



Techno-Social
Business Incubator

Starting-up in India



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Former President and Bharat Ratna, Dr. APJ Abdul Kalam

“...ideas and innovations are no longer geographically or politically confined. An invention made today somewhere takes no time to find its market thousands of miles away. The expansion of information and communication technology and the convergence of technological tools are structuring new world knowledge, where problems of one part of the world can be solved by multiple experts based at different points of the globe.

Dr. APJ Abdul Kalam address at the formal launch of
Aashray - Promotion of Social Enterprises Foundation
on June 20 2015

Aashray has been recognized as a Techno Business Incubator (TBI) by the National Science & Technology Entrepreneurship Development Board of the Department of Science and Technology (DST), Government of India. DST has also authorized Aashray to accept CSR grants

“...You know, development sometimes is viewed as a project in which you give people things and nothing much happens, which is perfectly valid, but if you just focus on that, then you'd also have to say that venture capital is pretty stupid, too. Its hit rate is pathetic. But occasionally, you get successes, ... and suddenly venture capital is vaunted as the most amazing field of all time. Our (*Bill & Melinda Gates Foundation*) hit rate in development is better than theirs, but we should strive to make it better.

Bill Gates
The-Rolling-Stone-Interview
on 13 March 2014

“This defines entrepreneur and entrepreneurship - the entrepreneur always searches for change, responds to it, and exploits it as an opportunity.”

Peter F. Drucker
Innovation and Entrepreneurship: Practice and Principles

“The old growing up/education paradigm entails mastering a body of knowledge and an associated set of rules with the assumption that one can then settle into a specific job and life role for the rest of one's life (be it a baker or broker). This model no longer works. First, the half-life of knowledge and structures is shrinking fast. Second, in the world defined by change (not repetition) and by fluid, open teams of teams (not today's institutions) that is now rapidly taking over, people won't be able to use their knowledge without the four critical human social skills (empathy, teamwork, the new leadership, changemaking).”

Bill Drayton
Founder - Ashoka Changemakers

Foreword

History has witnessed how development of technology lies at the heart of human progress. While the current global challenges encompass poverty, illiteracy, clean and green energy, equitable distribution of resources, safe drinking water, quality healthcare, employment opportunities, etc., technologies are continually shifting development targets and the means of reaching them.

Technologies in various spheres of life and at different levels, ranging from the strategic to the grassroots have the potential to generate more employment and require up-gradation of human skills at all levels because of their all-pervasive utility. In order to meet the goal of becoming a developed nation, India would need transformative technologies as well as people-centred actions that could generate productive employment and research. This would eventually lead to contextually appropriate technological developments.

Great achievers across the globe who introduced or developed technologies in pursuit of visions showed unwavering tenacity and hard work to realize their dreams. These entrepreneurs did not hesitate to take risks while their commitment to their vision persisted even when they faced numerous failures. Today there are numerous researchers dedicated to extending the frontiers of science and technology, be it in academic and research institutions, companies or business organizations; and there are Venture capitalists willing to make investments on the ideas of these entrepreneurs and researchers.

India has scores of exceptional entrepreneurs with long-term vision who have the potential to contribute significantly to sustainable and equitable development, but need financial support for the realization of their ideas. This country also has numerous individuals and institutions that are creating platform and ecosystems to channel the entrepreneurial spirit constructively and productively.

We are happy to announce that the vision of people associated with Saath Livelihoods, Incube Ventures, Entrepreneurship Development Institute of India (EDI) and Ashoka India to promote and support entrepreneurship and competitiveness has led to the setting-up of

“Aashray - Promotion of Social Enterprises Foundation (Aashray) as a techno-social business incubator. The organizations have pooled complementary competencies to create an incubation ecosystem for promotion of innovations, setting-up of social enterprises and scaling-up of innovative ventures and grassroots technologies that enables transformation of vision of entrepreneurs into successful and contextually appropriate social impact ventures.

Technology Business Incubators (TBIs) such as Aashray are expected to contribute to India's Technology Vision 2020, which is quite easily within our reach if entrepreneurs are helped in establishing totally new techno-entrepreneur based units built around the nation's natural resource base, its vast human & intellectual resource base and core competencies. They are more likely to support innovations that address the 'last mile challenges' of reaching services and products to actual users, and as highlighted under PURA (Providing Urban Amenities in Rural Areas), cover the following areas that contribute to environmental sustainability/ mitigation of environmental degradation:

1. Creation of employment opportunities for all the employable people, particularly the youth.
2. Capacity building in education, and value added employable skills and knowledge.
3. Provision of quality and timely health care, electricity, energy and safe drinking water, and water efficient pucca houses.

The focus of Aashray on social impacts of technological and social innovations, especially in the lives of people at the Bottom of the Pyramid makes it an exceptional techno-social business incubator.

This documentation of the vision that led to the setting-up of Aashray, and progress made to date highlights the focus on equitable development and spirit of entrepreneurship of those associated with the incubator. We look forward to seeing significant enterprises graduating from Aashray in the years to come.

Mani Iyer, Director Incube Ventures, August 2015

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Preface

Globally, innovation and entrepreneurship are recognised as drivers of wealth creation and sustainable competitive advantages. Innovation accelerates inclusion and sustainable growth with new products, new processes, new services, as well as through development of new business models and new markets (Szirmai, 2011; CII, 2013)¹. Entrepreneurship, which involves the recognition, creation, and utilization of opportunities to innovate, not only addresses developmental challenges and enhances access to affordable goods and services in all sectors, but also generates employment (Sharma, 2014)².

India, with a population of over 1.21 billion (Census 2011) of whom 335 million are 15 to 32 year old (NSS 66th round) and poverty ratio of 21.9% (269.3 million persons) (Gol, 2013)³, provides innumerable opportunities to entrepreneurs to develop ideas into innovations and enterprises that contribute to inclusive growth, irrespective of the sectors and geographic locations. Government of India (GoI) has introduced several policy measures and initiatives for entrepreneurship development, skills enhancement, and employment generation. GoI has also established institutions to take its policy decisions forward, and introduced reforms to enhance private sector involvement.

On 27 May 2014, GoI created a new and dedicated Ministry of Skill Development and Entrepreneurship to concentrate on skill development and to ensure that India creates new businesses in an increasingly competitive world. The emphasis on priority for supporting social enterprises and innovation in the Twelfth Five Year Plan has attracted the attention of impact investors, the government, business incubators and others concerned, and has resulted in the development of an ecosystem of support services.

By serendipity, two individuals in Ahmedabad - Mani Iyer and Rajendra Joshi, one representing the private sector and the other a social entrepreneur, discovered that they shared a passion for contributing meaningfully to economic and social development of people who are marginalized and poor. Both believe that social problems and the varied needs of people at the Bottom of the Pyramid for decent livelihoods, and

affordable services and products can be met through viable, innovative and ethical businesses, that is, through social enterprises.

This led to brainstorming sessions to identify an appropriate means for supporting ideas and entrepreneurs that have the potential of meeting the service and product needs of a large population and at the same time, generate employment. Subsequently, with the aim of responding to the sustainable and inclusive imperative and further their mission, the two decided on creating an enabling ecosystem to nurture social and technological entrepreneurs. This led to the incorporation of Aashray - Promotion of Social Enterprises Foundation (Aashray), a techno-social business incubator, together with Entrepreneurship Development Institute of India (EDI) and Ashoka India as knowledge partners.

This book documents Aashray's journey from conceptualization to incorporation, recognition as a TBI, formal launch by former-President and Bharat Ratna - Dr. APJ Abdul Kalam, and its role in pushing the agenda for setting-up of a Nano-Technology Mission in India.

The book includes papers on the themes of incubation, financing challenges that incubators and start-ups face, and description of a few interesting innovations and ideas.

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- 1 Szirmai, Adam, Wim Naudé, and Micheline Goedhuys. Entrepreneurship, innovation, and economic development. Oxford University Press, 2011.
CII, 2013. How India Innovates: The Promise of Sustainable & Inclusive Innovation. CII-ITC - Centre of Excellence for Sustainable Development. Confederation of Indian Industry, Supported by GIZ
 - 2 Sharma, L. and Madan, P., 2014. Effect of individual factors on youth entrepreneurship – a study of Uttarakhand state, India. Journal of Global Entrepreneurship Research 2014, 2:3
 - 3 Gol, 2013. Poverty Estimates for 2011-12, Planning Commission, Government of India, July 2013

Commitment to Sustainable Development & Support to Entrepreneurs

This Section presents the journey of Aashray - Promotion of Social Enterprises Foundation (Aashray) from the conceptual stage to its incorporation, formal launch and strategic actions. It also includes Dr. APJ Abdul Kalam's address at the Inauguration of Aashray on 20 June 2015.

Livelihoods & Social Enterprises: Aligning Commitment with Opportunities

Rajendra Joshi, Managing Director, Saath Livelihoods

Societies reach a tipping point when they become aspirational. One of the reasons for last year's decisive political change was that people chose aspirations over welfare. This is a significant change " it seems Indian society feels that it's basic needs are being met and are now yearning for higher needs of security, self-growth and enhanced self-esteem. People feel that these higher needs will be met with increased economic opportunities and independence. The Social Contract has to go beyond social needs to include economic aspirations.

India's youth demographic profile where 65% of its population is aged under 35 and 50% is aged under 25, has led to the aspirational tipping point. These young people will drive political, social and economic change. This change will be positive and long term when there is a quantum jump in livelihood opportunities.

Thus, the most critical challenge in India and other developing countries is that of creating opportunities for sustained livelihoods for its young populations. Therefore, THE ISSUE is "How to create livelihood opportunities". This raises the questions: a) What are the livelihood options? b) Are the livelihood options in the organized or the informal sector? c) Are they in the service, agriculture or manufacturing sectors? d) Are they in rural or urban areas? e) Are they through jobs or through entrepreneurship?

Policy makers, government, political and social organizations, and concerned citizens are trying to find answers to this huge challenge of creating a multi-fold increase in livelihoods opportunities.

At Saath and Incube, we are convinced that entrepreneurship has the potential to be the paramount enabler of livelihoods in India. We believe that the Social Contract will be strengthened if people are empowered with a means of decent livelihood. Our basic understanding is that all viable and ethical

businesses are social enterprises. We want to promote and support social entrepreneurs who can create ventures and convert the manifold needs for affordable goods and services into livelihood opportunities in a growing economy with a large aspirational young population. These ventures can be of a for-profit or a not-for-profit nature, be micro, medium or large by size, answering needs across sectors and geographies and be viable.

To further our mission, we have created an enabling ecosystem to nurture social entrepreneurs. Our understanding is that the building blocks for such an enabling ecosystem are finding and mentoring entrepreneurs, a pool of innovative and replicable ideas, funding for seed and growth stage of enterprises, partnerships with peer organizations and a physical environment that facilitates a virtuous cross-fertilization of processes, techniques and network advantage.

We define Social Enterprises as those who answer the needs of the Plinth of the Pyramid (PoP). We prefer this term as it is empowering and reflects the real status of a segment that consists of the informal and agricultural sector, which is the backbone of the Indian economy.

Social enterprises can be for-profit or not-for-profit. We are supporting both as we realize that social entrepreneurs can be driven by either altruism or profit or both. Our experience is that in the early stages, social enterprises require low cost capital for designing and testing their business models, which is mostly available through grants, and once the business model is aligned to the market, require commercial capital for growth. This would require a hybrid model of for-profit or not-for-profit.

There is a distinct category of social enterprises that we call Transitional social enterprises. These are programmes of NGOs that provide products

and services, which can be converted into revenue generating sustainable businesses. Many Non-Governmental Organisations (NGOs) want to make this transition and require specific guidance and support.

We are creating an incubation space for social enterprises with these requirements. The design of Aashray's ecosystem of incubation focuses on all aspects required to create a sustainable social enterprise. This broadly includes mentoring and seed funding. Mentoring encompasses clarifying mission and objectives, business model design, market analysis, marketing and brand building. We provide seed funding to enable the incubatee meet costs and leverage additional resources.

We are based in Gujarat, which has the advantage of having a history of nurturing social change organizations and, simultaneously fostering an inborn spirit of entrepreneurship. This environment, we feel will strengthen our mission of finding 'out of the box' solutions to India's developmental needs and convert these into social enterprises.

To achieve our mission, we are creating an ecosystem of institutions, financial instruments

and a committed team. We will incubate social ventures across health, sanitation, skilling, agriculture, eco-tourism, habitat and energy, with technology innovation and appropriate business modelling underpinning the structuring of the social venture.

We are confident that we have initiated a concept that will lead to the creation of significant livelihoods across sectors in India with considerable social and economic impact. It will go towards meeting the economic and social aspirations of young people. After proving the concept in Ahmedabad, we are going to replicate this pilot across India.

"Social entrepreneurs drive social innovation and transformation in various fields including education, health, environment and enterprise development. They pursue poverty alleviation goals with entrepreneurial zeal, business methods and the courage to innovate and overcome traditional practices. A social entrepreneur, similar to a business entrepreneur, builds strong and sustainable organizations, which are either set up as not for profits or companies."

Schwab Foundation for Social Entrepreneurship

Aashray - Promotion of Social Enterprises Foundation (Aashray)

Saath Livelihoods and Incube Ventures have set-up "Aashray - Promotion of Social Enterprises Foundation (Aashray) - a techno-social business incubator, together with Entrepreneurship Development Institute of India (EDI) and Ashoka India as knowledge partners. The aim was to provide one-stop comprehensive basket of business and technology incubation services to technological and social innovators and entrepreneurs who have socially relevant products and services innovations that will materially benefit the people at the Bottom of the Pyramid in both rural and urban areas.

The focus of Aashray is on building social capital and promoting social enterprises that enhance livelihood options and opportunities for physically, economically and/or socially vulnerable groups and individuals - specifically youth, women, people with disabilities and artisan groups. The organization envisages evolving a holistic programme that shall cater to all the minute details of developing a successful business/ technological or social enterprise.

These entities have complementary incubation related competencies, expertise, capacities and experiences for promotion of innovations, setting-up of social enterprises and scaling-up of innovative ventures and grassroots technologies. They represent the following building blocks of an enabling incubation ecosystem: i) finding and mentoring entrepreneurs; ii) pool of innovative and replicable ideas; iii) funding for seed and growth stage of enterprises; iv) partnerships with peer organizations; and v) a physical environment that facilitates a virtuous cross-fertilization of processes, techniques and network leverage.

Vision:

To create an incubation ecosystem that successfully supports transforming of ideas into successful and contextually appropriate social impact ventures through mentoring, networking, seed funding, capacity building, business development and other critical support services.

Values:

- Social responsibility
- Transparency
- Accountability
- Fiscal prudence
- Community focus

Mission:

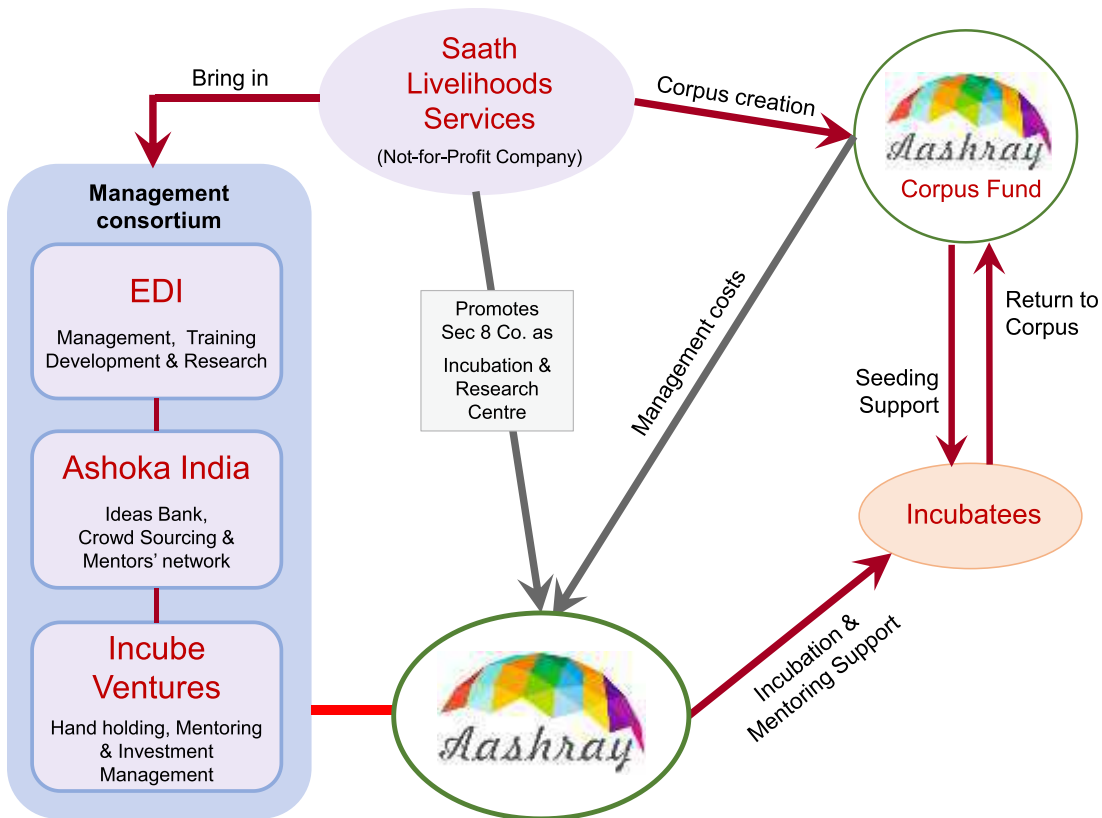
To emerge as a premier techno-social business incubator that passionately and patiently perseveres to provide incubation support to technological and social entrepreneurs.

Objectives:

- To create an enabling and inclusive ecosystem for techno-social business incubators who provide incubation support to start-ups in various sectors.
- To provide a platform for setting-up of appropriate, sustainable and scalable social and technological enterprises that have the potential for making significant social impact.

- To build a pipeline of innovative business ideas and/ or seed early stage enterprises that have evolved in not-for-profit organisations, academic institutions, and research and development (R&D) institutions.
- To promote/ support the creation of easy to use and affordable technology and knowledge based enterprises that focus on technology solutions for people at the grassroots.
- To assist innovators, entrepreneurs and researchers for the promotion and take-off of their ideas/ enterprises, and facilitate the structuring, incorporation and funding of projects in the most optimal manner until they are market ready.
- To replicate Aashray incubated enterprises to reach the socially and economically challenged regions including small and medium towns towards for creating a rapid impact.

Aashray functioning



Focus Areas

With its goal of contributing to the environment and sustainable development, and its vision of transforming ideas into successful and contextually appropriate social impact ventures, Aashray's focus on supporting social ventures and transformative technologies.

Transformative Technologies

The technologies' space provides tremendous opportunities for change. Encouraging the development and/ or rapid adoption of technologies, including hardware devices (consumer, medical etc. devices) and/ or software has the potential of yielding significant benefits to society. Aashray's focus is on supporting transformative technologies in the areas of biotechnology, nano-technology, non-destructive testing & diagnostics, and information & communication related technologies, which have the potential of providing solutions for current and future needs of multiple sectors, especially, healthcare, life sciences and related services, as well as new products, new processes, etc.

Social Ventures

Social enterprises, which directly work towards achieving social or environmental impact, are recognised as sustainable means for poverty reduction. Aashray's focus is on supporting social enterprises that reduce poverty by enhancing livelihoods and reducing vulnerabilities, and/ or by providing services or products for BoP communities. This could be through job creation for the unemployed, support for producing own products and creating markets for the same, and through job training to help the unemployed acquire employable skills.

Funding

Aashray will facilitate different types of financing for early-stage entrepreneurs, especially social entrepreneurs and small technology start-ups that involve new products, processes and business models.

Seed/ Venture Funding

Aashray will provide seed and venture funding to promote the idea until it is converted into a sustainable project. A reasonable amount of

owner's equity is expected. Aashray will facilitate later stage financing for expansion of an enterprise that is already profitable.

Piloting/ Prototyping

To facilitate testing of prototypes at the field level, Aashray has the following infrastructure:

- Laboratories/design centre
- Training facilities
- Conference/ meeting rooms
- Computing and documentation facilities and communication systems
- Office space including IT infrastructure etc.

This would enable development, testing, pilot-run and other pre-launch activities involved in perfecting the new ideas into products/ services.

