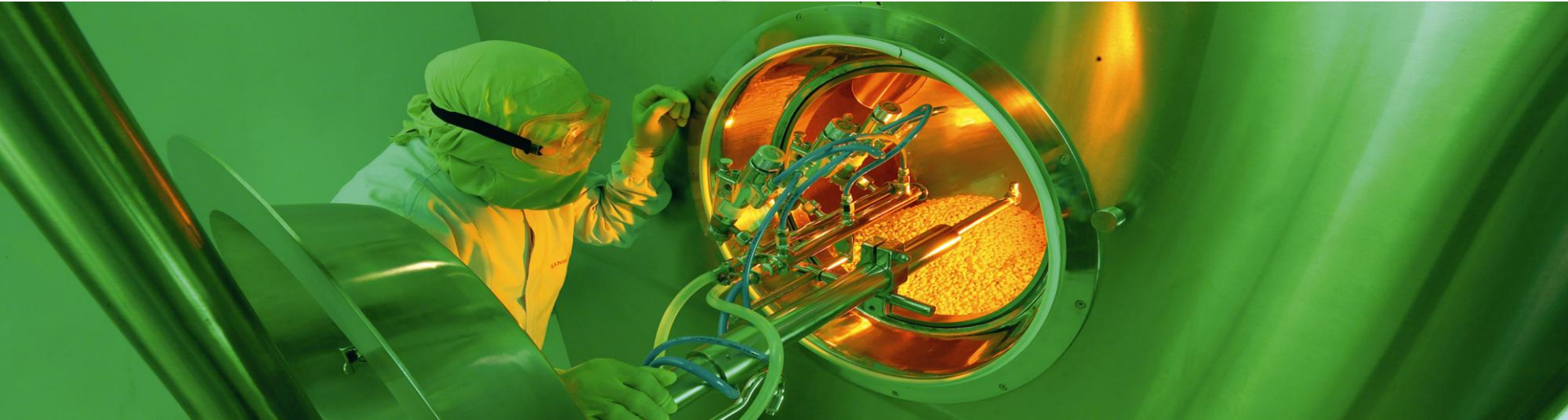


Pharmaceuticals

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Advantage India

Cost Efficiency

- Low cost of production and R&D boosts efficiency of Indian pharma companies
- Comparative cost advantage enhances Indian pharma exports

Economic Drivers

- Economic prosperity to improve affordability of drugs
- Increasing penetration of health insurance

2020F

Market size:
USD55
billion

Advantage India

Diversified Portfolio

- Accounts for over 8 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

2010

Market size:
USD18.8
billion

Source: BMI, Aranca Research

2015 revenue forecasts are estimates of BMI, United States Food and Drug Association (USFDA), BMI stands for Business Monitor International, API stands for Active Pharmaceutical Ingredients

