Gujarat Pharma Industry
Striding into the future

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The global pharmaceutical industry is demonstrating marked trends in recent times, with the focus shifting from traditional markets like U.S. to promising new ones particularly Latin America and Asia Pacific. India too, has carved out a significant portion of the world pharma pie, registering growth across segments including generics, research and development of New Chemical Entities (NCE) and Contract Research and Manufacturing Services (CRAMS).

At the forefront of the growth in the pharmaceutical industry in India is Gujarat. Accounting for nearly 42 percent share of India’s pharmaceutical turnover, 22 percent of its drug exports and 20 percent of its chemicals output, Gujarat’s pharmaceutical industry has evolved into an innovation-driven, knowledge-focused industry.

Going forward, to attain a leading position in the global pharma industry, Gujarat would have to develop into an ideal location for global clinical research, avid competitor in CRAMS and centre of excellence for overall pharmaceutical development. Further, the state will also have to capitalise on emerging opportunities such as medical tourism, contract research and pharmaceutical machinery manufacturing. Key to this process will be building global competitiveness, developing a strong talent pool and adopting a conducive global mindset.

Foreword

Pankaj Patel
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Head - Markets
KPMG in India

Share of Gujarat

- India’s Pharma Turnover: 42%
- India’s Drug Exports: 22%
- People Employed in Gujarat’s Pharma Industry: 52000
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Global Pharma Industry - An Overview

The global pharma industry is currently undergoing significant transformation. Estimated at around USD 607.9 billion in 2006, the global pharma industry has grown at a Compounded Annual Growth Rate (CAGR) of 6-7 percent over the last three to four years. The North American region and in particular, the U.S. market dominates the industry, followed by Europe and Japan. In 2006, these three markets together constituted about 87 percent of the global pharma market.

**Significant Trends**

*Asia-Pacific and Latin America - emerging as the most promising markets for growth*

The Asia-Pacific region and Latin America currently constitute a smaller share of the entire global industry. However, these are emerging markets and are growing at a remarkable rate as compared to the developed markets. This is mainly on account of favorable economic and demographic shifts in these markets which are supported by significant regulatory reforms.

*Market share of generics growing consistently*

Governments worldwide are encouraging the use of generic products in order to control steeply rising healthcare budgets. Currently, emerging markets contribute 60 percent while the regulated ones account for the remaining 40 percent of the world generics pie. Globally, the generics penetration is expected to increase significantly in the coming years.

*Reducing R&D productivity*

A serious concern for pharma companies worldwide is the declining Research and Development (R&D) productivity with a reduced number of blockbuster drugs entering the market annually. This is further aggravated by steadily rising drug discovery and development costs.

*Off-shoring/Outsourcing non-core activities to low cost destinations*

The global pharma industry is under tremendous pressure on account of intensifying competition, weak R&D pipelines, increasing time-to-market of novel products and fewer approvals forthcoming from regulators the world over. As a result, the last few years have witnessed a rapidly growing trend of outsourcing and off-shoring activities. Multinationals are increasing their cost efficiencies by outsourcing non-core functions - such as drug development and manufacturing to low cost destinations, in order to focus on core operations like drug discovery, sales & marketing and brand management.
Indian Pharma Industry - An Overview

The Indian pharma industry has gained significant traction in the last few years. It is currently on a high growth trajectory and rapidly integrating with the global industry. This integration is opening up tremendous new opportunities for Indian Pharma across all segments including generics, research and development of New Chemical Entities (NCE) and Contract Research and Manufacturing Services (CRAMS). Indian companies are now well positioned to explore these opportunities as they adopt effective and efficient business models that are spread across one or more of each of these segments.

Key Segment and Trends for Indian Pharma

Domestic Market Attractiveness
The domestic formulations industry has grown at a CAGR of nearly 13 percent from 2002-07. This market is expected to further grow at a CAGR of 16 percent over the next five years. This growth will be spurred primarily by India’s expected economic prosperity. The industry is also witnessing a gradual shift in the disease pattern towards chronic ailments such as cardiovascular diseases, diabetes, obesity, etc., reflecting the changing lifestyle of India’s urban population.

