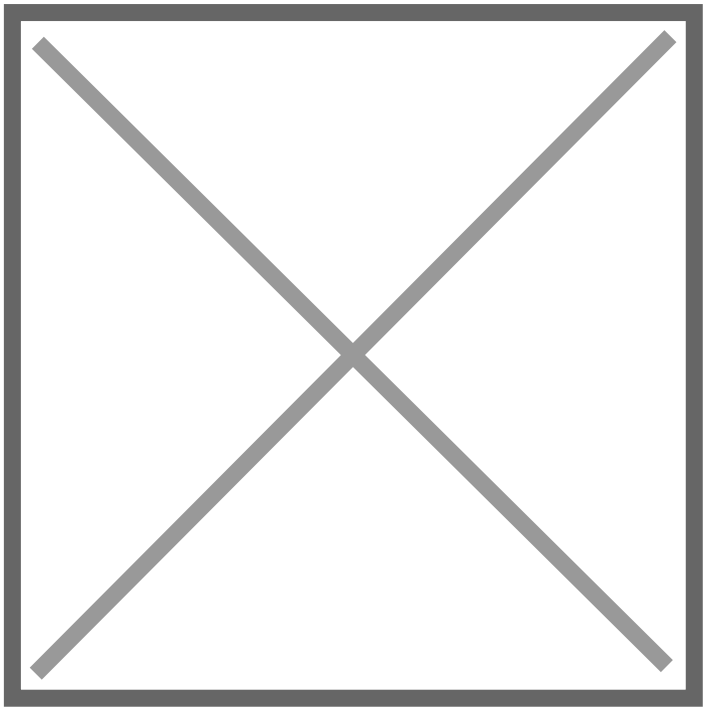
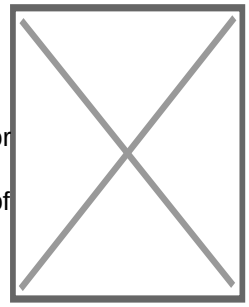
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BIOTECH PARKS - What they should be?

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Specialized parks can patronize the biotech industry in the country.



Biotech, like infotech, is a new area and a hi-tech one. It is for the first time in history that we have an area in experimental science where the borderline between basic research and its application has become extremely tenuous. This has been largely because of the fact that the vast proportions of biotech products are low-volume AND high-priced. For example, the daily requirement of an individual for vitamin B-12 is only 1Âµg. This means that 1 g of vitamin B-12 can take care of million people and 1 kg of it can cat-er to a billion people per day. So two tonnes of it would take care of the entire requirement of the world over a year, even if none of this requirement is met from other sources.

It is for this reason that we have seen, in the last two or three decades, famous scientistsÃ¢â?¬â?•some of them being Nobel Prize winnersÃ¢â?¬â?•becoming entrepreneurs and millionaires. However, in every such case the individual was helped either by venture capitalists who were willing to take risk or by institutional support, often by both.

Biotech Parks, the growth facilitators

Biotech parks are a way to help those, who have the knowledge and expertise and the ability to turn the same into a commercial venture, to actually succeed. A biotech park does so by providing invaluable shared infrastructural support and facilities, which, if set up by an individual company for an exclusive in-house use, will cost enormously. Further, it will not be used to full capacity by any start-up. It would, therefore, be cheaper for a start-up to locate itself in a biotech park and use a central facility set up in the same campus by the promoters of the park, against payment for the time for which it is used. For example, a DNA sequencer can cost over Rs 1 crore. It may be absolutely essential for a biotech company but may be used by it for less than 5 percent of the time in the initial stages of the development. Thus setting up this facility as a shared facility in a biotech park could help many start-ups simultaneously.

A corollary of what I have said above would be that in our country, a successful biotech venture can be set up only by the government (state or central) or a large public or a private sector company that can invest substantially and does not expect quick returns. An investment in a biotech park should be considered as a long-term investment as in education, be it in a university or a professional college. It is universally recognized that if the education that is provided is appropriate, worthwhile and thorough, the returns that the state gets through those who pass through the portals of universities or professional colleges, far outweigh the expense incurred on their education. The same would be true of biotech parks.

