

Innovation, Business Models and Entrepreneurship
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Lecture - 38
Incubators: Business Vs Technology

Welcome friends. So now, slowly we are coming to end of this course and during this whole course in last most than 35 sessions we have discussed different aspects of developing business on the basis of your innovation and innovation is the key word which was running all through these sessions.

Now, when we are doing innovation we also discussed that you have prediction disability you do not know whether the path which you have taken is correct or not correct, what type of challenges are there in this path, you require different types of resources. These resources may be knowledge resources, resources related to physical space, resources related to monetary support and resources related to psychological support also. All these things are required when you are going on this path.

So, very popularly we call this path as the path of entrepreneurship, but this path is not a easy path. It has its own challenges. Therefore, many of us are not very comfortable on moving on this path therefore, we require a type of support a support system which can help us which can hold our hands when we think off walking on this path of entrepreneurship and that is the role done by incubators.

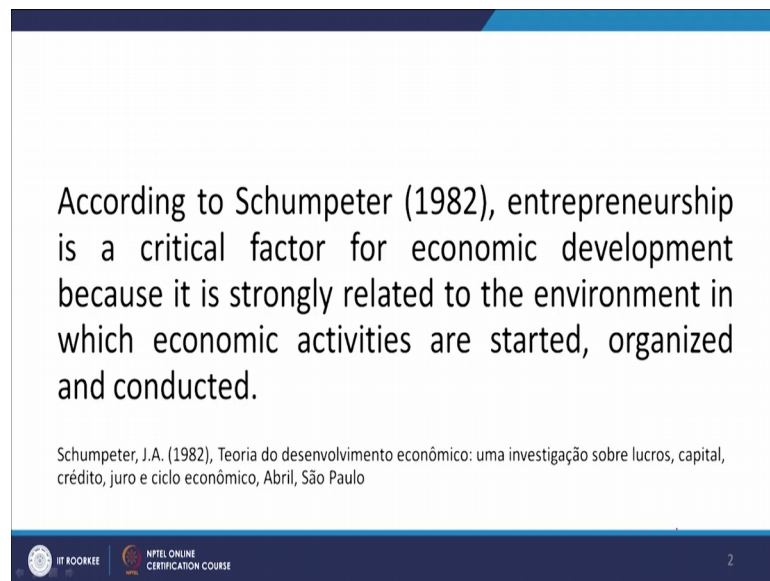
There are different types of incubators now in our country the concept started from the west from America particularly, but now in India also you see great number of incubators in universities, in IIT's, in IIM's and even private incubators are also available and these incubators they are primarily doing the hand holding of those people those entrepreneurs who want to succeed, but they have some kind of challenges in their path of success, in achieving the objectives.

So, therefore, in this session we are going to discuss the concept of incubators, business incubators are there, technology incubators are there, and nowadays we have a combination of technology business incubators TBIS a very popular term in the eco system of incubation. So, all these things what is the process of incubation, how do we

differentiate between a technology incubator and a business incubator these things we are going to discuss in this particular session.

Before we jump actually to the incubator it is very very important to understand the process of entrepreneurship because incubators are actually supporting the process of entrepreneurship.

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The term incubator we all know is available from the concept of industry where particularly we talk of medical industry and when early born are there and those early borns are difficult to survive you create artificial environment a protected environment for them. So, that that early borned, newly borned can be kept for 1 day, 2 day, 3 day, 4 days in that protected environment and then once that baby has gained sufficient strength to face the challenges of real world then that baby comes out of incubator and then it is taken as a normal baby.

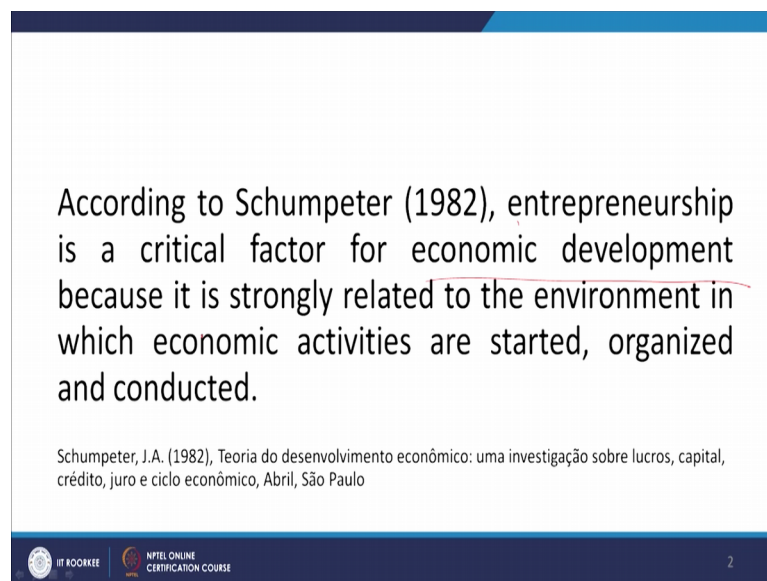
So, same thing is in the business also, your idea is there, but your idea does not have that much strength at the movement that it can stand on its own. Therefore, you require a support a place a kind of environment which is a protected environment and in that protected environment different types of support system is available.

