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Articles

Fostering a Hybrid Enterprise: Petri Dishing a Social Enterprise

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Abstract

Business incubators have increasingly been synonymous with entrepreneurship accelerators. The incubators are seen as formative environments for spooling out risk-proof entrepreneurs. This belief is increasingly subscribed to by most stakeholders of the community including the government, the business schools dispersing management education, technical institutes fostering a workplace ready workforce, and most of all, the aspiring entrepreneurs. The article explores the context of a business incubator when applied to social entrepreneurship. Would the existential structure of a business accelerator take into account the nuances of the social aspects of social enterprises? To what extent would venture capitalists and angel investors, some of the key stakeholders of the business incubator ecosystem, accept the double and even the triple bottom lines, for navigating their returns. An attempt is made to compare the startup requirements of a social enterprise with the mandates of a for-profit/commercial business incubator and its metrics of success. Clarity is sought on the potential and impact of intermediation, for social enterprises that succeed in their social and financial goals.

***Keywords**: Social Enterprise, Business Incubation, Hybrid Enterprise, Impact Investing*

Introduction

India has nearly the largest number of poor people living in any country as per reports in 2014[1]. The nation also has about 280 million who live on less than USD 1.90 a day[2] as per the World Bank; and 363 million people live below the official poverty line fixed at the unsustainable amount of Rs. 32 per day in rural areas, as per a report by the Rangarajan Expert Group prepared in 2014[3]. The stark inequity underscores the urgent need to find innovative solutions to bridge the ever growing inequity in wealth and digital divides. The majority of the underserved population is yet to truly benefit

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from the multi-stakeholder interventions including that of the governments and the myriad non-profit organizations.

One of the innovative forms of intervention for development today is a social enterprise, a hybrid form of organisation derived from the ecosystems of both private enterprises and not-for-profit organisations (NPOs). Social enterprises relate to societal needs of poverty alleviation, health care, education, environmental issues and advocacy work, hitherto largely seen as the preserve of the public sector. By entering these sectors and introducing a profit motive, the social enterprise creates a new business paradigm. The multiple threats of overpopulation, global warming, rural to urban migration with the concurrent high urban poverty levels, sanitation issues and health epidemics are being revisited by socially motivated entrepreneurs who seek innovative solutions for these challenges through the framework of a social enterprise (Galvin and Iannotti, 2014). New business models are emerging from such a cross-pollination of NPOs and commercial entities.

Social and Hybrid Enterprises

Defining the Social Enterprise

There is a growing body of research on the still nascent paradigm of social entrepreneurship. Much of it continues to revolve around the definition of what constitutes a social enterprise. Though social entrepreneurship is classified as entrepreneurial activity that results in both social and economic values, the field still lacks an unified and clear definition (Dacin et al. 2010, cited in Zoltan et al., 2013). Organisations with community welfare goals who have even a partial engagement with market processes and adopt market-based approaches for addressing 'social' issues, with tradeoffs between profit and social objectives, are included in the definition of social enterprises (McKay et al. 2014 cited in Lehnera and Nichollsa, 2014). Social enterprises are an evolving business paradigm incorporating the mandates of the government, the aspirations of a NPO and the bottom lines of a private enterprise.

Social enterprises are also considered hybrid organisations combining the social goals of a NPO with the profit motives of commercial enterprises, crossing both 'normative and regulatory borders' between both the processes (Lee and Battilana, 2013). Though charity and commerce have traditionally been considered belonging to two separate activity spheres with lines not hitherto crossed, the social enterprise encompasses both areas within its realm of functioning (Roy, 2012; Lehnera and Nichollsa, 2014). Social enterprises have been termed 'third-sector organizations' with

social goals on the basis of partial or total 'non-profit distribution constraint' (Fazzi, 2012). Social entrepreneurship is called the 'simultaneous pursuit of economic, social, and environmental goals by enterprising ventures' (Haugh, 2007, cited in Santos, 2012). Social enterprises deploy business strategies for realisation of non-profit goals. A key success indicator for social entrepreneurs would be their capacity to impact social change and not balance sheet profit alone (Galvin and Iannotti, 2014).

The Social Enterprise Alliance (SEA), USA, an organisation representing social enterprises has the slogan 'Where Mission Meets the Marketplace'. The SEA maintains that a social enterprise must promote social or environmental issues employing 'business methods'' (Galvin and Iannotti, 2014). As per the SEA, to be defined as a social enterprise, the organisation must seek to fulfil a social need though their activities. A social enterprise will consist of earned revenue combined with grants and subsidies as part of their fund inflows, as opposed to a pure NPO which subsists mostly on grants and donations. The EMES International Research Network, a network of researchers prefers to prescribe rules for social enterprises – to be organisations that have democratic governance, limited profit distribution and has a social goal as its mission. EMES website defines such enterprises as ''organisations with an explicit aim to benefit the community, initiated by a group of citizens and in which the material interest of capital investors is subject to limits'' (Young and Lecy, 2014).

The commonality of social enterprise definitions appears to be the requirement of an activity based in commerce to separate the enterprise from a purely social movement or a philanthropic process. Social entrepreneurs are typically seen to conceptualise, when they redefine or take a relook at an existing social problem and tailor a targeted and often an innovative solution to this existing issue. For e.g., a social entrepreneur looking at financial exclusion issues in rural areas in India, may look at the issues through the perspective of financial awareness and hence reframe the problem as one of both education and financial system linkages. However a 'systematic empirical account' categorising the various issues that a social enterprise may address is yet to evolve (Mair et al., 2012).

Societies the world over are facing potential instability caused by exponential changes in technology and uncertainty from migrating populations. Innovative solutions and new societal structures to deal with these changes are sought. Social enterprises could be one such tool provided an appropriate institutional support is generated for fostering these new structures (Salvado, 2011). Radical changes in technology exert

impactful effects on social structures and mechanisms, and policy makers need to adapt age-old processes to suit the evolving changes. Institutions need to be re-engineered and existing structures discarded to make way for new systems that are in line with the new paradigms. Social enterprises play a beneficial role in these often disruptive changes and help both policy makers and the community to navigate, adapt and benefit from new processes and technologies (Lindhult and Guziana, 2011). In an environment of dismantling of government support structures and the promotion of favoured governing mechanisms such as private public partnerships (PPP), policy makers are increasingly looking at entrepreneurship as a poverty alleviation tool (Hall et al., 2012). Globally, governments are increasingly exploring social entrepreneurship processes for innovative solutions to social problems both as drivers of innovation and as solutions to complex issues. The office of Social Innovation and Civic Participation by the Obama Administration and the Social Innovation aspect – part of the Europe 2020 Flagship Initiative Innovation Union – are a few social enterprise approaches to complex social issues (Zeyen, 2012). The Draft National Entrepreneurship Policy of the Entrepreneurship Development Institute of India considers creation of social enterprises as part of the process of achieving inclusive growth.

It thus appears that social enterprises are those organisations that have a mandate for a social welfare outcome as a leading part of its mission statement. It is imperative that these enterprises are fostered and a supportive ecosystem created to generate more of such enterprises. Access to resources plays a critical role in the creation and fostering of any enterprise. Every organisation requires resources to exist and as a result has to engage with the forces that manage and act as gatekeepers to these resources (Desa and Basu, 2012). Impact investing is one of the funding avenues for social enterprises. As a term, 'impact investing' was first alluded to by a group of investors convened by the Rockefeller Foundation in 2007. The term includes a range of profit-oriented investment strategies that have sought social, environmental and financial returns. Impact investments that include micro finance models and crowd-funding internet-based platforms seek to evolve around technology and impact measurement metrics (Justis, 2009). Yet another term for funding processes in the sector of social enterprises is developmental venture capital which takes equity in the enterprises that are being funded with the twin goals of social and financial returns. Both, impact investing and development venture capital are forms of venture capital that focus on multiple goals for an enterprise than just a goal for profit alone. Reports say that the first venture firm of the 'modern'

type was American Research and Development (ARD), which was designed to finance 'noble ideas' (Rubin, 2009) and did not have a profit goal. ARD's first investment was in a business that was working on X-ray technology for cancer treatment.

Asia has large and successful social enterprises such as BRAC originating in Bangladesh with its presence in 14 countries (Salvado, 2011), Grameen Bank, Self-Employed Women's Association of India (SEWA), with over 1.2 million members (Shahnaz and Tan, 2009) and the Population and Community Development Association in Thailand. But these entities are the exception rather than the norm. Wide coverage in the media may give an illusion of the pervasiveness of successful social enterprises in Asia. However, most of them are small-to-mid-sized, with neither unlimited access to capital nor the required recognition of their impactful work. Funding for social missions continue to be largely through grant agencies and donor groups. However, donor funds could be erratic, subject to both political intent and financial stability of the donor. Policy framework is yet to be fully in line with a social enterprise's goals and requirements. NPOs in many Asian countries are not allowed to invest any savings as a result of their 'income generation' activities, and have to keep them in unproductive savings accounts (Shahnaz and Tan, 2009). In spite of these hurdles, the Asian social entrepreneurship sector ranges across a wide scale of industries including clean energy, health, microfinance, education, housing, micro and small-medium enterprises, environment, insurance, telecommunications, technology/transportation/infrastructure, fast-moving consumer goods, IT-enabled services water/sanitation, food security and media. Research also suggests that one of the reasons that the poor have disproportionate bad outcomes for the poor choices they make when compared to the more well off, is that they receive lesser benefits and 'protection' from both the private sector and the governments, in the event of failure (Karnani, 2009). Moreover, micro finance is not the panacea as promised and as hoped by many. The basic assumption of microfinance is that poor people have to essentially function as entrepreneurs. As with the middle class, most of the unorganized sector in India, which is about 90% of the working population, would prefer to have sustained employment, thereof compelling them to be untrained and often reluctant entrepreneurs. This is evidenced by the fact that about 90% of the workers in developed nations, educated and having access to financial services, are employees (Karnani, 2009).

It is seen that economic foundations of social entrepreneurship are not uniform across the 'third sector' (Young, 2014). Social entrepreneurs raise funds from a diverse basket as they are a heterogeneous group deriving

their origins from a diverse range of countries' sectors and fields. It could be surmised that social entrepreneurs need to be equipped with a varying set of skill sets based on the sector, field and level of economy they belong to. Skills required may be as varied as having to generate and manage funds in kind and cash from fee income, charity funds, government sources, interest income, partnership and volunteer support (Young, 2014). In the UK, a nation that is actively pursuing the paradigm of social and hybrid enterprises, the government has defined a social enterprise as 'a business with primarily social objectives whose surpluses are principally reinvested for that purpose in the business or in the community, rather than being driven by the need to maximise profit for shareholders and owners' (Doherty et al., 2014).

Social Enterprises as Hybrid Organisations

The hybrids evolve from a blend of artefacts from the purely commercial, the public sector and non-profit sectors, spanning boundaries and blending institutional paradigms of each sector to a tailor-made organisation that specifically serves its constituency (Doherty et al., 2014). Social enterprises are found in all sectors, in all sizes and in a diverse range of organisational structures. Varying in their geographical and cultural context, they exist in both rich and poor nations. As their chief goal is social impact, their disparate identities hamper the classification of such hybrid enterprises as viewed through the lens of organisational structure or legal framework. Establishing operational and success standards for an individual hybrid enterprise, both of which are critical for measuring the outcomes of an incubator, is difficult (Holt and Littlewood, 2015).

In biology, a hybrid is the result of the bringing together of two different species into a new hybrid form. To carry the analogy to an economic organisational structure, a hybrid organisation is the result of breaking down of institutional walls to merge into a new organisational whole. The norms, values, organiation systems and hierarchies of two disparate cultures are brought into a new archetype retaining the symbols and token of both cultures (Doherty et al., 2014). This brings about conflict during its interface with the surrounding economic environment that has distinctly separate norms of engaging with NPOs and for–profit organisations.

The lack of an established norm or a common standard for a social enterprise, especially with regard to its legal framework, has posed barriers in providing supportive framework to social and hybrid enterprises. The multiple institutional paradigms encased in one enterprise have proved a challenge for established and traditional financial structures to connect with the

financing needs of an innovative sector. Lack of timely finance is a barrier to develop the marketing, advocacy and other organisational requirements of the social enterprise. Financial sustainability seen in the context of a grants, fee-based income and project-based funding is a difficult balancing act for the social enterprises in the wake of the complexities involved (Sarriot et al., 2004 cited in Salvado, 2011).

Concept of Incubation

Definition

Business incubation is a process where newborn enterprises, even before inception at the business plan stage, are sheltered and just as in an actual incubator for newborn babies – a new business too is nurtured, but in this construct, for an average period of two years (Maital et al., 2008). An incubator fosters an environment where an organism or a business construct takes shape in a Petri dish or alternatively in the mind of the entrepreneur. It is handheld through the process of growing from a cell or in the business context from the ideation stage to a viable business. The investor through the business incubator may provide space, cash inflows and intangibles including relationships to a larger business ecosystem, mentorship in organisational skills, fund raising expertise and market access. In return, the investor and the business incubator would look at stakes in the incubated enterprise, firm valuations and a clear and defined exit strategy. Incubation helps in sheltering the infant enterprise from destabilising changes and from the frequent demise pattern of new business, till it reaches a self-sustaining stage where it has higher survival possibilities (Cruz et al., 2013).

The business model of incubators was initially used for reviving manufacture. The incubation model picked up about thirty years later where it gradually acquired the tomes of an industry in itself (Aernoudt, 2004). In the typology of incubators as classified by Aernoudt (2004), 'social incubators' that incubate social enterprises deal with the nonprofit sector and their main goal is to address the 'social gap'.

Incubators could be brick and mortar establishments that physically house the incubator such as the Business Innovation Centres (BIC) in Europe. When promoted by the government, they often state a goal of triggering local enterprise and innovation leading to economic growth. When promoted by private organisations, they could have varied goals of pure profit achieved through acquiring stakes in the incubatee which makes the incubator a stakeholder in the new 'graduated' enterprises, and increases the networking possibilities with new innovative enterprises. The incubation

process could also take the form of an innovation centre that offers support, expertise and even access to high technologies without providing physical space for operations. Incubation when done virtually comes in the form of mentorship, extending the brand strength and sharing of expertise without sharing the same physical space (Milanović et al., 2010). In all these variations of the incubation process, funding in the form of initial fund support could be part of the incubation package.

