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

**Module - 10**
**Idea to Entrepreneurship**
**Lecture - 25**
**Network Entrepreneurship**

(Refer Slide Time: 00:33)


Chakravarty: I am extremely glad to invite Professor Anil Gupta along with his team from GIAN for our class today. Professor Anil Gupta has been you know an independent thinker, activist for the cause of creative communities and individuals at grassroots, tech institutes and any other walk of life committed to make this world a more creative and collaborative place.

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Founder

राष्ट्रीय नवप्रवर्तन प्रतिष्ठान – भारत
विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार का स्वायत्तशासी संस्थान
National Innovation Foundation - India
Autonomous Body of the Department of Science and Technology, Govt. of India

**Prof. Anil Gupta**

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Prof. Anil Gupta

Founder

Honey Bee Network

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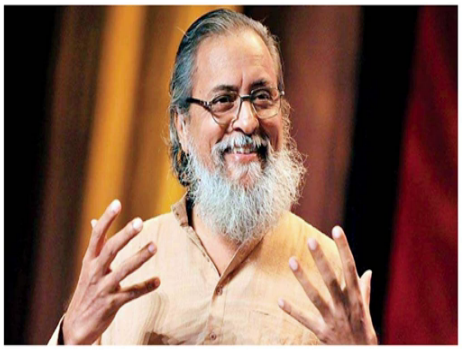

Prof. Anil Gupta

Founder


SRISTI
Society for Research and
Initiatives for Sustainable
Technologies and Institutions

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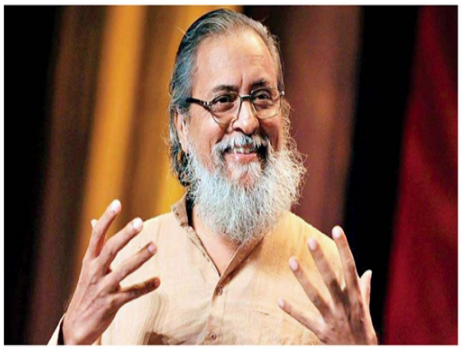

Prof. Anil Gupta

Founder

GIAN

Gujarat Grassroots Innovations Augmentation Network

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You know Professor Anil Gupta has traveled widely across the world you know like spreading the you know message of innovation creativity and grass root you know up liftment you. He has been a visiting faculty at the Indian Institute of Management currently where he was you know working earlier after teaching for 36 years and he has got a army of wonderful alumni who stand by Professor Anil Gupta anytime.

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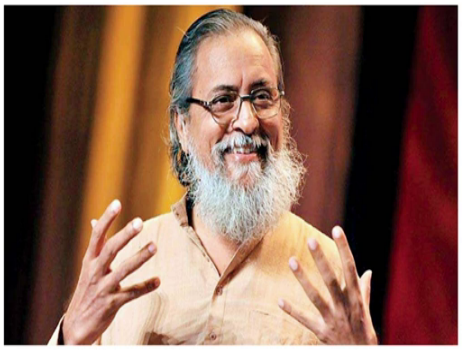

Prof. Anil Gupta

Awards-
CSIR Bhatnagar
Fellowship.

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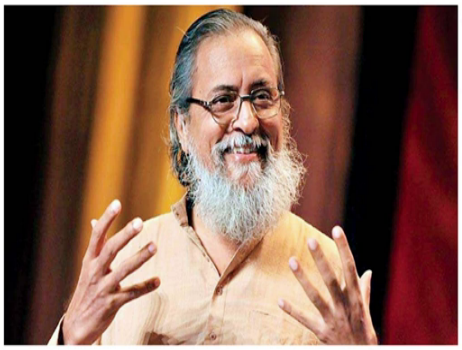

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Prof. Anil Gupta

Fellow, The World Academy of Art and Science, California 2001

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Prof. Anil Gupta

Fellow
National Academy
of Agricultural
Sciences (NAAS)

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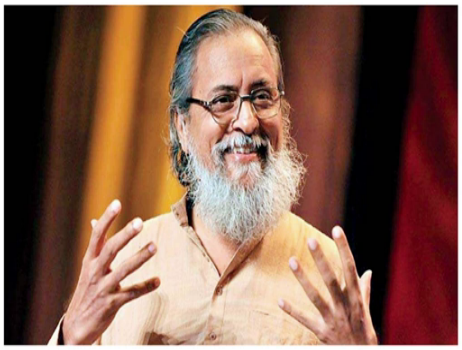



And, then you know be he is been a distinguished visiting faculty of IIT Bombay and sir has got one of the you know CSIR Bhatnagar Fellow; he is also the national innovation council chaired by the adviser of the Prime Minister; he is a Fellow of The World Academy of Art and Science, California a fellow of the NAAS, INSA, AcSIR professor.

And, of course, let me now introduce you to you know like you know Anamika so.

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Chakravarty: Anamika as we in the right hand of professor Anil Gupta [FL]. She has worked for more than 13 years on understanding Grassroot Innovations and Entrepreneurship as well as an outstanding traditional knowledge systems.

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Co-Director

GIANASTRE, the Incubator Company of GIAN

Dr. Anamika Dey

She is working worked as a CEO Gujarat Grassroot Innovation Augmentation Network [FL] like you know GIAN [FL] sir [FL] and co-director of the GIANASTRE, the incubator company of GIAN.

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She is also a visiting faculty at the Indian Institute of Management. Of course, she has been teaching at IIT, Bombay also.

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She is an associate editor of the Honey Bee. Fabulous magazine, Anil Gupta sir which you know translates knowledge into practice and you know [FL] honeybee [FL] like nectar [FL] store [FL], Honey Bee network you know picks up various new technologies and practices and methods from across the world and brings it to a common portal so that people can benefit from there. [FL] benefit [FL].

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She has been involved in training UNDP accelerator labs in solution mapping across the world along with our co-faculty Anil Gupta [FL].

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Having also worked with UN, ESCAP, NESCO and UNICEF in different assignments.

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She is a member of the Steering committee of the Festival of Innovation Entrepreneurship and then of course, lot of our students got awards in that festival.

Correct.

Chakravarty: Or some other projects which we built and like you know of course, she is also worked in the Presidents of India Office and National Innovation Foundation.

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Was invited OXFAM – Bangladesh.

I was there for a Rasus entrepreneurship project.

Oh.

That they implemented in Bangladesh.

Chakravarty: Wonderful.

They do a lot of things, sir. Even [FL] children community.

Chakravarty: I mean.

I mean they have diversified into many things.

Chakravarty: Yeah, students are like to take this opportunity to inform you there is a lot of these wonderful organizations like INBAR, OXFAM [FL] systems of methodology of course, we have our own you know home grown GIAN. So, lot of opportunity for us to work across the world with these organizations to do wonderful work.

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And, she is done a doctoral thesis from IIT – ISM Dhanbad on farmers' creativity and coping at farm level through agro-biodiversity conservation for higher resilience to climate fluctuations.

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[FL] Anamika [FL] PhD, [FL] this is like the PhD for our farmers [FL] like you fabulous you know I think we should further work in this area because of global warming [FL] farmers [FL] because our farmers were not entrepreneurs before they were pure farmers.

Yeah.

Chakravarty: Now, farmers have become entrepreneurs and the climate is not supporting them students.

Correct.

Chakravarty: [FL] entrepreneur [FL] investment, [FL] feeds, [FL] fertilizers [FL] pesticides [FL] investment [FL].

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Sir [FL] hybrid [FL].

Next year they cannot use the seed. So, the input cost will increase.

Chakravarty: Increase.

Now, we are giving them resilient improved varieties, they can save the seed and plant again next year.

Chakravarty: (Refer Time: 4:33).

So, entrepreneurship [FL] problem [FL] solve [FL].

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Dr. Sudarshan Iyengar

Former Vice Chancellor

Recognised as a leading scholar on Gandhian studies in India. Iyengar, a Ph. D. in Economics, is the Former Vice Chancellor of Gujarat Vidyapith, Ahmedabad

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Chakravarty: [FL] Student this is a very very serious, [FL] Iyengar [FL] who is a vice chancellor Gujarat Vidyapith [FL] morning [FL] informer session [FL] agricultural problem [FL] traditional farming [FL] commercial [FL] farming [FL] farmers you know [FL] trouble [FL].

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Resilience [FL] resilience [FL] strategies [FL].

Chakravarty: [FL].

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[FL] Database [FL] sustainable technological practices [FL].

[FL] Problem [FL].

Chakravarty: [FL] Very good.

[FL] Database [FL] abandoned patent, [FL] gian dot org slash patent dot php [FL].