Progress to date

To successfully create an incubator ecosystem and catalyse the acceleration of grassroots technologies and social ventures, the following actions have been taken:

1. Incorporation of/ Registration of Aashray - Promotion of Social Enterprises Foundation as a private company registered in 2014.
2. Establishing of Governing and Advisory Boards representing the stakeholders.
3. Establishing physical infrastructure to accommodate the incubation projects as envisaged.
4. The Aashray Endowment Fund (designed for seed funding social entrepreneurs and enterprises) floated.
5. Raised necessary resources for creation of facilities, and partnered with various institutions and agencies.
6. Aashray recognized as a Techno Business Incubator (TBI) by the National Science & Technology Entrepreneurship Development Board of Department of Science and Technology (DST), Government of India. DST has also authorized Aashray to accept CSR grants.
7. Aashray has incubatees who have largely been identified through its network, and is providing them with mentoring and other support, capital and a nurturing environment.

Aashray Launch

On 20 June 2015, Dr. APJ Abdul Kalam, Bharat Ratna and former President of India, formally launched Aashray - the techno-social business incubator by unveiling an Aashray Plaque at an inaugural function organised at EDI.

Dr. Kalam, in his address to audience in a filled to capacity auditorium, emphasized the need for empowerment and inclusion of the poor for sustainable economic growth. He highlighted environment, people, economy and ideas as the four pillars that connect the world and shared his dream of a world by 2030 where the divide between rural and urban, rich and the poor, developed and developing has narrowed down; and where there is equitable distribution of resources and adequate access to energy, quality healthcare and quality water.

Dr. Kalam also briefly interacted with some Aashray incubatees and took a few questions from the audience.



Following the launch of Aashray, a National Colloquium was held on “Strengthening the Incubation Ecosystem in India” with the objectives of identifying and exchanging experiences that have proven to be effective in creating an enabling environment for incubation of technology and social innovations; and the context in which innovations have evolved into significant and successful businesses. The tone of the discussion was set by Mani Iyer, Director Incube Ventures in his opening remarks on the role of incubators in meeting the inclusive development agenda of the government. Prof. Bala Bhaskaran, Director (Strategy) of Incube Ventures - the Moderator of the Colloquium, initiated the discussions by posing key questions to each Panellist.

Dr. HK Mittal¹ gave a technology perspective of incubation eco-system in India and on Gol plans and challenges.



Dr. Awasthi² elaborated on how social ventures can be nurtured, with emphasis on how the world has been changed by unreasonable people.

Mr. Anil Patel³ elaborated on the relevance of incubation and lacunae in the economic system that affects growth of MSME sector.



country. They stressed that the quest for economic growth for all in India would be greatly facilitated if “start up culture” were to take roots in Indian society particularly in the educational campuses. Mr. Rajendra Joshi summed up the role of an incubator and proposed a vote of thanks.



Navin Maini⁴ spoke on how the banking system can be improved upon to support start-ups and role of Micro Units Development and Refinance Agency (Mudra) Bank – a Govt's initiative for regulating and refinancing all Micro-finance Institutions (MFI) which provide loans to micro/small business entities engaged in manufacturing, trading and services activities.

Mr. Piyoosh Gupta⁵ delved upon role of SEBI vis-à-vis funding of start-ups. The Panellists, with their vast experience in the fields of SME, governance, entrepreneurship development, finance, economics, regulatory environment, etc., provided valuable perspectives on the tremendous scope for innovation and actions taken by Govt and various financial institutions for strengthening the incubation ecosystem in the

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- 1 Mr. Harkesh Kumar Mittal, Adviser and Member Secretary, National Science & Technology Entrepreneurship Development Board (NSTEDB), DST
 - 2 Dr. Dinesh Awasthi, Director, EDI
 - 3 Mr. Anil Patel, former MLA and Minister of Industry and Mining, Govt. of Gujarat and President of Ganpat University, Mehsana
 - 4 Mr. Navin Kumar Maini, former Dy. Managing Director, SIDBI and Member of Board, Mudra Bank (Director on the Boards of India SME Technology Services Ltd., SIDBI Venture Capital Ltd., SIDBI Trustee Company Ltd., and India SME Asset Reconstruction Company Ltd., and 'The Montreal Group' of Business Development Bank of Canada (BDC), Montreal, Canada), and member on the Apex Committee of SIDBI Innovation & Incubation Centre (SIIC), IIT Kanpur.
 - 5 Mr. Piyoosh Gupta, Chief General Manager in Securities and Exchange Board of India Regional Director, West Zone, Securities and Exchange Board of India

Dr. APJ Abdul Kalam address: Empowering Education with Entrepreneurship Goal

Dr. APJ Abdul Kalam address at the Inauguration of AASHRAY - Incube Foundation at the Entrepreneurship Development Institute Ahmedabad, June 20 2015 (Source: <http://www.abdulkalam.com/kalam/theme/jsp/guest/content-display.jsp>)

Friends, I am delighted to be with the students and faculty of Entrepreneurship Development Institute (EDI) here in Ahmedabad. I am glad to know that the EDI will strive to promote social enterprises and technologies targeted at problems of the needy. My greetings to Director, members of the faculty, researchers and students.

Friends, I had many discussions with students and youth from across the nation, about the development pillars of India for an economically developed nation by 2020 and highlighted how we need creative leaders to realize such a vision. I have had many fascinating discussions, ideas and action plans. Today, I am going to discuss with you on an important aspect of 21st century economic growth, which is the empowerment, and inclusion of the needy population in a sustainable manner. What could be these ideas of sustainable development for almost half of humanity? What new models of business, management and leadership would be needed? Today, we will try to address these important issues. Friends, the topic I have selected for discussion today is **"Empowering Education with Entrepreneurship Goal"**.

Global Challenges

Today, the challenges of the world are poverty, illiteracy, safe drinking water, clean and green energy, equitable distribution of resources, quality education with values for all, overcoming societal imbalances, curing diseases, quality healthcare for all and good living conditions.

Individual nations are working to find a solution to these challenges. However, we are clearly witnessing that challenges faced by nations are not only of their making or the solutions amenable only by the individual nations. There are many international dimensions for the cause and solutions. Hence working for solutions is a collective responsibility of the global community. In addition, when nations start working on the common enemies of illiteracy, poor health care etc., their tendency to focus on national, regional and global peace with better mutual trust is

enabled. The global challenges take various manifestations based on the local dynamics, which are interconnected on various factors.

Let us look at the dynamics of these manifestations.

Dynamics of Global manifestations

The world today is integrally connected through four rapid connectivities. They are **environment, people, economy and ideas**. We all know that global warming and climate change are no longer problems of individual nations; they are planetary problems. In the present time, a single product may be made out of components sourced from multiple continents and provide services to markets far off from their place of origin. We also saw, how the economic turbulence originating in one part of the globe shook the whole world. The world today is concerned about the growing inflationary pressures, recessions, and potential fall in growth rates, affecting valuable efforts on development.

At the same time, advances in transportation have progressively made movement of people across nations and regions more feasible. This has led to the globalization of expertise and talents that can flow seamlessly from one nation to another. This also has led to the globalization of human diseases, the most recent instance being of different kinds of flu, which rapidly spread across the globe and threatened the entire human kind.

Similarly, ideas and innovations are no longer geographically or politically confined. An invention made today somewhere takes no time to find its market thousands of miles away. The expansion of information and communication technology and the convergence of technological tools are structuring new world knowledge, where problems of one part of the world can be solved by multiple experts based at different points of the globe. Seamless flow of information and people also means that local or regional issues will invariably gain global prominence and unaddressed problems including poverty can mutate rapidly into global terrorism which we are

already witnessing. This flow of ideas has also led to increasing importance of global human rights and propagation of the idea of democracy.

It is the responsibility of our generation of leaders and youth, to choose the path, which brings us together, and not the one, which pulls us apart.

Let me recall an experience.

Globalization: When I was travelling in an aircraft in USA, I was told that much of its controls where software driven and most probably developed in India. When I presented my credit card, I was told that it was being processed in the backend server located in Mauritius. When I walked into a multinational software company in Bangalore, I was fascinated to find that it truly presented a multicultural environment. A software developer from China, working under a project leader from Korea, working with a software engineer from India and a hardware architect from the US and the communication expert from Germany, were all working together to solve the banking problem in Australia.

When I see all of them working together like one family forgetting about the culture from which they came or the language they speak, I feel that the only hope for such borderless interaction to continue is to inculcate the spirit of "borderlessness" in every human activity on our planet Earth.

Based on detailed discussions in many educational institutions across the world and with many citizens in India and abroad from multiple organizations, and disciplines, I am happy to present to you the distinctive profile for the Nations of the World in 2030, as follows:

Let me present to you these visualizations.

Distinctive profile for the Nations of the World in 2030

1. A world of nations where the divide between rural and urban, rich and the poor, developed and developing has narrowed down.
2. A world of nations where there is an equitable distribution and adequate access to energy and quality water.
3. A world where core competencies of each nation are identified. Missions synergizing the core competencies of different nations lead to economic advantage and faster development for all the societies.

4. A world of nations where all the students of all societies are imparted education with value system.
5. A world of nations where affordable quality health care is available to all.
6. A world of nations where the governance is responsive, transparent and corruption free.
7. A world of nations where crimes against women and children are absent and none in the society feels alienated.
8. A world in which every nation is able to give a clean green environment to all its citizens.
9. A world that is prosperous, healthy, secure, devoid of terrorism, peaceful and happy and continues with a sustainable growth path.
10. A world of nations with creative leadership who ensure effective mechanisms to resolve conflicts between nations and societies in a timely manner keeping overall peace and prosperity of the world as a goal.

Two possible solutions

There are two possible solutions for achieving this vision. The first solution seems to be the conventional approach, which has been followed so far across the world. It starts with working for national prosperity and peace within the local boundaries and perspectives, hoping that over a long run it would percolate into regional prosperity and peace, ultimately may lead to prosperity and peace at the global level. The collective experience across the world highlights that this solution has not yielded the desired results in the past, and with a globalizing world, its efficacy in bringing global prosperity and peace in the future is uncertain.

The second solution would be, looking from the global prosperity and peace as the overall objective of the world, thereby percolating to achieve regional prosperity and peace which will ultimately ensure the national prosperity and peace of the participating nations. It is all about making a study with reference to global context and finding, how every nation can align towards the global missions. It has also to be remembered that national missions inspire the citizens; this spirit has to be directed towards globally important missions.

How can such global collaborative models be realized? More so, how can a successful enterprise and business be drawn from such cooperative, rather than competitive platforms?

Let me give you an example of such a venture between India and Russia.

Core competencies through convergence

Now let me explain how India has used "hard cooperation" with other nations based on its core competence to evolve a world-class product and systems using innovation, creativity, knowledge generation, knowledge sharing, and knowledge dissemination among the scientists of two countries.

One of the significant technological breakthroughs in India in this decade is the design, development and productionization of Supersonic Cruise Missile - BRAHMOS by an Indo-Russian joint venture. On behalf of the two Governments, Defence Research and Development Organisation (DRDO) from India and NPO Mashinostroyeniya (NPOM), a Federal State Unitary Enterprise from the Russian Federation became the two shareholders of the JV with a unique ratio of 50.5% and 49.5% in 1998.

The message I would like to convey out of this programme is: It is possible for India, with core competencies in multiple fields, to work with many countries in joint venture mode bringing together multiple core competencies of partnering nations leading to successful enterprises. BrahMos is an example of technological cooperation leading to economic benefits for the partnering nation and adds value to number of institutions in both the countries. I think such a project is especially significant study for an institution such as EDI, which can delve deep in the genesis of BrahMos and discover how a multi-national enterprise of global scale and global quality can be realized in a short span of time with the convergence of core competencies of different nations.

Adding value to education through Entrepreneurship

There has been a growth in our educational system and we are generating over 3 million graduates every year and over seven million plus two level candidates who are aspiring for employment. However, our employment generation system is not in a position to absorb all these youth leading to increase in educated unemployed, year after year. This situation will lead to instability in the social structure. We need

education that will lead to specific employment opportunities. A multi-pronged strategy is needed to make education more attractive and simultaneously create employment potential. How do we do that?

Firstly, the educational system should inculcate by adding syllabus of entrepreneurship and prepare the students right from the school and college education to get oriented towards setting up of the enterprises which will provide them creativity, freedom and ability to generate wealth. Apart from entrepreneurship, the youth should have the spirit that "we can do it".

Secondly, the banking system should provide venture capital right from every village level to the prospective entrepreneurs for undertaking new enterprises. Banks have to be proactive to support the innovative products for enabling wealth generation by young entrepreneurs.

Thirdly, there is a need to identify marketable products and enhancement of purchasing power among the people. This can come through the implementation of mega programmes such as PURA, Interlinking of Rivers, Infrastructural missions, Power missions and Tourism. The universities and schools should become a facilitator for creating this entrepreneurship scheme through the support of the banking system and the marketing system. This will enhance value to the education and create the motivation for the students.

Employment generators

Let me share with you how to generate employment. The most important sectors for sustainable national development are Agriculture, Education, Healthcare, Water and Energy. The common thread that will run across these would be the three connectivities of PURA namely physical connectivity, electronic connectivity and knowledge connectivity. These three connectivities will lead to economic connectivity. One of the ways by which the rural agriculturists could increase their earnings is by value adding to the agricultural produce by processing and manufacturing. The farmers, either individually or through their cooperatives would market processed and value added items instead of marketing the raw materials. This increase in the value-addition taking place in the rural area itself is an indicator of the society moving towards prosperity and knowledge era.

One such sustainable development system is the mission of Provision of Urban Amenities in Rural Areas (PURA) through creation of three connectivities namely physical, electronic, knowledge leading to economic connectivity.

The number of PURA for the whole of India is estimated to be 7000 covering 600,000 villages where 800 million people live. Similarly, about 30,000 PURA Complexes would be required to convert the 3 billion rural population of the world into a vibrant economic zone and bringing Sustainable Development to rural areas. There are operational PURAs in India initiated by many educational, healthcare institutions, industry and other institutions. Government of India is already moving ahead with the implementation of PURA on the national scale across several districts of India. Now all these examples of rural development through PURA along with international experience have taken the form of a book, titled Target 3 Billion.

Employment generation through entrepreneurship

Friends, since I am in the midst of students and professors who are studying and teaching entrepreneurship, let me share some thoughts about education and entrepreneurship. A three pronged strategy is needed to make education more attractive, make it skill imparting and simultaneously create employment potential - How do we do that?

Firstly, the educational system should highlight the importance of entrepreneurship and prepare the students to get oriented towards setting up of enterprises which will provide them creativity, freedom and ability to generate wealth. Diversity of skills and perseverance in work makes an entrepreneur. It should be taught to all the students. In addition, college syllabi even for arts, science, and commerce courses should include topics and practical where such entrepreneurship is possible.

Secondly, the banking system should provide venture capital right from every village level to the prospective entrepreneurs for undertaking new enterprises. When I studied the performance of major bank's venture fund, I found a few entrepreneurs have increased their profitability many times in less than seven years generating thousands of direct jobs and tens of thousands of indirect jobs. We need a large number of such

venture capital institutions who can take risk and promote entrepreneurs. EDI can bring out the success stories in the form documents highlighting venture capital funding and employment generation opportunities.

Thirdly, entrepreneurs have to produce competitive products to become successful in their missions. The experts here may like to study the role of education in improving the competitiveness index rating of the country to within top ten ranks from the present below 50 situations.

Conclusion: Economic Development and Creative Leadership

In conclusion, I would like to discuss with you the linkage between national economic development and creative leadership:

- A nation's economic development is powered by competitiveness.
- Competitiveness is powered by knowledge power.
- Knowledge power is powered by technology and innovation.
- Technology and innovation is powered by resource investment.
- Resource investment is powered by revenue and return on investment.
- Revenue is powered by volume and repeat sales through customer loyalty.
- Customer loyalty is powered by quality and value of products.
- Quality and value of products is powered by employee productivity and innovation.
- Employee productivity is powered by employee loyalty, employee satisfaction and working environment.
- Working environment is powered by management stewardship and sound management.

For success in all your missions, you have to become creative leaders. Creative leadership means exercising the vision to change the traditional role from the commander to the coach, manager to mentor, from director to delegator and from one who demands respect to one who facilitates self-respect. For a prosperous and developed India, the important thrust will be on the generation of a number of creative leaders from our educational institutions. Apart from this, what is needed is the spirit among the youth that "I can do it, we can do it and the nation can do it."

Our educational institutions have to concentrate on developing the leadership traits and the confidence to perform among every youth of the nation. This quality of leadership will certainly empower the 3 billion people of the world with sustainable development as its focus.

My greetings and best wishes to all of you.

May God Bless you.

Dr. APJ Abdul Kalam

www.abdulkalam.com



Innovations: Contributing to Sustainable Development

Creating Technology Incubation Ecosystem in India

Mani Iyer, Director Aashray & Dr. Raashid Saiyed, CEO Aashray

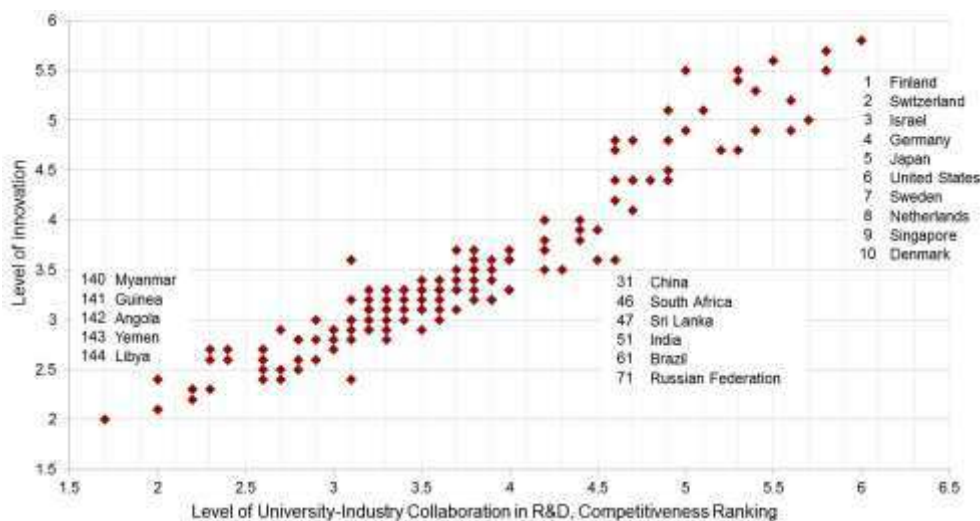
The ecosystem for technology incubation could be visualized to comprise of private individual, financial institutions, high quality education institutes, corporate sector and the Government policy framework that is implemented.

Education sector that can provide high-quality human capital, scientific strength and technological skills is a key ingredient of the ecosystem. Unfortunately, where as in public institutions quality assurance systems do not seem to deliver quality the private sector institutions have focus on revenue generation and surplus creation. Society too seems to be just seeking degree certificates, which have become a social currency and not knowledge, skills and attitudes leading to competencies. If education institutions were oriented towards building competencies and not acting as certification agencies perhaps high quality human capital might with adequate scientific strength and skills could be made available. The figure clearly shows the intensity of R&D collaboration between Universities and Industries, and level of innovation

Level of innovation¹

University Business Incubators can play a crucial role in creating technology ecosystem. A case in point is Sid Martin Biotechnology Incubator in USA. Sid Martin Biotechnology Incubator is a good example of technological education synergy between the United States Department of Agriculture, the University of Florida and the State of Florida. It began its operations in 1987. One of its successful spinout named RTI Biologics was listed on NASDAQ. NBIA named Sid Martin Biotechnology Incubator as the top Incubator of the World for 2013, following another success of the World's Best University Biotechnology Incubator awarded from Sweden-based research group UBI. The graduated companies have attracted nearly USD 1 billion in funding².

- 1 Data accessed from: <http://reports.weforum.org/global-competitiveness-report-2014-2015/rankings/>
- 2 [http://www.wiete.com.au/journals/WTE&TE/Pages/Vol.11,%20No.3%20\(2013\)/26Davaris-A.pdf](http://www.wiete.com.au/journals/WTE&TE/Pages/Vol.11,%20No.3%20(2013)/26Davaris-A.pdf)



Source: University-Industry Collaboration in R&D, Competitiveness Rankings
Global Competitiveness Report 2014-2015, World Economic Forum

A study found that economic impact from incubators created by Nyu-Poly with New York City and state was \$251 million. In addition, the economic output is expected to nearly triple by 2015, with 900 new jobs growing to 2,500¹.

