CONTENTS

- Executive Summary ........................................ 3
- Advantage India ............................................. 4
- Market Overview and Trends .............................. 5
- Growth Drivers .............................................. 17
- Success Stories: Sun Pharma, Dr Reddy's, Lupin, Cipla ................................. 30
- Opportunities .................................................. 38
- Useful Information .......................................... 41

AUGUST 2013

For updated information, please visit www.ibef.org
Leading pharma producer

- The country’s pharma industry accounts for about 1.4 per cent of the global pharma industry in value terms and 10 per cent in volume terms

Among fastest growing industries

- The Indian pharmaceutical industry revenue is expected to expand at a CAGR of 17.8 per cent during 2008–16 and reach USD36 billion

Rapidly growing healthcare sector

- The healthcare sector in India is expected to reach USD100 billion by 2015 from the current USD65 billion

Growing generics market

- The generics market is expected to grow to USD26.1 billion by 2016 from current USD11.3 billion in 2011; India’s generics market has immense potential for growth

Ranked 5th in terms of attracting FDI

- Attracted 5 per cent of the total FDIs into India from April 2000 to March 2013
- Cumulative FDI inflows worth USD10.3 billion from April 2000 to March 2013

Source: India Biz, PharmaBiz, Frost and Sullivan report on Indian Pharmaceutical Market, Aranca Research
Note: API - Active Pharmaceutical Ingredient, USFDA - United States Food and Drug Administration, CAGR - Compound Annual Growth Rate
The engineering sector is delicensed; 100 per cent FDI is allowed in the sector.

Due to policy support, there was cumulative FDI of USD14.0 billion into the sector over April 2000–February 2012, making up 8.6 per cent of total FDI into the country in that period.

Growing demand
Source: Pharmaceuticals Exports Promotion Council of India, BMI, Aranca Research, 2016 revenue forecasts are estimates of BMI,
Notes: BMI - Business Monitor International, API - Active Pharmaceutical Ingredients, F - Forecast

Advantage India

Cost efficiency
- Low cost of production and R&D boosts efficiency of Indian pharma companies
- India’s cost of production is approximately 60 per cent lower than that of the US and almost half of that of Europe
- Due to lower cost of treatment, India is emerging as a leading destination for medical tourism

Economic drivers
- Economic prosperity to improve drug affordability
- Increasing penetration of health insurance

Diversified portfolio
- Accounts for over 10 per cent of global pharmaceutical production
- Over 60,000 generic brands across 60 therapeutic categories
- Manufactures more than 500 different APIs

Policy support
- Government unveiled ‘Pharma Vision 2020’ aimed at making India a global leader in end-to-end drug manufacture
- Reduced approval time for new facilities to boost investments

2008
Market size: USD16 billion

2016F
Market size: USD 36 billion

Source: Pharmaceuticals Exports Promotion Council of India, BMI, Aranca Research, 2016 revenue forecasts are estimates of BMI,
PHARMACEUTICALS

EVOLUTION OF INDIAN PHARMACEUTICAL SECTOR

Before 1970
- Market dominated by foreign companies, with little domestic participation

1970–1990
- Indian Patent Act passed in 1970
- Several domestic companies start operations
- Development of production infrastructure
- Export initiatives taken

1990 - 2010
- Liberalised market
- Indian companies increasingly launch operations in foreign countries
- India a major destination for generic drug manufacture
- Approval of Patents (Amendment) Act 2005 which led to adoption of product patents in India

2010 and beyond
- Increasing patent filing by Pharma players
- Likely adoption of newer sales models like channel management, KAM and CSO

Note: KAM - Key Account Management, CSO - Contract Sales Organisation

Source: Aranca Research

For updated information, please visit www.ibef.org
### API IS THE LARGEST SEGMENT OF THE INDIAN PHARMACEUTICALS INDUSTRY

<table>
<thead>
<tr>
<th>Pharmaceutical Industry</th>
<th>Active pharmaceutical ingredients (APIs)</th>
<th>Contract research and manufacturing services (CRAMS)</th>
<th>Formulations</th>
<th>Biosimilars</th>
</tr>
</thead>
<tbody>
<tr>
<td>• India is expected to supplant Italy as the second largest producer of APIs globally</td>
<td>• Fragmented market with more than 1,000 players</td>
<td>• Largest exporter of formulations in terms of volume with 14 per cent market share and 12th in terms of export value</td>
<td></td>
<td>• Biosimilar’s revenues are expected to touch USD550–600 million by 2013 from USD200 million in 2008</td>
</tr>
<tr>
<td></td>
<td>• Drug companies from India filed 49 per cent of the overall Drug Master Filings (DMF) filed in the US in 2012</td>
<td>• CRAMS industry is estimated to have reached USD7.6 billion in 2012, up from USD3.8 billion in 2010</td>
<td>• Domestic market size is currently valued at USD11.2 billion</td>
<td>• The government plans to allocate USD70 million for local players to develop biosimilars</td>
</tr>
</tbody>
</table>

**Source:** BMI, Datamonitor, Various Industry Estimates, ICRA Report Estimates, Aranca Research

*Note: OTC - Over The Counter*
INDIA IS FOURTH LARGEST PLAYER IN ASIA-PACIFIC BY VALUE

- With 5.7 per cent of market share, India ranks fourth in terms of total market share in Asia-Pacific.

