

Understanding Incubation and Entrepreneurship
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Module - 05
Bio-Med Innovation and Entrepreneurship
Lecture - 11
Section - 03
The Innovation Process

So, let me go to the last part, where we will give you a little bit of best practices. Although some of these things are applicable more to the faculty, researchers or directors of institutions who are setting up innovation and ecosystems, there will be DMCs of the things which will be useful to you also.

Especially when let us say 5 years down the line, you want to create your own innovation team or maybe in your own company or you want to select a partner for helping in your innovation. These some of the elements will be will come in handy for you ok.

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Biomedical Engineering and Technology Innovation Centre



So what we do is that we look at BETIC, our lab which is called BETIC. We look at BETIC as not the inventor, but BETIC as a running partner for the inventors who are running a marathon. We look at those who do healthcare innovation and especially, some of you who are actually already doing thinking of doing that. We have the greatest respect for you because we feel that you are the ones who will win the gold medals.

Remember Neeraj Chopra, we all celebrate Neeraj Chopra, but we must equally celebrate who are supporting them to reach that place, right. That has that does not happen every time, that we have to also recognise that. So, I will give you glimpses of the ecosystem that builds winners like what we are seen earlier.

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Medical Devices Innovation **BETIC Facilities**

So, once you step into BETIC.

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Medical Device Innovation : BETIC Facilities (Sanpada)



Proof of Concept
Area

At IIT Bombay we have facilities for you know PoC building which is the first one here.

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Medical Device Innovation : BETIC Facilities (Sanpada)



CAD and Simulation
Area

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Medical Device Innovation : BETIC Facilities (Sanpada)



Electronic Prototyping Area

CAD and simulation is the second picture here, electronics prototyping, plastic prototyping, metal 3D printing and also, pilot manufacturing.

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Medical Device Innovation : BETIC Facilities (Sanpada)



Plastic Prototyping



Metal Prototyping

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Medical Device Innovation : BETIC Facilities (Sanpada)



Pilot Manufacturing

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Medical Device Innovation : BETIC Facilities (Sanpada)

COE Pune (2000 sq.ft)



VNIT (2000 sq.ft)



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Medical Device Innovation : BETIC Facilities (Sanpada)

MGMHS Sanpada (~1500 sq.ft)



We also have facilities in Pune and Nagpur, I mentioned to you and the Gait lab which I showed you earlier, those markers you can put in the body and then cameras will pick up your human movements, which is a good indicator for not only what is called as musculoskeletal problems, but also for psychological or neurological problems. And walking signature changes, if you have some may be a mental disorders, neurological disorders.

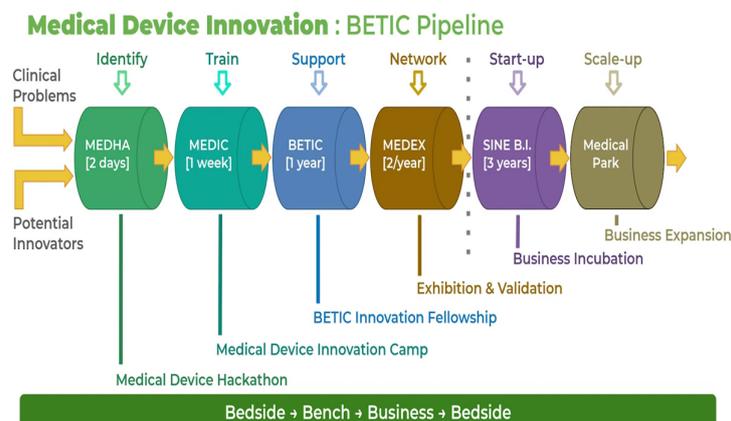
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Medical Devices Innovation BETIC Pipeline

And the best part is that we have pipeline.

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The pipeline starts from MEDHA is called as Medical Device Hackathon, which we normally do it in summer months. This year we did a eMEDHA because we could not get physical get together of people. And this is where the problem that keep on coming to us almost on a daily, if not weekly basis.

Problems from doctors saying why do not you look at this is a very important problem, those problems and many people who want to work in MEDIC or BETIC centres, we qualify these two get qualified. Because we see which problems are worth taking forward and which innovators are worth supporting forward. So, they all participate in these MEDHA.