Like if you visit any incubator at a hospital, where newly borned babies are there so, different types of support systems are available. There are nurses 24 into 7 keeping

watch on the activities of each baby in the incubator, they continuously monitor their temperatures, they continuously monitor their other vital parameters and when they feel that now baby is stabilizing, now the baby is able to face the challenges, at that time they take the baby out from incubator family members are not allowed to go inside the incubator because it is a protected environment family members can bring lot of virus, bacterias with them because you are coming from the opens. So, therefore, protection is required.

Similarly, we are talking same kind of protection for our ideas, same kind of protection for our innovation and therefore, first we will discuss the role of entrepreneurship. Time and again we have discussed that entrepreneurship is very very important. All modern leaders, national heroes they are regularly talking of entrepreneurship and probably that is the reason we offered this course on innovation and entrepreneurship because it is the need of the our.

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According to Schumpeter (1982), entrepreneurship is a critical factor for economic development because it is strongly related to the environment in which economic activities are started, organized and conducted.

Schumpeter, J.A. (1982), Teoria do desenvolvimento econômico: uma investigação sobre lucros, capital, crédito, juro e ciclo econômico, Abril, São Paulo

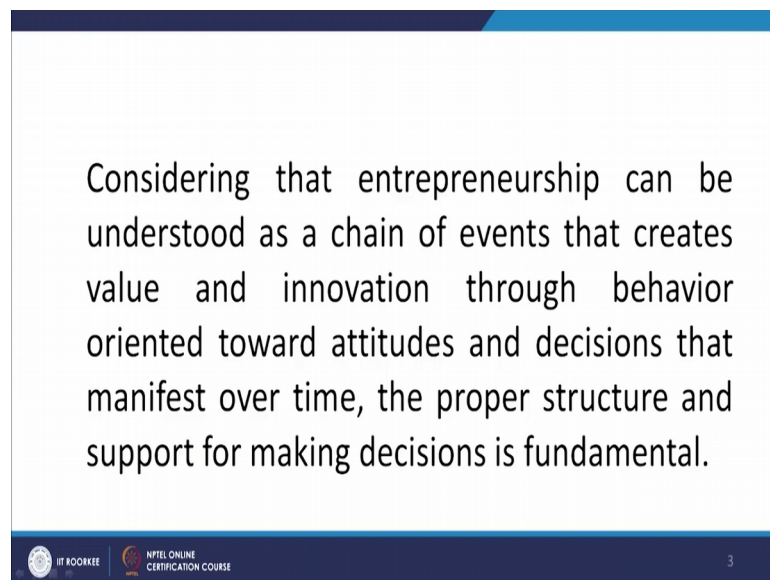
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The father of entrepreneurship Schumpeter he also mentions in one of his article that entrepreneurship is critical factor for economical development, because it is a strongly related to the environment in which economic activities are started, organized and conducted. So, this point we have emphasise very often that entrepreneurship is a very critical element for economic development.

More entrepreneurs are there, more economic development of that area will take place. You take an example of India some of the states in India where you have large number of entrepreneurs and you can see that economic prosperity of those states that is much ahead of rest of the country much higher than the average per capita income of rest of the country.

For an example, Gujarat, where entrepreneurship is in the blood of each citizen of Gujarat and therefore, economic prosperity of that state is much higher than the national average. So, entrepreneurship is very very important and now, to flourish the entrepreneurship we need incubators.

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Now, considering that entrepreneurship can be understood as a chain of events that creates value. now, it is important that in entrepreneurship when we are talking to start a new venture because entrepreneur is a flag bearer, he is a leader, he is first mover and he is starting a new kind of business, he is starting a new industry in that case it is a journey full of risk. And therefore, it is important to see the important processes in the journey of an entrepreneur, because we are saying that it is a chain of events that cleats value.