- In terms of Pharmaceutical Risk/Reward ratings, India stood 10th in Asia Pacific.

Source: Market Line, Aranca Research
The Indian pharmaceuticals industry revenues are expected to rise at a CAGR of 17.8 per cent to USD36 billion during 2008–16.

During the same period, the revenues from prescription drugs are expected to expand at a CAGR of 18.2 per cent to USD29 billion.
With 72 per cent of market share (in terms of revenues), generic drugs form the largest segment of the Indian pharmaceutical sector. In 2011, sales of generic drugs stood at USD11.3 billion.

Over the Counter (OTC) medicines and patented drugs constitute 19 and 9 per cent, respectively, of total market revenues.

Revenue share of Indian pharmaceutical sub-segments in 2011 (%)

- **Generic drugs**: 72%
- **OTC medicines**: 19%
- **Patented drugs**: 9%

*Source*: Business Monitor International, Aranca Research

*Note*: F - Forecast
Anti-infective drugs command the largest share (17.8 per cent) in the Indian pharma market.

The cardiovascular segment represents 11.4 per cent of the market share; its contribution is likely to rise due to the growing number of cardiac cases in India.

Top five segments contributed nearly 58 per cent of the total drugs consumption.

Indian pharmaceutical market segments by value (MAT March 2013)

- Anti-Infectives: 17.8%
- Cardiac: 34.6%
- Gastro Intestinal: 12.3%
- Vitamins / Minerals / Nutrients: 11.4%
- Respiratory: 7.6%
- Pain / Analgesics: 8.9%
- Others: 7.4%

Source: All Indian Origin Chemists & Distributors, Department of Pharmaceuticals, Planning Commission Report, Aranca Research
Note: MAT - Moving Annual Total
Indian pharma companies are capitalising on export opportunities in regulated and semi-regulated markets

The Ministry of Commerce targets to export USD25 billion worth of pharmaceuticals in 2016. Indian drugs are exported to more than 200 countries in the world, with the US as the key market.

India is the largest provider of generic medicines across the globe; India’s generic drugs account for 20 per cent of global generic drug exports (in terms of volumes).

In terms of value, pharmaceutical products exports have increased at a CAGR of 26.1 per cent to USD10.1 billion during FY06–13.

During the same period, pharmaceutical products imports rose at a CAGR of 25.4 per cent to USD1.8 billion.

Trade data of Indian pharma industry (USD billion)

Note: CAGR - Compound Annual Growth Rate; CAGR is mentioned in INR terms.
Cipla has the largest share (5.0 per cent) in the Indian pharma market, with MAT sales of USD649.6 million during March 2013.

Sun Pharma posted the highest growth in revenue (20 per cent) among major players during the same period.

GlaxoSmithKline, with a revenue base of USD596.2 million for March 2013 MAT sales, ranks third in the market.

Ranbaxy, with a revenue base of USD542.2 million for March 2013 MAT sales, ranks fourth in the market.

While these top four companies have garnered 20 per cent market share, top 10 companies account for nearly 39 per cent of the market share.

Market share, revenue and growth rates of leading companies (%)

Note: The bubbles denote MAT March 2013 sales in USD million.

Source: All Indian Origin Chemists & Distributors, Equity Master, BMI, Aranca Research
Note: Market share is in terms of revenue MAT - Moving Annual Total
PHARMACEUTICALS

PHARMA GIANTS RAISE THEIR R&D SPENDING

* By 2015, the Indian healthcare sector is expected to reach USD100 billion from the current USD65 billion

* This would help drive R&D growth in India; the average R&D expenditure by Indian pharma companies is close to 2 per cent of total revenues

* In FY12, total R&D spending by top seven pharma companies was USD533 million

R&D spending by top pharma giant (USD million)

Source: All Indian Origin Chemists & Distributors, Equity Master, BMI, Aranca Research
Note: R&D - Research and Development
* Data for FY11
Indian pharma companies spend 2 per cent of their total turnover on R&D.
Expenditure on R&D is likely to increase due to the introduction of product patents; companies need to develop new drugs to boost sales.

The pharmaceutical export market in India is thriving due to strong presence in the generics space.
Pharmaceuticals Exports Promotion Council expects pharma exports to reach USD25 billion in 2016.