The best ideas and innovators we invite them to MEDIC which is a 1 week intensive camp, this year we are doing an eMEDIC, but 5 days intensive camp becomes very difficult. So, a

distributed that over 4 weekends. In fact, the last Saturday that is 2nd of October was the first day of this year's MEDIC.

And so 2nd October, 9th October, 16th October, 23rd October and 24th October is going to be a finale of this MEDIC event. Very best of the best ideas and innovators will give them a 1 year fellowship in BETIC, like we mentioned the very first MEDIC which Adarsha and Tapas had.

They came from this MEDIC event and joined BETIC for 1 and half years and exhibition typically you get to meet you know investors and partners and doctors and even general public. The moment you say that it is very interesting product, we want to buy that and you and you know a you should start a company at that point of time. And SINE is our business incubator, but these innovators can go any other incubator that they want to or eventually they go to a medical park or a industry park or a research park and so on.

So, typically from a hospital bedside to engineering bench to business back to hospital bedside, we can close a loop for a low to low to medium risk device, like the stethoscope and many others we have done. We can do it now in under 1 to 2 years now disposable, but a high risk device that an implant can take you 5 to 8 years.

So, just remember that the risk as well as investment and timeline are high for high risk devices. So, for start-up companies we do not really recommend implants and class 4 devices. For start-up companies I think that screening, diagnosis, low risk, low to medium risk devices are a good bet because for investment is low we can get to the market faster as long as you are creating a good value proposition it works very well.

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Medical Device Hackathon : MEDHA



Let me just show some pictures of this hackathon, which we do in different places.

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Medical Device Hackathon : MEDHA



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Medical Device Hackathon : MEDHA



We are in Bangalore, Pune, Wardha, Kolhapur, Nagpur, Mumbai also other colleges.

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Medical Device Hackathon : MEDHA



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Medical Device Hackathon : MEDHA



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Medical Device Hackathon : MEDHA



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Medical Device Innovation Camp : MEDIC



And then the MEDIC which is currently going on, but these are the previous MEDIC. Day 1 typically we take them to hospitals, but now because we cannot take them in hospital, this time we are showing them videos of hospital immersion. Day 2 they start looking at brainstorming and how to create a solution.

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Medical Device Innovation Camp : MEDIC



Day 3 they start building the PoC's, day 4 they test it in some way and on some volunteers.

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Medical Device Innovation Camp : MEDIC



And the day 5 they pitch it to a roomful of doctors, industry experts, technology experts, investors and so on.

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Medical Device Innovation Camp : MEDIC



And these are pictures of our previous MEDIC camps, those in the front row and some was a ties obviously, are our jury members and most of them are doctors, who can give very very cutting feedback on ideas. Some doctor may say this is a great idea and the same jury panel, one doctor will say no, no we are solving it in different way and you should do like that.

And this is very good feedback in just 1 day, the kind of feedback that these innovators get is worth, you will not get the feedback even if you travel 1 month, 1 year and meet so many other doctors.

It is a very intensive kind of a environment. So, this year we are doing an eMEDIC 2 to 24 October, already started and you can watch the news in LinkedIn and other places that we will put out those pictures.

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Medical Device Innovation : BETIC Fellows



And then the winners of those MEDIC we bring them as BETIC fellows for 1 year.

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Medical Device Innovation : BETIC Fellows



And you can see the pictures where these BETIC fellows are working with doctors.

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Medical Device Innovation : BETIC Fellows



In every picture you will find one BETIC engineer and one doctor.

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Medical Device Innovation : BETIC Fellows



And some pictures you also see that patients, like the baby in the middle that was a Wadia Hospital in Mumbai and these babies who have a clubfoot deformity we helped in creating what is called as a smart brace.

So, the parents know that how to put the brace properly and the doctors can monitor whether the parents have put the brace properly, because if it is not done properly the deformity cannot be corrected throughout the life. The best time to create the to correct a deformity is in the first 3 months to 1 year up to of the baby's birth.

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Medical Device Innovation : BETIC Fellows



So, all other pictures have this doctors, engineers.

