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Hot Start-up: Disruptive next-gen solutions for food analysis industry

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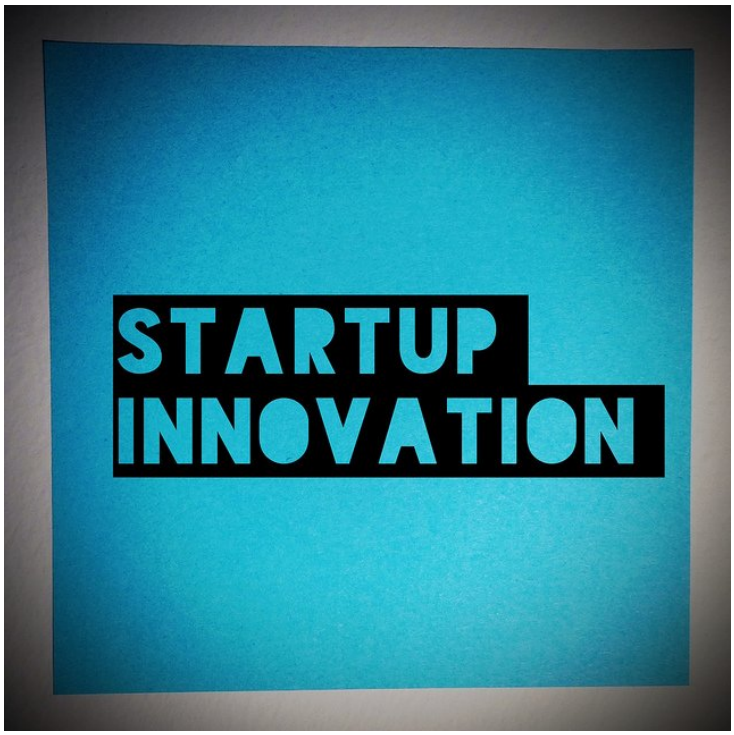

Melamine is a white, crystalline, organic base chemical rich in nitrogen, widely used in the manufacture of adhesives, plastics and whiteboards.

This chemical has the capacity to increase the milk's nitrogen content, leading to an increased protein levels in the milk, which has been excessively adulterated with water.

During this time, Dr Venkat's group were developing bioanalysis methods for processing large number of samples within a short duration.

These methods were immediately put to use, and an analysis method to rapidly and reliably detect melamine in milk was published.

Over the next few years, the team developed an entire analytical tool kit for pesticide and food contaminant analysis was developed. The primary aim was to cater to the unique analysis needs of Indian farmers and exporters, which means handling high-volume perishables.

Ultimately, in 2014, NCL alumni from Dr Venkat's group and a couple of other scientists from NCL set-up Barefeet Analytics to commercialize these methods.

The start-up intends to leverage the teams' diverse and sound understanding of both scientific and business aspects to provide potentially disruptive solutions for food analysis.

The team and the business ideas were nurtured at NCL Venture Center in Pune.

Barefeet's current team members include Dr Ajeet Singh (32), Mr Vishal Mahale (25), and Dr Magesh Nandagopal (37).

Dr Venkat Panchagnula currently serves as the director of the venture.

"We decided to apply for BIRAC's Biotechnology Ignition Grant (BIG) to further develop our proof-of-concept for field trials. Approvals for the start-up through the CSIR's Scientist Entrepreneurship Program were obtained. We put a dedicated team together and rented out lab space at NCL Venture Center to begin operations," says Dr Venkat.

The food analysis market in India presents a huge opportunity for the company.

Currently, the export markets, for example, in the US or EU, are highly regulated, while the Indian markets are catching up to meet the food safety standards.

There is a pressing need in the Indian food industry for efficient analysis of farm and food products.

"At every stage of the supply chain, a reliable partner is needed to ensure that products are meeting the required standards, and regulatory specifications among others. This need is being felt more and more now. And we are looking to serve this need," Dr Venkat remarks.

There are numerous challenges in the economics and logistics of food analysis with significant rejection rates and losses in the export market.

Compliance in the Indian scenario is challenging due to several reasons including the needed scale of operations.

Infrastructure Challenges

Initially, the company had a major challenge in facing the capital-intensive high-end scientific instrumentation needed to carry out its R&D work.

"Fortunately, the facilities available at NCL Venture Center have helped us to manage it in the initial phases," adds Dr Venkat. "We are trying to develop next-generation solutions that would change the face of food analysis industry. We obviously have to get the buy-in from regulators and get our methods accepted. That is one of our prime challenges."

The company has received its seed funding through BIRAC's BIG grant worth Rs 47 lakh.

"We are also generating some revenues through consultancy and executing small projects in our domain expertise. We are hoping to raise funds in the coming year to help us in setting up a full-fledged food analysis laboratory," Dr Venkat reveals.

The start-up now caters to quality control & food testing laboratories, food & beverage processing units, food & produce exporters, farmers, and organized high-value retailers.

Partnerships & Collaborations

He expresses, "We would love to work with food processors, exporters, and farmers - basically all our customers - in developing specialized solutions for their needs. Also, we are looking for partners from existing analytical labs in India and abroad."

The venture initially aims to build and strengthen its crucial capabilities, infrastructure and manpower.