Multinational companies are collaborating with Indian pharma firms to develop new drugs.
Pfizer partnered with Aurobindo Pharma to develop generic medicines.
Six leading pharmaceutical companies have formed an alliance ‘LAZOR’ to share their best practices, so as to improve efficiency and reduce the operating costs.

Cipla, the largest supplier of anti-malarial drugs into Africa, has set up a USD32-billion plant for production of anti-retroviral and anti-malarial drugs in Africa.
Ranbaxy, the fifth-largest pharmaceutical company in South Africa, installed a USD30 million manufacturing facility in Johannesburg in 2010.

Source: Aranca Research
The Indian Government plans to involve the private sector in R&D mainly for sectors like vaccines, drugs and pharmaceuticals, super computing, solar energy and electronic hardware.

The government has invested USD1.1 billion in the Public-Private Partnership fund to support R&D in India.

Amendments to the Patents Act, 1970, to make it TRIPS compliant.

Increased incentives to domestic firms to conduct R&D.

Increased likelihood of technology transfer from developed nations.

The introduction of product patents in India in 2005 has boosted the discovery of new drugs.

India has reiterated its commitment to IP protection following the introduction of product patents.

Source: Aranca Research
Dholka in Gujarat houses major manufacturing facility of Cadila. The facility spans over 100 acres.

Ranbaxy’s API manufacturing facility at Toansa, Punjab.

Lupin has an USFDA-approved plant at Tarapur, Maharashtra. The facility forms the core of Lupin’s fermentation capabilities.

Wockhardt's facility covers an area of 40,468 sq meters in Baddi, Himachal Pradesh. Baddi is also home to the formulations manufacturing facility of Cipla.

Mandideep in Madhya Pradesh is the manufacturing hub for Lupin's cephalosporin and ACE-Inhibitors. Cipla has a formulations manufacturing plant at Indore.

Piramal’s USFDA-approved manufacturing plant in Hyderabad.

GlaxoSmithKline has a major facility at Rajahmundry, Andhra Pradesh.

Source: Company websites
SECTOR DRIVEN BY CONFLUENCE OF DEMAND, CAPABILITIES AND POLICY

Growth drivers

Demand-side drivers
- Accessibility of drugs to greatly improve
- Increasing penetration of health insurance
- Growing number of stress-related diseases due to change in lifestyle
- Better diagnostic facilities

Supply-side drivers
- Cost advantage
- India a major manufacturing hub for generics
- 546 sites registered at USFDA

Policy support
- Reduction in approval time for new facilities
- Focus on specialised pharma education
- Improved accessibility for BPL people

Source: Pharmaceutical Export Promotion Council
Note: BPL - Below Poverty Line, USFDA - United States Food and Drug Administration
Launch of patented drugs

- Following introduction of product patents, several multinational companies are expected to launch patented drugs in India
- Growth in the number of lifestyle diseases in India could boost the sale of drugs in this segment

Medical infrastructure

- Pharma companies have increased spending to tap rural markets and develop better medical infrastructure
- Hospitals’ market share is expected to increase from 13.1 per cent in 2009 to 26 per cent in 2020

Scope in generics market

- India’s generic drugs account for 20 per cent of global exports in terms of volume, making India the largest provider of generic medicines globally
- India’s generics market is expected to grow to USD26.1 billion by 2016 from current USD11.3 billion in 2011; India’s generics market has immense potential for growth

Over the Counter (OTC) drugs

- In 2011, India's OTC drugs market stood at USD3 billion; it is expected to rise at a CAGR of 16.3 per cent to USD6.6 billion during 2008-16
- Increased penetration of chemists, especially in rural regions of India, would make OTC drugs easily available

Patent Expiry

- Between 2010 and 2015 patent drugs worth USD171 billion are estimated to go off-patent leading to a huge surge in generic product
- The newly available market will be filled by generics, which would provide great opportunity to the Indian companies

Source: India Biz, Aranca Research
Note: CAGR - Compound Annual Growth Rate
Cost efficiency

- India’s cost of production is nearly 60 per cent lower than that of the US and almost half of that of Europe
- Labour costs are 50–55 per cent cheaper than in Western countries
- The cost of setting up a production plant in India is 40 per cent lower than in Western countries
- Cost-efficiency continues to create opportunities for Indian companies in emerging markets and Africa

Competency

- India has the largest number of USFDA-approved manufacturing plants outside the US
- India has 2,633 FDA-approved drug products
- India has over 546 USFDA-approved company sites and 857 companies holding market authorisations with UKMHRA

Relative cost of production with US cost as base

Source: Frost and Sullivan report on Indian Generic Pharmaceuticals Market, BMI, Aranca Research
Note: USFDA - United States Food and Drug Administration
## Demand Drivers of Indian Pharma Industry

### Accessibility
- Over USD200 billion to be spent on medical infrastructure in the next decade
- New business models expected to penetrate tier-2 and tier-3 cities
- Over 160,000 hospital beds expected to be added each year in the next decade
- Increasing access to lower-income segments due to government initiatives that increase access and affordability (e.g. RSBY)