In the medium to long-term, a considerable share of the growth is expected to come from the Tier II and III cities and rural markets, in addition to Tier I cities.

Global Generics Opportunity
For Indian Pharma, generics has always been the mainstay of the industry. Indian companies have transcended domestic boundaries and explored international markets and in particular the U.S. and European countries. However, Indian companies are now shifting focus and foraying into new under-served and emerging markets in Latin America, South Africa, Russia and other CIS nations and Japan. Semi-regulated markets offer tremendous potential due to the continuously improving economic, demographic and regulatory factors.

Almost all these generics markets are now set to report double-digit growth. Currently, India has captured only 10 percent of the global generics industry. However, it holds a dominant position in terms of the total Abbreviated New Drug Application (ANDA) and Drug Master File (DMF) filings. Hence, Indian Pharma is aggressively pursuing its growth strategy through acquisitions, marketing and distribution alliances, increased focus on building niche therapeutic portfolios and Para IV filings.
Research and Development
With the introduction of product patents in India, pharma companies have recognised NCE research as one of the key strategies for long term survival and growth. Most leading companies have ventured into this segment. The top pharma companies are now shelling out as much as 7-9 percent of their sales revenues towards conducting NCE and NDDS research. The impressive growth and specialisation achieved by India in this segment has also attracted the attention of multinational innovator companies, which are increasingly partnering with domestic companies through in-licensing and out-licensing deals.

Another trend observed is that several players are hiving-off their R&D units into separate entities in order to increase the focus on their research operations, scale up operations, improve the scope of collaboration, adopt effective funding models and optimise resource mobilisation and utilisation.

Contract Research and Manufacturing Services (CRAMS)
India is also increasingly emerging as one of the most globally preferred outsourcing/offshoring destinations for pharma. This trend can be largely attributed to India's inherent competencies in terms of low manufacturing cost, highest number of U.S. FDA approved plants outside the U.S., vast talent pool having excellent chemistry skills; diverse patient pool, strong support from ancillary industries such as bio-informatics, clinical data management, etc.; and favourable regulatory environment. Indian Pharma is now broadening the scope of its service offerings by providing a wide range of services spanning the entire pharma value chain.
Located on the western coast, Gujarat is India’s seventh largest state in terms of area and ninth largest in terms of population. The state’s capital, Gandhinagar, is the second planned city in the country (after Chandigarh) and is located just 32 kilometres (km) from Ahmedabad, the commercial capital of Gujarat. The State of Gujarat has some of the country’s most dynamic entrepreneurs who are original and fast-paced in their thinking and focused in their drive for growth and profitability.

Accounting for 16 percent of the country’s total industrial output and 18 percent of the country’s total investment, Gujarat is one of the most industrialised states in the country.

### Fact-file

<table>
<thead>
<tr>
<th>State Capital</th>
<th>Gandhinagar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area (sq. km.)</td>
<td>1,96,000</td>
</tr>
<tr>
<td>Population (Census 2001, Million)</td>
<td>50.6</td>
</tr>
<tr>
<td>Literacy Rate (percent)</td>
<td>69</td>
</tr>
<tr>
<td>Sex Ratio (per 1000 males)</td>
<td>921</td>
</tr>
<tr>
<td>Length of coastline (km)</td>
<td>1,600 (the longest in India)</td>
</tr>
<tr>
<td>GSDP at factor cost (current price) (USD billion)</td>
<td>54</td>
</tr>
<tr>
<td>GSDP over 10 years (%)</td>
<td>12.4</td>
</tr>
<tr>
<td>National Highway Length (km)</td>
<td>1,572</td>
</tr>
<tr>
<td>Domestic Airports</td>
<td>Ahmedabad, Bhavnagar, Surat, Bhuj, Rajkot, Porbandar, Kandla, Keshod, Vadodara, Jamnagar</td>
</tr>
<tr>
<td>International Airport</td>
<td>Ahmedabad</td>
</tr>
<tr>
<td>Major Ports</td>
<td>Kandla, Dahej, Hazira and Mundra</td>
</tr>
<tr>
<td>Key Industries</td>
<td>Chemicals, Drugs and Pharmaceuticals, Gems and Jewellery, Mines and Minerals, Textiles, Agro-based</td>
</tr>
<tr>
<td>Monthly per capita expenditure (USD)</td>
<td>15.3</td>
</tr>
</tbody>
</table>

