therapeutic areas, numerous medico-marketing initiatives, strong distribution network of distribution depots catering to a network of over 3,000 stockists, reaching out to 7,00,000 chemists.

Cipla’s Research & Development (R&D) is focused towards developing new products, improving existing products as well as drug delivery systems and expanding product applications. Hundreds of scientists work on all facets of pharmaceutical development and technology. In-house R&D forms the backbone of its operations. Cipla also cooperates with other enterprises in areas such as consulting, commissioning, engineering, project appraisal, quality control, know-how transfer, support, and plant supply.

Cipla is a pioneer in API manufacturing in India for over 5 decades. It currently manufactures more than 200 generic and complex APIs. Cipla APIs cover a broad spectrum of therapeutic categories that are supplied to some of the major formulation players in the pharmaceutical industry globally. Cipla houses state-of-the-art research facilities for its API process development at three locations in India, with dedicated teams working on synthetic, organic chemistry, process engineering and analytical development at multiple locations. API pipeline consists of 75+ complex developments in the therapy areas of Oncology, Hep C, ARV, Diabetology, CVS, CNS, Respiratory etc., Cardiovascular, Dermatology, Cosmetology, Ophthalmology, Osteoporosis and Urology. Formulation pipeline has 250+ complex products majorly in Respiratory, Oncology, ARVs, Ophthalmology, CNS, CVS etc.

Cipla has over 2000 products in 65 therapeutic categories available in over 40 dosage forms, including Liposome Injection, Microsphere Injection, Topical Delivery System, Metered-Dose Inhaler, Dry Powder Inhaler & Respiratory Solutions, Nasal Drug Delivery, Ophthalmic Solutions, Pre-filled Syringe, Hormone Injection, Nanotechnology, Melt Extrusion & Hot Melt Granulation and Particle Engineering.

Cipla is committed towards disease detection and patient awareness programmes like KBC (Know your Blood Cholesterol) and Check BP which can help doctors reach hundreds of undiagnosed patients and improve patient care and treatment adherence. In dermatology and cosmetology, Cipla has a spectrum of products based on a range of formulations for acne, skin infection (bacterial, fungal & herpes), seborrhoea dermatitis, psoriasis, steroid responsive dermatitis, hair loss and aging skin. Products
are available as oral and various topical formulations like cream, ointment, solution, suspension, foam, serum and so on.
(Source of information - http://www.cipla.com)

2. Lupin

Lupin Limited is a pharmaceutical company based in Mumbai, Maharashtra. It is among the top five pharmaceutical companies in India. Lupin was founded by Desh Bandhu Gupta in 1968. The company is named after Lupin flower because of its inherent qualities and what it personifies and stands for. Lupin Pharmaceuticals, Inc. is the U.S. wholly owned subsidiary of Lupin Limited. Through its sales and marketing headquarters in Baltimore, MD, Lupin Pharmaceuticals, Inc. is dedicated to delivering high-quality, branded and generic medications trusted by healthcare professionals and patients across geographies. Lupin's mission is to become a transnational pharmaceutical company through the development and introduction of a wide portfolio of branded and generic products in key markets.

The company is a leading global player in Anti-TB, Cephalosporins (anti-infectives) and Cardiovascular drugs (ACE-inhibitors and cholesterol reducing agents) and has a notable presence in the areas of diabetes, anti-inflammatory and respiratory therapy. It is dedicated to fight infectious diseases and manufacture drugs of the highest social priority.

Lupin Limited is strongly research focused. It has a program for developing New Chemical Entities. The company has a state-of-the-art R&D center (Lupin Research Park) in Pune. It is a 19 acre site with built area of 150,000 sq.ft. 320 scientists work there. It works closely with an extensive network of global laboratories, companies and academic institutions.