### Acceptability
- Rising levels of education to increase the acceptability of pharmaceuticals
- Patients to show greater propensity to self-medicate, boosting the OTC market
- Acceptance of biologics and preventive medicines to rise
- Vaccine market could grow 20 per cent per year in the next decade
- Surge in medical tourism due to increased patient inflow from other countries

### Affordability
- Rising income could drive 73 million households to the middle class over the next 10 years
- Over 650 million people expected to be covered by health insurance by 2020
- Government-sponsored programmes set to provide health benefits to over 380 million BPL people by 2017
- By 2017, the government plans to provide free generic medicines to half the population at an estimated cost of USD5.4 billion

### Epidemiological Factors
- Patient pool expected to increase over 20 per cent in the next 10 years, mainly due to rise in population
- New diseases and lifestyle changes to boost demand
- Increasing prevalence of lifestyle diseases

---

Note: RSBY - Rashtriya Swasthya Bima Yojna
During 2008–16, total healthcare spending is expected to rise at a CAGR of 12.7 per cent to USD133.2 billion from USD51.4 billion.

Pharmaceutical sales as a percentage of total healthcare spending are expected to increase to 27 per cent by 2016 from 18.9 per cent in 2008.

Source: BMI, Aranca Research
Note: F - Forecast, CAGR - Compound Annual Growth Rate
Growing per capita sales of pharmaceuticals in India offers ample opportunities for players in this market.

Per capita sales of pharmaceuticals is expected to expand at a CAGR of 16.3 per cent to USD27 by 2016F.

Per capita sales of pharmaceuticals (USD)

CAGR: 16.3%

Source: BMI, Aranca Research

Note: F - Forecast, CAGR - Compound Annual Growth Rate
Reduction in approval time for new facilities

- Steps taken to reduce approval time for new facilities
- NOC for export license issued in two weeks compared to 12 weeks earlier

Collaborations

- MoUs with USFDA, WHO, Health Canada, etc. to boost growth in the Indian Pharma sector by benefiting from their expertise

Support for technology upgrades and FDIs

- Zero duty for technology upgrades in the pharmaceutical sector through the Export Promotion Capital Goods (EPCG) Scheme
- Permission for 100 per cent Foreign Direct Investment (FDI)
- Government is planning to relax FDI norms in the pharmaceutical sector

Industry infrastructure

- Government of India plans to set up a USD640 million venture capital fund to boost drug discovery and strengthen pharma infrastructure

Pharma vision 2020

- Pharma Vision 2020 by the government’s Department of Pharmaceuticals aims to make India a major hub for end-to-end drug discovery

Source: Aranca Research
Government expenditure on health has increased from USD14 billion in 2008 to USD23 billion in 2011.

The expenditure is expected to expand at a CAGR of 18 per cent during 2008–16 to USD53 billion, thereby increasing the share of government expenditure to total healthcare spending from 27.6 per cent to 39.9 per cent during same period.

Source: Business Monitor International, Aranca Research
Note: CAGR - Compound Annual Growth Rate, F - Forecast
The share of private sector spending has increased from USD36 billion in 2008 to USD49 billion in 2011.

Supported by favourable government policies, the private sector’s share is expected to reach USD80 billion by 2016.

Source: Business Monitor International, Aranca Research
Note: F - Forecast
Penetration of health insurance is expected to more than double by 2020.

Increasing penetration of health insurance is likely to be driven by government-sponsored initiatives such as RSBY and ESIC.

Government-sponsored programmes expected to provide coverage to nearly 380 million people by 2020.

Private insurance coverage will increase by nearly 15 per cent annually till 2020.

Population covered by health insurance (in million)

<table>
<thead>
<tr>
<th>Year</th>
<th>Private insurance</th>
<th>ESIC</th>
<th>RSBY</th>
<th>Government employee insurance</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>110</td>
<td>80</td>
<td>55</td>
<td>20</td>
<td>240</td>
</tr>
<tr>
<td>2020</td>
<td>140</td>
<td>120</td>
<td>130</td>
<td>25</td>
<td>380</td>
</tr>
</tbody>
</table>

Source: McKinsey estimates, Aranca Research
Notes: RSBY - Rashtriya Swasthya Bima Yojna
ESIC - Employees State Insurance Corporation
Cost-based pricing is complicated and time-consuming compared to market-based pricing.

Market-based pricing is expected to create greater transparency in pricing information and would be available in public domain.

Prices of NLEM drugs linked to WPI.

Essentiality of drugs is determined by including the drug in National List of Essential Medicines (NLEM) (348 drugs presently).

Promote rational use of medicines based on cost, safety and efficacy.

Prices of NLEM drugs linked to WPI.