Now, what are those important events in this chain which are adding value? Because that is very very important that you identify value adding events in that chain and what we are going to do that we are trying to categorise events on different basis, and then we will see that what are the events.

Now, some of the authors they have mentioned that in this entrepreneurial process two important activities are there, one is opportunity recognition and other is resource acquisition, opportunity recognition and resource acquisition.

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The slide is titled "Entrepreneurial Process" and lists two main activities:

- Opportunity recognition (with handwritten "SBA" circled in red)
- Resource acquisition (with handwritten notes: "Knowledge, Skills, Funds, M/c, Material, Market" and "Paperless offices" circled in red)

At the bottom of the slide, there are logos for IIT ROORKEE and NPTEL ONLINE CERTIFICATION COURSE, and a small number "4" in the bottom right corner.

Now, as an entrepreneur first we recognise some opportunity that there is an opportunity we have discuss this example earlier also that present time in India we have a very very important issue that is swatch Bharath Abhiyan, SBA which is very high on the governments agenda. We want to make India clean we want to make India a hygiene place.

Now, as an entrepreneur in this objective of government of India I can find large number of business opportunities because to make SBA possible swatch Bharath Abhiyan possible we want more and more cities more and more states to come under the umbrella of ODF and when we are talking of ODF we require more and more toilets, we require more and more sanitation facilities and there are opportunities that how to build more and more cost effective toilets.

In many areas you do not have sewer lines. So, what do you do with those toilets where sewer lines are not there, so can we have more eco friendly bio toilets so that these are easy to use because that is a very important problem. If proper water supply is not there so once somebody has used the toilet it becomes non usable for the second person. So,

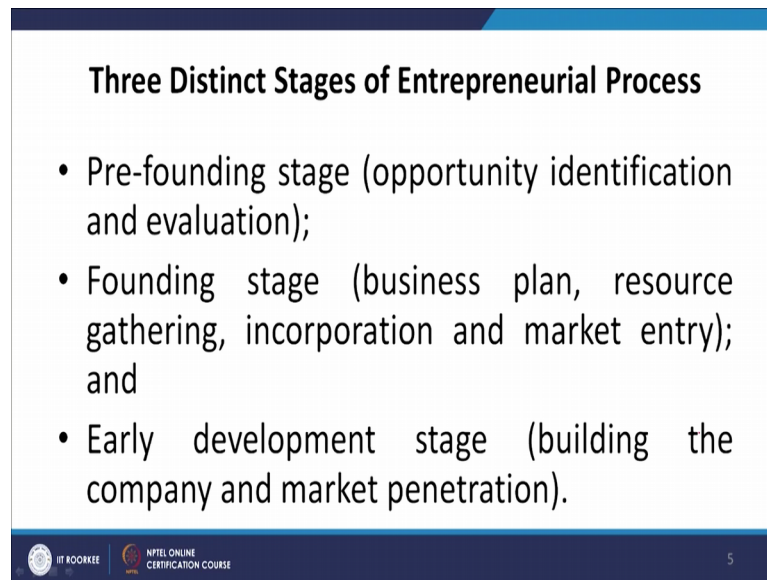
all these things are part of opportunity recognition as an entrepreneur I can see the opportunities in all these things.

Now, another issue is related to we want to move to paperless offices. We want to have more and more digitization in our offices. So, paperless offices are the requirement and that is again an opportunity. Now, can I develop some of the applications where it is possible to have less paperwork or eliminate the paperwork and it is user friendly also? Normally, whenever we talk of paperless offices we want to use scanning machines for keeping the records, but can we have some more simpler options these are the opportunity recognition; so you continuously when we discuss the idea management system in one of the initial sessions.

Now, we need to see that how that idea management system will help you for an entrepreneur in the opportunity recognition that is the one part and once you recognize the opportunity once you find that, yes this is a possible business opportunity, then the second important element of the process is resource acquisition and this resource is with respect to knowledge this is skills this is funds, this is machine, this is material, this is market so, large number of different type of resources are required and you need to procure those resources, so that you can create value out of all these resources, so that you can market your idea.

So, these are two important processes in the entrepreneurial journey as per some of the author. Then, large number of authors have also given a different slightly different way of presenting the entrepreneurial process and according to them there are three distinct stages in entrepreneurial process.

