

Understanding Incubation and Entrepreneurship
Dr. B.K. Chakravarthy
Department of Engineering Design
Indian Institute of Technology, Bombay

Module – 08
Tech Entrepreneurship SINE
Lecture - 16
Introduction to SINE Incubator

(Refer Slide Time: 00:27)



Poyani Bhatt

Chief Executive Officer, **SINE**

Let me introduce you to you know Poyani Bhatt, students. We have this you know she is going to talk about the incubator in I you know IIT, Bombay which started very early and that helped us you know look at entrepreneurship in a very very interesting way and very close way in IIT, Bombay. Poyani herself is a you know qualified legal and compliance professional she was working in a bank earlier.

Student: Ok.

And a fellow member of the institute of company secretaries of India turned to technology business incubation by chance, helping entrepreneurs over a decade and experience of three decades in industry and academia. So, that is been great support for all the in incubatees you know having an experienced person like that at the helm of affair and thank you so much Poyni and you know please you know we can start your session.

Yeah. So, thank you professor Chakravarthy. I think along with me I let me also take up quick like couple of minutes to introduce my colleagues here. So, along with me my colleague Bratati is there as well as Rakesh is there, they both are part of our incubation team here. So, essentially looking after business like you know our own business which is like you know the getting pipeline and helping them incubated and so on so forth.

Bratati has a background in like the biotechnology area, so is the case for Rakesh also and Bratati has done PhD and Rakesh has done his MBA as an additional thing. So, over to you Bratati. Thank you Poyni ma'am for your introduction and thank you Professor Chakravarthy for this opportunity. I hope I will do justice in introducing SINE to all of those who are present here today.

(Refer Slide Time: 02:13)

Introduction to **SINE**



(Refer Slide Time: 02:21)



Bratati

Ph.D. in **Biotechnology** in
Plant and Algae

Part of managing **BIRAC**
funded Biotechnology
schemes at SINE and
**Business development &
Incubation**

So, today I am here on SINEs behalf giving you a brief introduction about our technology business incubator I am Bratati I have like Poyini ma'am pointed out PhD in Biotechnology focusing on plant and algae biotechnology. And, I have joined SINE in the past year and I am part of the I am part of managing the BIRAC funded Biotechnology schemes here at SINE, as well as a part of the business development and the incubation group in general.

On behalf of the Society for Innovation and Entrepreneurship or SINE as you know us here at IIT, Bombay we extend you a warm welcome. Today's introductory session is geared to give you a quick glimpse into what we do here at SINE and how we can help you and those in your network to navigate the different aspects associated with starting a new business venture.

(Refer Slide Time: 03:09)



And, we are under the umbrella of IIT, Bombay and we are the oldest ones associated with an academic institute.

(Refer Slide Time: 03:17)

What is the critical Role of a **Business Incubator** in the life of a **young entrepreneur**?

Incubator

New businesses get selected, supported and directed in the **profitable** arenas

Necessary **hand-holding** happens at the early stages in order to help young businesses find their footing.

To **raise funds** at necessary stages of the product development and **make the connects** that are essential to its survival.

So, most of you are familiar with how critical a business incubators role is in the life of a young entrepreneur, but nevertheless I will reiterate. An incubator is not only where new businesses get selected, supported and directed into profitable arenas, but also where the necessary handholding happens specially at the early stages in order to help young businesses find their footing. Also to raise necessary funds at every stage of the product development and make the connects that are so essential to its growth and survival.

(Refer Slide Time: 03:50)

SINE

Society for Innovation and Entrepreneurship, IIT Bombay

Not for profit organisation

Self-sustained through revenue and equity sharing by the incubatees



Now, SINE is a leading technology business incubator it is hosted by the Indian Institute of Technology here at Bombay and it is a not for profit organisation and through the revenue share revenue and equity sharing with our incubatees is how we are also a self sustained entity.

(Refer Slide Time: 04:10)

Economic Growth
Deep tech
IP generating start ups

Strategic Value
Space & Defence

Social Impact
Healthcare



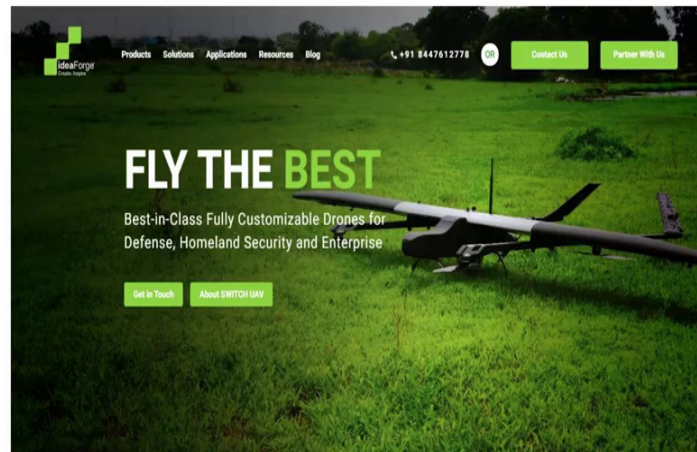
Now, being IIT Bs business incubator we focus on deep tech IP generating start-ups which produce ventures that not only have an economic impact such as a high risk high reward ventures.

(Refer Slide Time: 04:21)



**Gupshup
(2021 Unicorn)**
enables better
customer
engagement
through
conversational
messaging.

(Refer Slide Time: 04:32)



As you all are mostly aware 2021s unicorn gupshup was one of SINEs incubated companies, but also creates strategic impact for instance targeting the defence and space tech sectors idea forge is one such successful SINE incubated companies that you probably have already heard about in this particular domain.

We also try to reach have a social impact as well and we one of the ways that we do it is we have multiple health care domain start ups as well that bring affordability and access to those who are marginally privileged in our communities. Thereby not only servicing the unmet needs of such sectors, but creating significant social impact in them in its way.

(Refer Slide Time: 05:06)

Focus

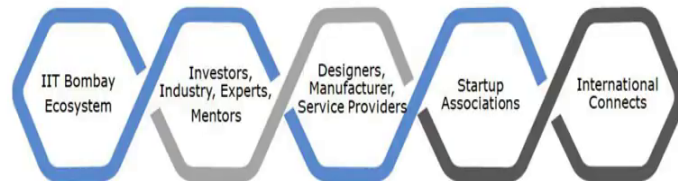
Handpicking startups that we can foster that aim to bring **futuristic technologies** to make India Global Leader in **innovation** while also serving **economic and social needs** of the country.



So, overall our focus is handpicking startups that we can foster that aim to bring futuristic technologies to make India global leader in innovation while also serving economic and social needs of the country.