Source: Gujarat Socio Economic Review 2006-07

### Roads
- Total road length: 73,600 km
- Road length per 1000 km: 628.8
- Over 95 percent of road length is surfaced.

### Airports
- Highest number of airports as compared to any other state in India
- International airport at Ahmedabad
- Domestic airports: Ahmedabad, Bhavnagar, Bhuj, Jamnagar, Kandla, Keshod, Porbandar, Rajkot, Surat, Vadodara.

### Power
- Installed generation capacity: 9,561 MW (as on 31-03-2007)
- Adequate inter-regional transmission and distribution capacity
- Estimated peak demand for power in 2011-12: 14,031 MW.
Railways
- Length of railway line: 5,188 route kms (as on 31-03-2007)
  - Broad Gauge: 2,736 kms
  - Metre Gauge: 1,665 kms
  - Narrow Gauge: 787 kms.

Gas Grid
- State wide gas grid of 2,200 km, of which 1,134 km is operational
- Only state having more than one gas producer
- Ambitious project underway to cover entire state with network of gas pipelines.

Ports
- Total length of coast line: 1,600 km - representing one-fourth of India’s water front
- Forty minor and intermediate ports
- Ten new green field sites identified to be developed as deep-water ports.

Gujarat has emerged as the SEZ capital of India based on land area, with 51 sanctions, encompassing 16,500 hectares of land.
Brief overview of the evolution of Gujarat's Pharma Industry

Alembic Chemical Works Co. Ltd., one of the oldest pharma companies in India, was set up in Vadodara in 1907, just six years after India’s first domestic pharmaceutical unit- Bengal Chemical and Pharmaceutical Works was set up in Calcutta. Sarabhai Chemicals was started soon thereafter.

The industry had received strong support from the academic field. In 1940, the Drugs Laboratory in Vadodara was established, followed by LM College of Pharmacy. Further in 1989, the B. V. Patel Education Trust, Ahmedabad and Gujarat Branch of Indian Pharmaceutical Association (IPA)- established the B.V. Patel Pharmaceutical Education and Research Development (PERD) Centre in Ahmedabad.

In the last few decades, the invested capital to labour ratio has risen significantly. The employment almost doubled between 1979-80 and 1997-98. Over the years, the industry has developed strong linkages with related sectors and industries such as chemicals, pharma machinery, information technology, etc.

There are currently approximately 3,500 drug manufacturing units in Gujarat. The state houses several established companies such as Torrent Pharma, Zydus Cadila, Alembic, Sun Pharma, Claris, Intas Pharmaceuticals and Dishman Pharmaceuticals, which have operations in the world’s major pharma markets.

Over the last few years, Gujarat’s contribution in the growth of India’s pharmaceutical industry has been significant. The state commands 42 percent share of India’s pharmaceutical turnover and 22 percent share of exports. Approximately 52,000 people are employed in Gujarat’s pharmaceutical sector, which has witnessed 54 percent CAGR in capital investments over the last three years.¹

¹ Food and Drug Control Administration (FDCA)
Gujarat’s pharma industry: Some key statistics and comparison with the Indian Pharma industry

Size and Growth of Gujarat's pharma turnover vis-à-vis India

Valued at USD 4.4 billion in 2005-06, Gujarat’s pharma industry has grown at a stupendous CAGR of almost 88 percent between 2002-03 and 2005-06, as against the 18 percent growth registered by the pharma industry of India as a whole, in the corresponding period.

Size and growth of Gujarat’s export vis-à-vis India

In the exports segment too, Gujarat’s pharmaceutical industries’ performance has been exemplary. Exports, valued at USD 1.1 billion in 2005-06, have grown at an impressive CAGR of nearly 78 percent between 2002-03 and 2005-06 as against the 28 percent growth in India’s total pharma exports during the same period.
Of the state's total exports, bulk drugs constituted for 40 percent, while formulations accounted for the remaining 60 percent.

