Enterprise Incubation Centres in Gujarat: An Exploratory Study

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Enterprise incubators, an innovative business support system, nurture nascent ventures of entrepreneurs by providing focused counseling and facilitation services along with state-of-the-art workspace and shared facilities. To explore the role of incubation centres in promoting entrepreneurship, the programs of four incubation centres in Gujarat were reviewed: Centre for Innovation and Entrepreneurship (CIIE) of IIM, Ahmedabad; NirmaLabs of Nirma University; National Design Business Incubation (NDBI) of National Institute of Design (NID); and Grassroots Innovation Augmentations Network (GIAN).

Further, a sample of incubatees - those who were availing facilities from these centres - have been surveyed through a questionnaire. The study reveals vast differences in the operations and services of centres run by academic institutions such as NIRMA, IIM, and NID compared to GIAN. The findings suggest that there is a great potential for the incubation models in playing a crucial role in commercializing the innovations of budding entrepreneurs.

Introduction

Incubation programmes have been considered an effective way to accelerate the growth and development of small and medium enterprises SMEs. Especially, in the contemporary environment of constantly advancing technologies, innovation has become a critical determinant of entrepreneurship. Moreover, entrepreneurs may lack the funds and other resources to set up facilities to develop and verify their ideas. An 'enterprise incubator' can offer several services ranging from grooming of entrepreneurs to fine tuning of projects, ultimately leading to enterprise creation.

> **An enterprise incubator is a "collective and temporary place for accommodating companies which offers space, assistance and services suited to the needs of companies being launched or recently founded".**

Concept of Incubation

In the medical field, an incubator (in·cubator/ in'ku-bat-er) is an apparatus for maintaining optimal conditions like temperature, humidity, etc. for growth and development, as the one used in the early care of premature infants or for cultures. The infant is kept in a the incubator till it can withstand the normal environment. The incubation stage, thus, refers to a limited period of association with a protected environment. In the context of business development or new enterprise creation, the concept of incubator is applied similarly.

New ideas, innovations, and inventions need nurturing during the formative stages. The enterprise incubator is a set up to facilitate the survival of such new firms, and nurture them for growth and success, by providing crucial inputs at different stages.

It minimizes uncertainty and increases the success rate of an enterprise that is at a very nascent stage (Nagayya, 2005). According to the National Business Incubation Association, graduates from incubators have a success rate of 87 per cent (Zimmerer and Scarbrough, 2005), which is much higher than that observed in start• ups launched without assistance.

Incubators, also named 'technology centres' or 'innovation centres', have been found to be one of the successful approaches being used in the past 35 years all over the world to promote and support entrepreneurs and SMEs. The formal concept of business incubation began in the United States of America in the 1960s. It later developed inEurope through various related forms (innovation centres, pepinieres d' entreprises, and techno poles or science parks) during the 1980s. Incubation programmes have boomed since then all over the world. India too witnessed the emergence of incubators in this decade.

Researchers have defined incubators in several ways. Albert et al. (1986) define an enterprise incubator as a "collective and temporary place for accommodating companies which offers space, assistance and services suited to the needs of companies being launched or recently founded".

An enterprise incubator has four principal characteristics: availability of modular and expandable space to rent for a limited period, access to shared cost services relating principally to administrative functions, access to management or technological support and privileged access to business and scientific communities and a place for interaction between companies and for moral support coordinated by management team (Philippe and Lynda, 2001).

LiteratureReview

A wide range of studies have discussed the environment for innovation, the role of incubators, and how they execute that role. These studies typically address questions such as: who sets up companies placed in incubators, who finances incubators, and what are examples of some innovative programmes. However, their usefulness is highly dependent on the specific experience of the authors and the insights they can bring.

Albert and Gaynor (2001) classified the research on incubators into descriptive, prescriptive, and evaluative research. The descriptive works define incubation, classify different types of incubators, identify key features of specific types of incubators, map out the incubator landscape, and set out the lifecycle of an incubator. Prescriptive works are aimed at informing key stakeholders, primarily sponsors and

incubator management. These studies illustrate the role of incubators in economic development, identify features of successful incubation programmes, examine other issues facing incubator management, and set out best practice guidelines and methodologies aimed at informing incubator managers on effective ways of running incubators. Evaluative works establish the metrics by which incubation programmes can be evaluated. They try to quantify the impact of incubators on firms they work with and the local economy, rank the features of incubation programmes, and try to evaluate the effectiveness of different incubation programmes.