(Refer Slide Time: 05:18)

SINE Ecosystem (External)



So, we draw a lot of our a pool of incubatees from the IIT B network within our system itself.

(Refer Slide Time: 05:31)

IIT Bombay Ecosystem

- 1. IRCC** - Licensing and Tech Transfer
- 2. BETIC, Tata Centre, WRCB** - Applied Research Groups
- 3. D. S. Centre** - Academic centre for Entrepreneurship
- 4. Ecell & Eclub** - Students Tech & Entrepreneurship clubs
- 5. Research Park** – Industry Collaboration for R & D
- 6. All Depts at IIT**- Core Research Groups



Because we have a technology transfer thing at IRCC where a large number of our faculty and student innovators file a lot of patents and because of the support that IIT B provides to its young entrepreneurs these can easily then be licensed out by the individuals once they choose to start their ventures.

We also have many applied research centres such as BETIC and WRCB as well as the Desai School of entrepreneurship. Here also innovation is fostered at the earlier stages and a lot of interesting ventures come out of these centres and then they approach us for funding and incubation support.

Also student clubs on campus such as the Ecell and Eclub, we do regular outreach with these and we also host and judge Hackathons whereby some of these ideas can be test run and we can also get a regular interesting stream of early stage entrepreneurs as well.

Now, besides we also have association with the research park that also helps us connect with industry leaders, find support for our incubated companies and foster further in synergies within the internal ecosystem. Now, within the IIT B system since it is such high level R and D is available on campus, mentorship connects within and also R and D facilities within the campus can be made accessible to our incubatees as well.

Now, to this we meld our diverse external ecosystem our industry connects pool of domain specific leaders etcetera for mentorship as well as a rich a in rich network of investors who are interested in supporting our startups at different stages of development.

Since most of our innovators often need help with the designing and manufacturing their prototypes, we also provide them with a lot of support whereby their prototypes can be refined and manufactured we provide them with such facilities and connects so that they can engineer and refine their prototypes in time.

Other services that we provide are of course, legal and financial help of different types help in financial IP filing and so on. We also have our trusted network of such service providers that we have used for several years and they often provide their help at discounted rates to us.

(Refer Slide Time: 08:07)

SINE
PoC to Scale up support to Innovators and Entrepreneurs
Incubation support for 3 years



A SINE provides start to scale support right through the life cycle of an entrepreneurs evolution and so, we start from the pre incubation stage. This is where the incubated companies or even innovators are at the ideation stage. So, very early stages there what we do is we provide them with small quantum of funds specially through government funding schemes.

And, then once the product or technology is a little has progressed a little bit in its development and there is an incorporated company that is when we bring them into the fold of our incubation program. Now, our incubation program normally lasts for a period of about 3 years. Now, during the stage at which a company is incubated with us we provide them several kinds of support.

(Refer Slide Time: 08:56)

SINE		
Infrastructure	Funding	Mentoring
Office Space	Grants	Bootcamp
Access to Labs	Seed Funds	Coaching
	Angels	Workshops
	VCs	Training
	Banks	
Advisory	Visibility	Networking
Legal	Demo Day	Investors
IP	Events Media	Mentors
Finance		Manufacturers
		Industry

For instance, in infrastructure we provide a fully furnished office facilities that are plug in play you can just rent these spaces and start work immediately. We also have access to several kinds of labs with the state of the art research facilities and as I mentioned earlier we can also allow access to other R and D facilities on campus.

Besides that also access to funding, funding sources are very critical need of any start-up at any stage. And, so depending upon the stage of the start-up we also help our incubated companies raise funds through angel fundings funding companies through VCs. Also we have a good network of banks in our network that also help with some of this funding; also seed funds, government grants as I mentioned earlier already.

We also provide extensive handholding and mentoring through the entire process we have a specific programs to train and bring these entrepreneurs up to speed to keep them equipped

with the recent tools that will help them succeed in their particular domains and so on. So, we often carry these out in a very targeted manner as well.

Besides this visibility is very important for any startup and so, we regularly try to showcase our top startups in front of investors we have investor days we mentor them to present effectively in front of these investors so that they can raise some funds themselves.

Besides that we also regularly post about our startups we highlight their achievements in our social media post and not a day goes by as most of you all are aware a SINE company is not in the news for some or the other achievement. Also as I have mentioned already earlier we provide advisory support in the form of legal IP and other finance needs we help our companies with those support as well.

(Refer Slide Time: 11:03)



Now, finally, once the incubation support is sufficiently pushed the innovator to the accelerator state is where we help with the scale up here again the industry connects raising follow on funding we help a lot through our network with these needs of the company.

(Refer Slide Time: 11:13)



Now, if you look at the impact that we have created over the 17 years of our existence it is quite significant. We have supported about 184 startups out of which 52 are currently with us, 82 have graduated, about 10 have been acquired or merged with other entities, out of which 40 have folded.

But, through our in the wake of all our successes and failures we have been left with a rich experience that we share with our startups we help them test drive their ideas and potentials.

And, so, this experience is something that is very valuable if you associate with us that you can benefit a lot from this experience that we have had over all these years.

Now, also SINE helps as I said raise its incubated companies help helps it helps them raise funds and we have all almost helped about raising about 25 crores of funds over our lifetime and out of the interesting statistic here is that for every rupee that we have helped to start-up with it has managed to raise about 127 rupees through external funding which shows you the potential that and the marketability of some of the companies that we host here.

We have also generated a good number of IPS and some of our companies have are very highly valued in the market and so, their valuations run into crores of rupees as you can see on the on screen. And, since each start-up comes with at least three members, we have also managed to generate a significant amount of employment as well. So, this is where the economic impact that we create is quite substantial.

(Refer Slide Time: 12:57)

Supported by



The Department of **Science and Technology** (DST)



The Ministry of **Electronics and Information technology** (MEITY)



The Department of **Biotechnology** (DBT)

Now, coming to government support, we are supported by The Department of Science and Technology, The Ministry of Information Electronics and Information Technology or MEITY for sure.

(Refer Slide Time: 13:09)

Grant Schemes and Accelerator programs



Biotechnology Research Assistance Council
The Department of **Biotechnology** (DBT)



Plugin
The Department of **Science and Technology** (DST)



Academia-Industry training



Nidhi Prayas
The Department of **Science and Technology** (DST)

So, we have DST, DBT and BIRAC which is the Biotechnology Research Assistance Council of a DBT we are also supported by several granting schemes for each of these government entities as well. And, we also have other accelerated program support such as Plugin, AIT and DST supported Nidhi Prayas and Nidhi IR these are specially designed to support early stage start ups.

