IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 4, June 2023

Something Solo: Study of Pre-Incubation, Incubation Centre and Startups

Ms. Kiran Ramkrishna Borade, S. S. Momin, S. S. Ripote, P. S. Tile
Computer Engineering, Guru Gobind Singh Polytechnic, Nashik, Maharashtra, India

Abstract: *India ranks 2nd in the list of countries by population after China. Population increases directly led to a greater need for employment and economic opportunities in country. To overcome these challenging issues and to generate large-scale job opportunities for upcoming workforce, in India, Start-ups have got an important role to play, by creating innovative ways. Union government along with various state governments, institutions and ecosystem enablers have made state-level policies to support start-ups in respective states and districts. They support entrepreneurs and initial stage start-up to companies by providing various start-up units like incubators, educational institutions, accelerators, investors, mentors, research institutions, NGOs, etc. This paper focuses on study of startups, pre-incubation and incubation centers. This paper basically covers the challenges faced by entrepreneurs to start their company, importance of startup-units, processes involved in pre-incubation and incubation centers, opportunities for entrepreneurs, history of incubation centers and requirements to setup and carry-on smooth process of incubation centers. The main aim of paper is to get brief idea regarding incubation and its setup as academic incubation centre.*

Keywords: Academic Incubators, Business Incubators, Incubation Centre, Pre-incubation Centre, Startups, Pre-incubation Centre, Technology Incubator.

I. INTRODUCTION

Unemployment rate in urban areas increased to 10.09% in December from 8.96% the previous month while the rate in rural areas decreased to 7.44% from 7.55% according to according to the recent CMIE Report [2]. In India, unemployment is one of main economic and social issues; especially the educated youth unemployment rate is large. The government and various institutions must encourage innovation and make investments in the education of the upcoming workforce in order to attract more startups and entrepreneurs, which is necessary to steady economic development and job creation in the various institutions and nation. By converting creative ideas into new company ventures or start-ups and consequently creating jobs, entrepreneurship development may be a crucial component in the battle against unemployment and in achieving economic success. So, instead of encouraging educated individuals to seek employment, the government along with institutions should foster an atmosphere that encourages the development of start-up businesses [1].

A start-up is a firm that is just starting out and whose founders have created a novel product or service with a scalable business strategy. Start-ups are "businesses that are often technology oriented and have great development potential," according to the Small Business Administration. Incubation centers helps these entrepreneurs to grow their idea into model and then into company. The organization known as an incubator helps entrepreneurs build their businesses and solve related issues, particularly in the early stages, by offering a variety of commercial and technical services, initial seed money, lab facilities, consultation, network, and connections. Their sole objective is to promote the development of new companies in a variety of methods, including: The cost of manufacturing space acquisition is below market. Their personnel offers suggestions and knowledge while creating company and marketing strategy. They aid in financing start-up companies.

Objectives of the Study:

•To understand importance of Startup in India.
•To study the facilities provided by the incubation cell.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 4, June 2023

•To review the role of incubators as a facilitator among start-ups
•To evaluate the impact of incubators on start-up units.
•To understand the need and process on incubation.

The paper is organized as follows: Section II challenges faced by entrepreneurs or startup companies. Section III represents phases in creating a company. Section IV represents preincubation processes in detail Section V represents incubation process in detail, Section VI concludes the paper.

II. START-UPS AND THEIR CHALLENGES

Basically, a startup or small company or working model goes through a process where entrepreneurs bring their idea to working model. A startup is a company or a project undertaken by an entrepreneur to seek, develop, and validate a scalable business model.
Indian government adopted January 16 as National Startup Day in 2022 with the aim to promote and encourage the startup culture in the country. Startups are backbone of new India. To start with a startup a person or a group has to have an idea. The following point explains what an idea is and which idea is innovative so that a person can become a successful entrepreneur.

Start with a Great Idea

Your first step in learning how to start a business is to identify a problem and solution. This is because successful startups begin from business ideas that fill the needs of a group of customers. But your idea doesn't always have to be a new one. You can update existing products or services in a way that's better for the consumer. This can be as simple as:
-Changing the product's appearance
-Adding a new feature
-Finding a new use for a product that customers already love
For instance, Apple started from Steve Jobs' original idea for a computer and has since created enhanced versions that better fit the market. They've also continued to evolve newer products like iPhones and iPads, making them more useful with each update. One example is how they're adding a keyboard for iPads that'll make them easier to use like a laptop.2 All these innovations by Apple led to them being worth of over a billion dollars. The following sections cover how an entrepreneur can bring his/her innovative idea to his own first company.

