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The Reality Byte

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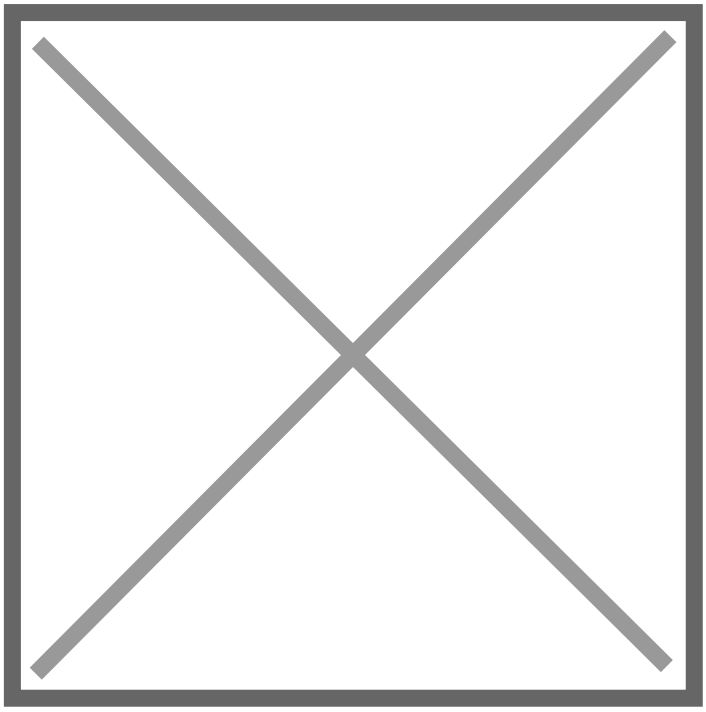

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While reports suggest that bioinformatics is the next sunrise industry, many small and medium companies have either closed or joined hands with leading companies in the same space.

Pune-based SciNova Technologies shut down in July this year. Set up in 2002 with an investment of Rs 25 lakh and 10 qualified staff with six having masters, two doctoral fellows, it had developed a couple of products. It also had the backing of a pharma contract manufacturing company with a presence in other countries. Despite all this, it was not able to market its products. The huge running cost and nascent market for bioinformatics tools forced the promoter to take this extreme step. However, this small company managed to do business of about Rs 25 lakh in 2003-04 and then increased to Rs 45 lakh the following year. Ultimately, the company downed its shutters in July 2005.

After the closure, Rajeev Gangal, founder and chief scientific officer, SciNova Technologies said, "The marketing team did speak to some companies for the deals. But they did not materialize or would have taken a long time to materialize after due diligence. Our products were also very complex and were still in an alpha stage. The industry response to our products was good, but none seemed willing to contribute to its development by buying an early license."

This is one example. With a few exceptions, others are passing through a similar situation. They are finding it difficult to manage or run the show. Hence they are following various business models so as to be in the business. Some are focusing on education and training with a few others into developing real bioinformatics tools.

Contrastingly, the reports are projecting a different picture. According to a NASSCOM-KPMG study, the biotech industry's R&D and services will reach a turnover of $3 billion by 2010 and the bioinformatics market will touch $2 billion. Indian companies have become providers of biotech information to clients around the world. Sequencing genes and delivering genomic information for big pharma companies is the next boom industry. India has become one of the prime forces in the development and manufacture of genomic drugs. There are about 170 biotech companies in India.

Strategies to overcome challenges

In spite of the growing interests and strong potential, the Indian bioinformatics sector faces challenges in standardization, integration and interoperability, both in terms of technology and market capturing. To overcome these challenges Dr Jayashri Mapari, senior research analyst, healthcare practice, Frost & Sullivan has suggested some strategic steps. She noted certain areas that can be ramped up for enhancing capabilities and making forays into the global bioinformatics space. Some of the steps include:

Ã¢â?¬Â¢ Compressing product development cycles by minimizing the production time and maximizing the time between introduction and obsolescence.

Ã¢â?¬Â¢ Constant watch on market demand and technological advances.

Ã¢â?¬Â¢ Improving data quality in terms of reproducibility and accuracy so that high-throughput is coupled with high-quality data.

Ã¢â?¬Â¢ Better and more integrated systems, algorithms, annotation protocols, and user interfaces must be developed for accurate interpretation of available information.

Ã¢â?¬Â¢ Different systems developed by different companies must be equally accessible to the researcher.

Ã¢â?¬Â¢ Develop more robust and standardized data annotations.

Ã¢â?¬Â¢ Improve the existing algorithms for effective filtering, visualization and analysis of the data.

Ã¢â?¬Â¢ Bring it all together in one easy to use system.

Ã¢â?¬Â¢ Evolve fiscal and regulatory policies so as to cut down product development, product commercialization lifecycles.

Ã¢â?¬Â¢ Stronger initiatives on the part of the government in terms of funding, infrastructure development support and effective regulatory policies.

However, Dr M Vidyasagar, executive vice president, Tata Consultancy Services, Hyderbad, observed, "I have never been convinced that India is a large market for bioinformatics products (tools), or even for bioinformatics services. Bioinformatics has the potential to make a large impact when a company is attempting to do "ab initio" drug discovery. Much of the pharmaceutical industry in India is focused on experimenting with variations of existing, validated drugs."