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Three Distinct Stages of Entrepreneurial Process

- Pre-founding stage (opportunity identification and evaluation);
- Founding stage (business plan, resource gathering, incorporation and market entry); and
- Early development stage (building the company and market penetration).

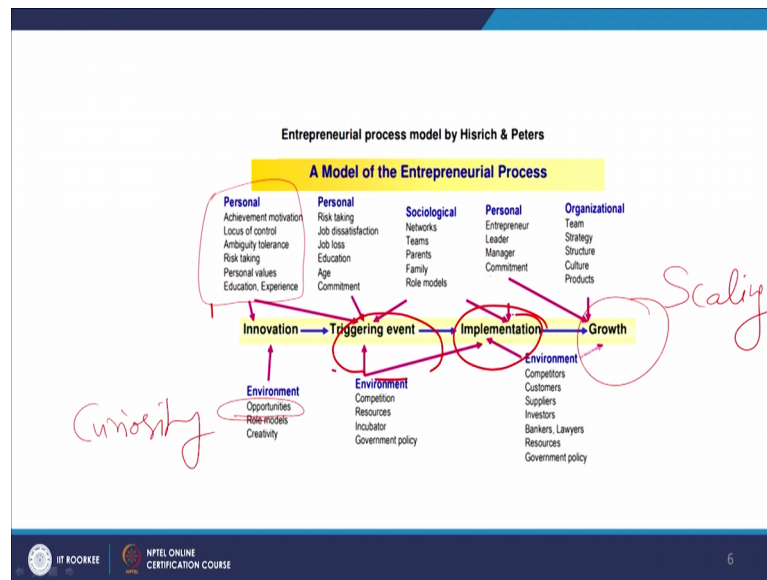
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The first is pre-founding stage. Now, this is opportunity identification and evaluation as we discussed just now the opportunity recognition. So, that is recognition of opportunity that is pre-founding stage. Then, the founding stage comes where you develop your business plan you acquire resources, incorporation and market entry, that is the founding stage and then you go for the development of your business scaling up of your business that is early development stage where you building the company and start market penetration.

So, these are three different stages already we have discuss pre founding stage as opportunity recognition, the founding stage we have discussed as resource acquisition at the third stage which this particular classification says that is the early development stage when you are penetrating into the market you have incorporated a company and now you are trying to scale up. So, you can say that now you are trying to scale up. So, this third stage is of the scaling up.

So, this third stage is particularly not related to incubator. In incubator we work with first two only because once you have graduated you have come out of incubator then this third state comes into the picture.

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So, now, if you see one of the popular entrepreneurial process model given by Hisrich and Peters, so, this Hisrich Peter model of entrepreneurial journey. You see that here four important stages are mentioned; the first is innovation, then there are certain trigger points, then the implementation. And then finally, the growth do you scaling up. So, this is the scaling.

Innovation is here meaning with the opportunities, role model creativity these things are the environmental factor. So, it is only possible when you have some opportunity recognition and we have discussed that curiosity is one of the very important element for opportunity recognition when you are curious you are keeping your ears and eyes open all the time then you see the opportunity and then you go on to the path of innovation.

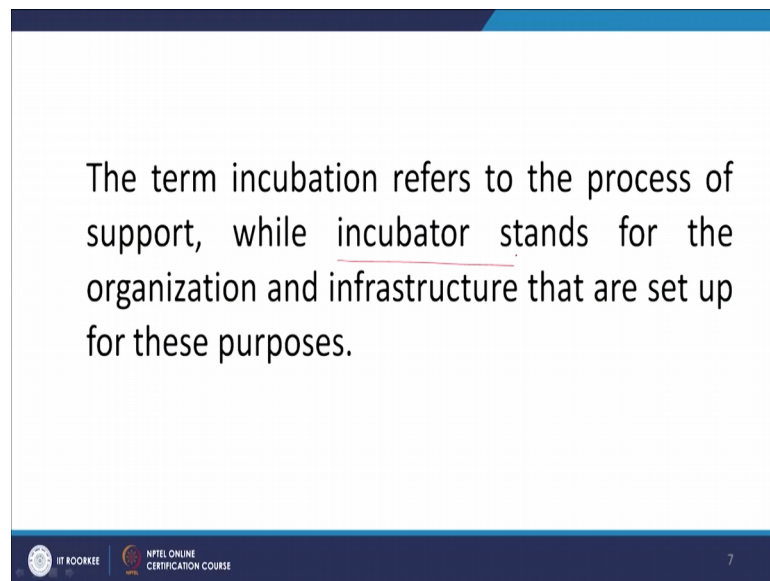
And, then this model also presents some of the personal characteristics which help in actually materializing these opportunities if you do not have these personal traits then though you may see those opportunities I am a professor, but and I do visualize so many opportunities around me, but since I may not be having these characteristics, personal characteristics, I may not be a risk taking type of person and therefore, I am not entering into those entrepreneurial journey.