Preliminary research has shown that technology and business incubation centres, in cooperation with institutes of higher education and research centres, are a driving force in support of academic spin-offs. Technology and business incubation centres were found in the vicinities of 59 universities in Germany, i.e. 76 per cent of this sector's institutions².

A policy framework that is monitored for execution would be a good enabler for an enterprising private individual wanting to incubate technology businesses. For example, encouraging private sector investments in TBIs and ensuring resources to them through requisite policy mandates. Currently, to obtain bank finance for private incubator is an uphill task. Could we have a National Bank for Technology Business Incubation? R&D expenditures as percentage of GDP³.

Here it would be interesting to note that in Israel, the state takes on most of the risk and funds 85% of the investment in start-ups requiring heavy spending on research and development. The rest of the financing comes from private groups that win the concession to operate and manage the incubators. The government provides entrepreneurs with around \$46 million annually. The technology incubator project is a government program 23 years old. By the end of 2013, the program helped launch more than 1,800 companies with \$730 million of government money⁴.

Each incubator receives annually \$190,000 from the state to cover costs of premises and administration⁵. Start-ups that are accepted and go through an incubator are offered up to \$500,000 in seed funding⁶.

With high learning curve and resources, corporate sector is another valuable ingredient in the incubation ecosystem. Whereas they may stick to their core competences of doing the business a good policy framework could encourage them to invest in TBIs and offer mentorship of their directors and key employees.

Currently such opportunities are available only to students of so-called premier institutions. In addition, the venture capital industry has a big role to play in the ecosystem. For example in Israel, venture capital funds investing in Israel have raised almost \$13 billion. In terms of capital flow, they have mobilized over \$40 billion in transactions related to the Israeli high-tech sector, including additional direct co-investments, public offerings, mergers and acquisitions. About half of the venture capital funds that directly invest in Israeli start-ups are international investors, while much of the funds raised by Israel's VC firms also come from abroad^{7,8}.

R&D Expenditures as % of GDP (2011-12)		
Rank	Country	%
1	South Korea	4.4%
2	Israel	3.9%
3	Japan	3.7%
4	Sweden	3.3%
5	Finland	3.1%
6	United States	2.7%
7	Austria	2.5%
8	Denmark	2.4%
9	Germany	2.3%
10	Taiwan	2.3%
14	China	1.97%

Israeli VC Proven Track Record 1997-2013

- Global recognition as a leading innovative technology centre
- 2nd only to Silicon Valley
- Human capital emerged as Israel's principal resource
- Growth engine of the economy
- \$26 billion invested in start-ups
- \$15 billion raised by Israeli VC funds
- More than 6,500 start-ups established
- M&A: \$50 billion, IPO: \$4 billion raised
- NASDAQ: 100 Israeli high-tech companies are listed

Source: IVC Research Centre

However, by far the most crucial ingredient of the ecosystem is the individual. Research points to an occurrence that individuals who have had military background and were exposed to decision-making under conditions of personal risk tend to excel in entrepreneurial conditions. This perhaps, is a pointer towards short-listing individuals who could be backed.

- 1 <http://engineering.nyu.edu/press-release/2013/07/25/study-finds-251-million-economic-impact-incubators-created-nyu-poly-new-yor> 18.6.2015
- 2 <http://www.oecd.org/science/inno/2101121.pdf> 18.6.2015
- 3 http://www.vinnova.se/upload/dokument/VINNOVA_gemensam/Kalender/2010/Trajtenberg_141202.pdf
- 4 <http://www.haaretz.com/business/1.598537> 17.6.2015)

- 5 <http://www.nordfors.com/incubators/statteng.htm>
- 6 <http://www.euopreneurs.org/blogs/why-israel-issuch-an-exciting-ecosystem-for-startups/>
- 7 http://www.international.ac.uk/media/6776/israel_the_new_silicon_valley.pdf
- 8 <http://itrade.gov.il/china-en/files/2013/11/IVC-Trends-Opportunity-November2013.pdf> 17.6.2015).

An Overview on Technology Nurturing & Incubation: A Life Science Perspective

Mohan Sridhar, Nandini Arunkumar, Shreyas Burji, and Taslimarif Saiyed

Technology in Life Sciences

Traditionally, technology in life sciences is defined as the application of scientific principles and knowledge to solve a problem or perform a specific function. Of the potential new technologies available at any one time, only a few are developed and become widely implemented. In this way, technology is shaped by society, by consumer choice. Yet it could also be argued that technology shapes society – the automobile technology, a simple example, has shaped our way of life as well as the environment around us.

Bio-innovation

Innovation is the translation of novel ideas and skills to produce new technologies, products, processes and services that improve economic and social prosperity. In biotechnology, the innovation process begins with a scientific discovery in the laboratory followed up by development of this promising discovery into a technology or product that has commercial value to the market as a finished product (Hansen and Birkinshaw 2007):

Step 1: Research-driven organizations such as those in academia are mandated to expand the limits of scientific knowledge and are in the best position to make new scientific discoveries – either by accident or by systematic study of existing problems

Step 2: These discoveries enter into validation process through proof of concept studies and after intellectual property protection has been

sought, almost exclusively become the domain of big players in the industry like pharma or biotech companies to further develop and commercialize.

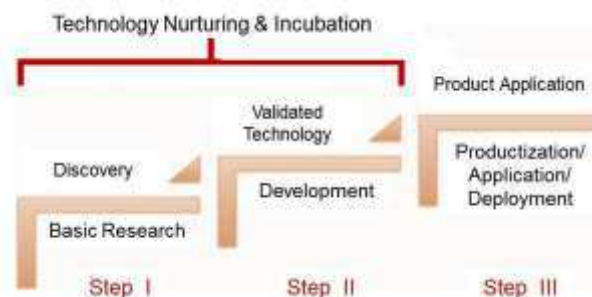


Fig. 1 The figure depicts a typical life-science innovation pathway. *Step 1* represents basic research, which provides discovery. *Step 2* represents development work giving rise to validated technology, and *Step 3* shows application work, which generates product or service from the particular discovery. The overlap between *Step 1* and *Step 2* suggests a vital step where the discovery needs to be carefully developed into a validated technology. This overlap or phase of the lifecycle is often referred to as the technology nurturing and incubation phase

Step 3: Productization or application of validated technology requires not only technical capabilities but also substantial investment, regulatory approvals, market strategy, etc. In terms of drug discovery, it takes at least 15 years¹ to develop drug candidates, for instance, and to even establish a platform technology requires a significant input of time, not to mention the capital intensive nature of both these activities. Hence, big biotech and pharma organizations have this scientific and financial muscle to work through the layers of regulatory needs, clinical trials and marketing that is necessary to take a product into the market.

Why Is It Important to Nurture Technology?

In order to progress from Step 1 to Step 2 of this depicted life science innovation pathway, researchers require knowledge of business strategy and a thorough knowledge of where their discovery can be applied in society. Many researchers who go on to become entrepreneurs, although they have an exciting discovery, do not have very sound understanding of possible applications of their discovery, competitive landscape, IP issues, regulatory requirements, investment and funding access, market awareness, much needed laboratory infrastructure for development or business expertise to be able to realize the potential of their discovery.

Ways to Nurture Innovation

Scientific entrepreneurs have a wealth of scientific knowledge and deep understanding of biological systems that they work on. Whilst this makes them invaluable assets to a start-up, they need support and assistance in translating their scientific research into economic activity. This support comes in different forms and from different sources:

1. Governmental support: grants, funding schemes and policy. For example, in India, the Department of Biotechnology through the Small Business Innovation Research Initiative (SBIRI) grants, Biotechnology Industry Research Assistance Programme (BIRAP) and Biotechnology Industry Partnership Programme (BIPP) aims to foster innovation in research and development in biotechnology in India.
2. In the USA, there are a number of funding schemes from federal and state governments. The most recognized are the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) schemes. In Europe, there are various schemes such as the Grant for Research and Development scheme introduced recently in 2011 and the Wakefield Grant for Incubation. Also recently, the UK government has opened up funds of 180 m euros to support new biotech and healthcare companies through an initiative called the Biomedical Catalyst².
3. Academic/ institutional support: scientific talent and infrastructure. Academic and research institutes have an enviable scientific talent

working on diverse scientific problems. They also have access to the wide range of equipment and technology that is needed for scientific research and discovery. A new start-up can collaborate with investigators in academia to tap both the scientific expertise and infrastructure that are available to them. This support is common across major research clusters around the world such as Oxford and Cambridge (UK) and Boston and MIT (USA).

4. Business/ technology incubators: Business/ technology incubators attempt and are structured to provide a comprehensive nurturing and supportive environment to young start-ups. This nurturing environment provides all the support needed for the start-up including scientific, business and legal support to help guide researchers-turned-entrepreneurs and where embryonic ideas can become the basis for tomorrow's great technologies or products.

Business/ Technology Incubation

Business/ technology incubators are designed to support the successful development of entrepreneurial companies through an array of business as well as technical support resources and services, developed and orchestrated by incubator management.

These incubators promote a culture where science/technology and business can mix to promote innovation (Wanklin 2002).

How Incubators Help to Nurture Technology

Firstly, running a successful incubator involves identifying exciting discoveries led by entrepreneurial researchers. The shortlisted candidates for tenancy are then screened based on set selection criteria. Those selected entrepreneurs or small companies are provided with a number of services and given access to space and infrastructure to develop on their discoveries. Some of the value-added services provided by incubators include business mentoring, networking activities for tenant companies, marketing assistance, help with accounting/financial management, links to strategic partners, access to angel investors or venture capital, comprehensive business training programmes, technology commercialization assistance, help with regulatory compliance and

intellectual property management assistance (Knopp and National Business Incubation Association (NBIA 2007).

Rather than individual start-up companies seeking out service providers on their own, incubators provide a centralized location where all tenant companies can not only share their entrepreneurial experience with one another but also get expert assistance from a variety of service providers in one place (Fig. 2).

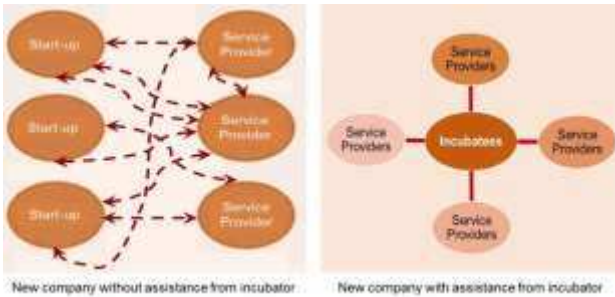


Fig. 2: Comparison between interaction of service providers and companies with and without incubation. The figure describes how incubation could help a start-up with streamlining interactions with service providers instead of complex network interactions. Also, the same is true in terms of start-up interaction with funding, regulatory, legal and technical players, which is substantially streamlined through an incubation process



Fig. 3: Incubator intervention in the life of a new company. This describes how a good incubation programme or centre could help start-ups, e.g. starting from business plans, market understanding and funding. The same is discussed in detail later (Source: Knopp and National Business Incubation Association –NBIA, 2007)

Impact of Incubators

Studying the impact of incubators will allow us to understand what incubation programmes have been able to achieve independent of the sector:

a) Impact on company performance: Successful completion of an incubation programme has been found to increase the likelihood that a start-up company will stay in business for the

long term: Older studies found 87% of incubator graduates stayed in business in contrast to 44% of all firms (Molnar et.al, 1997). Some authors have argued that incubated firms have low failure rates compared to firms outside an incubator environment (Rothaermel & Thursby 2005) (Fig. 3).

b) Impact on environment and economy: Incubators also have an impact on the surrounding environment in which they are located. They infuse an entrepreneurial climate in the area, create local jobs, diversify local economies, and build and accelerate local industry growth. In 2005, North American incubators alone helped more than 27,000 start-up companies and provided full-time employment for more than 100,000 workers generating annual revenues of more than \$17 billion. Data from the National Business Incubator Association also suggests that an incubator programme positively effects the growth of a tenant company within an incubator and return on investment for every \$1 public investment in the incubator generates \$30 in local tax revenue (Knopp and National Business Incubation Association 2007).

Growth of Incubators

The impact of incubators in fostering innovation has been significant and thus has given rise to an increase in the number of business incubators worldwide from less than 50 in 1980 to over 4,000 in 2005 (Barrow 2001) (Fig. 4).

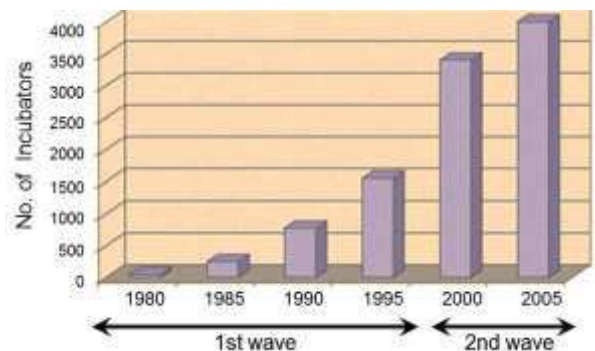


Fig. 4 Increase in number of incubators in the world from 1980 to 2005. The figure shows how from 1980 to 2005, there has been an increase in numbers of incubators. Below we discuss simultaneous growth of start-ups and innovation together (Source: Barrow 2001)

In 2006, the number of incubators in the USA alone was 1,100, almost double the number present in 1998 (Knopp and National Business Incubation Association 2007). Europe has about 1,000 incubators including 300 incubators in Germany. Among the developing countries, China leads with about 100 incubators. Among the industrializing countries, Republic of Korea is reported to have about 300 incubators (Santosh Kumar and Vinay 2010–2011).

Bio-incubation: Different from other incubation

Let us turn the focus towards incubation process and incubators in life sciences/ biological sciences. Bioscience technology nurturing requirements although similar to other technologies needs specialized support to transform bioscience discoveries into products or technologies on the market. Typically, the transformation process involves longer timelines for development and then commercialization, huge initial and continuous capital investments in infrastructure and expertise across various scientific disciplines and backing from industry, preferably large pharma or VCs – once product is proven.

Bio-incubators provide tailored services to life science with particular emphasis on knowledge-driven inventions that involve the development of novel technologies and technology-based firms (Dutton 2009). Apart from the focus of bio-incubators on helping develop technology and knowledge-intensive firms, they also provide more specific support services towards IP protection, technology transfer and regulatory affairs assistance. Having world-class researchers nearby also fosters an intellectual climate in which ideas are exchanged easily and partnerships are developed. Consequently, both business and academia are strengthened. Being located in a cluster also provides access to top minds across multidisciplinary fields who may provide their expertise to aid in the development of a discovery into an innovation (Dutton 2009).

Many bio-incubators are usually strategically located within research clusters. For instance, many reputed institutions such as Boston University (Boston University Incubator) in the USA, Imperial College in London (Imperial Innovations) and Cambridge University (Springboard) in the UK have incubation programmes to nurture entrepreneurial activity

and development of new start-up companies. The accessibility of the budding start-ups to expertise in life science research and interactions with this academic sphere adds significant value to the incubation process.

Need for Incubation in India

In most countries, incubation activity is supported significantly by institutional mechanisms such as providing incubation space in a subsidized fashion to inventors to pursue the path to innovation. In India, there are initiatives and programmes of the Department of Science and Technology (DST) such as Science and Technology Entrepreneurship Parks (STEPs)³ with an objective of opening doors of self-employment for young science and technology graduates. With the maturity of STEPs in changing economic scenario, the DST established Technology Business Incubators (TBIs) in the year 2000. As of today, there are around 100 TBIs introduced by several ministries including DST (Santosh Kumar and Vinay 2010–2011).

Some of the well-known incubators in India include Society for Innovation and Entrepreneurship (SINE) at IIT-Mumbai, Technopark Technology Business Incubator (T-TBI) in Trivandrum and Centre for Innovation, Incubation and Entrepreneurship (CIIE) at IIM Ahmedabad.

SINE at IIT-Mumbai has produced companies such as ThinkLABS Techno-solutions, an educational robotics venture, and Myzus Technologies and Elnifinitus. These start-ups have been successful in raising venture capital investment after incubation of up to Rs. 3 crore from the market. In Trivandrum, T-TBI has until date successfully incubated about 60 companies and has had a 92% success rate. In early 2011, T-TBI was chosen as the world's best software-incubating company and the first Indian organization to have achieved this status (Trak-India Business Blog, 2012). CIIE at IIM-Ahmedabad has incubated more than 50 companies in the areas of Internet and mobile technology, clean technology, social sector start-ups and healthcare since it started in 2007 (Trak-India Business Blog, 2012).

Whilst this suggests some good incubation programmes/centres, there has been a real need for high-quality incubation programmes/centres in

life sciences. Some incubators like IKP Knowledge Park, Hyderabad; NCL Ventures, Pune; Society for Innovation and Development, IISc, Bangalore; and a few others have given a much needed initial push, but the bioscience community needs many more like these. The Dept. of Biotechnology (DBT), Govt. of India, upon realizing this need, has recently announced a large scheme to establish and support high-quality bioscience incubators in the country⁴. With such and many more upcoming incubation centres, which have both technical and business capabilities, there is a hope that young ideas and discoveries will be nurtured towards their goal of reaching market as a product or application.

Conclusions

It is known that industry needs academic strength in discovery science as a base to make a substantial social and economic impact. At the same time, academic discoveries require further nurturing to be translated into innovation. This is particularly missing in the life science sectors of developing nations such as India, for instance, where a large number of intellectual contributions from scientists have not been translated into products/technologies on the market. By setting up bio-innovation “hubs” with incubators that are closely associated with research clusters, the process of discovery to innovation can be accelerated. The scenario in India as highlighted above shows that the future is bright for innovative technology development in India; however, it is important that India, among other developing nations, learns best practices of incubation from the Western countries such as the USA and Europe where there have been innumerable success stories⁵.

Through mentoring incubatees in an incubator environment by providing both scientific and entrepreneurship/business expertise, providing state-of-the-art working laboratories, cutting-edge technology platforms and strategically “nucleating” incubators in existing bio-clusters, an ecosystem that nurtures and supports discoveries can be created and can put budding entrepreneurs with exciting discoveries on the path towards commercialization or productization.

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Industry Mission on Nano Technology for India

Aashray

Government of India launched a National Mission on Nano Science and Technology (Nano Mission) in May 2007.

On August, 6th and 7th, 2015, Centre of Excellence in Nano Technology (CoE-NT), CII Ahmedabad, organized a two day Global Green Nanotechnology Conclave (GiGaNTiC, 2015), at Hotel Pride, Ahmedabad. On the Day 2, during the panel discussion on “Nanotechnology for providing market leadership and achieving sustainable market growth: Opportunities, challenges, policies and the way forward”, Session Moderator Shri. Mani Iyer, Director, Aashray - urged Professor YS Rajan, Distinguished Scientist ISRO Bangalore, to consider articulating a vision for a probable Industry Mission on Nano Technology for India. He also urged the distinguished panel members comprising Professor Ashok Raichur, Indian Institute of Science, Bangalore, Dr. KS Rao, Director, Syngene International Limited, Dr. Arvind Patel, Managing Director, Sahajanand Laser Technologies Limited and Dr. Sanjay Bhardwaj, Scientist & Team Leader, Centre for Knowledge Management of Nanoscience and Technology to translate that vision into actionable mission for industry to take up so as to bring out a comprehensive document within next 45 days. Mr. Iyer took the responsibility of coordinating the preparation of the document with the panellists and other distinguished professionals, and of co publishing it along with CoE-NT, CII, Ahmedabad.

““When a nanotech company matures and becomes a real business, it becomes something else. It becomes a biotech company or a cleantech company or a memory chip company. Nanotechnology has fueled the core innovations in electronics and energy.”

Steve Jurvetson

Whereas purpose of Nano Mission of Govt is “to foster, promote and develop all aspects of nanoscience and nanotechnology which have the potential to benefit the country” with primary objectives of:

- Basic Research Promotion
- Infrastructure Development for Nano Science & Technology Research
- Public Private Partnerships and Nano Applications and Technology Development Centres
- Human Resource Development
- International Collaborations;

The purpose of Industry Mission on Nano Technology for India is to spell out the vision and a road map for nanotechnology industry’s contribution to making India a developed country - the cherished dream of the late 11th President of India, Bharat Ratna Dr. APJ Abdul Kalam. We are specifically looking at actionable points that could be accomplished in the next 15 years.