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Medical Device Innovation : BETIC Fellows



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Medical Device Innovation : BETIC Fellows



We call them as our happy pictures because it gives us a lot of joy, satisfaction, motivation to do this innovation.

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Medical Devices Exhibition

MEDEX and other events

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Medical Device Exhibition : MEDEX and other events



And then the 4th step I mentioned was to put the device in exhibition.

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Medical Device Exhibition : MEDEX and other events



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Medical Device Exhibition : MEDEX and other events



We organise our own exhibitions at least once or twice every year which we call as MEDEX, Medical Device in Expo.

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Medical Device Exhibition : MEDEX and other events



But we also go to other events like the India International Science Fair, where you can see our former Health Minister Dr. Harsh Vardhan coming to our booth, and by a time he came to the booth for 3rd time, 3rd year he was asking, so what is new this time water refresh you know he is our CEO of our BETIC.

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Medical Device Exhibition : MEDEX and other events

IIT Bombay, 2018



Honourable Prime Minister had come to IIT Bombay, we had a special exhibition from him. And you can see him seeing our prosthetic leg, which we have developed for like Jaipur like, but it is a much better much smarter device made using technology advanced technologies. Slightly higher price, but much better functionality in terms of walking Gait. And the bottom right you also see product launches happening during our exhibitions.

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Medical Device Exhibition : MEDEX and other events



So, you can see doctor Kakodkar, along with our director launching a diabetic foot screener, which is a major issue in the country that out of 6 crore diabetic patients in the country, today almost 10 percent will get some amputation of the foot toe because of a gangrene and an infection, which is it cannot, does not come in the news, but it is a fact.

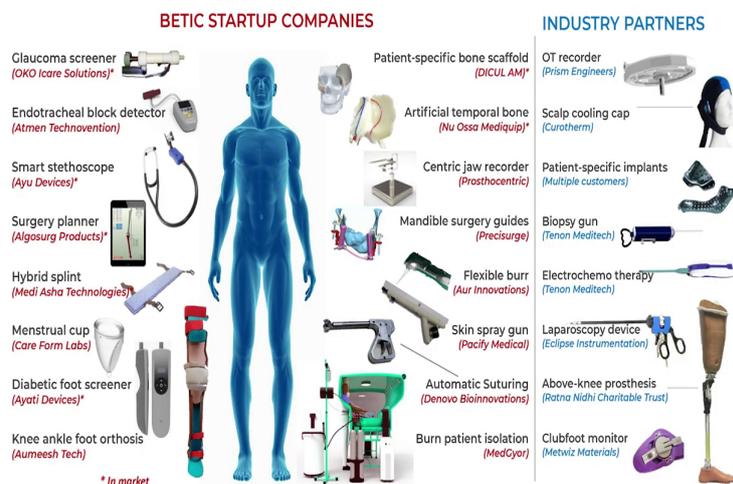
The largest number of amputations happening are because of diabetes in this country and that we want to prevent by this diabetic foot screener device, that is being launched during one of these events.

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Medical Devices Innovation
BETIC Products

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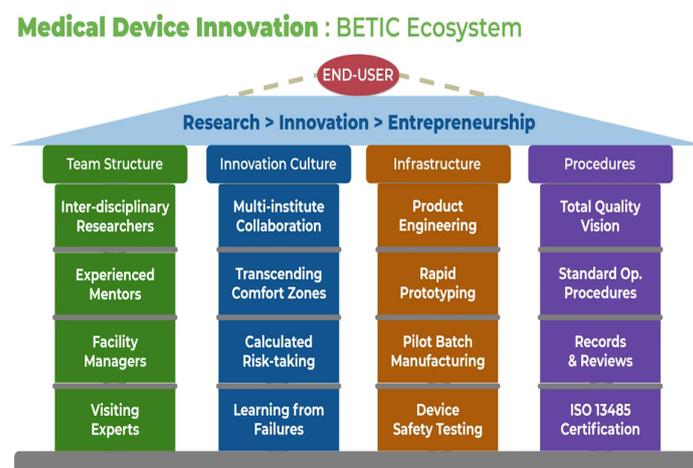
So, today we have 16 products, coming out of BETIC all these are spanning, screening, diagnosis, monitoring devices, surgical instruments, various other treatment devices, rehabilitation assistive devices.