Gujarat holds a dominant position in India's pharma industry. The state has successfully captured a share of over 42 percent of India's total turnover in 2005-06. This is a steep increase from the mere 10 percent market share in 2002-03.

In terms of exports also, Gujarat's share in India's total pharma exports has increased considerably. While Gujarat had only an 8 percent market share in the total exports in 2002-03, by 2005-06 it accounted for as much as 22 percent.
As a precursor to growth, Capital investment in the pharma industry in Gujarat has also increased at an astounding CAGR of about 54 percent between FY’03 and FY’06 – reflected in the increase of number of units (both own as well as loan) from 1,964 in 2003 to 3,462 in 2007.

Source: FDCA.
Gujarat Pharma – a SWOT analysis

**Strengths**
- Modern infrastructure facilities
- Backward linkages with raw material suppliers
- Established pharma industry
- Entrepreneurial mindset
- Well-developed allied industries
- Benign regulatory environment.

**Weaknesses**
- Low level of R&D spend
- Relatively inadequate technical manpower and skilled workforce
- Limited international exposure for most small to medium scale companies.

**Opportunities**
- SEZ-led significant export opportunities
- High growth segments such as CRAMS, R&D and generics.

**Threats**
- Announcement of tax holidays from governments of other Indian states
- Emergence of other alternative pharma destinations abroad
- Inadequate emission norms and waste disposal facilities may hinder growth.

*Source: KPMG Analysis*
Clusters

A cluster is defined as a geographically proximate group of companies and associated institutions in a particular field, linked by commonalities and complementarities.

For any successful industry, one of the driving forces is the presence of Small and Medium scale Enterprises (SMEs). A peculiar characteristic of SMEs is that, generally they exist and thrive in clusters.

Types of Clusters

- Resource-based cluster
- Induced cluster
- ‘Me-too’

Examples

- Marble cutting and polishing industries around Makrana in Rajasthan
- Auto-component industry in Gurgaon triggered by Maruti Suzuki
- Cotton knitwear units in Tirupur

Advantage derived from clusters

- Proximity to sources of raw material
- Availability of business development services
- Abundance of customers
- Availability of skilled labour
- Common infrastructural facilities
- Common mindset and healthy competitive culture
Ahmedabad Cluster – A case study

A large number of small firms were set up in Ahmedabad during the 1970s and 1980s. This phase was further strengthened as a result of growing exports to Russian and African countries. During this growth process, a few first generation entrepreneurs graduated from small to medium/large firms and some later entrants became sizeable enterprises. In turn, this growth phase witnessed the entry of new entrepreneurs in the small scale sector.

At present, it is estimated that there are around 75-100 bulk drug producers and 1000 manufacturing units mostly in formulations and other areas including excipients, disposables, homeopathic, ISM and miscellaneous products under the purview of FDCA. Of these 10 are large, 100 are medium and the rest are small units. The major players in and around Ahmedabad include Zydus Cadila, Sun Pharma, Torrent, Core, Alembic, Dishman, Intas and Sarabhai. The major products manufactured in this cluster include:

(a) Pharmaceuticals—both allopathic and ayurvedic formulations, in different dosage forms (including tablets, liquid, capsules, externals and injectables), and

(b) Medical disposable products like IV sets

Around 50 manufacturing units produce medical disposables. The rest are in formulations including ayurvedic products.