Lupin operates a globally integrated network of 11 manufacturing facilities. Its world class facilities are built to manufacture and deliver a wide range of finished products. Manufacturing plants in India are located at Mandideep (Madhya Pradesh), Tarapur (Maharashtra) and Goa. The plant at Mandideep forms the hub of Lupin's competencies in cephalosporins and ACE-Inhibitors. It manufactures both APIs and finished dosages. It is world's largest producer of lisinopril API. The plant at Tarapur forms the core of Lupin's fermentation capabilities. It is world's largest plant for
rifampicin. The plant at Goa forms Lupin's non-cephalosporin oral dosages. It is Lupin's 11th plant to receive US FDA approval.

Lupin is recognized as a leading manufacturer of cephalosporin API’s, with FDA approval to manufacture complex oral and injectable cephalosporins. It is fast gaining share in the cardiovascular segment manufacturing a wide range of ACE-inhibitors and cholesterol reducing agents. Lupin’s capabilities in sterile processing, synthetic process development and fermentation skills coupled with its intellectual property strengths, puts the company in a very strong position to offer a diverse portfolio of niche API’s to its customers.

(Source of information - http://www.lupinpharmaceuticals.com)

3. Sun Pharma

Sun Pharmaceutical Industries Limited is an Indian multinational pharmaceutical company headquartered in Mumbai, Maharashtra. Sun Pharmaceuticals was established by Mr. Dilip Shanghvi in 1983 in Vapi. It manufactures and sells pharmaceutical formulations and active pharmaceutical ingredients (APIs) primarily in India and the United States. The company offers formulations in various therapeutic areas, such as cardiology psychiatry, neurology, gastroenterology and diabetology. It also provides APIs such as warfarin, carbamazepine, etodolac, and clorazepate, as well as anticancers, steroids, peptides and controlled substances. It is the largest chronic prescription company in India and a market leader in psychiatry, neurology, cardiology, orthopedics, ophthalmology, gastroenterology and nephrology. Sun Pharma completed the acquisition of Ranbaxy Laboratories Limited, an integrated, research based, international pharmaceutical company, on 25th March 2015. This acquisition has made Sun Pharma the most profitable company and largest pharmaceutical company by market capitalization in India. Its manufacturing is across 26 locations, including plants in the US, Canada, Brazil, Mexico and Israel. Sun Pharma committed to providing affordable pharmaceutical products of global quality standards to patients all over the world.

Sun Pharma is pioneer among Indian pharmaceutical companies to see tremendous value in investing in Research and Development. Sun Pharma has around 1800 research scientists working in multiple R&D centres equipped with cutting-edge enabling technologies for research. Its scientists have expertise in developing
generics, difficult to make technology intensive products, Active Pharmaceutical Ingredients (APIs), Novel Drug Delivery Systems (NDDS) and New Chemical Entities (NCEs).

Sun Pharma has over 45 state-of-the-art manufacturing sites spanning 6 continents. These manufacturing units are located in India, the US, Brazil, Canada, Egypt, Hungary, Israel, Bangladesh, Mexico, Romania, Ireland, Morocco, Nigeria, South Africa and Malaysia. Its manufacturing capabilities span generics, branded generics, difficult-to-make technology intensive products, over-the-counter (OTC), antiretrovirals (ARVs), Active Pharmaceutical Ingredients (APIs) and intermediates. Its products cover the full range of dosage forms, including tablets, capsules, injectables, inhalers, ointments, creams and liquids. The therapeutic segments include psychiatry, anti-infectives, neurology, cardiology, orthopaedic, diabetology, gastroenterology, ophthalmology, nephrology, urology, dermatology, gynaecology, respiratory, oncology, dental and nutritionals.

It began producing Active Pharmaceutical Ingredients (APIs) in 1995 as a vital input in the manufacture of complex formulations and products to facilitate complete vertical integration. Today, its list of APIs exceeds 300 which is used for captive purposes as well as marketed to customers in over 60 countries across the world. Its product list includes generics and complex APIs that require isolated manufacturing areas, like anti-cancers, peptides, steroids, sex hormones and controlled substances, including poppy-derived opiate raw materials that are primarily used in the manufacture of analgesics, sold as both Narcotic Raw Materials (NRM) and API's. It manufactures APIs currently in 12 plants located in India, Hungary, the US and Israel. (Source of information - http://www.sunpharma.com)