[FL] 0.9 million abandoned US patents, [FL] US [FL] grant [FL] renew [FL] free [FL] use [FL].

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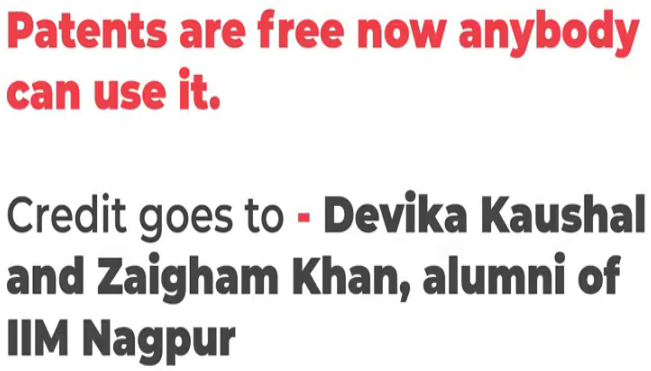


Devika Kaushal [FL].

Zaigham Khan.

Chakravarty: [FL] US [FL] download [FL] website [FL] [FL] it is a valuable you know resource and sometimes we are not even looking at all the resources available before we do something.

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So, just to finish our Anamika's bio data, research interests are understanding grassroots and social innovations, very important Anamika; their emergence, translation and transfer across geographies, community resilience especially as understood and contributed by women. So, welcome to the class of our students from Anant National University too and Professor Anil Gupthaji good morning and.

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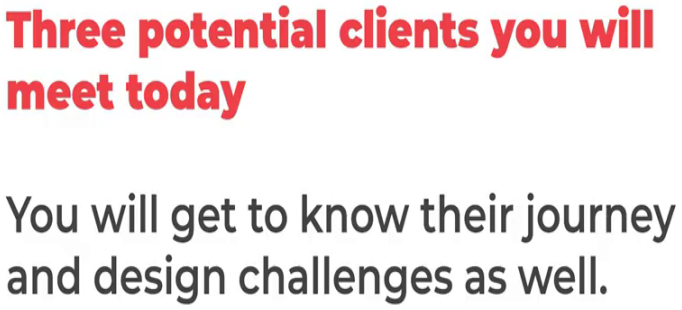


Good morning.

Chakravarty: [FL].

[FL] Potential clients [FL].

Chakravarty: Oh [FL].

[FL] Innovators [FL].

Chakravarty: Oh, this is great.

Innovatory [FL] innovators [FL] briefly [FL] journey [FL] design challenge.

Chakravarty: Ok.

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**Kissan Dharambir**

**Dharamveer Kamboj's innovation of a multi-purpose food processing machine has become a staple for rural women unleashing their entrepreneurial dreams**

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[FL]. So, [FL] design challenge [FL] Dharambir, who is the world famous multi-purpose food processing machine inventor, the President of Audi; Paresh Panchal also president of Audi, he will share the challenge that he is having in his machine and he is trying to change, because he found that the customers of his machine gave him feedback about some problem, which he wanted to solve.

A food [FL], now he is finding a replacement for that.

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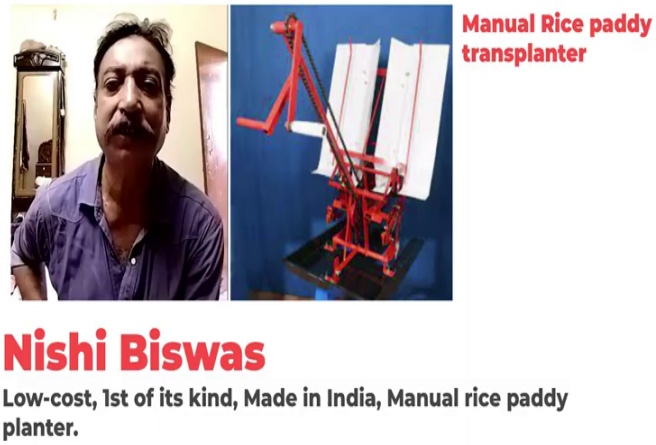


And then Nidi Nishi, who has developed a manual paddy transplanter, a very serious problem in our country which he is trying to tackle, he will also share. So, we will have 3 of them; you know we are going to realize as the time passes that more and more opportunities in any profession and design modes, because we have so many component that we need, that we need to bring together. And how do we do that?

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So, I will look at a network entrepreneurship from the point of view of those of you, who would like to be entrepreneur and how can you help them network with each other; individually we will not grow very far, but together we can. So, we will discuss that point, we will also look at the small brief story of honeybee network, very briefly.

Chakravarty: Ok.

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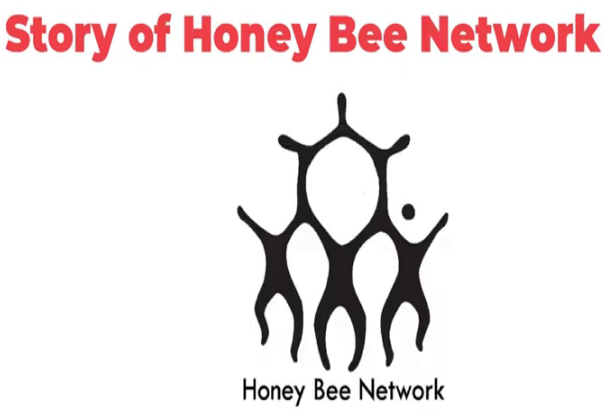

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So, what I am going to discuss my friends is that, the philosophy of network being the next gold; this is the lesson we learned from honeybee network. And I will give you examples why it is so vital for making dreams come true, which otherwise will remain a dream. And particularly when it comes to distributed a innovation, distributed entrepreneurship; it becomes even more critical.

And I do not have all the resources within the boundary of my organization, within the boundary of my own farm and yet I want to do something which is transformative; then how would I achieve transformative results without creating network software.

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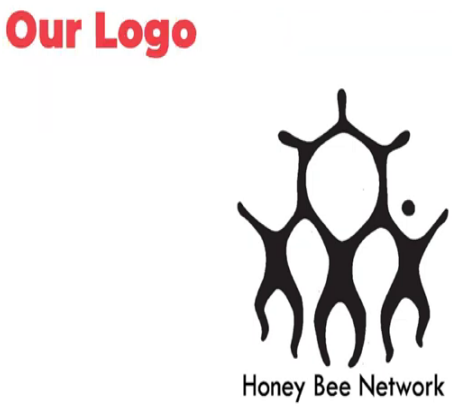


A resources, skills, opportunities how do we do that. So, when we started the honeybee network, this is how we believed and this is a logo designed by the students of an ID in a class of graphic design. So, I will tell you the story of this logo.

So, that the students came out with this logo without this dot and Professor S. M. Shah the graphic design professor was sitting in the class and Milsina was sitting in the class and I said there is something incomplete in this report; which is good idea human figures networking, but there is something incomplete, there is no story coming out.

After about half an hour of struggle students also struggling, faculty also struggling and we were not able to find out where the problem was. And then Professor Shah got up and went to the board and put a small dot here; he said is that the story complete now, I said yes, a

nameless, faceless person comes in contact with the network gets an identity, that was the storyline which I have never tired, got tired of telling for the last 35 years.

But can you imagine a dot can make so much difference, just a dot. You take it away and the whole story goes away.

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So, I would say that designers can add so much value by just the minimalist intervention that I have a very high respect for your Profession and Chaku has been a great friend; I have known him for a long time.

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And I know how much effort he puts in to bring things to reality even for as poor people as people who carry the pilgrims on their shoulder in the Amarnath and other places and how can the life of these people, the porters can be made more comfortable.

So, you know you can work with the poorest people; one of the design that his student had made has gone to, was noticed by the President of India.

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So, what happened was that, we had a festival of innovation and there one of the student of Chaku got an award and this was when you have to put a intravenous injection, you have to find a vain in your hand here. So, many times you puncture 2 3 times to find a vain and it is troublesome, it obviously hurts.

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So, what the attachment had done was, he made an infrared light lamp; you put it here, the vain immediately becomes apparent and then you can put a venture. So, there was no disturbance and this President liked very much; he asked his doctor who was with him in the morning walk, do we have this 2018 Chaku you remember.

Chakravarty: Yeah, yes sir.

And then I talked to him and I said look the President of India wants your innovation today, I get it sent immediately. And we got it sent and it was used in the dispensary of President India's house. Can you imagine how ideas can make connections between the head of the state and your ideas here.