The business incubator itself could be viewed through the lens of a hybrid enterprise. Through the incubation process, clusters of businesses are formed, expertise of disparate skill areas are brought together to develop the incubatees' business strengths, including their financial management abilities, human resource relationships, market development tools and enterprise strategy. Clusters are created and skill sets shared, by bringing in expertise of diverse areas in the form of mentorship onto a single learning platform. Through its incubation process, there is a flattening of hierarchical traditions potential for new collaborations and partnerships in place of the traditional supply vendor chain, thus bringing the norms of multiple institutions into a new hybrid structure (Milanović et al., 2010). When the incubator processes both purely commercial and social enterprises, the for-profit incubates learn to engage with hybrid enterprise incubatees, a skill that is increasingly required outside the physical and virtual walls of the incubator.

Theoretical Framework of Incubation

The social enterprise itself being a hybrid enterprise could benefit when viewed from the twin lenses of Spence's (1973) signalling theory and Kolb's (1976, 1981) experiential learning theory frameworks. The complex ecosystem of business incubation when integrated with a multi-prismatic organism, the social enterprise will be better delineated through the weaves of the theory of multiple lineages.

Spence (1973) through his research in labour economics looked at information asymmetries in decision-making processes in the job market (Bergh et al., 2014). In general, signalling is used to distinguish 'quality'. For e.g., the third sector organisations or the NPOs operating in the environment sector will send indications of their environment efforts to stakeholders through communicating their actions on sustainability. In this instance, the information asymmetry is brought into equilibrium or a balance, so that the stakeholders can then make a decision on engaging with their preferred NPO based on their signalling of sustainability reporting. Here, the ability of the NPO to meet the environmental norms and requirements of its clients and

stakeholders, is the 'quality' that is sought to be signalled or communicated (Simeans and Koster, 2013). The business incubator through the process of its screening and focus on the business to be incubated, signals to the external world the quality, in this case, the viability of the business model. The fulfillment of the metrics of business success or in the case of the social enterprises, its social metrics, will in turn affirm the success of the business incubator by signalling to the external world including venture capitalists, potential collaborators and the government. The acceptance of an enterprise for incubation becomes a signal to the venture capitalist for distinguishing between ventures that have potential for viability (Bergh et al., 2014).

The second theoretical framework of experiential learning is based on Dewey's (1938) "theory of experience." As per Dewey, though conventional education related to imparting training on practice that was based on tradition, the new educational conventions required a 'theory of experience' to guide the learner through the acquisition of the knowledge process (Kolb and Kolb, 2005). Kolb developed the experiential learning model, a closed loop of "concrete experience (CE), reflective observation (RO), abstract conceptualisation (AC), and active experimentation (AE)", each step leading to the next (Kolb, 1976). Learning is a product of combining new experiences with existing thought models and translating existing concepts to newly acquired experiences (Kolb, 1976; 1981; Kolb and Kolb, 2005).

Incubators while performing their roles as shelters and 'promoters' of innovation transform the incubated entrepreneur through an educational process (Cruz et al., 2013). The incubator can be seen as a centre for experiential learning with the incubatees being strengthened in their business abilities and personal strengths through the expertise they gain from the diverse mentors and trainers. The Global Social Benefit Incubator (GSBI) in Santa Clara, USA, prefers to incubate social enterprises with only viable business models and established social networks. They in turn provide the incubatee social enterprises with training and funding through the Start-up and Small Business Innovation (SSBI)'s network with the Silicon Valley industry and their network of 120 Jesuit universities (Kreiner, 2014).

The author of this paper had co-founded a social enterprise in Information & Communication Technology (ICT) and agriculture in rural India, during the start of the new millennium and over a decade later researched on entrepreneurship at the business incubator of the Indian Institute of Management Bangalore (IIMB). The researcher's experiential observations while at the incubation centre were that signalling strengths acquired

through participating in the incubation ecosystem, would have better served the researcher's own entrepreneurial venture over a decade ago. The researcher's experiential learning while operating the social enterprise, combined with concepts explored during entrepreneurship research at the incubator, and interface with other incubatees at the incubator produced new knowledge.

Incubating Social Enterprises

In the conjoining of profit and impact goals of a hybrid enterprise, Santos et al., (2015) define profit as the 'value' that is achieved by the owners of the enterprise, be it shareholders, business partners or sole proprietors and 'impact' as the gains achieved by the enterprise's clients or direct beneficiaries of its services. Purely for-profit organisations need to focus on the profit outcome, whereas NPOs need to focus on only the social good achieved. The metrics for both are distinct and have normative good practices, to be followed. However the hybrid enterprise needs to do a fine balancing act of achieving the success metrics of a commercial entity and the social impact metrics of a NPO (Santos et al., 2015).

The social enterprise would benefit from all the inputs, both tangible and intangible, that the incubation process potentially provides. The resource strapped social entrepreneur would welcome a fund injection, premises for working and mentoring that provide support for markets, work force and strategic partnerships. Straddling the worlds of profit and non-profit, the social enterprise may not fit into the conventional bottom line and top line valuation norms of a conventional business incubator. The social enterprise with its double or even a triple bottom line objective may prioritise its social goals over its profit maximisation goals. Venture capital funding that operates in the sector of impact investing could help the social enterprise founder overcome this disconnect with commercial business funding mechanisms. Though sustainable venture capital is still an under-researched area, venture capitalists increasingly look to venture further afield from their traditional single bottom line targets. Impact investors, often through the incubators they are linked with, seek to perform advisory roles and provide network support for double and triple bottom line targets. Thus, social enterprises can seek sustainability and gain management capacity for both their profit and social paradigms of business operations and funding opportunities (Bocken, 2015).

Examples of Social Enterprise Incubators

In the mid-90s, Thousand Oaks Environmental Business Cluster (TOEBC) was USA's second incubator that seeded enterprises with environment as its mission goal, with the first based in San Jose focusing on environment technology. The incubators offered office space, internet access, environmental networking possibilities and high tech equipment. The incubatees at these environment focused incubation centres, benefited from the synergy resulting from connecting with other hybrid enterprises that were connected to the incubators (Grace, 1996).

In Chicago, USA, Impact Engine, an incubator that focuses on social enterprises with social and environmental goals had raised USD 500,000 as initial funds. Impact Engine's initial batch of incubatees included social enterprises in the sectors of education, energy, financial services and health. The GSBI program in the USA, which has incubated social enterprises in the sectors of alternative energy, information & communications technology, health care, education, water and microfinance aspires to 'incubate the incubator' (Kreiner, 2014). The Sonora Institute of Technology (ITSON) mission in Mexico includes bringing agri businesses, software and eco tourism companies to fruition, thus blending in both for-profit and hybrid enterprises. In its mission statement, ITSON wishes to focus on both 'ethical' and 'economic' value addition to its stakeholders viz the students, faculty and the community it serves (Kaufman et al., 2011).

In Ahmedabad, India, the Centre for Innovation, Incubation and Entrepreneurship (CUE–IIM) Ahmedabad, a university backed incubator has supported Aura Herbal Textiles Limited which worked on a herbal dyeing process to replace the environment polluting chemical dyeing process for fabrics (Bulsara et al., 2010). The Indian government has also developed plans to encourage the start-up ecosystem, with the Start-up India Project[4]. As part of enabling societal equity, the governmental screening process involves affirmative action by favouring the socially disadvantaged.

Targets and Outcomes Expected out of Social Enterprise Incubation

Social enterprise incubation should lead to a self-sustaining ecosystem wherein the entrepreneur who balances the parallel goals of social good and commerce can achieve sustainability after being processed through incubation. The social enterprise incubator is a crucible that will be an appropriate filter for motivating enterprises that meet current societal unmet needs. It provides the required signalling behaviour to the investor community who will form valuable linkages to the hybrid entrepreneur

through the incubator. Mentoring for market, strategy and financial capacity building can be delivered through a social incubator. The incubator has the potential to become a meeting ground for other stakeholders and specialists in hybrid enterprises including NPOs, related government functionaries and social enterprise volunteers.

Conclusion

Due to social enterprises being seen as an alternative and new solution to societal issues of poverty and inequity, there is increased motivation to create a niche space for this innovative business form. Incubators are part of the ecosystem that jump start business and can provide a gestation space to the often fragile entities of social enterprises. Though there are government initiatives in India to develop micro and small scale entrepreneurs in the form of institutions such as Council for Advancement of People's Action and Rural Technology (CAPART), Small Industries Development Bank of India (SIDBI) and the National Innovation Fund (NFI), there is no comprehensive approach to address the needs of social enterprises. Many of these social enterprises are struggling financially and at the most are able to service a few thousands when there is a dire need to address more than 600 million living in abject poverty or near poverty conditions in India, outside the access framework of most private and government services (Karnani, 2009).

An incubator offers the right environment to jump start the social enterprise and to get the business on a level ground with that of a for-profit enterprise. It also acts as a laboratory for the social enterprise ideation process to play out and evolve into a sustainable business through the sharing of knowledge and experiences made possible at the incubator. The networking opportunities availed by the sheer presence of the infant enterprise at an incubator alone could become a trigger and possibly even the foundation to its initial success.

The profile of the incubator, which mainly depends on the character of the entity forming the enterprise, will affect the incubation experience of the social enterprise incubatee. A government-backed incubator would have explicit mandates for social good and may have less room for operational flexibility. It would have access to vast resources but would be rigid in its operational framework. Incubators started by universities may have a business disconnect unless it is supported with commercial expertise. The community-run or an individual-led incubator may offer the maximum flexibility to operate and may have the most commonality of interest with the social entrepreneur; however will tend to have limited access to resources. Angel groups or venture capitalists networks could also initiate incubators,

but the funding exit norms may constrain the social entrepreneur who has her/his focus on the social bottom line with a lesser attention to its profitability.

The social incubator could be an ideal platform to leverage the experiential learning of other senior social entrepreneurs to jumpstart the hybrids that are being cultured in its premises. The networks developed at the incubator could sustain through the enterprises' life time and even transcend on to newer and evolving norms of social enterprises as societal needs change at a faster pace in the new millennium. Positive social engineering that leads to equity could also be realised through an incubator by affirmative action – for e.g., by screening for an equal representation of gender and communities while calling for social enterprise incubatees. Here, the social incubator plays a signalling role indicating to the investors the business feasibility of social enterprises that cater to the most underserved need of the moment and/or initiated by the least represented sections of society.

The incubation process could also potentially play a restrictive role in the creation and sustenance of the social enterprise. If the incubator does not follow the metrics of social and environmental good, the incubation process will prove detrimental to the very existence of the social enterprise incubated. The exit strategy of the investor may not be aligned with evolving mission goals of the hybrid enterprise, which by its definition needs to adapt its operations to the fragile eco-system in which it operates. Normative restrictions in the definition of an organisation as viewed by the business incubator may hamper the operational strategy and even the governance structure of a hybrid enterprise, many of whom sustain through collaborations and partnerships. The multiple identities and paradigms of hybrid enterprises make it difficult for the average investor to measure the success or failure of their investments. Valuation conflicts may arise between the entrepreneur, the board and executives appointed by the investors arranged through the incubator. Thus, it is seen that the business incubator cannot be viewed as a panacea for the social enterprise. When viewed through the paradigm of development, the need for evolving business structures are many and varied, while a few incubators cannot meet their complex needs.

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Incubators and Pre-incubates in Russian Universities: Used Models and Success Stories

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Bochkovskiy Pavel[3]

Abstract

The study explores the chain of successive stages through which the innovative project runs from its origins as a concept, to commercialization of its product/service, and to the post-incubation support. It has specifically focused on the analysis of the profit centre as one of the pre-incubator`s key structural units. The creation of such profit centres within the pre-incubator enables entrepreneurs to gain practical experience in doing business through interaction with experienced managers of the pre-incubator. The article reflects upon the current problems faced by small innovative enterprises in Russia and explores the possible ways of advancing their activities at early stages. It examines the basic phases of the so-called "spin-off" process and the possible barriers that can often be encountered by the entrepreneur during the "pre-incubation" and "incubation". Although there are several concerns relating to small innovative companies in Russia that need critical examination, authors in this study point out the positive trends in a pre-incubator`s development at leading universities, which for several years have proven their effectiveness.

***Keywords**: Incubators, National Innovation system, Pre-incubation, Small innovative enterprises, University, Russia.*

Introduction

Shrinking R&D expenditure and a decline in financing of small enterprise support programmes in Russia have decreased the innovative activity

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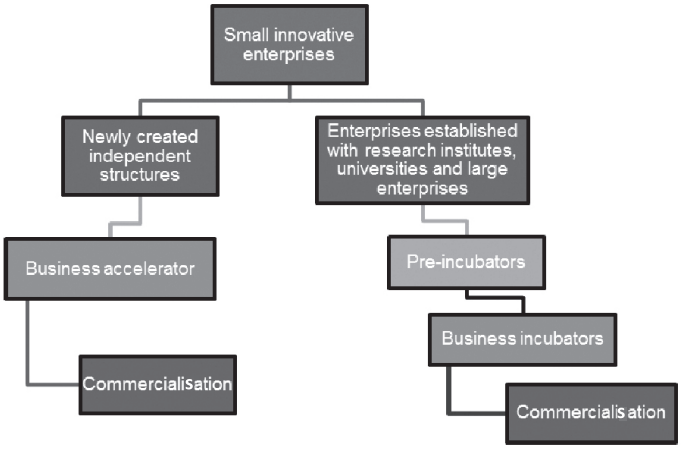
of small enterprises. However, Russian policy in the field of innovation continues to set extremely high goals, which are simply unattainable in the current conditions. Russian government has recognised the need to develop a way towards commercialising the results of scientific research. Since the beginning of market reforms, it has been struggling to reduce the gap between itself and the other advanced countries in the field of science and technology. The Russian government recognises the importance of commercialisation of scientific research and the problems associated with it, besides the technological gap it encounters with the world-class science and technology development.