So, if the environmental characteristics environmental requirement and the personal phenomena matches then this process will start and then you have the trigger event and

then you go for the implementation also and these things are the part where incubator is going to help us.

So, now, let us see process of incubation or incubator the term incubation refers to the process of support while incubator stands for the organization and infrastructure that are set up for these purposes.

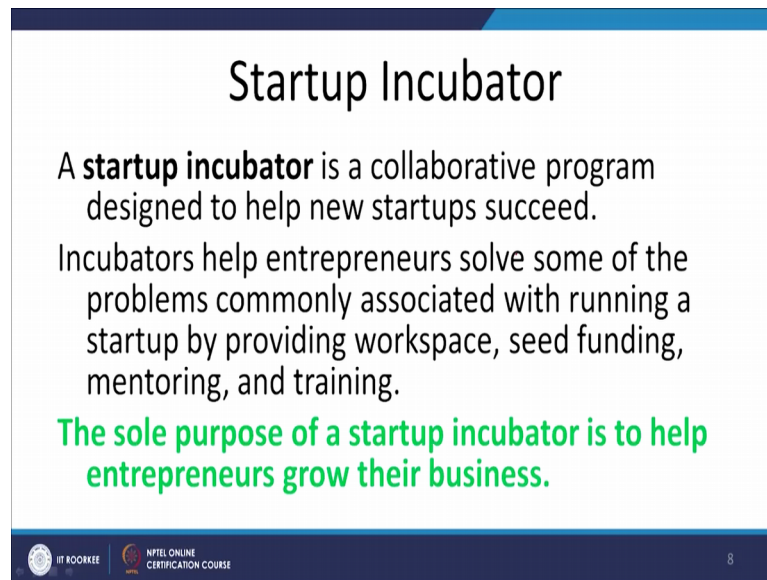
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So, as we have discuss that incubator is a type of support system. It provides array of support of different types of facilities which are required in the process of entrepreneurship. Now, because incubator is possible at any stage of your business theoretically speaking at any stage of business whenever you require a kind of support you can think of a concept like incubator.

So, this is possible even at a stage where you are 4 years, 5 years, 6 years old company even in that case you may think off going to incubator, theoretically speaking. But, commonly the word incubator is associated with a start-up incubators.

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Startup Incubator

A **startup incubator** is a collaborative program designed to help new startups succeed.

Incubators help entrepreneurs solve some of the problems commonly associated with running a startup by providing workspace, seed funding, mentoring, and training.

The sole purpose of a startup incubator is to help entrepreneurs grow their business.

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And, now what is the meaning of a start-up incubator? This is collaborative programme designed to help new startups succeed. The sole purpose of a startup incubator is to help entrepreneurs grow their business. So, that is the only idea behind incubators that somebody is requiring some support, somebody is requiring some help and incubator provides that type of support system so that entrepreneur finally, gets success.

So, incubators help entrepreneurs solve some of the problems commonly associated with running a startup by providing work space, physical space, seed funding, mentoring and training. So, these are some of the common issues which you will find with all the startups. You want to start a business, but you do not have a physical place so, that is the first important thing.

Students in IIT's they normally start you will read about many startups coming from IIT alumni fraternity. So, they started their activities from their hostel rooms. So, they use the first place of their work is the hostel room. So, considering this issue now in most of the IIT's we have physical incubators where a suitable office space is allocated to prospective incubatee or to incubatee so that you have a feel of corporate culture.

You have computers you have your other office staff and then you can work in a very organised manner, but there are examples where students from their hostel room have developed successful companies without requirement of or without the support of incubator, but these are some rare examples we want to develop a structured innovation

and therefore, incubators are required then we hardly have any money in our pockets as students we always work on credits. Even our canteen you see that all my evening teas are on credits. So, what to talk of money for starting a business? So, you need seed funds, incubators provide seed funds also.

