

► RING-SIDE VIEW

## Ten years of SINE

SINE is completing 10 years of its existence. SINE was set up in 2004 to run a technology business incubator following success of a pilot IT incubator at IIT Bombay. Since its start, 50 companies have been incubated here.

Over this period of time, the incubator and the incubation activities have evolved. What started as an informal approach to a company incubation in early 2000, has now become a close association between SINE and its incubatee companies - from helping companies write business plans to working on business models and access to investor and business network. Most companies incubated at SINE have started generating their revenues during incubation period, and more than half of the companies incubated so far have been funded by angel and/or venture capital investors.

More than quantifiable impacts, there is a change in environment at IIT Bombay which is very positive. There is an increasing interest in students to pursue entrepreneurship post their graduation. Many prefer to work with or take up internship with start-ups as against established corporates. A number of alumni have gone on to start their own companies after 2-5 years of corporate experience, either at SINE or outside the

incubator. Every new generation of entrepreneurs is more mature in their understanding of running their start-ups.

Indian innovation ecosystem too has matured more in last 10 years. Angel and venture capital investors' community has been growing. Large companies are seeking involvement with research labs, academia and start-ups. There has been systematic push from the Government to encourage knowledge-based entrepreneurship. Various government departments have started a number of initiatives with financial support for proof of concept, prototyping, seed funding, and patent filing for individuals & SMEs, setting up business incubators, and so on. Experts, professionals, and successful entrepreneurs are keen to mentor start-ups.

SINE endeavours to leverage strengths in entrepreneurial ecosystem and disseminate the information for the benefits of entrepreneurs and various stakeholders. SiGNETure is one such effort in that direction.

Ms. Poyni Bhatt  
COO, SINE



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## ▶▶ New Incubatees at SINE



**igrenEnergi Semiconductor Technologies** comes with the vision is to leave a better world for future generations by enabling clean energy. The founders are serial entrepreneurs, with Bachelor's degrees from IITB and Ph.D.s from top US universities. igrenEnergi's products

are built using proprietary innovations in electronics (including 1 US patent), embedded software, and cloud based applications software, and their goal is to improve energy efficiency and reduce cost of electronics required to generate, store, and use energy. The first product of the company, a DC optimizer/mini-inverter is undergoing trials for solar power installations. The same technology can be used for more efficient energy-management in electric vehicles. [www.igrenenergi.com](http://www.igrenenergi.com)



**Purple Squirrel Eduventures** is promoting industry-academia interaction to improve career awareness and enable informed decision making. It partners with educational institutes across engineering, arts, science, commerce and management,

and companies across sectors to allow students insights into such organisations, and create a platform to bridge the gap therein. 'Purple Squirrel' is a term used by recruiters to describe an ideal job candidate, someone with qualifications that perfectly fit the jobs requirements. The company aims at creating comprehensive industry visit packages to introduce students first-hand to a variety of career options beyond those conventional & help them build industry networks that could lead to internships/full-time jobs. [www.purplesq.com](http://www.purplesq.com)



**kWatt Solutions Pvt. Ltd.**  
economising renewables

**kWatt Solutions** is operational in renewable energy space

focusing on energy optimization and technology customization & creating and nurturing network of entrepreneurs, thus working towards "economizing renewables". The company provides solutions to electricity supply based on solar photovoltaic (PV) technology. kWatt Solutions is engaged in providing inimitable products and services to congregate the needs of nation in bridging the electricity deficit. It aims to provide 'PV systems on demand': kilowatt range PV systems anywhere across the country with immediate delivery on demand, with surety of local service to the customer. [www.kwattsolutions.com](http://www.kwattsolutions.com)



**Wegilant** delivers web security products, consulting and research. Wegilant

offers strategies, capabilities, and technologies necessary to help businesses preemptively protect Web applications & IT infrastructure from threats. Its mission is to low cost end-to-end solution for web application security audit & patching on the cloud. Wegilant has launched three lines of products: a web security analyzer on the cloud, to help businesses scan their web apps for security loopholes in a cheaper & automated way; a PHP Source Code Analyzer for security on the cloud with strong automatic patching algorithms; and a multi-user collaborative platform for web penetration testing & patching, for a group of developers to test and fix the security bugs/loopholes of a website in collaborative way. [www.wegilant.com](http://www.wegilant.com)