And these are spanning also class 1, I did low risk class to high risk class and you can see the company names in red colour, every one of these has won a minimum funding of 50 lakh rupees. The average funding was 1 crore, and the maximum funding some companies are gone even 4 to 5 crore rupees of funding to go forward in their innovation pathway.

And many companies are also coming to us, these are all small medium companies, Indian companies who cannot set up their own R and D centres because of either cost or inability to attract the right kind of a talent.

So, they come to us saying that why do not you become our R and D unit, we know the market, we know the doctors, we can do distribution we know the specification of the product, but we do not know how to create the product and do this concept, proof of concept prototype and product. Why do not you do it for us? And they are so happy that they are coming back to us now, 2nd time, 3rd time and so on.

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And this we call it as a BETIC ecosystem, where we say that we need to be able to create a overall architecture of an institution, where we can take research to innovation to entrepreneurship. And for that we need four pillars, you know this for your interest and if I looking at an institution which where you want to get help, see that they have at least as many of these as possible.

So, one is that do they have a an interdisciplinary team structure. For example, BETIC we have people who have we actually have doctors in our team members, full time doctors or physiotherapists or biomedical engineers. We have electronic speaking, we have material scientists, we have mechanical people, design, software you know all these people work together in BETIC Lab and many of them are managers mentors and so on that is one critical part.

Innovation culture, when you are doing innovation you are taking a risk, when you are taking a risk there is going to be a failure. When there is a failure you want to learn from failure rather than go and become stronger and move ahead, not get this you know disappointed or disheartened by failure.

So, how do we handle failures which come out of risks which is part of innovation is a very big part of the culture, which Indian's are not really mastered yet. So, we try to really handle that in a big way.

And third is this infrastructure for you know designing, manufacturing, testing and so on and finally, the kind of procedures that we have. You will not believe that people have come to BETIC and said that you almost run like a industry, we have signed formats and records which everyone has to fill.

A doctor visits us, we give them a form to fill saying that you have a fill and sign that, doctors are surprised. When we go to a hospital they asked us to fill a form right, first time when you go to hospital to open your file.

We give a doctor to open a file in our lab, it has to be signed by the doctor and then signed by the person who is interviewing the doctor and that becomes our first step towards problem definition. Can you imagine we have like 200 forms like that in BETIC and this is part of the ISO 13485. We are internationally recognised what is called as a quality management system for a medical devices and I do not think any other academic institute in the country has that.

That makes us very easy for us to get permissions from hospitals or testing centres or government for doing this patient trials you know human clinical trials. Now, you can say all this sounds very difficult for an academic institute, that this is not the job academic institute.

You are supposed to do just teaching and research right, who is talking about these things in which academic institution. So, people actually get surprised that I even talk about these things and they say how are you even finding the energy or the resources to do all those things.

Like students I would like to just mention, sir just passing made a remark that he has this Metal 3D printing, you know this is the one of the only machines in the whole country which can do titanium implants, in IIT for example, and that to 3D printed, you have meet the 3D printed a plastic parts.

But the type of infrastructure which Professor Ravi is saying is it really takes huge amount of effort, and you know like every pillar what you see has been you know very very painstakingly built. And once the pillar is built for example, people are now using it to make titanium, you know tooth implants, customised titanium implants for the for various parts of the body. Just you know other than any other larger of course, the knee and the hip joints.

But you know customised implants can come out of the advance more, he showed this whole big picture of multiple facilities. But I thought I just mentioned this one facility which is you know which is one of the toughest materials and it goes through a huge process of sintering and you know powder.

But just to you know highlight that point of infrastructure, I was just telling Ravi that a lot of my own friends, you know across institutes also get very very surprised. And you know it is you know the way you know the whole pillars have been built, the way the whole methodology has been built, we got to follow that now very rigidly in our 8 days of you know engagement where we are going to show you different incubators.

But you are free to you know also think about how, whatever you come up with. In fact, I have opened it, earlier I said we will do toy and game, but now I have opened it up I said, whatever you want to, but you have to build a team of 5 people.