III. CREATING A COMPANY

In the process of realizing a project or business idea, entrepreneurs face numerous problems in different subjects such as legal, economic, technological, etc. It is very difficult for entrepreneurs to cope with these problems alone and to establish and successfully maintain their companies. However, successful entrepreneurs, who find solutions to important problems in our lives are also contributing to the national economy. Recognizing this important economic and social contribution, public and private organizations have started to solve the problems of entrepreneurs in different processes and support entrepreneurs in many ways by establishing pre-incubation centers, incubation centers and acceleration programs. The main feature that distinguishes pre-incubator, incubator and post-incubator (accelerator) from each other is that they are suitable for entrepreneurs in different processes.
In India, Startup Mission (SUM) is designed to provide a springboard to budding entrepreneurs who wish to launch themselves into the world of technology-based business careers. Entrepreneur's bright ideas to develop a product or service using advanced technology solutions can find a fertile ground in Startup Mission. SUM is designed to provide entrepreneurs all the support to make technology-based business ventures successful. The highly innovative and productive environment of SUM provides entrepreneurs the right ambiance to build up technology ventures at international standards. SUM is restricted to high tech startups with technology products and innovations with in a limited time frame that literally makes the entrepreneur to seriously work on his product idea and boost him to come up with a 'Market viable prototype.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 4, June 2023

The process of creating a company is divided into three phases:

•The pre-incubation phase (3-6 months): from ideation to the minimum viable product (MVP).

•The incubation phase (6-12 months): from the creation of the company to the stabilization of its business model.

•The acceleration phase (3-6 months): accelerating the growth of the company, by raising funds, opening branches or going international.

Following Figure 3.1 illustrates the steps required to bring idea into self-organizing company.

3.1. Pre-incubation stage (Idea to Working prototype/ Business Plan/Startup):

Pre-incubation is a process involving startups that start working alone or with a team, usually involving a technology-focused business idea or project, but not yet incorporated to bring that idea to life. Entrepreneurs in the pre-incubation stage need special training, mentoring and consultancy services to understand whether their ideas are feasible, commercialized and scalable. Pre-incubation centers provide entrepreneurs at this stage with physical spaces such as open offices and co-working spaces.

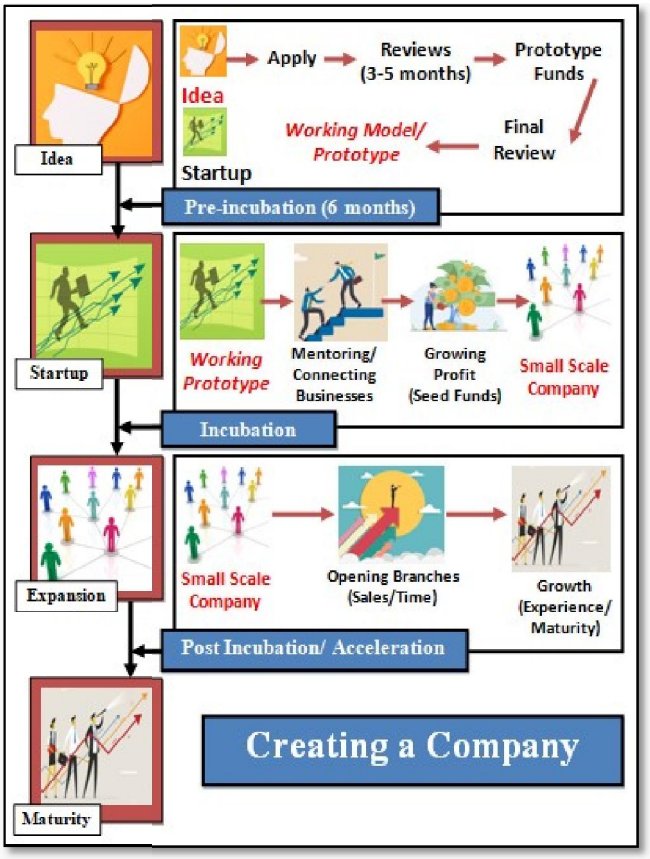

Figure 3.1. Steps to create a company

Entrepreneurs create an accurate and applicable business plan by clarifying their ideas with the support they receive from pre-incubation centers. At this stage, the number of entrepreneurs who move on to another, more viable business idea, benefiting from the knowledge and experience of mentors and advisors, is quite high. The important thing in the pre-incubation phase is to build a team that can do the job and make the right business plan to save money. At the end of the pre-incubation process, entrepreneurs are ready for incorporation with a detailed business plan. The next stage is the incubation process.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 4, June 2023