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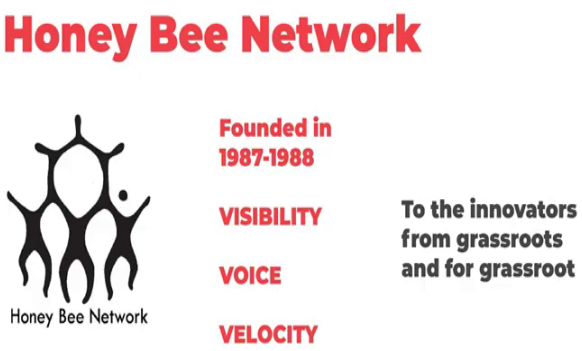


So, I think this is what Honey Bee Network has done; it has given voice, visibility and velocity to the ideas of creative people both in formal and in formal sector. So, we have a whole ecosystem; children, student's, technology student, design student's, individuals, homemakers, anybody can appear for various contrast that we have essentially to unleash the power of strategy.

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So, this is very important, spider's web has very big threats and yet the web is very strong; that is a good metaphor for recognizing how much power the network can have, because many times seemingly weak threats when connected properly, it become a source of problem.

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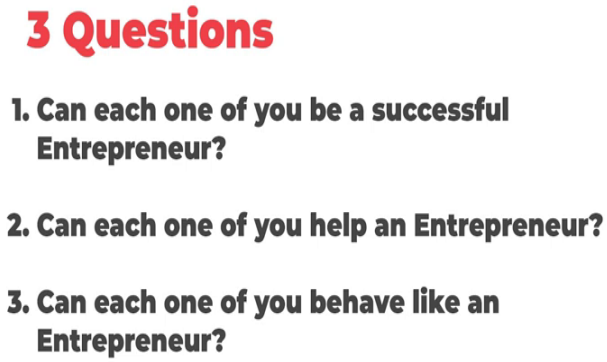


So, we have 3 questions now to ask you and pardon me at Chaku; because this questions might contradict some of the thing that you are trying to do, but I think you will find that there is a joy.

Student: Sure, (Refer Time: 11:51).

In it the first question is, can each one of you be a successful entrepreneur; yes or no?

Student: So, we can be a successful entrepreneur.

Each one of you.

Student: Not sure about successful, like I might fail; but end of the day if my failure teaches me, then I am a success successful entrepreneur I think.

So, that let me see this hesitation how does it give way. The second question is, can each one of you help an entrepreneur?

Student: Yes sir, yes yeah sir.

Student: Yes.

Yeah there is a louder yes now. You see it is not necessary that each one of us becomes entrepreneur; after all we need designers for different whole professional world you know. So, I understand fully well if some of you find that no sir I might not be a good entrepreneur, I can understand that; even though the course is trying to build the capability in everyone, but we discovered, we know that not every each one of us can be very good in everything, is not it.

Some of you might like to become faculty members, some of you might become entrepreneur which is fine. But you can all help some entrepreneur in one way or the other. And we will have 3 grass root entrepreneurs today, who will come to you with a specific challenge and if it suits your interest, you can try to help them.

Third question, can each one of you behave like an entrepreneur?

Student: Yes sir, we definitely.

Student: Yes sir.

You know what, no matter in which role we are; the one is to be full-time entrepreneur, second is to behave like an entrepreneur.

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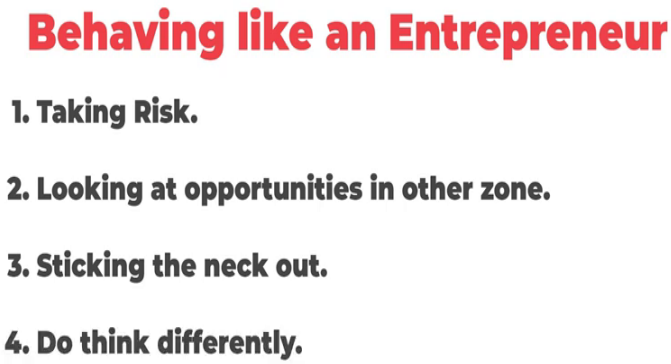


Entrepreneur is taking risk; looking at opportunities when others zone see them, is not it. Entrepreneur sticks the neck out, entrepreneur tries to do things differently, right. So, each one of you can behave like an entrepreneur and I have no doubt about it, because that is an attitude.

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As a professor I teller developed so many opportunities for other people by creating different institutions. So, I created Honey Bee Network 35 years ago, then SRISTI was set up in 93, then Gian Grassroot Innovation Augmentation Network an incubator was set up in 97, National Innovation Foundation was set up in 2000; these are all new institutions, they did not exist before.

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That they were trying to contribute to the grass root innovation movement in India and around the world; so I was in some sense an academic entrepreneur is not it. I was trying to find opportunities, which others had missed all these years. Around the world nobody had ever heard of; how can grass root innovation ecosystems be built.

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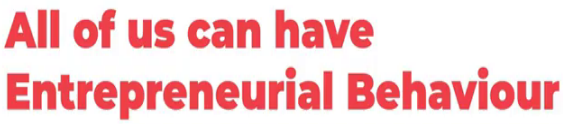


So, all of us, what I am trying to say is all of us, each one of us can have entrepreneurial behavior; no matter where we are by taking risk, by seeing opportunities which others miss, by standing out and so on. Now, that is one of the my expectations from today's class that I will expect all of you to become design angel. What is design angel? Angel you know angel network, the angel make investments in innovations, sometime they give grants, sometime they make take a small equity and then they help the entrepreneur grow.

Supposing as a designer you say well I will try to improve your design grass root innovator, but I will take 2 percent equity or one percent equity. If you grow successfully, I will like to recover my cost; if you do not succeed, I will not, I will forget it. You know a deferred payment kind of the system that, today I am not charging you, because you cannot afford me; you cannot desire me, but you deserve.

Chakravarty: In fact, is this a new word's at design angel, we have not seen this before.

I am saying Chaku that you have such, you are such a great teacher and you bring so much energy out of the students; but you have the right to take that dakshana you know.

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And one dakshana the each student should give you is that, alright we will help at least one innovator at grassroot level in a year, that is not too much.

Chakravarty: Very true.

By asking questions, by getting suggestions you can open so many doors of imagination for the innovators that they on their own might not discover. And 3 of the innovators today you

will talk to, you will lis10 to 15 minutes each, will share with you their stories and their challenges. So, I am very keen that we prove this point that, while we may not necessarily become entrepreneur; but we can certainly help entrepreneurs who have tried to solve problems, which market and state had ignored.

State had ignored, public sector R and D had ignored, all the institutions and the market had also ignored; otherwise their solution would not have been required you know, somebody would have developed them. Why would these small people farmers, artisans, rikshawala why would they need to invent them these solutions? So, I am also suggesting today that by working with these innovators, periodically you will learn the art of frugality.

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Now, how do we learn about frugality? Frugality for customer, frugality for manufacturer and frugality for mother earth and environment; it is very important that your definition of the

frugality should not be confused. We have a sachet that say, take tea sachet one rupee sachet of hair oil or shampoo, very frugal is not.

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It very affordable, very inclusive; now calculate the cost of collecting this piece of plastic from 600 50000 villages of our country, it is very costly. So, we have to find new ways of creating those sachets, which will not spoil them for.

So, there is a huge problem or might be plastic today causing enormous pollution and health hazards for all of us and all living needs. So, naturally this piece of plastic that we are throwing away in every single village, where the sachet is reaching is having a huge cost, but that cost is not reflected in the balance sheet of the firm.

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So, design angels are those who will also keep; who will like to learn, but also share. So, in some sense the time that you are given is a small fees that you have paid from to these grassroots innovators for learning from them art of frugal design, frugal innovation. And in the process you can help them improvement, take a small equity in their design and then in future, recover it from the income that they have, so why not we create that.

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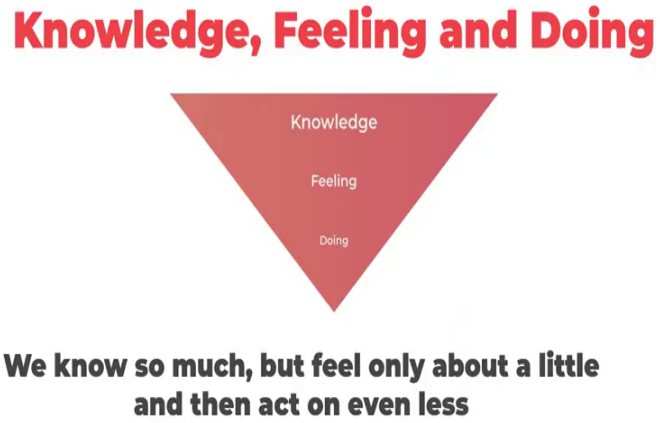


So, what are the drivers of this kind of behaviour we have knowledge, feeling and doing Now, I am aware that these do not move in the same direction. Yesterday in my other class my had discussed that, first you may have a knowledge is so much, feeling is this much, action is this much, this is one way round at right.