“If we can reduce the cost and improve the quality of medical technology through advances in nanotechnology, we can more widely address the medical conditions that are prevalent and reduce the level of human suffering.

Ralph Merkle

“In thinking about nanotechnology today, what’s most important is understanding where it leads, what nanotechnology will look like after we reach the assembler breakthrough.”

K. Eric Drexler

Incubating start-ups

India & Corporate Incubation: A Practitioner's perspectives & recommendations

Indian Institute of Corporate Affairs (IICA)

This White paper, published originally by IICA in May 2015, is based on a study of for-profit Incubation models of a mix of corporate incubators, public institutions, global accelerators & angel network affiliated incubators by Centre for Business Innovation, IICA.

India's start up ecosystem has been making waves recently with nearly USD 1.7 Billion funding raised in the first quarter of CY 2015, a jump of 300% from the same period last year. In terms of the number of investments, the figures are even more remarkable. Nearly 150 investments have been made in the first three months of CY 2015 in comparison to 300 investments in the whole of CY 2014. This trend is seen to be spread across industries including IT, automotive, pharmaceutical, biotechnology, FMCG etc. The increased activity in the start-up space has catalysed a parallel industry of business incubators and accelerators in India. Business incubators support very early stage start-ups for a period ranging from six months to two years whereas accelerators provide short intensive time based support for early revenue start-ups. Both, in essence, aim to increase the survival rate of start-ups and subsequent commercial success.

Business incubation is a nascent topic in India but is quickly gaining attention due to the explosive growth of start-ups in the last decade. In particular, incubation is seen to be of relevance to large corporations, both Indian and global, as a channel of interaction with start-ups and being at the forefront of innovation. Corporates, across industries, are practicing incubation as a new found medium for innovation and as a way to create and sustain competitive advantage. As a concept, however, for-profit incubation in the Indian landscape remains largely unexplored and limited literature is available for guidance. In this regard, the research paper presented on the current incubation landscape in India is both timely and topical.

A detailed review of global literature yields a striking insight. Incubation is a complex topic as no single standard model of incubation exists that is directly applicable to Indian incubators.

At this juncture, there is a need for an Indian framework for corporate incubation that would be of practical consequence for the multitude of stakeholders: incubators, start-ups, corporates, academia, government etc. involved in the incubation ecosystem. To this end, Roland Berger Strategy Consultants performed a rigorous analysis of the Indian incubation landscape through primary interviews, secondary research and an analysis of global models. Detailed primary interviews with business leaders and managers of over 30 organizations from across the spectrum of Industry, Academia as well as Incubators, were held to ensure that this exercise was wide-based. We ensured a healthy mix of corporate India, in terms of industry, company size, company origin, type of organization, and location to gain a holistic understanding of the current Indian incubation landscape. Key insights generated from a comprehensive review of academic as well as business literature were used to build the hypothesis and draft the analytical framework for incubation.

Our analysis based on a combination of theoretical assessment of global incubation models and Indian real-life case examples has resulted in a first-of-its-kind study on for-profit incubation in India, focused on corporate and standalone incubation. This study provides a six-pronged analytical framework to comprehend corporate incubators and identifies four distinct models: leveraging, fast-profit, insourcing and market as relevant in the Indian context. Similarly, an analysis of Indian standalone incubators along a four dimensional framework is constructed and subsequently four new models are proposed: facility centric, facility plus, virtual and accelerator, according to the services offerings and duration of incubation. Key recommendations for both standalone and corporate incubators

along the lines of the analytical framework are proposed and an incubation matrix is outlined with practical implications for the stakeholders in the start-ups ecosystem.

Review of Global incubation models

The paucity of formal research on incubation in India propels us to study and understand global incubation models to gain a deeper insight into the start-ups ecosystem. A detailed review of academic and business journals leads us to one key conclusion - there is no standard model of incubation followed globally. Incubation models are impacted by a host of factors including, industry, organization DNA, motive for incubation, and nature and extent of resources mobilized. However, some common themes emerge. Incubators can be categorized into corporate and standalone incubators. Corporate incubators usually follow one of the four models of leveraging, fast profit, insourcing and market. Standalone incubators, on the other hand can range from pure facilities provider to majority stakeholder and active manager, that is, facility-centric, advisory-centric, investment-centric, and management-centric.

Indian Incubation landscape

Incubation is still a nascent development in India and formal corporate incubation has only developed in the past decade. However, the increase in the number of tech and e-commerce start-ups in the past 5-6 years and the success of global superstar incubators/ accelerators such as Y Combinator & Rocket Internet, has catalysed the growth of business incubators and accelerators in India. Currently, the incubation landscape in India can be broadly categorized into two models based on motive for incubation: profit and non-profit. Non-profit incubators nurture a social purpose such as community development and can be further sub - classified into government and non-government entities. In both cases, funding is usually by government grants or subsidies. On the for-profit side, two major categories emerge: corporate incubators and standalone incubators.

Corporation incubation models in India

Based on a detailed assessment of global incubation models as well as empirical evidence from our interviews with over 30 organizations, we have constructed a six dimensional analytical

framework to aid our analysis of corporate incubation models in India. Our analytical framework explores corporate incubation along 6 key dimensions: (i) type of organization, (ii) motive for incubation, (iii) selection criteria for incubation, (iv) capacity for incubation, (v) operating framework for incubation, and (vi) value realization.

Type of organization

The first dimension explores the DNA of the incubating organization as well as its strategic vision. Does the company excel because of its pursuit of innovative technologies/ products or does it outshine its competitors by providing cost-effective solutions? The strategic vision of the company plays a key role in determining the incubation efforts of the organization. The industry of operation also plays a major role in bringing the incubation motive, expected value realization into perspective.

Motive for incubation

The second dimension seeks to recognize the core motive for incubation. One of the key differentiators between successful incubators and less successful ones is a clearly defined motive in alignment with the strategic objectives of the organization. The motive to incubate can vary widely from developing innovative technology either internally or externally to increasing market adoption of existing technologies. Alternatively, the incubator may view incubation as a channel to engage with Bottom of the Pyramid groups such as small farmers, women's self-help groups etc.

Criteria for incubation

Once the motive for incubation is determined, corporate incubators develop criteria to determine the type of business to incubate internally, or which profile of external start-ups to support. These criteria include domain, core/ non-core business, and stage of incubatee and most importantly, source of incubatee. Corporate incubators may source ideas internally from within the organization or from the start-up community depending on the motive for incubation. Other criteria such as quality of founding team as well as fit with culture of the parent organization also may play an important role in the selection of the incubatee.

Capacity for incubation

Of the organizations covered during our interviews, all companies have expressed a desire and capacity for incubation; however, most have been hesitant to share specific information about their financial appetite and processes concerning incubation. The degree to which allocation of funds is done is entirely a function of the corporate incubator's inclination towards incubation. Usually, for companies looking to incubate internal teams, a budget for incubation is determined by the CEO/ Managing Director's office and monitored by a Steering Committee, usually comprising the CEO/ Managing Director, Chief Strategy Officer, and the respective Business Unit Heads. While financial metrics such as Return on Investment (RoI), NPV and IRR are tracked, companies are careful not to make these too restrictive or binding for incubation practices, as in the case of an existing business unit that is subject to top line and bottom-line pressures.

Operating framework for incubation

The fifth dimension deals with the comprehensive list of service offerings, including financial support, human capital and incubation process followed by corporate incubators.

In the case of corporate incubators, funding may vary depending on the motive of the parent incubator. Some companies may choose not to provide any financial assistance to external start-ups, since they believe that there is sufficient availability of external capital; instead, they focus on providing other services to start-ups such as mentoring and market access and introduce start-ups to potential investors.

Typically, corporate incubators allocate dedicated human resources to manage and drive the incubation efforts. In most cases, incubation efforts are driven by the Strategy Office. However, in rare cases, the company may choose related departments such as R&D units to drive the incubation exercise. Mentors form an integral part of the incubation program of a corporate incubators. Companies leverage their human capital to provide domain-specific mentors, but some firms also emphasize the need for mentors with prior entrepreneurship experience. In such cases, experts are sourced externally, if the required expertise is not present in-house.

Value realization

Value realization avenues for a corporate incubator include spinning-in and integrating the incubatee with existing business or spinning out the incubatee as a different entity. Usually, companies maintain a mid-long term perspective of 4-10 years on value realization from incubation activities but the time is highly dependent on industry as well. Since several of the corporate incubators in India are relatively new (less than 3 years old), the vast majority do not have formal incubator performance metrics in place but pay close attention to incubator-related metrics such as Return on Investment, NPV, IRR, and WDV of the firm. Certain incubatee-linked metrics such as customer retention rate, customer acquisition rate, numbers of new jobs created also tracked for the evaluation of the incubation program.

A rigorous analysis of Indian corporate incubators along the outlined framework confirms our empirical findings from global studies. Similar to the global examples, several companies have also developed their own incubation models, which are a hybrid of 2 or more existing traditional models or completely original models in their own right. These incubation models are followed because of a mix of organizational DNA, needs/ motives, industry, and organizational capability.

Leveraging incubators

Leveraging incubators identify and leverage core adjacent areas within the company for internal incubation. Typically, the motive for setting up an incubator is to generate additional revenue by incubating new innovative or complementary business ideas & developing them as new SBUs or integrating with existing SBUs. To this effect, a dedicated New Business Division is created within the Strategy department of the organization to manage and support the incubation of these new non-core ideas & technologies.

The case study clearly outlines how a leveraging incubator can streamline the 'intrapreneurial' spirit of employees and organizational knowledge to create a sustainable and scalable new business line for the company. The incubating team does not face a resource crunch as it can leverage the company's resources. On the flip side, since the incubation time frame is longer, significant financial resources and management bandwidth are required for a successful outcome.

Case study: Leveraging Incubator

1. An IT software company is leveraging its intrapreneurial culture & internal capabilities to create new businesses in strategic areas. The incubation process consists of 5 key steps.
2. Business Plan submission – The entire process is owned and driven by the Chief Strategy Office. Ideas in pre-defined domains of analytics, digital and Internet of Things are sourced internally via business plan competitions and to this end the incubator has invigorated business unit team leaders as well as infused a sense of friendly internal competition to receive mentoring and funding support. The application process is open throughout the year.
3. Business Plan Evaluation – The business ideas are evaluated on criteria such as market opportunity, scalability, value proposition, future monetary prospects as well as complementarity with existing business. The idea is to nurture unique solutions and ideas that can generate sizeable, substantial revenue going forward.
4. Final Selection – The incubator acts like a VC and funds ideas that may not generate revenue today, but within 4-6 quarters. On an average, 10-12 ideas are funded per year and separate budget is allocated to each idea. Dedicated cross-functional teams are formed and domain experts are externally sourced on an as-needed basis. The start-up team's founder is retained as the project owner.
5. Incubation – Regular quarterly reviews are conducted by CSO office & CTO office. Robust stage gate mechanism of reviewing progress and ideas are killed off if consecutive milestones are not met. KPIs of incubating team are aligned to milestones. Since oversight & funding comes from CSO office, the incubation activities receive full cooperation across the organization.
6. Integration with existing BU/ Creation of new BU – After successfully incubating the business, it is merged with an existing BU or set up as a separate BU, depending on its strategic fit with the organization.

'Fast-profit' incubators

'Fast-profit' incubators develop non-core technology/ products & subsequently spin these off as separate entities. The motive in this case is two-fold: One - to generate profit/ return on investment by commercializing and spinning off technologies that are not strategically aligned to the company's vision and, Two - to tap into the entrepreneurial knowledge within the firm. The support services usually include the full range from mentoring, funding through access to active management. The distinct advantage of the fast-profit incubator model is a steadfast focus on maximizing RoI at the end of the incubation time frame. Similar to leveraging incubators, entrepreneurship talent in the company is tapped into and at the same time, resources of the

company are not tied-up in non-core areas. The exit or sale of the new venture marks the end of the relationship with the parent company.

Case study: Fast-profit Incubator

1. A leading IT company successfully incubated two companies and spun them off as separate business. Key highlights presented below.
2. Opportunity identification: Identified non-core and unutilized IP (VAS mobile services and supply management software) that did not strategically fit in with the organization's core business. The incubator provided full support in product development, funding requirements, customer access, & launch before spinning them off.
3. Commercialization & New entity development – The two companies were subsequently spun off as separate entities and the 'intrapreneurs' who had incubated the venture became founding team of the new spin-offs. The incubator maintained equity stake in the spin-offs until its exit from the two companies in 2004 and 2008, respectively.
4. Funding support: In addition to investment provided by the IT Company, Private Equity firms and active venture capital investors made commitments in the first company. The second company received funding from a global Private equity and Venture Capital firm in 2001 followed by another round from a consortium of investors in 2006.
5. Value realization: The IT giant's stake in the first incubatee company was diluted completely when the latter was acquired by a multi-enterprise collaboration company in 2004/2005. The second incubatee company went for an Initial Public Offering in 2008. The IT Company has now divested its entire stake in the second firm.

Insourcing incubators

Insourcing incubators identify emerging technology/ product start-ups, fund and develop them for potential purchase of product/ technology, spin-in or 'acqui-hiring'. Additionally, insourcing incubators interact with high-potential start-ups frequently and have constant access to latest tech/ product innovations. Insourcing incubators are used by companies as a scouting exercise and as an intermediate phase – the start-up is groomed and incubated prior to a potential purchase, licensing agreement or spin-in. Insourcing incubators present the most recession proof model as a reduced corporate R&D budget calls for more outside-in innovation. The model provides a solution to people and time constraints faced by most large corporations. It provides a channel to infuse fresh new ideas and bring in talent into the organization. On the flip side, possible reluctance to use external technologies may hinder the smooth functioning of the incubation program.

Case study: Insourcing Incubator

1. Multinational companies including retailers are incubating start-ups in India with the goal of acquiring or licensing technology from them. Overview of a leading international retailer's accelerator program in India is presented as a case study.
2. The Retail Company employs nearly 3,000 people in Bangalore to support its global operations in areas such as technology, marketing, human resources, finance, merchandising, supply chain, property development, analytics and reporting. The retailer's vast customer base provides incentive for quality start-ups looking to scale up operations in India. The retailer identifies start-ups with technologies that can be commercialized within a year & leveraged by the parent in HQ & broader retail industry. Post-accelerator program, the company may purchase/ license the technology developed or acquire/ spin-in the start-up.

Incubation Model

3. Intensive 16-week cohort-based model (5 start-ups per batch), conducted twice a year
4. Funding: Up to USD 50,000 per start up, acts as seed funding prior to Series A round
5. Focused more on product/ technology development, rather than the organizational aspects of the incubatee
6. Mentorship from company's management, investor community, domain experts in tech & design
7. Co-working space at the Bangalore office with infra/ admin support

Market incubators

Market incubators support external start-ups as a means to increasing demand for or adoption of their own technology and/or products. Market incubators support development of complementary technologies without potential acquisition goals and 'match make' with external markets to enhance core competencies. By leveraging market know-how and large established customer base, market incubators model helps start-ups develop new products more effectively. A key feature of the market incubator is that it delegates complementary market knowledge from R&D management to incubated ventures. However, unless the incubator has a strong brand image or technology, there might be a shortage of quality applicants due to the limited demand for the incubation program. In addition, this model is highly volatile to changing market demands such as changing economic conditions or technical standards. In addition, companies are also creating their own models, and in some cases, combining two or more traditional incubation models.

Case study: Market Incubator

1. Large global technology companies are supporting start-ups in India to encourage adoption of their platforms & technologies
2. The company, a large global tech firm, started its Indian incubation effort in 2014 and is focused on creating developer groups focused around its technologies. During its 5-day pre-incubation program, the company offers access to technology, events and online resources. Additionally, 1:1 mentor: incubatee ratio is maintained to advice on product strategy, user experience, user interface, and digital marketing & presentation skills.
3. Overview of the 5 day intensive training program for incubation from idea to launch stage
4. Ideation: Investigation into the design problem through research, competitive review & strategy exercises
5. Idea Refinement: Brainstorming and development of all possible solutions
6. Idea Validation: User research and identification of potential customers through use of online platforms
7. Pitch: Prototype preparation and training for investor pitch such as presentation skill enhancement training
8. Launch: Prototype launches to gather customer feedback. Demo-day where start-ups pitch to VCs/ investors

Standalone incubation models in India

Our understanding of global standalone incubation models as well as empirical evidence from our interviews with Indian standalone incubators generated an analytical framework along the four key dimensions: (i) Motive and criteria for incubation, (ii) capacity for incubation, (iii) operating framework for incubation, and (iv) value realization.

Motive and criteria for incubation

Standalone incubators unlike their corporate counterparts usually have a single-minded motive for incubation i.e., to achieve profit or generate return on investment. A secondary motive may be that of supporting and creating a positive catalytic environment for start-ups as most standalone incubators are usually set up by set up by angel investors, serial entrepreneurs, VC funds, and/or high net worth individuals, who have expertise and want to positively contribute to the start-up ecosystem. A small sub-set of incubators that have been set up by individuals with abundant real estate – also provide a co-working space, with limited additional support services, such as basic accounting, legal, and marketing support.

Standalone incubators use similar selection criteria as corporate incubators in terms of domain, stage of incubatee, source and quality of start-up team. Typically, a selection committee is constituted comprising of the founding team of the incubator, 1-2 domain experts or successful entrepreneurs, and 1-2 seasoned investors. The committee panel takes complete responsibility of the application process including short-listing and interviewing the shortlisted start-ups. Since the incubator program typically acts as a gateway to subsequent rounds of angel/ VC funding, it becomes imperative to have investors on the selection panel, who can evaluate the 'investment-worthiness' of the start-up. This selection team is usually the management panel of the incubator and is involved in the reviews of the incubatees once the incubation program is underway.

Capacity for incubation

Once the motive for incubation is determined, corporate incubators develop criteria to determine the type of business to incubate internally, or which profile of external start-ups to support. These criteria include domain, core/ non-core business, and stage of incubatee and most importantly, source of incubatee. Corporate incubators may source ideas internally from within the organization or from the start-up community depending on the motive for incubation. Other criteria such as quality of founding team as well as fit with culture of the parent organization also may play an important role in the selection of the incubatee.

Operating framework for incubation

Operating framework seeks to explore type of financial support, human capital range of service offerings as well as highlights of the incubation process. Some standalone incubators/ accelerators provide a prescribed amount of seed funding in exchange for a set equity stake in the company – this is similar to some of the global standalone incubation models (e.g., Y Combinator). VC/ angel-run incubators/ accelerators may take between 5-30% equity stake, in exchange for funding.

The operational team, may be comprised of an incubation manager, who is the main point of contact for the incubatee – depending on the size of the incubatee batch, there may be 1 or more

incubation manager. These people are typically experienced entrepreneurs who have deep business knowledge (and in some cases, domain knowledge too). In addition, the incubator typically may have in-house design, marketing, accounting and legal support.

Operating framework for incubation

The range of services offered by the incubator varies significantly across standalone incubators in comparison to their corporate counterparts. Some standalone incubators may choose to provide only a physical space with basic support services, while others may provide funding and mentoring support in exchange for equity stake. In such a case, no physical premises are provided. The facility + funding + mentoring model typically provides the whole gamut of incubation services, including market access and network access.

Similar to the case of corporate incubation, standalone incubators' may have an unstructured incubation process that can be customized to the needs of each start-up, or they may opt for a structured, time-bound, cohort-based system.

Value realization

Standalone incubators usually have a short to mid-term perspective on value realization from incubation activities, ranging between 3-4 years from the time of incubation, depending on the industry, and the type of incubator (for instance, for VC incubators, dilution typically takes place at Series B, C, or D).

The standalone incubation models in India differ from the popular global models of advisory-centric, investment-centric, and management-centric. In India, we observed 4 distinct models – facility, facility 'plus' incubators, virtual incubators, and accelerators.

Pure facility incubators

Pure facility incubators are set up with a motive to generate return by charging incubators a fixed fee for infrastructure and support services provided. Selection criteria are not stringent as the value realization is not tied to the incubatees' profits. Incubatees use the facilities on a per-seat basis and move out once they attain a steady stream of revenue or obtain traction in the market. Services provided can vary from basic co-working spaces

to access to a host of incubator sponsored events. A prominent advantage for start-ups is the peer-to-peer networking opportunity in the facility. Freelancers with expertise in accounting, legal, digital marketing & design are typically available at the adjacent desk. However, funding and mentoring are usually excluded.