3.2. Incubation stage (Startup/Working prototype/ Business Plan to Small Scale Company/Expansionof Startup): At the end of the pre-incubation phase, the entrepreneurs who complete the business plan and are ready for incorporation move on to the incubation phase. Entrepreneurs in the incubation stage continue to need physical space, training, consultancy and mentoring services as in the pre-incubation period. Incubation centers meet these needs of entrepreneurs. In the incubation phase, entrepreneurs establish their companies and produce their minimum viable products. Incubation centers provide technical support to entrepreneurs in terms of product development. After product development, one of the most difficult stages, commercialization of the product begins.

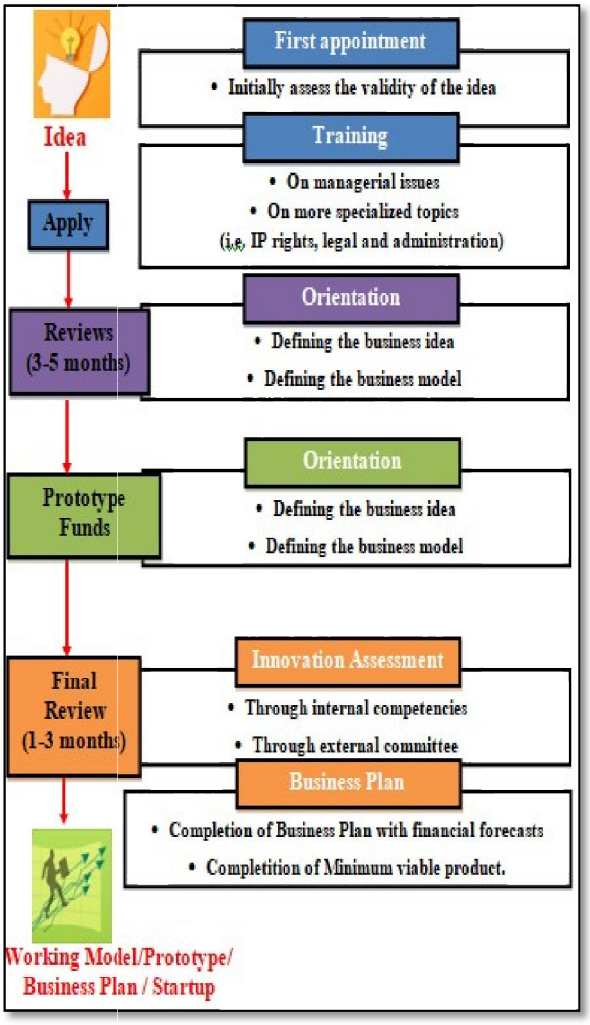

Figure 3.1.1. Pre-incubation steps and stages.

The main reason why this stage is difficult is that commercialization efforts are costly. Due to the costs incurred, the financing needs of the companies increase and the entrepreneurs need to find new supports. This process proceeds differently depending on the sector of entrepreneurs are in or the product they are developing. For example, licenses and certificates create serious costs for entrepreneurs providing services in the field of health. It is easier for startups to receive investment from angel investors and venture capital funds during the incubation period compared to the pre-incubation period. Incubation centers organize meetings, demo days for companies to be visible and find investment, and support companies in investor search processes.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 4, June 2023