Strengthening cooperation between science and business structures and encouraging the commercialisation of research and development is a widely discussed problem in industrialised countries. Today, insufficient R&D innovation is embodied in various spheres. Research universities and institutes have significant potential for the development of a city or region, but the potential has no actual implementation. Moreover Russian economy has no "success stories" as the Silicon Valley. The issue however can be addressed through the development of small-enterprise incubation and pre-incubation systems. The main purpose of a pre-incubator, created as an interface between universities and business incubators, should enable the conditions in which entrepreneurs have an opportunity to check the competitiveness of their products, and their business idea, and also experience doing business at the very early stages prior to starting their own companies. This article examines the basic phases of the so-called "spin-off" process and the possible barriers that can often be encountered by the entrepreneur during "pre-incubation" and "incubation". The study analyses the profit centre as one of the pre-incubator`s key structural units. The creation of such a profit centre within the pre-incubator enables entrepreneurs to gain practical experience in doing business through interaction with experienced managers of the pre-incubator (Leonova, 2010).

Small Innovative Enterprises

Small innovative enterprises can be divided into two groups: the newly created independent structures and enterprises established with research institutes, universities and large enterprises. Based on this classification, the author develops proposals for a development policy to stimulate the SIE (small innovative enterprises) in Russia as represented in Figure 1.

Figure 1: Commercialisation of Small Innovative Enterprises



Source: Author

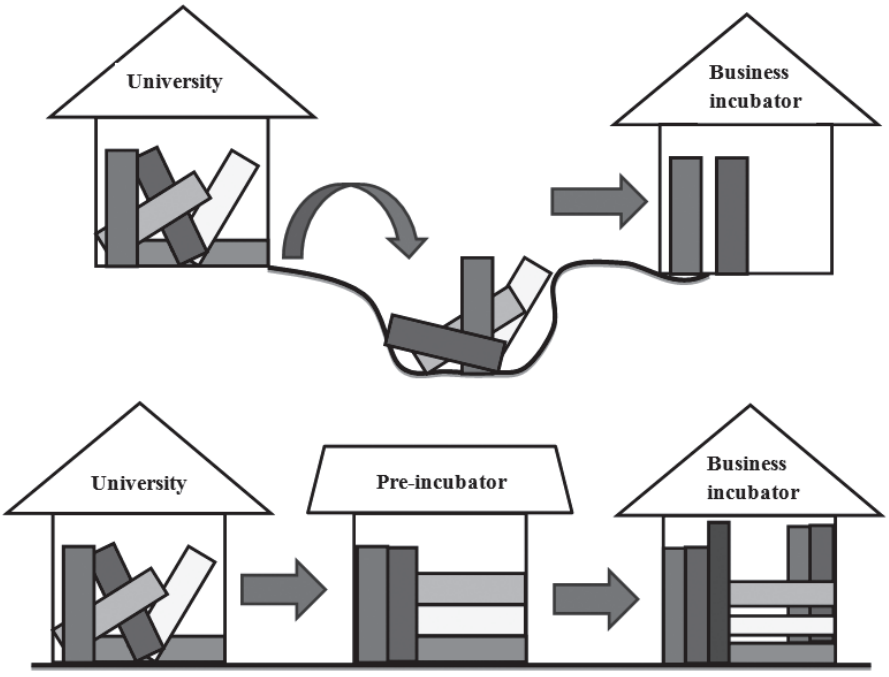
Small innovative enterprises in Russia operate their business in many ways. One of them is to start as an independent structure, which can join a business accelerator. SIE during business accelerator programmes gain access to capital and investment in return for start-up equity. Another way of doing business is a kind of enterprise established with research institutes and universities. Usually, it is with the pre-incubator, where a SIE can check the competitiveness in business with less risk prior to starting its own independent company and before it joins the global market.

Incubation and Pre-incubation

In today's economy, there are a variety of programmes of business incubators and business parks, which have shown to be effective in working with start-ups. However, business accelerators and pre-incubators can promise greater prospects for growth and allow entrepreneurs to obtain advice from specialists and assistance in the development of the idea, financing, and most importantly, an opportunity to devote few months to a specific idea. As part of the pre-incubation programme consultancy services renting rooms at affordable prices are the key to sampled start-ups. The purpose of pre-incubation is the removal of obstacles to the spin-off process by creating new infrastructure elements necessary for the incubator. In these new objects that are created at the interface between universities and business incubators, potential entrepreneurs have an opportunity to check

the competitiveness of their products before the registration of private companies (See Figure 2).

Figure 2: Pre-Incubation Model



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Spin-off process, mentioned above, can be divided into successive phases, where entrepreneurs can encounter problems. They include three phases.

First phase is to test the technology, when there is a technological uncertainty. At this stage, it is unclear, whether the idea is cost-effective or not, so the emphasis should be placed on improving the technology. Second phase is to test a business idea. Although innovative solutions that can be applied to the practical aspects of life are considered, the market can reject the idea. Third phase consists of checking the growth wherein the company should focus on further development.

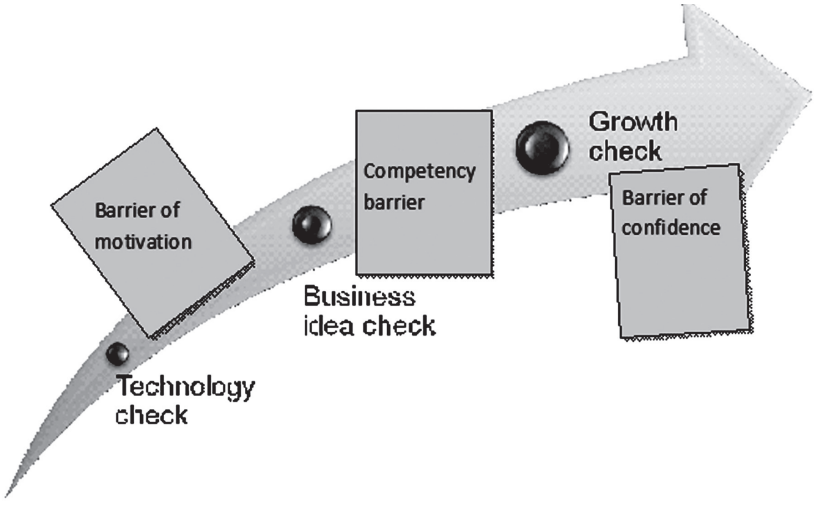
The transition from one phase to another can go wrong, therefore, only a small part of the idea may be popular in the market. Here, the most suitable can be referred to as "evolutionary selection". As part of this concept, initially only commercialised technological solutions are considered. The solutions are adopted due to the demand for them in the market. However, it is

important to understand potential competitiveness of innovative solutions which may be evident before placing them in the market. Weaknesses of these innovative solutions can be eliminated by the decision to commercialise and also introduce diversity to the market innovative products, which is an important aspect of the developmental process (Rajaniemi et al., 2011).

Barriers to Reach Pre-incubation and Incubation Stages

In the process of commercialisation of potential ideas, an entrepreneur can face a number of obstacles (See Fig. 3). First, businesses can encounter the obstacles with the "barrier of motivation". There is the chance that market researchers may decline to take part in the business. At the heart of this phenomenon are the opportunity costs of establishment. On the one hand, the entrepreneur faces the loss of permanent jobs and financial security; and on the other hand, it could be viewed as 'waste of time' because the development and implementation of the project is not equal to career growth and may not lead to expected results. Another barrier may be "competency barrier", which arises due to the lack of entrepreneurial and company management skills. The third barrier common to all start-ups is the "barrier of confidence" which arises due to the lack of will for development and also due to non-availability of formal and informal networks in the market for the development of the project.

Figure 3: Barriers to pre-incubation and incubation stages



Source: Adapted from Clarysse et al., 2005

The main task of incubation is to eliminate these problems. Hence, prior to incubation programmes within the university, there should be the task of ensuring the creation of a medium through which it would be possible to bring an innovative idea to the market. This will in turn increase the number of spin-off businesses at universities, in the case of successful completion of the project. There are three types of strategies to address them.

- General stimulation of the entrepreneurial activity. In this case, the majority of enterprises are not committed to growth.
- Formation of spin-off companies with high growth potential (pre-incubation).
- Financial investments in spin-off companies (incubation).

Hence, it is necessary to create pre-incubators in universities that would guide the enterprising projects regarding business incubators. Pre-incubation and incubation phases could be complementary to each other. Both the phases are essential, especially in the less developed regions, where spin-off companies are rare and success stories of incubation are limited. As part of an evolutionary approach, incubation's main task is the successful implementation of the idea into the market. However, the main task of pre-incubation is to strengthen formal and informal relationships between the enterprise and the project launch of the institutional and business environment in order to completely utilise the capacity of the industry. When encountered with several problems and issues, pre-incubators together with business incubators can help entrepreneurs to facilitate their entry into the market. Pre-incubators assist entrepreneurs in business organisations by sharing the knowledge of management. Innovative features of pre-incubation include the fact that entrepreneurs are given the opportunity to test their business idea and gain the experience of doing business at very early stage, even in the absence of their own company. Unlike traditional business incubators, pre-incubators only support entrepreneurial projects (start-ups) and not already registered companies (Leonova and Maxim, 2013).

Pre-incubation phase concludes with the support offered to entrepreneurs in designing the contract for the provision of services that allows start-ups to carry out normal business operations such as sales of pilot products. Financial risks are borne by entrepreneurs as a team of senior managers and defendants for the execution of all business transactions. The act of registration of the enterprise should take place after a successful pre-

incubation period, when scientists or entrepreneurial team have gained sufficient knowledge, skills and experience for self-management of the company. Due to self-confidence and experience gained by entrepreneurs during the pre-incubation stage, their concerns and anxieties for future failure are significantly reduced.

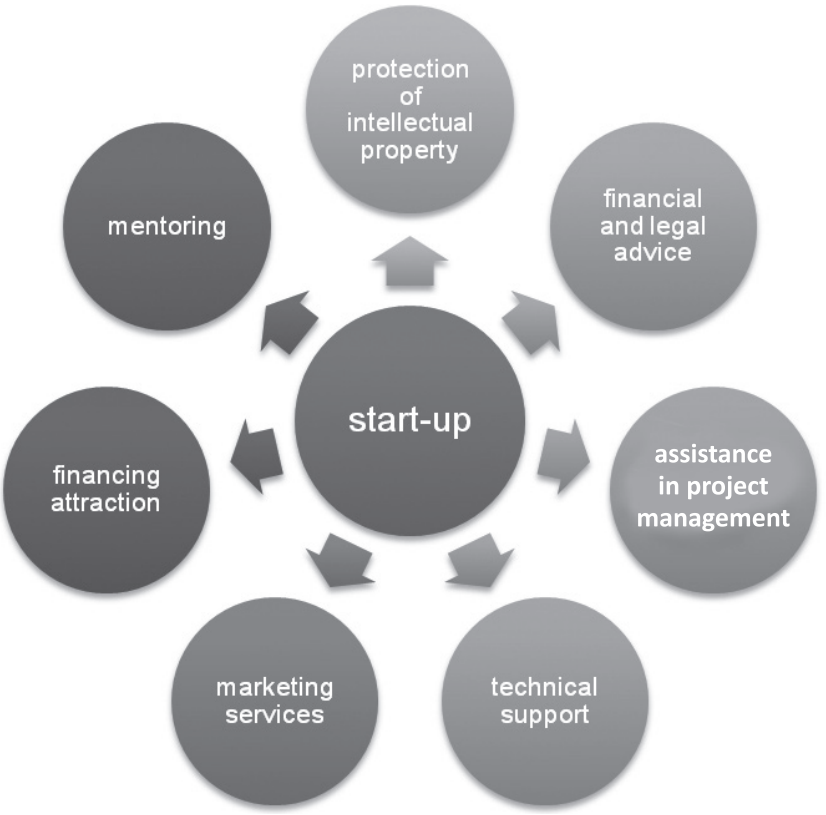
Objectives and Functions of Pre-incubators

Pre-incubators can be established in the form of limited liability companies and joint stock companies, which work closely with the university. Thus, in the Russian innovation system, pre-incubators bridge the gap between the university and business incubator (See Figure 2). Target groups at the incubator are not only the students and graduates of the university, but also researchers and educators. The main objectives of pre-incubators include:

- Enhancing the qualification of entrepreneurs and enabling them to handle an independent foundation and management of the company.
- Increasing the number of university spin-off companies.
- Creating sustainable spin-off.
- Imbibing "entrepreneurial culture" in higher education through programmes and activities.

Pre-incubators should support the business ideas of students and scholars, established on the basis of innovative technologies that have high commercial potential. Pre-incubator`s work should be focused on training and mentoring potential entrepreneurs and to provide a legal basis for business start-ups, which are not independent legal entities. During pre-incubation, entrepreneurs are studying market demand and potential business ideas to sell the pilot products and services. If the market-test is successful, the entrepreneur closes his project in the pre-incubator and may then proceed to the registration of the company. The main functions of the pre-incubator include the following: assistance in the protection of intellectual property; financial and legal advice; assistance in project management, technical support of the project, marketing services; assistance in attracting funding from the state budget and extra-budgetary funds and mentoring (See Figure 4).