Pharmaceuticals

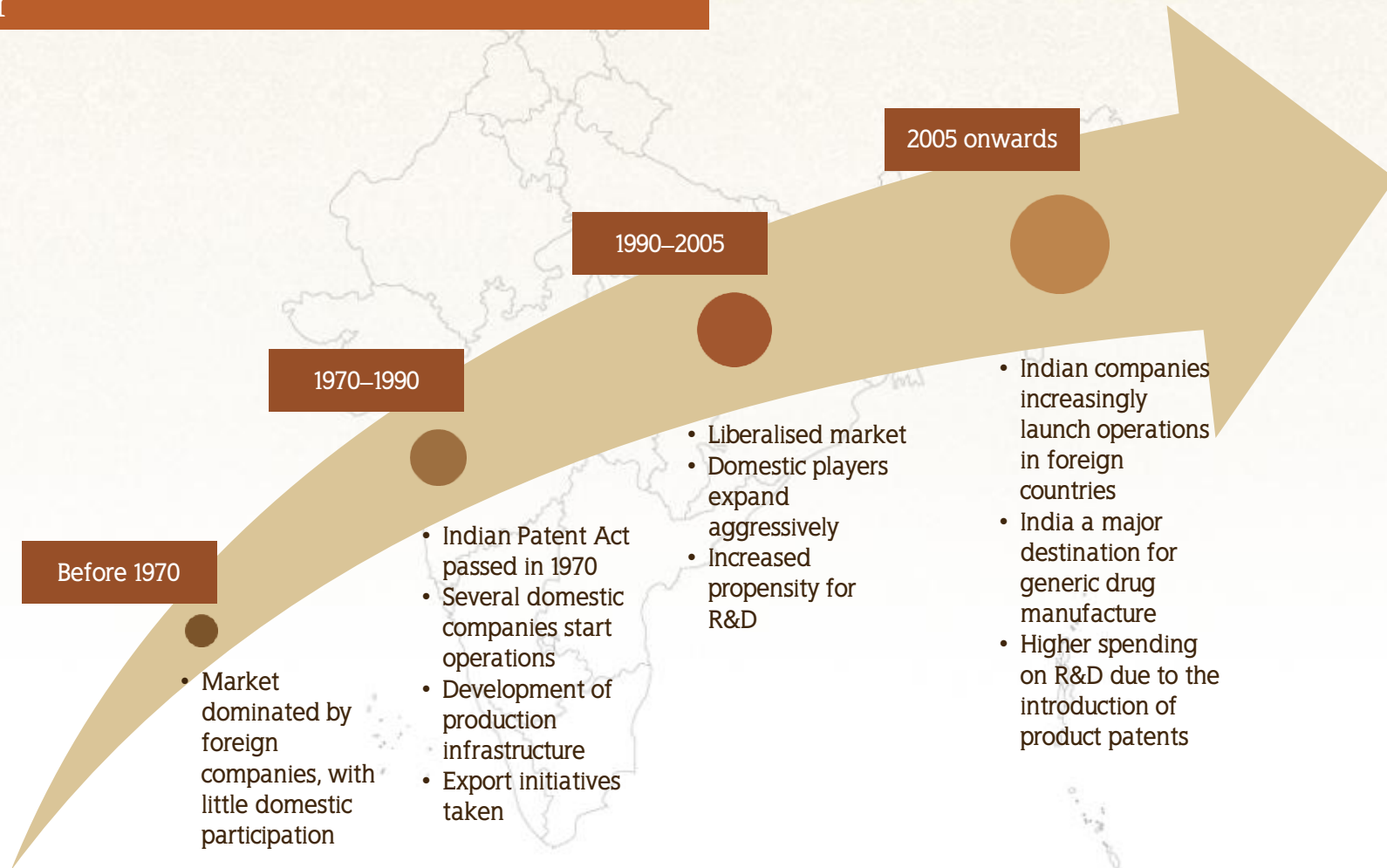
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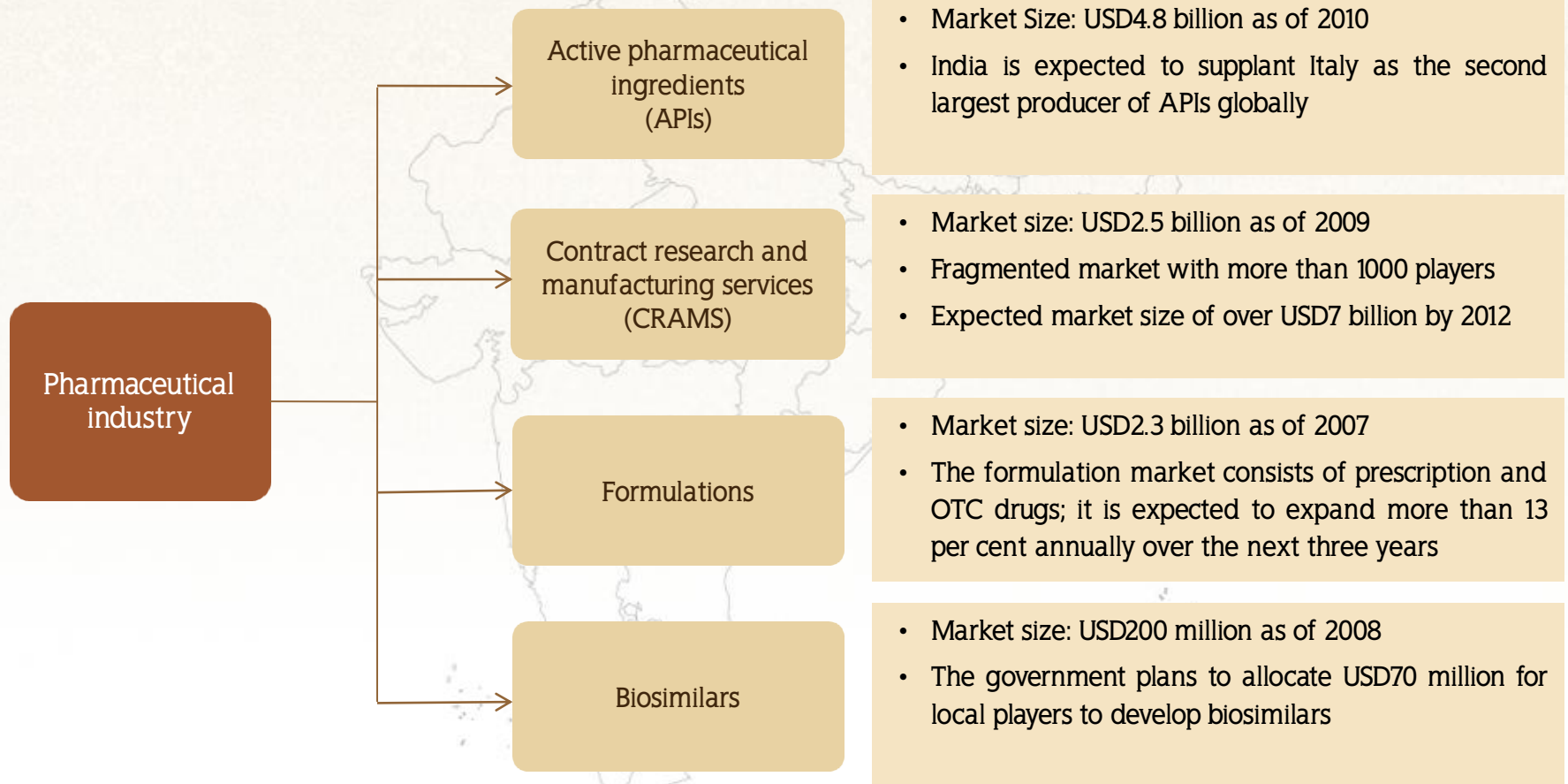
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Evolution of the Indian pharmaceutical sector