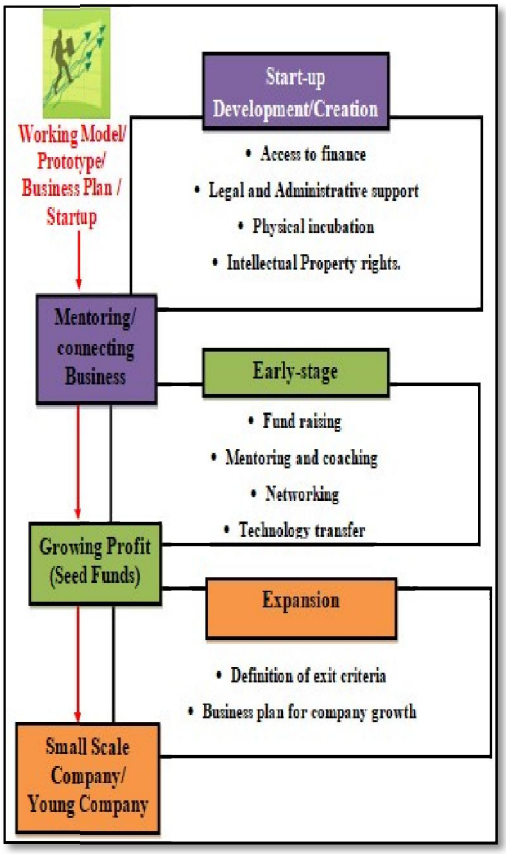

Figure 3.2.1. Incubation steps and stages.

It is believed that startups make a great contribution to the country's economy and employment. This is why there are many incubators in the India that offer services to entrepreneurs. Big cities with universities also offer a lot of support for innovation. There are many factors that determine success in establishing up and operating incubators. However, the role and support of stakeholders is a critical factor in the successful establishment and operation of an incubator. Key stakeholders such as partners, connections, networks and service providers directly contribute to the success of an incubator if they are well implemented. Incubation centers are generally established by public institutions, companies that want to advise startups, and educational institutions. Many startups also come directly from school and discover a gap in the market during their training. These entrepreneurs create jobs and innovation relatively quickly. That's why local governments like to cooperate with these entrepreneurs.

The income of a real incubator mostly comes from subsidies from the government or education subsidies. These Incubators are usually located in business parks where the government is willing to invest. For example, the Dutch incubators YES!Delft and New Energy Docks work with subsidies from the government, universities and companies. BViT, on the other hand, earns a small portion of its income from subsidies and consulting work, while the bulk is from startups []. They buy shares in a startup in exchange for bringing in investors or customers. The first step when establishing an incubation center is a fully equipped business area. Incubators buy a building and divide it into several small workspaces. Thus, multiple entrepreneurs share unit costs. As the center grows, it expands by adding new spaces. Office space in incubators is usually fully furnished. Cleaning, security, internet and heating services as well as cafeteria and meeting rooms are provided. Sometimes plants, phones and computers are also included in these services. It is very advantageous for entrepreneurs to rent an incubation center where they can focus on their own business using this infrastructure readily available.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 4, June 2023

3.3. Post Incubation/ Acceleration (3 months):

A startup accelerator, sometimes referred to as a seed accelerator, is a business program that supports early-stage, growth-driven companies through education, mentorship and financing. Startups typically enter accelerators for a fixed period of time and as part of a cohort of companies. While accelerator programs can provide beneficial resources to organizations at all stages of development, most focus on those that are pre-revenue.

Startups that want to join an accelerator submit an application and are often admitted in batches split up throughout the year. Once accepted, the startup accelerator will provide resources and services such as guest speakers, advising hours, a negotiated amount of capital and sometimes a shared coworking space. Term periods average around 3-4 months and require anywhere around 3-8% ownership of the startup. The assistance of an accelerator ends with a "graduation" or demo day, when startups present their work and proceed independently.

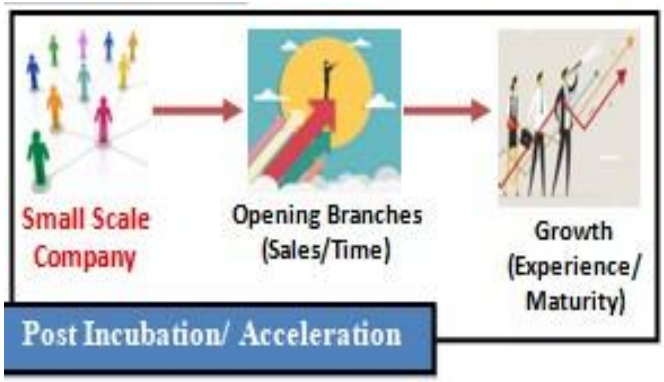

Figure 3.3.1. Post Incubation or Acceleration

IV.KEY ORGANIZATIONS AND INITIATIVES [4]