But you know again back to you Ravi thanks, I have I could not stop myself because you just made a passing remark on the metal 3D printing. But I know that I put afford to put in for 2 full years to get that machine up and running, next to my lab and un you know just to get inspiration I go there and watch some of the prints a printing going on and it is really a fabulous initiative yeah please Ravi go ahead.

Thank you for mentioning that. Actually we are using that to do research in one area which has not been done anywhere in the world also, which is maxillofacial implant. Many road accidents the face get gets crushed, sometimes our eyeball get, eyeball is intact, but the bone under the eyeball get crushed and the entire eyesight becomes you know unbalanced.

So, there is something called as the orbital implant, there is something called a your many cancer patients that Tambaku, Gutka cancer patients you might have seen in TV or advertisements, one whole side of the face is gone right. We have to rebuild the whole thing using and we are using this research to look at reconstructing facial bones you know, that is a maxillofacial is what is called as. So, this is all tough.

Yeah again (Refer Time: 14:58).

So, thank you for saying that.

Yeah.

Now, again just we have would have again mentioned to you very important thing, you know Professor Ravi's first PG student worked on this full issue of how do you identify the

benchmark and how do you get the scanned image of your bone from this side to map it on this side. There is some 3 to 4 PG students who worked on it.

So, it is not coming just out of nowhere, it is coming out of deep research you know and all those teachers are there, are now you know those same PG students are now you know heading institutes in Singapore and other locations and you know taking the BETIC story forward.

But even you know just now that you know sir just mentioned that the 3D printing the you know the facial, the maxillofacial bones, but to do that that type of research which is at the back you know his you know a phenomenal amount of knowledge which has been built.

Now, thank you for saying, because what I want to say next is precisely that. How do you put the whole things together? You know it is not just facilities, but also people, but also culture. And the people many people who come to our lab get surprised, they almost say that we do not want to leave this place.

And I say how do you do something like that? I say the secret is very simple our focus is not on buying machine or not on you know getting some award or not on you know writing a paper or getting a promotion or something like that.

But we are always saying and we tell that to every team member who comes (Refer Time: 16:20) that focus on the end user, think about that poor patient in the rural area who is cannot afford a treatment or cannot afford a diagnosis, simply because he is in a wrong place or has a wrong income you know structure.

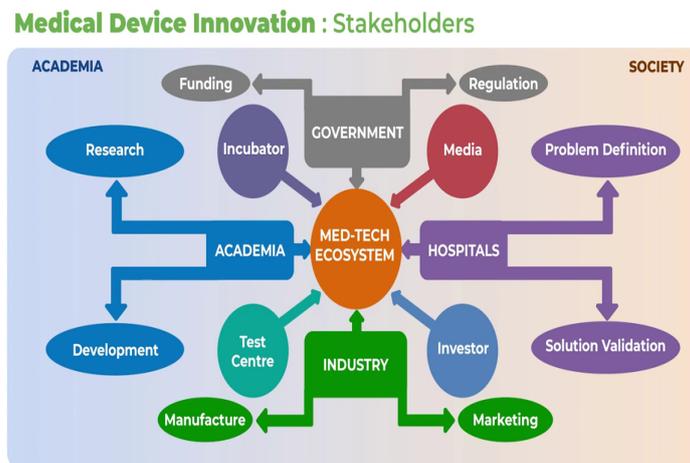
So, we say that if you focus on that, the end user who he want to really help and benefit. Somehow all the things magically fall in place, it may take sometimes months it may not happen in days and weeks.

But in some time it has happened miraculously we thought about a very critical problem or a resource and there is a magical phone call and then person other end saying that by the way we invented a new sensor, we are looking at someone can try it out and we are looking at a sensor which needs exactly same specifications.

So, these miracles will happen if you are what I call is purity of purpose in terms of really helping the marginalised poor people, I think you know some of these things fall into place.

I want to share that which is unscientific, but I want to like you to try it out and see that can you take on a problem which others have not taken, just because there is no money or business into the whole thing, but somehow magically everything falls into place. Just try it out sometime in your life and that I want to end with one more couple of more points.

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One is that when you say stakeholders and we academia, we represent Academia. In medical domain it is very important to have the three other stakeholders, one I mentioned all the time which is hospitals, I also now mentioned industry which is both start-ups and industry and government.