Then we need somebody who is able to help us guide us whether we are moving on the right direction or not that is the role of mentor. So, incubators provide the facilities of mentoring. You have some fifty percent skills in your required area of technology. So, incubators may help to acquire remaining fifty percent of skills also by way of cleaning. So, these are some of the common problems.

And, we will see a very exhaustive list of services which are commonly available in different types of incubators like they will tell you because you are a technology enthusiast so, you do not know the basics of business, so most of the new entrepreneurs they face this problem that they do not know how to talk to investor.

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The slide is titled "Common services available in Incubator" and lists 17 services. At the bottom, it features logos for IIT ROORKEE and NPTEL ONLINE CERTIFICATION COURSE, along with the page number 10.

- Help with business basics
- Networking opportunities
- Marketing assistance
- High-speed Internet access
- Accounting/financial management assistance
- Access to bank loans, loan funds and guarantee programs
- Help with presentation skills
- Connections to higher education resources
- Connections to strategic partners
- Access to angel investors or venture capital
- Comprehensive business training programs
- Advisory boards and mentors
- Management team identification
- Help with business etiquette
- Technology commercialization assistance
- Help with regulatory compliance
- Intellectual property management and legal counsel

So, they will take tell you the basics of business they will give you the networking opportunities, so that you can meet with different types of investors, they will help you in marketing assistance, they will provide you the students who can help you with the marketing a related problems, high speed internet access is obviously, a very common thing, then you do not know how to make balance sheets, how to make cash flow statements, how to file your returns.

So, there may be a common facility which will help all the incubatees in the incubator about these accounting financial issues then it will also help you to get loans from bank or other schemes and the since you are an incubatee of a reputed incubator so, it automatically may act as a guaranty for getting funds from some other agencies.

Then some of the very common thing like helping with the presentation skills connection to higher educational resources if you are within the incubator of IIT, IIM, I NIT etcetera. So, you are having access to their lab facilities, their library, so, those educational resources are also available to you; so connections to strategic partners because people keep visiting these types of incubators and everybody is in search of good strategic partner. So, not only you, but other people are also interested to have good partners. So, those types of people will come and you may have opportunity to develop the strategic tie ups with them.

Then different types of angel investors, venture capitalists networking with them is also possible, comprehensive business training programs, advisor ship, mentor ship, management team identification, business etiquettes, technology commercialization assistance, regulatory compliances. Now in India like earlier we use to have sell tax vat etcetera now it is moving to GST. So, all the incubatees they need to understand that how to apply GST to their business what are the consequences of implication of GST in India. So, these types of regulatory compliance help is also provided by incubators then issues related to IP management and legal counsel.

So, these are the facilities. It is quite possible that in some of the incubator all these facilities are properly available, in some of the incubator some facilities may not be available, but these are every exhaustive items which incubators normally provide and therefore, it is desirable to be part of an incubator in initial years of your business.

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Applicant — Incubatee — graduate

Incubator

- A business incubator's main goal is to produce successful firms that will leave the program financially viable and freestanding.
- Startup incubators are usually non-profit organizations, which are usually run by both public and private entities.
- Incubators are often associated with universities, and technical Institutes (such as IITs, NITs)and some business schools (such as IIMs) allow their students and alumni to take part in these programs.

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Now, as we discuss that the business incubators main goal is to produce successful firms that will leave the program financially viable and free standing. So, now, if you understand this particular statement so, the meaning is that somebody comes in the incubator and when it is entering.

So, we say that an applicant is there, you submit your application your proposal to incubator, this is incubator and if you are admitted you are known as incubatee and when you have spent 2 – 3 years period inside the incubator as incubatee then you graduate and when you are graduating from the incubator. So, we are expecting that you should be financially viable and free standing, it is you can stand on your own now you do not require any support as long as your requiring a support you are inside incubator, but when you see when you feel that you are now financially viable you do not require the seed funding support from incubator you have developed sufficient investment from other angel investors, venture capitalist or debt funding. Then in that case you graduate because now you are a free standing person. So, that is the main objective of incubator.