An advantage of facility-centric incubators is they provide a very low cost, low risk entry into the incubator space and start-ups can use facilities and other services at relatively low-cost. On the flip side, lack of equity stake and lack of control over selecting 'successful' start-ups, suggests that there is limited financial return with this approach.

Case study: Facility+ Incubator

1. A Bangalore based biotech incubator offers funding, testing facilities, domain expertise & support on US FDA filings to start-ups. The key steps leading to incubation and subsequent exit are highlighted below.
2. Business Plan Submission: Early stage external start-ups are targeted for incubation. The ideas incubated are primarily bio-based
3. Selection of ideas: The start-ups must be at least at Proof-of-concept stage and the idea must be innovative but not necessarily
4. Validation of Science & Technology: The first phase of incubation covers business analysis and planning done under mentor's
5. Funding: The second phase of incubation lasts up to 6 months and involves access to investor network.
6. Exit: Successful exit is after 4-5 years when the incubator exits by diluting its stakes in the start-up

Case study: Facility-centric Incubator

1. An NCR plug-n-play incubator offers a range of facility-centric services but does not provide mentorship or funding support
2. Start-ups can choose from a range of plans varying from full time occupancy to per diem occupancy basis. The service offerings include:
3. Plugs and Play Office space: Physical infrastructure, internet connectivity, office equipment, security, and power backup
4. Networking: Shared office space enables networking with other entrepreneurs
5. Access to legal, HR and admin services: Access to curated list of freelancers with expertise in accounting, legal, digital marketing, design and HR
6. No funding, mentoring or access to market is provided to incubatees.

Facility + incubators

Facility+ incubators or full service incubators typically provide end-to-end services from funding, mentoring, support services, facility, market access, access to other internal departments for collaboration/ advice, etc. Seed funding is typically provided in exchange for equity stake in start-up, ranging from 5% to 30% with an investment horizon of 3-5 years. Often, the incubation process is unstructured since incubators are usually stage- agnostic and the needs of each incubatee are different. In many cases, the management team of the incubator draws up a plan for incubation with the start-up before commencing the program, and provides support on an as-needed basis.

An advantage of facility+ incubators is that start-ups of all ages can be supported. On the flip side, the incubation program is a longer process than average, since it is often unstructured. Further, it may require significant resources outlay on the part of the incubator since physical facilities and a host of other services are provided to the incubatee.

Virtual Incubators

Virtual Incubators are set up by angel investors or venture capital firms and funding and 'virtual' mentoring in exchange for equity. The end goal is to generate RoI by identifying and investing in high potential start-ups with an exit horizon of 2-3 years. The incubation process is greatly dependent on the lead investor who connects virtually with the start up at the commencement of the program and outlines a plan for the course of the program. Services include high impact mentoring, funding and access to market. The lead investor typically has a minority stake and usually allotted a board seat. In some cases, the lead investor may replace 1 or more of the founders if the firm's direction is not strategically aligned to the vision of the investors.

"What we need is an entrepreneurial society in which innovation and entrepreneurship are normal, steady and continuous"

Peter F. Drucker

Case study: Virtual Incubator

1. A venture capital firm led by a prominent corporate leader takes 15-30% equity in technology and life-sciences focused start-ups
2. The Venture capital firm incubates external start-ups with disruptive customer focused technologies and the potential to address and transform large markets. Only technology and life-science start-ups that can provide return on investment within 4-5 years of incubation are selected
3. Incubation Model
 - * 15-30% equity in return of investment and mentoring support
 - * The incubator is a minority investor, start-up founders remain as owners and drive growth

The advantage of a virtual incubator is the access to strong funding network since it is usually set up by active angel investor networks or venture capital firms. In cases where the incubator is set up by serial entrepreneurs or corporate thought leaders, start-ups have access to high impact mentoring. On the flip-side, absence of physical space/ facilities limits interaction among incubatees as well as with mentors and negatively affects networking opportunities.

Accelerators

Accelerators follow a structured, time-bound cohort-based process & often work with 'early-revenue' start-ups. The services typically include physical space, funding, mentoring, market access, support services, networking within cohort, and support/contacts for subsequent rounds of funding in exchange for equity stake up to 10%. The key differentiator between accelerators and other standalone incubator models is the presence of focused and intensive structured process for the duration of the incubation program.

Conclusions

The incubation landscape is comprised of multiple key stakeholders: start-ups, large Corporations, Incubators, Government, Investors, Universities, Mentors and each one's contribution is vital to ensure a robust ecosystem. Each of the stakeholders should have specific roles and objectives vis-à-vis incubation.

Start-ups form the core of the Incubation matrix and are setup with an objective to develop into a scalable and profitable enterprise. They spur innovation and contribute latest technology/ products as well as create employment

opportunities for the community. Large corporations can directly benefit from start-ups, not just through the acquisition of new technologies but also utilize them to infuse an 'intrapreneurial' culture in the organization. Start-ups also provide domain experts and successful serial entrepreneurs an opportunity to 'give back to the community'. In return start-ups seek funding and more importantly, high-impact mentoring from domain experts as well as business model expertise from serial entrepreneurs.

Corporations bring a host of benefits to the start-up ecosystem including funding, mentoring and access to market. Typically, these services are offered in liaison with incubators in exchange for equity stake.

Case study: Accelerators

A Bangalore accelerator has a unique model of incubating & subsequently 'matching' start-ups with large corporations. The accelerator incubates high quality start-ups that provide solutions customizable to large corporations' needs (some of which are part of their holding company's portfolio). As a part of the incubation, an investment of USD 30,000 (including USD 10,000 as seed money) for 5-10% equity in return. Upon completion of program, the incubator matches select incubatees with large MNC accelerator programs, or else supports incubatees in pitching their enterprises to investors for subsequent rounds of funding. The accelerator follows a 4 step structured induction process as described below:

1. Learn: Boot Camp in partnership with renowned global academic institutions and leading global training and developmental organizations
2. Build: Coaching and mentoring sessions with industry captains on four key areas, namely Business, Design, Technology and Leadership Development
3. Shape: Collective team provided by accelerator customizes the program to meet the incubatees' needs. Week-long base camp to prepare for pitching to investors
4. Pitch: Culminates with 'Heroes Day' where pitching sessions in front of VCs, Angel Investors, HNIs and institutional investors are conducted

Government plays a pivotal role in providing an enabling environment for start-ups and catalysing entrepreneurial growth. Frequent monitoring of the dynamic environment that start-ups work in and providing a conducive ecosystem via a facilitating regulatory framework are the key activities undertaken.

Investors, both venture capital firms and angel investors scope out high potential start-ups and provide seed funding/ Series A funding in exchange for equity stake. In cases where the

investor is brought in as a mentor by the incubator or where the incubator is set by angel investors/ VC firms, investors also provide valuable mentorship and drive the strategic growth of the incubatee.

Incubators play the role of an aggregator and bring all the components together to provide support to start-ups to grow at an accelerated pace and increase their overall chance of survival.

Recommendations for incubators

The six dimensional analytical framework described in the report provides a guideline for incubators to positively contribute to the start-up ecosystem.

a. Type of Organization

Determine the type of incubation based on the industry that you operate in, the DNA of your organization, and your strategic imperatives.

b. Motive to incubate

Determine the motive and objective for incubation (including secondary objectives) Ensure it is aligned with your overall strategic objectives/ plan (product strategy plan, technology strategy plan). Create a unique value proposition or positioning (applicable in the case of corporate external incubators and standalone incubators).

c. Criteria for incubation

Select the criteria for incubation, i.e., a) which domains, b) core, core-adjacent, non-core, c) any quantitative/financial objectives, in terms of revenue. Select the type of incubation, i.e., intra-company vs. external, incubator vs. accelerator, etc. In ideation stage, it is important not to be too constrained about the economics and the revenue potential as this can stifle the incubation (economics comes in when it is selected as an incubation project, when you have to invest, bring in people and devote time and resources, then start thinking about the economics). Build an idea funnel that could follow a top-down and bottom-up approach. Top management should set the 4 to 5 topics/ trends of interest from a strategic perspective top-down, and then the entire organization is encouraged to think and propose ideas for incubation from the bottom-up.

d. Capacity for incubation.

Ascertain the organization's appetite and willingness to invest in incubation, both in terms of financial resources, as well as human capital, and time. Identify where this support will come from –within or outside the organization? Determine the incubation model and the services to be offered. Select the team which will lead and drive the incubation –ensure that it is a cross-functional group, ensure that an entrepreneur's perspective is represented, Right talent and right resources (investment) Be prepared for failure – learn from experience, over time, get instinctive. Obtain and maintain executive sponsorship and funding, preferably from the CEO.

e. Operating framework for incubation

Follow a milestone-based and stage-gate process for new products, simple gate system: design and engineering gate, manufacturing prototype, testing and validation gate, (4-5 gates in the system), similar gate systems with different objectives. Ensure that incubation is driven by a central organization, allocate dedicated human resources, have a budget, testing laboratories, empowered and autonomous. Do not be afraid to terminate/ course correct a process – if consecutive milestones are missed 2 reviews in a row, re-evaluate the entire effort and identify reasons. Encourage 'intrapreneurial' efforts – technology day, case competitions, rated and ranked. Determine the service offering to incubatees: e.g., physical facilities, funding, market access, mentoring, extent of support services provided, networking events, access to investors, etc. Interviews with incubatees suggests that mentoring, funding, and market access are the three top value addition that an incubator can provide; therefore, any new incubator should focus on providing at least these three services. Build a strong network of 'quality mentors' who can provide a mix of domain expertise and business advisory.

e. Operating framework for incubation

Interviews indicate that a combination of serial entrepreneurs and investors is of value to start-ups. While high profile mentors are important to inspire incubatees, it is more important to provide access to mentors who have the time and the commitment to coach their incubatees. In the case of external mentors, it is also beneficial to

incentivize mentors appropriately. Some mentors take 1-2% sweat equity in exchange for their services, which incubators have indicated has worked well for incubatees.

f. Value realization.

Determine the investment horizon for incubation, i.e., when value should be realized by. This should be done keeping in mind the industry, current capability of the incubating organization, and the end goal of incubation (e.g., spin-off, spin-in, IPO, etc.). Conduct regular reviews with senior management of the incubator is critical to ensure continued focus of the incubator.

“Humanity’s greatest advances are not in its discoveries, but in how those discoveries are applied to reduce inequity.”

Bill Gates
Co-founder – Microsoft Corporation

About Indian Institute of Corporate Affairs (IICA)

The Ministry of Corporate Affairs in India established the Indian Institute of Corporate Affairs (IICA) as a unique world-class institution to function as a think tank, action research, service delivery and capacity building support to the Ministry, corporate sector, professionals and related stakeholders. The campus was set up at IMT Manesar, Gurgaon in NCR. The Indian Institute of Corporate Affairs Society was registered on 12th September 2008 with the primary aim of providing a platform for dialogue, interaction and partnership between governments, corporate, investors, civil society, professionals, academicians and other stake holders in the emerging 21st century environment.

Vision: To function as a holistic, capacity building institution and think tank for corporate regulation and reform, through synergized knowledge creation and management, global partnerships and real time solutions.

Effectiveness, Efficacy and Sustainability of Incubators in India

Benchmarking them with Global Best Practices in the Incubation Space

Dr. Dinesh Awasthi, Director, EDI

Innovation and entrepreneurship are critical drivers of social and economic development. With increasing awareness about the need to promote Innovation and Entrepreneurship around the world, especially in developing economies, policymakers and other stakeholders has increasingly been viewing business incubation as an important tool to unleash human ingenuity, enable competitive enterprises and create sustainable jobs. The need for Technology Business Incubators (TBI) has been recognised the world over for initiating technology led and knowledge driven enterprises. Studies also show that such mechanisms help not only in the growth of technology based new enterprises but also in improving their survival rate substantially (from 30 per cent to over 70 per cent). TBIs also facilitate speedy commercialisation of research outputs. TBIs usually provide various services namely; market survey/ marketing assistance, business planning and training, organising management/ technical assistance, assistance in obtaining

statutory approvals, information dissemination on product ideas/technologies, syndicating finances, arranging legal and IPR services etc. Thus, the TBIs besides providing a host of services to new as well as existing enterprises also facilitate an atmosphere congenial for their survival and growth. Major objectives of setting up TBIs are:

- Creation of technology based new enterprises,
- Creating value added jobs & services,
- Facilitating transfer of technology,
- Fostering entrepreneurial spirit,
- Speedy commercialisation of R&D output,
- Specialised services to existing SMEs.

Incubators in India and need to Review their Performance

The term Incubator came into being in 1959 when Batavia Industrial Centre in Batavia, New York was set up (McKee, 1992, p. 41). Most of the early incubators emerged on the scene in the belief among corporations and universities that promotion of hi-tech start-ups are the catalysts for

commercialisation of high and medium technology developments. The University City Science Centre, for example, was founded in Philadelphia, Pennsylvania with these ideals in 1964. Beginning in 1973, the National Science Foundation supported a series of experiments with innovation centres through its Experimental Research and Development Program (NSF, 1985). Subsequently, a large number of incubator emerged across the globe and it became a movement. There are about 7,000 incubators across the globe of which about 1,400 are in USA and Canada, close to 900 in China, 370 in Germany, 355 in S Korea, 220 in UK, 60 in Israel and 78 in Brazil.

The incubation process in India started with setting up of Science & Technology Entrepreneurship Parks (STEPs) in 1984. Currently, there are about 180 STEP TBIs and Business Incubators working in the country. These incubators are supported by DST (68), DBT (BIRAC 10), DIETY (41), Ministry of MSME (138), Ministry of Agriculture (ICAR through ICRISAT, 10), State Governments (8) and Private Sector (17). Though the total works out to 292 incubators, a large number of them have been supported by multiple agencies. Discussions with knowledgeable professionals in the field indicate that the Business Incubators have immense scope for improvement, as they are not able to meet expectations of the stakeholders.

The Need for the Study

Keeping in view the fact that the number of incubators is on an increase and significant resources are being committed by the government, it will be only prudent to undertake the study to assess the effectiveness and efficacy of the programme. The incubation movement has already completed almost 30 years and we do not have any comprehensive analysis of the contribution of these incubators also warrants such a study.

It may also be added that 'Incubation' is one of the components of National Manufacturing Competitiveness Programme (NMCP) as well, which emphasis on the support for entrepreneurial development of SMEs through Incubators. In fact, the Government launched NMCP to improve the competitiveness and efficiency of MSME sector. Under the scheme, the main task is promotion of individual innovator

so they could become technology-based entrepreneur.

Therefore, a research project is proposed to be undertaken to study effectiveness, efficacy and sustainability of the TBIs and the problems and issues faced by these TBI in their performance and the potential that they possess in imparting tangible services. This will lead to designing appropriate strategy, mechanisms to strengthen the existing TBIs.

An indicative Literature Review on the Subject and Emerging Issues

A business incubator could be defined as an organisation that offers a wide range of services and access to space, to meet the needs of technology based nascent enterprises. The focus of incubators is to augment the success and growth of technology enterprises to maximise their impact on economic development. Business incubators usually focus the following dimensions of services (Rice, 1992, Adkins, D., 1994, Cooper, 1985): i. enterprise development; ii. a business consultancy network; iii. entrepreneurial synergy; iv. flexible affordable working space; v. shared office services. vi. networking opportunities encouraged by incubator management; vii. management or technical assistance through in-house expertise and/or a network of community support; assistance in obtaining financing; and service to business clients outside the incubator as well as to in-house tenants.

It is often argued that most effective incubation programs are those that effectively adopt a need-based pro-active approach to meet the needs of their clients/ incubatees. The key characteristics of such approaches as per the US National Business Incubation Association" NBIA (1990):

- i. selective entry of clients and allocation of time proportionate to their demonstrated growth;
- ii. comprehensive business plan and intensive review based decision-making for each enterprise for package of services in which their clients participate;
- iii. participation in deal-making and deal-shaping with their clients;
- iv. identification and monitoring of quantifiable milestones with their clients, to offer a tailored business development program;
- v. enhance organisational learning amongst their clients;

- vi. have access to extensive and deep networks of expertise specifically cultivated to develop small, rapidly growing enterprises; and
- vii. facilitate capital acquisition to underpin the implementation of the business development strategy.

How incubators will be managed largely depends on the stage of the incubator life cycle (Allen, 1988). The focus during the early stage is expected to be more on establishment of the physical facility; and during the second or "business development" phase, attention is redirected towards nurturing of new businesses. During the maturity phase, the focus shifts to growth, expansion, diversification and policy advocacy. As the incubator moves through the three phases of its life cycle, the quality and quantity of development outcomes (e.g., in terms of firms graduated) are expected to be higher.

The operations of an Incubator range between its functions as a real estate development on the one hand and business development on the other. It could be argued that the incubators focussing business development are more likely to generate economic value than the other (Allen and McCluskey, 1990, p 64). Allen and McCluskey (1990) also argue that (i) business incubators should be designed to travel through their life cycles more rapidly; and, (ii) business incubators should adopt a more business development oriented stance in establishing their program. The capacity of a business incubation program to achieve maturity rapidly is critically dependent on how it is designed at the outset.

"The entire life-cycle process has been seen to take five to six years, but as new incubators are able to learn from past industry experiences, new knowledge and information sharing compresses the learning curve." (Allen, D. N. & McCluskey, R, 1990, p. 66)

Financial independence can insulate an incubator from this uncertainty. The keys to this are to seek to have the program attain self-sufficiency. That is, generate enough income to pay the program's operational expenses. In turn, establishing a self-sufficient program is dependent upon generating an adequate stream of income and minimising on-going costs Rice (1992). Based on his study of incubators he observed that the more effort that had to be expended by the incubator manager in shoring up ongoing operational funding for the

incubator, the less the time available for facilitating the creation and development of new enterprises.

The second major determinant of the rate of progress through the incubator life cycle is how effectively the program focuses on enterprise development. Focusing an incubation program on enterprise development means ensuring that programs designed to enhance the viability and growth of enterprises are in place and that adequate resources to deliver these programs are present.

Job creation is considered one of the important objectives of incubator programmes (Birch, 1979; National Council for Urban Economic Development, 1985). However, several experts in the field are firmly of the view that it cannot be the focus. "Job creation is a by-product of business development, it is not the product ...anybody ought to understand that no one goes into business primarily to hire people." (Mamis, 1989, p. 125). Therefore, too much of focus on job creation can weaken an incubator to achieve its critical objectives like financial independence and quality business development services.

This brings one to the role and criticality of the incubator manager in this process. The success of an incubator largely depends upon the quality of the incubator manager and his/her team. How much time they are able to devote to their business development work and how much time do they devote to technical aspects, could be an important determinant of success of an incubator. It is often argued that the managers are not able to devote adequate time to their clients that hampers the overall performance of incubators (Office of Local Government, 1992, p. 13).

In a review of research incubators, Rice (1992) found that, along with the provision of facilities/services and access to funding, researchers identified peer networking, networking by intervener, counselling, and training/education as the most important forms of intervention. According to Rice, such intervention may take place at three levels, that is: (i) Passive environmental intervention; (ii) Reactive direct intervention; and, (iii) Proactive direct intervention. The effectiveness of incubators increases as they move from first level of interventions to the third.

Another aspect on which good incubators seem to be contributing is the support to incubatees in

developing and managing relationships. Lichtenstein (1992), in his Ph.D. thesis tried to deal with this issue by exploring the answers to (i) what is the significance of relationships and how do they influence entrepreneurship?; and, (ii) what kind of settings or networks of relationships are conducive to entrepreneurship and how do we create them? His key finding was that "the most important contribution of business incubators to entrepreneurship lies in the opportunities they provide for entrepreneurs to interact and develop relationships with other entrepreneurs, the incubator manager and other individuals associated with the incubator" (p. iv).

Governance is yet another issue that is critical to the success of an incubator. If the governance is transparent, just and proactive, the chances of its success will be higher than otherwise (Colbert, 1985; Lalkaka, 2001; Scaramuzzi, 2002; Chandra, 2007; Ratinho, Harms, Groen, 2010; Deschamps and Nelson, 2014).