Government plays a very critical role because they are the ones who give us funding to create, buy these machines, build these labs you know give pay salaries, not very high salaries, but some salaries to these fellows and all that. And the medical device regulation which I mentioned also. Academia we typically we do R and D, Research and Development.

Industry typically does manufacturing and marketing if your R and D is complete properly. Handshaking between your prototype to product has to be proper and then the hospitals where we go to identify a problem and we go back to them to see whether the solution is proper or not, these are the four critical stakeholders in medical device innovation, but does not stop there.

We need four more people, we need incubators where the start-ups can start, we need testing centres, there are very few testing centre in the country accessible for start-up companies. Big companies have their own testing centres, but start-up companies where will they go from mechanical safety testing, electrical safety testing and so on? They these centres cost crores of rupees to setup, we need investors to put money in this you know in this area.

Investors are putting money in B2B and eCommerce and FinTech and everything else, but healthcare it is still it is slowly increasing, but it is still not there. And finally, even media has to play an important role, they have to highlight stories of this innovation, how they are making a difference it is happening again.

Now, it is happening, but in the beginning 5 years back healthcare start-ups were nowhere there in this whole ecosystem. But now we are seeing very good traction in all the 4, all the 8 fronts.

And last I would like to share with you how do you decide what you want to do in life, if you are decide to do entrepreneurship is it right for you or not that is the first question. If you want to really do entrepreneurship and create your start-up company what problem you should solve or what area you should work on that is one decision point.

And once you decide to do a start-up in a particular area, let us say a healthcare start-up or the screening device for cancer anything else you want to look at you decided that how do you select the team members for that ok.

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So, this slide will answer your these questions. This is loosely borrowed from a Japanese concept called Ikigai Ikigai in case you want to look it up, but here is my version of that same Japanese concept.

So, its based upon answering four questions to yourself. Close your eyes or go sit in some quiet place think about what you really love to do, think about what you are good at doing, think about what will get you some money. Because finally, life cannot be run on charity you have to earn some money and finally, what the world needs ok; these 4 things. If you look at these four questions and you want to also look at how do you know the answer to the question I am giving you criteria.

You know that you love to do something if you forget food and sleep. You are just cheerful, it just keeps you engaged you just do not want to stop doing that is what it means that you love to do. What you are good at doing? How do you know that? That is what your degree is, that is what you are trained into, that is what your experience you know. That is what you are good at doing.

What you are getting paid for is your salary coming from that and someone is giving you a cheque or transferring money to bank account and what the world needs is give you some contentment when we do something what the world needs you feel a little happy inside ok.

Now, let me cross these and get you 4 more sectors. What you love to do and what you are good at doing is what is called as passion and just I put a picture so that you can connect with that in your mind. What you will are trained to doing, what you are good at doing and what where your salary comes from is a profession. He is one great doctor from South India again.

And what the world needs and the and what it can be paid for? The same doctor teaches biology to his other kids in his building, in his spare time on weekends and the parents do not mind giving him some money or maybe taking him out to dinner, which is money in some form that is called as vocation, again there is one more example on that.

Who made vocation into his full time job and what the world needs and what he loved to do is what is called as mission. The trick in life is to find something which connects all the four sides if you can find that and if you find that early in life, yeah you have you can achieve

fulfilment you know way before others have. And this fulfilment cannot be bought by riches or comforts or good words of phrases from people, this is complete inner fulfilment ok.

So, find out what is it that you can do that connects all the four sides. And once you decide what you want to do find out others who connect with you on a similar fashion. This helps you to answer both these critical questions often.

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Reflection Point
What is the biggest bottleneck in Med-Tech innovation?

- Academic Mindset
- Biomedical Safety Testing
- Conflicts within Teams
- Design and Simulation Facility
- Equipment for Manufacturing
- Finance for Scale up

So, that is the end of my last part and of all the things and maybe I want to leave you a thought with you in Med-Tech innovation in general. What do you think is the biggest bottleneck or a challenge which preventing the success stories to coming out, is it that we have an academic mindset?