Figure 4: Functions of Pre-incubator



Source: Author

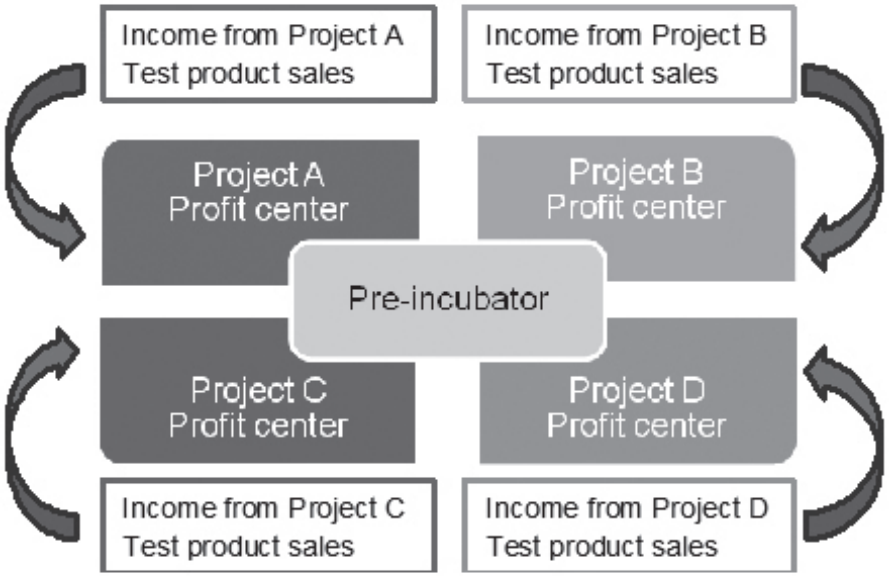
A pre-incubator provides viable conditions for training of potential entrepreneurs by stimulating, motivating, and supporting them to be in an active position. Although some scientists tend to play an active role during the commercialisation process of their research results, they are often exempted from duties such as accounting and other administrative tasks. The proposed model in the paper offers a pre-incubator special entrepreneurial training, personal coaching, and access to the appropriate network (See Figure 2).

Activities in various start-ups may be different and differ in specialisation. Start-ups in the field of information & communication technology may tend to have different eco-system when compared to consulting activities in the fields of biotechnology. Pre-incubation phase followed by the incubation phase facilitates the new potential entrepreneurs with the necessary eco-system and support system in their respective fields.

Testing the Market through Sales

One of the pre-incubator`s structural units is the financial centre. It has the potential to become a profit centre as it provides financial resources and nurtures economic activities of the entrepreneur and his/her team (See Figure 5).

Figure 5: Profit Centres at the Start-up's Pre-incubator Site



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Businesses can use the proceeds from the test product sales, which form the cash resource profit centre, for the payment of staff salaries and other costs associated with the activity. In addition, businesses can choose their own clients and suppliers on behalf of the pre-incubator. Further, the company can use its own corporate identity of the project such as the individual's name, logo and design. While understanding pre-incubation as a concept, it is important to note that the contracting party advocates a pre-incubator and not an entrepreneur. During the pre-incubation, due to the pre-incubator`s management contracts with customers or suppliers, entrepreneurs on specific personal examples are exposed to situations where they tend to learn how the agreements are handled and concluded.

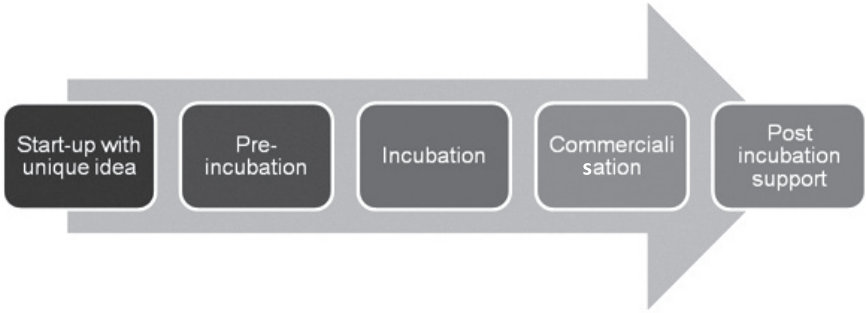
Pre-incubator`s managers are responsible for financial management, for maintaining the detailed records of all financial transactions. Profit centres provide entrepreneurs with regular reports on the financial situation. Being involved in the management of the business, the entrepreneur obtains practical experience to handle a separate independent business. Another essential element in this model is the pre-incubator`s insurance in case of potential losses caused by business activities. For example, it is necessary in cases where an entrepreneur has damaged the pre-incubator's property due to improper use of technical equipment, or if the start-up product has harmed the health of customers. While attempts can be made to address the essentials, the so-called business risks cannot be insured. However, due to financial support of the state venture funds, ministries and partners, a pre-incubator is able to cover some of its expenses. They may include costs associated with market analysis, marketing, external affairs, legal or economic consulting business accelerators, shipping, business correspondence, public relations, novelty of research, charges to file the registration of a patent or brand, office supplies, software, communications and travel expenses, rent for offices in the technology centre, etc. These expenses should not be offset by profit centres. In adopting this model of creating a pre-incubator, each institution must contribute to this process by offering its technical infrastructure and internal resources for entrepreneurs, which should be recorded in an appropriate agreement on cooperation between the university and pre-incubator.

Developmental Stages of an Innovative Project

An innovative project runs a chain of successive stages from the concept or an idea, to commercialisation of the product/service, and to the post-incubation support (See Figure 6).

Stage 1 is the start-up stage with a unique idea/innovation. Initially, there is an initiation, i.e. the activity consists of choosing targets of innovation that include formulation of the problem, finding the idea of innovation and its feasibility. Further, during this stage, there are efforts to overcome "the barrier of motivation". The business idea is nurtured and developed, which is reflected in the business plan. The preparation of a business plan is an essential part of the process of implementing the enterprise idea, which is transformed into a special start-up project, which includes actions such as the identification and acquisition of specific resources and the necessary actions for the formation of legal business entities.

Figure 6: Innovative Project Stages



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Stage 2 focuses on the pre-incubation process and provides a stable transition from 'idea phase' to 'growth phase'. During this stage, core competencies of the enterprise are formed and developed. It also helps in overcoming the "barrier of competences". A justification is made for the innovation and market research is conducted for the product/service. The project team has studied the demand for a new product, determined by the release of the product volume, consumer properties and commodity characteristics of innovation. The primary product is ready for initial testing.

Stage 3 is the actual incubation stage. During this stage, all the business opportunities are used to overcome "the barrier of confidence". The innovative product/services is actively tested and introduced in the market delivering a package of measures aimed at implementing innovation (advertising, organising the trading process, and others.)

Stage 4 is the commercialisation stage. Managers try to define the factors, which are able to slow down or speed up the innovation process. Successful commercialisation of an innovative process ends the diffusion of innovation, which is an extension of development of innovations in new regions and new markets.

Stage 5 is the post-incubation support. During this phase, the entrepreneurs and managers make full use of production and the possibility of consulting the business incubator. The project may leave the site, but can continue to use post-incubation support if necessary.

Formation of such infrastructure in universities and providing legal, organisational and technical support of innovation activity requires certain financial investments. Therefore, it seems appropriate to consider the

possibility of creating pre-incubator and business incubators in higher education not only in the form of companies, as established by law, but also in the form of producers' cooperatives, in which universities and research institutes would be able to participate as members, making mutual contributions to the indivisible fund co-op, which cannot be distributed among the members of the cooperative, but the amount can be credited depending upon the deposit amount.

Production cooperative consists of an association of individual labour input, rather than capital which can be a useful approach for the organisation of the pre-incubator and is expected to use a maximum workforce. Profit of the cooperative will be distributed among its members in accordance with their participation and the size of the contribution. Members of the cooperative with limited personal labour participation in cooperative activities and lesser financial contribution will receive their appropriate share. By the decision of the general meeting of cooperative members, cooperative's profits will be distributed among its employees, who will be able to attract business accelerators and consulting firms. The number of pre-incubator`s members cannot be less than five people. Members of the incubator will include citizens of the Russian Federation as well as foreign citizens to enable the membership and participation of international experts (Leonova et al., 2011). The legal entity will allow participants to:

- Participate in the production and other economic activities of the cooperative, as well as in the general meeting of cooperative members with the right to vote.
- Elect and be elected to the Supervisory Board, the executive and supervisory bodies of the cooperative.
- Make proposals for the improvement of the cooperative activities.
- Receive a share of the cooperative profits to be distributed among its members, as well as other payments.
- Seek information from officials of the cooperative with any questions of its activities.
- Withdraw at their discretion from the cooperative and receive stipulated amount by this Federal Law and the charter of the cooperative payments.

Conclusion

Russian business incubators are perceived exclusively as office space. In Russia, projects need to focus not on the "square and accounting". Projects should focus on a network of contacts in the incubator and in constant action of exploring the investors. A number of business incubators are successfully operating in Russia only on the basis of the university reputation. Examples include business incubators of the Russian Presidential Academy of National Economy and Public Administration. Business incubators arrange meetings with industry leaders and organise educational programmes in which mentors from Silicon Valley work with start-ups. Incubators organises gatherings in order to attract potential investors who engage in financing the project; encourage participation in trade fairs and specialised events; pay for patenting and registration of a legal entity; support research funding, etc. Several business incubators are associated approximately with around 120 start-ups. HSE Business Incubator in Moscow is involved in financing of start-ups and promotes the incubator projects at exhibitions. During the year, the incubator produces 4-6 projects and those who win contests become the residents. Together in all streams, there are about fifty projects. Business Incubator of MSU (Moscow State University) through its annual programme "Formula for Success" organised by the Moscow State University has about 70-80 people and 20 projects which are active. Annually, the incubator produced only 5 viable projects.

To conclude, this article argues that business incubators and pre-incubators developed in Russia are not viable and good enough when compared with other developed countries. However, there are number of positive trends that can be witnessed in the pre-incubator`s development at the leading universities. They have proven their effectiveness in the recent years and thus signal the growth and development of business incubators in the future years. Pre-incubators strengthen the interface between science and business structures; stimulate the commercialisation of research and development in universities; and improve the potential for partnership between small innovative companies and universities in Russia.

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Reflections on Business Incubation Processes in a Technical University

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Jyoti Tikoria[2]

Abstract

The paper presents the authors' reflections on business incubation processes drawn from their experiences of managing a business incubator in an Indian technical university. Given the technical ambience, quality of students and entrepreneurship programs, BITS Pilani provides the ideal ground to churn out several start-ups and campus incubator pipeline. Within-campus incubators offer attractive opportunities to student start-up enthusiasts. Access to faculty, alumni and huge lab-structure are the key advantages of campus incubators. However, experience has shown that these incubators are not able to easily exploit the aforementioned advantages due to various factors. First, being student-entrepreneur populated, incubators are not able to provide the networked learning that is possible when more 'experienced' start-up professionals share the same space. Second, university policies and governance systems are unable to adapt quickly to the different needs of a start-up ecosystem. Third, evidences reveal that faculty are experienced in research in the labs but most researches are unable to complete the link from lab to market.

Keywords: *Business incubation, Ecosystems, Governance, Student start-ups, University incubator, India.*

Introduction

Incubators are programmes designed to support the successful development of entrepreneurial companies through an array of business support resources and services, devised by incubator management and offered both in the incubation centre and through its network of contacts. The concept of incubators for business start-ups is borrowed and adapted from

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the field of medicine; and refers to such support mechanisms that help in the vulnerable, nascent struggle phase of start-ups by providing them with physical facilities. It may include office space with basic communication infrastructure, mentorship and networking contacts, especially for facilitating access to capital, identity and recognition because of association with the incubator and its sponsor institutions, and techno-managerial assistance through the incubator's professionals and/or network (Smilor & Gill, 1986; Aernoudt, 2004; Bollingtoft & Ulhoi, 2005). Govindaranjan and Fisher (1990) opine that the practice of resource sharing by the incubatees yields synergetic advantage. Major incubators can be divided into two distinct categories: industry-specific and business incubators. Industry-specific incubators provide access to required labs with industry standard equipment, access to real deployment sites or venues to test the product in the real world. However, these are very rare incubators for core industries such as medical, embedded systems or robotics.

Understanding the Concept of 'Business Incubator'

Hackett & Dilts (2004) defined business Incubator as a shared office-space facility that seeks to provide its incubatees i.e. ("portfolio" or "client" or "tenant-companies") with a strategic, value-adding intervention process of business incubation. According to Rice (2002), "A business incubator in collaboration with the community in which it operates is a 'producer'" of business assistance programmes. The entrepreneurial ventures located in an incubator, as 'consumers' of those outputs, operate in an interdependent coproduction relationship with the incubator". Aerts et al. (2007) emphasise that business incubators represent an environment designed to hatch enterprises. National Business Incubation Association – NIBA defines business incubation as a process that accelerates the successful development of start-ups by providing entrepreneurs with an array of targeted resources and services.[i]

A business incubator's main goal is to produce successful firms that will leave the programme financially viable and free-standing. Business incubators help emerging businesses by providing various support services such as assistance in developing business and marketing plans, building management teams, obtaining capital, and access to a range of other more specialised professional services (Sherman and Chappell, 1998). Allen and Rahman (1985) assert that management problems, under capitalisation and lack of business skills hamper survival rates among new ventures and this is where the incubator facility plays a key role by providing the assistance that fills the knowledge gaps, reduces early-stage operational costs such as

rent and service fees, and establishes entrepreneurs in a local enterprise support network. Business incubators provide benefits such as pitching sessions with industry experts or investors/VCs; access to mentors who have mentored many start-ups and interaction with industry experts. They organise sessions on a fortnightly basis; and their agendas revolve around improving business strategy, better presentation, creating IPs, product reviews and seek expert opinions for tech companies.

Incubators vary in the way they deliver their services, in their organisational structure, and in the types of clients they serve. Successful completion of a business incubation programme increases the likelihood that a start-up company will stay in business for the long term. NBIA's Impact of Incubator Investments Study – the results of which were published in 1997 found that among incubation programmes that were responding, 87% of incubator graduates were still in business. This further supports the cause of establishing incubators (Molnar et al., 1997).

Business Incubation in India

While the business incubator industry in USA came into existence in 1959; India witnessed business incubation only in 1984 when the Department of Science & Technology (DST) set up the first scheme to help entrepreneurs bootstrap their business. The Government of India was an early adopter of business incubators as a tool and launched a nationwide incubation programme under the aegis of National Science and Technology Entrepreneurship Development Board (NSTEDB) in 2000 by DST (NSTEDB Report, 2009). Today, even after twenty-six years, not much has been achieved in the business incubation landscape in India; and these incubation centres are still at a nascent stage when compared to business incubators in top global tech schools in terms of funds, research opportunities, access to right mentors, etc.