Sun et al. (2007) have categorized critical success factors of technology incubation into three categories: environmental-related factors, incubator-related factors, and incubatee-related factors. The environment category is the collection of external parameters that affect the operations of the incubation programme. The incubator category consists of configuration factors and process factors for the incubator programme. The incubatee category contains factors related to incubated companies, particularly the attributes of founders or entrepreneurs.

Strategic alliance is a key element in lifting incubators' competitiveness. Chnag and Hsin (2006) have studied the motivation and performance of incubators' strategic alliances. This study shows that all incubators can be divided into three groups according to the similarity of resource ownership and strategic thinking: strategic group with dominance over information resources; strategic group with dominance over business administration resources; and strategic group with dominance over technical and human resources. They found that, owing to the diversity of each strategic group's resource dominance, incubator's motivation for taking on a strategic alliance varied. Similarly, the performance of each strategic alliance also varied.

Collinson and Gregson (2003) have made a comparative study of entrepreneurship promotion in Canada, United Kingdom, and the United States. They adopted a knowledge-based approach to examine how networks of the potential entrepreneurs interact with networks of experienced entrepreneurs and managers, venture capitalists, technical experts, consultants, IPR lawyers, and other specialists. This interaction is promoted and mediated at the local level by organizations which act as local network-nodes or knowledge integrators, as well as incubating new ventures to increase the new business birth rate in their respective regions. Collinson and Gregson found that the integrative capabilities of local entrepreneurs and their ability to search, filter, assimilate, and integrate knowledge from a huge variety of sources has been improved by the activities of these organizations.

Although a large number of studies are available addressing various aspects of entrepreneurship, studies on the role of incubators are few and far between. Similarly, few studies analyse the role, type, and effect of incubators in the economic context of different countries. Rarely any study has compared the models of incubation centres and examined the perception of incubatees availing the services. Most of the studies seem to have been done without following appropriate research methodology and therefore their findings are not very helpful. To address this gap, this paper provides a comprehensive description of incubation and a comparison of models along with an assessment of incubatees on extended support and services provided by incubators.

Objectives

The objective of this paper is to enhance the understanding of how innovation and entrepreneurship can be leveraged through incubators. In order to achieve this, the following specific objectives are being set:

- To study the scope and types of incubation centres; review the functioning of incubation models
- To find out the relevance of demographic and social variables such as educational qualification, age, family background, and past experience of incubatees for being entrepreneur
- To assess the satisfaction level of the incubatees, with regard to facilities provided by incubation centres in materializing their business ideas.

Methodology

Both primary and secondary sources of data have been used to meet the objectives set out above. The

study was conducted in two rounds. A systematic attempt was made to collect data from both coordinators running the incubation centres and chief executives of the incubated companies so that opinions from two exclusive perspectives could be obtained. The authors discussed with the coordinators of CIIE, NirmaLabs, and GIAN on the availability and scope of services provided to incubated companies, day-to-day operations, nature of incubatees, success or failure stories, government support, and relationship with university and other research centres. The interviews were semi-structured so that the conversation could develop freely according to the answers of the respondents and allow in-depth inquiry.

In the second round, incubatees who were availing the services at the incubation centres were mailed a structured questionnaire. In surveying the incubated companies the focus was to collect personal information like age, family background, state of origin, major reasons to be an entrepreneur, sources of finance, nature of the venture, whether being registered previously with any incubation centre or not, etc. The satisfaction level of incubatees on various parameters was measured on a five-point scale. The importance of facilities provided by the incubation centre was also measured on a five point scale. The incubatees were instructed to express the level of importance they felt for offered facilities like infrastructure, mentoring, seed fund, networking support, workshops and training programmes, help in strategic and operational management, and growth and future plans.

Sample

For the survey, 18 incubatees (6 from CUE and 5 from NirmaLabs and 7 from GIAN) were randomly selected. Unfortunately, the incubatees at NDBI of NID could not be surveyed. However, the incubation model of NDBI has been discussed based upon secondary information.

PART I
The Incubation Models

The incubation models are described separately under the different institutions where they are offered.