But look at the other way around, I feel about a problem and that feeling generates a quest for search for knowledge; has anybody else done that. And then after discovering what has been done or what needs to be done; both knowledge from the customers, knowledge from their website, then you try to act.

So, it can be beginning with fulfilling; sometime you start action first, it is called action research, you take a action, you look at the this response. People say no it will not work, it is not good enough, you need something else; alright what do you need and then the dialogue

begins. And then you begin to ask yourself, but there is something missing here; what is missing here and to that to find out what is missing, there is a very important concept in our culture, in all Indian languages a word similar to samvedana exist.

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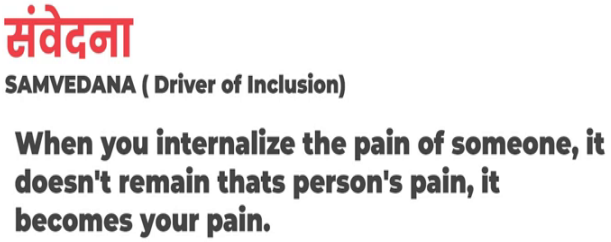

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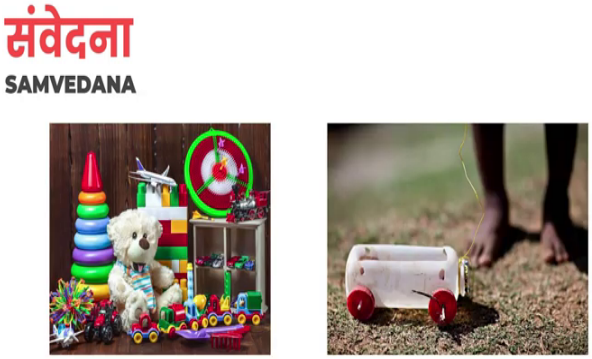


Sam means equal, vedana is pain; you know there is no reason why toys or any other gadget should only be available to those who have enough purchasing power. You must have, you go to villages, you will find people making toys after match box, people making toy of wooden toy; I mean wheels, they make toys out of everything a can, sometimes you give a lid of a soft drink lid to the child and child then throws it and the sound of the lid the child enjoys.

After that you give him a very costly doll and the child throws it with the doll, because he wants to play with the lid.

And you say no, you play with the doll, not with the lid and child say no I want to play with the lid; because for child the value is not in the price or cost of that toy, it is in the sound, the

interaction that the child is having with that sound. So, therefore, the lid becomes more important than they costly toy, many time you missed this point, we miss this point.

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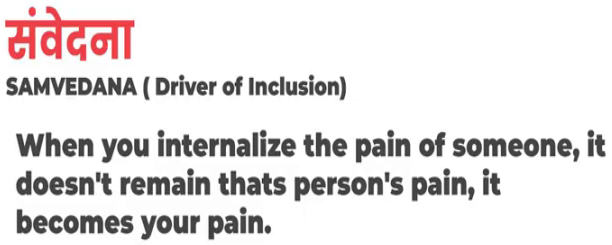


So, samvedana is a very important driver; when you internalize the pain of someone else, it does not remain that persons pain, it becomes your pain.

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[FL] For my own happiness I try to reduce that pain and generate certain [FL]. So, samvedana is [FL] through [FL] for my own happiness. Now, this is something which is becoming more relevant today than was before when I conceived this idea.

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This is a tree, which I talked to in kangda when I we had a shobhayatra. And I said what happened to you and he said you know what, I was not supposed to branch, but then I did. So, I made into a parallel stem. So, many times when we are doing things, an error happens; what does our body do, it repairs them.

If I cell in my body is going through imitation; it really repairs, it replaces rejuvenates by passes various strategies my body is choosing to do, so that I can continue talking to you, this is called autopoiesis, liberty of a design to improve with usage.

There are many ways of doing that; you can do it through artificial intelligence, you can do it through machine learning, you can also do it by new materials. For example, a knife will

become sharper, every time you cut fruits, it becomes sharper; that is autopoietic knife right, it is learning, it is self-designing, it is improving as the usage goes.

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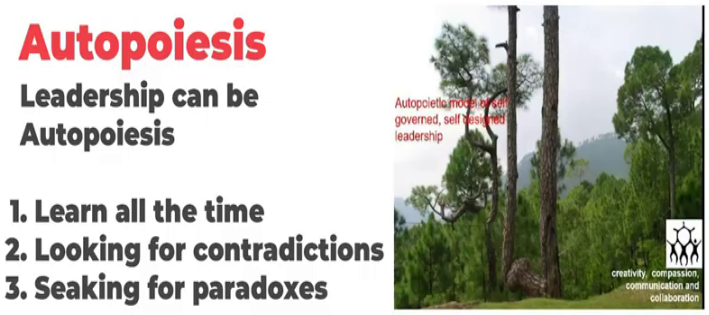


So, the leadership also can be autopoietic; that means we learn all the time, we are hungry to get feedback, we are hungry to get contradictions, we are looking for paradoxes in our lives, we want to see contradictions, all the time you want to look at contradictions.

Who do I hear first; the one who contradiction, not the one who confirms me. But unfortunately the tendency is to gravitate toward those who agree with us; but somebody who reacts strongly against what we are saying could be our best friend and autopoietic design favors criticism paradoxes.

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You know there is a very interesting story; I do not know how many of you remember that, there is one company in our country, which gave awards to people who found the new uses from their product.

So, it got seaking ideas which are, which it could not imagine. So, I have made something, I will not give you more clue; I made something which you are consuming, but you put it to a use that I have not imagined. So, if you tell me something new, which is different from what I have ever imagined and I will celebrate that contradiction that will celebrate that paradox, my god I did not realize that one can make xyz from this. You remember the name of the company; it is celebrates creative consumers by putting their photograph on the wrapper.

Student: Amazon prints images of the customers in the packaging.

No, but the idea is to get a customer who is given a new application of it, Kurkure.

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If you make raita of Kurkure, Kurkure purchase never imagine you can make raita of it, right. My god what are you doing with it and so, every time they were surprised and that brings us to next issue, surprise is a necessary condition for learning.

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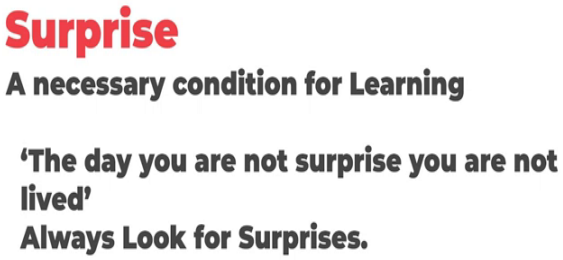

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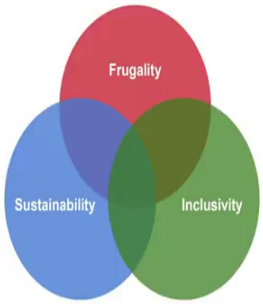


Be all the time, if the day you are not surprised, you have not lived; my god with 40 years of teaching if I did not think of it and a student surprises me, my day is made. I have learned so much in that moment. So, look for surprises. So, that is what we have already discussed that frugality, sustainability and inclusivity all the 3 are important; not just frugality, do not get into the confusion that frugality is something which can be afforded, there are many solutions.

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Dynamite for catching fish is very frugal, even poor people use it in for fishing. Is it sustainable? No.

Student: No.

It kills small fish and big fish both, it is an innovative use. So, the dynamics will be affected. So, overall fish population will be affected. Now, we do not want such innovations and please do not get the impression that everything that grass root innovators do is always sustainable; no, sometimes they can do things which are not sustainable. And we should be very careful in deciding which path are we going to engage.

This is where the entrepreneurs have to look at accessibility, affordability and availability.

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There is a family health center in my village, very accessible; the medicine paracetamol is very affordable. I go to the dispensary and there is stock out, it is not available what time, we have given this feedback from people. Sir we like your innovations, but where are they available and we have to admit that we do not have a distribution center that is yet in the various part of the country, where you can find these frugal innovations easily.

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There is a limitation, ecosystem has not achieved this kind of pervasive visibility in every city of the country, one day it will happen. Mansukhbhai Prajapathi has done it, he has opened about 20 18 or 20 stores in the country, where his clay products are sold, the one who made a clay refrigerator, he has done that.

But so far other innovators not yet; so we need to go today, we will have Paresh Panchal with us, we will have dharambir with us. Dharambir has sold products around the world; he has sold in Africa, he has sold in many other countries.

