



Emerging role of the Indian Pharmaceutical Industry

* Itishree Mohanty

* Faculty in Management, Kanak Manjari Institute of Pharmaceutical Sciences, Chhend, Rourkela

ABSTRACT

Life without Liberalization, Privatization and Globalization is becoming even more painful than change as the economic health of India is today living on borrowed time and the workers continue to be paid without doing any work which is a painful proposition for any self respecting individual. It is well known that from the moment we are born almost all change is difficult .Nobody really enjoys change and we would be misleading if we said that Liberalization, Privatization and Globalization is easy. Workers may find it initially uneasy, facing new owners and new ways of working together. Changing the habits of a lifetime always entails some uncertainty and discomfort. But once embarked upon it is usually less difficult than was feared.

So, in this competitive world, Pharmaceutical industries need to be flexible and innovative in their ways to deal with the unfamiliar situations that they often find themselves in. They are in a period of great change. The steadily increasing complexity of the world is asking too much from pharmaceutical industry. The reality of yesterday proves wrong today and no body really knows what will be the truth tomorrow. They create their own future by focusing on certain emerging role. This article attempts to showcase an emerging role of the Indian pharmaceutical industry that companies have understand the benefits reaped out.

Keywords : Liberalization, Privatization, Globalization , Drug Delivery Systems.

Introduction

Now, it is a time for unprecedented scientific opportunity in pharmaceutical research as pharmaceutical industry is going on revolutionary technological improvements phase and profound scientific insights, leading to reinvention of the drug discovery and development process. With the advancement of molecular science, information technology and many other areas have collectively created platforms which are expected to innovations in drug discovery.

Generally, today's, pharmaceutical industries are increasingly applying in-house drug delivery technologies to the pharmaceutical products of other drug makers i.e. new Drug Delivery Systems. These companies have resorted to collaborations, co-development, mergers and acquisitions as their strategy is mainly for development.

These companies are working towards improving the drug discovery and development process such as:

1. Reduction of time spent in development.
2. Identification and expansion of the number of high quality compounds entering preclinical development and clinical trials.
3. Elimination of compounds that would have eventually failed.
4. Reduce attrition rate of clinical candidates.

The pharmaceutical industry in India is poised to make a giant leap in the coming years. Emerging trends in the pharmaceutical industry in developed countries have created unique opportunities for leveraging India's obvious strength in pharmaceutical R&D. There is a significant increasing in the R&D spending by industry incumbents to develop innovative drugs has resulted in increasing focus

on novel ways of containing the R&D costs.

The adoption of new technologies and various licensing trends have enforced greater collaborations, with many more international pharmaceutical companies evaluating Indian partners for conducting discovery and developmental activity. Some of the significant licensing deals in the Indian pharmacy industry are represented in the following table

Table 1 :

Major clinical trials in India							
Year	Licensor	Licensee	Molecule	Indication	Licensing stage	Royalty	Money received(\$ mm)
1997	Novo Nordisk	DRF 2593	Diabetes	Pre-clinical	6-8%	12	
1998	Dr.Reddy's	Novo Nordisk	DRF 2725	Diabetes	Pre-clinical	6-8%	12
1999	Ranbaxy	Bayer AG	Cipro XR	Antibiotic	Pre-clinical	6-8%	34
2001	Dr.Reddy's	Novartis AG	DRF 4158	Metabolic disorder	Pre-clinical	6-8%	05
2002	Ranbaxy	Schwarz	RBx2258	BPH	Phase-1	08-10%	10
2002	Torrent	Novartis AG	TRC4xx	Vascular Complication	Pre-clinical	-	04
2004	Glenmark	Forest Labs	GRC 3886	Asthma	Pre-clinical	12-15%	10

Source: Compiled by authors

Besides that some of the Indian players such as Dr.Reddy's Laboratories with ICICI ventures have brought in a novel concept of funding to support R&D activity in the Indian pharmacy sector through sharing of costs. Also the EXIM bank evinced its interest in funding Merger and Acquisitions in the pharmaceutical industry that facilitating the consolidation of the industry.