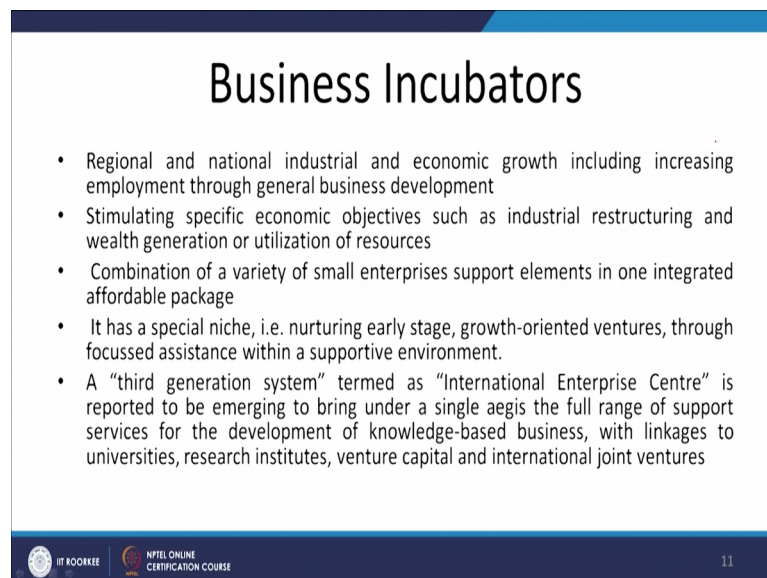
Another important characteristic of incubator is that most of the time it is expected that incubators are non profit organizations and the idea is basically to support the culture of entrepreneurship. So, these are non profit organizations and these are running both with public and private entities and most of.

The time in our country and not only in our country, but globally also whether you talk of Israel, whether you talk of USA, whether you talk of European nations, whether you talk of Latin America, you will find that incubators are normally associated with universities and technical institutions. Like in our case in most of the IITs and NITs you find incubators.

You find incubators in business schools also particularly like in India most of the IIMs are having some of the excellent incubators because the first target population for these incubators are the students of these institutions and the alumni base of these institutions. So, therefore, most of the universities and educational institutes are having the kind of incubator facility and we discussed all these common services which are normally available in incubator.



Now, though this classification is not very much required, but to some extent there are some literatures which say that incubators can be business incubator, technology incubator then technology innovation centres, and finally technology business incubators. So, some literature is pointing that different types of incubators are there. So, now, let us see quickly what are the different type of incubators.

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Business Incubators

- Regional and national industrial and economic growth including increasing employment through general business development
- Stimulating specific economic objectives such as industrial restructuring and wealth generation or utilization of resources
- Combination of a variety of small enterprises support elements in one integrated affordable package
- It has a special niche, i.e. nurturing early stage, growth-oriented ventures, through focussed assistance within a supportive environment.
- A “third generation system” termed as “International Enterprise Centre” is reported to be emerging to bring under a single aegis the full range of support services for the development of knowledge-based business, with linkages to universities, research institutes, venture capital and international joint ventures

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Now, business incubator are basically to support the business development process, where you already have a developed technology now you are trying to develop a business model around that technology. So, these incubators help in developing that

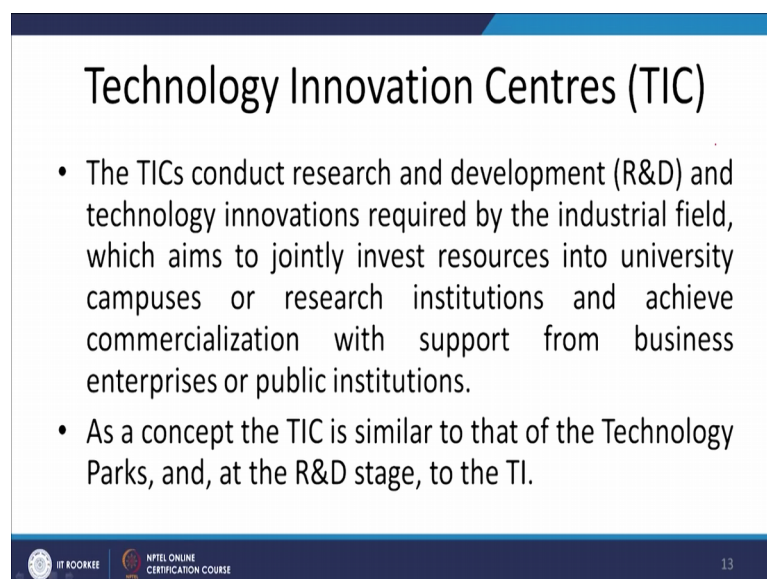
business around a particular technology. The technology incubator is a step before the business incubator, where these incubators help in developing or strengthening a particular technology development process.

The technology is yet not developed fully, it cannot reach to commercialization level. So, therefore, you require some kind of support, mentoring. So, in the business incubator the mentoring is by the business leaders and in the technology incubator the mentoring is normally done by the university professors and you go more into the laboratory environment for the technology incubators, you are developing new technology.