Essentiality of drugs is determined by including the drug in National List of Essential Medicines (NLEM) (348 drugs presently).

Promote rational use of medicines based on cost, safety and efficacy.

Only finished medicines are to be considered essential which would prevent price control of APIs which are not necessarily used for essential drugs.
In recent years, several foreign players have made acquisitions in India to get a foothold in the country’s pharma market and leverage on the technical and cost efficiency of Indian companies.

Increasing number of companies are forming JVs to benefit from research and development; large firms from developed markets are venturing with Indian majors to develop new medicines.

<table>
<thead>
<tr>
<th>Indian Company</th>
<th>Foreign Company</th>
<th>Value (USD million)</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aurobindo</td>
<td>OJSC DIOD</td>
<td>NA</td>
<td>JV</td>
</tr>
<tr>
<td>Dosh Pharmaceuticals</td>
<td>Sanofi</td>
<td>NA</td>
<td>Acquisition (animal health div.)</td>
</tr>
<tr>
<td>GlaxoSmithkLine Consumer</td>
<td>GlaxoSmithkLine Plc.</td>
<td>1,088</td>
<td>Acquisition</td>
</tr>
<tr>
<td>Natco Pharma</td>
<td>Litha</td>
<td>NA</td>
<td>JV</td>
</tr>
<tr>
<td>Glenmark</td>
<td>Sanofi</td>
<td>615</td>
<td>JV</td>
</tr>
<tr>
<td>Dr Reddy’s</td>
<td>Iso Ray</td>
<td>NA</td>
<td>Licensing rights</td>
</tr>
<tr>
<td>Sun Pharma</td>
<td>Merck</td>
<td>NA</td>
<td>Marketing</td>
</tr>
<tr>
<td>Piramal</td>
<td>Abbot</td>
<td>3,720</td>
<td>Business buyout</td>
</tr>
<tr>
<td>Orchid Chemicals</td>
<td>Hospira</td>
<td>400</td>
<td>Business buyout</td>
</tr>
<tr>
<td>Aurobindo Pharma</td>
<td>Pfizer</td>
<td>Not disclosed</td>
<td>Generic development and supply</td>
</tr>
<tr>
<td>Shantha Biotech</td>
<td>Sanofi Aventis</td>
<td>783</td>
<td>Acquisition</td>
</tr>
<tr>
<td>Ranbaxy Labs</td>
<td>Daiichi Sankyo</td>
<td>4,600</td>
<td>Acquisition</td>
</tr>
<tr>
<td>Dabur Pharma</td>
<td>Fresenius Kabi</td>
<td>219</td>
<td>Acquisition</td>
</tr>
</tbody>
</table>
## INVESTMENTS, JVs INFUSING SUPERIOR CAPABILITIES IN INDIAN FIRMS … (2/2)

<table>
<thead>
<tr>
<th>Indian Company</th>
<th>Foreign Company</th>
<th>Value (USD million)</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cosme Farma Laboratories</td>
<td>Adcock Ingram Healthcare</td>
<td>87.8</td>
<td>Asset acquisition</td>
</tr>
<tr>
<td>Strides Arcolab Ltd</td>
<td>Gilead Sciences Inc</td>
<td>NA</td>
<td>Licensing agreement</td>
</tr>
<tr>
<td>Ranbaxy</td>
<td>Gilead Sciences Inc</td>
<td>NA</td>
<td>Licensing agreement</td>
</tr>
<tr>
<td>Jubilant Biosys</td>
<td>Endo Pharmaceuticals</td>
<td>NA</td>
<td>Drug development</td>
</tr>
<tr>
<td>Piramal Healthcare Ltd</td>
<td>Fujifilm Diosynth Biotechnologies</td>
<td>NA</td>
<td>Drug development</td>
</tr>
<tr>
<td>Biocon</td>
<td>Bristol-Myers Squibb</td>
<td>NA</td>
<td>Exclusive marketing</td>
</tr>
<tr>
<td>Unichem Laboratories</td>
<td>Mylan</td>
<td>30</td>
<td>Acquisition</td>
</tr>
<tr>
<td>SMS Pharmaceuticals</td>
<td>Mylan</td>
<td>33</td>
<td>Acquisition of manufacturing unit</td>
</tr>
<tr>
<td>Biocon</td>
<td>Abbott Laboratories</td>
<td>NA</td>
<td>Contract research</td>
</tr>
<tr>
<td>Agila Specialties</td>
<td>Canonsburg</td>
<td>1,850</td>
<td>Acquisition</td>
</tr>
<tr>
<td>Jubilant Biosys</td>
<td>Mnemosyne Pharmaceuticals Inc</td>
<td>NA</td>
<td>Drug development</td>
</tr>
<tr>
<td>Zydus Cadila Healthcare</td>
<td>Bayer</td>
<td>NA</td>
<td>Marketing arrangement</td>
</tr>
<tr>
<td>Claris Lifesciences</td>
<td>Otsuka Pharmaceutical</td>
<td>250</td>
<td>JV</td>
</tr>
<tr>
<td>Zydus Cadila Healthcare</td>
<td>Abbot Laboratories</td>
<td>NA</td>
<td>Licensing agreement</td>
</tr>
<tr>
<td>Lupin</td>
<td>Eli Lilly</td>
<td>NA</td>
<td>Marketing arrangement</td>
</tr>
</tbody>
</table>