A nodal government agency to boost innovation-driven entrepreneurial ecosystem in the state of Maharashtra. Established under Skills, Employment, Entrepreneurship and Innovation Department, Government of Maharashtra, the society aims to foster innovative approaches and create conducive environment for innovative businesses to operate in Maharashtra. Under the aegis of Maharashtra State Innovative Startup Policy 2018, released in February 2018, the team at Maharashtra State Innovation Society is driving various initiatives to provide support at multiple levels to the startup ecosystem.

4.1. Key Initiatives

•Maharashtra Startup Week (MSW)

A flagship event to give startups an opportunity to pitch their product/services to government and win 24 government work orders worth up to 15 lakh each. Maharashtra Startup Week will happen in last week of April every year.

•Network of Incubators

Funding and setting up state-wide network of 16 startup incubators

•HirkaniMaharashtrachi

Providing mentorship and financial support to women entrepreneurs working under Self Help Groups to transform their innovative ideas to scalable and sustainable businesses

•District Business Plan Competitions

Conducted at district/division level, it is a platform to propose innovative business ideas to address problems faced by local communities and districts

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 4, June 2023

•Financial Support to Startups

Providing financial assistance to startups by reimbursing a major fraction of their costs spent on filing patents and lab testing for product launches.

According to Maharashtra State Innovation Society (MSInS)[] 17 supporting incubation centers are established and total 85 CR Grants committed. Following are few of Incubators and services they provide.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 4, June 2023

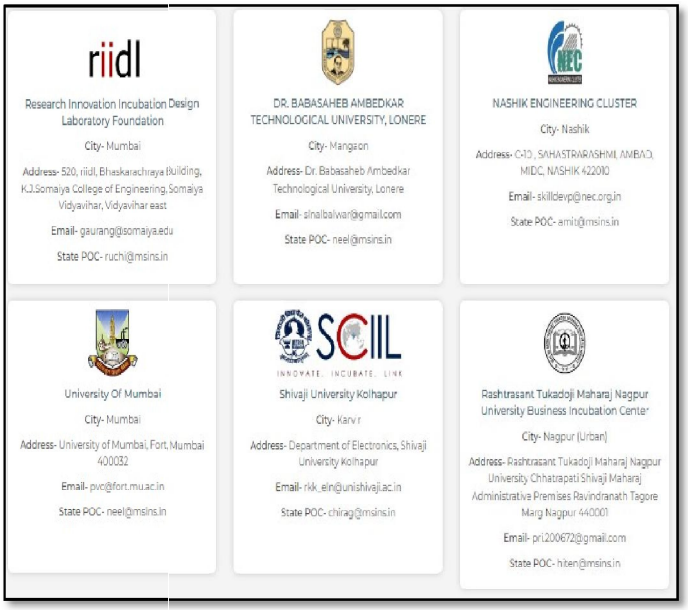

Figure4.1 Supporting Incubation Centers across Maharashtra

4.2 Incubations in Mumbai, Pune, Nagpur and Nashik.

4.2.1. Research. Innovation. Incubation. Design. Laboratories.

Technology business Incubator(TBI) helps early stage startups to develop their product from their idea stage to funding stage. TBI provides the best resources available with them to the startups in fields such as training, mentoring, investing opportunities, etc.

Startup Statistics: 72+ Total Startups, $3 Million+ Funding Raised, 200+ Full Time Jobs Created, 15 currently incubated

Supported Domain: Biology, Hardware and Software.

4.2.2. University of Miumbai: Department of Innovation Incubation and Linkages(IIL)

University of Mumbai has started a start-up incubation centre, MU IDEAS Foundation to establish a start-up culture that encourages innovative ideas; transform novel concepts into practical industry solutions and viable businesses. It aims to promote setting up of start-ups and support them during their pre-incubation, incorporation and operations phases to enable creation of successful businesses enhancing the overall economic health of the state and country, while generating large scale employment.The incubation center has been supported by University of Mumbai and Maharashtra State Innovation Society (MSInS).