1 Centre for Innovation Incubation and Entrepreneurship (CIIE)

CIIE was set up by the Indian Institute of Management, Ahmedabad (IIMA), in 200 l with support from the government of Gujarat and the National Innovation Foundation (NIF). Setting up CUE was an outcome of the first national workshop on Indian Incubator for Innovation Based Enterprise held at in 1998 at IIMA, to discuss issues related of commercializing technology based innovations by individual innovators. Expertise at IIMA in areas of technology network, management, grassroots level innovations, and entrepreneurship development provided the necessary impetus and intellectual basis for this initiative. The three focus areas of CHE are: incubation, research, and dissemination. CHE organizes activities through the year such as incubation: entrepreneurship development research and training, workshops and seminars, consultancy, and clinics. CHE does all this in partnership with academic/research and funding institutions such as NID, CSIR, DST, NEN, HTD, IITB, and GVFL. It has both physical and virtual incubation facilities. CHE also conducts programmes such as Anveshan, Cleantech Ventures, and Solar Innovation Programmes, and an educational camp called iAccelerator. These are briefly discussed below.

Anveshan

Launched in 2002, Anveshan is a unique nationwide proactive search for hi-tech and high impact innovators in public, private, and informal sectors so as to transform their innovative products and technologies into viable enterprises. Selected innovators and their technologies receive incubation support in the form of infrastructure, networks, and intellectual expertise.

Anveshan is subdivided into three categories: **start-up programme** targets innovators who have developed a high-tech or mass impact technology with a prototype and wish to commercialize it; **top innovation programme** aims at identifying 50 best technological innovations across the country. The aim is to promote creation of intellectual property and culture of innovation amongst students, scientists, and researchers; **ideaz programme** targets innovators having an idea to address a specific challenge area. This is targeted at people who have some idea of "what" can be done, but cannot develop the idea/technology because either they do not get the opportunity or resources.

Cleantech Ventures

This is an attempt to promote environmental friendly and clean technologies. Areas of interest are energy technologies, water purification and management, eco-friendly process, natural production, and materials recovery and recycling.

Solar Innovation Programme

Realizing the growing energy needs of the country and the increasing dependency on fossil fuels and its impact on global climate, the Ministry of New and Renewable Energy and CHE have decided to launch the Solar Innovation Programme to identify and develop technologies for sustainable development.

iAccelerator

iAccelerator is a three month summer start-up camp aiming at accelerating web and mobile related ideas into prototypes and possibly build a team around the idea, get some funding, and most importantly achieve some traction from customers. iAccelerator comprises intensive monitoring of product development, and mentoring by venture capitalists, business, and technology experts. Once prototypes are ready, HMA students work closely with the start-ups in commercializing them. CHE gives a stipend of Rs. 8000 a month to each incubatee, computers with connectivity, office space, mentoring, networking, and accommodation.

Piramal Prize - Healthcare

The Piramal Prize is a partnership between the Piramal Foundation and CHE. It was established by the Ajay G. Piramal Foundation in 2007 to encourage and support bold entrepreneurial ideas which have a profound impact on access to higher standards of health for India's rural and marginalized urban communities. The award recognizes high-impact, scalable business models that propose innovative solutions which directly or indirectly address India's healthcare needs. CHE regularly organizes entrepreneur meets and technology commercialization workshops.

Methodology and Process: CUE

Potential entrepreneurs send their proposals either online or by post. Based on merit, incubatees are selected. Intellectual property evaluation is done and a non-disclosure agreement is signed. Innovators pass through multiple elimination rounds and are screened by a panel of judges. If short listed, innovators are invitee! for interaction and presentation before judges, VCs, technical experts, and entrepreneurs for final selection. At this stage service and shareholder agreement with incubatees is signed. Infrastructure and services are provided to selected incubatees. Mentoring is given at every stage of the programme and networking is facilitated in technology related issues. After satisfactorily completing these steps, commercialization activity starts which includes formation of an enterprise, preparation of business plan, conducting market research, and taking advice on legal and financial aspects.

Each innovator will have a small support group comprising two or three faculty members/experts to act as mentors. Every two months, the innovator will present her/his progress to the mentors and they can mutually decide as to how much information would be put in the public domain. Depending on the nature of the product design, the innovator will be linked by the incubator with an appropriate technology network. These stakeholders will help in providing support on various complementary assets that would be required in the commercialization process. Incubatees can leave the incubation centre whenever they feel to do so. Incubatees usually remain for 2-3 years. Mentoring and networking advice can also be given to incubatees virtually if they already have an office place. Virtual incubation comprises long-distance and periodical mentoring through face-to-face, video, and telecom meetings.

The centre also envisages running mobile incubator clinics in various parts of the country for certain periods to help innovators across the country.