Key Issues

The above review indicates that to succeed, it is important for an incubator to focus on appropriate intake of clients, value added services, creation of networks, business development, financial self-sufficiency, operational self-sufficiency, governance, contribution to the economy, employment generation, entrepreneurship and innovation, etc. How far the incubators in India stand to the test of these parameters is the key issue. The proposed study aims to explore these issues with reference to incubators in India.

Objectives of the Study

The overall objective of the study is to assess the effectiveness, efficacy and sustainability of Incubators in India and major issues faced by them, and evolve a comprehensive strategy for sustenance and growth of incubation movement, keeping in view the global best practices in incubation space. The objectives of the study are:

1. Map the existing incubators in India in terms of their location, typology, sectoral focus, objectives and growth over time, infrastructure available, etc.;

2. Review the process of incubation by these incubators, such as process of intake, entry and exit criteria, services offered by them; mentoring/nurturing process, networking, etc.;
3. Study impact of the incubators in terms of enterprises created, survival rate of enterprises, jobs generated, entrepreneurs reached, replication of 'pilot' model, extra-curricular activities, etc.;
4. Assess effectiveness of these incubators in terms of the objective set by them considering parameters like employment generated per Rupee of subsidy, tax paid per Rupee of subsidy, income, sales and export generated, research commercialized, disadvantaged groups addressed, incubator expansion, etc.;
5. Assess sustainability of the incubators in terms of revenue surplus, services cost recovery, governance (parent-incubator relations); financial sustainability, etc.;
6. Assess stakeholders' and clients' satisfaction, leveraging state policies, team and management (human resources managing incubators)
7. Understand the problems and issues faced by incubators in their operations and growth constraints;
8. Document Global Best Practices in incubation space and develop a bench mark for Indian Incubators;
9. Suggest ways and means to strengthen the existing incubators in view of their limitations and international best practices;
10. Evolve a strategy and formulate a policy for promotion of incubators in the country.

"What business entrepreneurs are to the economy, social entrepreneurs are to social change. They are the driven, creative individuals who question the status quo, exploit new opportunities, refuse to give up, and remake the world for the better."

David Bornstein

Things Incubators are supposed to do and what they end up doing

Raj Janagam, Founder, UnLtd., Hyderabad

Here is a quick note on things incubators like ours do, while most of the incubators we come across are in a constant state of building programs!, here are a few things that as incubators we should be doing or at least make a genuine attempt to do. Next time you hear a start-up incubator representative talk, please ask them to talk about their work on following points when they are done with boasting of their real estate space, the million dollar funds they always have (and will keep having) and finally after they finish giving gyan. We need a serious need of putting accountability practices for incubators, we need to put together accreditations or acknowledgements of incubators just like how UGC accredits educational institutions since the number of entrepreneurs who want to make a better time investments in working with one incubator over the another are very high.

At our incubator, UnLtd Hyderabad we focus on the objectives of incubation, that is, to help entrepreneurs:

- validate their product and market
- realize their strengths and weaknesses and steps to overcome them
- avoid the obvious mistakes and help them grow faster and better

In order to achieve the above, we are currently doing the following things.

Give Entrepreneurs, Money

Nothing beats cash, even if you are the most intelligent mentor on planet earth if you truly want to support an entrepreneur give him some cash. The act of giving cash is not just to help them meet their financial challenges, but is actually to tell them that you really believe in them and are ready to give away the most important material thing in the world to see them succeed.

Provide Coaching

You read it right, am not talking about mentorship neither am I talking about giving advice. We need people who are running incubators to board the same boat as the entrepreneurs and travel along with them to understand their perspectives and worldview.

Provide access to experts

There are a lot of entrepreneurs who want to give back and the best thing for them will always be lending their expertise to the early stage entrepreneurs, this is different from mentoring because an expert will actually say, "let's sit down and work on your financial planning together"

Facilitate Peer Learning

There is a lot of knowledge within the start-up founders who are still running a venture and that knowledge is invaluable to those who have just started up. Some of these sorts of peer learning should be open to everyone who applies to the incubator and some senior entrepreneurs since they might have a great value to add.

Provide new skill sets through workshops/ trainings

Incubators need to constantly try to understand the dynamic challenges of the entrepreneurs and need to facilitate skill based workshops relevant to them at the given point of time. We should organise workshops based on the entrepreneurs challenges and should hold almost one workshop every month. The topics of the workshops shall range between topics to understand and learn the tricks in Fundraising, Team Building, Legal Frameworks, Marketing and Communications etc.

Provide meaningful connections

When was the last time you went to a start-up networking event and found it useful? As incubators, it is our responsibility to either promote or organise events or gatherings where entrepreneurs can come out of their caves to meet other human beings who could be their potential investors, partners or customers. We should not just introduce or organize events, but carefully go through the guest list and make introductions between people who can work with each other in future.

Provide information and access about the opportunities for entrepreneurs

While one can go online and search for opportunities for showcasing or funding, that is not what an entrepreneur should be doing! While they are busy building their products and services, incubators shall play a vital role in not just finding opportunities for them, but also understanding the relevance, quality and steps for entrepreneurs to participate in. We should not refer to opportunities unless we find the best value for the time of the busy entrepreneur. In our estimate an entrepreneur can easily spend up to 45 days per year of his precious time in just attending or participating in conferences, events, competitions etc.

Provide access and hand holding support for follow-on investments

Entrepreneurs spend humongous time chasing investors/ investments. Incubators can help in the whole process by scouting – vetting – introducing – evaluating the investments/ follow-on funding to entrepreneurs.

Get them business!

What good is an incubator if it does not help you get customers where the real testing of your product happens? Most of the time I see incubators taking this most important piece of work as the problem of entrepreneur alone! The entrepreneur has obviously more ideas in developing the product and services than selling them unless he is from a sales background.

Celebrate!

Most often neglected area and considered as entrepreneurs least important need, celebrating is something we as entrepreneurs need to be reminded of and welcomed. Entrepreneurs fight a thousand battles in launching even a single product and after they launch? They go on repeating the cycle! Incubators need to be conscious of developing spaces for celebrating small or big-wins.

However, there are things we don't talk about much. While the world knows and can understand easily on what we can do, the donors or investors in particular understand what we end up doing. This is to share those but also to find a direction to overcome the challenge of minimizing the work

that does not benefit our entrepreneurs. We strongly believe that unless the success of the incubator is aligned with the success of the entrepreneurs it's not going to be a great incubation experience. So if the success of the incubator shall never be measured on results such as – 'huge number of applicants, media coverage, awards, amount of funds raised or accumulated for incubation, conducting PR events etc.' The true success should be based on milestones like the increase in the revenue/ sales of the investees, the number of ventures receiving follow-on funding, the number of jobs created, the leverage in different aspects which the entrepreneur received in his leadership and skill sets while getting incubation support.

Therefore, here is the list of key things we end up doing.

Raise Funds!

Like any start-up, we raise funds. However, the hard part is we are constantly raising funds! Imagine the last funding round you just closed and what if I tell you that you need to repeat that cycle ten more times this year! Obviously, what makes it super difficult is to work with the people who are called as investors and donors because even now I just wish they come and see our work and then give us the monies.

But no, we spend huge amounts of time finding leads, getting referrals, building proposals, pitching, negotiating, justifying, paperwork, evaluations, reporting and after all of this still justify why we used that funds.

Build and Manage Team

Building a doomsday arc is perhaps easier than building and managing teams. Especially when you are an incubation platform where the environment is always that of a start-up, you do not find 'experienced' people and those who have experience are very few and very expensive.

Build Support Network

It is not an option for incubators have a community around them or not. They need to have a massive, vibrant, relevant and dynamic community of people, many people think of them as just funders but it's not true.

As an incubation platform, we constantly search and engage with people and institutions. We are

hungry for collaborations as that is the only way we will ever scale and hope other incubators understand this too. When you are building an ecosystem how do you think it makes sense to work alone?

Attend Meetings/ Events

Meetings and events are things I genuinely wish are fewer than now! While I understand that it is very important for the organizers to have their personal brands get developed, but since the purpose of these events is to add value to entrepreneurial eco-system, then why can't you all work together and just organise one or two events in a year? We attend countless events to find the same people and same content marketed in different ways! However, it is not an option since this is also a place where we make

introductions, which is helpful to build our community. Anyways, I wait to hear this line someday – “Due to the huge response to our entrepreneurial event last year and the same kind of response with the XYZ event we have decided to merge our events and bring you the same value at lesser time and costs!”

What is the phobia of meetings called? We receive countless requests for meetings of all kinds and spend a lot of time in either attending them or explaining people why it is not the best thing to do. Some of these meetings are so deadly they can go on for several months before a decision is made! While many people have written about how to conduct productive meetings I think we need to include such etiquettes and methods in our formal education system.

Financing: Challenges for Incubators and Incubatees

Innovation Economy: Managerial Challenges

Prof Bala Bhaskaran

Relevance of Innovation, Incubation

Economic development can be defined as a transition of an economy from one state of development to another. In this process of development most economies transit through the stages of factor-driven stage, investment driven stage, innovation-driven stage and wealth-driven stage in all probability in that sequence.

Indian economy, like any other large economy, is not a homogenous whole. A segment of Indian economy has reached the threshold of innovation-driven stage of economic development. Transition to this stage is driven by the strength of a large number of innovations happening in the economy. To usher in the innovation-driven stage of economic development, it is imperative that we need to let loose an avalanche of innovations in every sector. This is one way of perceiving the necessity and relevance of Business Incubation.

With the opening up of the economies of the world and the unfolding technological revolution, the world is becoming increasingly connected with high level of competition in every field. The competitive asset that firms and nations need to possess in such an arena is the ability to develop and sustain innovation pipelines. Business incubation is one of the structural options in achieving the innovation pipeline.

Business Incubation

Business Incubation is a unique and highly flexible combination of business development processes, infrastructure and people designed to nurture new and small businesses by helping them to serve and grow through the difficult and vulnerable early stages of development.

Business incubation provides SMEs and start-ups with the nurturing environment needed to develop and grow their businesses, offering everything from virtual support, rent-a-desk through to state of the art laboratories and everything in between.

They provide direct access to hands on intensive business support, access to expertise in finance, accounting, law, etc., exposure to other entrepreneurs and suppliers to really make businesses and entrepreneurs to grow.

Business incubation provides a nurturing, instructive and supportive environment for entrepreneurs during the critical stages of starting up a new business. The goal of incubator is to increase the chance that a start-up will succeed, and shorten the time and reduce the cost of establishing and growing its business. Business incubators can help to nurture the companies that will emerge as the wealth creators and employment providers of the nation.

Incubators serve as a launching pad for young and small businesses. Start-ups, which are innately dynamic entities, need access to support, and incubators are a means of providing this. For entities that are already in existence, the incubator will function as an accelerator to scale up its operations to economic levels and beyond.

Building Blocks of Incubation

The critical building blocks and the key elements within each are shown below.

Business Modelling	Idea Concept paper Profiling Target Group Profiling products/services
Technology Support	Linkage with University/education Institutions Linkage with Research Labs Linkage with Testing(Diagnostics) and Quality Assurance systems Facilities for Prototype development, Design and Expert Guidance
Commercial & Legal Support	Incorporation of entity Guidance on taxation Accounting Banking
Organization & Management	Sourcing Talents Organization structure Team Building & Leadership _ Strategy for execution Strategy for sustainability.
Marketing	Assessing market potential Positioning, Packaging, Branding Planning to reach the customer
Funding	Financial structuring Fund raising
Coaching, Mentoring & Monitoring	Hand-holding, guidance Continuous monitoring Navigation Leadership

The Incubation Yantra



The Challenges

The transition from an idea to a sustainable entity is the pipeline of incubation; this pipeline envisages a very critical nurturing of the business entity. A Business Incubator is concerned about these critical aspects. The critical challenges as observed in the Indian context are outlined below:

a. Technological aspects: Most of the technological products require elaborate technological development before they can be put into the market. For instance any chemical product will have to be developed initially at lab scale; then it is produced in a pilot plant and later at commercial scale. The product so developed will have to be tested for its performance at every stage. If it is a pharma product then the stages of trials are many: tested on animals, then clinical trials and only then can it go for test marketing. In the case engineering products prototypes have to be made first, then performance is to be tested through field trials, then samples are given to customers to try out. Only if they are accepted does the product go for test marketing. If you are producing an automobile component for Original Equipment Manufacturers (OEMs), samples are given to the OEMs for field trials. They keep on testing the product on their final product and feedback is obtained after a prolonged time of field-performance. Consequently, the time taken for the product to be accepted by the customers is bound to be very long. All along this, the manufacturer of the product does not get any finance from the banking system for the capital expenses as also for the operation expenses. The promoters have to find their own resources. Theoretically, angel funds are expected to fund

the enterprise at this stage. However, the experience in India is that angel funds take up only those projects that have shown the proof of performance and are ready to take-off. There are research grants from GOI; to some extent they bridge the gap, but they are not adequate to cover the entire duration and scope of the technological development. This is major challenge being faced by the mentors and incubators.

b. Structuring of projects (Business Modelling):

Most of the innovative ideas emerge from scientists and technologists. Before these ideas become tangible products, they require fair amount of commercial, legal, financial, marketing and strategic inputs. Therefore, it is necessary that persons who are well versed in all the aspects of business mentor these ideas (and the innovators). To find persons who are well versed in all the aspects of business is really a big challenge before the incubator. Very often, they engage a team of experts to complement the inputs and help build the enterprise. In any case structuring the project is very crucial aspect and hence a major challenge before the incubator.

c. Sourcing finance for the start-ups:

In the current context the innovator and his/ her business entity has to rely on own resources primarily. There are research grants available from GOI sources, but if an innovator waits for the grants to be available before the commencement of his/her venture, the venture is almost likely to be delayed. This situation can be salvaged if only there are ample business innovators across the country and they are endowed with adequate funds to support innovators and innovative business ventures. Funds have to be made available for capital expenses and operating expenses also. If business incubators are created across the country and if they are endowed with adequate funds for capital and operating expenses, then the individual innovator would be free to carry his work rather than chase pillar and post for funds. Two examples are listed below:

1. In the late 1960s and early 1970s, Gujarat government had an industrial development strategy that embodied liberal funding.

Gujarat Government had established Gujarat State Finance Corporation (GSFC) to finance small-scale industries. It had another organisation called Gujarat Industrial Investment Corporation Ltd (GIIC) to finance medium and large-scale

industries. Gujarat Industrial Development Corporation (GIDC) was created to provide industrial infrastructure for the industrialisation of the state. GIDC had enthusiastically created industrial estates with fair number of plots and shed all across the state and they needed to be sold. All the three organisations (GSFC, GIIC and GIDC) fortunately had a common Chairman, Mr Manubhai Shah. Under his leadership, they decided to mount a joint campaign. In 1969 they announced a scheme called Technician Scheme wherein Technicians were given 100 % finance to set up any business entity of his/her choice. The definition of Technician was interpreted liberally "a person is a Technician if he/she is qualified and experienced technically, or he/she is experienced in technical lines, or he/she is born into the family of carpenter/ blacksmith/ mason/ goldsmith/ etc. Even the working capital margin was provided by GSFC or GIIC by way of lien on the deposits kept by these organisations with the bank. Large number of persons were given the financial assistance all across the state through a concerted campaign. Nearly 1000 technicians started business at the various industrial estates of GIDC. Nearly 40 % of them flourished and repaid the financial assistance within a short span of time of 6 years. Another 30 %, after an initial slump gradually, took off, stabilised over a 12 year horizon. The rest did not survive and fell off on the way. However, in a span of 15 years most of the estates established GIDC across the state became flourishing industrial towns supplying large number of products and inputs to the large industries across the country. Some of the notable locations are Vatva and Naroda near Ahmedabad, Makarpura near Vadodara, Vapi in South Gujarat etc. In fact, these large numbers of small enterprises created the backbone for the industrialisation of Gujarat in the 1980s and beyond.

If we desire to support incubation in a big way the spirit of industrialisation shown by GSFC, GIIC and GIDC should be emulated.

2. Another example of rapid innovation is available from Israel where the state gave 100 % funding to large number of scientists and technologists who migrated into Israel from erstwhile USSR. These were highly accomplished technologists/scientists and they did transform themselves into technology businesses when given full freedom to develop their innovations without any constraints of finance.

Financial resources are extremely low for new ventures. Banks prefer established firms only. How do we bridge the gap?

d. Finance for structural adjustments: In the SME sector today if a firm fails to perform well, it has no means or scope of reviving its fortunes. Infancy problems are more rampant in the SME sector and such instances are bound to run into irregularities with its bank. The infancy problems (teething troubles) could be due to technological problems, or delay in achieving quality standards, or due to raw material problems, or financial or managerial problems or due poor business structuring of the firm etc. In any case, its bank account is the first to become irregular; the firm would have defaulted on its payment cycle to the bank. Once the firm has defaulted, its Cybil ratings go down and the firm becomes an 'untouchable' to any bank for any assistance. There is no method of diagnosing the problem and working out a rehabilitation package to the firm; the firm's bank would neither the capability nor the inclination to diagnose and revive the firm. Even if any external agency comes into play to revive the firm, the bank's concern is only about collateral security and its adequacy vis-à-vis the accumulated liabilities.

With creation of large number of Business Incubators across the country, there is ample scope for unlocking the hidden capital and resources lying locked up in the large number of SMEs functioning sub-optimally. The incubators should have access to Structural Adjustment Fund specially designed and raised for revival of SMEs. This possibility is based on the premise that business incubators would have the expertise and capability to diagnose the problems of the sub-optimal SMEs and are capable of reviving them health and glory. This is a great potential waiting to be tapped.

Today the banking system is not equipped nor inclined to look at rehabilitation of sick business entities because they have burnt their fingers in such ventures in the past. They, perhaps, do not have the expertise to distinguish between an entity that is capable of reviving vis-à-vis another entity that is not. So enormous funds are blocked up and they may most probably be lost forever. We need to find a solution to this situation.

1. Funding of Business Incubators: Incubators are expected to provide their services at literally no cost to the innovators/ entrepreneurs. This is possible when the cost of operation of business incubators is minimal and they are funded to take

care of the operating expenses. Most of the incubators established in India are attached to Universities or research institutions. As a result, there is capital expenditure involved in creating them. The operating expenses are also taken care of by the parent university/ research organisation where the incubator is established. Should we be happy with incubators established by universities and research organisations? Should we not encourage some of our senior scientists, technologists, managers and even the well-established businesspersons to establish business incubators? They may have the technical know-how and networking capability to create a Business incubator; but how would they create the physical infrastructure? If we desire the concept of innovation and incubation to spread like wildfire, we should support everyone who comes up with an idea of creating business incubators. If an individual entrepreneur or a group of entrepreneurs come up with an idea of creating a business incubator in the form a non-profit company, they should be supported by giving them land and other physical infrastructure on lease basis with very low rentals [if the rental are high, the incubator would not be sustainable]. Wherever physical infrastructure on lease is not possible, the housing finance companies or the infrastructure finance companies or the banks should come forward to provide long-term loans with relative low interest rates. They should be supported for operating expenses also. If we make the business incubators a viable proposition, then and only then, we will have a large number of business incubators supporting and transforming large number of innovations into sustainable projects.

- a) Entrepreneur driven Business Incubators are also necessary to accelerate our journey into the knowledge economy.
- b) Govt as well as all state governments should proactively think of giving physical infrastructure on long-lease to Business Incubators.
- c) Wherever lease is not feasible, infrastructure finance companies, Housing finance companies and banks should evolve a policy of funding the physical infrastructure of the business incubators by way of long-term loans.

Conclusion

In order to create, nurture and sustain an innovation economy it is necessary to establish a critical mass of incubation infrastructure in the country. These calls for the development of a new culture and state and its agencies may have to take a lead through a variety of initiatives. The state must also create and nurture an ambience where private players are encouraged and facilitated to create incubation infrastructure. In the transition of the economy towards innovation-driven stage of development, it is necessary elicit cooperation and inputs from every segment of the society promptly and diligently.

“The incubator, then, offers the promise of creating new businesses and more than trebling their chances of survival. In addition to the say 20 surviving businesses with 200 workers within the incubator, the real benefit comes from the companies that leave and grow (some at rates of 20-30% per year). Such flourishing businesses stimulate economic activity, with collateral growth and employment at both suppliers and customers. Significant tertiary effects come from the incubator playing a catalytic role in developing entrepreneurial skills, modifying the culture of university - research - industry relations, and influencing national policies toward private small businesses.”