4.2.3. SNDT Women's University Mumbai

To cherish synergy amongst academia, corporate and civilians that invigorates entrepreneurial spirit and inculcate innovative and ingenious bent of mind among young brains to be job creators, self-reliant and nation builders.

4.2.4. Savitibai Phule Pune University

Centre for Innovation, Incubation & Linkages C-BRIDGE (Center for Business, Research, Incubation, Development, Growth and Entrepreneurship) at SPPU is set up to promote innovative startups through the University ecosystem. Centre would facilitate and hone ideas and innovations that are useful to the society and address some of the problems faced through development of product, process and services.

4.2.5. Nashik Engineering Cluster

Provides Startup help to entrepreneurs and organize various challenges so that enterprenurs with new idea grow up.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 4, June 2023

V. HOW TO START INCUBATION CENTRE?

Following are steps to start incubation centre:

1. **Assess the market conditions and entrepreneurs requirements:**
   There are some top quality incubation centers in the country, where there is always a queue to get in. While there are others, who have a tough time ensuring 100% occupancy of their premises. Be aware of the market conditions while thinking of starting the incubation center – and answer questions like whether there is a demand for incubators, where will incubatees come from, what are the capital costs and operating costs of setting up an incubator. One important thing to keep in mind is what do entrepreneurs really want from an incubator – is it access to cheap office space, internet, electricity (the tangible benefits of an incubator) or the spirit to work along with fellow entrepreneurs, chance to meet investors, get access to quality manpower and experienced advisors (the intangible benefits of an incubator). This will help you identify the real pain point of your customers (the entrepreneurs) and address their needs most effectively. It is very important to ask the question – why do we want to setup an incubation center?

2. **Identify team and service providers:**
   While it may sound great to have an incubator which connects the entrepreneurs, investors, mentors, trainers, students and faculty – the real test comes in execution. The team that manages the incubator has to be A-class, as they are the ones who will drive the incubator, while the incubatees will drive their individual businesses. It is also good to identify a set of advisors – preferably a mix of industry veterans, faculty and investors, which always guides the incubation managers on strategic issues. 3. Arrange for resources An incubation center needs resources during setup and operations. Few of them are listed below: a. Space b. Connectivity – internet/telephone/electricity c. Data center d. Services – maintenance, security e. Furnishing – chair, table, cubicles f. IT Infra and Support – software, LAN, leased lines, wi-fi, printer, scanner, copier, Access control system g. Others – board rooms, meeting rooms, coffee machines, restaurants etc. All this comes at a cost, and the incubation center management needs to generate to resources for the same – in terms of capital, manpower and time. For an individual or an institute, it is prudent to setup a project team to take up the task in a systematic manner. Government support provides some subsidy towards this, but comes with its own costs.

3. **Establish industry linkages:**
   Once the incubation center is setup, it is very important to establish industry linkages – maybe even before the first company starts operations. This maybe contact with local entrepreneurs, lawyers, CAs, industry associations like CII, FICCI, Nasscom etc. or media (TV, print etc.), and other parts of the eco-system like investors. Many incubators are not able to perform well for themselves or for their portfolio companies because of being too internally focused.

4. **Draw out a calendar of activities:**
   It is important to draw out a calendar of activities, which keeps the incubator always charged. Conducting training programs, mentor meets, talks from experts, job fair, product showcases, technology demonstrations etc. from time to time helps the community to grow and brings in a great network effect!

5. **Attract, select, retain and manage startups:**
   Last, but not the least, an incubators' primary reason of existence is entrepreneurs! The team needs to think about ways to attracting, selecting, retaining and managing startups that inhabit their planets. A clearly conceived and stated criterion for selection is important – for example, most college-based incubators do not allow anyone else other than their own alumni/students to get incubated. So, it is important to communicate the same in advance to avoid disappointment. Another benefit of a government supported incubator is that the portfolio companies get service tax rebate – which again is a way to attract startup entrepreneurs! The success of any incubator is in the success of its portfolio companies.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 4, June 2023

VI. ACADEMIC INCUBATION STORIES

"Startups are seen as 'cool' by the younger generation. Even middle-aged mid-career professionals are giving up their cushy jobs and jumping onto this bandwagon so that they don't miss the excitement and opportunity to make it big as well as make a difference to society," says B Ravi, institute chair professor and founder, Biomedical Engineering and Technology Incubation Centre, IIT-Bombay.