Criteria for Incubation

The applicant should ideally have developed a prototype or running model for innovation and not a mere idea. This innovation should have a mass-impact and be in any high-tech area such as biotech, nanotech, energy, pharmacy, electronics, etc. The applicant would need to register a company prior to or within two months of signing the MoU for joining the incubator. Any IPR developed/used during incubation would be transferred to CIIE for the period of incubation.

This would act as collateral for support provided by CIIE.

Funding

CIIE helps incubatees through direct funding in start-ups or raising venture finance. Some of the funds that CIIE leverages include: DST funded seed fund wherein CIIE invests up to Rs 25 Iakh in outstanding start-ups which are incubated at IIM ,TePP(Techno Promotion Programme) where CIIE helps in raising up to Rs 10 lakh for any innovator who wants to develop a prototype based on his/her idea. SEMindia has announced an equity based funding of Rs 5 lakh for outstanding start-up incubated at CIIE. CIIE also works closely with VCs and banks and has been raising venture finance for start-ups as and when required. The following figure depicts the activities of CIIE.

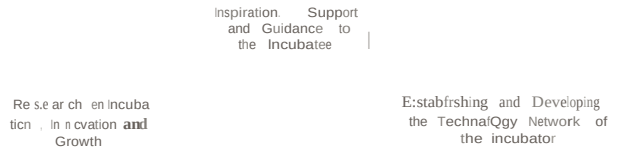


Figure 1 (Source:http://www.ciieindia.org/)

2 Gujarat Grassroots Innovation Augmentation Network (GIAN)

Gujarat Grassroots Innovation Augmentation Network (GIAN) was set up on March 1, 1997, with support from the government of Gujarat, Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI), and Indian Institute of Management, Ahmedabad (IIMA). GIAN's aim is to scale up and spawn grassroots innovations and help development of successful enterprises. In this effort it provides innovators with adequate linkages to modern science and technology, market research, design institutions, and funding organizations.

GIAN is India's first technology business incubator focused on incubating and commercializing grassroots innovations. Grassroots innovations are essentially solutions generated by people at the grassroots le~el to tide over persistent problems, solutions to which are either not available or not affordable by a large section of people. GIAN's objective is to build a value chain around these innovations with the objective of making them available to the masses through market mechanism or otherwise.

Incubation Process at GIAN

GIAN incubates high potential grassroots innovations into market ready products through a well-established incubation process and using its strong and decentralized network. The incubation path followed by GIAN is shown below:

Figure 2 (Source: http://www.west.gian.org/incubation)

3 NirmaLabs

NirmaLabs is a non profit company set-up by Nirma Education and Research Foundation (NERF) in 2005. It is an incubator to spawn high-tech knowledge based wealth generation ventures. NirmaLabs has a corpus of Rs.5 crore to incubate individuals and projects and is also supported by DST.

Incubation Process at NirtmaLabs

Participants can be either direct recruit entrepreneurs, i.e. funded by NirmaLabs or intrapreneurs, i.e. people having bright engineering/ science background funded by companies or people from commerce/management background interested in technology ventures. Incubatees are selected after a rigorous selection process. The grooming period lasts for 25-30 weeks. Individuals/teams with ideas have an opportunity to undertake incubation and grooming concurrently. While grooming, candidates will select a project to work on. Once selected for incubation, NirmaLabs will invest a seed capital of Rs.20 lakh to fund the enterprise. All costs are accounted and treated as a soft loan to the project. Once the prototype is ready it will be further funded by on board or external venture finance companies to form a start-up company. The project team will hold 80 per cent equity in the company before venture funding and 10 per cent will be with NirmaLabs. The pool company has 5 per cent equity in every start-up company incubated/funded by Nirmal.abs. The remaining 5 per cent will be held by mentors. Every start-up company is given equity in the pool company. As the number of incubatee enterprises grows, this pool will become larger.

4 National Design Business Incubation (NDBI)

NDBI is a part of a commitment by NID to build on India's design strengths, translating the dream 'designed in India, made for the world' into reality. NDBI, supported by DST is the first and the only one design-led business incubator in the country. The aim is to nurture a culture of entrepreneurship in the creative minds of young designers and create a new class of entrepreneurs-- 'designpreneurs'.

Incubation Process at NDBI

NDBI had two categories of incubation support: physical incubation and virtual incubation. Physical incubates usually stay over a period of 6-8 months and get services such as individual studios, rapid prototyping lab facilities, high performance visualization lab, assistance for showcasing design-led ideas through design idea fairs, etc. Networking or mentoring support is given through virtual incubation.