# Mind over heart! A better approach than ‘follow your heart’

A. Vijaya Simha

Literally all entrepreneurial enterprises are driven by a passionate zeal to make change happen, also hopefully that this would make us rich and famous too. While your heart, anatomically, conducts the most unenvied role of providing nutrition and oxygen to the rest of your body 24/7 for the rest of your life; the brain manages to put the rest of the organs on autopilot while it takes a nap. In an all-encompassing entrepreneurial emotion that we all broadly term “follow your heart”, I believe it’s a very unfair policy to ignore the other parts of your body, for what functions they perform, and should be a recognized part of your team.

The fragility of the entrepreneurial team is probably the greatest risk in any entrepreneurial venture. It starts with a passion, that is driven by the ego and ends too because of ego. “Like minded class buddies who share many things in common” or homogeneity of teams are not exactly the kind of teams that investors take kindly to, mainly due to the fragility of emotions that bond the organization.

What investors look for in entrepreneurial ventures in which they intend to take an exposure in, are related to the potential for growth in value of the organization and in its overall sustainability over the long term in some cases. It also is the goal of the enterprise; and so let’s look at it from the investors side on what they would like a team to look like. As Nietzsche put it “In individuals madness is a rarity, but in groups it’s a rule”.

## Grey Hair

The presence of salt and pepper does add to the flavour of the entrepreneurial team. These are specially useful in areas such as product design, manufacturing and going to market. Existing wisdom may quickly establish proactive protocols and standard operating practices without going through a tortuous learning mode. Even simple things like finding out the starting base line during negotiations can be useful in optimising both time and expense in the process of scaling up.

## Been there, done that

Serial entrepreneurs carry battle scars that instill confidence in investors. Having been there and done that is a very valuable qualification, even if you have failed earlier. It’s common that most successful entrepreneurs are not necessarily first time entrepreneurs. Even experiences such as running a T-Shirt business or a food stall during Mood Indigo counts.

## Social Networks

The ability to move into any social circle is a skill and an art. But more important is the ability to gain acceptance in these circles is a valued soft skill. Indirectly, it reflects on your ability to understand and contribute to the fun, happiness and harmony of these social circles. Social circles need not be restricted to the ones who appear on page 3; but include communities of practice, professional groups etc. The more heterogeneous your circle of friends is, the more impressed/convinced is the investor.

## Personal skills

Peter Senge in his “Fifth Discipline” called it personal mastery- your team’s “existing skill sets” and how they are being honed continually. Demonstrate this through specific exercises you conduct; whether it be a focus group discussion, or a laboratory trial, or a prototype. Show it around, but please, it should reflect your passion and pride and it should be a work of art!

## Articulating the Grand Vision

The grand vision needs to be clearly painted with vivid colours so as to make it understandable to your team mates (most important), the investors, and to your potential customers. So go out and practise that. If you have to use power point; try to paint the picture in one slide. Or better still if you could paint this picture in a short 3 minutes speech, sing it or act it out.

## Complementary Characteristics

The team should reflect competency and capability in a number of aspects of organizational development and a mix and depth of functional skills. The most important functions such as domain, technical expertise, business expertise (must have) will determine eligibility of a team member and other attributes such as leadership, excellent ability to articulate, passionately sharing the vision and beliefs, etc are suitability factors.

## Problem Solving Leader

Leadership at the early stage of an entrepreneurial venture is dominated by activities on overcoming challenges. Implementation involves familiarity with the bolts and nuts of the task, whether it's building in a rigidity into a mechanical system or crafting and negotiating the capitalization table while inviting investors. It is possible that your original idea does not appeal to a focus user group or your investors, in which case you may have to do a "pivot". This, incidentally, is your competitive advantage against larger more inertial organizations.



### About the Author

Mr. VijayaSimha is an evangelist for a vibrant medical technology industry in India and the co-founder and CEO of a San Francisco-based start up called OneBreath, Inc., engaged in the translation of an innovation from the benches at Stanford University to the bedsides of millions who would die due to respiratory illness in developing countries. Mr. VijayaSimha is also a member of the FICCI National Committee on Health Services and the FICCI Advisory Council on Innovation that are exploring opportunities where the academia and industry could engage for profit and prosperity using the FICCI platforms.