The Technology Business Incubators (TBI) funded by various government sources and departments such as DST, etc., are aimed at promoting entrepreneurship development by focussing on promoting technology/ knowledge-based businesses. They are largely designed to be an interface and networking mechanism between academic, R&D institutions, industries and financial institutions. They aim to provide a platform for speedy commercialisation of the technologies developed in the institutes to reach the end-users. Niti Aayog, Government of India under Atal Innovation Mission has announced well-structured schemes to set up new incubator centres and support the existing incubators for scaling up their capacity.

The schemes have provided full flexibility to the applicant institute to create provisions for financial support of professional staff and building the infrastructure in emerging areas of innovation. The schemes have attracted participation by both academic and non-academic institutes. These schemes may help in addressing the limitations and constraints of the existing incubation infrastructure in India.

The need and importance of business Incubation is also, amply emphasised in the National Entrepreneurship Policy for India. As the Indian government is trying to promote start-up culture in the country, the number of students selecting entrepreneurial paths through start-ups is likely to increase in the future years. To meet the requirements of the young population, universities must be prepared to provide them with the necessary guidance and basic amenities. The process of launching a start-up can be made easier by reducing administrative efforts, legal machinery and other related aspects, allowing them to focus more on their core technology.

The recent series of successes in new technology establishments has intensified the wave of start-up culture in India. Individuals, institutions, governments are eager and anxious be a part of this start-up revolution, be it by way of launching own start-up, investing in a start-up, or supporting the ecosystem that harbours start-ups. The excitement and engagement in the technical campuses is possibly more as each student who is technology-enabled, dreams of being the next Zuckerberg. The start-up fervour and enthusiasm has reached other educational campuses too. Some of the top technical schools in India such as Indian Institute of Technology (IIT), National Institute of Technology (NIT), Birla Institute of Technology & Science (BITs), etc., have successfully encouraged and nurtured business incubation in their campuses. Activities in the incubation centre have motivated bright students to convert their innovative ideas into business ventures. However, more focused efforts are needed to enable these business incubators to create new jobs and develop companies evolving new technologies. Infrastructure in the incubation centres can be further increased to support the start-up efforts of the students with better projects and ideas. Besides, they provide students with opportunities of funding, mentorship and other resources to convert their ideas into valued products/services. They also

encourage the youth to shift from a job-seeking mindset to a value-creating mindset among the youth.

The Case of BITS

BITS Pilani, one of the pioneer institutions providing technical education in India has undertaken the task of entrepreneurial training and mentoring more than a decade ago, and has successfully created an ecosystem for promoting entrepreneurship in the campus. The formal teaching of entrepreneurship courses, mentorship programmes, and networking is supported by setting up and running business incubators on all the BITS Pilani campuses in India which include Pilani, Goa and Hyderabad. The incubators are designed to provide both physical and virtual incubation to start-ups originating from among the BITS Pilani university students, alumni and faculty as well as new ventures from the local geography. Start-up incubators and accelerators hosted by universities can serve as core centres for local community members to start new companies and solve innovation and commercialisation challenges. Incubators focus on addressing community issues such as supporting local start-ups by providing mentorship and technical support, thus contributing to local economies. These within-campus incubators also offer attractive opportunities to the student start-up enthusiasts.

The admittance into on-campus business incubators is determined by the application submitted by the entrepreneur. In general, start-ups with only a feasible business idea and workable business plan are incubated, making it difficult to compare the success rates of incubated companies with general business survival tactics. In this article, based on the data collected through personal interviews, the authors share the perspective of incubatees and their own reflections as administrators.

Incubatees perspective

The incubatees parked at TBI, BITS Pilani in Goa and Pilani campuses were interviewed understand their views on campus incubators. The questions included: What should campus incubators ideally provide to its incubatees? What are the reasons for them to join the incubator and what benefits they could gain from the incubator? What are the additional provision that can be made to attract the incubatees?

In response to the above queries, incubatees felt that during the initial days, it is very important to guide students towards how-to-think about business models. They need guidance on several aspects such as trimming

down the pitches and core product/service, how to evolve the product/service and ensure IP protection, etc. In order to achieve that, campus incubators can regularly review the work done by incubatee companies and invite experienced entrepreneurs, mentors and investors specific to the company's field. They can be done through video and conference calls if personal visits cannot be made by the experts. This can be a huge support to the incubatees, especially if the mentor gets involved with the start-up's challenges.

Second, incubatees feel that even in absence of clear-cut competitive goals, the on-campus incubators are able to make an important contribution to the development of the start-ups. Creation of technology, patentable and otherwise, is much more by start-ups incubated in the campus incubators when compared to outside-incubators. Third, as these university incubators are rooted in academia, they promote research & development oriented projects. Although, outside-incubators are revenue-centric, their engagement with the commercially oriented projects is well-known. Hence, incubatees suggest that there should be provisions for outside-incubators to access labs, maker space and faculty as consultants. They proposed that a small amount can be earmarked in department budgets to be provided as a seed fund of Rs. 50,000 per start-up for prototyping (consumables for hardware, server space for software/web companies) to encourage outside-incubators.

Fourth, providing course credits for start-up-related activities, mentoring for structured market analysis, support in applying for grants and facilitating the founders to perform 'immersions' in shadow target market profiles, can be useful according to incubatees in the initial phases. These suggestions are both feasible and pertinent, and the authors support it as many of these can be easily converted to action and would help the incubating companies to gain strength.

Fifth, incubatees also found that the university incubators gave them more credibility, by providing a brand identity to the start-ups, through being located in a premier institute campus. Incubatee status also, facilitates them in accessing seed funds, mentorship, writing of basic business plans, building motivation for the team and provides a professional place to work. They were particularly helpful for incubatees in terms of giving them a designated work area where much work was actually completed, away from noisy hostels, and in providing them with bright and enthusiastic student interns. Sixth, the initial feedback on presentation pitches made by

the incubatees led to drastic improvement leading them towards the real market. Most incubatees stated that incubators provide valuable platform for sharing ideas.

Administrators' Perspective

The authors argue that the role of campus incubators should be towards creating a podium allowing students to explore their market ideas in a "safe environment". The control on costs of running a company and promoters' personal expenses, along with 'no salary foregone' are very important factors in establishing the advantages for student start-ups to incubate in campus incubators. If they can spend one year in just understanding all the stakeholders, building a sensible business model and conducting small experiments to crystallise their idea – they are ready to move out and engage with the real market, or at least mature to gain from a business incubator. Therefore, campus incubators can be game changers by allowing student companies to experiment. It would be further useful if the campus incubator can instill some project management techniques in an informal manner in these companies. Setting up monthly and quarterly goals mutually, designing time-bound experiments, analysis of results, developing a business case, etc are some of them. Such monitoring and reporting can prove beneficial to both sides namely incubatee and incubator owners/ administrators.

Once an outside investor/angel/VC or profit-oriented equity demanding incubators comes into the life of a start up, the focus shifts towards execution of the idea, which requires different expertise. Campus incubators can differentiate by helping companies clearly define the idea and product. The risks, time and costs involved in developing a feasible business idea, or creating a new technology product are low on campus incubators. This advocacy can provide an important proposition to define the identity of a campus incubator.

Conclusion

While the authors appreciate the efforts involved in establishing and sustaining the incubation centre, they also strongly recommend that managing incubators located in universities in a professional and sustainable manner, requires some strategic changes. Their experiences reveal that these incubators are unable to optimise and capitalise the available advantages. Hence there are a few important issues and concerns that need

to be addressed. First, there is need for assigning dedicated and adequate space for TBI within the university campus. Second, it is essential to recruit dedicated and separate staff/professionals for managing day-to-day activities to strengthen the business focus of the incubator and incubatees. This is especially effective when these persons have either direct start-up, entrepreneurial experience or have guided start-ups in other incubators, investing concerns, etc.

Third, there should be efforts to make the TBI an integral and yet distinct part of the university system. The serious limitations in creating start-ups through campus incubators stems from the fact that the orientation of the institution in most of its activities (writing the proposal to set up the incubator, managing its infrastructure, handling incubates etc) all remain academic. The degree and extent of academic orientation need critical examination. It should be known as a lab-space that produces start-ups instead of research! If the orientation is tilted towards industry practices, faculty interested in 'lab to land' type of research will get involved and appreciate the benefits of incubation; and the entire concept can focus on creating technology that can be commercialised to help people. Fourth, monitoring of incubator activities through formal processes, checks and balances would improve the performance of the incubator but more importantly, create timely feedback points for the incubating start-ups.

Fifth, since student-entrepreneurs dominate the campus, university incubators miss out on the networked learning that is possible when more 'experienced' start-up professionals share the same space. Access to outside entrepreneurs is beneficial as it presents continuous opportunities to interact with like-minded people, most of who could be possibly engaged and involved in the similar or related issues. Regular and frequent interaction with other start-ups also has to be enabled. Attracting incubatees from start-ups outside the college would help in developing such an advantage and strengthen the network of incubators. Synergistic efforts become possible as one incubator is able to exploit the advantages of the other. Campus incubators should associate closely with other incubators in the region, with investors, individuals, banks or VCs, as the learning is entirely experience-based and practical. Lastly, making the incubator visible in the university is essential. Often, students and faculty may not even know whether an incubator exists in the university.

Monitoring and successfully enabling the incubators in an engineering campus although is a great challenge, the satisfaction it provides to the enablers is immense. To augment the incubation industry and its

advantages, it is essential to enhance the desired impact of the incubator on various stakeholders especially the young students. The authors have been a part of the management team of the university incubator in Goa and Pilani campuses for the past several years. They observe the importance of incubators to be self-sufficient and self-sustained. Self-sustainability of the TBI requires that the incubator should run by itself as a start-up, in terms of organisational structure, infrastructure, governance and working. It requires dedicated professional staff to manage the incubator. Often, to address these challenges of the need to be self-sufficient university have a tendency to make the process cost-effective and prefer it to be managed by the teaching staff, thus discouraging to hire professional staff. Even though the teaching staff manage these incubators efficiently and deliver results, some of them tend to disengage from it eventually if it is assigned as additional tasks besides regular assignments.

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ENDNOTES

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Incubation for Student Entrepreneurs: Experiences from the Hindustan Technology Business Incubator

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Abstract

Business incubators (BI) help start-up businesses with all the necessary resources/support that the start-up needs to evolve and grow as a mature business. Typically, the BIs provide incubatees with necessary infrastructure support, technology/prototype development support, research assistance in procuring funding, business consulting assistance, etc., to enable the start-up and make it a success. The incubation for student start-ups is unique in its experience, since it involves a distinct approach. Unlike the full-time entrepreneurs, the student entrepreneurs have different demands in promoting and running the enterprise. Balancing both the worlds of academics and business is a challenge by itself. This paper reflects the challenges in incubating student entrepreneurs based on the experiences of Hindustan Technology Business Incubator and discusses specific issues involved in mentoring.

Keywords: *Business incubator, Innovation, Mentoring, Student entrepreneur.*

Introduction

India has witnessed several changes in the last couple of years in the field of business, economy and politics. For the first time in 30 years, there was an absolute majority and a single party government at the centre. The stock market was scaling fresh heights with regularity and the rupee had shown signs of stability impacting the investor's mood. The initial measures undertaken by the government created the perception that doing business in India is now easier and the country had sought the attention of investors. The promise of flexibility in the administration ensured removal of bottlenecks responsible for stalling the much needed growth for the past many years. Attempts were made by the government to remove hurdles regarding

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several issues such as tax policy, land acquisition issues, environment approvals, labour laws, etc., and ensured that India regains the confidence of investors and corporates. Furthermore, there was also an increased belief in the power of 3Ds that is expected to form the building block of India's growth story – Democracy, Demographic dividend and Demand. India is the world's largest democracy and despite the geographical diversity, the people of India have shown their faith in the democratic system. The second D refers to the demographic dividend, with nearly 65% of the country's population in the working age group; there is huge powerhouse of human potential that needs to be tapped. The third D is Demand – being home to 1.25 billion people, there is a huge demand for all sorts of goods and services that makes the Indian market an attractive prospect to everyone. The 3Ds in short, capture the immense potential and opportunities available in India (CII, 2015).

Campaigns such as "Make in India" that aim at turning the country into a global manufacturing hub and increase the per capita income by creating jobs for over 10 million people are some of the steps undertaken to boost the economy. Such initiatives encourage the move of the Indian economy from a services-driven growth model to a labour-intensive manufacturing-driven growth, which is more sustainable. By focusing on export-oriented manufacturing, heavy infrastructure building and urbanisation in parallel, the government aims to emulate China and the East Asian economic model, paving the way for sustained rapid economic expansion (CII, 2015).

India will soon enter the stage of reaping the demographic dividend. During this phase, most of the population contributes to the country's gross domestic product. It is a phase of lower dependency ratio – that refers to the number of children or elderly dependent on each earning person. The lower the dependency ratio – the higher the economic growth will be, all else being equal. This extra boost to growth is the demographic dividend, and it is one of the best phases in the life cycle of a nation. Focused steps need to be taken to reap maximum benefits in this phase. While replicating the remarkable economic development model in both savings and GDP growth (East Asian economic miracle is a good approach), it is equally important to understand and find a solution to the unique problems of the country to maximise the opportunity. India ranks 35th in the Global Talent Index 2015. However, India needs to invest enough money into education to convert the large number of new workers into moderately productive ones. The country's economy has to be organised so that the available profits from a growing workforce get reinvested in the economy (GTI, 2015).

India's Resurgence in the Global Arena

Resurgence, the word as it is, reminds us of the ancient mythical bird "Phoenix" which would rise from its ashes to take a new birth. Though not in ashes, it is the right time for India to initiate the actuation process of resurgence which would steer the country to lead the world. Now, there is an air of resurgence. Is it because that the new government in power is taking up the much awaited direction and initiatives, the clarion calls to "Make in India", the rejuvenated foreign relations, etc.? The answer would be both 'Yes' and "No". It is a "Yes" because the much awaited initiatives have started coming from the top. "No" because we need more than "direction" to bring out such a change. The secret ingredient of this transformation lies with the people of India. It is the potential that this young nation with 800 million people in the working age holds, that makes India brim with optimism and confidence (CII, 2015).

