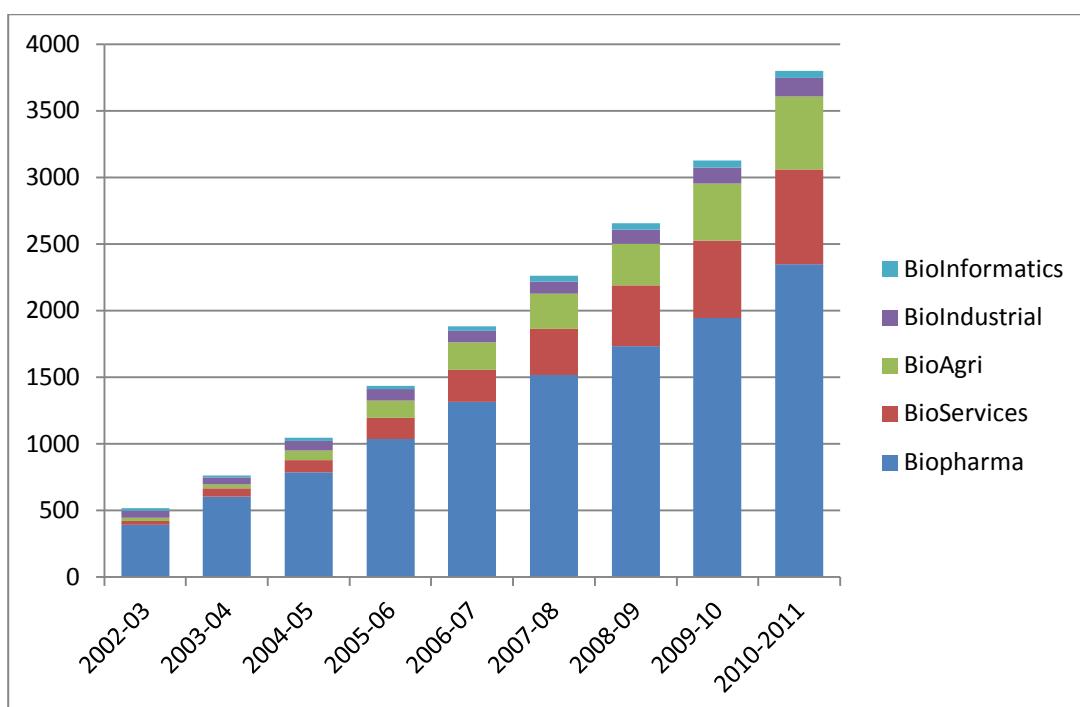


## PHARMA AND BIOTECHNOLOGY ACTIVITIES IN INDIA

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The Indian biotech industry has been booming over the past decade, growing from 23.5 Billion ₹ (Indian Rupee, INR) (about 0.5 Billion US\$) in 2002-03 to 172.5 Billion ₹ (more than 3.75 Billion US\$) in 2010-11 (Figure 1, source: 'Biospectrum/ABLE Biotech Industry Survey', June 2011).

**FIGURE 1:** Indian biotech market (in Million US\$)



The Indian biotech sector is estimated to count more than seven hundred players, but this includes the pharmaceutical sector with generics (small molecules, hormones, vaccines, monoclonal antibodies), the bioagri industry (genetically modified crops, animal health), bioindustrial applications (bioenzymes, development of biofuels), the bioinformatics area (data warehousing, data mining, DNA sequencing, data management), equipment providers, and a wide range of bioservices.

The need for a better understanding of the potential of Indian biotech companies as actors or contributors to drug discovery and early development has been the trigger of our survey, which includes data on more than two hundred and forty companies, and is based on information available on company websites and in press releases. Our survey includes all activities and service offerings with a clear pharmaceutical drug discovery focus, ranging from biology, through to medicinal chemistry, pharmacology and integrated drug discovery,



and up to preclinical development. It does not differentiate between service providers and companies whose business model is built on developing own IP and partnerships, as it can be considered that all these different activities can be available to potential clients or partners (Western pharma and biotech companies, research institutes or nonprofit organizations), be it through fee-for service/full-time-equivalent (FFS/FTE) models or through partnerships and licensing agreements.

