

# THE FUTURZ – AN IP BIOTECH CONCLAVE

## TECH TRANSFER & BENEFIT SHARING: INDUSTRY-ACADEMIA PARTNERSHIP



TAPAN RAY  
DIRECTOR GENERAL  
ORGANISATION OF PHARMACEUTICAL PRODUCERS OF INDIA





Established - 1965

71 Members

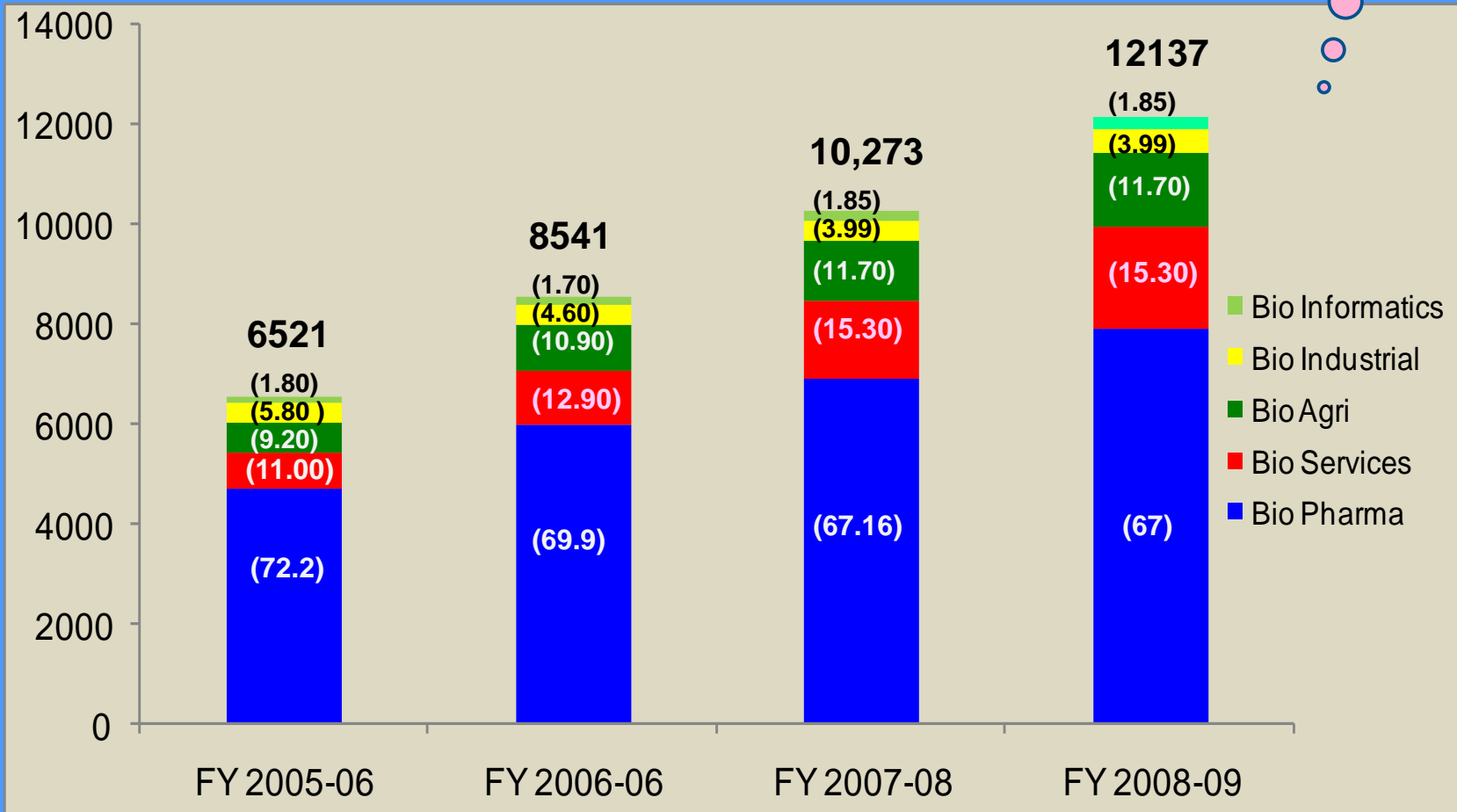
# ABOUT OPPI

- Research-based International & large Indian Pharma Companies
- Affiliated to International Federation of Pharmaceutical Manufacturers & Associations (IFPMA), Geneva, Switzerland
- 3 Fundamental Beliefs
  - Adherence to TRIPs Compliant IPR (Intellectual Property Rights)
  - Ethical Sales Promotion based on IFPMA Guidelines and OPPI Code of Conduct
  - Adherence to International GMP & Quality Standards