PART II

Analysis

Responses from 18 incubatees have been analysed and categorized on factors such as demographic profile of entrepreneurs and other incubation related details. This categorization revealed a great deal of similarity on responses from the incubatees at NirmaLabs and CIIE. Therefore, to simplify and facilitate the comparison, we have divided the major findings into two parts: one for NirmaLabs and CIIE and the other for GIAN. Throughout the discussion we have maintained this distinction.

Table 1: Demographic Profiles of Incubatees

		NirmaLabs &CUE (Nos)	GIAN (Nos)
Education	Less than SSC	-	3
	SSC	-	3
	Graduate	5	1
	Post Graduate	3	
	Doctorate	3	
	Total:	11	7
Age (years)	Less than 25	2	1
	25-35	5	1
	35-45	2	2
	More than 45	2	3
	Total:	11	7
State of Origin	Gujarat	3	7
	Other states	8	-
Total:	11	7	
Entrepreneurial Family Background	Yes	3	3
	No	8	4
	Total:	11	7
Previous Work Experience	Yes	7	4
	No	4	3
	Total:	11	7

Education

Education provides a good background to start and run a new venture. It plays a pivotal role in helping the entrepreneurs to cope with the problems they confront.

A study by Hornaday and Tieken as quoted by Brockhaus and Horwitz (l 986) showed that many of the successful entrepreneurs felt that, prior to the current generation of young people; education was a less important factor for entrepreneurs. Now, however, because of the growth of technology and heavy competition, education is especially important. From the above table, difference in the education background of the entrepreneurs is quite evident. While incubatees from CIIE and NirmaLabs are highly educated grassroots entrepreneurs those supported by GIAN did not possess any professional or technical qualifications. These are "self-made" individuals who without proper education and formal training have ventured into small businesses. As grassroots entrepreneurs they are addressing some perceived problems in their surrounding areas which are predominantly less technology based. Therefore, high-tech education may not be a pre-requisite for exploring such possibilities.

Age

It is true that people start businesses at all ages but real entrepreneurs just cannot wait and often begin in their late teens or early twenties. In principle age is not a determining factor for entrepreneurs except that the true entrepreneur is likely to start sooner (Bolton and Thompson, 2002). However, there was no distinct difference in the age of entrepreneu_rs we studied. Almost all of them are aged between 35 to 45 years. These entrepreneurs may have had the attributes of an entrepreneur but waited for an opportunity.

Nativity

Three-fourths of the entrepreneurs at NirmaLabs and CIIE belong to other states while all GIAN entrepreneurs belong to Gujarat. Incubation centres at Nirma and IIM encourage technology based entrepreneurship so the proportion of non-Gujaratis availing facilities at such centres would be greater compared to incubatees of GIAN.

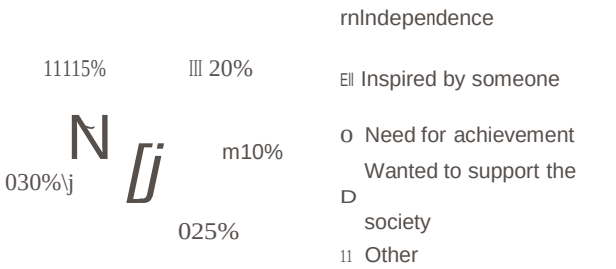
Family Background and Work History

Work history not only can be a negative displacement in the decision to launch a new venture but also plays a role in the growth and eventual success of the new venture (Hisrich and Peters, 2002). All the entrepreneurs we studied from both categories had some prior experience, either through family business or previous employment in technical and management areas. A family background in trade or business clearly gave the entrepreneurs an advantage. Similarly, previous technical and industry exposure helped them in the decision to launch a new venture.

Reasons for being an Entrepreneur

Desire to be one's own master, sense of accomplishment, exploring one's creative talent, locus of control, serving the society needs, etc. motivate an individual to be an entrepreneur as described in entrepreneurial research and literature. We observed a marked difference in the reasons for becoming an entrepreneur belonging to the two categories.

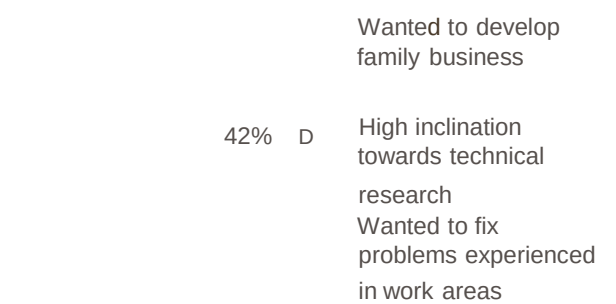
Figure 1: Reasons for becoming an entrepreneur for Nirma Labs and CIIE



Need to support the society, need for achievement and the desire to be independent were ranked high by entrepreneurs from NirmaLabs and CIIE while developing family business, inclination for technology improvement and tracing the problems were ranked high by grass root entrepreneurs.

