

# Incubating Right

By [Shalini Gupta](#) on July 21, 2015



*Pune—based Venture Center is abuzz with new start-ups in the biotechnology space and is showing the way to other incubators on how to approach these early stage companies* **By Shalini Gupta**



Dr Vishwas Joshi

After having worked in various capacities in drug discovery, with leading pharma companies for almost 15 years, Dr Vishwas Joshi understood that awareness of the risk involved in drug discovery becomes a handicap for companies venturing into this space. Rather than being a deterrent, he used this insight to break out from the league to chase his idea of developing a technology for production of protein in animal cells. Today, he is the founder of Seagull Biosolutions, a company, with a technology platform for vaccine production, which could be a gamechanger once it is introduced in the market. Joshi is just one of the several scientists who are developing innovative new technologies with an eye on the future, housed in the Venture Center, nestled within the NCL Innovation Park in Pune, near Mumbai.

## **Ground for innovation**

Set up by Council of Scientific and Industrial Research's (CSIR) National Chemical Laboratory, the NCL Innovation Park began operations in 2006 with an aim to promote and support innovative technology development and advancement carried out in partnership/ collaborative mode. Venture Center is furthering its mission to create, shape and sustain a "Pune cluster" of innovative technology businesses with a significant economic impact regionally, nationally and globally within the next 20 years. It is one of India's largest

inventive enterprise incubator, a critical component of the innovation ecosystem in the NCL Innovation Park.

The Center is a technology business incubator approved and supported by DST- National Science and Technology Entrepreneurship Development Board and has also operated schemes of the DSIR, TDB, TIFAC and DC/MSME. It is also home to a BIRAC (Department of Biotechnology, Government of India) BioIncubator, which Joshi is a part of. With around 30 inventive start-ups in-house, a large range of services, facilities and resources available and more than 130 events a year, the Venture Center stands out amongst various incubators across the country, and is Pune's startup hub now.



Dr V Premnath

While most incubators support start-ups after a founding team comes to them with a preliminary business plan, Venture Center goes one step further by identifying competencies in research institutions, helping put teams together around that and help arrange funding and then take it ahead as start-ups as a part of its Lab2Market programme. Says Dr V Premnath, Director, Venture Center, “We believe that this approach is critical for science –led start-ups to come up in India with more than 80 per cent of research spending in publicly funded research institutions (unlike the US where less than 40 per cent happens in academic and research institutes). So, not tapping these centers of knowledge to build knowledge intensive start-ups will be unproductive. Furthermore, in India there is a chasm between knowledge workers (who often do not have family wealth behind them) and business communities (which often do not have knowledge assets with them). The Lab2Mkt programme helps bridge this gap.”

Out of a total of 33 business ideas that were screened under the Lab2Mkt programme, eight start-ups have been advanced to the point where a company has been incorporated and initial funding arranged, he informs. What is even more interesting is that, seven of out these eight companies are in the biosector. This is only where it begins to get even more exciting, as further figures are revealed. Venture Center incubatees include beneficiaries of BIRAC's BIG, SPARSH and SBIRI grant schemes. The BIG grant has so far had a major impact. Five Lab2Mkt companies received grant funding from BIRAC in the year 2013-14, two companies received funding in 2014-15. So far, six rounds of funding have been completed. As many as 29 companies from Venture Center's network (including those not resident in Venture Center) have got BIRAC grants. Companies who got funding under the BIG programme of BIRAC have raised Rs 430 lakhs so far.

The numbers speak for themselves, even as the Centre is buzzing with activity. So when prodded for figures on how many companies have commercialised their research so far, Dr PremNath elaborates, “Venture Center is a young incubator for a life sciences incubator. Most of our companies are under four years old and work in domains which have long regulatory approval periods. So, the number of companies who have already sold products based on their research is relatively small. However, several of them have filed Intellectual

Property (IP) or are in the process of filing IP. Several others have licensed IP and are advancing them. The proportion of companies who are either developing their own IP or leveraging licensed IP is larger at Venture Center than most other incubators.”

### **Breaking through**

Joshi’s company, Seagull Biosolutions, is a part of the bioincubator and a BIG awardee from BIRAC (2013). A small grant from DSIR after he achieved his proof of concept in June 2012 offered the much needed impetus to go forward. He has developed a technology platform called eSAME by using an enzyme present in measles vaccine that can allow not only protein but virus production, thus making it versatile. When he started toying with the idea in 2011, drugs like erythropoietin and GCMSF were commonly produced in India. However there was little or no expertise or technology platform to develop in the production of monoclonal antibodies.

“We got a grant to develop a virus for cancer therapeutics which causes no toxicity in humans unlike chemotherapy which has side effects. Once the virus is injected in the patient, it knocks down the cancer and people who could have died in a months time, can survive for years. Such therapies are now being considered as the next paradigm for cancer therapy,” he adds. In April 2015, Amgen got an approval for the first such drug for cancer. “If we can have this therapy in the market, immediately after it gets approved, and that too at a lower cost, it will be a big boon for Indian patients. I’d be able to produce it at Rs 10, 000-12,000. And subsidise it further, “ he says confidently.

The excitement in his voice is palpable since the platform can form a vaccine from a new virus in less than eight months time. He informs that using measles vaccine as a vector, all vaccines can be produced at a very low cost, less than \$1-2, at par with measles vaccine, which is the cheapest so far. He is again looking for funding, with the product yet at least seven to eight years away from the product being in the market, and is afraid that it might be hard to come by. A second vaccine for dengue is also in development and has completed animal studies, just like the one above.