Biotech growth 18%  
Biopharma 65%,  
average 14% growth

# INDIAN BIOTECH INDUSTRY



Rs.Cr ( % )



Top 10 Biotech  
39%  
contribution

# TOP 10 INDIAN BIOTECH COMPANIES

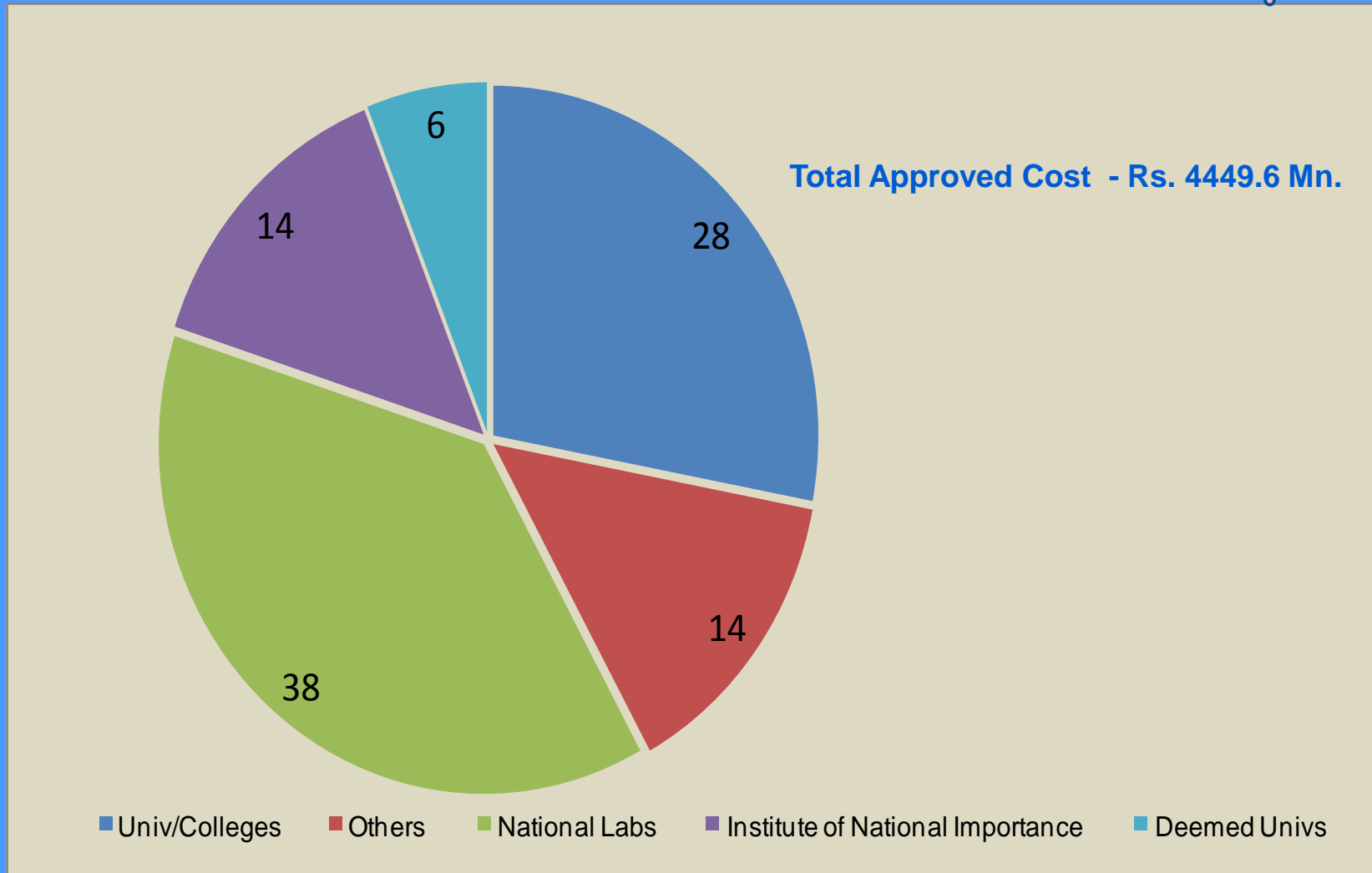
Rank 2008	Company	2008-09	2007-08	2006-07	2005-06	2004-05	% Change over 2007-08
1.	Serum Institute of India	1,114	987	951	703	505	13
2.	Biocon	912	877	849	689	661	4
3.	Panacea Biotech	597	678	701	438	217	-12
4.	Rasi Seeds	375	293	333	310	87	28
5.	Nuziveedu Seeds	363	292	226	63	-	25
6.	Novo Nordisk	330	260	222	175	140	27
7.	Siro Clinpharm	280	-	-	-	-	-
8.	Novozymes South Asia	250	225	100	83	69	11
9.	Shantha Biotech	247	150	115	82	67	65
10.	Jubilant	242	159	-	-	-	52