4. Cadila

Cadila Healthcare is an Indian pharmaceutical company headquartered at Ahmedabad, Gujarat. It is the fifth largest pharmaceutical company in India. It is also one of the largest privately held pharmaceutical companies in India. Cadila was founded in 1952 by Ramanbhai Patel. It is a significant manufacturer of generic drugs. Over the last six decades, the company has been developing and manufacturing pharmaceutical products in India and selling and distributing these in over eighty-five other countries around the world. In 2006, Cadila Pharmaceuticals entered a joint venture with Apollo
Hospitals Group to manage Apollo Hospitals, Ahmedabad. In 2015, the company acquired an Indian pharmaceutical company called German Remedies.

At Cadila Pharmaceuticals, Research and Development is at the core of all its initiatives, be it Biotechnology, APIs, Formulations, Plant Tissue Culture or Phytochemistry. More than 300 scientists in its various Research and Development setups reinforce the competitiveness of research in the therapeutic areas which have high unmet medical needs. Cadila Pharmaceuticals taps the best scientific talent in the country and has collaborations with more than 30 leading Research and Development centers in India.

One of the core business areas of Cadila Pharmaceuticals is to synthesize Active Pharmaceutical Ingredients (APIs) of the highest standard in an integrated cost effective manner. The company offers more than 38 APIs and intermediates which are exported across the world. Two Active Pharmaceutical Ingredient (API) manufacturing units at Ankleshwar, Gujarat manufacture a wide range of APIs and intermediates including many USFDA-certified products.

Cadila also has extensive range of finished dosage formulations (branded and generic) which covers every aspect of human life. Its basket of formulations contain more than 850 products in several forms belonging to 45 therapeutic segments and 12 specialities including cardiovascular, gastrointestinal, analgesics, haematinics, anti-infectives and antibiotics, respiratory agents, antidiabetics, immunogicals and oncology. The manufacturing expertise is available for almost all dosage forms including sterile as well as non-sterile products. Formulations has three manufacturing facility in the state of Gujarat, Jammu (India) and Ethiopia.

Cadila Pharmaceuticals is the only Indian manufacturer of Streptokinase and Hyaluronic Acid-based products. Hyaluronic Acid containing products include Visial for Ophthalmology and Halonix for intra articular use. Streptokinase is used in management of heart attack. The company also manufactures rabies immunoglobulin and diagnostic kits for detection of HIV and HCV. Cadila Pharmaceuticals is working in areas of novel vaccine adjuvants, Sepsis management and therapeutic vaccine for pancreatic cancer.
Some of its top brands are (1) Polycap – According to Cadila Pharmaceuticals commissioned and sponsored ‘The Indian Polycap Study’ Polycap brings down the risk of coronary heart disease by 62% and stroke by 48%, (2) Risorine – It is the world’s first boosted – Rifampicin containing fixed-dose combination, used for treatment of tuberculosis, (3) Mycidac – C – It is world’s first active immunotherapy in lung cancer, (4) Scat Eye Drops - World’s first Sparfloxacin Eye Drops, (5) Rabeloc I.V - World’s first parenteral formulation of Rabeprazole.
(Source of information - http://www.cadilapharma.com)

5. Abbott

Abbott Laboratories is an American Worldwide Healthcare Company. It has 74,000 employees and operates in more than 150 countries. The company headquarters are in Lake Bluff, Illinois. The company was founded by Chicago physician Wallace Calvin Abbott in 1888. Abbott is known for its innovative products and a commitment to applying leading edge science and technologies to advance patient care. Its medical tests and diagnostic instrument systems are used worldwide by hospitals, laboratories, blood banks, and physician offices to diagnose and monitor diseases such as HIV, hepatitis, cancer, heart failure and metabolic disorders, as well as assess other indicators of health. Its product and services are designed to maintain its reputation for high quality and optimal performance.

Abbott Laboratories has been present in India for over 100 years through its subsidiary Abbott India Limited. It is one of India's fastest growing pharmaceutical companies. It is headquartered in Mumbai. It has a strong presence in multiple therapeutic categories such as Women's Health, Gastroenterology, Neurology, Thyroid, Diabetes & Urology Pain Management, Vitamins, Anti-Infectives & other therapy areas.