And within the country he has sold and he keeps on inventing new machines, very great. Paresh Panchal who is making incense making, incense stick making machines. And Nishi who has made a very interesting manual paddy trans planter and he will also share the few

challenges that he is facing and we have made a small investment in his machine to help him reach the market.

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## CHARKHA

- Competition announced by Gandhi ji to develop better CHARKHA, with Rs 1 Lakh Award

24th July 1929

https://www.flickr.com/photos/136879256@N02/24045307022

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Mathma Gandhiji [FL] charkha [FL] [FL] July [FL] for 1929 1 lakhs rupees award, 7000 700 pounds. And a very many eminent people were on the jury, this came out of that next year 2000 in 30 1930 when he was in Gada jail. So, centuries the design had not changed and it got improved, this design was created by people who felt, who internalized the description that he had came.

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What do these innovators have common? They have passion, they have purpose, single minded; like in Arjun, they only see the eye of the bird, they have a built a process.

Otherwise they would not have succeeded; they have a process by which they fulfilled the design cycle of the product and then they perform, but they also have access one thing common to all of them, a platform.

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Platform that GIAN provides is for micro venture fund, SRISTI providers to Sujathi and I have provides to the National Awards and of course, Honey Bee Network provides that the whole ecosystem of designers, of IPR attorneys of R and D people of various types.

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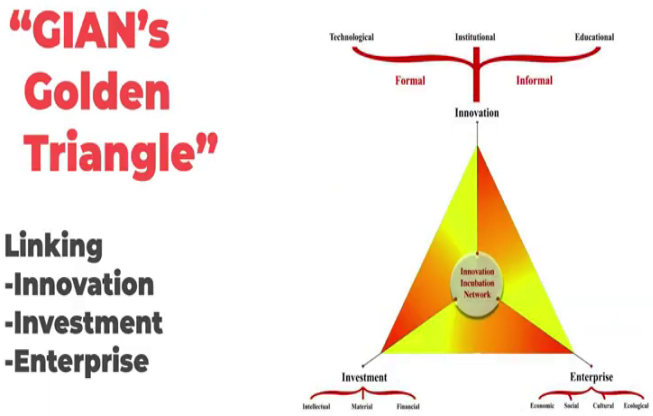


This is the triangle that we try to convert, this is what GIANs triangle is linking innovation investment enterprise. You may have innovation, somebody has an investment, somebody has enterprise; investment not just financial, but also material and intellectually.

So, when you become design angel, you are making an investment of design in somebody who is an entrepreneur; entrepreneur can be economic, social, cultural or ecological. Innovation can be from formal and informal sector; innovation can come from IIT H, IIT Bombay, it can from IIMA or it can be from informal sector grassroots. So, today we will talk to 3 grassroot innovators and we will see how we learn from them. So, Dharambir [FL] machine [FL] challenge [FL].

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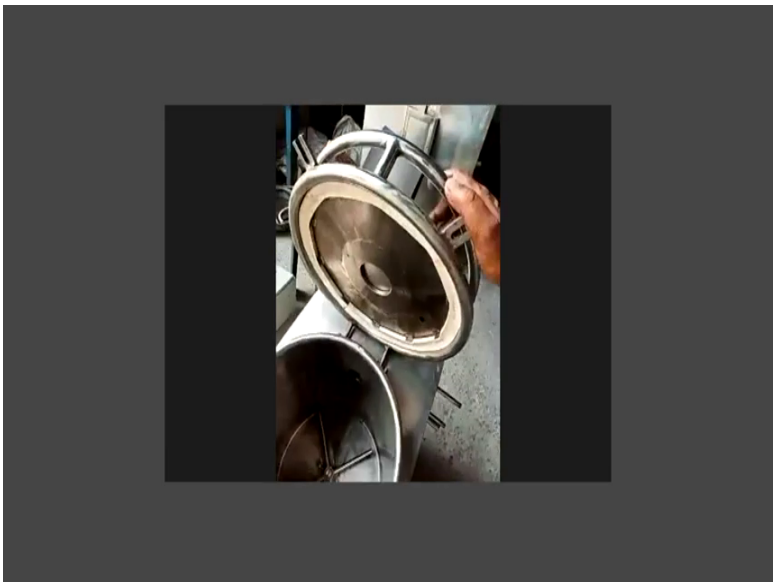

[FL] Machine [FL] improvements [FL] multipurpose [FL] machine [FL] vacuum dryer [FL] vacuum fryer [FL] multipurpose machine [FL].

[FL].

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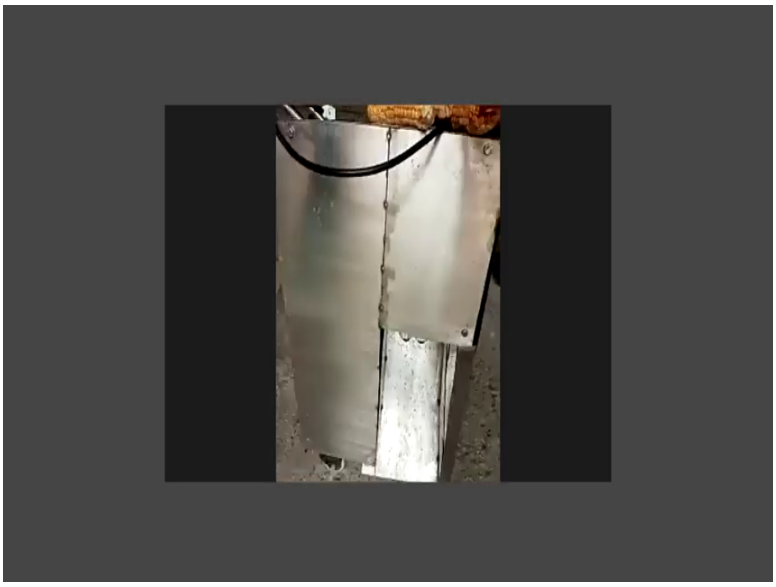

Vacuum dryer [FL] vacuum fryer [FL].

Vacuum dryer or vacuum fryer.

[FL] Machine [FL].

Dry [FL] vacuum dry [FL] vacuum [FL] vacuum company [FL] plan [FL] vacuum [FL] vacuum [FL] help machine [FL].

[FL] Cut [FL] cut [FL].

[FL] Cut [FL].

[FL] Cut [FL].

[FL] Torque [FL] torque [FL].

[FL] System [FL].

[FL] [FL].

[FL] Cutter.

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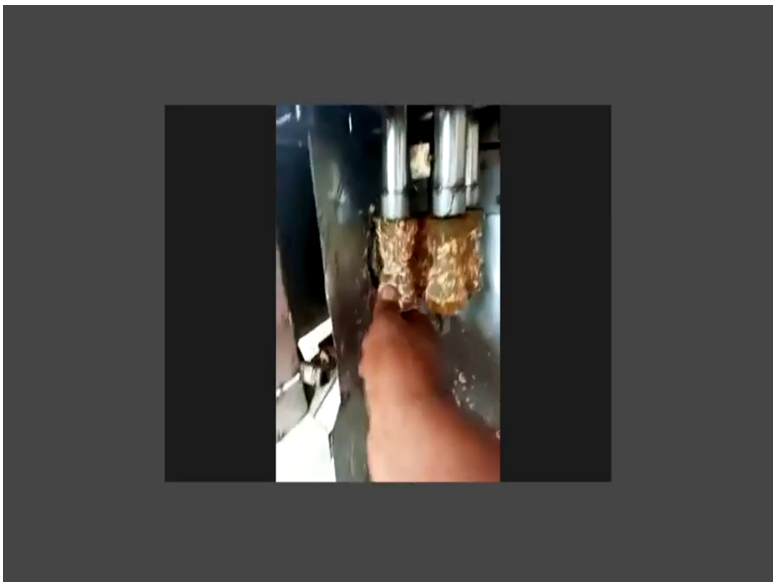

[FL] Cutter [FL] flexible [FL], cutter [FL].

[FL].

[FL] Help [FL].

