Indian Pharma – Global Impact

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L I F E . R E S E A R C H . H O P E

Headlines: TODAY

- More than three-quarters of the Top 50 pharma companies conduct clinical development in India(1)
- Outsourced manufacturing activity in India at $100 million(2)
- Outsourced clinical trial activity in India at $75 million in 2005(3)
- Increasing drug discovery partnerships with large as well as small innovator/biotech companies
- Asia to account for 40%-50% of global clinical trials in 2010(4)
- Outsourced contract research activity in India by 2010 touches $2 billion(5)
- Outsourced manufacturing activity in India to cross $1bn by 2010(6)

(2), (6) Motilal Oswal Report
(3), (4), (5) Frost & Sullivan

Setting the context

- Improving R&D productivity concerns for innovator pharma companies
- Exploring opportunities for expanding pipeline while addressing costs as well
    - Testing the waters: Outsourcing of non-core activities on an experimental basis
    - Expanding partnerships: Drug discovery experimental programs in various countries
- Birth of the ‘pharma services’ industry in India
- THE BIG MOVE: India transitions into Product Patent Regime starting 2005

Setting the context

- Indian companies foray into innovation space: setting up internal drug discovery programs as well as exploring partnerships with large and small innovator companies
- Burst of scientific discoveries and technological innovation has pushed drug discovery R&D to a level of sophistication that is too broad and difficult for any company to take on single-handedly
- 'India advantage' → advantage of the 4C's: cost, capacity, capability, communication

Discovery & Development Landscape in India

Internal Programs	Services Model	MNC Outposts	Partnerships
▪ Dr. Reddy's ▪ Glenmark ▪ Ranbaxy ▪ Cadila ▪ Torrent ▪ Sun Pharma ▪ Biocon ▪ Wockhardt ▪ Nicholas Piramal	▪ Aurigene, Advinus, GVK Lifesciences ▪ Dr. Reddy's, Disman, Nicholas, Jubilant, Shasun, Divis, Suven ▪ GVK Bio Vimta, Lambda, Lotus, Accutest ▪ Siro Clinpharm, iGate Clinical Research, Asian Clinical ▪ Quintiles, ClinTec	**Drug Discovery** ▪ AstraZeneca ▪ Altana **Clinical trials & data management** ▪ Pfizer ▪ Eli Lilly ▪ Novartis ▪ GSK	▪ GSK – Ranbaxy ▪ Eli Lilly – Jubilant, Suven ▪ Zydus – BI, Onconova, ▪ Dr. Reddy's – Rheoscience, Argenta, ClinTec ▪ Aurigene – Merck/ Serono, Forest Labs, Rheoscience ▪ Merck & Co. – Advinus Therapeutics ▪ AstraZeneca – Torrent ▪ Wyeth – GVK ▪ Nicholas – Morvus, Connexios, Biosynth ▪ Syngene - Innate

Source: Company news, industry reports

Internal R&D Programs: Emerging NCE Pipeline from India

Company	Pre-Clinical	Phase I	Phase II	Phase III	TOTAL
Dr. Reddy's	4	2	3	-	9
Glenmark	4	-	2	-	6
Ranbaxy	8	1	1	-	10
Cadila	n/a	3	1	-	4
Torrent	n/a	1	-	-	2
Wockhardt	n/a	1	1	-	2
Sun Pharma	n/a	-	1	-	1
Nicholas Piramal	n/a	-	1	-	1
Biocon	n/a	1	-	-	1
Total	16	9	10		36

Source: Analyst reports

Services Model: Value proposition across Discovery & Development value chain

IP CREATION

PRE CLINICAL

SERVICE OFFERINGS

- Chemistry services
- Biology Services
- Screening Services
- Lead Optimization

SERVICE PROVIDERS

- Aurigene Discovery
- Advinus Therapeutics
- GVK Lifesciences
- Connexios

CLINICAL

SERVICE OFFERINGS

- Clinical trials
- BA/BE Studies
- Clinical data management
- Compliance
- Clinical supply quantities

SERVICE PROVIDERS

- Siro Clinpharm, iGate Clinical Research, Quintiles, Accutest, Vimta, Lambda, Lotus, GVK Bio
- Dr.Reddy’s, Dishman, Jubilant, Nicholas, Shasun, Suven