Abbott India Limited has over 2,600 employees and reaches customers through a wide network of 35 distribution points, catering to over 4,500 stockists and 150,000 retail outlets. Abbott India Limited's success is driven by a combination of a highly competent and motivated commercial team, R&D backed products, aided by strong alliances and partnerships. The company has over 100 employees at a state-of-the-art formulation plant at Verna, Goa. The manufacturing plant is designed to produce high quality, high volume formulations using cost efficient processes and has well
equipped laboratories and trained personnel to ensure compliance with international quality standards. The company has in-house development and medical teams to undertake product and clinical development tailored to needs of the Indian market. Abbott India Limited believes in providing quality healthcare through a mix of global and local products which directly affect the life of the common Indian.

Many of its products are part of the Top 50 brands in the Indian Pharmaceutical market (IPM), such as Duphaston which was ranked number 1 in its segment (Progestogen and similar combinations) and Thyronorm which was ranked 8th in December, 2012. Zolfresh was ranked 2 in the Extended Sleep Market, while Digecaine was ranked 3 in (Antacid + Local Anaesthetic) category. Some of its brands have shown tremendous growth and achieved key milestones such as (1) Digene – It continues to be number 1 prescribed Antacid with over 5.5 million prescriptions annually. Approximately 29,000 doctors prescribe Digene every month. (Source of information - http://www.abbott.co.in)

6. Wockhardt

Wockhardt Ltd. is an Indian multinational pharmaceutical and biotechnology company. It is headquartered in Mumbai. Wockhardt was founded by Habil Khorakiwala in the early 1960s. His father Fakhruddin T. Khorakiwala had acquired Worli Chemical Works in 1959. This was incorporated as Wockhardt Pvt. Ltd., in 1973. It has 3 research centres and 12 manufacturing plants. The company has manufacturing plants in India, UK, Ireland, France and US, and subsidiaries in US, UK, Ireland and France. It is a global company with more than half of its revenue coming from Europe. In 2011–2012 its UK and USA sales alone were US$475 million. The company has over 8600 employees from 21 different nationalities globally. It has 3 research centres and 12 manufacturing plants. It has market presence in emerging markets such as Russia, Brazil, Mexico, Vietnam, Philippines, Nigeria, Kenya, Ghana, Tanzania, Uganda, Nepal, Myanmar, Sri Lanka, Mauritius, Lebanon and Kuwait. It is involved in manufacturing and marketing of formulations, biopharmaceuticals, nutrition products and vaccines. Its main products are in anti-infectives, cardiology, dermatology, diabetology, neurology, pain management and respiratory.

Wockhardt Hospitals is a subsidiary of the Wockhardt Group. Wockhardt is providing affordable, high-quality medicines for a healthier world. Wockhardt has vast
international expertise in the manufacture of pharmaceuticals and biopharmaceutical formulations as well as Active Pharmaceutical Ingredients (APIs). Wockhardt is the first company outside of the US and Europe to manufacture recombinant human insulin and its purity is very high. The company has successfully created an integrated multi-technology capability to manufacture all types of dosage forms including sterile injectables and lyophilised products.

The state-of-the-art biotech plant in Aurangabad has six dedicated manufacturing facilities for biopharmaceutical bulk as well as recombinant formulations. The Wockhardt Biotech Park has created its own benchmark in manufacturing recombinant products with world-class technology. Wockhardt’s success in building an international manufacturing footprint has earned it the reputation of a world-class manufacturer. It has invested heavily in recent years in technologically advanced manufacturing plants, ensuring their compliance with US and European regulatory requirements. Wockhardt continues to upgrade its world-class facilities and make further investments in new units and processes. The state-of-the-art lyophilisation unit at Shendra, Aurangabad in India is fully automated to provide high quality injectable products and is also first of its kind in Asia. Another plant at Aurangabad includes the manufacture of nano-particles for all dosage forms to meet the latest advanced technology.