Out of seven surveyed, three of them wanted to

Figure 2: Reasons for becoming entrepreneur for GIAN



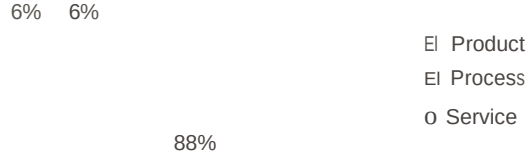
develop the family business further, for which they selected the entrepreneurial field. The rest of them had different and interesting reasons for being an entrepreneur. Few of them responded to the problem areas in their field of working and had no intention to commercialize their innovation and develop an enterprise. A cotton stripper was developed by Mansukhbhai, to remove the lint from the cotton shell, a solution to cotton stripping problem. Pareshbhai who was in the business of manufacturing wooden and plastic firkins for kite flying has developed a motorized charkha for kite flyers, a solution to winding and unwinding the string during kite flying. There were some individuals who were highly inclined towards technical research and wanted to explore their technical talent and thereby getting the recognition for their work.

Incubaton Details

Nature of Innovation

A sizable proportion of entrepreneurs including grassroots entrepreneurs have come out with product

Figure3: Nature of Innovation for Nirmalabs,CIIE & GIAN



innovations compared to process innovations and are largely in the manufacturing sector. Further, CUE and NirmaLabs incubatees are highly inclined towards knowledge based sectors such as information technol• ogy, biotech, healthcare etc.

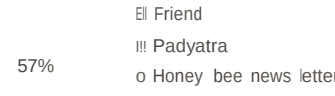
While grassroots entrepreneurs are developing/in• novating products such as auto air-kick pump for in• flating tyres, non-stick earthen tawa, mitti cool refrig• erator, bicycle sprayer, motor-cycle driven ploughing machine, health chair, cotton stripper machine, motor• ized charkha for kite flyers etc., which are relatively less high tech endeavours.

Incubation Centre: Source of Information

Entrepreneurs availing the facilities at NirmaLabs and CIIE came to know about the incubation centres through newspapers and workshops while four out of seven grassroots entrepreneurs came to know about GIAN through informal channels. Others got to know about the centre and its activities through exhibitions, padyatra, Honeybee newsletters, and workshops.

Figure 4: Sources of Information for Nirmalabs and CIIE

Figure 5: Source of Information for GIAN



Ownership Structur

While the ownership structure of the ventures started by the incubatees at NirmaLabs and CUE is

Figure 6: Ownership Structure for NirmaLabs and CIIE

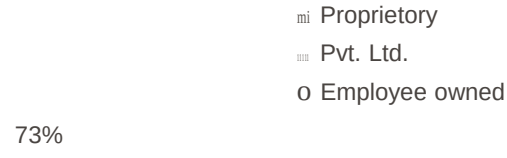
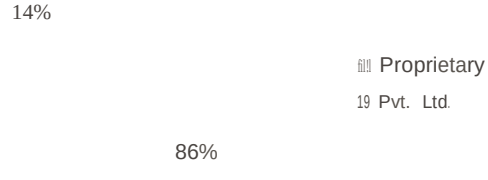
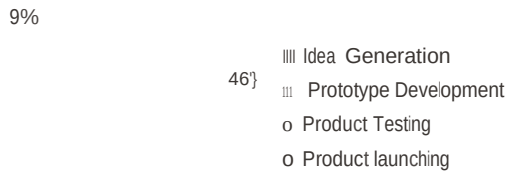


Figure 7: Ownership Structure for GIAN



tilted towards private limited companies (8 out of 11), majority of the grassroots entrepreneurs are proprietors and only one entrepreneur opted for a private limited company. This may be because of the nature of innovation and the background of grassroots entrepreneurs; they preferred a conservative organization structure whereas their counterparts preferred a wider structure which may help in scaling up their businesses in future.