COMMERCIALIZATION

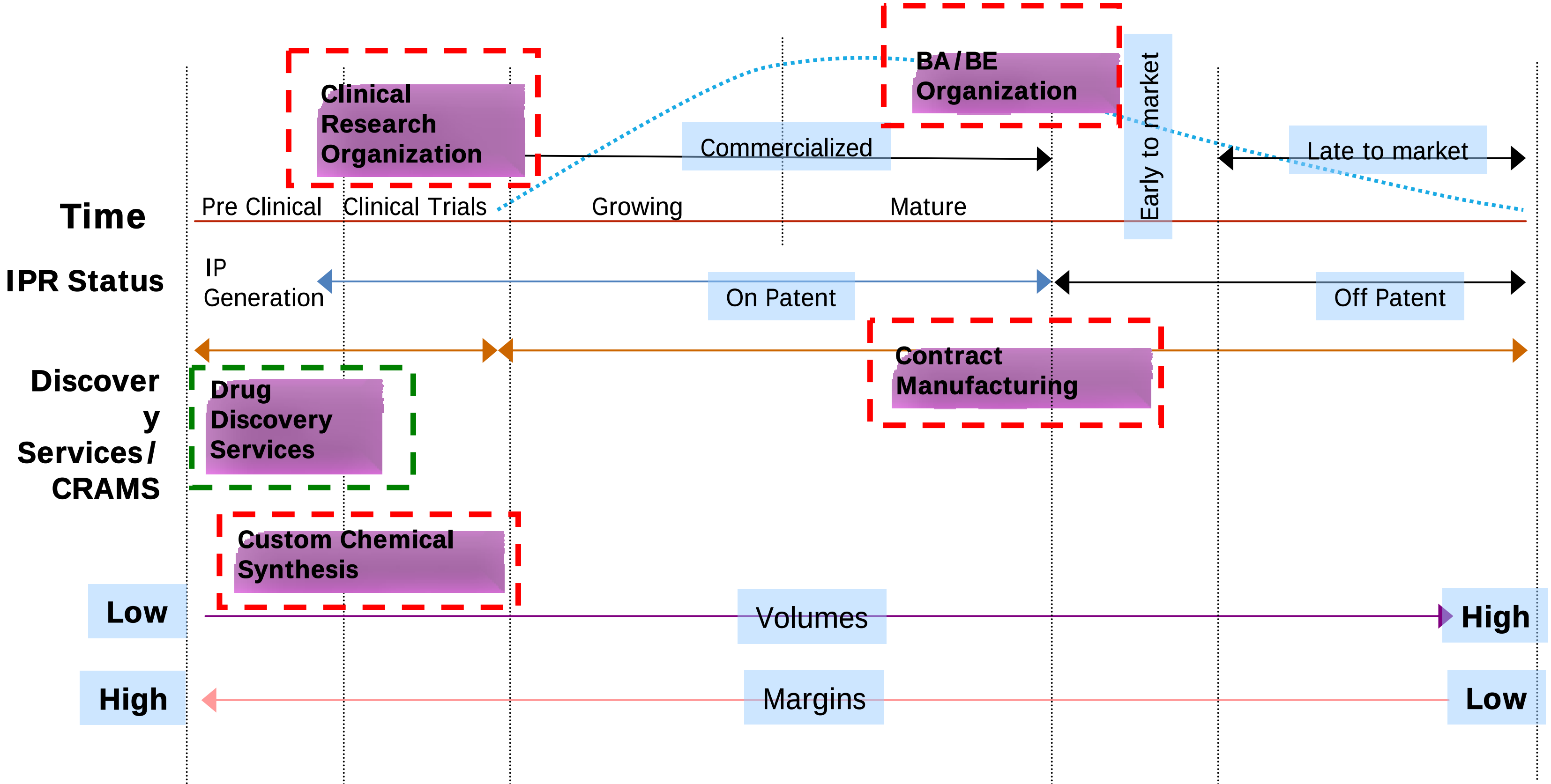
SERVICE OFFERINGS

- API and Finished Dosage supplies for launched or off-patent innovator products

SERVICE PROVIDERS

- Dr.Reddy’s, Dishman, Jubilant, Nicholas, Shasun

Value proposition across Drug Discovery & Development value chain



Established business models; will likely exceed most estimates

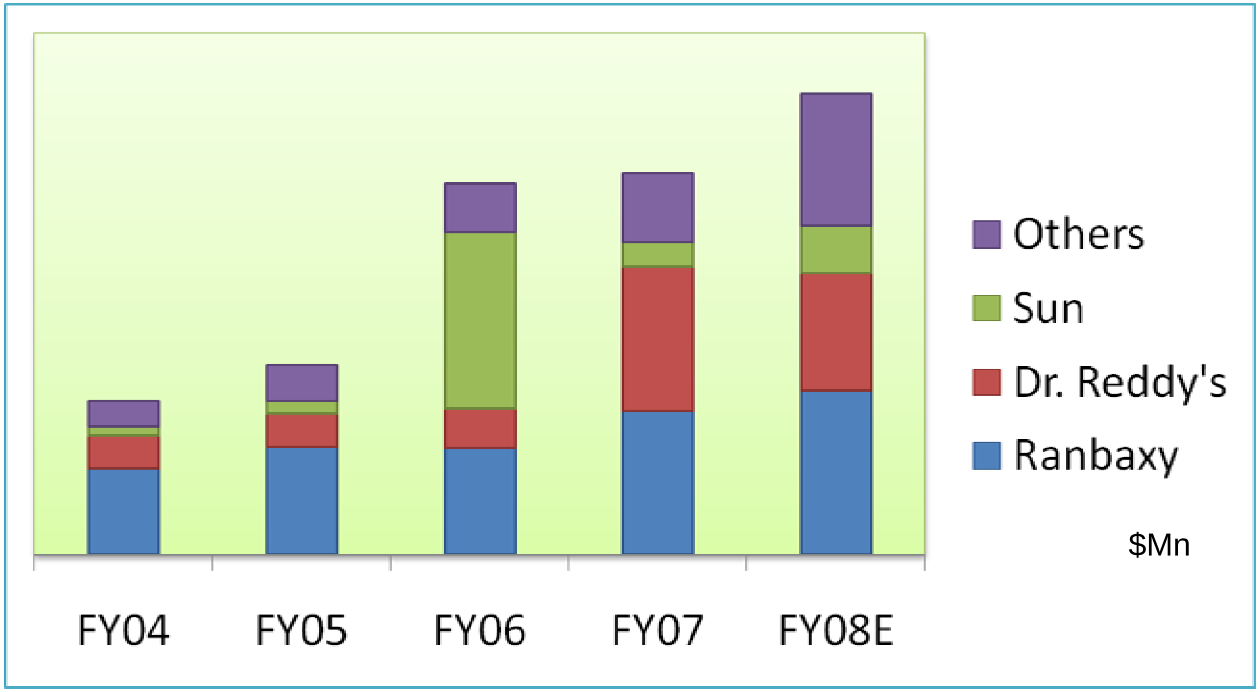
Likely to witness increasing partnerships & value creation

Contract Research/manufacturing relationships

Company	Client	Comments
Cadila Healthcare	Altana	Two intermediates for pantaprazole
Dishman	Solvay	6 projects, including supply of starting material and intermediates for eprosartan
Dishman	Astra Zeneca	Intermediate for esomeprazole
Dishman	Merck & Co	Intermediate for losartan
Dishman	GSK	Three intermediates
GVK	Wyeth	$ 40 MM FTE contract
Hikal	Degussa	Manufacturing intermediates and API's to Degussa on a project basis
Jubilant	Eil Lilly	5 year contract for discovery of NCE in various therapeutic areas. Jubliant to identify lead candidates, medicinal chemistry and take product to proof of concept; receive fees and milestones
Lupin	Cyanamid / Wyeth	Intermediates
Matrix	GSK	Supply of acyclovir
Nicholas Piramal	Astra Zeneca	MOU for drug intermediates; no fixed tenure
Nicholas Piramal	Pfizer	5 year contract potentially $ 350 MM for supply of products as per acquisition of Morepeth Facility
Nicholas Piramal	Hospital products	10 year contract manufacture and supply of hospital products
Nicholas Piramal	AMO	Five year contract of ophthalmic products
Nicholas Piramal	Allergan	APIs for levobunolol and brimonidine
Nicholas Piramal	Pfizer	Seven year contract for R&D services in the animals health division