By academic I mean as students we just want to learn something, earn your degree, get some high marks and get a salaried job. Is it the academy mindset from student side? And teachers just want to simply teach what is in textbooks.

We classically said textbook to blackboard to student notebook without going through anyone's head or heart ok. Or is it that or is it that safety testing is an issue or within themes there are conflicts between the founders, is it that facilities are there maybe manufacturing equipment facilities are not there or finance is not there, I mean or anything else that you feel that important. I just want to leave you with this question and we can see what answers you give.

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Research - Education - Innovation - Entrepreneurship



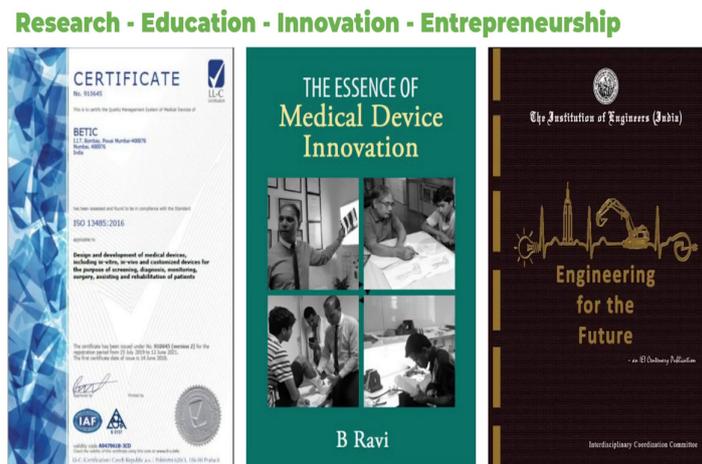
The screenshot displays the website for BETIC (Biomedical Engineering and Technology Innovation Centre). The header features the BETIC logo and navigation links: About, Partners, Services, Impact, and Events. Below the header, a teal navigation bar contains icons for Purpose, Journey, Team, and Resources. The main content area is titled 'About BETIC' and includes a paragraph of text and a photograph of a building.

About BETIC

Medical devices are critical for healthcare. Indigenous development of novel, suitable, reliable and affordable devices leads to social impact as well as high-value jobs. Since its inception in 2014 at IIT Bombay, Biomedical Engineering and Technology Innovation Centre (BETIC) is building the necessary eco-system by connecting stakeholders – government, academia, medical community, industry, investors and facilitators. The team met several hundred doctors, identified 400 unmet needs, created 200 novel concepts, and filed 50 patents. Further, they developed 20 devices, incubated 15 startups, licensed 5 products to industry, and launched a few in the market.

And I will leave with one last slide about this is the contact information. If you want to look up BETIC dot org, you can look at it.

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So, that is a ISO certificate for our lab, there is a book called Medical Device Innovation where we have written stories of the 16 start-ups, but book is right now out of print although thus the e-version is there on Amazon, the hardcopy is sold out.

We are writing the second addition of that, hopefully earlier next year it will come out. And then we have few other places where BETIC as a story, BETIC as a best practice or BETIC start-up companies as the case study. By the way one of the BETIC start-ups there can be a Harvard case study, which is one of the very rare distinction honours for an Indian company to feature in Harvard case study like that.

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Conclusion

R.E.INV.ENT

So, this is our take on the connecting research also with education and that is why we call it as R.E.INV.ENT. Reinvent yourself, reinvent the country, reinvent academic environment. But I think we have a long way to go to do this, in the next 5-10 years if you get it right, I think our country can be really very not only economically powerful and create a good standard of living, but also create a good quality of life.

So, I think we have to marry these both standard of living with quality of life and we can go do that, I think we all will be very very content and fulfilled nation as a whole, but thank you very much.

This is again very very inspirational you know to of course, all our students including me, your last slide was fabulous about you know what we set out as a goal in life that was really nice. So, they are mentioning that you know the, you know one should be able to see the goal

of their start like in front of one's eyes so that he or she might get a proper encouragement to run.

That is one student, the other students saying academic mindset, setting a rigid goal is what another student is saying and then you know and one student saying that academic mindset of the institute and also at the same time perseverance of you know people about students outside the institute. Perseverance of people about students outside the institute. So, they think that the students in the.