In case of drug discovery and development industry, the focus of Indian companies has been more on the early development rather than the discovery of the target itself. A partnering alliance helps both the Indian company and the foreign partner to meet their strategic objectives while retaining their financial and operational independence. Most of the novel research products discovered by Indian companies have been out-licensed to the global pharmaceutical companies. Today pharmaceutical company mainly comprises two kinds of players having diverse business models such as in the following table

Table 2:

Table 2: Major Players in India	
Large Indian Pharma	Big pharma
Ranbaxy	GSK
Nicholas Piramal	Novartis
Sun Pharma	Matrx laboratories
Glenmark	Altana pharma
Torrent Pharmaceuticals	Astra Zeneca
Zydus Cadila	
Lupin	
Dr.Reddy's Laboratories	
Complied by the author	

Indian pharmaceutical industry also focuses on training aspect which is crucial for its success. The Indian scientists are gearing up to the growing demands of the industry as is evident from the increased R&D spending and the creation of well equipped R&D facilities by number of leading pharmaceutical firms. And also the alliances between the Indian and the foreign players are further reinforcing this confidence.

With increase adoption of technology, they have already produced more new compounds in recent years which never did in its entire history. The pharmacy executive also is well equipped to employ rational approach based on computer-aided structure based design strategies.

Indian companies have been rapidly moving up the value chain in the last few years. The existing talent pool is largely dominated by scientists who have rich exposure in working on drug discovery projects specifically focusing on lead optimization and pre clinical development. They are well trained to undertake complicated projects running into multiple steps and employing sophisticated technologies.

In pharmaceutical industry, training aspects also play a significant role. A collaborative action has constantly been undertaken by the government and the industry to revamp the academic courses content and align them with industry requirements providing incentives for the pursuit of science and creating career opportunities. These partnerships are making way for upgrading the technical competence of both the fresher's and the existing employees in the industry.

Moreover, National Institute of Pharmaceutical Education & Research and BV Patel Pharmaceutical Education & Research Development (PERD) Centre is unique institutions of their kind, which focus on providing training to the various research professionals to keep up with the development challenges. While NIPER is the Government of India initiatives, PERD centre is a private trust that focuses on promoting advanced research and training in pharmaceutical sciences. There are also several university led programs and specialized pharmacy courses being offered by public and private pharmacy colleges.

In terms of infrastructure development as well as technology base and range of production, the Indian pharmaceutical industry has shown tremendous progress.

Some of the major leading Indian companies like Ranbaxy, Dr.Reddy's, Nicholas piramal, Cipla, Lupin etc., have made substantial investments to upgrade their

infrastructure in an effort to ascend the research value chain and sustain global competitiveness, and avail the opportunities. Also government laboratories such as Council for Scientific and Industrial Research, Indian Council of Medical Research etc. have a chain of national institutions that host world class infrastructure to undertake research in the drug discovery value chain.

In order to strengthen the Research and Development capabilities, the Department of chemicals has also set up a committee called Pharmaceutical Research and Development Committee (PRDC). This PRDC committee has laid down certain conditions to qualify as Research and Development intensive company in India.

These conditions are as follow :

- The policy has also conferred in principle approval to provide fiscal incentives for encouraging generation of intellectual property and facilitating indigenous endeavors in pharma research and development.
- The policy states that the government, through NIPER, would upgrade the standards of pharmacy education and research and development in the country. It also envisages collaborative research plans between NIPER and other technical institutes in the country.
- The policy has proposed that the Ministry for Health & Family Welfare should streamline the procedures and steps for quick evaluation and clearance of new drug applications developed in India through indigenous research and development.

The Indian pharmaceutical industry is poised to grow into a major R&D hub for drug discovery and developmental activities for those companies who are seeking a skilled workforce, world class infrastructure and large markets with competitive costs. As India has a resourceful and inexpensive information base with reasonable pharmaceutical experience so it has witnessed a lot of action in the recent years. This can be only possible because of various emerging scenarios in global pharma market and the changing regulatory environment in the domestic arena that has acted as catalyst to the growth of the R&D in India. Some of the inherent advantages such as chemical synthesis, low cost of research, competent workforce etc.. have acted as key enablers in magnifying the opportunities for the Indian players in the drug discovery and developmental segment.

Conclusion

Going by the significant benefits for their businesses, more and more pharma companies are beginning to join in the emerging role in a big way. However companies who follow the right approach will be the winners in the race and they can carve out a differentiates market position ahead of their rivals. It can be said that India has come a long way in terms of growth, productivity and global credibility and can surely become the "Knowledge Led Economy " as said by our Prime Minister Dr.Manmohan Singh if only it takes due care in planning its long term and short term gains correctly.

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