He explains, "This involves setting up a food testing and analysis laboratory with the requisite hardware, and being on the path to quality and regulatory certifications. Simultaneously, we'll undertake sales and marketing activities to generate revenues. A key aim would be to gain the credibility among customers. We aim to reach out to strategic partners, both within India and outside, for collaborations, investments, and strategic partnerships, for widened reach to other markets."

Networking events, interacting with key opinion leaders and having a good website along with a strong presence on social media are its key strategies in building its brand visibility.

Enabling Scientific Enterprises

Dr Venkat says that a lot more needs to be done for enabling science-based enterprises in India.

He elaborates, "A crucial bottleneck is the infrastructure that is needed at every step. Government-supported scientific R&D including the CSIR should be prodded to open up and help MSMEs, which unfortunately is still a far cry from what it should be. Scientists who are also entrepreneurs should be incentivized, and are still looked at with suspicion by the Establishment."

Usually the incubation time for these start-ups are much longer. With insufficient support, not many start-ups will be able to survive for long.

"The amount of paperwork at every stage is daunting. For example, to import an equipment from abroad, a license is needed while any common person can buy the same from Amazon. Huge customs duties for these imports heavily burden the start-ups. Beyond the ignition grants, funding avenues for good ideas are few in comparison to the size of our country. Investors in India are either averse to capital heavy investments. Often they lack understanding to offer meaningful support. Further encouraging and easing foreign direct investments (FDIs) in science-based start-ups is also needed," he patiently describes.

So far, Barefeet has made good headway in detecting pesticide residues in grape samples.

This involves innovation on all fronts - integrating the cutting-edge hardware, developing new analytical methods and data processing capabilities, expresses Dr Venkat.

"This augurs well for our impending forays into the milk and honey analysis market and other food products analysis," he mentions.

Quicker ROIs

Dr Venkat admits that it is tough to explain the dynamics to shareholders and investors who seekquicker returns.

"We look for folks who are already in some way tuned to or have exposure to high-technology space, and understand that it is a valuation play and not necessarily a revenue play in the initial years. Even though we have a terrific team, and are fully capable of generating revenues from undertaking analytical services and consulting from day one, we consciously dedicate only a part of our energies to shore up our operating funds," he shares.

However, he says that from his observation VCs are indeed funding Life Science start-ups in India. "But the funding comes in at a much later stage. It is particularly in Life Sciences, where technology derisking requires much greater investments. VCs should take the lead and fund during the earlier stages of the start-up," he notes.

Synergistic Ecosystem

According to him, Pune and Chennai are faring quite well as Life Sciences start-up hubs.

"Both these cities have a high density of skilled manpower, critical mass of higher educational or tertiary institutions, research

centers of international repute, strategic proximity to vibrant industrial corridors and existing infrastructure," he justifies.

He comments that revenue generation is not always essential for raising initial investments abroad, while it is a hard-sell if start-ups were to approach investors in India without revenues.

"In the West, opening and closing companies," Dr Venkat emphasizes, "is much easier and the paperwork is a lot lesser. It is easier to find highly-skilled and trained manpower and set-up in a world-class technology incubator, usually close to a University eco-system. Some of these innovation parks offer rent-free space in the initial stages among other such incentives. It is also easy to procure used equipment for labs, at times from e-bay and service them, while such a thing is unthinkable in India. The scale of science-based entrepreneurship happening in the US or UK is phenomenal, and we have a long way before we can catch up."

Incubator Support

Dr Venkat stresses that all entrepreneurs need the same qualities to begin. "Being market and customer-focused is one of them. There are plenty of other qualities we can talk about. Big institutes like IITs or IIMs come with their extensive alumni networks, and hence could prove advantageous from that front. Otherwise, it is all the same. People with fire will survive, others will... well, move on," he states.

He advises start-ups to stick to whatever works for them, whether starting up independently or joining an incubator or accelerator.

"Incubators do provide a great deal of support and cushioning for first-time entrepreneurs. They provides a platform where companies can meet and network with other people. Some of them even provide funds for start-ups-all of which are very important," he opines.

Billion-Dollar Start-ups

Can India raise billion-dollar Life Sciences start-ups? "There is no easy answer to this," says Dr Venkat.

"As a society, we have huge tasks at hand on providing quality education, health, food and infrastructure. Scaling these up while achieving quality, leading to productivity and growth is a complex problem. A society that achieves this, mostly the US, has a lot of synergies in place. However, we do have a large enough drive in the form of existing opportunities. For example, there are large gaps in services especially in achieving the last mile connectivity. While the challenges for a start-up are significant. These are motivating enough for keeping the hopes high," he highlights.

Dr Venkat says that if not being an entrepreneur, he'd have been quite happy in any role that allows him to innovate, especially if it has societal relevance while retaining a certain amount of independence.

"In that sense, the major difference in working for some organization versus being an entrepreneur would be about taking risks," he ends.

Quick Bites:

Company's Roadmap:

ï‚§ Capacity building
ï‚§ Revenue generation
ï‚§ Strategic partnership

Entrepreneurial Lessons Learnt:

ï‚§ Cost - Rarely being the only differentiator for a product/service
ï‚§ Importance of quality