**8 out of top 10 are Biopharma companies**



25% of NMEs under development are biotech origin

# R&D PROJECTS BY TYPES OF INSTITUTIONS





# BIOTECH RESEARCH INITIATIVES .... TODAY

- ❖ Funding for stem cell research:  
National Institute of Health, USA, identified Reliance Life Sc (Mumbai), National Institute of Biological Sc. (Bangalore)
- ❖ Biometrics' field:  
Raw clinical data now being transmitted to specialists in India for scientific evaluation.
- ❖ Malaria:
  - Afflicting 300-500 Mn. people, killing 1-3 Mn. allows fatal genetic illnesses, like sickle cell anemia.
  - Development of Malarial vaccine through Indian biotech initiatives, a great boon.





# BIOTECH RESEARCH TYPES

## ❖ *Joint Research:*

Two or more collaborators working jointly.

## ❖ *Collaborative Research:*

Scientists of different disciplines work together on a project.

## ❖ *Complete Outsourcing:*

Altogether different research organization is assigned a research project by another organization.





# RESEARCH INITIATIVES .... JOINT & COLLABORATIVE

CSIR-led New Millennium Indian Technology Leadership Initiative (NMITLI)

A. **Latent M tuberculosis** - with a network of 11 leading research institutions and Lupin as industrial partner in 'Public Private Partnership'. New anti-TB drug after 40 years was announced.

## Strategy:

- ❖ Development of new drugs including identification of new targets
- ❖ New drug delivery systems
- ❖ Application of bio-enhancers







# RESEARCH INITIATIVES .... JOINT & COLLABORATIVE

- B. **CSIR and TCS** developed the bio-suite for use in large data related work such as genome analysis, gene sequence analysis, 3D modeling, simulations, manipulations and structural changes.
- C. **Avestha Gengraine Technologies**, India's first discovery-based biotech company, announced achievement of significant development milestones in its DHA research project.
- D. **CSIR partnering** with **Dabur** for gall blastoma lead under Genomic Research project to take it up to the stage of commercialization.