### Why Ahmedabad?

<table>
<thead>
<tr>
<th>Availability of raw material</th>
<th>Support Institutions</th>
<th>Financial Institutions</th>
<th>Industrial associations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Bulk drugs</td>
<td>• B.V. Patel PERD Center</td>
<td>• SIDBI</td>
<td>• IDMA-GSB</td>
</tr>
<tr>
<td>• Excipients</td>
<td>• The Food and Drug Control Laboratory</td>
<td>• ICICI</td>
<td>• MDMA</td>
</tr>
<tr>
<td>• Coating material</td>
<td>• LM College of Pharmacy, Vadodara</td>
<td>• GSPC</td>
<td>• MDMA</td>
</tr>
<tr>
<td>• Empty capsules</td>
<td></td>
<td></td>
<td>• ADMA</td>
</tr>
<tr>
<td>• Preservatives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Ampules</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Glass vials</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Strong linkages between small and medium size players, industrial bodies, and medical and financial institutions has created a proper ecosystem for the growth of the pharmaceutical industry in Ahmedabad. This in turn, has made Ahmedabad one of the highly developed pharma clusters in Gujarat.
<table>
<thead>
<tr>
<th>Location</th>
<th>Existing products</th>
<th>Export Potential</th>
<th>Market-based / Resource-based / Infrastructure-based</th>
<th>Degree of Competition with large units</th>
<th>Potential Future Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad</td>
<td>API, Finished Dosages, Contract Manufacturing Biological Manufacturing</td>
<td>High</td>
<td>Market and Infrastructure</td>
<td>High</td>
<td>Biological manufacturing, Medical Devices</td>
</tr>
<tr>
<td>Vadodara</td>
<td>Finished Dosages, Biogenerics</td>
<td>High</td>
<td>Market and Infrastructure</td>
<td>High</td>
<td>API, CRAMS, Biological Manufacturing</td>
</tr>
<tr>
<td>Ankleshwar</td>
<td>API, Formulations, Vaccines</td>
<td>Medium</td>
<td>Resource</td>
<td>Medium</td>
<td>API, Formulations, Medical Manufacturing</td>
</tr>
<tr>
<td>Bharuch and Vapi / Valsad</td>
<td>API, Finished Dosages</td>
<td>Medium</td>
<td>Resource</td>
<td>Medium</td>
<td>Intermediate and Finished Dosages</td>
</tr>
</tbody>
</table>

Source: www.clusterpulse.org, KPMG Analysis
Pharma SEZs

The proposed Pharma SEZs are expected to further boost India’s pharmaceutical exports segment. And Gujarat, which is witnessing a vibrant growth in this segment, will be one of the major beneficiaries of this development. SEZs are instrumental in bringing in globalization at a faster pace, due to their inherent outward looking foreign trade focus by establishing close global contacts. SEZs, therefore, offer distinct advantages to export oriented pharma companies who are present in these zones.

Currently, India represents a very small portion of the outsourcing market as compared to global peers like China, Singapore etc. Additionally, the size of projects handled by India are also small. SEZs— which have good infrastructure facilities and technology— can help these pharma companies develop a global mindset.

Gujarat is set to witness tremendous benefits from the development of SEZs, as it already has an established pharma ecosystem with excellent infrastructure facilities. Through these SEZs, pharma companies in Gujarat will further facilitate India’s integration in the global pharma industry.

Prominent Pharma SEZs in Gujarat

<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
<th>Likely Activities</th>
<th>Investment</th>
<th>Area (Hectares)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zydus Cadila</td>
<td>Ahmedabad</td>
<td>NA</td>
<td>NA</td>
<td>48</td>
</tr>
<tr>
<td>Cadila Pharma</td>
<td>Haripura</td>
<td>Pharmaceuticals, APIs and Biologicals</td>
<td>500</td>
<td>100</td>
</tr>
<tr>
<td>Jubilant</td>
<td>Vilayat</td>
<td>Manufacturing hub for outsourcing of pharmaceuticals, fine chemicals and specialty chemicals</td>
<td>NA</td>
<td>100</td>
</tr>
<tr>
<td>Dishman Pharma</td>
<td>Ahmedabad</td>
<td>Bulk Drugs</td>
<td>396</td>
<td>138</td>
</tr>
<tr>
<td>JB Chemicals</td>
<td>Panoli (Bharuch)</td>
<td>Bulk Drugs, Intermediaries, R&amp;D and contract manufacturing</td>
<td>113</td>
<td>130</td>
</tr>
</tbody>
</table>

Source: Press Articles
Building Blocks and Key Imperatives

There are certain building blocks that help industries flourish. Gujarat’s pharma industry is a good example of a well-developed ecosystem with strong building blocks that have helped the industry grow at such a phenomenal pace.