# The Industry-Academia partnership in the Indian biotechnology arena: An important cog in fashioning an innovation driven Indian bioeconomy

Dr. Satya Prakash Dash

## Setting the scene

The Indian biotechnology industry is growing at a rapid pace. An annual survey conducted by the leading industry magazine, Biospectrum, pegs the growth at more than 20% year on year over the last decade- the industry's revenue has grown from less than US\$500 million in 2003 to about US\$5 billion in 2013. This growth is despite the winds of global economic downturn that have swept the last 4-5 years. The Indian biotechnology industry landscape has now a vibrant mix of 500 biotech firms spread across the country especially in the hubs of Bangalore, Hyderabad, Mumbai-Pune and Chennai. Many new firms are emerging in smaller hubs such as Bhubaneswar, Chandigarh and Thiruvananthapuram.

The Indian biotechnology strengths lie in biopharma manufacturing especially vaccines and biosimilars, contract research and manufacturing (CRAMS), industrial biotech especially in enzymes and bioagri (GM & other technologies) with increasing strengths in regenerative medicine (stem cells and tissue engineering), medical technology (medical devices and diagnostics) and systems and synthetic biology.

The stated policy aim of the nation is to build this nascent industry from US\$5 billion revenues to \$100 billion by 2025 and thus usher in a bioeconomy. This is an achievable aim if the different cogs of the biotech innovation machine can fit together to make the innovation machine run smoothly & efficiently. One of the important elements for this growth is the industry-academia partnership that extends from joint curriculum design to joint R&D and translation.

## Porous systems and mobility between industry and academia

Many believe that industry and academia are two different cultures with unique currencies. Industry's currency is revenue and importantly profit and it envisions its future in terms of new products and new markets while the academic culture is blue sky research and its currency is peer reviewed

publications. However, there are numerous examples of these two systems working together to extend the frontiers of science, technology and commercialisation of technology into products.

One of the important elements of building industry-academia linkages is to have modalities of mobility amongst its skilled researchers. Opportunities should be created in India where academics can spend a year in an industrial lab to conduct joint research with industry. Similar opportunities are essential for industry's R&D researchers to spend time in academia. This could begin in small steps such as providing access to interested industry participants in delivering short term courses in academia. The more such linkages are forged the greater will be the probability of future collaborations. From the industry's standpoint it is crucial to think beyond the quarterly forecasts and provide 10-15% of time for industrial R&D researchers to focus on research projects of their interests. Several innovative firms such as Google, IBM, Pfizer and Genentech have this component to drive creativity and innovation within their organisational set up.

Other elements in the spectrum of industry-academia linkages include an active Technology Transfer Office (TTO) that helps commercialise academic R&D by finding suitable industrial partner, creation of culture of entrepreneurship in academia through interaction with industry, academic spin outs and startups, formation of a vibrant incubation centre within academia as nesting grounds for startups and industrial research and joint bidding of national projects by industry and academia. All of these modalities have taken roots in India and need further strengthening.

Such linkages between the two systems call for agility and porosity in both industry and academia which could be facilitated by the Government.



## Fashioning a porous and agile ecosystem for industry-academia linkages through targeted funding and other support mechanisms

In the Indian biotechnology scenario, BIRAC which is a not for profit Section 25 company established by the Department of Biotechnology (DBT), Government of India is playing a role of a connector and catalyser to transform the Indian biotechnology landscape. BIRAC facilitates the transformation through targeted funding for R&D especially to startups & SMEs for affordable product development, providing support systems for incubation and technology transfer and creating and supporting platforms for industry and academia to network and explore synergies.