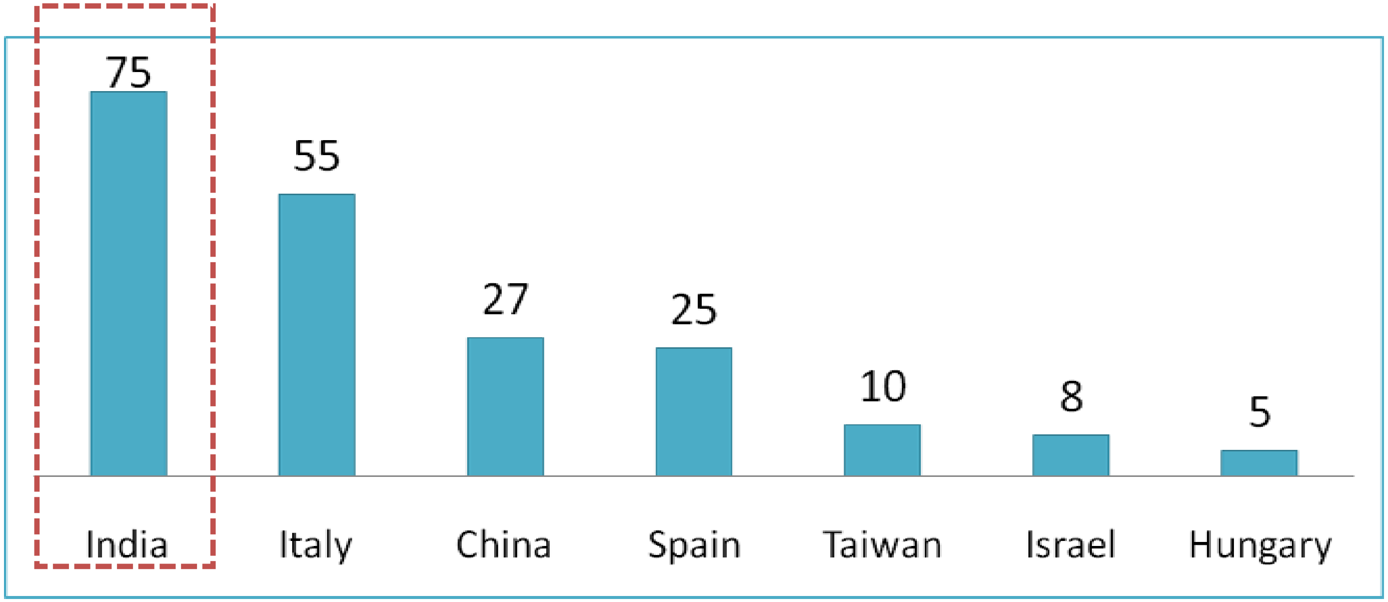
Source: Analyst reports

Indian Cos. have significant play in Global Generics Finished Dosage Sales



Indian Companies have emerged as global players with abilities to tap into all markets

India -Global Manufacturing Base



India has the most USFDA approved pharmaceuticals manufacturing sites outside USA

Ramp-up of ANDA filings by Indian companies with 411 pending approvals

COMPANIES	PENDING APPROVALS		TARGET FILINGS
	FY06	FY07	
Ranbaxy	59	88	20-25 per annum
Dr. Reddy's	44	69	15-20 per annum
Cadilla	24	37	15-20 per annum
Sun	44	77	30 per annum
Wockhardt	12	30	20 per annum
Aurobindo	38	41	40 per annum
Jubilant	0	4	4 per annum
Orchid	12	21	15 per annum
Glenmark	17	36	20 per annum
Shasun	0	8	3-5 per annum
Lupin	25	27	15 per annum