**Dr Chaitanya Saxena**

Joshi is not alone. The entrepreneurship bug hit Dr Chaitanya Saxena when he was working for Eli Lilly at its Indianapolis based drug discovery unit as a key member of a team that was developing technologies for identifying new drug targets. He had a plan to start a company that will develop chemical-proteomics based target identification technologies and offer it to multiple drug-discovery efforts across the globe. In May 2010, he set up base in the Venture Center and there has been no looking back. A series of grants from DBT in the ensuing years made sure that the momentum continued.

His company Shantani Proteome Analytics has received a total of four grants so far. While he is not keen to reveal the amount of funding received till now, he tells us more about the

technology. “We are focused on developing and commercialising proteomics based technologies that offer multiple benefits to drug discovery efforts at different levels. At the same time, we are using these technologies internally and developing our own ‘first-in-class’ drug-discovery programmes. Our technologies are validated and we are already offering them as services,” he elaborates. He already has six global customers for these technologies which (1) allow identification of drug targets of phenotypically screened molecule at early stages of their development so that lead molecules can be rationally developed, (2) profile proteome-wide toxicity of the ‘lead’ molecule during lead to lead-optimisation phase and (3) provide a basis of repurposing molecules that are at late stages of clinical development.

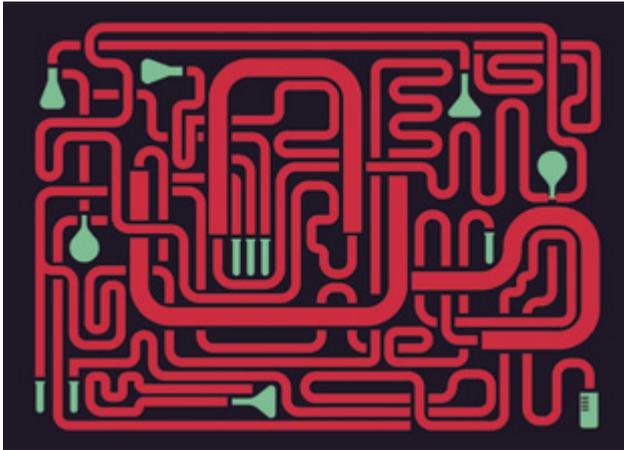
The company’s internal drug discovery efforts have also come a long way, with its first programme at pre-IND stage. This is a ‘first-in-class’ programme in Type-2-diabetes therapeutic area and animal studies have established that therapy under development, if successful in clinical trials, will provide well-differentiated benefits to patients, he explains. The therapy will not only control higher glucose-levels in patients but additionally it will protect their pancreas to limit the progression of disease and control the weight gain that is often associated with diabetes.

### **The right ecosystem**

Both Joshi and Saxena are scientists turned-entrepreneurs and going by their progress so far, their future certainly looks promising. While one is working in the area of vaccines, the other is into drug discovery and both are challenging fields where new innovation is a dire need. Biotech incubators could be the nurturing grounds for such innovators. Premnath adds that an incubator needs to build a conducive ecosystem with the right facilities, services, mentors, funding options, experts, events, networks etc which gives a certain degree of comfort and certainty to entrepreneurs to even begin venturing into biotech/ biomed. These sectors demand knowledge intensity, technology inputs and technology risk alongwith high investment due to expensive equipment and supplies. Given the larger journey to market due to need for regulatory clearances, entrepreneurs need experience, passion and interest in commercialisation of inventions or scientific ideas of which there is paucity in India, he concludes.

And it is not just about creating the right incubator that will solve the problem. “The biggest limiting factor is the limited understanding of drug discovery processes across stake holders. A few to none venture capitalists, academic groups are doing great biological research but it does not necessarily cut into developing a new drug. Big pharmas of India, barring a few, do not have significant interest in new drug discovery for their own valid reasons. In an Indian set-up its the right approach that is most likely to work in developing new drugs,” reiterates Saxena. He feels that substantial early-stage funds and an inability to identify people driven for excellence in commercial application of science and science ingeneral is the key challenge. He is quick to add that they are evolving business models in drug discovery more suitable for Indian investors who seek to exit in three years.

So, what would be critical to ensure that such scientific start-ups reach a critical mass? Premnath says that we need mechanisms to create a pipeline of such start-ups by grant funding as the US does via SBIR and POC funding as done by the Deshpande Center at MIT in the US.



Incubators operating the scientific start-ups space need to find ways to make accessible various pockets of funding- including grants from the government and international/ charitable organisations, soft loans, equity investments etc. Of this, grants and equity are preferred modes where the revenue foresight is weak or unpredictable and entrepreneurs are first generation entrepreneurs.

Universities and research institutions are not geared to support start-ups directly, he states. Their mandate, motivations, their structure, their institutional processes etc are not conducive for entrepreneurship. Also, academic and research organisations often have legal limitations in supporting start-ups. In this context, incubators set up as independent entities are often better suited for nurturing start-ups and supporting entrepreneurship, he adds.

Meanwhile Tania Paul, who has received the BIG grant late last year is working on multiple coagulation disorder to formulate a herbal drug to reduce excessive blood loss in trauma, thrombocytopenia and in genetic disease like hemophilia. Currently, there is infusion with costly recombinant factor eight injections. “ It is long journey where I have stepped a mile it seems, I am on the way to develop the prototype formulation and presently gathering scientific evidences to prove and promote the product by conducting various experiments. Soon we shall be done with preclinical safety and will be head towards clinical trials. All being well, the product shall reach the market after getting a FDA licence.”

It is a long journey for sure, not only for these start-ups but also for India to create a thriving ecosystem for biopharma and biotech start-ups. While NCL has set a prime example of a buzzing incubator helping early stage start-ups, there is a need to create a wholesome ecosystem so that not only do such start-ups begin, flourish and break even but also go on to become iconic companies in their own right.

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