BIRAC's funding modalities for fostering biotech R&D encourage industry-academia partnerships and creation of an entrepreneurial culture in academia. BIRAC's portfolio of funding schemes encompasses all stages of product development. For example its "Biotechnology Ignition Grant" (BIG) scheme supports startups and academic individual to test their ideas into a proof of concept (PoC) through a grant of up to INR 50 lakhs, while programme such as SBIRI and BIPP, two of the original flagship programmes, provide substantial amount of risk funding (in combination of grant & loan) for incremental as well as cutting edge innovation research including PoC, validation, pilot and scale up. Further, schemes such as SPARSH focus on social innovation in the biotech context and BIRAC "Grand Challenges" in partnership with Bill & Melinda Gates Foundation also address societal needs in healthcare, nutrition and agriculture.

The BIG grant has spurred entrepreneurship in the country with close to 3 dozen projects, either by startups or individuals, that have been funded. Many of the startups have emerged out of academia and are led by postgrads, PhDs and postdocs thus seeding an entrepreneurial mindset in the country.

Through SBIRI and BIPP, BIRAC has funded more than 200 biotech companies and around 220 projects. BIRAC has provided support of up to INR 500 crores in

SBIRI and BIPP. In total both schemes have facilitated 68 collaborations (industry-industry and industry-academia) of which a total of 51 projects are industry-academia projects. These partnerships range from developing rapid diagnostic test for malaria, design and develop hit molecules for cancer targets, development of platform technology for nitrilase catalysed biotransformation processes, development of nanopesticides and development of disease resistant okra through RNAi approach to name a few.

Another funding programme of BIRAC called "Contract Research Scheme" (CRS) targets specifically bridging the industry-academia systems. Through CRS, BIRAC supports academia, through a grant, to take forward their research leads through validation and translation stage by an industry partner in a contract research mode. This is to encourage public and/or private Universities to validate their translational research that has commercialisation potential. There are 7 on-going projects in CRS where academia is the primary applicant with an industry partner.

BIRAC recently launched University Innovation Cluster (UIC), in partnership with National Innovation Council, to further deepen innovation mindset in the universities across India and build "innovation-cluster around universities. Initially 5 universities have been chosen. The modalities of this scheme are to create "industrially relevant" projects with an industry partner led by Innovation Fellows (post-docs & post-grads) and help build a support systems around these universities-entrepreneurship, TTOs and Incubation.

Besides BIRAC provides support to 14 bio-incubation facilities across India where incubatees have access to lab space as well as access to instrumentation facilities. Most of the incubation facilities are present within an academic cluster which facilitates industry-academia conversations, linkages and possible collaborations.

All the above support mechanisms are primers being led for industry-academia linkages and collaboration in the country which hopefully will expand and intensify as we evolve into a bioeconomy.



### About the Author

Dr. Satya Prakash Dash is with BIRAC as Head Strategic Partnerships & Entrepreneur Development. Previously he was at IIM Bangalore, ABLE Bangalore and University of Cambridge. He holds triple masters from Leicester (UK), Cambridge (UK) and Sambalpur (India) and a PhD from University of East Anglia, UK. His interests are "business of science", biotech strategy, entrepreneurship, design and national S&T policy. In 2012, he authored a high level strategic blueprint of the biotechnology sector in India titled "Indian Biotechnology: The Roadmap to Next Decade & Beyond" at the behest of DBT-BIRAC.