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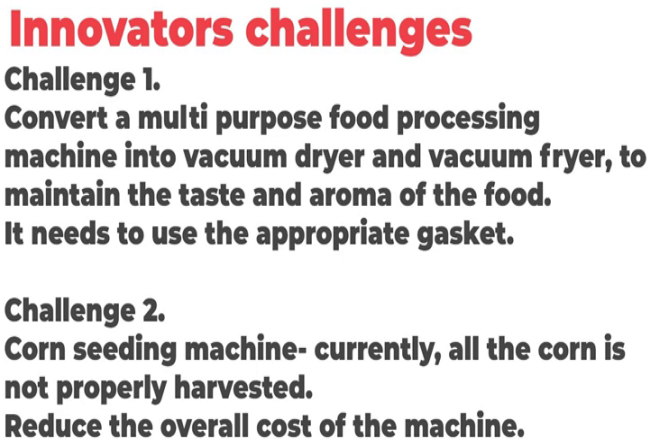


So, those of you who do not follow what he is saying; just clarify that when he puts the cob inside. We first of all he has mentioned 2 problems so far; first problem he mentioned is that, he wants to make his multi-purpose food processing machine into a dryer, vacuum dryer and vacuum fryer. Certain things are fried in vacuum, then it becomes very gives a different taste and maintains the color; the problem that he is facing of facing is of course what kind of gasket he puts in the lid and also that sometimes the vacuum takes away aroma or some other properties.

So, what I do that these properties do not get damaged. So, when he puts the cob inside 2 feeders that are there, they do not have flexibility enough with the result that the corn pop, grain of the corn gets sometime broken. He want some way of the 2 with 2 rollers which are trying to pull the grain out to have a little bit of flexibility, that is the second question he has pulled. Dharambir [FL].

[FL].

[FL] Material [FL] cost [FL].

[FL].

[FL]. So, friends you have all understood the challenge that the innovator is facing; first of all he has put too much of material around the corn peeling, it can be actually very tidy small machine with one tenth or one fifteenth of the material that he is using. And secondly, there is no flexibility for thicker or thick thinner; because the cob is not uniform size, you know it thin it is smaller and then it becomes bigger and he wants to increase the flexibility.

[FL].

Reduce the cost, grains should not get broken.

That is the challenge.

Chakravarty: Any comment students from Dharambir.

Any comment you want to make.

Student: Professor I have a question [FL] material [FL] material [FL] sir [FL] material use [FL] weight [FL] grains perfectly [FL]. So, is there a limitation [FL]?

[FL].

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I [FL] I feel that you food grade [FL] issue [FL].

Chakravarty: [FL].

So, it is being used for food, right.

So, it has to be a food grade material I feel so.

[FL] Material [FL].

[FL] Silicon [FL].

[FL] Silicon [FL] flexibility, [FL] silicon [FL] pipe [FL].

[FL] [FL] pipe [FL].

[FL] Pipe [FL] pipe [FL].

Chakravarty: Dharambirji [FL] pipe [FL] flexible pipe, [FL] threading [FL] pipe [FL] pipe [FL] silicon [FL] pipe [FL] silicon.

[FL].[FL] Pipe silicon [FL] silicon [FL].

Chakravarty: Dharambirji [FL] problem.

[FL] Student [FL] number [FL].

[FL] Student [FL] interested [FL] professor [FL] interact [FL] under the guidance of the professor, please try to see whether you can engage.

Dharambirji [FL] machine [FL] machine [FL].

Yeah [FL] machine [FL].

[FL].

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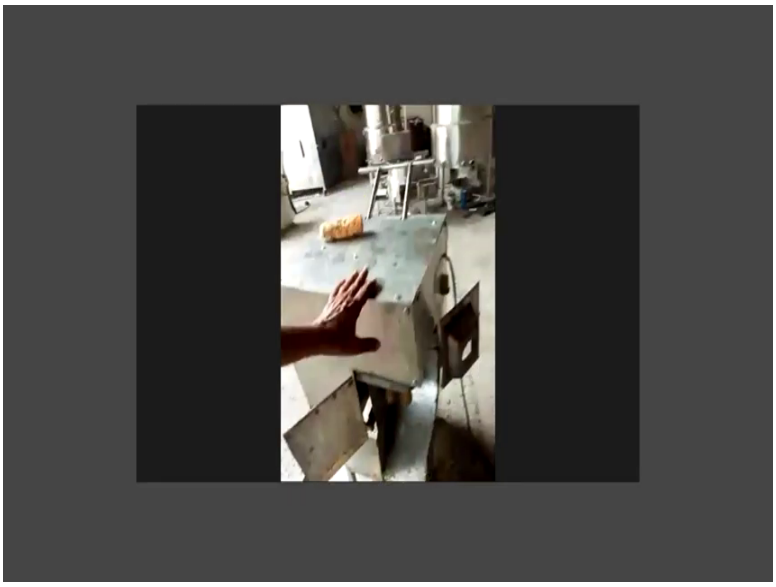

So, market [FL] market [FL] machine [FL] China [FL].

Chakravarty: [FL] Machine [FL] China [FL] machine [FL].

[FL] Video [FL].

[FL] Video [FL].

[FL] Machine [FL].

[FL].

Chakravarty: [FL] Dharambirji [FL] course simple or [FL] China [FL] China [FL] machine [FL].

[FL] Skill [FL].

Chakravarty: [FL].

[FL].

Chakravarty: [FL].

[FL].

[FL].

Chakravarty: See our people know, know the material specifications better than us yaar.

Chakravarty: Great food grade. So, food grade use [FL] silicon use, [FL] see you they network a lot and get all the information which is like.

Correct.

Chakravarty: And he is using stainless steel scrap, because stainless steel is very expensive sheet [FL] scrap [FL] company scrap [FL] 304 kilo; [FL] pharmaceutical industries uses steel, he is pricking that then that comes at 100 rupees a kilo. So, 100 [FL] a kilo [FL] Dharambirji steel.

[FL].

[FL] scrap [FL] use [FL].

Chakravarty: [FL].

Circular economy, [FL] circular economy, this is circular economy in action.

Chakravarty: Very good know.

Re waste of the food processing machine is becoming input into the corn machine.

Chakravarty: Corn machine, [FL] Dharambirji [FL].

Less of an entrepreneur more of an innovator; his son is the one who is doing the business now, a [FL] machine Nishi [FL] Nishi Biswas [FL].

[FL] Mechanical [FL] workshop [FL].

[FL] Machine [FL].

[FL] Machine [FL] lakh rupee [FL].

So, internet [FL] search [FL].

[FL] China [FL] machine [FL].

[FL] Manual machine [FL].

[FL] Manual machine [FL] internet [FL] internet [FL] video [FL] video download [FL] snapshot [FL] [FL] components [FL].

[FL] Machine [FL].

(Refer Slide Time: 37:00)

Manual rice paddy transplanter

[FL] testing [FL].

[FL] Machine [FL] machine [FL] commercial production machine [FL] uparastrapathi

[FL] mantri [FL] award [FL] final product [FL].

[FL] trial basis [FL] machine [FL].

[FL] Machine [FL].

[FL].

[FL].

[FL] traditional [FL] machine [FL].

[FL] machine [FL] mat.

[FL] Machine.

Yeah [FL].

[FL].

[FL] Response [FL].

[FL] Through [FL] order [FL].

[FL] machine [FL] target [FL].

[FL] Machine [FL].

Actually [FL].

[FL] Machine [FL].

[FL].

[FL] Quantum mechanics [FL].

[FL].

[FL] Water fill [FL].

[FL] Electro chemistry [FL] future [FL].

[FL].

[FL] Student [FL].

(Refer Slide Time: 39:06)


[FL] Students if you have any question did you follow what it is a trans planter, manual paddy trans planter; but the women have to use back banding posture for plant transplanting paddy, very painful, millions of women work with feet in the water as you know and it is a very painful situation. So, the question is that, can we reduce their pain, can we reduce their

drudgery? And he has found an answer to that. So, this is a very interesting solution that he has found.

Student: Sir, can we know the working mechanism of this machine?

[FL] Video [FL].

[FL] video [FL] YouTube channel [FL] video [FL].

Chakravarty: See students how good the you know enterprises going YouTube channel, online, inspiration from Chinese machine, selling very; Nishiji [FL] Nishiji [FL] trans planter [FL] market, [FL] inspire [FL] company [FL] you know when he started initially modified.

Chakravarty: The Nishi quite a bit; because it is not even if you have a concept from wherever you know, you need a lot of you know ingenuity and you know like creativity to build your own machine using local components.

Right [FL].

[FL].

[FL].

Chakravarty: So, you know there is no doubt about that; concept has come, but you know all the working of course, he must have done a multiple. [FL] Nishiji [FL] last [FL] the last [FL] I mean final machine [FL] machine try [FL].

[FL] Machine [FL].

Chakravarty: [FL] machine [FL] [FL] machine [FL] improve [FL].

[FL] scrap [FL].

Chakravarty: [FL] That is a very important journey, students in [FL] design prototype comm. [FL] production [FL].

[FL] Important [FL] children the students have a tendency often to get fixed with the first product they make and they keep making modification in the same prototype; rather than junking it and starting afresh on the second prototype and junking that and starting third prototype, they start you making that better.

And that is not a right approach.