In the BIRAC supported schemes, we have several of them. The most critical one is the one that supports ideation to proof of concept which is known as the biotechnology ignition grant and for those in the biotech domain this is a nice quantum of funds about 50 lakhs for 18 months that can help launch establish a mend of proof of concept in a very substantial manner.

And, this grant big BIRAC big grant it is launched it is announced twice a year in the 1st of January and 1st of August and we can provide a SINE is one of the big partners and we can provide you extensive support if you are in that domain and interested in applying for this grant. Besides that if you are in the field of information technology and computation, there are several MEITY grants as well that can help you.

(Refer Slide Time: 14:22)

Programmes



So, again a summary of some of the programs that are that we that are supported through us Plugin for instance; it is an acceleration program in collaboration with Intel and GST. It is basically it is third we have completed three cycles of this program and during this about 10 start ups are selected and they are provided with prototype growth support and Intel provides extensive a technical mentorship during this process.

I have already mentioned some of the other governments schemes through DST etcetera that we have. We are also supported through the defence sector in the defence sector. We have the defence India startup challenge that also those of you who have innovations that can help the Indian Army, Navy or Air Force this is a good challenge for you as well.

So, we are deliberately sector agnostic because we want to keep ourselves open to all domains and develop a network so as to reach the widest range of entrepreneurs. So, we support start ups in ICT in software, healthcare, cleantech to name a few you can see on the screen that we cover a wide range of domains.

Now, of course, the line share of our companies belong to the healthcare domain. Now, this is because the government focus is often to make healthcare accessible and affordable for the Indian populace. And so, there is always a lot of grant support and a lot of push from the government to support innovations in this sector as in other sectors such as clean energy and so on.

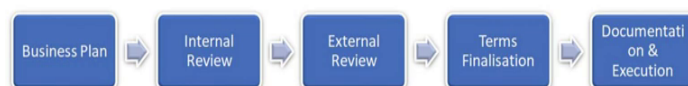
Besides that the fin a in the Fintech domain for instance companies as more and more companies are leaning towards digitization and data safety we are also getting a lot of entrepreneurs who are in that who are leaning towards that domain as well.

(Refer Slide Time: 16:16)

SINE Selection Process

High tech, IP driven, futuristic startups beyond the proof of concept stage and closer to market

Avoiding **aggregator platforms** and technologies that have **low entry barriers**



Incubation period is for **3 years** and progress of the startup is closely monitored

Now, at SINE we are very selective in choosing the startups that we want to include in our incubation program. As I mentioned earlier we look at High tech, IP driven often, futuristic and high tech technologies we normally look for companies that are beyond the proof of concept stage and closer to market.

Now, we try to avoid aggregated platforms and technologies that have low entry barriers basically and so, we start we have a very strict betting process and we start it right with the application that is made online on our portal or on our website innovators who are interested can apply online and that is where we start the betting process.

First screening is by our internal team of business developers and we look at the not only the tech, but also the business plan the team and so on and once we are interested in a particular start-up idea or I mean an existing start up. We then reach out to domain experts investors in

the field which who can help us in the external review process of these start ups and we at least do a minimum of two of these reviews and get feedback which we also pass on to the people who are in our pipeline.

And, if we receive favourable feedback from our reviewers then we go ahead and share our terms here is where we bring forth the revenue and equity sharing terms and if those are acceptable by the startup. Then we go on to bring them into our fold and provide them with help right away.

And, as I have mentioned earlier incubation period is for 3 years and during those 3 years at every stage whether you are coming through our incubation program or you are coming through a government granting scheme, your progress is very regularly monitored any help or feedback that is essential for your success is provided as well.

(Refer Slide Time: 18:16)

Collaborations

GOVERNMENT	CORPORATE	INTERNATIONAL	INVESTOR
 Department of Science & Technology Government of India	 	 Swissnex India Consulate General of Switzerland	
 Ministry of Electronics & Information Technology Government of India	 TATA CONSULTANCY SERVICES	 TAIWAN TECH 國立臺灣科技大學創新育成中心	 PARAMPARA The Entrepreneurial Tradition
 BIRAC Biodiversity Research and Innovation Center Department of Biotechnology Government of India	 Axis Bank Bank of Baroda	 HAX manush labs	 BLUME INFLECTION PARTNERSHIP
 MINISTRY OF DEFENCE	 Ideas to IMPACTS DETERMINING THE FUTURE ENERGY™	 Stanford Seed SPARK	 DIGITAL FUTURISTS ANGELS NETWORK
 Maharashtra State Innovation Society	 MathiWorks  iST	 UNIVERSITY OF TORONTO SCARBOROUGH	 omnivore  Endiya

I have mentioned already the government support some of the corporate CSR programs that support us come through Intel, Mahindra, Tata consultancy services, AIIMS New Delhi and so on also SANOFI which is a major player in the healthcare domain and other banks such as Bank of Baroda we have very close relationships with our corporate partners.

Now, internationally we are part of some cross border programs such as Swissnex where we have these exchange programs with the government with the Swiss government and there have been programs where innovators from that country has visited and vice versa. We also have a close relationship with Taiwan.

And, we have also part of the Stanford Seed Spark and we have every year we are taking part in their training as well. Also we are part of cross border programs with Canada through university of Toronto. Now, beside all of these connects we also have a rich network of investors and this is very critical for any business incubator and its incubated companies to succeed. So, through we like I mentioned earlier through our investor day demos we regularly showcase our promising start-ups so that they can raise funds from the investors in our network.

(Refer Slide Time: 19:39)



Cross Border Programs

Academia Industry Training

- Collaborative bootcamp for researchers, innovators and early-stage entrepreneurs from India and Switzerland
- Supported by Government of India

Like I mentioned earlier these are a few glimpses of the cross border programs that we have been doing with as part of Swissnex which is Switzerland cross border boot camp that we had with the Swiss government and this was an academia industry training boot camp.

(Refer Slide Time: 19:56)



Cross Border Programs

Taiwan Collaborations

- NTUST: Incubator Connect
- TRIPLE/ ITRI: Manufacturers association

We also have Taiwanese collaboration especially manufacturers association which is critical for us to make these connects with some of our incubated companies that need extensive prototype building.

(Refer Slide Time: 20:08)



Current Companies

Healthcare

Ayu Devices Pvt. Ltd.

Compact module to convert an analog stethoscope to a digital stethoscope

<https://www.ayudevices.com>

Now, to highlight some of our most promising companies in the healthcare domain we have Ayu devices many of you are probably familiar.

Bratati we are we are very glad that we could actually get a little bit of presentation from professor B Ravi on Ayu devices we are pretty excited to see.

Yes.

