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How to get 2000 biotech startups by 2017?

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With a large number of multinational biotech and biopharma companies initiating their R&D and manufacturing operations in India, the demand for biotech incubators has increased tremendously. Companies have realized the benefits provided by these business incubators and have been relocating their facilities to the parks and other university campuses.

Both the central and state governments are making all efforts to promote biotechnology endeavors in the country by setting up biotech parks, incubators as well as pilot projects. This is to encourage new entrepreneurial ventures in biotech and provide an excellent template for promotion of biotech startup companies. The central government, through DBT and BIRAC, has been providing funding support in the form of grants-in-aid, budgetary allocation and incentives for the development of biotech incubators.

According to a recent FICCI report, the Indian lifesciences industry is now the third-largest contributor to reducing India's merchandise trade deficit. The industry generates around $10 billion of trade surplus every year, allowing it to neutralize around 4 to 5 percent of total energy imports for India. In addition, it also generates a significant number of jobs. FICCI estimates indicate that around 2.5 million people are currently employed by the industry (including some of the industries such as chemists, stockists, etc.).

Trends and methods

With all these positive trends can India have another 2,000 startups by 2017? Certainly. Let us look at how? "The current biotech start-up environment is very good and conducive. When it comes to investments, it is not like the software industry. Venture capitalists indeed invest in lifesciences start-ups. It takes time to see the returns. Most areas in the Lifesciences are happening right now. Especially, in the areas of genomics and bioinformatics," said Mr Shrikumar Suryanarayan, chairman and co-founder, Sea6 Energy.

Meanwhile, BioSpectrum conducted a survey on the current incubators of lifesciences companies in India and their role in incubating a lifescience company. These incubators provide the lab space, needed infrastructure and mentorship to all the incubatees. It was discovered that India has over 250 academia, biotech parks and incubator facilities across the country. It

just needs each of them to support 10 start-ups as incubatees in their premises. The goal to reach 2,000 start-ups can be achieved.

"Long-term venture capital and availability of physical infrastructure are no doubt the key ingredients for biotech start-ups to test ideas and build technologies. However, even more critical is the availability of right mentors and right advice at key stages of incubation," said Dr Guhan Jayaraman from IIT-Madras. Further he added, Bio-incubators (and BIRAC) need to identify such people and enlist their support for mentoring start-up companies. Established biotechnology industries also need to form a support structure (e.g., a consortium or a corpus fund), wherein they can mentor or financially support (in exchange for equity) start-up companies.
Finally, a concerted effort needs to be made in manpower training and development, especially for industrial biotechnology. These should include post-finishing schools in biotechnology and entrepreneur development, he added.

Creating a large number of biotech start-ups is not the main requirement, as is creating many successful start-ups with innovative technologies. So, identification of such start-ups, providing them long-term venture capital and mentoring them at key stages is more important than providing the investment for a large number of start-ups.

We need at least 50 incubation centers, each having a capacity to incubate 40 high potential start-ups, felt Dr Jitendra Kumar, director and head, Bangalore Bio innovation Center (BBC). "Considering the cost of setting up one incubation center as Rs 50 crore, we must have dedicated capital resource of Rs 2,500 crore to achieve the target. This number excludes the incubators that are already existing, but I think we must create an incubator support fund of this quantum. We also need to have dedicated funds for seed funding the incubatees through grants/soft loans and equity funds," he added.

Shortcomings
"All incubators do have shortcomings. Getting the right support also depends on the incubation centers and how well they are equipped to handle the incubatees," said Mr Suryanarayan. For instance, he provides the example of C-CAMP. "C-CAMP is embedded in a cluster. There is a lot of access to rich ecosystem of scientists and professionals, infrastructure, and the management has been extremely proactive. There is no bureaucracy. It is totally a different environment from how the government operates. We need more BIG and BIPP programs, because that's from where start-ups will arise. There should be more industry-academia tie-ups and similar programs that encourage start-ups to flourish.

Currently, there is a tendency to not engage start-ups /entrepreneurs while setting up the facilities, or formulating policies. "So their representation must improve to create real impact. Also, Incubation centers have not been institutionalized properly in the Indian scenario. Most of the incubators in India run on project mode, with no dedicated funds, no autonomy or no career paths for incubation managers. So, the activity runs on the fringes and never is a mainstream activity," felt Dr Jitendra Kumar.

"Integrating / introducing IT-enabled research support to reduce cost and time in the traditional wet lab model; formal linkages with academic expertise through rewards and incentives and aggressive alignment with Angels and VC investors, are some of the areas where incubators need to improve," felt Mr A Balachandran, GM, VIT-Technology Business Incubator, VIT University, Vellore.