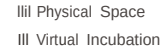
Figure: 8 Stage of development for Nirmalabs and CHE



Time Gap Between Realization of Idea and Joining the Incubation Centre

Most of the entrepreneurs (7 out of 11) at NirmaLabs and CIIE started availing incubation facilities within one year of realizing the opportunity/idea. Hence, such entrepreneurs were in the idea generation or prototype development stage when they joined the incubation centre, indeed at a very early stage. However, a time gap of 10 to 12 years was noticed in the case of grassroots entrepreneurs between idea generation and availing the facility at GIAN. Because of this, four of the entrepreneurs had already developed the product when they joined the centre; three of them were at the product launching stage.

Figure9: Type of facility for Nirmalabs and CHE



Type of Facility Availed

NirmaLabs and CIIE provide physical incubation where the incubatee avails the physical infrastructure and virtual incubation which is more of online mentoring. GIAN's model of incubation is quite different where the incubatees are provided with financial and mentoring support while the entrepreneurs work at their own places as the products are at an advanced stage of commercialization. For NirmaLabs and CIIE, majority (8 out of 11) entrepreneurs are availing physical incubation facility while the rest were availing virtual incubation support.

Importance of the Facility at Incubation Centre

As seen from Tables 2 and 3, for the incubatees in NirmaLabs and CIIE, facilities such as mentoring, financial support, networking, and assistance in decision making were rated as extremely important compared to other facilities. At GIAN, the same facilities besides help in future plans were considered very important. However, workshops and other training programmes arranged by incubation centres were not considered important. Moreover, they perceive infrastructure as an extremely important facility.

Table 2: Importance of Facilities

Facilities	NirmaLabs and CIIE		GIAN	
	Median	*Mode*	*Median*	*Mode*
Infrastructure	4	4	2	5
Mentoring	5	5	4	4
Financial Support	5	5	4	4
Networking	5	5	4	4
Workshops/Seminars/ Training Programmes	3	3	2	2
Help in Decision-making	5	5	4	4
Help in Future Plans	4	4	4	4

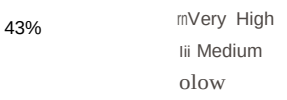
Scale for Importance of facilities

Extremely Important	Very Important	Some what Important	Not very Important	Not at all Important
5	4	3	2	1

Role of Incubation Centre

Figure10: Role of Incubation Centre for Nirmalabs and CHE

Figure 11: Role of Incubation centre for GIAN



Respondents were of the opinion that the centre has played a role in conceptualization and development of their business ideas to some extent. Facilities promised while they joined the centre were actually provided. Eight out of eleven incubatees at CIIE and NirmaLabs admitted that the centre has played a significant and instrumental role and without their assistance they would not have been able to tum their innovation into commercial application. In the case of GIAN, the responses were divided equally between significant and not so significant role played by the centre.

Table 3: Satisfaction Level of Incubatees

	NirmaLabs and CIIE		GIAN	
Parameters	*Median*	*Mode*	*Median*	*Mode*
Physical Space (only 8 incubates out of 11 availed the facility of physical space)	1	1	NA	NA
Knowledge	2	2	0	-2
Industry Mentoring	1	2	0	-2
Fees and Rent	1	1	0	-2
Interaction with other incubates	1	1	0	-2
Financial assistance	1	1	0	-2
Developing business plan	2	2	NA	NA
Promotional Efforts	1	1	0	-2
Skill & behavior of the staff	2	2	0	-2
Interaction with the staff (head of Incubator)	2	2	2	2
Help in decision making	2	2	0	-2

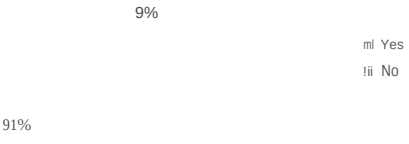
Points assigned to each scale

Highly Satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Highly dissatisfied
2	1	0	(-1)	(-2)

There is some difference among NirmaLabs and CIIE and GIAN with respect to satisfaction level for different facilities. For entrepreneurs at NirmaLabs and CIIE, none of the parameters was dissatisfying. They were all either highly satisfied or satisfied with respect to these parameters as seen from Table 3. The grassroots entrepreneurs were not satisfied with these facilities. The responses for almost all the parameters are classified as neutral (median value: 0) except for the interaction with the head of the incubator. Nearly all these entrepreneurs were highly satisfied with the personal attention and mentoring support provided by the head of the centre who has facilitated setting up several innovation-based micro-enterprises.