The product that wonderful work which they did very nice.

Yes and it is a simplistic yet such an essential innovation that they have come up with. It is basically a little module that they have developed.

Like I am explaining the students that it is not a full new products. See it is a very nice user you know.

Yes.

Based thing where you just you know chop off the tube and have an additional piece in the middle.

So, Ayu device is especially this stethoscope that they have developed is was very critical during the COVID area to protect not only the doctors, but the patients as well because the module can be taken out and through like Wi-Fi you can know like the doctor can listen in on any lung or heart abnormalities sorry.

And, so, this is a module so, this modular nature of it and the ability to pass the information through Bluetooth like enabled them to carry out this remote provide remote access to some of these critical care patients that require them.

(Refer Slide Time: 21:26)



Current Companies

MedTech (AI/ML)

EnDimension Technology Pvt. Ltd.


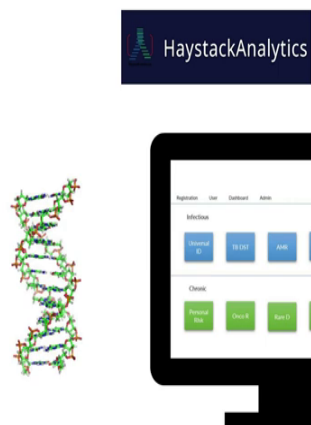
AI/ML based tool for analysis of medical images and abnormality detection

<http://endimension.com/>

Then we also have EnDimension they are basically developing an AI ML based tool to detect early stage lung nodules and other lung abnormalities through medical images because of our huge population pressure radiologists etcetera are often under a lot of pressure and so, they are quickly looking through these scans and might miss some of these early stage nodules that can actually be the intervention can happen early on.

But, because of the huge pressure and the number of images that they look through they often miss these little things that can easily be picked up by an appropriate algorithm that this that this company has developed and so, it can help in prevention of not only lung cancers, but other lung abnormalities as well. So, it is an assistive tool basically that helps in better to provide better care to the patients.

(Refer Slide Time: 22:26)



Current Companies
Healthcare
Haystack Analytics Pvt. Ltd.
Haystack provides end-to-end solution for At-Scale Genomics, for Diagnostics and Mapping of infectious diseases.
<https://haystackanalytics.in/>

Also we have haystack analytics they are basically bringing genomics into the forefront of diagnostics and they are revolutionizing the field as well specially the field of infectious diseases because they are working on antibiotic resistant tuberculosis and they are using genomic data to basically find out the susceptibility of certain strains and of certain patients to develop these drug resistant tuberculosis.

So, they are going to they have also made a major impact during COVID in coming up with quick ways to determine COVID variants etcetera and so, they are they have managed to generate a lot of interested interest in their approaches. They have raised external funding they are now valued at about 40 crores. So, very interesting product and very futuristic as well.

(Refer Slide Time: 23:31)



Graduate Companies

Hardware

**ideaForge Technology Pvt.
Ltd.**

UAV based security and
surveillance solutions

<http://www.ideaforge.co.in/>

Now, coming quickly going over the other companies that have brought a lot of focus good focus on SINE and on IIT Bombay ideaForge is one of the largest suppliers of drones to the Indian Army and they have other surveillance solutions as well. And, their um entrepreneurial journey again is very very inspiring and you will get to hear from them as well.

(Refer Slide Time: 23:46)

 atomberg



Graduate Companies

Hardware

Atomberg Technologies Pvt. Ltd.

Technology for energy efficient fans

www.atomberg.com

And, the Atomberg I think they have come up with the energy efficient fans.

(Refer Slide Time: 23:51)

medprime



Graduate Companies

Healthcare

Medprime Technologies Pvt. Ltd.

Smartphone based portable digital microscope .

<http://www.medprimetech.com/>

And, also Medprime Technologies they have come up with the Smartphone based portable digital microscope and actually we use this in our bio lab and so, extremely good product and so, these are some of the companies that we thought we would highlight. So, I mentioned this already SINE has a BioNEST supported state of the art biomedical bio like Vet lab.

(Refer Slide Time: 24:18)

SINE, IIT Bombay

Society for Innovation and
Entrepreneurship, 3rd Floor, CSRE Building,
IIT Bombay, Powai, Mumbai – 400 076, India.

sine@sineitb.org

022 2576 7016



And, so, it is equipped with some of the state of the art facilities and we are now a centre of excellence. So, we are expanding and we will hopefully incorporate other essential facilities as well to our existing research facilities. We also have a good metal working and prototype building labs as well.

Again we are a small and friendly team you can approach us at any point from the ideation to further on. We have a diverse group of people with a combined experience of more than 220 years and as you can see with all of us from the SINE team we have experience in diverse fields and so, when put together we can help you with most of your business needs.

And, we are very approachable and you can just pick up the phone and call whoever you think can help you with something for government funding specially for early stage entrepreneurs to get your foot through the door government funding is the best way to go. And, you can

always contact me you can contact Dr. Pranatha for some of these BIRAC funds, you can contact Rashmi and Rakesh for other kinds of funds as well. So, for whether it be funding support or other help, we are always there to help you.

Now, for all incubation related out queries you can reach our senior incubation managers all the information that you need is on our website and you can of course, write to us at incubation at sine iitb dot org. Like I said we are extremely approachable and we are ready to hear you from an idea that you might have to if a company that you might be ready to launch. So, we really look forward to hearing from you and that will be all from me.

Yeah. So, that was quite an overview Bratati. Thank you very much. So, in the audience if you are a faculty member and really working with your start-up centre or setting up the start-up centre like you know I am sure you have got a the kind of ecosystem that needs to be created the kind of government program support available to get the things going and the kind of impact that is getting basically expected from an incubation centre.

If you are a venture or potential you know entrepreneurs, then I think this will give you an idea the kind of incubators you should be going and how incubators are supporting you.

Yeah in fact Poyini I am very happy to mention to you that out of these 45 students of IIT, Hyderabad where we have you know trying to you know take this course on 10 of them have already have entrepreneurship incubation experience which is like phenomenal. So, nowadays we get students already who are sort of you know and then of course, another 10 of them are from industry. They have spent you know 1 year to 7 years in industry.

Yeah.

So, you know so, sometimes I tell the students that now you should start teaching us how to go about doing things. I know we can only facilitate you know to take things forward.

Right. No, it is really good because like I visited IIT, Hyderabad maybe about 4-5 years just to give an idea about like setting up the incubation centre and things are happening and then there are already 10 entrepreneurs in the group and it is really like you know progressing and it also indicates the kind of ecosystem that like you know countries evolving at a macro level. So, interesting.