*Source: ICRA Research on Indian Pharmaceutical Sector, India Ratings Research Outlook on Indian Pharmaceutical, BMI, Aranca Research*

*Notes: JV - Joint venture ADC - Antibody Drug Conjugates*
Sun Pharma was set up in 1983, with a compact manufacturing facility for tablets and capsules

It set up its first API plant at Panoli in 1995

Today, it has 26 manufacturing facilities across four continents and employs more than 14,000 people

Over 70 per cent of its sales come from international markets

Its revenues increased from USD930.6 million in FY09 to USD2.1 billion in 2012–13, increasing at a CAGR* of 27.4 per cent

Source: Sun Pharma website, Aranca Research
Note: CAGR - Compound Annual Growth Rate,
*CAGR is mentioned in INR terms
Among top five Indian pharma companies

Revenue base of about USD2.1* billion

Market capitalisation of USD15.6* billion

Strong presence in generics market

Over half the sales from North America

Focus on R&D

256 approved products and 391 filed for approval

23 manufacturing sites worldwide

Organic growth phase

All-India operations begin

Commenced operations in Calcutta

Nationwide marketing operations rolled out

Built the first API plant

First international acquisition: Niche Brand in the US

Acquired controlling stake in Taro and full control on Caraco

1983

1987

1995

2004

2012

Source: Sun Pharma website

*As of FY 2012–13
Dr Reddy’s began as an API manufacturer in 1984, producing high-quality APIs for the Indian domestic market.

- It has presence in almost all therapeutic segments.

- It has an integrated business model in three segments: Pharmaceutical Services & Active Ingredients (PSAI), Global generics, and Proprietary products.

- It has access to numerous emerging markets through partnerships with GlaxoSmithKline (GSK).

- Its product offering spans the entire value chain, from process development of the API to submission of the finished dosage dossier to regulatory agencies.

- Its revenues increased from USD1.5 million in FY09 to USD2.1 million in FY13, at a CAGR* of 14.4 per cent.

- Global generics comprised over 71 per cent of its revenue mix in FY13.

Dr Reddy's net sales (USD million)

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales (USD million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY09</td>
<td>1,479</td>
</tr>
<tr>
<td>FY10</td>
<td>1,480</td>
</tr>
<tr>
<td>FY11</td>
<td>1,626</td>
</tr>
<tr>
<td>FY12</td>
<td>2,016</td>
</tr>
<tr>
<td>FY13</td>
<td>2,141</td>
</tr>
</tbody>
</table>

CAGR*: 14.4%

Source: Dr Reddy's website,
Note: CAGR - Compound Annual Growth Rate,
*CAGR is mentioned in INR terms
DR REDDY’S: PROVIDING AFFORABLE AND INNOVATIVE HEALTHCARE … (2/2)

- Among top three Indian pharma companies
- Dr Reddy’s Laboratories incorporated in Hyderabad
- Listed on BSE; commenced production of its first API
- Dr Reddy’s Research Foundation established, Drug Discovery begins
- Acquires Roche’s API business in Mexico
- Exclusive JV with FUJIFILM to develop and manufacture generic drugs in Japan

- Fastest Indian company to cross USD2 billion revenues by 1984
- Integrated business spanning 3 segments: PSAI, GG and PP
- Market capitalisation of USD5.5* billion as of FY2012–13
- Revenue base of about USD2.1* billion
- Over 25 billion units in generics capacities
- Over 16500+ associates worldwide
- First company in Asia-Pacific outside of Japan, to list on NYSE
- 18 manufacturing sites worldwide
- 16500+ associates worldwide
- 18 manufacturing sites worldwide
- Revenue base of about USD2.1* billion
- Market capitalisation of USD5.5* billion
- Among the leaders in supply of generic APIs globally

Source: Dr Reddy’s website, Annual Report
Notes: PSAI - Pharmaceutical Services and Active Ingredients, GG - Global Generics, PP - Proprietary Products, JV - Joint venture, *As of FY2012–13
Lupin is a renowned pharma player having a wide range of quality, affordable generic and branded formulations and APIs.

Lupin has emerged as the fifth largest and among the fastest-growing Top Five companies in the US.

It is one of the world’s largest manufacturers of TB drugs and has significant market share in the cardiovascular, diabetology, asthma, paediatrics, CNS, Anti-infectives and NSAIDs therapy segments.