API is the largest segment of the Indian pharma industry

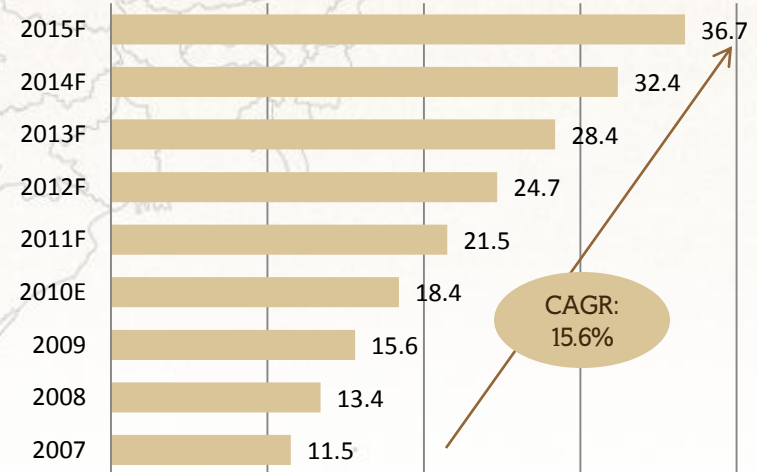


Source: BMI, Datamonitor, Various industry estimates, Aranca Research
Note: OTC stands for Over The Counter

Fast growth to continue in both domestic, export segments ... (1/2)

- The Indian pharma market was estimated at USD21.7 billion during 2011
- It is forecasted to double in five years reaching USD36.7 billion by 2015

Revenue of Indian pharma industry (USD billion)

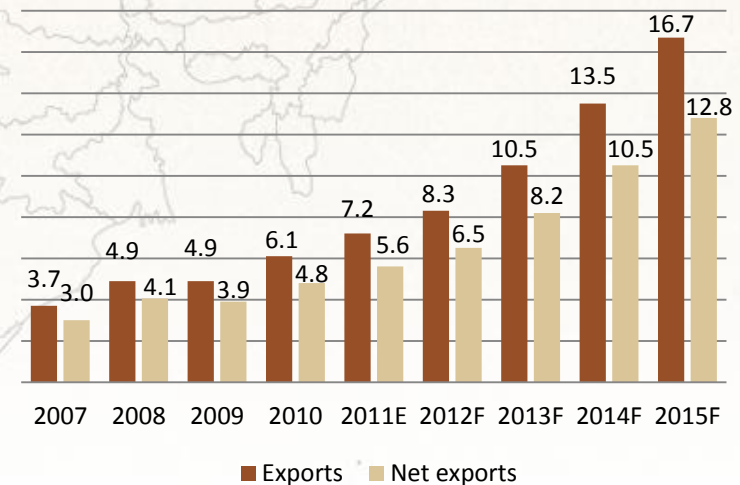


Source: BMI, Aranca Research
Note: E stands for Estimates, F stands for Forecasts

Fast growth to continue in both domestic, export segments ... (2/2)

- Pharma exports from India are forecasted to increase more than two folds over the next five years
- The trade surplus in the pharma sector is likely to expand to USD12.8 billion by 2015

Trade data of Indian pharma industry (USD billion)

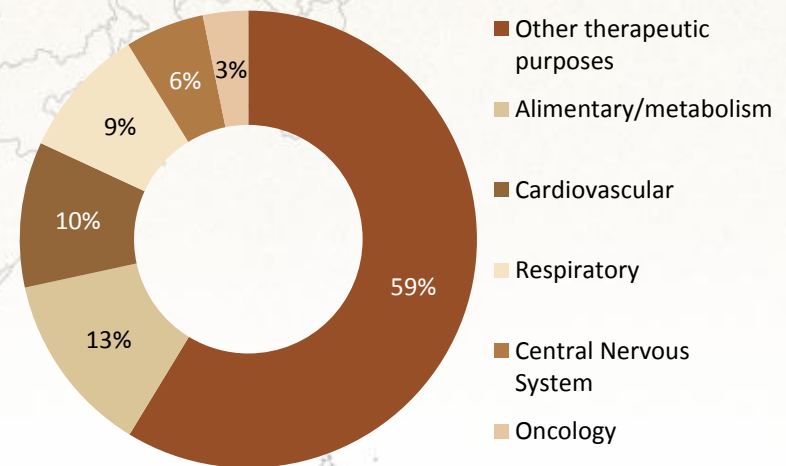


Source: BMI, Aranca Research
Note: E stands for Estimates, F stands for Forecasts

Alimentary drugs lead the market; India is third in Asia-Pacific ... (1/2)

- Alimentary drugs command the largest share (over 13 per cent) in the Indian pharma market
- The cardiovascular segment represents 10 per cent of the market share; its contribution is likely to rise due to the growing number of cardiac cases in India

Indian pharmaceutical market segments by value (2010E)

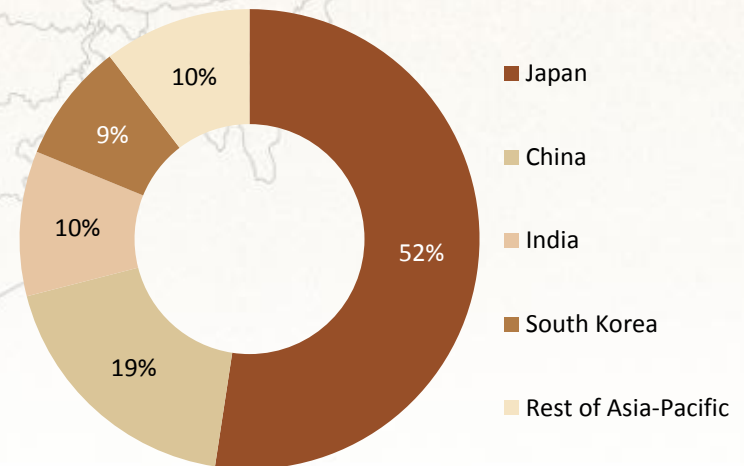


Source: Datamonitor, Aranca Research

Alimentary drugs lead the market; India is third in Asia-Pacific ... (2/2)