I think that I do not have any presentation and I am going to basically do some kind of a free flowing conversation here that what it takes to basically spin-out specially.

(Refer Slide Time: 27:49)




Spin-out I use the word spin out because we all are sitting up in academic setup and then ultimately like you know the work that we do either as a academic project as a student or R and D activity or design activity in this particular case as a part of like you know faculty

member or faculty project yup, ultimately our work belongs to you know institute and then when you want to start you have to spin it out you just cannot cannot get started with, right.

Yeah.

So, you yeah. So, you have like in as an entrepreneur or potential entrepreneur whether you are a student or whether you are a faculty member, you have an idea, you have a technology, you have a product or solution, yeah and how do you go about it, right? It like you can create a company simplistically put, you can create a company and get started a couple of guys coming together, but I think it a lot more is basically involved yeah when you get started.

(Refer Slide Time: 28:56)



Shorten the journey from **product to market** by understanding the processes upfront and preparing in advance.

If the understanding is basically developed up front or the kind of you know processing is done somewhat in advance yeah then the journey to market basically get shortened otherwise

you basically get started and you learn a lot on your way you have to come back again walk on the drawing board again go back so that back and forth would basically you know give a lengthen your process and at times in technology space the way things are evolving you also become redundant, yeah.

So, hence it is important that like you know some kind of understanding some kind of activity mapping is very much necessary before you get started and like for me like activities side I think Rakesh will talk about link canvas model as long as I am concern I am talking about some four or five broad things that you may want to pay attention to.

So, first and foremost I would say like I these are not necessarily in like same order, but then critical each of them is very critical.

(Refer Slide Time: 30:11)



a. Intellectual Property

So, first thing I would basically put it is that your IP product solution technology whatever you develop within academia. It needs the clean ownership title.

(Refer Slide Time: 30:30)

a. Intellectual Property

1. IP/Product developed in **academia** needs a **Clean Ownership Title** to get started as for all academic work, ownership lies with the **host institute**.
2. Seeking a **license or technology transfer** from the institute can be one way to get a Clean Ownership Title.
3. **Guides** can **waive** their **rights** to the IP and benefit by either getting a **share** in the **royalty** or becoming a part of the company itself for future support and guidance.

So, as I said that IP typically or all academic work or all developmental work you know ownership belongs to basically IIT I mean not IIT your host institute where you are like you know pursuing this activity.

So, since the ownership belongs to the institute, you cannot take or we cannot take it for granted that this belongs to me and I just get started. The process basically is to go to the institute and seek basically licensing a technology transfer to get started that gives you a clean title.

That in fact, Poyni you hit on this very very important aspect of you know sometimes the whole you know department where there is a guide and a student working together. In fact, you know.

Right.

Poyni we had fights between PG student and his PG guide.

Absolutely even we have seen that.

You know I think they have both started the companies and both were fighting and even they are fighting till now.

For example, you know we should be very clear that intellectual property at the institute level at the student level at the guide level is very different. You know and from there when you go for a intellectual property there and then it is one story where you know you have done as a student and guide, but then when you have you know when you do a company you need to actually buy this you know right or you know like and then when you buy this right your guide can also have a small share out of the royalty for example.

Absolutely.

So, there are lot of schemes know, Poyni? Yeah.

Right, right absolutely unless the guide basically you know says that like waive the rights that.

Very good lot of guides do.

But, I think you can it is always good to have the guide taking along because in future you need his or her like you know goodwill or help in developing further because it is not you get started with one thing, but as you grow you require multiple product solutions offering sometimes you pivot and yeah, their support is always needed when you go along, right.

Yes.

So, I think clean title or clean ownership is very important now like just professor mention about it right that student faculty and many students. So, there could be many innovators.

(Refer Slide Time: 32:29)

a. Intellectual Property

4. Each of the innovators in a team has authored to the IP or knowledge. Innovators who are not a part of the company need to be **compensated** for their efforts to get their **NOC**.

5. A **funded project** is another way to get a Clean Ownership Title. It is easy to get funding in an **academic environment**. Although, an **industry collaborator** might not permit you to **'spin out'** as you would want to in the future. Carefully negotiate the **IP terms** at the time of taking the project itself.

And, each of them are authored to this IP or knowledge right and their NOC is equally important. So, if you if you are not taking them along say for example, as a co-founder or as a

part of a team, how do you develop a model to compensate them for their efforts so, in future when you grow big.

(Refer Slide Time: 32:52)



I am sure all of you would have seen this movie on the Facebook, right and then like Mark Zuckerberg started and then eventually he actually when he started he there were two other co-inventor of the things that they were doing and we never recognized him as a co-founder, never gave them any founder equity and eventually he had to settle for millions of dollar basically as a compensation and you do not want to lend yourself in that particular situation, yeah.

So, not that I am telling that all of us are going to be Mark Zuckerberg, but it is always and ultimately like you know you want to go have a smooth path when you go along, right. So, that is one thing.

Second thing is that basically that would be a funded project like within the academic area like set up it is very easy to get funding from the government, from the industry collaborator, so and so forth. Now, when specially it is a industry collaborator yeah they have their own IP condition and terms how do you basically you know navigate those terms and condition that is another thing.

So, if you are working one particular solution technology or whatever and then there is a industry collaborator who is seeking basically equal right in the IP that will not permit you to spin-out as you want to in future. So, you have to smartly negotiate IP terms at the time of taking the project itself or else you may lose that chance you have to go back and renegotiate with that and it took again take maybe years and years we are actually dealing with a company which is in a power sector.

IP belongs to two industry plus IIT Bombay taking an NOC is not easy for them. It is almost 3 years and they are still not getting an NOC. Fortunately it is a multiproduct company the company is doing pretty good, but they are not able to liberate the other IP where they were banking a bit banking a lot yeah.

(Refer Slide Time: 35:15)

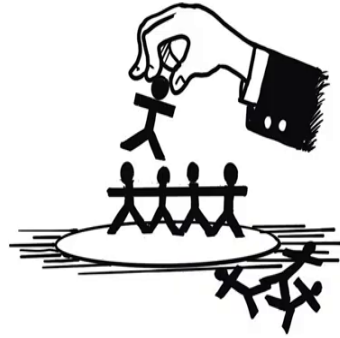
a. Intellectual Property

6. The best thing to do is **patent** the IP before disclosing the work. If the technology or IP is such that it is generally unknown, then you should be careful in not infringing on other person's IP.

Third thing is that like if the IP is protectable like it is best thing IP able and patentable it is best thing to do basically you know apply for the patent because once you get started and information is out in the public like you know it becomes difficult for patenting. So, like once you disclose your work it cannot be patented.