(Source of information - http://www.wockhardt.com)

7. Pfizer

Pfizer is an American global pharmaceutical corporation headquartered in New York City with its research headquarters in Groton, Connecticut. It is among the world's largest pharmaceutical companies. Pfizer is listed on the New York Stock Exchange. Pfizer develops and produces medicines for a wide range of medical disciplines - anti-allergic, anti-diabetic, anti-infectives, anti-parasitic, cardiovascular, dermatology, multivitamins, dermatology, neurology, pediatrics, psychiatry, respiratory, vitamin/minerals, antibiotics, steroids, vaccines, vitamins and minerals. Pfizer's products include the blockbuster drug Lipitor (atorvastatin), used to lower LDL blood cholesterol; Lyrica (pregabalin) for neuropathic pain/fibromyalgia; Diflucan (fluconazole), an oral antifungal medication; Zithromax (azithromycin), an antibiotic; and Celebrex/Celebra (celecoxib), an anti-inflammatory drug. Pfizer was founded in 1849 by cousins Charles

The pursuit of innovation is basic to Pfizer's culture. It shapes its strategy, defines its purpose, and governs every facet of its operations. Pfizer has produced innovative breakthroughs in a wide range of research areas, including depression, high cholesterol, HIV infection, hypertension, bacterial infections and systemic fungal infections. It is also taking on some of the world's most difficult diseases, including cancer, arthritis, and osteoporosis.

Pfizer India Limited is headquartered in Mumbai. It has a turnover of Rs. 1827.74 crores for the year ended March 31, 2015. It has over 4,000 colleagues spread across India. Its state-of-the-art manufacturing facilities are at Thane, Maharashtra. Pfizer has won several awards including that for the multinational pharmaceutical company of the year and the most respected MNC. The company was also awarded the FICCI SEDF (Socio Economic Development Foundation) Certificate of Commendation for its social responsibility efforts. Six Pfizer brands feature among the Top 100 pharmaceutical brands in India. Two of Pfizer India's brands -- Corex (Cough Formulation) and Becosules (Multivitamin) -- continue to rank among the Top 15 pharmaceutical drug brands. Pfizer has won the Golden Peacock Innovative Product for Magnex (Sulperazon). Becosules has won the Most Trusted Brand Award. In India, Pfizer instituted the first ever Disease Management Programme -- Healthy Heart™ in Cardio Vascular Disease (Hypertension, Chronic Stable Angina and Dyslipidemia), in partnership with Apollo Hospital, Hyderabad and Apollo Hospital, Chennai. It offers Patient Assistance Programmes for Glaucoma, Breast Cancer and Neuropathic Pain. It has also partnered with physician associations to develop recommendations / guidelines of managing specific diseases. Recently, Pfizer has committed itself to understand the origins of brain disorders and to develop innovative medicines that effectively treat Alzheimer’s disease, autism, bipolar disorder, depression, Parkinson’s disease, schizophrenia, among others.

(Source of information - http://www.pfizerindia.com)
8. Alkem Laboratories

It is a leading Indian pharmaceutical company with global operations, engaged in the development, manufacture and sale of pharmaceutical products. It was established in 1973 by Samprada Singh. It is headquartered in Mumbai, Maharashtra. In 1978, Alkem established its first manufacturing plant in Taloja. In 2006, anti-infective drug Taxim of Alkem became the first anti-infective drug in the Indian pharmaceutical industry to cross 1,000 million in terms of domestic sales in India. In 2014, Clavam from Alkem crossed 2,000 millions mark in terms of domestic sales in India.