- Japan accounts for over 50 per cent of pharmaceutical sales in Asia-Pacific, followed by China which is a distant second with 19 per cent
- India, with a little over 10 per cent market share, ranks third by market size

Market share by value in Asia-Pacific (2010)

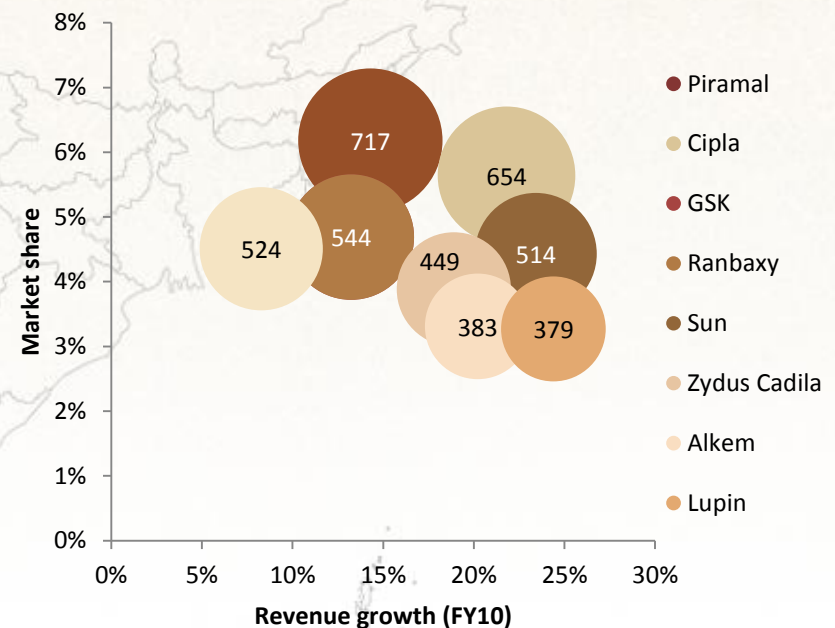


Source: Datamonitor, Aranca Research

Competitive market; top 4 firms account for over 20 per cent

- Piramal has the largest share (6.2 per cent) in the Indian pharma market with revenues of USD717 million during FY10
- During FY10, Lupin posted the highest growth in revenue among the major players
- Ranbaxy, with a revenue base of USD524 million, ranks fourth in the market
- The top four firms account for just over one-fifth of the market share

Source: BMI, Aranca Research
Market share is in terms of revenue



The bubbles denote revenue earned during FY10 in USD

Notable trends in the Indian pharmaceuticals sector

Research and development

- 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

Clinical trials

- Due to its cost advantage, India is increasingly becoming a hub for clinical trials. Clinical trials market is estimated to be worth USD400 million in 2009

Export revenue

- The pharmaceutical export market in India is thriving due to strong presence in the generic space

Joint ventures

- Several multinational companies are collaborating with Indian pharma firms to develop new drugs
- Pfizer partnered with Aurobindo Pharma to develop generic medicines

Product patents

- 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

Pharmaceuticals

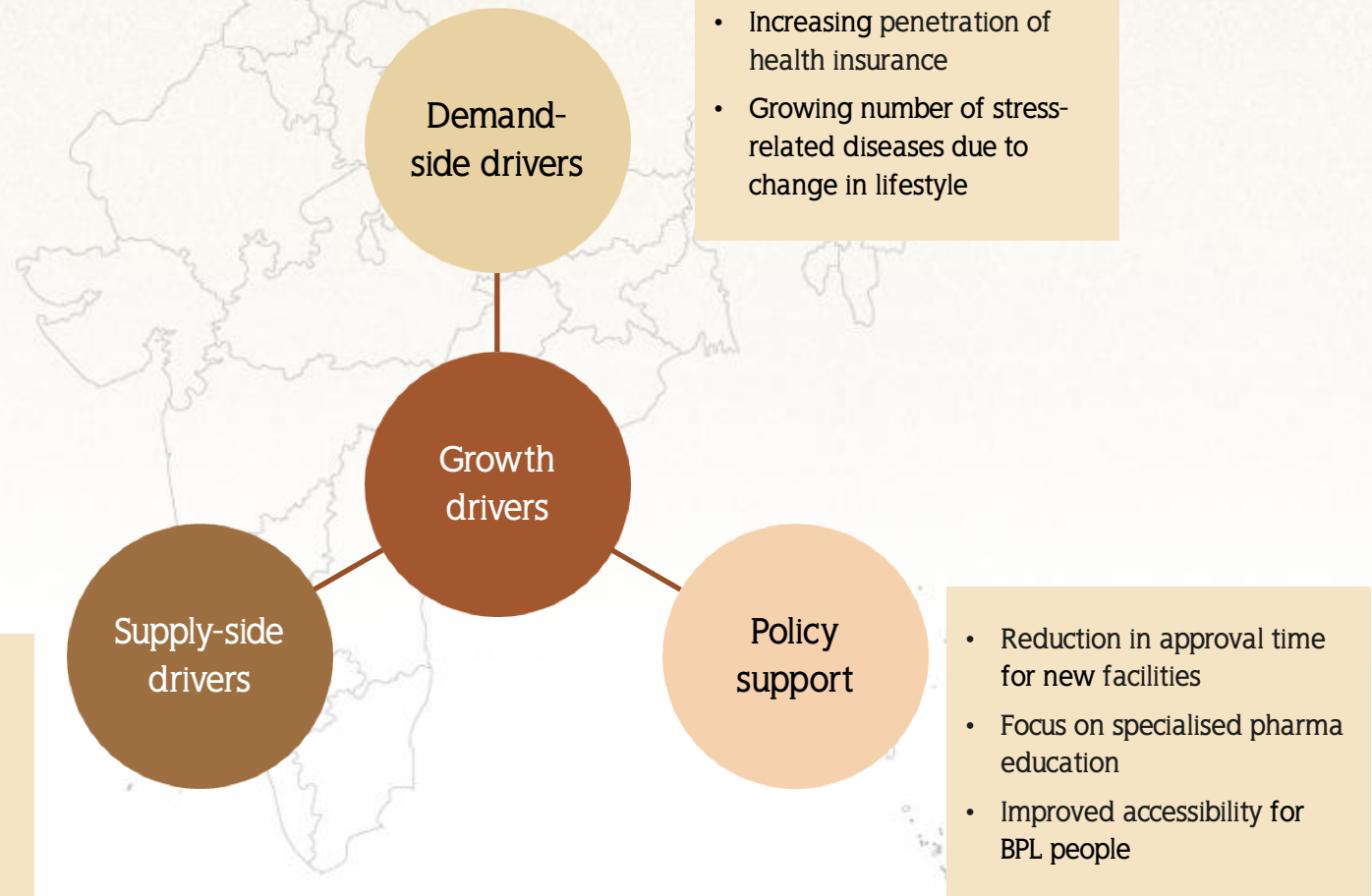
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Sector driven by confluence of - demand, capabilities, policy