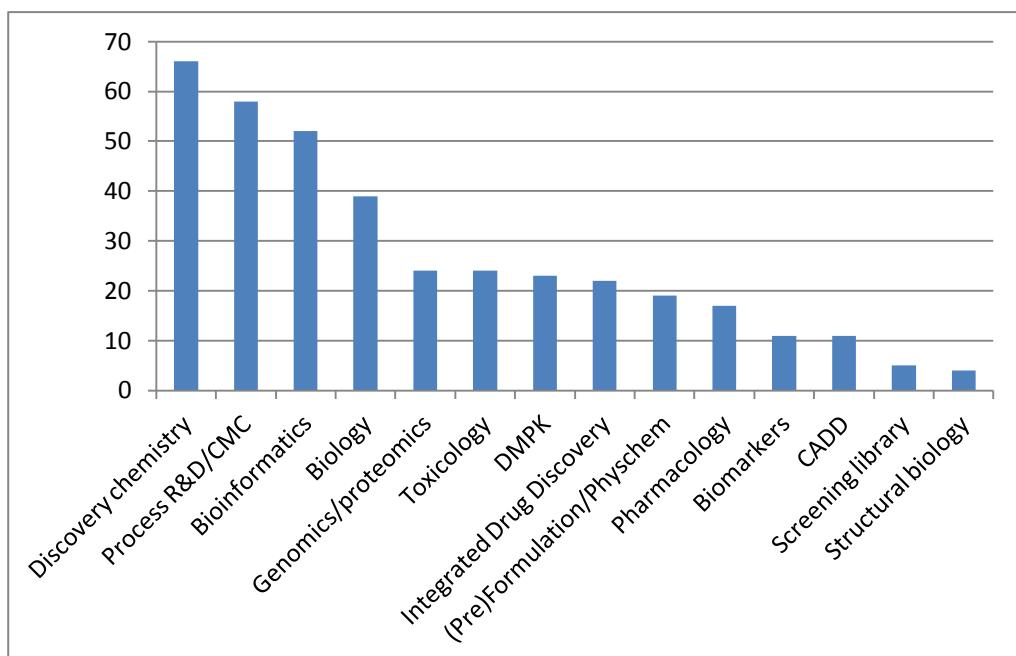
## RISE OF INDIAN BIOTECH COMPANIES

The Indian pharmaceutical and biotech sector covers multiple types of activities and companies:

- Pharmaceutical companies that have grown successfully with their generics business, that appeared between the nineteen fifties and eighties. Drug discovery activities have been a more recent addition since the nineties.
- Service providers or contract research organisations (CROs) who started with supplying synthesis chemistry, and have expanded since into other activities
- More recently, biotech companies have appeared that focus on drug discovery and on developing their own intellectual property (IP)

Figure 2 illustrates the distribution of all activities and services available in the analyzed companies, some of which are fairly specialized in a given area, whereas others offer multiple activities and services.

**FIGURE 2:** Number of drug discovery related activities and services





Whereas India had been known in the past for its synthetic chemistry or informatics based activities, all other disciplines have appeared in more recent years across the entire drug discovery and development value chain.

A growing number of companies are developing integrated drug discovery capabilities, ranging from screening libraries and structural biology, to medicinal chemistry, in vivo testing and preclinical development. These are in general not available as pure services, but are usually part of strategic collaborations and partnerships.

## **CONCLUSION**

India's drug discovery and development capabilities will without doubt continue to expand. In their efforts to outsource and to partner drug discovery projects, Western pharmaceutical companies will be faced with the challenge, given the wealth of activities and services available, to decide internally on what activities to perform externally, then to select the right partner, without falling into the classical traps that have in the past hampered outsourcing initiatives. These include above all inefficient preparation, unrealistic expectations, lack of trust, lack of communication, not to mention perceived cultural differences. All of these potential issues can be significantly reduced, even avoided, provided externalising drug discovery is not anymore considered as a tactical tool to reduce R&D costs, but as a unique strategic opportunity to tap into a wealth of drug discovery resources. It is a dynamic and challenging environment, which requires preparation, company intelligence and, once a collaboration is in place, an appropriate alliance management, but the results can be uniquely rewarding.

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More details on this report are available from:

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