Lessons from International Experience for the Promotion of Business Incubation Systems in Emerging Economies
Rustam Lalkaka, November 1997

Issues facing AIFs, especially Social Venture Funds

Mani Iyer & Jatindra Bhatia, Directors, Incube Ventures

Securities and Exchange Board of India (SEBI) has issued SEBI (Alternate Investment Funds) Regulations, 2012 wherein Social Venture Funds (SVFs) have been recognized for making investment in social ventures, which are formed with the purpose of promoting social welfare, or solving social problems or providing social benefits. Further, the intention of the Central Government regarding incentivisation of the Alternate Investment Funds like SVFs is clearly visible from the guidelines which state that the Alternative Investment Funds which are generally perceived to have positive spill-over effects on economy and for which the Board or Government of India or other regulators in India might consider providing incentives or concessions.'

With definition of distinct category of niche venture funds, SEBI and the Govt. of India has recognized the need for and recognized the impact such venture funds are expected to have on the economy of the country.

While Gol is encouraging setting up of such funds, these funds, especially the SVFs, face quite a few hurdles when it comes to raising resources for investing in social ventures.

The major sources of fund raising for SVFs are:

- a) Domestic Institutional Investors which include Developmental Banks, Commercial Banks, both PSUs and Private Sector, Insurance Companies.

- b) Corporates.
- c) Foundations.
- d) HNIs, and
- e) Multilateral Development Financial Institutions.

Other than SIDBI and NABARD, there are hardly any Development Banks left in the country as the traditional role of Developmental Banks like ICICI and IDBI has undergone a transformation with these converting themselves into Commercial Banks. IFCI is facing its own set of well-known problems.

As regards commercial banks, they have their own issues like risk weights of 150% of the exposure and the investments in SVF does not fit in their normal treasury operations which are dictated by maximization of returns motives. Further, the investments in social ventures, especially at the start up/ concept stages has much longer maturity profile and tenure, which again is not found acceptable by the Banks.

Corporates have shared with us that investments in Venture Funds is not their core activity. Admittedly, a part of CSR corpus can be utilized for giving grants to SVF, as SVF have been permitted by SEBI to accept grant and give grants. However, the CSR Guidelines are not explicit about reckoning of such grants as a part of 2% mandatory CSR spend by the Corporates. Further, many of the large corporates have their

in-house foundations for carrying out the social projects as a part of their own CSR.

Foundations are also not enthusiastic about investment in SVF as either they are running their own programmes or they will be required to approach the Charity Commissioner's Office and none of the Foundations contacted by us are hopeful of receipt of such approvals of investment by the Charity Commissioner's Office as the activities of SVF are not in the nature of charity.

The HNIs tap the sources and enter the markets with maximization of returns and maximization of their wealth. The idea of accepting muted returns along with social returns has not been found appealing to majority of HNIs contacted by us.

Multilateral Development Financial Institutions normally step in after the visibility of the investment by DFIs and domestic sources.

Thus, we are facing formidable odds in our journey for raising funds for SVF and there are undue delays in carrying out our core activity viz. investments in social venture, the reason for our setting up of SVF.

Based on our experience and we are sure that other SVFs will also be facing similar scenario staring them in face, we feel that there is a dire needs to amend some of the existing regulations applicable to various set of investors which will facilitate access of SVFs to the resources required:

1. The risk weight of the investment by the Banks in the SVF could be brought down to reasonable level.
2. As most of investees who are start-up are likely to be in MSME segment, investment in

SVF could be made the part of Priority Sector lending by the Banks.

3. Investment in SVF by the corporate be reckoned as part of 2% mandatory CSR spend of the corporates.
4. Gol could think in terms of investing a part of the corpus of SVF out of the dedicated funds set up for this purpose i.e. establishing Fund-of-Funds at Central Government level.
5. A part of RIDF being managed by NABARD could be earmarked for investment in SVF.
6. Thus, there is a crying need for creation of enabling and conducive ecosystem in the country for promotion of SVFs, which are slated to play a very important role for investments in social ventures and creation of social capital.

The enabling regulation for registration of SVF is only the starting point in promotion of this very important and solely needed niche class of Funds, which are playing a very important role in the developed world across the globe.

We should appreciate the problems faced by AIFs in general and SVFs in particular and help in easing the policy bottlenecks by taking up the matter with the relevant Regulators/ Gol and pave the way for such funds to have a level playing field, justify the faith reposed by SEBI/ Gol to become the instruments for development of social sector and promote inclusive growth.

Gol could think in terms of investing a part of the corpus in SVF out of the dedicated funds set up for this purpose i.e. establishing Fund-of-Funds at Central Government level (Gol).

Why "SVFs" should be eligible to receive CSR contributions

Mani Iyer, Director Incube Ventures and Rajendra Joshi, Managing Director, Saath Livelihoods

In India, major corporates and industrial families have engaged in philanthropic activities for meeting social needs, to assist the poor and for contributing to social development without any legal requirements. This includes support for setting up of some of the country's most prestigious national institutions of professional education and for activities that are in

consonance with their operating context or core competencies. The activities were undertaken either directly through their own trusts or through donations to non-governmental organisations (NGOs)/ charities, other charitable organizations. In fact, a study based on data from 2012-2013 Annual Reports of the top 300 firms in India found that 34% of them work through own foundations

or trusts, about 19% organise free medical check-up, blood donation and educational camps for farmers and school children in the rural areas, and around 30% collaborate with non-profit organisations to carry out their CSR activities (Rai and Bansal, 2014)¹.

CSR initially got a push by way of introduction of the labour and environment protection laws and the Public Sector Undertakings were asked to take up the CSR initiatives. Then Government of India (GoI) made it mandatory for companies to undertake CSR activities under the Companies Act, 2013. The vision behind this move is this that a Corporation must not only achieve its economic goal but also adopt the principles of corporate social responsibility. The primary objective of the provisions of Corporate Social Responsibility (CSR) under the Companies Act 2013 is to involve the corporate sector in the inclusive growth process by bridging the gaps in social development indicators². The concept of CSR is defined in clause 135 of the Act, and it is applicable to companies with the prescribed net worth or turnover. The Statute provides CSR activities to be undertaken by collaborating either with a registered trust or society, or through their own trusts and foundations or by pooling their resources with another company.

The CSR regulation complements the National Voluntary Guidelines (NVGs) that are based on the basic principles of corporate responsibility and responsible business practices, which are ethical in nature and practice, and respect and recognize human rights, fair sourcing and protection of the environment. The Securities Exchange Board of India (SEBI) mandates that the top 100 companies report on these principles in their sustainability reports.

The objective of the CSR provisions under the Companies Act 2013 is in concurrence with global recognition of innovation and entrepreneurship as factors that contribute to sustainable economic growth and prosperity. More recently, many organizations and individual that were giving grants for social development initiatives, which are generally not easily scalable, have adopted venture style investing to make their investments more effective and to achieve a larger impact from the funding they provide. Further, social enterprises across all sectors are increasingly being incorporated as not-for-profit or 'for-profit' enterprises under the Companies Act, 1956 with the aim of building profitable

businesses that make products or provide services that benefit people from low income or BoP segments.

Government of India (GoI) has over the years introduced several policies and initiatives for skills enhancement, entrepreneurship development and employment generation. Social enterprises are addressing some of the country's most critical issues in varied sectors, including health, education, energy, agriculture, livelihoods, and financial inclusion. However, social enterprises face a real capital gap of under \$100,000 for business growth and eventual scale. Many others need less capital but greater technical assistance to increase their ability to productively deploy capital (Walji, 2012)³.

GoI encourages angel investors to finance and mentor small start-ups at a stage when they face difficulties in obtaining funding from financial institutions, banks, etc. with the objective of encouraging entrepreneurship⁴. In 2012, SEBI (Securities Exchange Board of India) gave a boost to support start-ups and entrepreneurs through the Alternative Investment Funds Regulations, ("AIF Regulations"). Para (3-4a) of the "AIF Regulations" states that "Category I AIF" which invests in start-up or early stage ventures or social ventures or SMEs or infrastructure or other sectors or areas which the government or regulators consider as socially or economically desirable, shall include venture capital funds, SVFs etc. as may be specified".

"For the purpose of this clause, Alternative Investment Funds which are generally perceived to have positive spill over effects on economy and for which the Board or Government of India or other regulators in India might consider providing incentives or concessions shall be included and such funds which are formed as trusts or companies shall be construed as "venture capital company" or "venture capital fund" as specified under sub-section (23FB) of Section 10 of the Income Tax Act, 1961".

This initiative, specifically of SVFs, fill the gap between microfinance and/ or grant-based funding and conventional Private Equity and Venture Capital Funds that exclusively focus on potentially high-risk/ high-return early-stage or start-up and small and medium-size enterprises with strong growth potential. SVFs, while making socially responsible investments in the form of seed-funding of low-risk/ muted-returns, support technology and social start-ups that generate

high social impact and reasonable financial returns for its investors⁵.

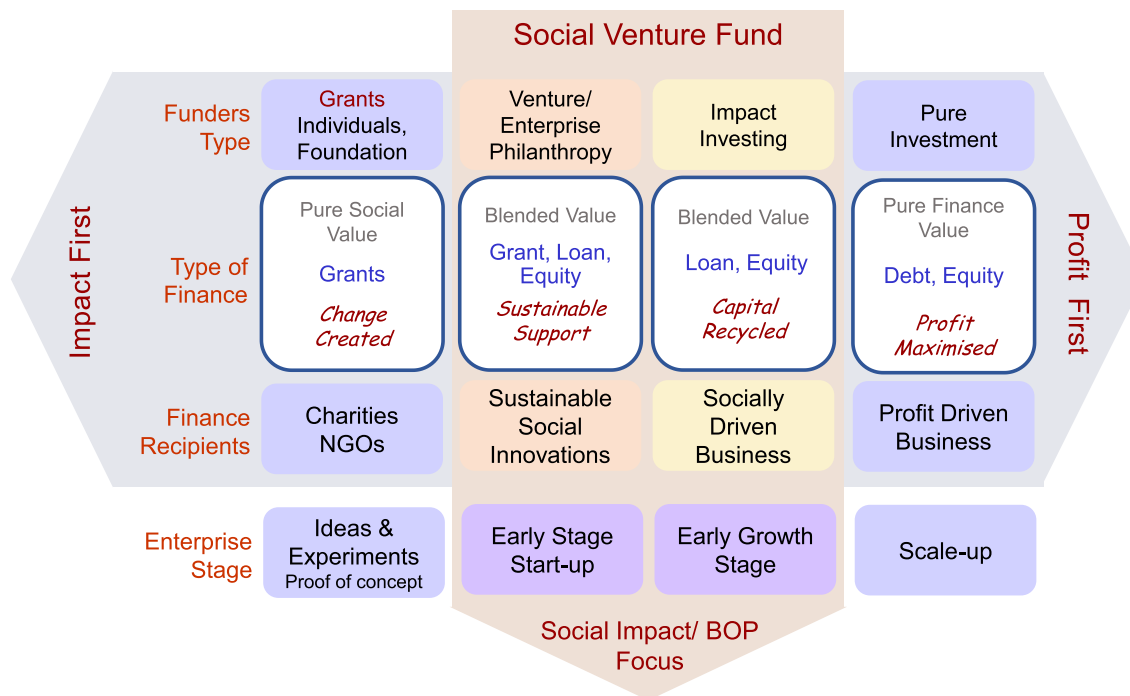
“A dollar of investment from social investors is associated with an investment of 2.2 dollars from mainstream investors. Though the SVFs make smaller investments per deal, their presence leads to a certification effect, thereby leading to a larger investment by mainstream venture funds”.

Rajan, A T. and Koserwal, P., 2003. Patterns in the Investor - Investee dyad, in India Venture Capital and Private Equity Report 2013 - Convergence of patience, purpose, and profit: An analysis of impact investments in India, Department of Management Studies, Indian Institute of Technology Madras, Chennai 600 036, India

Since the focus and clients/ beneficiaries of the CSR Policy and SEBI’s Category I AIF - SVF are the same, SVFs should be eligible to receive CSR contributions as grants which can be invested in the form of repatriable/ non-repatriable grants that will be invested on behalf of the contributors for supporting start-ups that will have a significant social impact.

- 1 Shachi Rai and Sangeeta Bansal, 2014. An Analysis of Corporate Social Responsibility Expenditure in India, EPW, Vol - XLIX No. 50, December 13, 2014. Accessed from <http://www.epw.in/web-exclusives/analysis-corporate-social-responsibility-expenditure-india.html>
- 2 Answer by the Minister of Corporate Affairs (Shri Arun Jaitley) on Tuesday 16 December 2014 in response to Unstarred Question no. 2542 in the Rajya Sabha
- 3 Walji, A., 2012. It’s a Capital (plus Advisory) Problem not a Pipeline Problem On Tue, 07/10/2012. Development Marketplace (<http://blogs.worldbank.org/dmblog>). Accessed from: <http://blogs.worldbank.org/dmblog/investment-platform-signals-expanded-focus-for-development-marketplace>
- 4 “Angel investors bring both experience and capital to new ventures. SEBI will prescribe requirements for angel investor pools by which they can be recognised as Category I AIF venture capital funds.” Finance Minister’s announcement in Budget for FY 2013-14.
- 5 According to SEBI’s definition, a “social venture fund”: i) invests primarily in securities or units of social ventures; ii) that satisfies social performance norms laid down by the fund, and iii) whose investors may agree to receive restricted or muted returns.

Social Investing: The Critical Middle



Harnessing Crowd Funding to Strengthen Start-ups

Prof Bala Bhaskaran

Introduction

Crowd funding is becoming popular in the digital era. Technology with its agility, access to large number of persons and sophistication is enabling large number of persons to contribute even small amounts to enable and sustain innovative projects. The phenomenon offers tremendous possibilities and consequently pitfalls too. The phenomenon of crowd funding is still evolving in India. At this stage, conceiving crowd funding as a source of funds for all types of projects in the market may be premature as it would necessitate clear understanding of the processes involved and elaborate regulation to manage the processes. It would be worthwhile to allow the process of crowd funding to flourish for the benefit of start-ups with little or no regulations lest it may hamper the process of evolution of the phenomenon of crowd funding. This brief paper outlines contours of such a system in the Indian economy in the current context.

What is Crowd Funding?

Crowd funding is the practice of funding a project or venture by raising monetary contributions from a large number of people, typically through the internet. One financial expert describes it as ,large groups of people combining their economic power to support an organization, company or project they believe in.'

This model of funding has three pre-requisites: (a) there is a tangible idea or a project initiated by a promoter of reasonable credibility and/or track record; (b) there are at least few persons who vouch for the feasibility of the idea/project and (c) a moderating agency or a platform through which the parties interact, come together and eventually launch the project.

The crowd funding can be structured as reward-based, equity-based or debt-based. In the reward-based model, the products or services of the project are presold to the contributors within certain specified span of time. In the equity-based version, each contributor is assured of a stake in the share capital of the company on certain basis. In the debt-based version, the contributions are

treated as debts at certain specified rates of interest and certain pre-decided repayment period. The funding can also be structured as a combination of one or more of the above options to customize the model to suit the situation at hand.

Guidelines:

This paper aims to give some basic minimum guidelines to make the process of crowd funding available to small firms and start-ups. These guidelines are listed below

- i. Objectives:
 - Crowd funding must be promoted as a means of fund sourcing for start-ups and SMEs
 - It should not be constrained by too many regulations. Make it simple and logical.
- ii. Who can source Crowd funding?
 - A start-up or existing SME whose paid up capital is less than Rs 50 lacs
 - The seeker of crowd funding must be an entity registered under the companies Act.
- iii. Quantum of funds being raised through Crowd funding
 - The amount being raised shall not be more than Rs 50 lacs.
 - The paid up capital of the entity after the crowd sourcing shall not exceed Rs 50 lacs.
 - An entity can resort to crowd sourcing more than once; but there must be a gap of at least 12 months between consecutive crowds funding.
- iv. Who can invest/participate in crowd funding?
 - Any individual Indian citizen
 - A corporate entity can participate only if its paid up capital of the entity, on the date of application, is less than Rs 50 lacs.
- v. Who can create Crowd Funding platform?
 - A corporate entity [registered under the Companies Act] exclusively dedicated to the task of crowd funding
 - Paid up capital must be more than Rs 5 crores

- Professional back up. IT infrastructure. SEBI approval [SEBI will create a detailed eligibility criteria].
- vi. Process of Crowd Funding
- Prospectus
 - Due diligence by the crowd funding platform/ independent credit rating agency
 - Sponsor required to ensure a two-way quote for a minimum period of 3 years from the date of appearing on the platform.
 - The platform will operate as a market to facilitate secondary transaction.

Conclusion

Crowd funding is an emerging area. It would take some time to evolve in the Indian market. In the meantime, let it evolve relatively unhindered and unregulated in the market catering to the start-ups and SMEs. This would give a boost to the market of start-ups and SMEs.

Some Innovations and Ideas

Digital Publishing opportunity from India

Dr. P. T. Rajasekharan, Chairman - Focus Medica

Global economic gloom is an inevitable reality that no economic activity can wish away. As is the law of evolution, in this struggle for survival, the weaker ones perish and the fittest survive. It definitely has been more difficult for the Publishing industry than even a pessimist would have anticipated a decade ago.

Book publishing has come a long way since the early 1900's when "book trade was ordered, collegiate, clubby and stable". Since that Sunday afternoon in 1934 when Allan Lane first came up with an idea of a paperback and with Stanley Unwin kick starting the literary revolution, book trade has travelled a lot and come full circle by now. The genius of publishing industry has always been its malleability combined with its creativity, diversity and adaptability. Contrary to common beliefs the reading habits or market for the printed book has not shrunk but in fact is growing significantly.

The style and language of communication has been changing and evolving over time, so is the case with the medium and method of communications. This is a continuing and universal phenomenon. As much as locomotion

has progressed from walking and running to bicycles, motor vehicles, ships, airplanes and satellites, as much as motion pictures have grown from silent movies to black & white and technicolour motion pictures, and their platforms have changed from movie projectors and screens to televisions, cell phones and computers, the printing industry has also evolved from letter press to sophisticated offset units. Change is an inevitable reality and publishing industry is at the crossroads with fear of a possible transformation from the print world to that of a digital universe.

The truth is everything coexists as they complement each other. Bicycles have not disappeared because of motor vehicles and in fact have multiplied, nor have cinemas and multiplexes because of television. Fortunately for publishing, every phase of its expression has survived and is thriving despite the fear of the past few decades that the print world is at the point of extinction. Harry Potter has pushed the fear of the death of the print media and books into cold storage forever. The million dollar advances paid out to authors as also the multimillion dollar advertisement budgets provisioned for individual

titles by publishers only reinforce the fact that audiences exist and can grow if the content is made interesting and useful.

One of the major drawbacks of the publishing industry is its inability to attract the best of talents into its fold. To presume that lack of competitive financial and career incentives is the cause for this is too simplistic an answer. Premier educational institutions like Harvard in the United States, London School of economics or the IIMs and IITs in India, do attract the best of talents merely because they offer creative opportunities. Lack of creative opportunity is a major limiting factor for attracting talents to this industry.

The reality is that the creative aspect of publishing is predominantly outsourced. The authors, be it of trade books, text books or academic books work from outside the publishing industry though some of the ideas originate from within. The coordination, editorial or marketing is the realm of publishing indeed.

Documenting or spreading knowledge is as old as human history. From stone slabs and copper plates through palm leaves, and paper to digital formats like computers, tablets and e-books, reading has been a long and fascinating journey. Epics like the Bible and the Mahabharata were written, circulated and preserved long before the invention of the printing machine in 1455 in Guttenberg, Germany. The progress of the printing machine and technology and the abundance of paper manufacturing helped convert it into a knowledge industry.

Nothing stays static and that is the law of nature. 21st century has become a global information society with electronic information services through various digital platforms. Adapting the existing print media and services to these new mediums, understanding and amending the legal complications involved in protecting the publishers' and author's rights in these changing milieu are some of the challenges today.

More important is the need to master the new digital platforms and create compatible contents that will educate and entertain users. The major overriding themes of the past few years are economic recession and digitization. The digital age with its wide range of opportunities it offers is also threatening to revolutionize the centuries old publishing and bookselling practices.