Notes: BPL means Below Poverty Line

Supply-side drivers of Indian pharma industry

Launch of patented drugs

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

Scope in generics market

- Due to its cost advantage, India has emerged as a major producer of generic drugs with several companies focussing on this sector
- With an expected market size of USD35 billion in 2015 vis-à-vis USD15 billion currently, there is immense potential for growth in India's generic market

Medical infrastructure

- Pharma companies have increased spending to tap rural markets and develop better medical infrastructure

OTC drugs

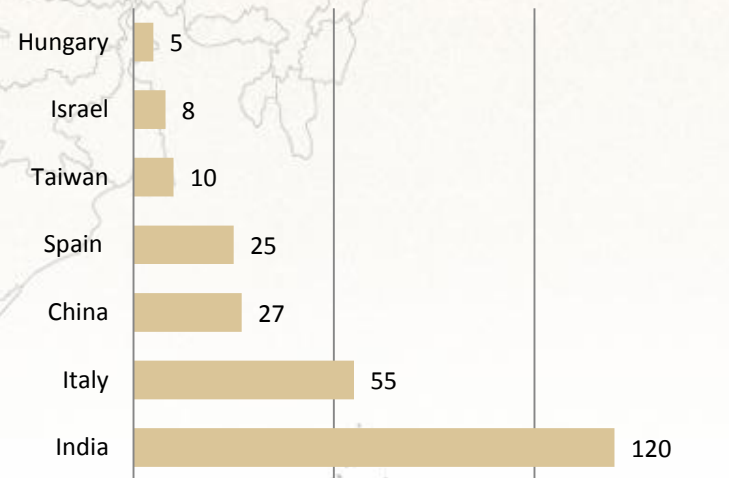
- Increased penetration of chemists, especially in the rural parts of India would make OTC drugs easily available

Competency and cost efficiency continue to be India's forte ... (1/2)

- India has over 120 USFDA-approved and 84 UK MHRA-approved manufacturing facilities
- These facilities significantly support the companies involved in CRAMS

Notes: USFDA is United States Food and Drug Administration
CRAMS is Contract Research and Medical Services

Number of USFDA-approved facilities in different countries

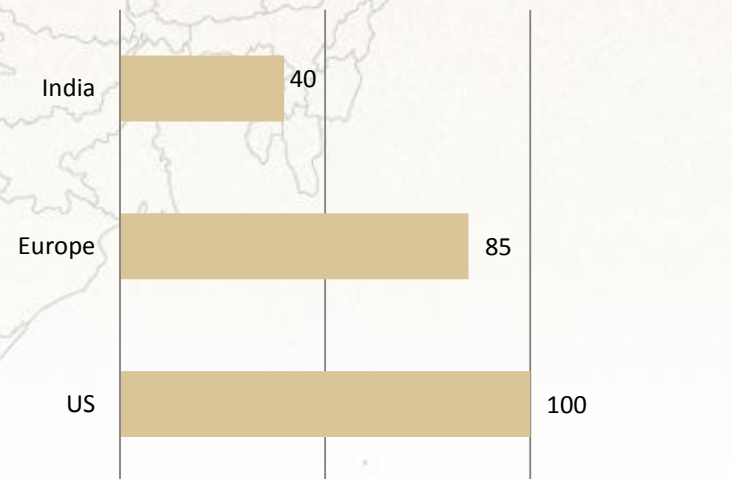


Source: BMI, Aranca Research

Competency and cost efficiency continue to be India's forte ... (2/2)

- The manufacturing cost of Indian pharma companies is up to 65 per cent lower than that of US firms and almost half of that of European manufacturers
- Cost efficiency continues to create opportunities for Indian companies in emerging markets and Africa