Apart from the practical and financial assistance, it is also beneficial for startups to get the support and backing of a large institution for branding and visibility. The institutes also provide a network of alumni members, mentors and future funding organisations.

IIT-Hyderabad's Centre for Healthcare Entrepreneurship (CFHE) takes a slightly different approach to incubation, in that it offers a programme that generates the ideas themselves, instead of expecting applicants to come up with them. It offers a one-year fellowship programme that trains people incorporate ideas that address health care problems. CFHE fellows spend six months in hospitals interacting with doctors, patients, ward boys and nurses, and identifies problems that need to be addressed. The fellows come up with ideas that are pitched to a jury, which selects one for incubation.

Habib Ali, founder and CEO of BeAble Health, joined CFHE's fellowship programme in 2016. "As a biomedical engineer, I would always look at the problem and say, 'We could use this technology for that,' " says Ali, who received funding from CFHE. "Biodesign process talks about understanding the problem, identifying the need and then coming up with an idea." In March 2019, Ali launched Armable, a device that provides neuro-rehabilitation for arms of stroke victims or those who have conditions such as cerebral palsy, multiple sclerosis or injuries.

"DocsApp was the first company to graduate from IIT-Madras," says Satish Kannan, CEO and co-founder of DocsApp, which was incubated by the IIT-Madras Incubation Cell, and received □5 lakh in funding, in exchange for equity, from the cell. The startup received its second round of funding of $200,000 in 2014 from Anand Rajaraman and Venky Harinarayan, both IIT-Madras alumni.

Similarly, BleeTech Innovations applied to IIT-Bombay's Society for Innovation and Entrepreneurship programme in 2016 with its idea of wearable devices for the hearing impaired, and received □10 lakh in exchange for a 2 percent stake. Co-founder Janhavi Joshi says, "After IIT-Bombay on-boarded us, we had a bootcamp." Held in Bengaluru, the bootcamp covered aspects on technology, manufacturing, marketing, market strategy and funding. "Throughout the program we had workshops by experts on topics like UX/UI, how to pitch, how to get funding, etc."

Academic incubation, however, comes with its set of challenges. Even with expertise in the field, faculty is often inexperienced in business, and might make it difficult for incubates to analyze their product from a business perspective. Institutes also do not provide facilities for manufacturing. Incubation cells help startups with preliminary growth for a fixed period of time or until external funding has been secured or revenue generated.

VII.CONCLUSION

In this review the journey from idea to startup and to success is described in detail. This paper focuses on study of startups, pre-incubation and incubation centers. This paper basically covers the challenges faced by entrepreneurs to start their company, importance of startup-units, processes involved in pre-incubation and incubation centers, opportunities for entrepreneurs, history of incubation centers and requirements to setup and carry-on smooth process of incubation centers. The main aim of paper is to get brief idea regarding incubation and its setup as academic incubation centre, there is a need of academic incubation centre.

Academic Entrepreneurship Incubators are one of the important tools in national strategy of innovation. They provide knowledge, know-how and technology transfer from academic society to market environment. Enabling scientists and students to commercialize their ideas, they supply the market with new technologies. Although the process of introducing innovative concepts to the market is very important, there are still various barriers disrupting development of Academic Entrepreneurship Incubators and in effect influencing emergency of knowledge-based companies. The most important obstacles are mentality and organization structures of universities, emigration of educated young people, problems with estimating value of new products, blurred laws regarding ownership of intellectual values and asymmetry of information between buyer and seller.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 4, June 2023

REFERENCES

[1] Hackett, S.M. and Dilts, D.M., 2004. A systematic review of business incubation research. The Journal of Technology Transfer, 29(1), pp.55-82.
[2] Pettersen, I.B., Aarstad, J., Høvig, Ø.S. and Tobiassen, A.E., 2015. Business incubation and the network resources of start-ups. Journal of Innovation and Entrepreneurship, 5, pp.1-17.
[3] Perdomo Charry, G., Arias Pérez, J.E. and Lozada Barahona, N.E., 2014. Business incubator research: a review and future directions. Pensamiento&Gestión, (37), pp.41-65.
[4] https://msins.in/ecosystem-incubator-list
[5] Skurczyński, M., 2008. Academic entrepreneurship incubators network in Poland. European Integration Studies, 2(1), pp.115-120.