India has a large population of 1.27 billion people of which more than half are under the age of 25 years. With a projected average age of 29 years, India will be one of the world's youngest countries by 2020. India also has the world's second-largest population of higher education students, and is expected to overtake China in that respect in the next decade. India's higher education capabilities have been on a steady growth for some years now. India already has the largest system in the world in terms of the number of higher education institutions. Higher education enrolment as a percentage of graduate-aged students (the gross enrolment ratio, or GER) has more than doubled over the last decade, but at 24.69% in 2013, it is still found to be less than the global average of 27% (GTI, 2015).

The Indian government is aiming to increase the GER (higher education) to 30% by 2020. However, even in the context of a rapid expansion of the education system over the last several years to achieve the target, it shall require a massive expansion on a scale which shall be first of its kind. The challenge is huge, since India has to accommodate an additional 14 million students, on top of the current enrolment of 26 million, in order to hit that 2020 target. The government is being urged to take up the expansion plans by some profound undercurrent shifts in the Indian economy. India is projected to be the world's third-largest economy by 2030 (after only China and the US). Also, according to several forecasts, by 2020, 90% of the country's GDP and 75% of its employment will be emerging from the services and manufacturing sectors (EY, 2014).

Such a structural shift in employment shall increase demand for knowledge workers, innovators, and scholars who can survive in a global and robust economy. India, with its fairly large workforce and increasing numbers of higher education graduates, shall have a strategic advantage to reap the benefits of this shift. However, for encashing the 'demographic dividend', there is need to create a globally oriented, competitive higher education system, which promotes innovation and entrepreneurship.

Need for Innovation and Entrepreneurship

Entrepreneurs play an important role in the economic development of a country. Successful entrepreneurs are creative and innovative. They bring new products and solutions to the market and improve market efficiency. They not only create jobs and wealth but also enhance economic growth. New firms adopting creative destruction, tend to shift surpluses from rent-seeking large producers to consumers and the society as a whole. The great economist, Joseph Schumpeter, placed innovation as the epicentre of economic theory and capitalism. He advocated that innovation was the process through which economies were able to break out from static mode to the path of dynamism. His theory of "creative destruction" was the first to highlight the importance of innovators in revolutionising the economy and its structure, leading to the creation of new products, services, and markets, and replacement of the old. While promotion of entrepreneurship can lead to growth and job creation, failure to promote entrepreneurship can result in stagnation leading to social and economic inertia (NITI, 2015).

Given the employment crisis in India and its outgrown population, the ability of entrepreneurs to create jobs is increasingly relevant. Increasing number of educated graduates necessitates creation of new businesses for absorption of their talent. Therefore, developing and sustaining a vibrant entrepreneurial ecosystem is one policy option that should be integral to any economic development plan. India has seen a wave of successful entrepreneurship earlier in history, which started during the time of the Swadeshi movement. Amongst these entrepreneurs were Jamshedji Tata who established the first iron and steel company, P.C. Roy who founded Bengal Chemical Works, V.O. Chidambaran Pillai who started the Steam Navigation Company, and Khwaja Hamied who founded Cipla, a pharmaceutical company. These firms have played a pivotal role in proving the mettle of this country. Now, with the advent of technology-driven growth, the entrepreneurial culture in India is picking up rapidly. Bangalore has been shortlisted within the world's 20 leading start-up cities in the 2015 Startup Genome Project ranking. It is also ranked among the world's five

fastest growing start-up cities. Nevertheless, much of this entrepreneurship is confined to the services sector which includes IT, e-commerce, and m-commerce. Also, the number of entrepreneurial ventures remains small in proportion to the growing population of India (NITI, 2015).

The Global Entrepreneurship Monitor that tracks entrepreneurial activity, declares that new business ownership rate for India in 2013 was the same as that of 2008. To create new jobs, as a country, we must move beyond our dependence upon IT achievements and the industrial conglomerates that instigated growth in the early era of liberalisation. Instead, India needs to develop technological capabilities to serve the requirements of its core industries. Capital goods used in manufacturing industries are mostly imported, as are electronic goods (Jose and Bosma, 2013).

There is tremendous scope to boost entrepreneurship in India. Some sectors that provide opportunities for growth including auto components, IT infrastructure, biotechnology, health care and education are poised to grow manifold in size over the next couple of years. This shall be possible by bringing about innovation in driving the economy. Traditional manufacturing has become increasingly commoditised, hence intellectual property is the need of the hour. It necessitates an increase in the government investment in R&D, knowledge-creation, and technological progress which have a role to play in fuelling innovation, productivity, capital creation, and therefore growth. This thinking highlights the scope for appropriate government policy and investment to enable entrepreneurship and innovation (NITI, 2015).

While supporting young technological firms and other new-age innovative sectors is important, India also needs to develop an ecosystem that encourages innovation as a more mature enterprise across the industrial spectrum. This segment has the capacity to generate a large number of jobs. Business incubators have the mandate to nurture and facilitate such growth among young start-ups.

Business Incubation

Business incubation is a process designed to facilitate the successful development of entrepreneurial ventures by providing an array of business support resources/services developed by the incubator management, and offered both in the incubator and through its network of contacts. Successful completion of the business incubation period increases the likelihood that a start-up company will stay in business in the long term. Incubators differ in terms of their service provision, organisation structure and in the type

of clients they serve. Some of the characteristic features of the Incubators include: a managed workspace providing shared facilities and a nurturing environment for resident companies; small management team with core competencies; advisory, training and financial services; resident companies up to 10-20 in number which might generally graduate after 2-3 years of incubation (Lewis et al., 2011). For a business incubator to be successful, there is need for a proper ecosystem supporting its activities. The NSTEDB (2015) has identified a list of factors essential for building a successful business incubator. They include:

- Presence of an industrial and business climate in the region
- High level of commitment by the host institution
- Presence of a competent team at the incubator
- Good research & development base and channels for commercialisation within the host institute to facilitate early success
- Ability of the host institute to network for knowledge as well as resources

Several countries, including India, are still trying their best to identify the right mix for a technology business incubator (TBI), which shall effectively foster innovation and entrepreneurship. Although the Indian government is trying to aggressively promote innovation and entrepreneurship through programmes such as Startup India, Atal Innovation Mission, etc., innovators and entrepreneurs continue to face innumerable challenges and the new venture failure rate is still very high. In this scenario, the role of technology business incubation centres, have assumed much significance, since they provide an enabling environment to deal with difficulties in the process of innovation and entrepreneurship, by providing comprehensive and integrated support to the innovators and entrepreneurs, thus augmenting the success rate of startup firms substantially. With 50 years of its continued service to imparting excellent engineering education, it was a natural choice for Hindustan Institute of Technology & Science (HITS) to provide a platform to encourage the innovation and entrepreneurship among its students. As a result, the Hindustan Technology Business Incubator (HTBI) was established in April 2015.

HTBI & HEIC at Hindustan University

The facility at the 'The Hindustan Technology Business Incubator' (HTBI) & 'Hindustan Entrepreneurship and Innovation Centre' (HEIC) is about 1000 square feet carpet area, with work stations, wi-fi connectivity, office cubicles

for campus companies & startups, conference hall and a training hall with audio-visual facilities. Their objective includes the following (HITS, 2015):

- HTBI & HEIC focus on encouraging innovative talents and spirits of the students.
- Activities are centered on fostering the spirit of entrepreneurship and quickening the pulse in the entrepreneurial direction. A dedicated cell for entrepreneurship activities was established in August 2007 in collaboration with National Entrepreneurship Network (NEN).
- HTBI & HEIC are committed to the development and growth of innovation and entrepreneurial culture in the campus. Accordingly, several internal and external programmes are organised to motivate the students and support them technically. Students are encouraged to ideate and develop a business plan.

The vision of HTBI & HEIC is to create an ecosystem which offers every student a chance to be innovative, creative and tactical to pursue his or her entrepreneurial dreams by gaining economic, technical and entrepreneurial expertise in their chosen field. The vision statement of the university says – "to make every man a success and no man a failure" (HITS, 2015). Efforts are made to translate the vision of HTBI & HEIC into action by strengthening the function through focused long-term and short-term plans (HITS, 2015). They include: emphasising focus on the three thrust areas – innovation/ entrepreneurship/outreach programmes; inviting experts in respective fields to become part of HTBI & HEIC's advisory board; reaching out to students from all disciplines right from the first year, to provide ample time to discover themselves. To meet the objectives, HTBI & HEIC are engaged in various activities (See Table 1).

Table 1: Activities at HTBI & HEIC

Ideate	**Interact**	**Consolidate**
Distinguished Lectures	Networking Events	Training Sessions
E-Week Celebrations	Participation in Competitions	Weekly Mentoring Sessions
Entrepreneurship Awareness Camps	Industrial Visits	Campus Companies/ Start-up Incubation

Source: Compiled by Authors

The Hindustan Innovation Challenge Experiment

The 'Hindustan Innovation Challenge' (HIC) is one of the flagship events of the HTBI & HEIC. It was launched in 2015 and has harnessed several factors to the advantage of the student innovators. HIC aimed at inspiring students to use creativity, enabling them to form multi-disciplinary teams. Teams of two to six students were formed to work on their innovative projects. Student teams have presented their innovative projects through eight rounds of screening before the grand finale.

The Hindustan Innovation Challenge is a one-of-its-kind, a science hunt, which aims to recognise young engineers from the campus to think out-of-the-box. Nominations for the challenge is thrown open to all streams of engineering in the campus, which encouraged many of the students to get together as teams and work on an innovative idea. As the domains were not restrictive, there was ample scope for creativity, multi-disciplinary approach and opportunity to work with a passionate idea. It was interesting to note that the barriers of seniority in the campus were also broken, as many passionate and novice first-year engineers enrolled themselves for the challenge without any hesitation about the expert seniors and researchers. The contestants underwent several rounds of screening comprising abstract presentation, preliminary screening round with external mentor, presentation before a panel of experts, poster presentation on Facebook (review by peers and members), video posting on Facebook (review by peers and members), video review by expert panel, one minute pitch, expert panel review of the video and interaction.

After these evaluations, 34 teams contested at the grand finale and were subjected to evaluation by 13 eminent members from different corporates. This provided a dynamic platform for the industry–institute interaction. The corporate panel members raised several relevant questions which made the whole process a valuable learning experience for the campus innovators. The students were upbeat about shaping up their ideas and the faculty mentors were motivated by the passion of these young innovators. They sought clarifications and information, and were busy finding solutions to the problems. In a nutshell, the campus was upbeat with the 'innovation' fever.

Students were engaged in variety of problem-oriented innovative projects. Solving the water stagnation problem on roads, sending a rover to explore planet Venus, building an app for tracking the college bus, work on a mobile app to save fishermen from crossing borders, improving efficiency of bikes, generating renewable energy downstream, etc. are some of the examples.

Many students were engaged in creating social media apps and one team also expressed interest in testing their abilities to harness the God's particle. Overall, the atmosphere was filled with an air of innovation. During the process, there were several obstacles which were encountered and were overruled by adopting the right approach/strategy. Table 2 summarises the different barriers encountered and strategies adopted to overcome those barriers.

Table 2: Barriers Encountered during the Incubation Process and Strategies Adopted to Overcome Them

Barriers	**Blocks and Limiting Beliefs**	**Strategies adopted to overcome barriers**
Negative Attitude	Tendency to focus on the negative aspects of problems and expend energy on anxiety and worry.	Engaged in series of interaction and explained the inherent opportunities.
Fear of Failure	Fear of embarrassment, looking foolish or being laughed at.	The term *failure* was replaced by *learning experience.* Participants were not rejected, instead motivated during the first two rounds of the contest
Academic Stress	Obsessed with the academic routine. Not having time to think productively. The over-stressed student faced difficulties in thinking creatively.	Peer learning & inspiration from competitor teams; Mentoring.
Confirmity	Tendency to conform to accepted patterns of belief or thought – the rules and limitations of the status quo often hampered creative breakthrough.	Teams were motivated to think 'out-of-the-box' through the expert panel review sessions.
Making Assumptions	Both conscious and unconscious assumptions restrict creative thinking.	Identified, examined and challenging the assumptions. Ensuring that the new ideas are not excluded.
Over-confidence	Issue of bounded rationality which excludes imagination, intuition, learning, etc.	Mentoring sessions and expert panel review.

Source: Compiled by Authors

Mentor – The Guidepost

Whenever there was a dilemma, the innovators/entrepreneurs look for advice. Innovators/entrepreneurs, especially youngsters tend to seek advice wherever there is a dilemma. Although they seek views from friends and family (who sometimes are inclined tell them what they want to hear), it is essential that they are assisted by mentors who can provide them with objective advice. A mentor could be a professional who advises entrepreneurs for a living or someone working in a related industry and is willing to help you. Unlike the friends and family, mentors are typically more removed from you and your business. Hence, they tend to be more objective and comfortable in delivering bad or critical news and advice. Since many such mentors are themselves innovators, researchers, entrepreneurs or intrapreneurs, their experience can be of great help in handling specific business/innovation challenges. Based on their experiences of an incubation process at the HTBI and HEIC, the following five qualities have been identified as essential for an ideal mentor. They include:

- **Pragmatism:** Most of the student entrepreneurs/innovators have ideas but are unable to put into practice easily. Their passion needs refinement and implementation. A good mentor will have some knowledge and perspective on almost every business subject, which compounds his/her effectiveness. An ideal potential mentor should be able to speak sense on a variety of industries.
- **Fortitude:** Most of the student entrepreneurs/innovators tend to be driven by the crisis of the moment. As a result, they may neglect the real priorities of growing the business. Once you share your long-term goals with your mentor, he/she may remind you at an appropriate time and help you to get back on the right track. It is essential that prospective mentors have such fortitude to envisage and advice.
- **Stamina:** A successful business is hungry for a constant stream of ideas for scaling and expanding, with a realistic understanding of the costs and resources required. Then, there is the exit strategy, which needs planning, connections and forethought. Certainly, you need a mentor to help you out. Thus, he/she should ensure that the prospective mentor is a storehouse of such energy.
- **Connections:** When you are in need of the right investors, equipment and legal or accounting advice, your mentor shall have the contacts and knows where to find those such critical information. More importantly, a mentor shall guide you to build and maintain your own

list of such critical contacts. Check whether the prospective mentor has such a network of contacts.