Relative cost of production with US cost as base



Source: BMI, Aranca Research

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 3 cities
- Over 160,000 hospital beds expected to be added each year in the next decade

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

Demand drivers

Affordability

- Rising income could drive 73 million households to the middle class over the next ten years
- Over 650 million people expected to be covered by health insurance by 2020
- Government-sponsored programmes expected to provide health benefits to over 380 million BPL people

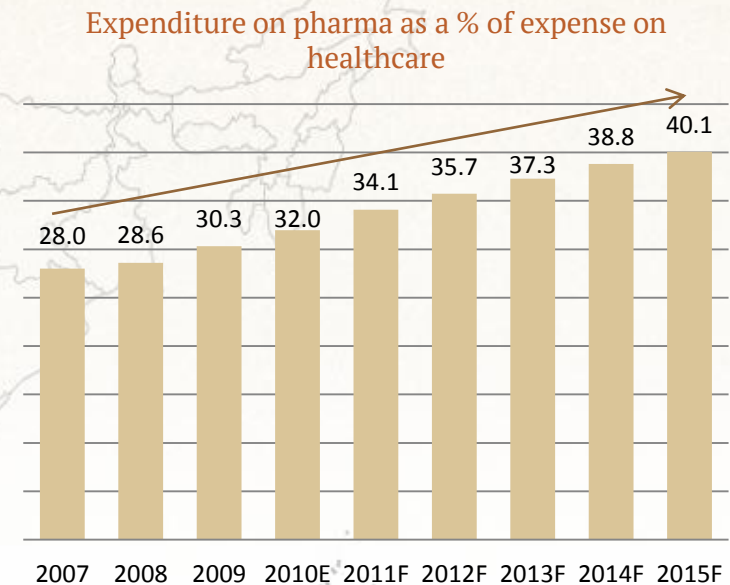
Epidemiological factors

- Patient pool expected to increase over 20 per cent in the next ten years mainly due to a rise in population
- Newer diseases and changes in lifestyle to boost demand

Source: McKinsey pharma report 2020, Aranca Research

Anticipated steep growth in expenditure on pharmaceuticals ... (1/2)

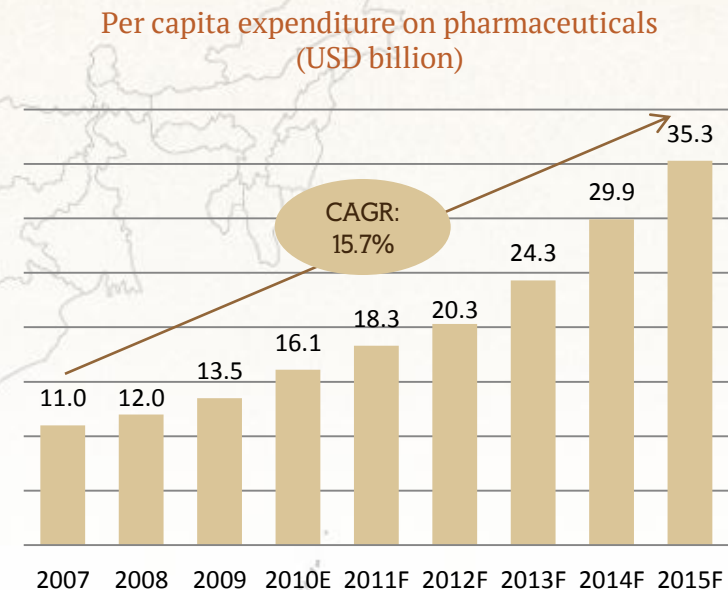
- From 28 per cent in 2007, expenditure on pharmaceuticals is likely to increase to over 40 per cent of the total spending on healthcare by households by 2015



Source: BMI, Aranca Research

Anticipated steep growth in expenditure on pharmaceuticals ... (2/2)

- Growing per capita expenditure on pharmaceuticals in India offers ample opportunities for players in this market



Source: BMI, Aranca Research

Favourable policy measures support growth

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 of 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
- The automatic route to facilitate 100 per cent foreign direct investment (FDI)

Industry infrastructure

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

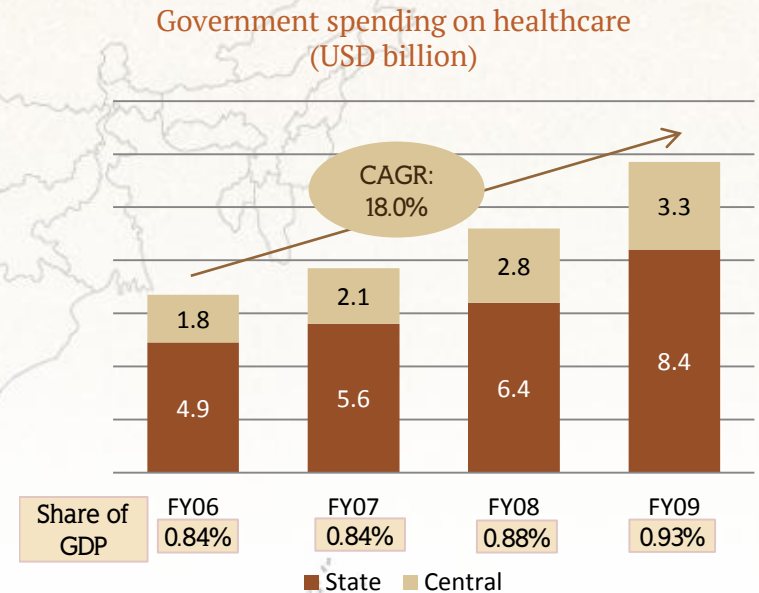
Pharma vision 2020

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

Notes: NOC – No objection certificate; VC – Venture Capital
MOU – Memorandum of Understanding