# RESEARCH INITIATIVES .... JOINT & COLLABORATIVE

- F. **Ranbaxy** collaborative research program with **GlaxoSmithKline (GSK)** or collaboration of Ranbaxy to develop an anti-malarial NCE Rbx 11160 with Medicines for Malaria Venture (MMV), Geneva.
- G. **Jubilant Biosys, India**, partnering in a drug development deal with **Eli Lilly**
- H. **Jubilant Biosys, India** entered into another R&D deal with **AstraZeneca (AZ)** to be funded by AZ for five years, owning patent of any neuroscience molecule that will come out.





# EMPLOYED INVENTOR

## The Assignment:

- ❖ To identify commercial goals & strategies
- ❖ To address identified needs and interests
- ❖ To include an intellectual property management plan
- ❖ Evaluation process
- ❖ Payments / funding /size of investment & matching funds
- ❖ Publication / pre-implementation requirements
- ❖ Risk reward relationship





# EMPLOYED INVENTOR

## The key Issues

- ❖ Managing bilateral collaborative R&D Programmes & Partnership Development Activities
- ❖ Quality of support from Industry & Institutions
- ❖ Providing information & support to investors
- ❖ Restoring the balance
- ❖ Applicants' capacity to manage, conduct & benefit all
- ❖ Creating opportunity for young researchers





# SHARING OF ROYALTIES - STANDARD PRACTICES

- ❖ **Avesthagen** - research in metabolics, proteomics, genomics and sequencing. The company shares IPR with collaborators.
- ❖ **Jubilant Biosys, India**- partnering in a drug development deal with Eli Lilly , entered into another R & D deal with AstraZeneca ( AZ), funding for five years, owning patent of any neuroscience molecule
- ❖ **Duke & Jubilant** - five years working together to develop a portfolio of 4-5 technologies, royalties paid to Duke would be churned back into R&D





# SHARING OF ROYALTIES - STANDARD PRACTICES

- ❖ **Johnson & Johnson** with **Advenus Therapeutics** of India, Nov 2008, US\$ 247 Mn. for inflammation and metabolic diseases.

## Responsibility:

- **Advinus** upto 'the proof of concept' (Phase II a)
- **J&J** will take over till commercialization of the molecule





# IMPORTANCE OF TECH TRANSFER TO BIOTECH INDUSTRY

- ❖ Productive use of research talents
- ❖ Development of cutting edge technologies
- ❖ Facilitating technology transfers
- ❖ Creation of joint ventures
- ❖ Prospects for economic returns
- ❖ Protection of intellectual property





# BENEFITS OF TECH TRANSFER TO BIOTECH INDUSTRY

- ❖ Recognition / Reward / Motivation
- ❖ Risk-sharing co-development of a NCE/NME
- ❖ Enhancing technology competitiveness







# TECHNOLOGY TRANSFER– DRIVERS & BARRIERS

## Drivers:

- ❖ Adequate patent enforcement mechanism
- ❖ Degree of patent and Regulatory Data Protection

## Barriers:

- ❖ Inadequate patent and regulatory data protection
- ❖ Favourable competitive environment in China & Brazil, besides other emerging markets





# FUNDING / GRANTS TYPES

## Grants to individual innovators:

Technopreneur Promotion Programme (TePP)

## Grants to Industry:

- ❖ Programme Aimed at Technological Self Reliance (PATSER)
- ❖ Soft loans to industry: Home Grown Technology Programme (HGTP)
- ❖ Grants from Department of Biotechnology
- ❖ New Millennium Indian Technology Leadership Initiative (NMITLIU)





# TECH TRANSFER & BENEFIT SHARING WIN-WIN SITUATION

1. Ownership of IP to funding agency
2. Knowledge generated become a part of know-how portfolio of the sponsor





All this will remain  
academic if not translated  
into reality

The name of the game:  
**“CAN DO”**







**Thank You**