- **Perspective:** A mentor shall know what exactly to look for, and shall be able to see from the point of view of your customers. Since you are passionate about your idea, you may get so immersed in your business that you forget to step out and look at your business. It is like living next to the railway track - after sometime, your ears become deaf to the noise of trains. Is your prospective mentor pointing out such noises to you? Is he the devil's advocate?

Thus, with the guidance of a proper mentor, an entrepreneur or a business shall be able to reach greater heights. A passion that is guided properly shall create histories. The right mentor shall be able to provide guidance that can create history. University campus with its learned population of faculty members is an additional strength as they are available in the campus for mentoring. They are a great advantage to student innovators/entrepreneurs and enable the conversion of students' ideas into reality. Faculty enjoy an already established rapport with the students and share a comfort zone which easily facilitates discussion and smooth interaction. They are often the first persons with whom the students discuss their innovation/venture ideas. A faculty mentor with his/her enthusiasm and thoughtful questioning, prodding and encouragement, can enable the students to enjoy a fruitful learning experience. HIC thus provided a flipped classroom atmosphere, where the young engineers worked on their innovative ideas with the faculty mentors as facilitators, guiding their progress.

Conclusion

Hindustan University situated in the vibrant industrial city of Chennai serves as an ideal location for the establishment of a business incubator. With its strong presence for more than three decades in the current IT corridor of Chennai, the campus provides an ideal atmosphere for industry networking and academic research available for enthusiastic innovators and entrepreneurs. The Hindustan Technology Business Incubator (HTBI) & Hindustan Entrepreneurship and Innovation Centre (HEIC) are dedicated to the development of innovation and entrepreneurial activities within the campus. This paper was an attempt to share initial process of incubation experiences in the HITS campus and the learning gathered from the experiments for replication and scaling up. With a structured approach to facilitate and mentor young innovators and entrepreneurs in the campus, it has the potential to nurture innovations and help the growth of enterprises within the campus. HIC envisages enterprises that graduate

from the campuses besides providing graduates who are job seekers with degree certificates. India needs a vibrant band of young entrepreneurs/ intrapreneurs driven by innovative ideas; and a dynamic university ecosystem, which can nourish such entrepreneurial ideas leading us to the next phase of growth which can successfully capitalise and encash on India's demographic dividend.

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Fostering Entrepreneurship through Technology Business Incubation in an Indian Rural Landscape

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Abstract

Technology Business Incubator (TBI) at Bannari Amman Institute of Technology (BIT) was established in 2007 with an objective to promote knowledge-driven and technology-intensive enterprises mainly in the focal area of application of biotechnology in agro, industrial and rural sectors. This report reviews the pattern of growth of BIT-TBI for the last five years of its existence. In order to facilitate the successful creation of bright and sustainable start-up companies, a number of fair measures have been adopted with different levels of success. The report lists some of the measures undertaken and discusses the challenges encountered by the TBI in a rural landscape. It also delineates the critical elements essential for sustenance of TBI in a rural setting. The study summarises the efforts involved in TBI to reach the creation of a dependable pipeline of innovations for the TBI and concludes that localised solutions in tandem with viable 'enterprise building' ideas lead to the creation of vibrant innovation ecosystem.

Keywords: *Entrepreneurship, Rural landscape, Technology Business Incubation.*

Introduction

Technology Business Incubators (TBI) support the early stage start-up firms that are established on basis of technology or service oriented innovation ideas. While ensuring the survival and growth of new idea-based ventures, TBIs have been handholding the acceleration of the young entrepreneurial

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start-ups from early stage to mid-stage enterprise development.[i] Besides providing work-space and office facilities, TBIs also deliver business and professional services for nurturing and supporting the early stage ventures. Since technological innovation has been recognised as a key differentiator for the economic prosperity of nations from the mid-80s onwards, there were fruitful attempts in India for seeding technological innovation and entrepreneurship through Science & Technology Entrepreneurial Parks (STEP). Department of Science & Technology (DST), Government of India through National Science and Technology Entrepreneurship Development Board (NSTEDB) pioneered the STEP activities which culminated in today's TBI movement (NSTEDB, 2014). TBIs exist as technology and innovation hubs in campuses of government and private universities, engineering colleges, R&D institutions, etc.

BIT-TBI is a joint venture of Bannari Amman Institute of Technology (BIT) in Sathyamangalam, Tamil Nadu (India) and Department of Science and Technology (DST), Government of India, New Delhi. It was established in October, 2007 as an institutional mechanism to help and promote knowledge-driven and technology-intensive enterprises in the focal domain of application of biotechnology in agro, industrial and rural sectors. Understanding the natural strengths of the locality, raw material availability patterns, existing modes of local commerce, the degree of business savvy approaches and attitudes of locals, support systems available for sustained business, living standards of general public, geographical specialties, connectivity, etc were taken into consideration while setting the early stage incubation activities. (See Appendix 1 for specific aspects of location and promoters of BIT-TBI.)

Review of Literature

TBI is perceived as a synergistic platform where selected proposals emerging from idea screening sessions can get fine-tuned and tested for proof-of-concept. TBI provides the crucial component called co-working space for enterprise building. This is essentially a sort of a high-trust environment for attaining the desired results. Pain points of start-ups get addressed at TBI with an array of required support services and desirable interventions from expert mentor pool (Faria, 2015). Seed support is provided to the innovators as per the merit of the idea/s under commercialisation and as per the suitability of linking ideas with those schemes under operation. Networking and marketing initiation also come under the ambit of regular TBI activities. TBI can be termed as centre for knowledge, value and wealth

creation. As more number of start-ups are established, TBI will assume the status as repository of enabled technologies (Hack et al., 2014).

The general public and/or the student community holding innovative ideas across various technology domains can get their lead ideas tested for commercialisation suitability in TBIs. Those ideas which are technically feasible, financially lucrative, capable of creating market traction and/or having a positive social impact are normally permitted to blossom as start-up ventures. Such start-up idea based ventures can remain as tenant companies within TBI (physical incubation) or as virtual incubation firms and can operate from remote locations. The typical spectrum of TBI services extended to such selected ideas, for them to bloom as start-ups are characterised by value proposition. Such start-ups, in turn, can monetise the delivered value or can avail value-based secondary funding (Hack et al., 2014). Typically, TBIs focusing on rural landscape can result in the creation of jobs at local level and reduce unemployment by creating a favorable ecosystem for entrepreneurial development. The main focus area under the rural incubation is to nurture and accelerate those commercial activities, which are need-based to create enterprises in the rural areas (ASPIRE, 2015).

Livelihood Business Incubators are being created in India as the National Small Industries Corporation (NSIC)'s "Rapid Incubation Model" or as rural incubation centres under Public Private Partnership (PPP) mode with the institutions, namely: NSIC, KVIC or Coir Board or any other institution/agency of central/state government. Rapid incubation model is a mix of "promotion of entrepreneurship and skill development" and involves setting up of live "demo projects"(ASPIRE, 2015). Rural Technology Business Incubator (RTBI), attached to IIT-Madras has been working towards imparting entrepreneurship and skill development training to the youth; and provides mentoring and hand-holding. RTBI endow the incubatees with grants and funding opportunities with a view to empower the youth to set up their own business enterprises. They promote new low-end-technology-based enterprises (Thomas, 2014).

Objective of the Study

The study is an attempt to review the initial five active years of BIT-TBI, observe the growth pattern of the incubation centre and identify the challenges encountered at the remotely located TBIs. The authors use the secondary data available at the BIT-TBI centre during the last five years of its operation to understand the challenges and the headways made before reaching the current level of progress. The study aims towards exploring the

typical issues associated with TBIs, while handling the early stages ventures in less dense innovations zones.

Incubation Scenario at BIT-TBI

Earnest efforts by the TBI team to facilitate/support the viable early stage ventures are reflected in the data on current incubations (See Table 1). These developments took place only after substantial work was undertaken to create an entrepreneurial ecosystem infrastructure and fine tune it towards creating an innovation pipeline. During 2015-16, the centre was in the process of nurturing 48 incubations. Of them, 18 were in 'proof of concept' stage, 22 were in 'prototype stage' and 8 were in 'product stage'.

Table 1: Summarised incubation scenario of BIT-TBI during its 8th year of operation

Sl. No.	Details of Incubations	Number
1.	No. of current incubations	48
2.	No. of student incubatees	21 (44% students)
	– Student incubatees (team)	21
	– Student incubatees (individuals)	56
	– Student Incubatees (Alumni)	12
3.	Men/Women incubatees (individuals)	79:16 (20% women)
4.	Incubatees (other districts/states)	22 (23%)
5.	Product/Service Incubations	42:06 (14.3% services)
6.	Stage of Incubations	03 stages
	– Proof of Concept	18
	– Prototype Stage	22
	– Product Stage	08
7.	Social/Regular Incubation	04:44 (~9% SEI)
8.	BT (focal area)/General Incubation	16:32 (1:3)
9.	High Impact Incubations	09 (18.8%)
10.	Average Walk-ins/Conversion these days	150/year/conversion 5:1

Source: Authors & BIT-TBI

The modes of operation of BIT-TBI during the first three years of its operation (2008 to 2011 - Phase 1) and the later years (2011-2016 - Phase 2) are contrasted by several factors (See Appendix 2). During the initial phase of growth (2008 to 2010), even though TBI had established its facilities and

had engaged in consistent interaction with the locals, the activities were not being translated into credible growth indicators for this RTBI. Professional interventions and perseverance exhibited in the operations reversed the trend during phase II of its growth (2011 to date). The initial stages to create a conducive innovative ecosystem and later progressively opt for a quality innovation pipeline involved dedicated and rigorous efforts by the TBI team. Once established, several other stakeholders and incubation services supported its growth and development.

The pipeline strategy seemed to yield positive results. Several innovative ideas from students and the general public who showed inclination towards innovation-based commercialisation surfaced through the BIT-TBI. The vibrant start-up culture which was prevailing in India also seemed to contribute to the BIT-TBI's growth. As a result of adequate and appropriate motivational stimuli and 'strategic fine-tuning imparting activities' at the centre, entrepreneurial momentum gradually became visible in the campus through students and other stakeholders. Table 2 succinctly indicates the current status of student participation (in BIT) in the viable technical venture creation as a career option. The range of products/services in the market from graduated and existing incubatees is shown in Appendix 3.

Table 02: Status of student participation (in BIT) in viable technical venture creation as a career option during 2015 & 2016

Sl. No.	Student Participation Details	Number
1.	Continuous interactions on weekly basis	450 students/week
2.	Current student incubatees (teams)	21
3.	Subject-wise student incubations a) BT/ FD b) Mech. c) EEE/ EIE d) IT/CSE e) Mechatronics. f) AUTO g) TT/FT h) Civil i) Education j) Rural Development/SE k) Design L) Agriculture	12 categories 04 02 03 02 03 01 01 01 01 01 01 01

4.	Seed fund for student incubatees a) MSME b) AICTW/EDC c)TANSTIA	 03 04 04
5.	Proof of concept sought (in pipeline)	24
6.	Contests participated	20
7.	Enterprise already formed (students)	03
8.	Awards by students incubates	06
9.	Other incubation service for students a) Hands-on-training b) Idea validation c) Expos d) Pitching practices e) B-Plan training f) IPR training g) Analytical testing h) Projects/Short-term lab work	 07 255 04 16 16 04 26 47 (95 students)

Source: Authors and BIT-TBI

Pre-incubation Pipeline

The BTI-TBI initiative of working towards attaining the pre-incubation pipeline during the last couple of years was one the critical components that culminated in to its success. This activity increased the bench strength of people who were interested in pre-incubation events and drills that could fetch them tenant status in the TBI (See Table 3). The pipeline strategy in the incubation process yielded results. The most beneficial was the impact it had on the students by creating appropriate motivational stimuli. It also fine-tuned their activities, which was essential for creating visible entrepreneurial momentum among students in the BIT campus. These developments led BIT-TBI to believe that there is sufficient momentum and positive affinity towards innovation-based small ventures in the locality. It was only after such initial visibility in the TBI activities that other stakeholders keen on converting the 'innovation to investible profit-making ventures' began recognising the local BIT-TBI platform. Several new programmes were announced by the DST for promotion of the innovation. During 2016-17,

there was 500% increase in the ministerial fund allocation to NSTEDB by the Government of India to support new schemes related to innovation-based start-ups. TBIs across India benefited from opportunities to enhance their ecosystem with developmental projects.

Table 3: Pre-incubation pipeline for small venture creation through BIT-TBI (2015-16)

Walk-ins	FMCG/ Consumer Durables	Engineering/ Manufacturing.	Design/IT	HC/Pharma	Total
Students	09	05	09	01	24
Public	21	04	03	01	29
Total	30	09	12	02	53

Source: Authors and BIT-TBI

Graduated incubations and support services from BIT-TBI

Pioneering start-up activities initiated as 'early bird innovation executions' in BIT-TBI, need appreciation as it is unique to create a full-fledged innovation area from a less dense innovation zone, especially when there are hardly any role models around. It was a result of the perseverance of the innovators who sustained their enthusiasm until they reached the logical conclusion of the projects. In spite of the long gestation period inherent to biotechnology incubations, eight of the early stage incubatees graduated after fulfilling their desired objectives. These early bird incubatees not only remained commercially vibrant but also turned out to be serial entrepreneurs. See Appendix 4 for positive impact created mainly from graduated incubatees and a few existing incubatees, who have reached the finished product stage. BIT-TBI also organised special events to ensure the presence of first-timers. Table 4 presents the details of the event and the specialised technical, social-entrepreneurial venture ideas associated with them.