So, these are the nuances one has to work on it and there is no IP technology is basically generally known to everyone and all those things and you want to get into start-up, you may want to assess your freedom to operate because someone else is may have that IP and you are not infringing. So, this is a very important part basically that you like you know as an entrepreneur specially if you are in academic environment to pay attention to.

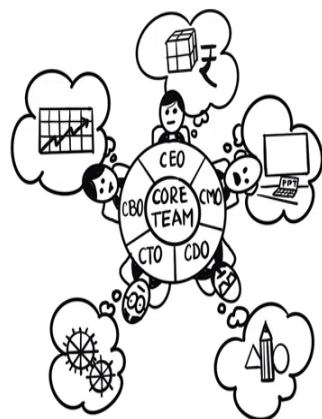
(Refer Slide Time: 35:53)



b. Team

Second thing is like a team entrepreneurial journey.

(Refer Slide Time: 35:58)



b. Team

1. A startup is never a single person's journey. There is a core team with employees performing various roles in the startup.

Building a Core team with founders with a complementary skill set and a shared vision and thought process is immensely critical.

Most successful entrepreneur you will see it is never a single person journey. There is a core team and then there is a key employee first employees and that is how they get started. Now, how do you go about like you know as an entrepreneur you cannot do everything you build the product, you sell the product, you manage the finance, you manage the operation if it is a physical product, you manage the manufacturing aspect it cannot happen.

Practically like you know you need to possess five functional skill set in a single person that is one thing and second thing is that physically it will be challenging to manage all the functions. So, as in and specially for an entrepreneur and first generation entrepreneur yeah resources are not really going to be very you know available to you.

So, how do you map your activity and functions? So, you find out the core team which is a founders team which can be complementary skills set and this has to be done very carefully

because it like it requires a very strong chemistry between the founders, it requires complementary skill set; many a times there could be chemistry, but then like in everyone is wanting to do technology, no one wants to sell.

Or everyone wants to do basically sell the product because it is more outgoing and networking kind of role, but no one wants to develop technology it would not work this way.

Third thing is like you know even with great chemistry they can know founders basically personal vision personal aspirations or career part may not align because entrepreneurship is a very you know lengthy, risky, road map, right. And, like if the cofounder wants basically say he is sitting on the fence of it 2 or 3 years I will give it and then I will move and if it does not work then the whole thing get collapse.

(Refer Slide Time: 38:23)

b. Team

2. The **founder's agreement** should clearly define,

- The **roles and responsibilities** of each of the founders.
- The **commitment** of founders in terms of money and work.
- **Equity sharing** between founders in context with the roles and responsibilities. Founders' assessment should be based on the amount of **value and commitment** they are bringing to the company and how much **risk** they are ready to take.

So, complementary skill set and basically you know shared vision shared basically you know thought process is extremely important. While you do it like again because chemistry is doing good and we are great friends in college and we had and like you know K to 12 together also we went to college in the same hostel and all those things, same department.

So, we will do great and we do not need anything else does not work in start-up. You require founder's agreement. This founders agreement has to spell out the roles and responsibility, yeah, what is the like you know each of them are committing to in terms of money, in terms of activity, in terms of role.

So, even equity sharing again it is in basically you know context with the roles and responsibility and who is putting what. So, just to give you an example: there are three cofounders. One cofounder basically had developed one patent take like you know which is going to take out; another cofounder has basically put in money and third cofounder is just joining.

So, third cofounder cannot get the same equity as the first two because some first two has brought something more than like you know playing a role as a cofounder to the table. So, that equity mapping also has to be very judicious, otherwise as you go along and as the new team skill set is required, new team members are coming up this equity basically structuring is going to pinch you.

So, this meaning equal equity structure is going to pinch you. So, it has to be in context with who is bringing what value, who is taking away what risk, yeah and how much commitment basically each of them are going to give. That is how you have to put the equity.

(Refer Slide Time: 40:06)

b. Team

3. As the startup grows, it requires **new skill sets** and often **new co-founders**.

There should be a **provision** in the founder's agreement that each of their **equity** will **dilute** in proportion to accommodate a **new co-founder**.

If a co-founder wants to **leave** the company, he/she cannot get their **full share** of the **equity**.

Second thing is that like as I mentioned that as you grow, like you know as a venture you also require new skillset. Sometimes you require people new cofounders right like you know provision in the founders agreement that each of you dilute in proportion to accommodate the new founder.

Similarly, someone wants to go out right. So, how do you basically deal with that persons equity because like you know 30 percent of equity and person is going out he cannot he or she cannot walk out walk away with 30 percent of equity, it has to come back to the rest of the founder. Otherwise they would not have you know incentive to continue, right.

So, these are the nuances basically has to be properly put in founders agreement. In fact, I remember at least like you know half a dozen of our entrepreneurs who have changed in at founders team they have come and told us that your founders agreement ma'am that you are

insisting is helping us so much in smooth the transition of outgoing people and new incoming people. So, it is very very important, right.

(Refer Slide Time: 41:14)

b. Team


4. Starting as a founder (or Co-founders) and hiring **key employees** for their **specialized skill set** is very important. The **agreement** of key employees is also crucial as startups are usually unable to pay the industry-level salary.

You start as a founder, but then you also take initial key employees yeah either at a technology level or as a market sales and market level, you may have very critical you require that critical key employees who are not actually founder because they have not taken the risk they want salary, you want to pay them and so on so forth.

So, they are not exactly cofounder they are also very important to the organisation and as I said that as a start-up like you know you do not have like you know enough resources to match industry salary, then how do you go about it. So, create a pool of sweat equity or ESOP and those key employees agreement also is extremely important to put it in place.

So, there are I think the I have seen in especially engineers when they start in IIT system or other engineering you know colleges I have seen, they are typically like you know technologist and the natural thought process is that [FL] my product and technology will sell by itself and we are great friend and we will get started.

(Refer Slide Time: 42:30)

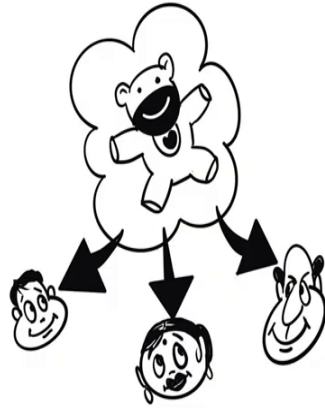


The critical act of mapping the **core activity** and putting it in place gets **overshadowed** by the **misconception** that product or technology can **sell by itself**.

And in the process they actually ignore very critical aspect of you know core activity to be mapped or put in place which basically you know otherwise come in their way like you know in smooth operation. I have seen a couple of companies basically going burst because one of the cofounder has actually walked out yeah.