Its revenues increased from USD822.5 million in FY09 to USD1.7 million in FY13, at a CAGR* of 25.8 per cent.

Advanced market formulations comprised nearly 52 per cent of its revenues in FY12.

Source: Lupin website

Note: CAGR - Compound Annual Growth rate
CAGR* - Growth in INR terms
API - Active Pharmaceutical Ingredient, CNS - Central Nervous System, NSAIDS - Non-steroidal Anti-inflammatory Drugs, TB - Tuberculosis
PHARMACEUTICALS

LUPIN: ON A HIGH GROWTH PATH … (2/2)

- Revenue base of about USD1.7* billion
- Market capitalisation of USD5.2* billion
- Global leadership in anti-TB segments
- 14th largest global generic pharma company
- Third largest Indian pharma company

Expanding India operations
Diversifying into different business segments
Focus on R&D
Acquisitions across the globe
Talent pool of 1000+ scientists

Commenced business
Commissioned a formulations plant and R&D centre at Aurangabad
JV in Thailand – Lupin Chemicals (Thailand) established
Commenced supply of Cephalosporin to alliance partners in US
Acquires I’rom Pharma; enters into joint development agreement with Medicis Enter


153 ANDAs and 111 DMFs
Source: Lupin website, Annual Report
Note: ANDAS - Abbreviated New Drug Application, DMFs - Drug Master Files, * - As of FY2012–13

For updated information, please visit www.ibef.org 35
Established in 1935, Cipla has over 34 state-of-the-art manufacturing units.

It is one of the few companies producing medicines for rare diseases like Idiopathic Pulmonary Fibrosis, Pulmonary Arterial Hypertension, Thalassaemia and Multiple Sclerosis.

Cipla has outperformed other global pharma majors by offering patented anti-AIDS drugs at affordable prices.

It has presence in over 170 countries, with an employee strength of over 20,000; it also stands as South Africa’s sixth-largest player.

Its revenues increased from USD1.1 billion in FY09 to USD1.5 billion in FY13, at a CAGR* of 13.0 per cent.

Cipla has plans for a USD36 million investment to upgrade its plant in Durban and a USD512 million takeover of South Africa’s Cipla Medpro.

---

Source: Cipla website, Cipla brochure, Cipla corporate profile

Note: CAGR - Compound Annual Growth Rate
* - Growth in INR terms
API - Active Pharmaceutical Ingredient, OTC - Over The counter

Cipla net sales (USD million)

<table>
<thead>
<tr>
<th></th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount</td>
<td>1,081</td>
<td>1,130</td>
<td>1,374</td>
<td>1,457</td>
<td>1,489</td>
</tr>
<tr>
<td>CAGR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13.0%*</td>
</tr>
</tbody>
</table>

* CAGR: 13.0%*
PHARMACEUTICALS

CIPLA: MAKING HEALTHCARE ACCESSIBLE … (2/2)

- Revenue base of about USD1.5* billion
- Market capitalisation of USD5.6* billion
- Global presence in over 170 countries
- One of the world’s largest generic drug companies
- Third largest Indian pharma company
- 53% of total income from oversees sales
- Over 10,000 product registrations globally
- World’s largest ARV manufacturer
- Over 2,000 products in 65 therapeutic categories
- Manufactured first Indian API in 1960
- 34 internationally approved facilities
- Cipla established to make India self-sufficient in healthcare
- Pioneered inhalation therapy to manufacture MDI
- Launched Deferiprone, world’s first oral iron chelator
- Pioneered access to HIV. ARVs made available at less than a dollar
- Made cancer treatment affordable with breakthrough in reducing cost of cancer drugs

Source: Cipla website, Annual Report
Notes: MDI - Metered Dose Inhaler, ARV - Anti-retroviral, * - As of FY2012–13

AUGUST 2013
## OPPORTUNITIES ABOUND IN CLINICAL TRIALS AND HIGH-END DRUGS

<table>
<thead>
<tr>
<th>Clinical trials market</th>
<th>High-end drugs</th>
<th>Penetration in rural market</th>
</tr>
</thead>
<tbody>
<tr>
<td>• As per various studies, India is among the leaders in the clinical trial market</td>
<td>• Due to increasing population and income levels, demand for high-end drugs is expected to rise</td>
<td>• With 70 per cent of India’s population residing in rural areas, pharma companies have immense opportunities to tap this market</td>
</tr>
<tr>
<td>• Due to a genetically diverse population and availability of skilled doctors, India has the potential to attract huge investments to its clinical trial market</td>
<td>• Demand for high-end drugs could reach USD8 billion by 2015</td>
<td>• Demand for generic medicines in rural markets has seen a sharp growth. Various companies are investing in the distribution network in rural areas</td>
</tr>
<tr>
<td></td>
<td>• Growing demand could open up the market for production of high-end drugs in India</td>
<td></td>
</tr>
</tbody>
</table>

Source: BMI, Aranca Research
The share of generic drugs is expected to continue increasing; it could represent about 90 per cent of the prescription drug market by 2016.