Alkem produces high-quality branded generics, generic drugs, active pharmaceutical ingredients (APIs) and neutraceuticals, which are marketed in India and 55 countries internationally, primarily the United States. For the year 2015, Alkem was the fifth largest pharmaceutical company in India in terms of domestic sales. It had 13 brands among the Top 300 brands in the Indian Pharmaceutical Industry for the fiscal year 2015. Its domestic business has grown at a CAGR of 17.6% from fiscal year 2011 to fiscal year 2015. It is the third-fastest growing company in terms of sales in this period and among the tenth largest pharmaceutical companies in the Indian domestic formulations market. It has 16 manufacturing facilities: 14 manufacturing facilities are at geographically diversified locations in India and two in the United States. In 2015, Alkem acquired a formulation manufacturing facility in the US. Out of the Indian manufacturing facilities, 12 are for the manufacture of formulations and two are for the manufacture of APIs. It has a strong research and development capabilities which enhance its portfolio of products. It has four research and development facilities, two in India and two in the United States. Alkem’s competitive advantage as a manufacturer stems from its world-class facilities. It has developed a portfolio of more than 700 branded generic drugs and command market leadership in select key therapeutic areas in the Indian pharmaceutical formulations market. Its brands are well recognized in their respective therapeutic areas. According to IMS Health, 13 of its brands are featured among the top 300 brands in India according to domestic sales for fiscal year 2015. Its most significant therapeutic areas are anti-infectives; gastrointestinal; pain and analgesics; and vitamins, minerals and nutrients.

(Source of information - http://www.alkemlabs.com)
9. Dr Reddys Lab

Dr. Reddy's Laboratories is an Indian multinational pharmaceutical company based in Hyderabad, Telangana, India. The company was founded by Anji Reddy. Dr. Reddy's manufactures and markets a wide range of pharmaceuticals in India and overseas. The company has over 190 medications and 60 active pharmaceutical ingredients (APIs) for drug manufacture. The product range spans across gastroenterology, oncology, pain management, cardiovascular, dermatology, urology, nephrology, rheumatology and diabetes. Company has a salesforce of over 3500 which connects with more than three lakh doctors on a regular basis to ensure that quality medicines are available across the length and breadth of the country. The company aims at reducing the disease burden in the country by selling high-quality generics and developing affordable and equally effective generic biosimilars.

Dr Reddy’s Laboratories began as an API manufacturer and has consistently built on its strengths in this area through the years. By 2007, Dr. Reddy's had six FDA plants producing active pharmaceutical ingredients in India and seven FDA-inspected and ISO 9001 (quality) and ISO 14001 (environmental management) certified plants making patient-ready medications – five of them in India and two in the UK. Now, it is one of the top producers of APIs in the world. The API business caters to leading innovator and generic companies across the US, Europe, Latin America, Japan, Korea and other emerging markets. Over the years, it has developed APIs such as steroids, peptides, complex long chain synthesis and oncology. It is also in Generic Formulations business. It offers more than 200 high-quality generic versions of expensive innovator medicines—at a fraction of the cost—in over 20 countries around the world. Generic Formulations, including tablets, capsules, injectables, and topical creams, is the largest part of company’s business portfolio. The products are available under a brand name, such as Omez (Omeprazole), Nise (Nimesulide), Ketorol (Ketorolac Thromethamine), Stamlo (Amlodipine Besylate), Razo (Rabeprazole), among many others. Over the years, these brands have established themselves as leaders in their respective categories. In 2014, Dr. Reddy Laboratories was listed among 1200 of India’s most trusted brands according to the Brand Trust Report2014, a study conducted by Trust Research Advisory, a brand analytics company.

(Source of information - http://www.drreddys.com/india)
10. Sanofi

Sanofi is a global and diversified healthcare leader which develops and distributes therapeutic solutions focused on patients’ needs. In India, Sanofi operates through four entities – Sanofi India Limited, Sanofi-Synthelabo (India) Private Limited, Sanofi Pasteur India Private Limited, and Shantha Biotechnics Private Limited. Sanofi India Limited was incorporated in May 1956 under the name Hoechst Fedco Pharma Private Limited. Over the years, its name was changed to Hoechst Pharmaceuticals Private Limited, Hoechst India Limited and Hoechst Marion Roussel Limited. The shares of Sanofi India Limited are quoted on the Bombay Stock Exchange and the National Stock Exchange. Sanofi India Limited has around 2,300 employees. It has state-of-the-art manufacturing facilities in Ankleshwar and Goa, where active pharmaceutical ingredients and formulations are manufactured. Sanofi has core strengths in the field of healthcare with seven growth platforms: diabetes solutions, human vaccines, innovative drugs, consumer healthcare, emerging markets, animal health and the new Genzyme.