Of the state governments in the country that have talked about the biotech parks that I am aware of are : Andhra Pradesh, Karnataka, Rajasthan, Uttar Pradesh (UP) and Uttaranchal. The last three have been in touch with me either directly or indirectly, at one time or the other.

The biotech park in Andhra Pradesh has been, so far, nothing but short of a disaster. Bangalore has an industrial technology park (ITPL) which is extremely well equipped and satisfies a large fraction of the criteria mentioned in the box. It seems to operate efficiently and should serve as a model for other similar parks in the country, including specialized biotech parks.

The UP government was in touch with me directly and prepared a document--a kind of a pre-project report--which was excellent and took into account all that has been said. The document needed to be converted into a full-fledged project report. That was the intention of those who got in touch with me on behalf of the UP government but, after that, the contact was lost and I do not know if anything has happened to the proposed park since then. The Uttaranchal government also got in touch with me and I referred to them the documents of the UP government. However, I doubt if any progress has been made in this new state. In the case of Rajasthan, I was contacted by a developer from Kolkata. It was apparently contracted to set up a biotech park in Rajasthan. However, the developer has not yet got back to me and not much progress has been made there either.

The lesson that emerges from this experience is that if any one (be it in the public or the private sector) wishes to set up a biotech park, there has to be a clear deliberate policy decision in this regard, taking into account the requirements stated in the box. Then, adequate resources must be assured and the project carried out under the supervision of a competent, highly professional group that understands biotech and its requirements. This is yet to happen anywhere else expecting, perhaps, Karnataka.

The Tamil Nadu government is intending to set up a marine biotech park which is an excellent idea as the state has a large coastal area. It seems to have contacted the right people to help in the setting up of the park. It, however, remains to be seen how serious the government is about it on a continuing basis.

Every state in India has a unique set of natural biological resources. If biotech parks are set up in our states in a way they should be and meet the requirements mentioned above, I have no doubt that they will act as a major instrument for the optimal utilization of such resources through development of biotech in the state.

What would help further is the tying of the biotech parks with organizations like the venture capital companies so as to aid the companies who propose to set up their facilities in the park with necessary support on due diligence. It is also important that such parks do not prohibit manufacture of biochemical products as long as the manufacture is done using lab-scale facilities. It would, of course, help further, if land around the park is available for purchase by the tenant start-ups (and only to them) for large scale commercialization.

Biotech park: The success parameters

- Aesthetic modern buildings which are functional and low-cost, with facilities such as vacuum, compressed air and gas on line whereever required.
- A centralized instrumentation facility for DNA and protein sequencing, synthesis of peptides and oligonucleotides, NMR, various kinds of microscopy, a FACS machine, and ultracentrifuges, on a pay-by-use basis.
- Centralized services like cold-rooms, hot-rooms and freezers for storage, etc.
- A set-up for quick acquisition of material from outside India, specially fine biochemicals of low-volume and high-value, requiring special handling.
- A set-up to advice on patents and intellectual property rights.
- An uninterrupted and stable supply of power and of quality water.
- Centralized facilities for distilled water, hot water, liquid nitrogen, ice, dry ice, instrument repair, and the like.
- Internet connectivity.
- State-of-the-art communication facilities within the complex and with the city, the country and the outside world.
- Both tele- and video-conference facilities.
- Appropriately equipped conference rooms and lecture halls.
- Bank, travel, post office, school, shopping center, restaurants and residential complex.
- Clean toilets, parking and guest house facilities.
- Easy, reliable, frequent and comfortable transportation from the city.
- Common and efficient security and appropriate fire detection and fighting systems.
- Pleasant surroundings.

PM Bhargava

Pushpa M Bhargava is one of India's most brilliant scientists. He founded and directed the Centre for Cellular and Molecular Biology (CCMB), Hyderabad.His scientific contributions include the preparation and characterization of primary liver cell suspensions, identification of proteins from the seminal plasma and extensive characterization of one of these proteins and seminalplasmin. He has been awarded with Padma Bhushan, the Legion d' Honneur, the Wattumul Memorial Prize and Goyal Prize.