Below is a summary of how some of these building blocks have helped Gujarat become one of the leading states for the pharma industry in India. Further, the key imperatives for Gujarat to retain its existing position and what will it take for it to become a global pharmaceuticals hub, have also been highlighted.

The key imperatives for some of these building blocks are:

Modern and well-developed infrastructure: Gujarat boasts one of the best infrastructure facilities in the country. Be it roads, ports, power or other logistical facilities, Gujarat ranks much higher than other competing states. Our meetings with various industry leaders revealed that infrastructure facilities and development helps them immensely in their business operations. Going forward, if this strong impetus on infrastructure development is maintained, the industry would grow at a sustainable rate in the future.

Conducive Business Environment: The Rajiv Gandhi Institute for Contemporary Studies has adjudged Gujarat as the best state in India for 'Economic Freedom'. Proactive government policies and an investor friendly regime is one of the main building blocks for the growth of the pharmaceutical as well as any other industry.
Adequate Talent Pool: The importance of a skilled workforce for a knowledge-based industry such as pharmaceuticals shouldn’t be under-emphasised. The industry needs an adequate supply of locally available skilled labour in order to meet the requirements of this rapidly growing industry. As far as availability and employability of the skilled labour required for the pharmaceutical industry is concerned, Gujarat lags behind other prominent Indian pharma hubs, particularly Maharashtra and Andhra Pradesh.

From the table below it is evident that Gujarat has relatively fewer student intakes and institutions offering Pharma related courses. Therefore, to develop into a world class Pharma industry and meet the demand for skilled labour, Gujarat will have to significantly increase both the number of institutions offering Pharma related courses and student intakes.

<table>
<thead>
<tr>
<th>State</th>
<th>No. of Institutes offering Pharma courses</th>
<th>Student intake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gujarat</td>
<td>37</td>
<td>2,345</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>83</td>
<td>4,482</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>82</td>
<td>4,955</td>
</tr>
</tbody>
</table>

These are several institutions in Gujarat that offer courses in pharmacy and medicine. These institutions will play an important role in determining the success of Gujarat’s pharmaceutical industry in the world market. There is a need to expedite the process by involving tie-ups with international research and academic organisations and augmenting the local capacity to meet the industry’s demand.

Cluster-driven Business Growth: The growth of Gujarat’s pharmaceutical industry so far, has been cluster-driven. These clusters have not only fostered competitiveness and complementarities across these regions but have also created a diversified manufacturing base for various products across the pharmaceutical value chain. Governmental actions can support the creation of conditions that encourage the formation and growth of clusters. These clusters can also help in terms of resource sharing in the areas of training and R&D facilities as well as other facilities such as waste management and water treatment plants. The regulatory and fiscal framework should provide incentives that facilitate company formation and growth within the pharmaceutical clusters.
Global Competitiveness: Globalisation permits much greater freedom for reaping competitive advantages based on regional resource endowments and opportunities for global integration. Globalisation of Gujarat’s pharmaceutical industry and the enhanced role of markets could offer greater opportunities. Gujarat has a tradition of regional specialisation in industry (textiles, chemical, petrochemicals, pharma within the large scale sector; specific clusters of medium and small units too abound). The long term development perspective will have to take advantage of the region’s existing potential.

Well-established Allied Industries: Strong linkages with the chemicals sector, a well established machinery and engineering sector, large number of Contract Research Organisations (CROs) and a booming healthcare sector has played an important role in the growth of Gujarat’s pharmaceutical industry. Partnerships between hospitals, academic and research institutions, allied industries and pharma companies can create an efficient networked model that will help the industry grow at a sustainable rate.
Creation of a Global Pharmaceuticals Hub

Gujarat, an established manufacturing base for bulk drugs and formulations — with its inherent competitive advantages — is poised to capture emerging global opportunities to become a global pharmaceuticals hub. Emergence of SEZs is likely to create a pharma behemoth- with scale and infrastructure on par with international standards, that will enable it to compete in the global market place.

The availability of a well-developed chemicals industry, which has strong linkages with pharma API/intermediates, can be utilised to boost the high growth of CRAMS sector. This could make Gujarat a strong sourcing base for global pharma companies.