Chakravarty: In fact, that Malaysians that movie know sir, that you know like on where he made that first you know the weaving machine and then his father burnt it by being angry and after that he made the metal one which was successful [FL].

[FL].

[FL].

So, very good Nishiji [FL] touch [FL] Anamika [FL] through ji.

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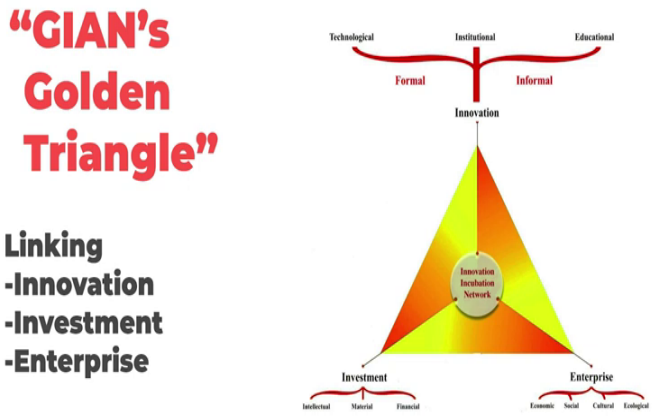


[FL] Database [FL] dot in [FL], 200000 engineering projects mainly, but also design projects. And we can upload all your projects here with your name, name of the guide, your department, college and abstract; we do not put whole projects here, but though we have some data's. We have about 25 full projects database, but that we have not put online to prevent piracy and all that; only abstracts and titles are given here, this is all open source.

And some of you can work on graphic user interface and make it more interesting; this is the database that just now we mentioned about the patent abundant patent database, which 2 of these students Zaigham and Devika with Anamika's guidance and our support have developed this.

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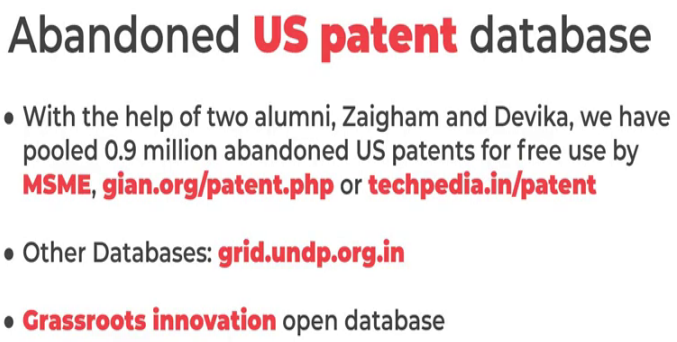


There is another database that GIAN had helped in steering with the undp grid dot u n d p dot dot in org dot in; it is also open access innovation for an innovation from grassroot you can find here. How can innovators who, how can entrepreneurs help each other?

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(Refer Slide Time: 42:45)


So, for example, one concept is mutual franchisee, I become your franchisee, you become my franchisee; when my customer comes to me and he says, but I am also looking for this and then I say yeah I know a friend of mine who also make that product, look at this here. So, you get commission on that sale, because you have been facilitate that sale; but the customer may not have bought your product, but bought your friends product and that is fine, that is fine.

Someday your friend will recommend you, your product. So, idea is that, we do not just work alone for our own business; we also help other businesses in our ecosystem to grow and make a network of entrepreneurs who help collectively grow.

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Second is pooled catalogue, the pooled catalogue means that you create a catalogue of let us say all the kitchen technology. Now, the 5 of you may have worked out on kitchen innovations; but customer would like to know all the 5, but you are selling only one of them.

If you promote only your product, not many customers will come; but when you promote 5 products, more customers will come to you, because they get their many needs met. So, question is, do you go to a shop to buy only one thing? Many times the shopkeeper shows, sir [FL] [FL]; you know they are willing to engage you with multiple choices, because they want to make you to purchase something.

Can entrepreneurs understand how shopkeepers work and engage create a catalogue, so that we can promote all the technologies in a domain together or all the toys together. One should not become too selfish or self centered [FL] promote [FL]; obviously, because you are part of

an ecosystem and different customers have different preferences and you are anyway getting margin on that.

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So, if you divide through you, then you get some commission on that what is the problem with that. Pooling inventory and procurement that is very important, because just now when Chaku asked this question where did you buy that steel; of course he used a strap of his own machine, but sometimes you to buy.

Now, let us say you buy 50 kgs, somebody else will buy a 100 kgs, somebody else will buy one ton and obviously, the price that you would all get in the market place will be different. Now, how can we pool our purchases, our raw materials supply, our supply chain, so that our negotiation with the buyer with the seller can be more effective and we can get the things at lower cost.

You know that farm easy which is our unicorn now Sudasha he was a; he presented that project in my class in a course, today to his unicorn. How did he do that? He was trying to pool the requirement of different small hospitals for medicines and that is how he changed the whole market, today chemist offer you discount; till 5 years ago no chemist would give you discount, no way never.

Now, we are getting 15 to 20 percent discount; how did this discount come in the pocket of consumers? Thanks to Siddhart Shah, one person who developed this concept of pooling the requirement of large number of buyers and then getting them a good deal.

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You can also have single bid multiple suppliers, so that one of you gets an order let us say for Christmas sale, you get an order of 50000 toys.

But you cannot make 50000, you can make hardly 5000; what would you do? You will request other manufacturers, this is the design approved, this is my margin, this is margin I will give; you are you become willing to become my partner in manufacturing. And then what happens, they become like your division; once the order is complete, you all start competing with each other again. So, cooperation followed by such competition and then again cooperation; but they stand somebody elses video will accept succeed.

So, the idea is that, we do not only believe in competition, we also find that there is a opportunity in cooperation.

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The next one is cooperative learning competitive market. In marketplace you compete, but; when it comes to sharing solutions, sharing ideas you learn from each other and do not

hesitate in sharing your learning. I found a good source of attitude color, some of you were talking about vegetative colour now.

(Refer Slide Time: 46:38)


C. V. Raju in Vishakapatnam makes toys, which are dyed with vegetative colours, because children put every toy in their mouth. When they put every toy in their mouths is young infants, that colour pigments should not be chemical.

So, he is the first one in the country who we gave an award and he has an enterprise. Now, if I tell you this lead and then you get in touch with C. V. Raju and you learn from it; what do loose, I do not know anything. So, the, so question is that, when it comes to learning space, we should be as open as possible, share our insights, share our mistakes, share our errors, that is the strength of Honey Bee Network. As you can see innovator was sharing with you everything, he was opening his machine; he was telling you exactly what he was taking.

Because he knows that if he shares he will learn; if he does not share, how will you know his problem, how will he solve it, same spirit must exist among the entrepreneurs.

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And the last one is distributed manufacturing, that is when we should not try to do everything ourselves; the whole world is doing outsourcing, but we want to do everything ourselves, that is not what going to work. We must try to have different things being manufactured by different people, who are specializing in them and then we become the assembler or we put the whole thing together in our design whichever way it is.

So, the cost goes down, our inventory goes down, our ship capital equipment cost goes down and quality goes up; because that person makes 50000 rollers high, we need only 1 roller or 2 or 5 or 10.

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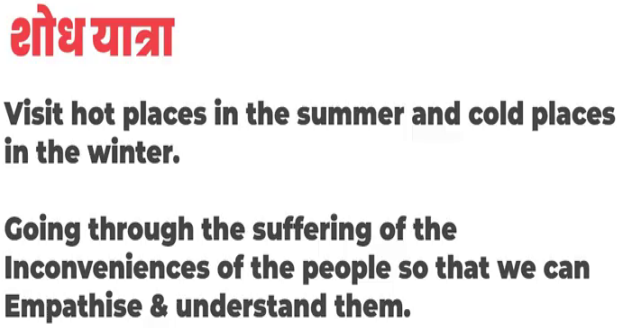


So, why do I set up the capacity from each component to be made myself; many grass roots innovators also suffer from this constraint, but we need to be able to solve this, this is the shobha yathra which you can write read about. So, we will walk in different parts of the country; summer we go to hot places, winter we go to cold places and purpose is voluntary suffering and Anamika does not share that philosophy, but I do.

And I believe that we must suffer from the inconvenience is that people go through, so that we can empathize with them, we can understand them, you can do other ways also.

Chakravarty: Sir Anamika [FL].

[FL] I will come with you some day [FL].

Chakravarty: Next time long way we have some wonderful you know places or very very you know innovative solutions inside the house, outside the house.

[FL] People [FL] morning [FL] jungle [FL] when you go talk and find out [FL].

Very spontaneously, very consumingly discussion takes place and then many problems come out, many suggestions come out.