Sanofi Pasteur India Pvt. Ltd., the Indian subsidiary of sanofi pasteur, with its registered office in Mumbai has been represented in India since 1997 through a legal entity created in early 1996 in New Delhi. Sanofi Pasteur’s endeavor in India has always been to be the first to introduce its innovative vaccines in India. Sanofi Pasteur India has 190 employees.

Sanofi’s business development strategy is based on a structured policy of acquisitions and partnerships, which form or strengthen platforms for long-term growth, creating value for shareholders. Sanofi business strategy is based on three key themes to reach and deliver sustainable growth: (1) Increasing innovation in Research & Development – focusing on patients’ needs, the company aims to become the most productive R&D organization in the healthcare sector, (2) Adapting structures to meet the challenges of the future and (3) Exploring external growth opportunities. The company aims to make offerings, which are more affordable and accessible to patients with fewer economic resources.

The company is also strengthening its other business activities such as vaccines, consumer healthcare (OTCs), branded generics and services. Sanofi is fully committed to unleashing all the creativity and innovation within the company. The
acquisitions of Zentiva, Medley, Kendricks, Acambis and Symbion Consumer, as well as Merial in animal health, are the first steps in this direction.

(Source of information - http://www.sanofi.in)

The market capitalization of top 20 pharmaceutical companies in India is given in Table 2.1.

**Table 2.1 Market Capitalization of Pharmaceutical Companies in India**

<table>
<thead>
<tr>
<th>Company</th>
<th>Market capitalization</th>
</tr>
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<tbody>
<tr>
<td>Cipla</td>
<td>Rs 42,792.26 crore</td>
</tr>
<tr>
<td>Dr Reddys Lab</td>
<td>Rs 53,833.54 crore</td>
</tr>
<tr>
<td>Lupin</td>
<td>Rs 78,780.17 crore</td>
</tr>
<tr>
<td>Aurobindo Pharma</td>
<td>Rs 42,512.57 crore</td>
</tr>
<tr>
<td>Sun pharma</td>
<td>Rs 201,358.94 crore</td>
</tr>
<tr>
<td>Cadila</td>
<td>Rs 34,628.09 crore</td>
</tr>
<tr>
<td>Glenmarck</td>
<td>Rs 23,362.70 crore</td>
</tr>
<tr>
<td>Torrent</td>
<td>Rs 21,231.53 crore</td>
</tr>
<tr>
<td>Glaxo SmithKline</td>
<td>Rs 28,111.24 crore</td>
</tr>
<tr>
<td>Alkem</td>
<td>Rs 16,171.17 crore</td>
</tr>
<tr>
<td>Jubilant</td>
<td>Rs 5,991.36 crore</td>
</tr>
<tr>
<td>Ipca</td>
<td>Rs 6,711.27 crore</td>
</tr>
<tr>
<td>Divis</td>
<td>Rs 25,993.36 crore</td>
</tr>
<tr>
<td>Piramal</td>
<td>Rs 16,167.44 crore</td>
</tr>
<tr>
<td>Abbott</td>
<td>Rs 10,219.43 crore</td>
</tr>
<tr>
<td>Biocon</td>
<td>Rs 9,478.00 crore</td>
</tr>
<tr>
<td>Alembic</td>
<td>Rs 11,734.17 crore</td>
</tr>
<tr>
<td>Sanofi</td>
<td>Rs 9,889.81 crore</td>
</tr>
<tr>
<td>Wockhardt</td>
<td>Rs 10,602.78 crore</td>
</tr>
<tr>
<td>Pfizer</td>
<td>Rs 7,707.35 crore</td>
</tr>
</tbody>
</table>

(Source of information - http://www.bseindia.com)

The pharmaceutical companies in India have a common aim of reaching to as many patients as it can at an affordable price. The salesforce of the company helps them in reaching their goals.