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How IIT-M's Bioincubator is changing the face of biotech start-ups era

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It is currently funded by Biotechnology Industry Research Assistance Council (BIRAC), and incubates start-ups in the area of biotechnology.

In his special interview to *BioSpectrum*, Prof Guhan Jayaraman, department of biotechnology, Bhupat and Jyoti Mehta School of Biosciences, IIT-Madras, sheds light on how the government, industry and academia can collaborate together in revolutionizing the birth of biotech start-ups era.

Q: What is the incubation model that you follow at the centre?

Prof Guhan: 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 Bioincubator provides a comprehensive wet-lab facility consisting equipments for microbial or cell culture, bioprocess engineering, molecular biology and analytics.

It also provides technical services and, through the IIT-M 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 Bioincubator also provides linkages with other institutions, and incubation centres for using specialized facilities which are not available at the IIT-M Bioincubator.

Being incubated in an academically-linked ecosystem also provides the start-up companies with a rich resource of faculty mentors, and students are also hired for internships and employment. The IIT-M Bioincubator does not by itself provide seed funding.

Q: How can this model be replicated to kick-start biotech start-ups boom in India?

Prof Guhan: BIRAC has already identified and funded a dozen such bioincubators across the country, including three in IITs.

However, it is not enough to provide funding to the bioincubators and expect immediate success stories.

The Government (BIRAC), industry and academia need to be more holistically involved in this process to streamline the functioning of bioincubators, identify promising companies or technologies which require support and minimize chances of failure.

There needs to be a thorough understanding of the bioincubation process and factors which will give better chances of commercial success.

Finally, bioincubators 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.

Q: What are the key investments needed to create, say, 2000 biotech start-ups by 2017?

Prof Guhan: 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 availability of right mentors and right advice at key stages of incubation.

Bioincubators (and BIRAC) need to identify such people and enlist their support for mentoring start-up companies.

The 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.

Lastly, 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.

Creating a large number of biotech start-ups is not the main requirement, as 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.

Q: In the current situation, how many biotech start-ups can an incubation centre produce in a year, given the challenges in funding and infrastructure?

Prof Guhan: Biotech start-ups will require a long time for incubation.

A typical incubation centre can incubate 12-15 start-ups at any given time and probably graduate 2 -3 start-ups a year after achieving full maturity.

Currently, one does not foresee any bioincubator graduating successful start-ups in the next 3 -5 years.

Q: Tell us about the uniqueness of your incubation centre.

Prof Guhan: The IIT-M Bioincubator has the unique advantage of being located in the IIT Madras Research Park which is a rich ecosystem consisting of a diverse array of technology companies, many of them being start-ups.

Being adjacent to the IIT-M campus, this ecosystem provides a fertile ground for industry-academia interaction.

Since different types of technology companies are being incubated at the Research Park, it provides an atmosphere for cross-fertilization of ideas, examples of diverse business models and opportunities for networking with entrepreneurs in different fields.

Biotech start-ups have higher chance of success when they are incubated in such an ecosystem, rather than a specialized silo.

Therefore, the IIT Madras Research Park model needs to be replicated across the country, by providing a diverse environment where there is rich academia-industry interaction and start-ups co-exist with established companies in different fields.

Q: Briefly tell us about the success stories achieved at the centre?

Prof Guhan: It is too early to talk about success stories. We have incubated just 4 companies.

Q: Do you see a rise in the erection of number of biotech start-ups? Or is it dwindling?

Prof Guhan: Three years ago, BIRAC initiated the establishment of a number of bioincubators and start-ups receiving the Biotechnology Ignition Grants (BIG).

Since then there has been an exponential increase in the number of start-ups at the incubation centres.

So long the Government continues this healthy policy and industry also joins the act, these numbers will continue to rise.

Q: Are you seeing any trends in biotech start-ups climate?

Prof Guhan: Most of the biotech start-ups seem to be focused in the healthcare sector, especially diagnostics and medical devices.

There are not enough start-ups in the area of industrial biotechnology, but there is a big market here.

Q: Where can Indian incubation centres improve on?

Prof Guhan: Indian incubators have to learn from the experience of successful incubators around the world, and yet learn to succeed under Indian conditions.

The Government, academia and biotech industry need to come together and engage with them and provide them long-term support.

Each incubator needs to develop its own niche areas of expertise and yet network strongly with other incubators for sharing infrastructure, ideas and mentors.

This is only the beginning. We have a lot to learn and a long way to go, but patience and self-belief are the key ingredients along with substantial long-term investment.

There is no fixed template available for success, but broad guidelines can be evolved over a period, which will perhaps improve success rates.

There is a need for regular workshops and brainstorming in this area, which is largely missing.

The bioincubators need to generously share ideas and infrastructure, as well as develop a strong network of mentors.