Figure 12: Financing from external sources for NirmaLabs and CIIE

Figure 13: Financing from external sources for GIAN



Financing from External Sources

Four out of eleven incubatees at NirmaLabs and CIIE have been successful in raising finance from various sources. Venture capital was provided by GVFL and SIDBI. For GIAN none except one had raised finance from external sources and others relied heavily upon their personal resources. Lack of information and refusal of financing institutions to sanction credit are the constraints faced by these entrepreneurs.

Future Relationship with the Centre

For NirmaLabs and CHE, almost all the entrepreneurs were very much satisfied, and hence will continue availing mentoring and other support from the centre in future even after leaving the physical space currently occupied by them. The satisfied entrepreneurs will not only continue availing the facility of the centre but will also recommend the centres to other emerging entrepreneurs. For GIAN, majority of the entrepreneurs had unfavourable experience. These dissatisfied entrepreneurs may not intend to approach the incubator in future.

Discussion and Implications

The foregoing analysis suggests that incubation centres definitely provide a vital ecosystem for start-ups. However, we found a difference in the satisfaction level with respect to the incubators. While incubatees at NirmaLabs and CUE expressed high satisfaction with the support they receive and a willingness to approach them for future needs, incubatees at GIAN are dissatisfied. Moreover, they believe that the centre does not have sufficient number of skilled and competent staff in the technical and managerial field to provide mentoring support. They strongly feel that financial assistance provided by the centre is not sufficient to meet the capital requirements. Hence, they had to invest a major proportion of personal earnings to commercialize the operations. The entrepreneurs suggest that the centre should strengthen its research and development arm to provide better technical insight to their product innovations. They also believe that the centre should have standard operating procedures for evaluating their business proposals and thereby work out the financial requirements of the projects. This will ensure that these entrepreneurs get adequate monetary support and will have to invest less of their personal resources. Since these entrepreneurs lack education for starting and running an enterprise, the centre should equally focus on managerial assistance besides financial support.

The incubatees also feel the need for more active promotion of the activities of the centre so that many grassroots innovators can avail the advantage of the facilities.

Incubatees at NirmaLabs and CIIE have the education background to successfully practice entrepreneurship. Therefore, the needs of professional entrepreneurs are very different from that of grassroots entrepreneurs. Mentoring and knowledge support which is so critical for grassroots level entrepreneurs is not perceived important by the professionals involved in the programs. The motive of joining the incubation centres by these entrepreneurs was to avail physical, financial, and networking support. As far as these facilities are concerned, the responses are quite favorable. They do, however, believe that the centres should provide more modules of learning related to marketing and related promotional activities so that the start-ups can withstand waves of competition.

Limitations of Study

The study covers incubation centres operating in Gujarat. Inter-state comparison of incubation models could provide better insights. Further, the study has not considered small incubation cells in different cities of the state which may not provide comprehensive facilities. The design incubator at NID was not covered. Thus, the sample may not be representative of the typical nature of incubation centres. Entrepreneurs who have already left the incubation centres were also not covered.

Recently Mudra Institute of Communications and Dhirubhai Ambani Institute of Information and Communication Technology have set up incubation centres. These are not covered since they are in the initial stages.

Conclusion

Gujarat has a thriving entrepreneurial culture offering a good platform for the growth of incubation centres. Today youngsters in Gujarat are mainly knowledge entrepreneurs unlike the first generation entrepreneurs who were mere traders. To create the pool factor in the entrepreneurial ecosystem and to promote entrepreneurship in Gujarat, many education institutions have been active in creating business incubation cells. Incubating cells can help small business ideas of students turn into business ventures.

Students who are aspiring to become entrepreneurs can actually see and meet incubatee companies to find out what it is like to be working for a start-up of one's own. Also an incubatee company gets access to competent faculty members and plenty of domain knowledge. Most importantly, incubation centres help market the products. When fresh start-up incubated companies go out in the market without previous track record, the reputation of the institutions help them get their first client.

Grassroots entrepreneurs are in a different category. They need different treatment as the information network in the informal sector is weak and interface with the formal sector is not very strong. The general belief that farmers and people in rural areas are conservative and lack entrepreneurial capabilities is

more of a myth. Grassroots entrepreneurs are the proud business owners of small businesses. Institutions like GIAN can incubate high potential grassroots innovations into market-ready products through a well-established incubation process and using its strong and decentralized network.

It is too early to comment upon the success or failures of incubation centres since majority of entrepreneurs are at the prototype development and product launching stage. According to information available from the centres, those who have successfully launched their products have been able to raise funding from venture and angel capitalists. While the success of incubatees might not be so well known, the incubation cell knows success when it sees one.

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