Like for an example a energy storage devices I need to develop efficient energy storage devices. So, some idea is there in my mind that if I use this material in batteries so, we have the efficient batteries with that material, but I am not very sure that what type of characteristics of those batteries will be. So, I require a technology incubator.



Now, if I have a developed battery with me and I need to develop a business model whether to develop batteries and sale those batteries or whether to give batteries on rent and I develop the recharging stations for those batteries. So, that is an issue of business incubator. So, depending upon where I am in the entrepreneurial journey I can go to a technology incubator or a business incubator, but the point is that nowadays it is very difficult to differentiate whether this incubator is a technology incubator or this incubator is a business incubator.

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Technology Innovation Centres (TIC)

- The TICs conduct research and development (R&D) and technology innovations required by the industrial field, which aims to jointly invest resources into university campuses or research institutions and achieve commercialization with support from business enterprises or public institutions.
- As a concept the TIC is similar to that of the Technology Parks, and, at the R&D stage, to the TI.

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Then another type of incubator which is Technology innovation centres for developing new technology. So, the TICs conduct research and development and technology innovations required by the industrial field, which aims to jointly invest resources into university campuses or research institutions and achieve commercialization with support from business enterprises or public institutions.

So, these are those places where we want to develop a new technology. So, you are comparing technology innovation centre with a kind of R and D setup where you have mentors. And you have pooled resources from private organizations as well as the educational institutions, so that new technologies can be developed. So, that is technology innovation centre.

And, finally, the most comprehensive type of incubator is technology business incubator where we have combination of technology and business services. You come with relatively a stable kind of technology where your prototype is almost ready. So, you have develop the technology, but prototype require some kind of market testing, you need to develop business model around that and you are also ready to make some kind of changes in your prototype.

So, you are working simultaneously on both the aspects to refine your product, to refine some of the aspects related to technology which your product is using and then you are also iterating with the business models. So, therefore, TBI, technology business incubator, is a more comprehensive term which is used for incubators nowadays.

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Technology Business Incubators (TBI)

- The TBI is a venture of universities, public research institutes, local government and private institutions to promote and bolster a new technology intensive enterprise.
- TBI refers to the type of incubation where the focus group consists of innovative, mostly technology-oriented, or knowledge-intensive service sector enterprises and interactions with the academic sphere giving a substantive element of the incubation process.
- The pushing forward of TBI occurred in parallel with the vigorous transformation of today's spatial economic processes, it can be interpreted as a reply for the challenges of the learning-based economy.
- As TBI intervenes into the spatial processes of the learning-based economy, integrates innovation and enterprise-policy, and is implemented with the active participation of the academic sphere, it has certain unique characteristics that deserve mention:
 - TBI fosters innovative start-up firms, thus the process of incubation is strongly intertwined with the innovation process that occurs in the supported enterprises.
 - The objective of TBI is the realization of certain local economic development goals (ultimately the enhancement of the competitiveness).
 - TBI aims at the development of new innovative industries by stimulating the establishment and early growth of start-up firms.

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And, then TBI has different ministries of government of India are developing technology business incubators related to their area of requirement, technology business incubators are there in the area of bio technology incubators are there in area of food processing, technology business incubators are there in area of information technology. So, area specific TBI's technology specific TBI's are also coming up slowly in our country. So, with this we come to end of this discussion that how incubators are very much required for initial days of your business and with the help of incubators you get that strength in your idea, that strength in your business model which will help to work as a free standing financially viable organisation, when you graduate from the incubator.

So, incubator nowadays are almost an essential part of process of entrepreneurship whenever new idea is there go to incubator, take the help of incubators and some of the incubators which are there in the educational setup they also help you in pre incubation activities before they admit you as regular incubatee they may help you, they may coach you, so that you can refine your idea, you can refine your presentation at the time of presentation of your idea to become a final incubatee to the organization.

So, they try to help you to come to that level, so that your entry into the incubator becomes a smooth, otherwise you may find some kind of rejection that you apply to an incubator and incubator is not accepting you. So, that may be quite demotivating. So, therefore, to develop the complete eco system incubators are also organizing different

types of pre incubation activities so that your level becomes parallel or inline to the requirement of incubator.

So, that is what very very important thing in the process of entrepreneurship journey. So, with this we come to end of this session.

Thank you very much.