Due to their competence in generic drugs, growth in this market offers a great opportunity for Indian firms.

Source: BMI, Aranca Research
Note: F - Forecast
India's OTC drugs market stood at USD3 billion in 2011 and is expected to expand at a CAGR of 16.3 per cent to USD6.6 billion during 2008–16.

Inclusion of various other drugs and cosmetics under the OTC market may further boost the sector.

Source: BMI, Aranca Research
Note: CAGR - Compound Annual Growth Rate
The Indian Pharmaceutical Association
Kalina, Santacruz (E),
Mumbai – 400 098
Phone: 91-22-2667 1072
Fax: 91 22 2667 0744
E-mail: ipacentre@ipapharma.org
www.ipapharma.org

Indian Drug Manufacturers' Association
102-B, Poonam Chambers, Dr A.B. Road
Worli, Mumbai – 400 018
Phone: 91-22-2494 4624/2497 4308
Fax: 9122 24950723
E-mail: idma1@idmaindia.com
www.idma-assn.org

Organisation of Pharmaceutical Producers of India
Peninsula Chambers, Ground Floor,
Ganpatrao Kadam Marg, Lower Parel,
Mumbai – 400 013
Phone: 9122 24918123, 24912486, 66627007
Fax: 9122 24915168
E-mail: indiaoppi@vsnl.com
www.indiaoppi.com
Bulk Drug Manufacturers Association
C-25, Industrial Estate, Sanath Nagar
Hyderabad – 500018
Phone: 91 40 23703910/23706718
Fax: 91 40 23704804
E-mail: info@bdmai.org
www.bdmai.org
**GLOSSARY**

- **CRAMS**: Contract Research and Manufacturing Services
- **API**: Active Pharmaceutical Ingredients
- **FDI**: Foreign Direct Investment
- **GOI**: Government of India
- **INR**: Indian Rupee
- **USD**: US Dollar
- **BPL**: Below Poverty Line
- **RSBY**: Rashtriya Swastha Bima Yojna
- **ESIC**: Employees State Insurance Corporation

Wherever applicable, numbers have been rounded off to the nearest whole number.
### Exchange Rates (Fiscal Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>INR equivalent of one US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05</td>
<td>44.95</td>
</tr>
<tr>
<td>2005-06</td>
<td>44.28</td>
</tr>
<tr>
<td>2006-07</td>
<td>45.28</td>
</tr>
<tr>
<td>2007-08</td>
<td>40.24</td>
</tr>
<tr>
<td>2008-09</td>
<td>45.91</td>
</tr>
<tr>
<td>2009-10</td>
<td>47.41</td>
</tr>
<tr>
<td>2010-11</td>
<td>45.57</td>
</tr>
<tr>
<td>2011-12</td>
<td>47.94</td>
</tr>
<tr>
<td>2012-13</td>
<td>54.31</td>
</tr>
</tbody>
</table>

### Exchange Rates (Calendar Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>INR equivalent of one US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>45.55</td>
</tr>
<tr>
<td>2006</td>
<td>44.34</td>
</tr>
<tr>
<td>2007</td>
<td>39.45</td>
</tr>
<tr>
<td>2008</td>
<td>49.21</td>
</tr>
<tr>
<td>2009</td>
<td>46.76</td>
</tr>
<tr>
<td>2010</td>
<td>45.32</td>
</tr>
<tr>
<td>2011</td>
<td>45.64</td>
</tr>
<tr>
<td>2012</td>
<td>54.69</td>
</tr>
<tr>
<td>2013</td>
<td>54.45</td>
</tr>
</tbody>
</table>

Average for the year
India Brand Equity Foundation ("IBEF") engaged Aranca to prepare this presentation and the same has been prepared by Aranca in consultation with IBEF.

All rights reserved. All copyright in this presentation and related works is solely and exclusively owned by IBEF. The same may not be reproduced, wholly or in part in any material form (including photocopying or storing it in any medium by electronic means and whether or not transiently or incidentally to some other use of this presentation), modified or in any manner communicated to any third party except with the written approval of IBEF.

This presentation is for information purposes only. While due care has been taken during the compilation of this presentation to ensure that the information is accurate to the best of Aranca and IBEF’s knowledge and belief, the content is not to be construed in any manner whatsoever as a substitute for professional advice.

Aranca and IBEF neither recommend nor endorse any specific products or services that may have been mentioned in this presentation and nor do they assume any liability or responsibility for the outcome of decisions taken as a result of any reliance placed on this presentation.

Neither Aranca nor IBEF shall be liable for any direct or indirect damages that may arise due to any act or omission on the part of the user due to any reliance placed or guidance taken from any portion of this presentation.