Emerging Opportunities:

Medical Tourism:

With India rapidly emerging as an attractive medical tourism hub, Gujarat is also making big strides in this segment. It is fast competing with other places such as Delhi, Maharashtra and Andhra Pradesh in this segment. The state offers high quality and specialised healthcare services and infrastructure at very low costs, thus making it a preferred destination for medical tourism.

Gujarat has highly qualified specialists particularly in the ophthalmology, urology, embryology, orthodontics, oncology and orthopedics therapeutic areas. It also offers other advantages such as English-speaking healthcare personnel, no waiting periods for treatment, and high standards of international transport.

Given the growing attractiveness of India as a global destination for medical tourism, the government of Gujarat laid down the 2006 Medical Tourism policy. This will further improve the healthcare infrastructure of the state and attract a higher number of patients.

The following factors can further boost medical tourism:

- Assisted healthcare institutions such as day care centres
- Support services such as nursing associations
- Linkages with infrastructure facilities for transportation of patients from airports and railway stations
- Linkages with organisations/ NGOs, etc., in overseas countries to acquire knowledge and leverage opportunities.
Contract Research Organisations: Gujarat is home to approximately 40 percent of CROs in the country. Its well established healthcare sector, strong infrastructure facilities and relatively low real estate costs has lured many global and local CROs to set up shop in the state. Globally, contract research is a high growth segment led by increasing outsourcing activities of pharma MNCs. Given all these growth enablers, Gujarat can capture a larger pie of this global opportunity by establishing a strong ancillary services industry base – such as bio-informatics and clinical data management centres – which can facilitate and boost R&D and other high-end activities.

Pharmaceutical Machinery: There is a strong local and global opportunity for Gujarat in the manufacturing of pharmaceutical machinery, given its strong and well established engineering sector. According to industry estimates, approximately 35-40 percent of India’s pharmaceutical machinery is produced in Gujarat. The strong growth prospects of the pharmaceutical exports segment and growing demand from the domestic market, will further fuel growth in the pharmaceutical machinery sector. However, Gujarat’s engineering sector is highly fragmented, especially the pharma machinery manufacturing segment. Due to the highly fragmented nature, there is a dearth of pricing power and critical scale. This in turn restricts the ability to produce the technology-driven products required for operating in global markets. The pharma machinery manufacturing industry in Gujarat needs to consolidate and synergise the skills and complementarities available in the broader engineering sector (like the CNC machine tools industry) to be able to create world-class players with the scale and resources required, to tap the global as well as local demand.

Gujarat’s dominant position in India’s pharmaceutical sector is well known. The next logical step is to aspire for global leadership in the pharmaceutical industry. However, global dominance would require:

– Continuance of current growth-oriented policies that have helped Gujarat achieve this mark, and
– Acquisition or development of capabilities required for operating in the global market place.
Many pharma companies in Gujarat have adopted the inorganic route to participate in the global markets. However, operating in the world markets is not just about acquiring global assets but also about having a global mindset. In order to benefit from the on-going integration of the world pharma markets, the pharma industry and companies have to change internal mindsets to think and compete globally, and create an environment of innovation. Companies would have to imbibe a culture that enhances its efficiency while responding to the global challenges in different geographies. Having a world-class management team, reflective of the diverse global markets in which they operate, would be a start in this direction. The enterprise-wide use of global IT solutions is another area that needs to be addressed.

**Globalisation model for Gujarat’s Pharmaceuticals Industry**
India is becoming an integral part of the global pharmaceutical value chain and many Indian companies are participating in this global growth potential through their organic as well as inorganic initiatives. Pharma companies from Gujarat have also contributed significantly to this process through acquisitions of foreign assets or by having export-led business models – reflected in Gujarat’s increasing share in India’s pharma exports as well as industry turnover. Going forward, as India further increases its dominance in the world pharma market, Gujarat with its growth enablers and strong building blocks can become a global pharmaceutical hub. However, this would call for an enormous change in mindset and transformation to attract global capital and talent. The path to globalisation is full of opportunities but also fraught with risks. Companies which would develop the right framework that would help them capitalise on this opportunity and mitigate risks will benefit the most.
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