Expanding global presence through Alliances & Acquisitions

DR.REDDY'S

Alliances

Indian firm	International firm	Market
Dr Reddys	Par, Pharmascience	US / Canada
Cipla	Ivax, Watson, Morton Grove, Eon, Pentech	US
Shasun	Alpharma, Codexis	US / Europe
Orchid	Stada, Alpharma, Par, Apotex	US / Europe
Cadila	Mayne, Mallinckrodt	Global
JB Chemicals	Pharm-a-Care	Australia
Strides	KV, Mayne	US /Canada/ Europe
Matrix	Aspen, Emchem Chemicals, Doc Pharma, Explora Labs	S. Africa / China / EU / Technology coll
Lupin	Watson, Baxter	US
Wockhardt	Pharma Dynamics	S. Africa
Glenmark	KV, Apotex	US

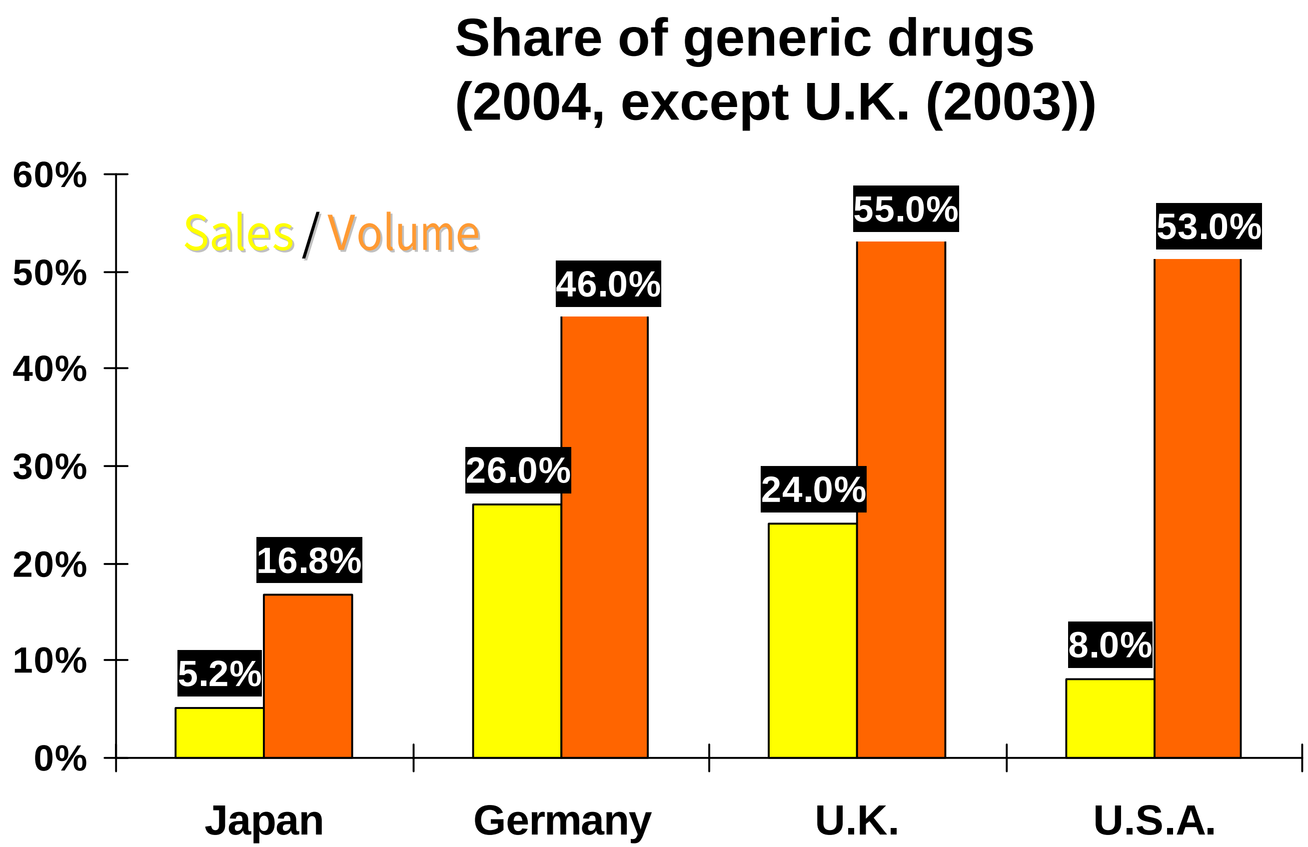
Acquisitions

Indian firm	International firm	Market
Ranbaxy	Ohm Laboratories	US
Ranbaxy	RPG Aventis	France
Ranbaxy	Basics	Germany
Wockhardt	Wallis, CP Pharma	UK
Wockhardt	Esparma	Germany
Cadila	Alpharma	France
Sun Pharma	Caraco	US