Incubation model
VIT University, Vellore provides concept-to-commercialization support and incubation support for biotech start-ups. It is heavily anchored on 'Access to infrastructure in the campus', 'Access to Talent', 'Access to Mentoring & Funding'. "Though our standard incubation period is three years, on a case-to-case basis, we extend this support up to five years too. Our funding assistance comes without hassles as it is a soft loan without any equity demand. We do bring in mentors and angel investors from our network to assist our start-ups in areas where we don't have resources in-house," said Mr A Balachandran.

At Bangalore Bioinnovation Center (BBC), the prospective incubatees are selected through a rigorous process. It is ensured that incubatees who are selected score high on innovation, social impact, team strength, and have a clearly laid out robust business model. These Incubatees are provided with subsidized infrastructure/common equipment facility, focused mentorship, seed fund, access to venture fund, logistics for future growth plans/scale up, branding and networking support.

BBC also plans to engage in building a robust pipeline of technology entrepreneurs through different institutional means such as live business plan competition, and forming teams around IP protected technologies which are lying bare on shelves in research institutions. "The center is promoted by the Karnataka Biotechnology and Information Technology Services (KBITS), which is a nodal center of the department of IT, BT and S&T, Govt of Karnataka. The center has received generous funding support from DBT. Structured as Section 8 not-for-profit company, it aims to spur innovation movement in lifesciences in the State and beyond," said Dr Jitendra Kumar of BBC.

The IITM Bioincubator is a part of the IIT Madras Incubation Cell and is housed in the IIT Madras Research Park. It is currently funded by BIRAC and incubates only start-up companies in biotechnology. Start-ups who are interested in being incubated have to apply through the website with a brief proposal. They will be called for a presentation before the Bioincubator Screening Committee consisting of academics, entrepreneurs, scientists from industry and medical institutions.

The committee selects them based on five criteria: Technical merit of the proposal, business strategy for commercialization, team expertise, availability of seed-funding or venture capital and compatibility with the infrastructure and space available in the bioincubator. The selected companies are allowed to incubate for an initial period of 2 years which is extendable, depending on progress and financial sustainability of the incubated company and other assessment criteria.

The IITM Bioincubator provides a comprehensive wet-lab facility consisting equipment for microbial/cell culture, bioprocess engineering, molecular biology and analytics.

It also provides technical services and, through the IITM Incubation Cell, it provides the incubated companies with legal, accounting and other non-technical services. It also connects the incubated companies with a mentor network consisting of academics, biotech entrepreneurs, industry experts and venture capitalists. In addition, the IITM Bioincubator also provides linkages with other Institutions, and incubation centers for using specialized facilities not available at the IITM Bioincubator. "Being incubated in an academically-linked ecosystem also provides start-up companies with a rich resource of faculty mentors, and students who can be hired for internships and employment. The IITM Bioincubator does not by itself provide seed funding," said Prof Guhan Jayaraman.

How to kick start biotech startups boom in India?

The Govt (BIRAC), industry and academia need to be more holistically involved in this process to streamline the functioning of bio-incubators, identify promising companies or technologies which require support and minimize chances of failure. There needs to be a thorough understanding of the bio-incubation process and factors which will give better chances of commercial success, felt Prof. Guhan Jayaraman. "Finally, the bio-incubators need to be located in an ecosystem where there is a rich mix of industry-academia interaction and a diverse set of start-up companies," he added.

Relevant department in every state should create such centers either through their own resources or through PPP mode. However, such centers should either be co-located with academic institutions or should be within an industrial cluster or both, felt Dr Jitendra Kumar of BBC. "BBC has the advantage of being located within an upcoming Bangalore Helix Biotech Park. The park already has within its campus reputed academic institutions like Institute of Bioinformatics and Applied Biotechnology (IBAB) and Centre for Human Genetics (CHG). Bio-Industry cluster building is under process. BIRAC like institutions and its schemes at State level is also an important requirement for scaling up the start-up movement in biotechnology in India."

"In my opinion, we need 100 specialized infrastructure zones that are to be created for incubation. These zones should have basic biotech product development and testing facility. The cost for this could be around Rs 500 crore. For every 5 such incubators, there could be one animal house facility and for every 10 such incubator, there could be a sequencing facility as common facility. Since relying on only campus facility leads to either delays or limited access to infrastructure, such dedicated facilities are essential," said Mr A Balachandran.

As FICCI puts it, India's lifesciences industry has traversed a successful journey in the past 50 years. From an era of import dependency in the pre-1970s, high-quality local players moved the country toward self-sufficiency in lifesciences by the 1990s. Since then, world class capabilities have helped the Indian industry build a strong global presence. In this journey, the industry has achieved several successes and has contributed significantly to the Indian economy and healthcare outcomes, in both India and abroad. The government could consider supporting this journey by creating a conducive environment for the industry to undertake start-up boom for the benefit of mankind.