There is a clear need to distinguish between trade and general books, and educational, especially scientific and health related books when their relevance is discussed in the digital context. The emotional adventure in experiencing and reading or turning pages or smelling or feeling a book is relevant more for arts and entertainment. In terms of developing content for a digital medium, the challenges of creating a visually realistic picture of say a stent being inserted in an angioplasty or a cornea being replaced in an ophthalmic surgery, a simulation of a cell division or a complex assembly of machinery can be an equally exciting emotional experience in health and science education.

There has also been a phenomenal and rapid change in the purchase patterns both in terms of choice of books as also buying methods. The reader, user or viewer is more discriminative of the contents and its presentation. Educational books outsell trade books by far, and online sales figures are increasing significantly. The reality today is that educational and science publishing dominates the industry and digital publishing demands its rightful share. Publishers are also increasingly becoming aware that digital content is more than just e-books. The new generation of readers may not suffer from diminished attention span, but may be shifting their interest and investment to science and education, and to easy ways to understand and master it. Society today is more focused on images. The world has never before been a visual culture as we are in now. The universe has fast forwarded from the days of a more leisured times and literary culture to that of images and visuals. A strong image has great depth to it, and as the old adage goes 'a picture is worth a thousand words'. It is also immediate and immediate stimulus is the mood, the need of our times for the sake of education.

In the world without borders that we live in today, the opportunity of being part of knowledge and entertainment creation is a great opportunity. Entertainment dominates the digital world today. To step into this medium with a mantra of 'education through entertainment' is a tempting challenge.

Smart City provides ecosystem for evolving a Start-up City –

“Value of Citizen Participation in building a smart start-up city: Vision for Naya Raipur”

Shalabh Mittal, Faculty – Development Studies & Social Entrepreneurship & Head – Centre for Social Entrepreneurship & CSR, EDI, & Vikas Bagri, Social Media Advisor, Government of Chhattisgarh

If one defines a ‘Smart City’ ” it would refer to a city that to study this growing phenomenon of ‘new uses digital technologies or information & communication technologies to enhance quality of life of its people. If we extend this definition to further define quality of life, it would include provision of basic amenities, health care, transportation, water & electricity, waste management etc. Every state government is aspiring to model at least one city in their state as a smart city and they have already established departments hope for citizens through building smart cities’.

In order to improve the transactional relationship between its citizens, a smart city is developed/ evolved around applications & business models that are enabled through public funding. However, more can be achieved if this is created by increasing public participation through provision of entrepreneurial opportunities. People participating in solving their own problems through creating viable business models will definitely enable smart city becoming a smart start-up city. The start-ups could be in any area of governance or project management or project implementation in building a smart city:

- Supporting economic, social and cultural development
- Engaging effectively with people through open innovation processes and e-participation
- Improving intelligence of the city collectively all dimensions of human intelligence and artificial intelligence

For such a smart city to be truly built, we will need to build an ‘Innovation Hub’ that creates an ecosystem for enterprise creation and has dedicated innovation labs, incubators and research labs with innovation funds for start-up and then prepare them for scale-up.

It is understood that the financing of the smart city becomes major responsibility of the government through provision of subsidies and tax incentives rather than based on a business model. Smart cities in true sense calls for a very different way in

which private and public sector must collaborate and work. One dimension of this relationship is to listen to citizens and incorporate their inputs but the other dimension would be to provide opportunities to citizens to solve their problems and create business around those problems. That has to be the mainstay of building smart cities. Why? Because just introduction of new technologies to get a label of ‘smart city’ is not going to make the citizens smart. If the city planners only engage vendors in introduction of new technologies, there will be difficulties in overcoming the scepticism that any change brings with it. Gaining support from citizens is key to any change and if it is directly linked to citizen’s quality of life and their opportunity to participate even earn from this change” it is going to involve citizens by a greater degree.

Union Minister Venkaiah Naidu in his address at a conference (May 2015) on ‘Emerging Global Business Opportunities for Entrepreneurs’ shared the government’s plan to finalizing schemes for 500 smart cities in India which calls for greater citizen participation. If this has to become a reality then ‘Entrepreneurship and Start-ups’ will have to be the underpinning phenomenon. Then again, the question would be what kind of entrepreneurship. Therefore, effectively the proposal is around building social enterprises that work towards solving social problems. It is important to note that Gandhi’s philosophy of making every village to become self-reliant through brave, corporate and intelligent work. Therefore, if we decipher from this statement we can interpret brave as entrepreneurial, corporate to mean strategic & organised and intelligent to mean IT enabled governance models (called smart). In addition, we will implement Gandhi’s vision of self-reliance.

There is need of platforms (digital and social media) that ensure citizen engagement and this needs entrepreneurial minds since the government can do not all. The problems of smart cities in future will need to be solved by citizens themselves; we cannot then re-invent and plan another concept of Ultra-Smart City.

Moving forward, we propose a research study to explore the concept of 'Smart City as Start-up City' and present it to the government for discussion.

To conclude, a smart city is one that does not only pump in government money but also

encourages citizens to build enterprises, hone entrepreneurial skills and create ecosystem. A smart city has to also be a start-up city. Ultimately everything that the smart city does is through an intelligent business model in place.

New Horizon for Sustainable and Affordable Urban Housing

Dr. Sharadbala Joshi

Housing policy in India was initially socially oriented with direct government involvement in housing construction. This gradually led to Institutional growth, new legislations and creation of parastatal bodies. As in other parts of the world, the approach was found to be inappropriate. This paper traces some of the past and two recent Governmental initiatives. The aim is to provide an overview of the current situation and highlight the currently positive environment for initiating housing projects that incorporate technologies, environmentally sustainable solutions and people-centred approaches.

Urbanisation offers unique opportunities for improving social, economic and environmental quality of the living and working environments. This has led to searches for model urban management and development solutions at multiple levels. From the late 1940s, Governments in a majority of countries of the South responded to the growing demand for urban housing by constructing public housing to increase the housing stock. In South Asia, the housing problems arose in the late forties because of accelerated urbanization in newly independent countries of the Indian subcontinent.

As the requirement for housing, especially affordable houses for migrants from rural areas, outstripped the numbers of houses built by Governments and individuals, there was greater awareness about this development approach not meeting development goals. In response to the rapid growth of slums, and acute housing shortages and unsanitary conditions in widespread squatter settlements, experts advocated state-assisted sites and services, slum improvement, subsidized housing schemes, and institutional restructuring, that could stimulate

commercial investments or community based improvements. This led to interventions for increasing access to serviced plots in sites and services projects where people could build their own homes incrementally, followed by support for in-situ slum upgrading initiatives. These found many supporters and key exponents of affordable housing started propagating the need for involving the poor in making decisions related to planning and development.

Government of India (GoI) introduced many programmes and schemes for guiding urban development processes, including enactment of the Slum Areas (Improvement and Clearance) Act and launch of a Slum Clearance and Rehabilitation Scheme with the objective of clearing slum areas and settling slum residents in new highly subsidized tenements at alternative sites. GoI also launched its first national programme, called the Scheme for Environmental Improvement of Urban Slums (EIUS) in 1972, which was followed by the enactment of the Slum Area (Improvement and Clearance) Act in several States. Both enabled formal identification and recognition of slums, and planning and implementation of the EIUS Scheme.

With the focus on environmental improvement of urban areas and poverty reduction programmes, the multiple dimensions of interventions were emphasised. Several events that occurred around this period mark the formal change of approach from slum clearance to slum upgrading. In India, the Urban Land (Ceiling & Regulation) Act was enacted in 1976 to prevent concentration of land holding in urban areas, and to make urban land available for construction of houses for the middle and low-income groups.

By the late 1990s, the problems of expensive and area-specific incremental slum improvement projects with locally inappropriate standards for provision of basic services were recognised. The narrowly focused, small-scale, high standards and top-down interventions could not meet the massive demand for improved urban infrastructure services and shelter. The physical, financial and institutional impacts of the projects neither resulted in citywide improvements nor met the massive demand for improved urban infrastructure services and shelter.

The gaps between programmes, policies and projects, and their implementation for achieving appropriate outcomes led to a general acknowledgement that the traditional approaches to urban planning were inefficient and local governments were under-performing. During this period, many organisations and individuals started propagating the need for involving the poor in making decisions related to planning and development. Subsequently, the incremental provision of shelter, infrastructure and urban services, with the assistance of government and through partnerships between the poor and non-governmental organisations (NGOs) or contracted community development workers, became an important approach to development.

Participation was promoted to enable the poor to express themselves, identify their needs and appropriate solutions, plan and act to change their situations in their own context. Participation was incorporated in Government and donor funded interventions in both rural and urban areas. This required involvement of Governments and the political will for implementing change and for adjusting organisational functioning. It also required changes in conventional municipal practices for addressing issues related to procedural and prescriptive characteristics of municipalities, and of stakeholders interested in maintaining the status quo. It led to the acceptance that local institutions require flexibility in management, building of capacities for problem solving, and that large-scale initiatives should start small and grow organically at rates that are dependent on their achievements.

This marked a paradigm shift for achieving change through holistic urban planning, improved governance, participation of communities in decision-making, exchange of good practice models, and determination and leadership of stakeholders across disciplines, sectors,

communities and countries. This was followed by recognition of the political dimension, political and social processes involved in settlements development, and the significant roles of local governments in influencing the outcomes of national and sub-national policies, programmes and projects for poverty reduction and environmental improvement.

Gol has taken several actions for urban poverty reduction, environmental improvement and housing. More recently, the Government's focus is on 'Housing for All' and achieving 100 percent 'open-defecation free' (ODF) status. Gol launched the 'Swachh Bharat Abhiyan' or Clean India Mission to end open defecation in all villages by 2 October 2019 - the 150th birth anniversary of Mahatma Gandhi. The Ministry of Drinking Water and Sanitation further specified that safe technology option means no contamination of surface soil, ground water or surface water; excreta inaccessible to flies or animals; no handling of fresh excreta; and freedom from odour and unsightly condition.

In 2011, in order to address the challenge of human waste disposal, the Bill & Melinda Gates Foundation initiated the Reinvent the Toilet Challenge. The aim was get research institutions to design a toilet that operates 'off the grid' without connections to water, sewer, or electrical lines, and that everyone would aspire to use across all countries. The Foundation awarded grants to researchers and industries around the world to create a toilet that removes germs from human waste and recovers valuable resources such as energy, clean water, and nutrients, costs less than US\$.05 the (Rs.3.50) per user per day; and promotes sustainable and financially profitable sanitation services and businesses that operate in poor, urban settings.

In October 2013, the Department of Biotechnology (DBT) under the Ministry of Science and Technology, Gol and Bill & Melinda Gates Foundation in collaboration with the Biotechnology Industry Research Assistance Council (BIRAC) of India launched the Reinvent the Toilet Challenge for India to support Indian individuals and organizations to undertake sanitation related research and development projects conducted to extend affordable sanitation services to poor communities.

This has been followed on June 17th by the launch of the 'Housing for All by 2022' programme for the rehabilitation of slum-dwellers and promotion of affordable housing for the urban poor with following components/options:

i. Slum rehabilitation of Slum Dwellers with participation of private developers using land as a resource; ii. Promotion of affordable housing for weaker section through credit linked subsidy;

iii. Affordable housing in partnership with Public & Private sectors and iv. Subsidy for beneficiary-led individual house construction or enhancement.

Most importantly, State Governments would have flexibility in deploying this slum rehabilitation

grant to any slum rehabilitation project taken for development using land as a resource for providing houses to slum dwellers.

The policy changes and the new housing and sanitation initiatives provide further incentives to entrepreneurs to work on affordable and sustainable housing solutions for households with annual incomes of less than Rs. 6 lakhs.

Cycle Chalao: Closure Caselet

Raj Janagam, Founder, UnLtd., Hyderabad

Cycle Chalao! is the flagship program of 'Impact Carbocuts Private Limited' The social enterprise is registered in Mumbai, India since 2009-10 and has successfully demonstrated the brand Cycle Chalao! at international levels. The aim of Cycle Chalao was to introduce high utility bicycle sharing systems in Indian cities thereby reducing the traffic congestions at public transit bottlenecks and reduce pollution levels.

Here's why Cycle Chalao! Closed.

We tried to build bicycle-sharing systems in India since 2010 but have not succeeded so far and are deciding to windup our efforts and move ahead.

We feel very happy to have friends from hundreds of cities and institutions and we hope to keep this relation going in our next BIG entrepreneurial venture. Of other things we feel victorious to know that Urban Development Ministry, Govt. of India has released a bicycle-sharing toolkit with emphasis on the business model we have advocated so far and some other cities have now modified and announced contracts in the way we have actively pursued.

The conclusion of our entire research, piloting, advocacy and working with government contracts is that the bicycle sharing systems to be successful in India have to be fully sponsored by the public authorities wherein the private corporations shall act as contractors to provide

construction, operations and maintenance alone. However, we never received any sort of support from the bicycle industry, outdoor advertisement industry and investor community. We needed support in forming partnerships with the government, bicycle industry and out of home advertisement companies. The partnership was never planned to be non-profit it always had a win-win situation for both sides but the sheer reluctance to try out new ideas and take risk in doing something which is new made it impossible for any of these institutes to come forward.

We accept our failure to carry on and wish to acknowledge the higher understanding of businesses, impact investments, working of public authorities and social entrepreneurial landscape in India. The only institutions which believed in us and actively supported as were India Cycle Service, Incube Ventures, UnLtd India, NMIMS University and folks at Arctic Holdings and couple of NGO's and Rotary Clubs.

Fast track in 2015, we see many more entrepreneurs still starting up and trying to do what we did and facing exactly the same problems! We hope that not just the investor communities but also the mainstream private sector corporations and the government bodies wake up to the need and importance of working with start-ups in our country.

Annexure

Aashray Incubatees

Saath Livelihoods: RWeaves, Weavers Cooperative

Artisans/ Conservation of cultural heritage and the promotion and revival of dying handicrafts of 'Tangaliya' and 'Patola'.

Saath Livelihoods: Urmila Home Managers Program

Training and placement program builds capacities and skills of "housemaids" and creates a cadre of Home Managers to provide reliable, efficient and specialized services to clients.

Saath Savings & Credit Cooperative Society Ltd.

To provide affordable financial services to the socially marginalized and economically deprived sections of society, in order to eventually reduce poverty and bring prosperity.

Ideal Foundation for Social and Economic Development -Nyayika

Legal services and other allied services in the different parts of Gujarat - An initiative of IDEAL Foundation For Social And Economic Development.

Silversmile Elder Care Foundation (Varishta)

Establish care centres and specialized living facilities for elderly patients with dementia.

Edutech Educational Services Pvt Ltd

Diagnostic test is being developed that give an insight about the knowledge level of both student and teachers as well as highlight their strength and weakness. Further personalized assignment and test helps to evaluate the level of improvement. We provide various solutions to schools like conducting integrated, Board or JEE/ NEET/ foundation classes in association with the school.

Decode MediaCom Pvt. Ltd.

Provide integrated media, communication & branding solutions primarily to social sectors (social enterprises, NGOs) and consult projects for sustainable development at all the levels of communication, branding and development.

Greenearth Culture Pvt. Ltd.

High quality pre-engineered bamboo cottages, villas, gazebos etc. of tropical styling produced with authentic treated bamboo.

Anveshan Catalyst Pvt. Ltd.

Differentiated low cost housing development (advanced erection technology)for migrant, self-employed, women groups within their affordability. Proposed to evolve it into a security net for them.

Western Range Bio Pharmaceuticals

Developing autologous cellular therapy for treatment of cancer and auto-immune diseases.

Konnect CSR Impactors

Offers CSR consulting, project evaluation, social impact analysis and reporting area of CSR and sustainability of society and enterprise.

INDIQ Inspection Diagnostics LLP

Identify and contribute to quality enhancing activities in industrially important technologies.

Kamdhenu

Technology solutions for dairy sector, relating to milk collection system (Analysers, Electronic Weighing Scales, local chilling plants, customized software solutions).

4th Wheel

4th Wheel end-to-end project management framework to introduce standardized real time reporting and data driven activity to the development sector.

Narmada Yatra - Serve Happiness Foundation

Inspiring youth to undertake entrepreneurial initiatives by undertaking a yatra to meet role model/social organizations in the field of dairy, health, education etc.

Plasmatech Solutions Pvt. Ltd.

Development of affordable indigenous plasma fractionation in India.

Glossary

Aashray	Aashray - Promotion of Social Enterprises Foundation
BIPP	Biotechnology Industry Partnership Programme
BIRAP	Biotechnology Industry Research Assistance Programme
BoP	Bottom of the Pyramid / Base of the Pyramid
CII	Confederation of Indian Industry
CIIE	Centre for Innovation, Incubation and Entrepreneurship
CoE-NT	Centre of Excellence in Nano Technology
CSR	Corporate social responsibility
DBT	Department of Biotechnology
DST	Department of Science and Technology
EDI	Entrepreneurship Development Institute of India
GiGaNTiC	Global Green Nanotechnology Conclave
GoI	Government of India
HNI	High Net Worth Individual
IDBI	Industrial Development Bank of India
IFCI	Industrial Finance Corporation of India
IISc	Indian Institute of Science
IT	Information Technology
MFI	Micro-finance Institutions
MSME	Micro, Small and Medium Enterprises
NABARD	National Bank for Agriculture and Rural Development
NBIA	National Business Incubation Association
NGO	Non-Governmental Organisation
NPSD	National Policy on Skill Development
NSDM	National Skill Development Mission
NSTEDB	National Science & Technology Entrepreneurship Development Board
PoP	Plinth of the Pyramid
PSUs	Public Sector Undertaking
PURA	Providing Urban Amenities in Rural Areas
R&D	Research and Development
Saath Livelihoods	Saath Livelihood Services
SBIR	Small Business Innovation Research
SBIRI	Small Business Innovation Research Initiative
SEBI	Securities and Exchange Board of India
SINE	Society for Innovation and Entrepreneurship
SME	Small and Medium-sized Enterprises
STEPs	Science and Technology Entrepreneurship Parks
STTR	Small Business Technology Transfer
SVFs	Social Venture Funds
TBIs	Technology Business Incubator
T-TB	Technopark Technology Business Incubator
VC	Venture Capital



Incube Venture Private Limited
(Incube Ventures)

Incube Ventures aims to incubate socially responsive, responsible and high impact technologies and creative business ideas by creating a platform for nurturing , mentoring and seeding

Incube Ventures has sponsored India's first Social Venture Fund registered with SEBI as Category I Alternate Investment Fund for investing into socially oriented companies, SME innovations and technology based companies. The company envisages sponsoring more social sector and technology related funds that focus on creating high social impact.



Saath Livelihood Services
(Saath Livelihoods)

Saath Livelihood Services (Saath Livelihoods), a not for profit (Section 25) Company incorporated in February 2007. Saath Livelihoods focuses on building social capital and promoting social enterprises that enhance livelihood options and opportunities for physically, economically and/ or socially vulnerable groups and individuals. Its activities are focused on:

- Enhancing livelihoods by initiating innovative and sustainable business models for promoting entrepreneurs, artisans, handloom weavers, teachers, and other stakeholders, and
- Enhancing livelihood skills through vocational training and support,



Entrepreneurship Development Institute of India
Ahmedabad, Gujarat

EDI was set up in 1983 as an autonomous and not-for-profit institute with support of apex financial institutions. It aims to become a catalyst in facilitating emergence of competent first generation entrepreneurs and transition of existing SMEs into growth-oriented enterprises through entrepreneurship education, training, research and institution building.

EDI has set up an exclusive Centre for Social Entrepreneurship and Corporate Social Responsibility. Among other activities, it runs a programme on social entrepreneurship for international participants and a diploma on social entrepreneurship through distance mode.



Ashoka India

Ashoka is the one of the largest networks of social entrepreneurs worldwide, with over 3,000 Ashoka Fellows in 70 countries creating large-scale impact through innovations. Founded by Bill Drayton in 1980, Ashoka pioneered the field of social entrepreneurship.

In India, Ashoka has a vibrant fellowship of over 350 fellows and elects a new cohort of Fellows every year. Going forward Ashoka India will also select and elect new Fellows from Nepal, Bangladesh and Sri Lanka and play a unique role in integrating the emerging social sector in South Asia.



Incorporated as a Section 8 (Not-for-Profit) Company on 30 July 2014

Corporate Identification Number: U74120GJ2014NPL080297