Japan Pharma market landscape

- Of the 178 New Chemical Entities (NCEs) launched worldwide in the past five years, only 47 have been launched in Japan.
- While Japan remains highly brand conscious, generic prescribing has risen in the past 2-3 years--suggesting a more pro-generic mentality than in previous years.
- Biotech and fixed combination drugs are showing especially good growth in Japan- representing 11% of total growth for the 12 months ending June 2004.

Penetration of generic drugs in Japan is still low



Source: JGPMA, ProGenerika, BGMA,GPhA

India Advantage

- **Second largest population in the world**
  - Every 6th patient in the world is an Indian; Diseases of the industrialized as well as developing nations
  - Recruitment of patients is 10 times faster than in the U.S.; On an average 14 weeks to set up a trial
  - Strong local medical need: 30% of global tuberculosis incidence
- **Cost Advantage**
  - Distinct labor cost arbitrage and relatively lower cost of Infrastructure & operations
    - Chemical investigator fees at 50% of that in the U.S.
  - Treatment costs at 30% versus U.S. (medication, investigation & hospitalization)
  - **Outsourcing chemistry, production of drugs for diseases of developing countries and late stage clinical trials → more than just cost savings**

Source: Industry reports

India Advantage

- **Infrastructure & Skilled scientific talent; witnessing exponential growth**
  - 16,000 hospitals → ~ 875,000 hospital beds → emergence of corporate hospitals (~80,000 hospital beds required every year for the next 5 years)
  - ~625,000 physicians with 20,000 new physicians graduating every year
  - Many talented chemists from years of reverse engineering & churning out 122,000 every year
  - 75 U.S.FDA inspected facilities with over 200 GMP certified facilities; highest number outside the U.S.
  - Robust IT infrastructure and resources

Source: Industry reports

Dr. Reddy's Corporate Overview

We are …
An Integrated Global Pharmaceutical Company

Our Purpose:
"To help people lead healthier lives"

Our Vision:
"To become a discovery led global pharmaceutical company"