**Views expressed here are personal and should not be attributed to BIRAC**

# Gandhiji as an entrepreneur

*Entrepreneurship insights from M.K. Gandhi*

by Dr. Nanduri Aparna Rao

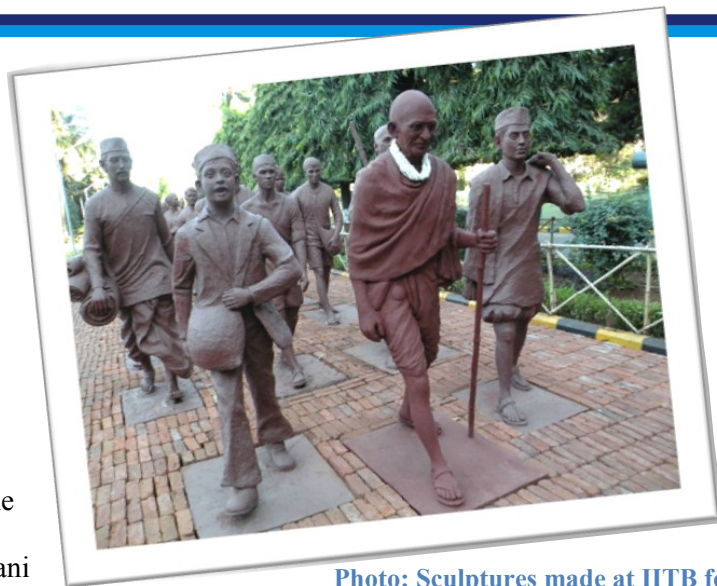
He belonged to one of the most business oriented communities in India- the Gujarati community. One recalls names such as Karsonbhai Patel (Nirma), Dhirubhai Ambani (Reliance), Gautam Adani (Adani Group), & Dilip Shanghvi (Sun Pharmaceuticals), but Gandhi figures nowhere on this list. Reason? While entrepreneurs as we know them create businesses and grow rich, he created business opportunities, social improvement and chose to stay poor... Yes, the one unique feature of this entrepreneur is that he gave away everything he earned, and could have earned, given his huge body of work – be it wealth or position for himself or his family. One would call him a saint and yes, short of beatification, he did everything saints would and many things saints wouldn't. He is known as the Mahatma – he is Mahatma Gandhi.

How does a Mahatma, a freedom fighter qualify to be called an 'entrepreneur'? Which business did he build up? Where is his 'empire'? I put this question to some senior business professionals. Their response – 'One would find his work in all fields – be it his field i.e. law or disparate areas like education, medicine, journalism, writing, handicrafts, trade union movement, art, livelihood, national level programmes for social upliftment, foreign relations... Of course he is one of the greatest entrepreneurs who ever 'walked this earth,' as Einstein said.

The reverse question faced was, where would you not find relevance of his work? The answer possibly would be a pang of guilt felt by many at the mention of his name. So associated is he for building the brands 'Truth & Non-Violence.'

A book on entrepreneurship describes a 'credo for entrepreneurs' – this is presented in the form of a list of qualities the world is looking for. The list includes qualities like commitment, ambition, strategic thinking, optimistic, enterprising, foresighted, trustworthy, integrity, tolerant, inspiring, transparent, compassionate and so on... A look at Gandhiji's body of work reveals all these and more.

Let us look at one small chapter from 'The Story of My Experiments with Truth.' The decision to launch a newspaper 'Indian Opinion' for sharing information and updates about the movement against various unjust



**Photo: Sculptures made at IITB for 'National Dandi Salt Satyagraha Memorial'**

laws and rules against Indians in South Africa. The first edition of this paper had to be brought out from the Phoenix Settlement. The decision was wrought with challenges of finances, logistics, infrastructure, manpower. An oil engine had been installed for printing.

As a precaution, Gandhiji had also asked for 'a wheel which could be worked by hand.' Another precaution was that the size of the newspaper was reduced to foolscap size to ensure publication with the help of a treadle in emergencies. The very first night, the engine failed. The carpenters who were tired after long hours had gone to sleep on the press floor itself, as the building work was not yet complete. The engineer after working late into the night, attempting to get it started, gave up. Gandhiji took up the task of convincing the carpenters. Along with them, he too took turns to work with the hand wheel, folding the papers etc. In the morning, the engineer was woken up at 7 a.m. and asked to look at the engine again. This time, it started. Their efforts paid off, and the first edition of the Indian Opinion was dispatched in time.

This one incident of his sheer will power displays all the qualities described in the book. His life, of course, reveals how, throughout his life, he kept learning, reading, writing and improving, to the last day. Little wonder then, that 'the man of the twentieth century', Mahatma Gandhi is the exemplary entrepreneur for luminaries like Narayan Murthy, Dr Abdul Kalam, Rahul Bajaj, Ratan Tata, Adi Godrej, Sreeji Arvind Singh Mewar and so many more globally. May the tribe increase!!!

## About the Author

Dr. Rao is an Associate Professor at Chetana's Institute of Management & Research, where she heads the Entrepreneurship Cell, initiated by herself 4 years ago. She is a trained NEN faculty for mentoring entrepreneurs.