So, this can be avoided if the cofounder's agreement is in place. So, team is another. So, first is IP, another is team.

(Refer Slide Time: 43:03)



c. Customer Discovery

Third thing customer discovery.

(Refer Slide Time: 43:08)

c. Customer Discovery

1. Product or technology will not sell by itself. Sales are only possible when there is a **market need**.
2. The customer discovery process is very important especially in the context of **sizing** unless you are have a very niche and strategic customer base.
3. **Competition analysis:**
Assessing the strengths and weaknesses of potential competitors and market size.

I think it is very important. As I mentioned like you know product, technology solution they do not sell by themselves. They sell only if there is a need in the market right specially in context with sizing because like you know you do not want to deal with like you know just one customer or ten customer unless you are in a very very you know niche or strategic need.

(Refer Slide Time: 43:31)



ideaForge Technology Pvt. Ltd.

UAV based security and surveillance solutions

Indian Army as their main customer.

So, ideaForge for example, this is one of the SINE companies that the entire market is a defence market, but they bring tremendous strategic value to the country and then like you know going with very few customer makes lots of sense and that customer itself is a very huge customer, right it is not a small customer.

So, competition analysis like you know why someone buy your product or technology or solution or for that matter design versus what is available in the market like you know why someone would pay you for that, yeah. And, then how big that market because bigger the market chances are like you know high that you will be successful and you will be raise larger money here. So, this three – four things are very very critical to basically you know map.

(Refer Slide Time: 44:23)



d. Fundability

Then fundability.

(Refer Slide Time: 44:39)

d. Fundability

1. Government

The first risk capital in the country came from the government when it started funding public institutions and incubators to support early product development.

Like you know you there are varied sources of fund funds available right now in country like you know first I think first risk taker right now, in the country or at least when we started you know first risk capital came from the government and it is not an overstatement.

When we started in early 2000 we did not have VC communities that what we see this time angels were completely non-existent in those days. In fact, when I joined I had to understand what angel investing means, yeah and then with that background government started funding basically public institutions or incubators like us. So, government is a big funder this.

(Refer Slide Time: 45:12)

d. Fundability

2. **Angel investors** and **Venture Capitalists**

- They Look for return on capital.
- Startups need to have a scalable business.
- Startups need to give at least a partial exit opportunity to them in the first 3-4 years.

Then you have angel investors, then you have VC venture capital funds.

(Refer Slide Time: 45:22)

d. Fundability

3. Corporate Strategic Capital

for example, **Government** looks for building the **technology prowess** and **self-sufficiency** of the country by supporting **high-risk innovation** without expecting any **return**.

Organisations having strategic or synergistic interest in adopting or integrating their technology/ solution/product into their scheme of things.

They look for how **relevant** the technology/solution/product is with respect to their business. Market sizing is not the priority.

Then you have even corporate strategic capital. They look certain elements in your start up. So, government of course, it is a basically more toward bringing technology prowess, technology strength or self sufficiency. So, that is their main objective and they support very high risk innovation via like you know fund that they have created and absolutely no return. Yes, they do track success and like you know performance parameter and all those thing, but the return need not be given to government or the government even does not expect 3x or 5x kind of return.

And, ideaForge is a classic example right it was a that is a strategic offering we supported them like we supported them in their pivot because they did not start with this strategic solution. Yeah, we supported them in pivot, there was a funding given to them and right now

what they have developed is actually adding the strength of defence, yeah and security forces in the country the.

And, this is exactly government wants in varied domains like be it healthcare be it in education and all over, yeah. So, this is one funding available. Second funding is it like the VC or angel funding VC and angel funding that typical interest in funding this particular spaces their return on capital.

So, if you are going to those investors be mindful that you need to have scalable business, you cannot have non scalable business. You need to basically give an exit to them at least partial exit to them in first 3 to 4 years total exit maybe 5 – 6 years. Yeah, but you have to provide that exit opportunity in 3 to 4 years.

So, they are looking at like you know yes competitiveness is one thing, but then scalability is a big thing for them. So, if you really look at it like all this e-com and app businesses, there is not much IP or technology depth out there, but that is a huge scale massive scale and they get funded typically.

Then it comes to strategic capital which is like you know typically coming from industry like they have a strategic interest or synergistic interest in the solution maybe for adopting or integrating their solution in like start-up solution in their scheme of things or maybe eventually like you know acquiring them and there are you know ample examples of them.

So, they look at more from relevance viewpoint like you know market sizing and all those thing comes as a second step, but more relevance to their own businesses. So, this is what like industry or strategic capital look at it.

(Refer Slide Time: 48:30)

d. Fundability

4. Family Businesses

Adopting or acquiring startup as one of their **asset class**.

The exit period can go up to 7-8 years or even more especially if a celebrity is involved.

And, finally, like family businesses as I said there are not ample or too many, but they are there basically like you know just shaping up. Family businesses like any other investment like you know idea is to create start-up investment as one of the asset class and they have a appetite for like you know long stay like typically 7 – 8 years or even could be more if it is a celebrity capital like you know Alia Bhat or Deepika Padukone that we are looking they are also investing basically big range startup ecosystem, yeah.

(Refer Slide Time: 49:18)

“Your potential business and funding have to map the **positioning of the investor** with respect to your company.”

So, these are the funding availability and depending on your start-up or depending on the funder you go, you need to pitch them from their interest view point, not what basically you want. Or you what you want is has to be basically mapped to that, otherwise like you know someone who is only investing in e-com business and all those things and you are going with some nuclear innovation, I am not too sure you will basically hit the right button there, yeah.

So, these are the funding aspect and then some kind of you know prepping up to get started. So, Raghu and I do not know whether they have already done this customer discovery, but that is one aspect. There are business model, revenue model, how are you going to basically map initial activity at least in first six months or one year I think my colleague Rakesh is going to basically share his thought on link canvas model.

So, that is the prepping up for the start-up. I think these are basically the core thing to basically go forward even before you set up a venture, yeah, maybe fundability you can basically work as you go along, but at least you require initial capital and somewhere you are going to pitch it if you are not going to bootstrap it. So, that is also equally important.

So, IP, team, market, fundability and initial like you know thought process about like revenue model, business model who to bring as a partners and so on so forth, right. Of course, things can pivot. So, like you know at a growth level or at the same level things keep on shifting and so that like you know you what you have done so far will also keep on shifting, but these are the core element needed to basically a thought through while you get started.