Government-led initiatives aim at better availability of drugs ... (1/2)

- Government spending on healthcare expanded at a CAGR of 18 per cent during 2005–09
- Increased government expenditure on healthcare could create an over USD4.5 billion market for pharmaceuticals in the next few years

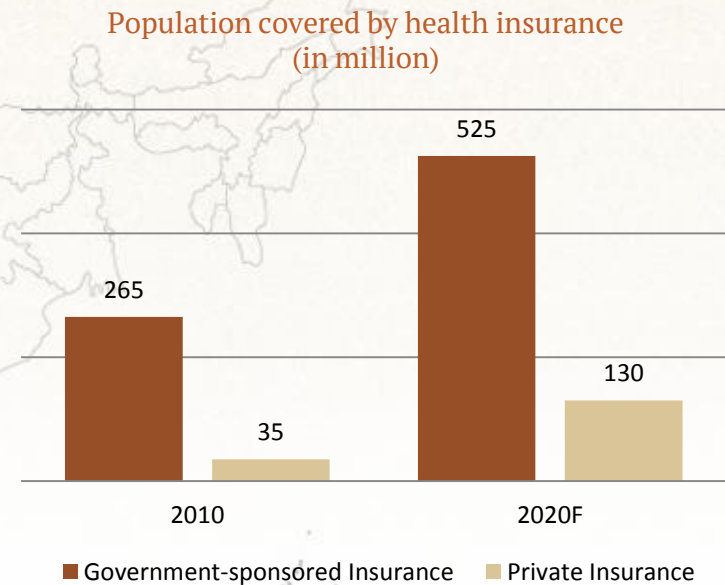


Source: McKinsey estimates, Aranca Research

Government-led initiatives aim at better availability of drugs ... (2/2)

- 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

Note: RSBY stands for Rashtriya Swastha Bima Yojna; ESIC stands for Employees State Insurance Corporation



Source: McKinsey estimates, Aranca Research

Investments, JVs infusing superior capabilities in Indian firms

- 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

Notes: JV is joint venture

Indian company	Foreign Company	Value (USD million)	Type
Aurobindo Pharma	OJSC Diod	Not disclosed	Sell pharma products in Russia
Sun Pharma	Merck	Not disclosed	Marketing and manufacturing JV
Cadila	Bayer	Not disclosed	Marketing JV
Biocon	Pfizer	350	Insulin marketing deal
Paras Pharma	Reckitt Benckiser	726	Acquisition
Piramal	Abbot	3720	Business buyout
Orchid Chemicals	Hospira	400	Business buyout
Aurobindo Pharma	Pfizer	Not disclosed	Generic development and supply
Shantha Biotech	Sanofi Aventis	783	Acquisition
Ranbaxy Labs	Daiichi Sankyo	4600	Acquisition
Dabur Pharma	Fresenius Kabi	219	Acquisition

Source: BMI, Aranca Research

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Opportunities abound in clinical trials and high-end drugs

Clinical trial market

- The Indian clinical trial market is estimated to be worth USD1.5 billion
- According to various studies, India is among the leaders in the clinical trial market
- Due to a genetically-diverse population and availability of skilled doctors, India has the potential to attract huge investments to its clinical trial market

High-end drugs

- Due to increasing population and income levels, demand for high-end drugs is expected to rise
- Demand for high-end drugs could reach USD8 billion by 2015
- Growing demand could open up the market for the production of high-end drugs in India

Penetration in rural market

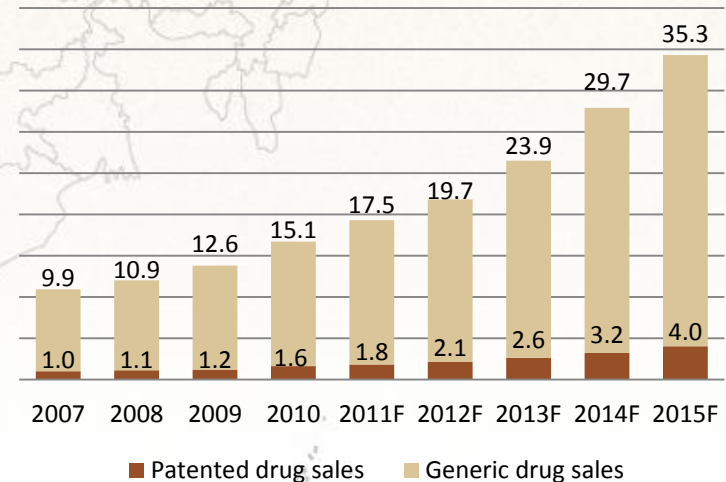
- With 70 per cent of India's population residing in rural areas, there are immense opportunities for pharma companies to tap this market
- Demand for generic medicines in rural markets has grown sharply. Various companies investing in the distribution network in rural areas

Source: BMI, Aranca Research

Drug sales to more than double by 2015 across segments ... (1/2)

- The share of generic drugs is expected to continue to increase; it could represent 90 per cent of the prescription drug market by 2015
- Due to their competence in generic drugs, growth in this market offers a great opportunity for Indian firms