## ▶▶ SINE updates

### I-ASCEND (IITB Alumni & SINE Committee for Entrepreneurship Development)

IITB alumni have been strong supporters of innovation on the campus. The pilot incubator project that evolved into SINE was funded and mentored by alumni. Alumni have also been keen investors & mentors of startups formed by IITB students and graduates. We are strengthening this relationship with alumni with the help of IITB Alumni Association (IITBAA). I-ASCEND is a joint initiative of IITBAA and SINE, to strengthen the entrepreneurship efforts by SINE, eCell and IITB, by building strong alumni linkages using the IITBAA/HF network and bringing support from alumni to the IITB entrepreneur communities. More details are available at <http://iitbombay.org/initiatives/iascend-1>.

If you want further information, or help in any way with this initiative, do write to [iascend@iitbombay.org](mailto:iascend@iitbombay.org) or [pareshvora@iitbombay.org](mailto:pareshvora@iitbombay.org)

LinkedIn Group page for iASCEND:

<http://www.linkedin.com/groups/IASCEND-Entrepreneurs-Startups-Hub-IIT-6615200/about>



### SINE Saturday

Following up on suggestions raised by alumni on Alumni Day, SINE has started monthly meetings - 'SINE Saturday' - for all IITB entrepreneurs/potential entrepreneurs. The meetings will be in the form of a brief talk/interactive session with an invited speaker, followed by networking session for entrepreneurs. The first such meet was held on January 25<sup>th</sup>, 2014, with an interactive session on 'Pricing' by Shantanu Rastogi, IITB alumnus & Principal at General Atlantic. This event was attended by close to 30 people from various startups. Schedule of events will be announced via email, on SINE website, and on SINE Facebook page.

Facebook page of SINE: [www.facebook.com/sineiitb](http://www.facebook.com/sineiitb)

### Biotechnology Ignition Grant (B.I.G.) applications

As Dr. Dash wrote in his article, B.I.G. scheme from Biotechnology Industry Research Assistance Council (BIRAC) of Govt. of India is available to scientist entrepreneurs from research institutes, academia and start ups. "The Applicant must be either an Incubatee or have a registered company with a functional R&D laboratory to be eligible for this grant. The scheme is designed to stimulate commercialization of research discoveries by providing very early stage grants to help bridge the gap between discovery and invention." <http://www.birac.nic.in/programmes.php?prg=big>

SINE has seen one successful B.I.G. grant to NanoSniff. Two applications are currently in final round of review, and more applications coming up. This grant scheme thus presents an additional opportunity to kick-start startup activity in life sciences in IITB.



## ▶▶ Company Updates



Covacsis has graduated from incubation and is in the process of closing series B investment.

Website: [www.covacsis.com](http://www.covacsis.com)



NETRA UAV, a collaborative development between *ideaForge* & DRDO, was showcased in the 65<sup>th</sup> Republic Day parade function.

Website: [www.ideaforge.co.in](http://www.ideaforge.co.in)



InOpen Technologies has raised a strategic investment and Series A round of equity capital from Benesse Holdings, a Japanese education giant.

Website: [www.inopen.in](http://www.inopen.in)



NanoSniff has started selling its MEMS product, OmniCant. Prof. V. Ramgopal Rao, co-founder, has been awarded the Infosys Prize for Engineering and Computer Science 2013.

Website: [www.nanosniff.com](http://www.nanosniff.com)



SensiBol has launched its revamped Android App "Gaona" on the Google play-store (<http://goo.gl/mSpX7l>). Gaona was covered in Tech2 (<http://goo.gl/XVeSxY>).

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Urjas has frugally engineered a low-cost, low-maintenance, multi-fuel gasifier for decentralized electricity generation. The company's product portfolio also includes technology to convert biomass to pyro-oil and synthetic hydrocarbons.

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## ▶▶ Useful Links

Technologies available for licensing at IITB are listed at [Industrial Research & Consultancy Centre \(IRCC\) website](#). Some technologies in the list have been used to form start-ups.

DSIR's "Promoting Innovations in Individuals, Start-ups and MSMEs" (PRISM) scheme helps fund conversion of idea to prototype. [Link](#)

DBT's Small Business Innovation Research Initiative (SBIRI) supports R&D in SMEs. [Link](#)

## ▶▶ Contacts at SINE

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