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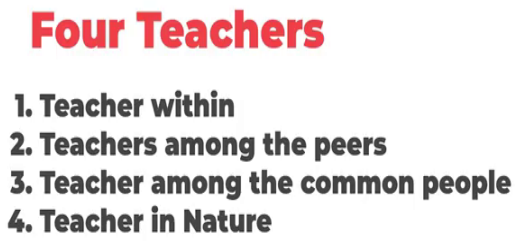


So, it is a way in which we learn from 4 teachers; teacher within, teacher among the peers like all of you around with each other, teacher among the common people, teacher in nature; 4 teachers we can all learn from, they are all available to each one of us.

It is up to us how much we learn from which teacher, but teachers were available to us. So, my suggestion is that, we should all try and pursue shobha yathras in our own way; we do for one week, the last was in Amreli we went from 5th of 4th of August to 11th of August and we discovered about 26 innovations in 5 days, which was very very unusual. Normally, we do not get as many in a week, but this time we got many; there is a person who is making a samosa making machine, can you imagine.

Imagine the steps involve in samosa making machine; he is a very good fabricator of Rajkot Farsan and other things. So, his next ambition is and he wants to do it in thirty thousand rupees. So, he will roll it, he will put it the substance in it; he will fold it, he will fry, he will deliver it all of that step we will do in one much.

There are such people available who have dreams in their eyes and they do not get an opportunity, they do not get support from designers and you know fabricators.

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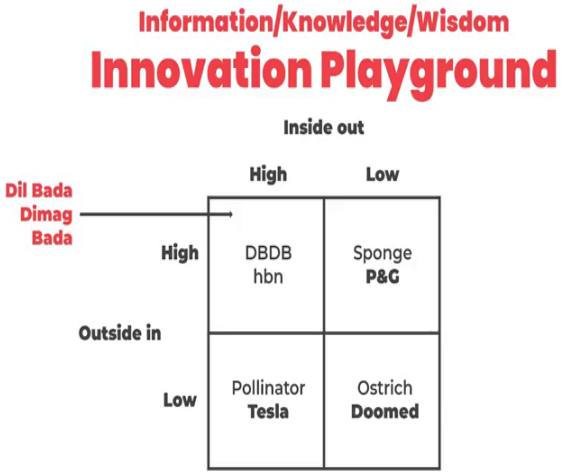


So, that is what we do in shobha yathras. This is a innovation playground some other day I will talk to you; but there is a summary is that there are 2 dimensions of it, inside out and outside in those, who do not want to learn from outside and those who want to do not share with outside, these are ostrich here, these are doomed, no future for the people.

Those who learn a lot from outside that is sponge; P and G does crowdsourcing, but does not tell you what they have made out of your suggestion, that is not fair. Tesla which distribute which opened all it is patents for better way, great coordinator; it shares a lot, does not need to seek, because he is a leader, it is the leader out of everybody else. And then there are those who learn a lot and share a lot, these are [FL].

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So, only people who have big heart and big mind can do this and I hope that in my wishes that each one of you will have a big heart and big mind; to be able to share a lot, learn a lot that is the sharing, caring and daring society. Daring is the entrepreneurial part, caring is a compassion part, sharing is the collection connection part.

If you want creativity, compassion and collaboration to grow; then dvdv is the box in which you should share a lot, learn a lot.

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ignitedmind@honeybee.org
For children creativity and innovation

hbncriia@honeybee.org
All other adults, teachers, parents, farmers and anybody else

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So, these are the 2 competitions that we have, all of you can participate in hbn criia, at honeybee dot org dot org hbn criia and gian dot org. And my this is the last slide creativity counts knowledge matters; innovations transform and incentives inspire, not just material incentive, but also knowledge matters. So, this is all I have to share, welcome and all the best.

Chakravarty: Anamika we wanted you to speak a little bit of whatever you have in mind today, just a few you know words for the students.

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So, for the students I will say that thing is innovation is very different from entrepreneurship, they are different skill sets, right.

Chakravarty: Exactly.

So, how GIAN came into existence is connecting the innovation with investment and enterprise. Many of our innovators they feel that they want to take it forward themselves; but the they have a different aptitude you know, the innovator will always whenever you give order, he will improvise and give it to you. You cannot make 2 products alike; whenever the customer oh says no, but I had paid for the previous one, but the innovator will say no I have given you a better product in the same price.

Now, market demands standardization, standard products, batch to batch consistency, which our innovators often do not understand. So, that is a very basic difference when we are talking about the aptitude of being an innovator and on the entrepreneurship.

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We have a, we had run a small scheme of micro venture innovation fund. So, here we gave small loans at a very minimum interest of 4 percent without any collateral or co obligation. So, you do not have to sign or you have you do not need a calendar, you do not need a house to mortgage nothing like that.

And on top of it, if we have ample evidence that the you tried the innovation; but you failed, it turns into a grant. Now, a loan is converted into a grant, if the innovation fails and we have a genuine proof of that.

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Apart from the scheme was run during the whole COVID pandemic right; we did not visit one single innovator, but we invested in 24 such enterprises like innovations and around 50 to 60 lakh rupees. So, your trust violation are [FL] sir.

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So, I feel trust.

Chakravarty: Yes.

As a currency should be encouraged when we are talking about entrepreneurship, it is not only about currency in terms of money.

It is also in terms of your social capital, it is also in terms of the trust that you are building, the ethics that you are promoting; these students I believe are in interested in being an entrepreneur in the future. So, also think about different kinds of currencies in which you will deal with right and [FL] the trust [FL]. So, the innovators they shared their innovation with us

wholeheartedly, no question nothing; [FL] why should we ask for so many details, [FL] because [FL] innovation.

These innovations these innovators are grassroots innovators, so they are little or not educated with not, like not everybody is as rich as Dharambirji is right, all our innovators. And he was also a rickshaw puller when he started; he met with an accident, went to his home and then started cultivating medicinal plants, because the area he was pulling rickshaw in khari boali, that is the old Delhi part where the spices and medicinal plants are traded.

There he got an idea that [FL]. So, he started cultivating medicinal plant [FL] processing [FL] and this thing. So, our innovators have a different kind of journey we will say. So, MBIF approved that people can be trusted and innovations can be encouraged to become enterprises [FL].

But I will mention one of them, one from Tamil Nadu, Mister Murugesan.

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So, he makes different products out of bamboo fibers, sorry [FL] banana [FL] fibers and he employs about 350 women; previously he used to employ about 150 of them with the support he has expanded and now 350 women [FL] single enterprise and we had invested about 3.5 lakhs.

[FL] Lakh [FL] this is also a successful enterprise; maybe he is not earning in crores or something like that, but he is so many families and these are all women, [FL] employment [FL] for us that also is an indicator of success.

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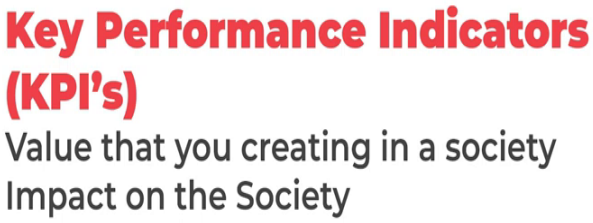


So, the second thing will be when you choose indicators or your KPI's for your success, you should also think about the value that you are creating in the society; bank balance like easy success [FL] that is one thing, so you become a unicorn or as pesticides, so you expand.

But [FL] success [FL] society [FL].

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So, that is also very important or [FL] life [FL] impact; like Mansukhbhai Patel he made the cotton stripping machine. So, [FL] cotton [FL] it does not, the bowls do not open up. So, you have to literally pull the, pull them out and for this women and children were employed; because it is a for anything that where the wages are low, generally women and children are employed.

And because their fingers are tender, it is easier for them to pull out the length; [FL] he even when he was a kid he did that. When he became an you know innovator, he completely mechanized this process; till 8th model he was not getting any success, a German student worked with him with drawings and all, because the gem Alexander knew only German and English and Mansukhbhai need own sorry knew only Gujarati right, but they spoke through designs. Now, this with this machine, child labor at least from that process was eradicated.

Chakravarty: Is it the same Aexander who studied at NID, who came to a NID.

Yes.

So, a student can like [FL] change [FL] sir [FL] employ [FL] impact [FL] impact [FL]. So, when you think about your entrepreneurial journey, think about the different values that you will create amongst different people, animals, plants, environment; [FL] environment friendly [FL], we will be very happy and very proud. So, this is a small little kind of what you say whatever I have learned from different people while working in GIAN with Professor Gupta; I did my PhD also with him, so I had a long association with him.

Chakravarty: And thank you so much.

All the best, all the best, good luck.

Chakravarty: For joining us.