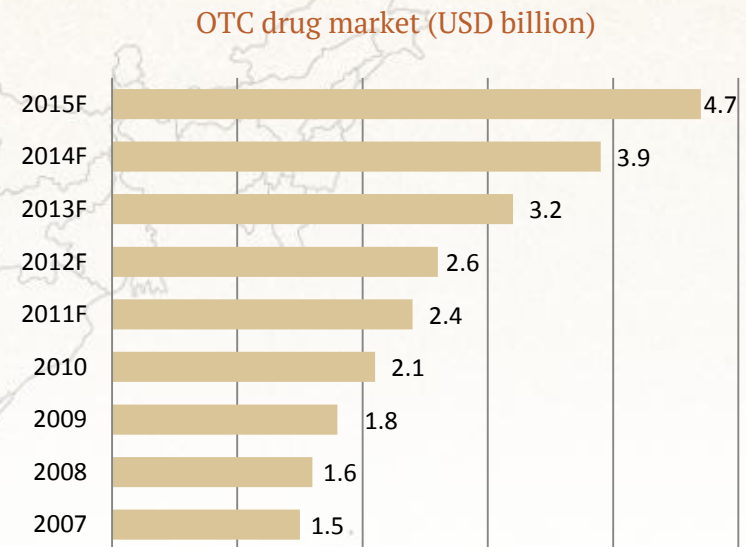
Share of patented and generic drugs in overall market
(USD billion)



Source: BMI, Aranca Research

Drug sales to more than double by 2015 across segments ... (2/2)

- The OTC market is forecasted to be worth USD4.7 billion by 2015
- The inclusion of various other drugs and cosmetics under the OTC market may provide a further boost to this sector



Source: BMI, Aranca Research

Pharmaceuticals

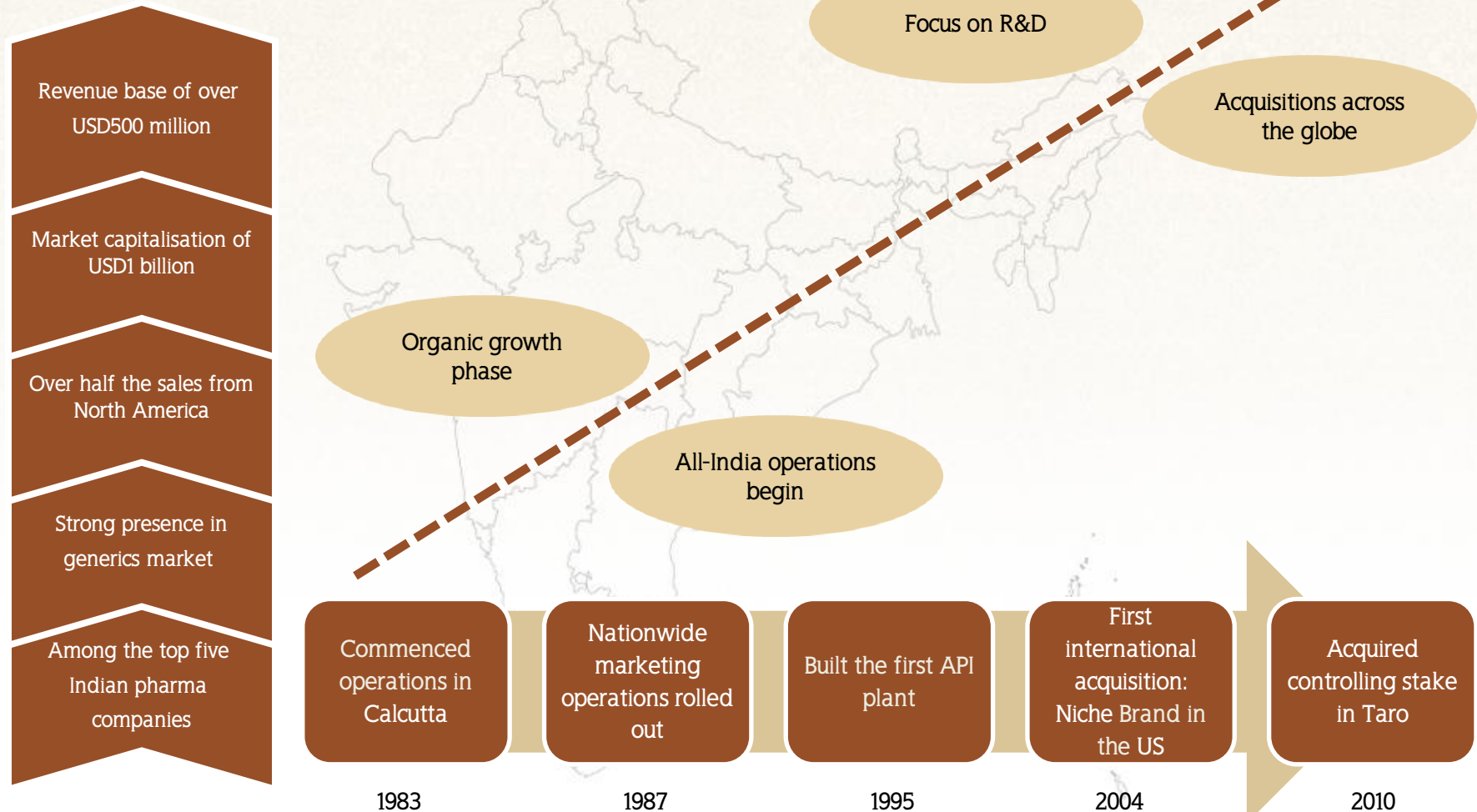
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Sun Pharma: Leveraging its generic market capabilities



Source: Sun Pharma website

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Industry Associations

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

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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

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