Dual Impact Approach

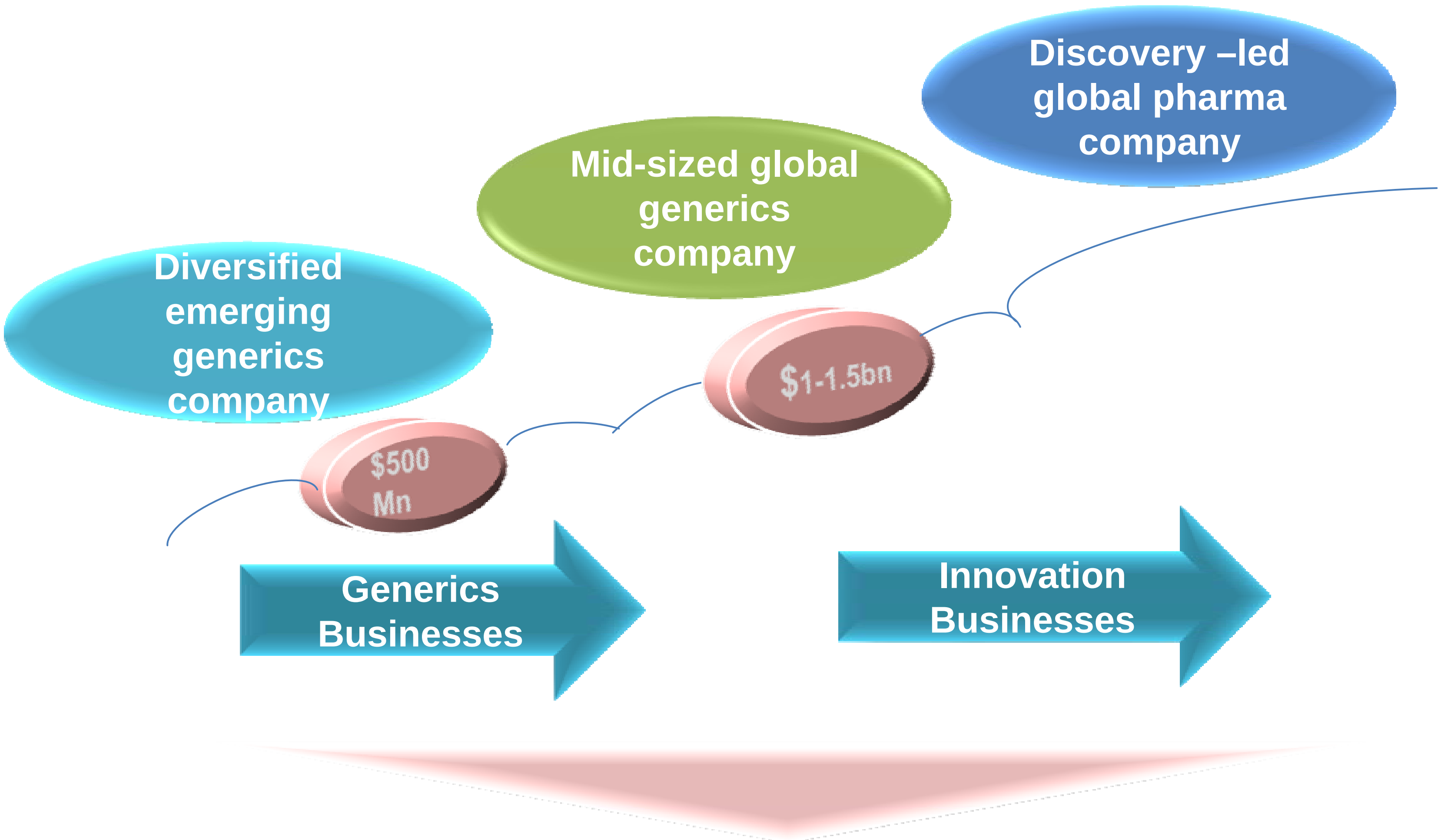
- Improve access and affordability through generic pharmaceuticals
- Satisfy unmet medical needs through new and improved pharmaceuticals

Overview of the Company

- Emerging Billion dollar global pharmaceutical company with proven research capabilities:
  - Largest listed Indian pharmaceutical company by revenues (1)
  - 4th largest generics company in Germany with betapharm acquisition
- Strong portfolio of businesses, geographies & products with strategic benefits of vertical integration
- Products marketed globally with focus on US, Europe, India, and Russia
- Strong Commitment to Drug Discovery program with 9 NCEs in pipeline
- 13 manufacturing facilities (8 US FDA inspected)
- 1,376 (2) scientific staff engaged in R&D programs across businesses (17% of total employees)
- Revenues have grown at a CAGR of 17% from FY'01 to FY'06
- Increase in international revenues from 49% in FY'01 to 86% in 9M FY'07 demonstrating expanding global presence

(1) Revenues for 9M fiscal 2007
(2) As of June 30, 2006.

Strategy Roadmap



Together will drive **Long-term Shareholder Value Creation**

Building an Innovative R&D organization

DR.REDDY'S

NCE Pipeline

TA Focus	Preclinical	Phase I	Phase II	Phase III
Metabolic Disorders	**DRL 16536** (1) AMPK Modulator	**DRF 10945** (1) PPAR ∝		**DRF 2593** (2) **Balaglitazone** **PPAR gamma**
Cardiovascular Disorders		**RUS 3108** (1) Perlecan Inducer		
Oncology			**DRF 1042** (3) Topoisomerase Inhibitor	
Anti-infectives	**Program** Broad Spectrum Resistant Gram-positive & Gram-negative			

(1) Assigned to Perlecan Pharma Private Ltd.
(2) Co-development and commercialization with Rheoscience.
(3) Co-development and commercialization with ClinTec.

THANK YOU