(Refer Slide Time: 51:19)



Traits of an Entrepreneur

I would also last my closing this thing is that while you do all those thing I think there are certain traits are immersed in entrepreneurs. Unless you have those traits you may really want to revisit your thought whether you are basically up for entrepreneurship or not.

(Refer Slide Time: 51:31)

Traits of an Entrepreneur

1. **Entrepreneurial mindset**

Ability to take risks in a long journey.

2. **Flexibility**

Not getting emotionally attached to your work and change the course whenever it is required. Having the ability to pivot.

So, first and foremost is mindset. It has to be a entrepreneurial mindset. Ability to take risk basically yeah which means it is a long journey lots of ups and down like you know and are you up for that long hold that is one thing. So, its a mindset that is one thing.

Second thing is flexibility. So, you get started with some design technology solution or whatever it is even after doing all those market sizing or whatever, but things keep on changing. It is very very dynamic. Markets are very dynamic right.

So, ability to basically give up you what you have done and this is I have seen basically especially academia and engineers coming out of academia because they have work on their product technology solution they are so wedded to their like you know faithful to their own basically solutions and technology they just cannot give up easily. They become very emotionally attached to that.

But, market forces may push you to basically you know think through differently in yeah the that time the ability to basically you know pivot or also when you grow you require different leadership, different skills set, ability to pass the battle. So, flexibility is extremely important.

(Refer Slide Time: 52:58)

Traits of an Entrepreneur

3. Perseverance

Shortcuts do not work in an entrepreneurial journey. It is a long journey with ups and downs. Value and ethics take a big role.

And, last thing I generally emphasize for first generation entrepreneur you may take whatever you know shortcuts, but it is a long journey like and ethics play a big role. So, you may basically you know [FL] will take you [FL] approach or aggression will take you up to certain

level, but if you want to build an organisation I think it is a value and ethics, value for stakeholder, value to your people, value to what you are doing extremely important.

I think Chakko I am going to close here. Happy to answer any question.

Last point is really resonating very strong about value and ethics. It is so critical to understand the contribution done been done by everybody you know and also look at look at it closely or you know how to build an organisation which is you know which is you know equitable and you know which works wonderful.

Thank you so much Poyini for your you know words and those are coming from the horse's mouth. So, it is very sorry to sorry use that use that analogy. But, we wanted to hear you out and this is like you captured all the key points from the intellectual property to the issue of funding to you know the how you know; how you know sort of build your teams and pivot your idea.

And, you know I keep telling my own professors in IIT, Bombay and other students that the people who kill the you know you yourself are the ones who are killing your companies, nobody else can kill your company. So, you know if you are not able to do well it is all because of you know. That is the whole thing you know in entrepreneurship that you need to understand the he is the king, customer is the king.

In fact, when I was working in L and T the Poyini they took us all the way to Lonavala to just tell us that customer is the king [Laughter] and they showed us some beautiful movies and they said [FL] customer king [FL] king [FL]. So, here you know since I am hearing you know Raghu and you, all of you talking about customer discovery and how critical that is you know from point of view of building you know. It just resonates again you know how valuable this whole you know idea is.

Students any quick questions you have now for Poyini?

Student: Yeah. So, I have a question.

Please go ahead.

(Refer Slide Time: 55:15)

Question By Student

What did you exactly mean when you said that ideas should not be pitched just by telling the investor about your **plans as a designer** but also by focussing on **what the investor is looking for?**

Answer

Your potential business and funding have to **map the positioning of the investor** with respect to your company.

Student: Yeah. So, like ma'am said about the investor. So, I had a little doubt. Like as you mentioned that pitching in the idea should not always from our side like what we want to do as a designer, but it should also focus on like what the investor way is, but what they are looking as an investors. So, I am not really clear on that part.

No Deepthi I actually corrected myself then and there itself it is not basically you want to do something yes, your idea or basically your potential business not idea your potential business basically has to map the basically you know positioning of the investor that is what like.

So, if you are that is what I was just telling you that if you are developing something really core to say nuclear kind of thing and if you go to an investor who is only investing say in IT or e-com kind of businesses and who is looking for an exists in 2 years, right you are not going to the right investorm yeah.

Student: Ok.

So, I am not telling that you shift according to their requirement yes, sometimes you may need to shift it if there is a case to it yeah, but point is that that your business or your fund need should be mapped to investors interest the profile of the investor. Because investors come with different different you know different different

Student: Yeah.

Sectors and you know goals also they want immediate money or money after 10 years look different. So, that is what Poyni was mentioning, yeah.

Student: Ok.

Yeah.

Student: So, the mapping should be correct, right.

Yeah, correct anybody who comes your way and say [FL]. Remember Raghu was talking about it.

No, actually we learnt this very hard way right I think.

Yeah.

Like IIT, Bombay incubators started in late 90s yeah, SINE started in 2004, but we had a pilot incubator in those days and in those days as I told you we did not have any investment community in the country, right and the investors who were there were typically PE, private equity. Private equity typically basically invest in like you know a 50 – 60 crore and they participate in management at times they take over the management also depending on PE that they go to.

And, like you know when we wanted to create a ecosystem within SINE we will get all this PEs to meet basically an entrepreneur. So, what start-up is talking about and what PE is wanting to hear there was no matching point at all, yeah and then we realized that we were bringing wrong set of people to the incubator, yeah.

So, like this is what I mean by that like you know when you are in start-up thing like maybe if you are doing something which gives basically which takes about 5 to 6 years to develop say health care product. Nowadays health care product even VCs are investor, but initial days they were not or defence product that I am talking about you need to go to a capital which is a patient capital, who are willing to stay there for 6, 7, 8 years not pushing a company for the exit, yeah.

So, typically this is celebrity capital is a very patient capital yeah and we have a couple of example here like we have two companies in defence – one is ideaForge there is also a company called Zeus Numerix. They both were funded by angel and both of them were basically looking at basically you know that I need one company in my portfolio where I can you know brag about that this is a very high tech portfolio for me, yeah and they were not even looking at investing like or sorry, exist at all.

Returns returns.

Because they had enough money of their own. So, that is how like you know mapping

And Poyni and now they are very proud of ideaForge see.

Absolutely even.

They really thought about it and they are so proud and you know in their (Refer Time: 59:09).

Zeus Numerix it is like you know I will tell you they call themselves as a DNA company. So, they design anything which is defence, nuclear, aerospace. You give anything they have a storage like in buffers they wanted some kind of design changes Israel companies had given them 18,000 crore [FL] like you know quote, this guy did it in 30 crores, yeah, just 30 crore and then like you know they are done with the solution yeah. It is amazing work that they are doing like.

(Refer Time: 59:42).

But they will never become a big company to give exit to their investor and their investor is very happy, yeah.