Pre-incubation Momentum and Awareness Creation Initiatives

Innovation pipeline creation is critical for sustained new venture support activities. Being a less dense innovation zone (tier III), systematic efforts were required to create minimum levels of awareness and sensitise people with technical ideas on incubations.

Table 4: Incubation leading to business acceleration

NIF (core innovation recognition)	Opting for specific acceleration	Getting to extended marketing	Angel referral readiness	BIG scheme of DBT(Stage 1)	Event Title
02	09	06	10	02	**No. of Incubatees selected**
Automobile innovation useful for heavy trucks (easy to incorporate, affordable, excellent tool for hill climbing).	Nine incubatees awaiting results from start-up wave Demo day of *Intellecap*.	Six of our incubation products are with supply chain mangement experts.	Investments culminated into promising products/ services having potential for financial and social returns shortlisted.	DIA dip tea for diabetic population	
Null combustion engine (perfect idea for proof of concept validation; if implemented, it will be a game changer).	(Automobile, Education, Electrical, Mechatronics, ITeS and Engineering innovations).	**(**Cosmetics, Agri. machinery, FMCG sector products).		Cold steeped grain extract bottled drink	

Source: Authors and BIT-TBI

Besides, access through 'walk in' incubatee inflow has been assisted by the following: display of incubation products at expos; radio & TV shows by graduated incubatees; participation in entrepreneurial conclaves, meetings, lectures; invited & motivational talks; MSME officials interacting with prospective incubatees; advertisements in industry association bulletins; campus sensitisation classes for beginners; participation in R&D unit & E-cell spearheaded activities; word-of-mouth and references by other stakeholders in the ecosystem; recognition by incubatees during innovation contests; reach through web site and government schemes (BIRAC, BIG, MSME, etc.). The above activities which served as motivational factors stimulated the environment and enhanced the awareness requisite for the incubation process.

BIT-TBI has been looking up to the gains from the ecosystem where value proposition is viably brought forward for its full-fledged & dynamic all round growth. The priority aspects now include website with future projections; gearing up for TDB's innovation seed fund; participation in ASPIRE scheme of MSME; strengthening the MoMSME scheme on entrepreneurship and using the same to create more localised innovation-based ventures; addressing more innovations in the social entrepreneurship domain and opting for CSR funds; high impact incubations supported through schemes BIRAC/ BIG & DST seed fund scheme, etc. Deserving incubatees nearing product realisation stage are given options such as (a) Demo Day by Accelerators,

(b) Tier II/Tier III angels and (c) domain-specific accelerator schemes so that there is follow-up on the support after incubation. Exploring the possibilities of international collaboration for start-up ventures through agencies such as UNIDO, World Bank, etc.; utilizing biotech-specific venture funds from state government; using options such as 'banks for innovations' can strengthen the financial ecosystem. In addition, availing opportunities form the initiatives such as 'Start-up India, Stand-up India; opting for potential stakeholders such as DeitY, NABARD, NSIC, SIDBI (Start-up Mitra), etc.; using ISBA & DST community online info highways could play a positive role. Further, BIT-TBI also envisages utilising the DST's innovation assisting schemes that include the 'seed fund option', 'idea scouting event' and similar support schemes announced by the DST/NSTEDB in the wake of the new measures planned towards strengthening the innovation ecosystem.

Challenges in Setting-up and Sustaining TBI in Rural Domains

Nurturing innovation-based incubations from remotely located TBI in rural India had its own set of challenges distinct from those of TBIs in tier 1 or tier 2 cities of India. Rural localities are invariably 'less dense innovation places' and flooded with challenges to create and nurture viable 'innovation supporting firms' and sustain it over a period of time. For instance, identifying a focal domain whose vital stakeholders are available in the selected rural location could be critical for rural TBIs to deliver the expected range of services in the long run. The pioneering picture in the form of abundant raw materials, access to technology leads, availability of skilled manpower, presence of relevant industrial activity, possibility of reaching up to potential market, etc., if present for a specific technical/commercial domain in a rural segment; the TBI could assist in supporting innovations which add value & wealth to the varied domain-specific stakeholders of that locality. The spin-off benefits of innovation thinking and out-of-the-box approaches triggered by TBI in the naturally enriched location for a specific field or domain of activity could be rewarding to both the innovators and the locality/stakeholders of the established activity.

For the TBIs to sustain in the rural settings, some of the critical elements include: (1) a section of the population sensitised to a critical extent on innovation and innovation handling, (2) periodic out-reach programmes on innovation and business support services of TBI, (3) existence of mentor pool (with the TBI) from the mainstream so that there is a desirable level of networking and handholding, (4) popularising success stories from

among graduated incubatees to motivate the public and unravel their potential ideas if any, (5) creation of domain-specific/general innovation pipeline for the TBI, (6) attracting fence-sitters to the benefits and nuances of pre-incubation events/activity, and (7) establishing the scope for follow-up funding. In addition, the provision for seed funding, better business services, idea evaluations, challenge programmes facilitating ideation, etc., also add flavour to the sustained efforts of TBIs to establish the desired ecosystem in the rural locality. For the rural TBI to gain control, the above mentioned smartly paced and patiently executed activities should occur at least for about 3-4 years, irrespective of whether TBI records any huge breakthroughs. Once the ecosystem capable of handling innovation is in place, then the TBI can be put to maximum use. Availability of good and needy infrastructure and finer support for technical, commercial, legal, IPR & other regulatory issues can serve as the beckoning element for the TBI all along. Presence of technical academic community (branded campus) sets a suitable stage for TBIs to ensure certain levels of predictable outcomes.

Conclusion

TBIs all over the country, have been recognised as repositories of enabled innovations and potential early venture handling hubs. The current government policy of recognising technology and innovation as effective instruments for India's transformation clearly suggest the need to set up and sustain more domain-specific rural TBIs. They have emerged as promising platforms for creating sustainable start-up firms leading to societal transformation and nation building. The TBI at Bannari Amman Institute of Technology was established with an objective to promote knowledge-driven and technology-intensive enterprises mainly in the focal area of application of biotechnology in agro-industrial and rural sectors. Several measures were undertaken to facilitate the successful and sustainable start-up companies through the TBI. Understanding of the natural strengths of the locality, raw material availability patterns, existing modes of local commerce, the degree of business savvy approaches and attitudes of locals, support systems available for sustained business, living standards of general public, geographical specialties, connectivity, etc., were taken into consideration for the early stage incubation activities. Subsequently, well-structured awareness camps on entrepreneurships, skill development sessions, faculty development programmes were conducted at regular intervals. Workshops on value additions of specific natural resources, student contact programmes, hands-on trainings useful for commercial activities and business plan contests also helped in securing the next set of

incubation enquiries. Pro-active strategic add-ons as a basket of in-house-proven innovations, cross-domain projects, opting beyond the focal area of operation, seed fund options, supporting the service based incubations, participation in expos, advanced supports such as IPR filing, etc., helped the TBI to establish a dependable pipeline of commercially viable innovation ideas. Thus, localised solutions in tandem with viable enterprise building, aimed through TBIs have led towards the creation of vibrant innovation ecosystem in rural areas.

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Appendices

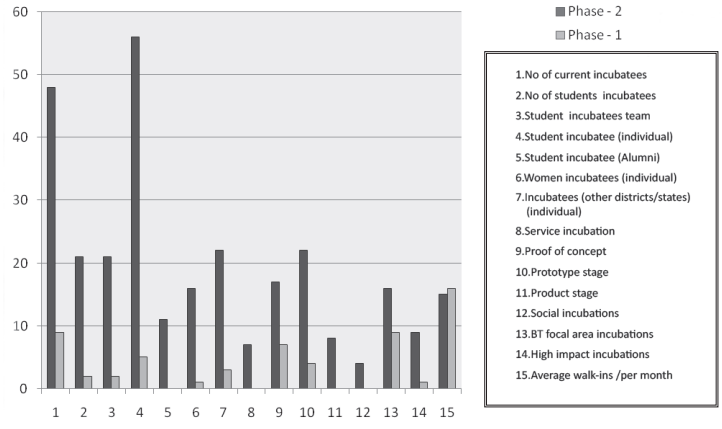
Appendix 1: Specific aspects on location and promoters of BIT-TBI

Sathyamangalam	BIT: Host Institution	DST: The funding authority
Geography: Southern side of the Western Ghats; Topography: town is not flat, covered by sloping lands; Latitude: 11.49; Longitude: 77.27; Climate zone: Temp: 25 to 27oC in plateau & 26 to 32oC in plains; Soil type: wet lands are predominant; Water source: River Bhavani flows in the middle of the town; Economy: rate of growth is low (northern side is surrounded by reserved forests), poor industrial activities; Population: Approx. 55,000; Major Agriculture: Sugarcane, Paddy, turmeric & banana; Major income: Municipality area: 29.24 km - i.e. 10.46% - is developed as urban area and the remaining 89.54% remains undeveloped agricultural land. 	Nestled on the banks of the river Bhavani, BIT's campus provides environment for natural learning in harmony with nature, away from the odds of city life. The spacious and the earth hugging buildings punctuated with landscaped courtyards and pathways are designed to emphasise the business ethics and character of an excellent centre for learning. The campus hosts well- planned academic blocks, computer centres, lecture halls, state-of-the-art learning centre, laboratories, conference halls, staff quarters, hostel, student Centres, etc. It has an area of 177 acres with a built-up area of >20 lakhs square feet. 426 dedicated members of faculty and offering 13 UG & 15 PG & PhD programmes in Engineering, Technology, Software Engineering & Management. BIT has the feel of a friendly hamlet while offering all the benefits of a citadel of learning	DST: Nodal central government department for organising, coordinating and promoting S & T activities in India. NSTEDB: The National Science & Technology EntrepreneurshipDevelopment Board (NSTEDB), established in 1982 by the Government of India under the aegis of Department of Science & Technology, is an institutional mechanism to help promote knowledge- driven and technology- intensive enterprises. The board, having representations from socio- economic and scientific Ministries/ Departments, aims to convert "job-seekers" into "job-generators" through Science & Technology (S&T) interventions. It has been promoting and developing high- end entrepreneurship for S&T manpower as well as self- employment by utilising S&T infrastructure & by using S&T methods.

Source: (1) www.google.co.inhttp://village map.in/tamilnadu/erode/Sathya mangalam.html

(2) Annual Report of NSTEDB, DST, 2010

Appendix 2: Small venture supporting profile of BIT-TBI (Phase II: 2011-16 and Phase 1: 2008-2010)



Source: Authors and BIT-TBI

Appendix 3: Products/services from BIT-TBI that have reached intended customers (in the last 2 to 3 years)

(a)	Product/Services in market so far from BIT-TBI : 45
(b)	No. of firms established by incubatees so far : 19
(c)	Varieties of products
(i)	Bottled natural drinks : 12 (27%)
(ii)	Neutraceuticals : 01 (02%)
(iii)	Herbal concentrations : 09 (20%)
(iv)	Candies : 05 (11%)
(v)	Cookies : 02 (04%)
(vi)	IT products : 01 (02%)
(vii)	Healthcare products : 02 (04%)
(viii)	Cosmetics : 01 (02%)
(ix)	Feed additives : 01 (02%)
(x)	Construction add-ons : 01 (02%)
(xi)	E-commerce : 01 (02%)
(xii)	Designer products : 01 (02%)
(xiii)	Education technology : 01 (02%)
(xiv)	FMCG : 07 (16%)

Source: Authors and BIT-TBI

Appendix 4: Range of impact from graduated incubatees of BIT-TBI

(a) No. of products launched by the first set of Successful incubatees from BIT-TBI (over 8 years)	: 45
(b) No. of firms established by incubatees so far	: 19
(c) Production facilities validated as scaled-up production Platforms from incubatees of BIT-TBI	: 14
(d) Pilot or scaled-up product making facilities from our incubatees	
(1) Bottled natural drinks	: 05
(2) Herbal concoctions	: 03
(3) Candies & cookies	: 03
(4) IT products	: 01
(5) Health care & cosmetics	: 02
(e) Average earnings from the first crop of graduated Incubatees	: 20 lakhs/ annum
(f) Amount of external funds secured (post-graduation)	: 160 lakhs
(g) Employment generation by the incubatees (graduated)	: 40 people
(h) TBI gains from graduated incubatees : listed below	
(1) Mentoring the new incubatees	
(2) Field success models for EAC/FDPs/SDPs, etc.	
(3) Technical assistance for new incubatees	
(4) Marketing/Business networking	
(5) Trained the EAC/FDP participants	
(6) Radio/ TV lead shows on small business ventures	
(7) Serial entrepreneurship	
(8) MSME liaison works	

Source: BIT-TBI

Appendix 5: Abbreviations used in the text

BIT	:	Bannari Amman Institute of Technology
DST	:	Department of Science and Technology
IPR	:	Intellectual Property Rights
TBI	:	Technology Business Incubator
S&T	:	Science and Technology
NSTEDB	:	National Science & Technology Entrepreneurship Development Board
GoI	:	Government of India
SE	:	Social Enterprise
SEI	:	Social Enterprise Incubators
BT	:	Biotechnology
FD	:	Food Technology
TT	:	Textile Technology
MSME	:	Micro, Small and Medium Enterprises
AICTE	:	All India Council for Technical Education
EDC	:	Entrepreneurship Development Cell
TANSTIA	:	Tamil Nadu Small and Tiny Industries Association
FMCG	:	Fast-moving consumer goods
ITeS	:	Information Technology Enabled Service
DeitY	:	Department of Electronics & Information Technology
NIF	:	National Innovation Foundation
ISBA	:	Indian STEP & Business Incubators Association
TE	:	Technology Enterprise
MSME B-4	:	Batch-4 in our incubation idea fund facilitation with MoMSME grant
TDB	:	Technology Development Board

ENDNOTES

i. http://www.hindu.com/2004/02/09/stories/2004020900750500.htm

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