Meanwhile pharmaceutical companies across the globe including the leading Indian pharma players are now under immense pressure to increase their drug research productivity owing to declining drug pipelines, a lack of recent blockbuster drugs and currently available blockbuster drugs going off patent. Moreover, a large number of drug candidates fail to make it to the final approval phase. As a result, drug discovery companies are compelled to incorporate tools that can improve their productivity and reduce R&D expenditure. Bioinformatics would aid companies in reducing the time involved in drug discovery. As drug discovery companies actively pursue these tools, the bioinformatics market is anticipated to be one of the most exciting segments in the total drug discovery market.

India's entry into the product patent regime in 2005 has in recent times boosted this sector. Many leading Indian pharmaceutical companies are investing on R&D to take an early lead in the new patent regime. But are they looking at local companies? The answer is 'yes' as well as 'no'. The bioinformatics companies have their own reasons.

Sowmyanarayan, manager - business development and alliances, Strand Life Sciences, Bangalore, said, "The term bioinformatics tools refer to a broad range of solutions/tools. Among all the tools that companies might be working on, only a few will be relevant to Indian pharma and biotech. This is because there are multiple ways/methodology to approach drug discovery and development. This being the case, the overall revenue contribution of the Indian market attributable to these tools will be low. But it does not translate to difficulty in sales. At least this is the case with our suite of offering and we have

had successes both nationally and internationally."

Sharing similar views Anuradha Acharya,CEO, Ocimum Biosolutions said, " First of all, I doubt it that Indian pharma or biotech companies are buying too many bioinformatics tools. There are a few Indian companies and they do buy from us. So I can't say they look only at buying from multinationals. We have customers like Ranbaxy, NFCL, JK Agri, Zydus, Nicholas Piramal and SRMC who have bought our tools. However, it is difficult to sell to Indian companies. The returns are not that high. Selling is not very lucrative for most companies. That might be a reason why most Indian companies are not actively selling to the local clients. However, we at Ocimum believe that there is a market in India, which is going to come up very soon and will be there when Indian companies are ready to buy." Disagreeing to the fact that Indian pharma and biotech companies are looking at bioinformatics tools, Dr Vidyasagar observed, "The multinationals are targeting the academic and R&D market much more than the commercial market. Another point is that the mature scientists in Indian companies that are potential users of the bioinformatics tools, are accustomed to the multinational software packages from their student days. So there is a tendency to gravitate towards the multinationals.

To change the situation, it is necessary to capture the student/academic community first. High quality bioinformatics tools from Indian companies are only now becoming available and in the future we will see them being used increasingly, not just in India but around the world," he added.

Is it brighter?

Although Indian bioinformatics companies are selling the tools, pharma and biotech companies are looking for tools from multinationals mainly because they get a free version and are not getting a standard product. Hence they have to face competition from the global players.

Dr Vidyasagar said, " In bioinformatics as in anything else, the Indian companies will face competition from overseas companies. For instance, TCS (not in life sciences but overall) faces competition from the likes of IBM, Accenture, etc. Ultimately we have to play to our strengths which are many, whether in IT as a whole or in the narrow area of bioinformatics. As far as our own bioinformatics initiative, we have broadened the scope beyond the traditional areas of bioinformatics to all aspects of the drug discovery value chain. We expect to show very significant growth in all aspects, be it pure revenues, IP creation, or thought leadership."

Indian bioinformatics market scenario

The Indian bioinformatics market pegged at about Rs 100 crore (with 40:60 percent ratio of local and export market) was expected to grow to $120 million by 2006 and likely to take a major pie in the global bioinformatics sector in next few years. At present there are about 45 companies in this space mainly based in southern cities like Bangalore, the IT capital of India, Chennai and Hyderabad. About 20 percent of them are based in Delhi and a very few in Pune, the knowledge center. Of these about 35 companies actually involved in developing bioinformatics tools and products while rest are into marketing of the tools.

He added, "The 'bioinformatics' that consists of activities such as database curation, literature search, etc. is indeed growing very rapidly, possibly at much more than 25 to 30 percent per year. However, the large value addition in bioinformatics is going to be in Indian companies assisting overseas biotech or pharma companies in doing ab initio drug discovery.

"I am not sure about the number but the industry is growing at a good rate. Pharma-biotech companies realize the value of /in silico /tools. But they only want to associate with companies that can deliver solutions that work. There has been a lot of hype around what /in silico/ tools can deliver. It is essential to set appropriate expectations on the potential of tools," said Sowmyanarayan.

The market is fairly small at this stage and 25-30 percent is not that big a growth. But it will eventually stabilize with 2-3 players in the market. Like in every segment, the market can only support a few strong players.

"The closure of SciNova was sad, but it takes a reasonably long time to create a branded product like Accelrys to really succeed. Hundreds of bioinformatics companies have shut down in the US. It doesn't mean that the market doesn't exist, its just that only a few survive to be successful product companies and there will be companies in India that will survive, especially those that have survived for over five years," opined Anuradha Acharya.

The sector will consolidate in the next couple of years and the few companies that are offering real value will survive. The surviving companies will tap the potential market as most of the Indian players have created their own niche and have been fairly successful in tapping that. Hence the future for the Indian players is still bright and the entry of multinationals will not significantly alter the market scenario.

Narayan Kulkarni