I think the person and they might have meant also perception of people about (Refer Time: 25:42).

Yeah not perseverance, it could be perception. Atharva did you mean perception? Atharva is.

Yes, perception.

Atharva is a student from Anant National University, they also have some very very interesting projects going on in the innovation studio. So, now Atharva we no long in going innovation, we are doing entrepreneurship right.

Yes, sir.

No, you know I want to make a couple of comments here, you know. One is that now the Professor Chakravarthy has opened up the areas, one of the areas which is in your opinion going to be very hot in 5 years time. So, if it is a good time to put your mind and feet firmly on the ground on that and pun intended, this is going to be AgriTech. There are lot of people now I am seeing that very good IT engineers, they are thanks to pandemic and thanks to this online sessions like this.

They are now you know can you believe, in cities like Bombay and Bangalore and Pune and other cities the house prices and rental have come down. Which means the people are going

back to their hometowns and when they go back to home towns they all have their independent houses and kitchen gardens. They are looking at the possibility of creating their own kitchen gardens everyone.

You know AgriTech in general and AgriTech for professionals, kitchen gardens in particular are such a hot area that I think you can if you put technology into that that is one great thing, that is one point I want to tell you. The second point I would like to add that yes, the perception about people in general you know it used to be parents first, be parents who say why are you doing innovation entrepreneurship get a salaried job, play safe, get married you know things like that.

Now, I can see many parents and I am not talking about IIT students, many other parents are saying 1 year you do innovation entrepreneurship we will not come in the way, if you want even 5 lakh rupees we will give you know for your basic running costs. If you succeed no one looking back everyone is happy about it.

If you fail in entrepreneurship believe me the kind of things that you learn in that 1 year of failure, the kind of confidence that you get, the kind of capability that you build makes you enormously valuable to the next company that hires you.

So, there is no failure in the entrepreneurship, you either succeed or you learn right. And that is now being understood even by parents, so they are also encouraging the children to do that. I want to add one third point, you are from IIT Hyderabad, we are from IIT Bombay and so on.

But believe me out of the 16 start-up companies that I have showcased you, 70 percent of the founders are not from IITs, they are not from middle class families, they are from low middle class or poor families ok, small towns rural areas.

The kind of passion, the perseverance. Now I use will use the word perseverance, they stick to the problem they understand the problem, they have seen the problem being chased by their own, I mean family or neighbours or the local community. They want to solve it no matter

what, that kind of commitment actually takes them over multiple hurdles including a hurdle of communication.

They do not even know how to talk properly, but the moment they start speaking everyone in the room knows that this guy is someone to bet on you know, does not matter whether he can speak or not. The passion shines through in their eyes and gestures and so on.

You just remember that when you pick partners, pick partners who are themselves going to be committed to the problem, the goalpost is not a start-up company or money or whatever or a unicorn which is fashionable these days. But to solve the problem, big problem for a large number of people everything else will fall into place.

So, I wanted to ask if BETIC just deals with the physical health care of a person or it also deals with the mental health care? Because, that is again a some different domain that you will touch.

So, BETIC does not deal with this or that, BETIC deals with the doctors and innovators who want to solve a problem. So, we have seen, we have done head to toe.

Yeah.

So, there was a recent company who came and said that can you develop a deep brain; deep brain stimulator or deep brain some device ok. Now, we have no clue about deep brain or no clue about (Refer Time: 29:37).

Exactly.

But then the company also brought connections to the neurologist and we have our interactions on the hospital. So, we went around saying hey anyone is interested in that problem. So, we got that and then we have to also need someone who will work on the problem for next 2-3 years. So, we reached out, so through this MEDHA hackathons and

MEDIC camps we get people right and some someone gets interested in the brain problems, brain cancer problems.

So, we our always, our goal is to build a team of a doctor and an industry in this case and an innovator who want to solve a problem. For us it does not matter what problem we are solving.

We are not particularly into, we are domain agnostic which means that we will solve a problem in any domain as long as problem is good enough and the team is there, value proposition is there and it is possible to put it in a market in the next 2 to 3 years.

You saw my 4 criteria right.

Yeah.

Proof is that we are we are fine with that.

Yeah.

In fact, again it is you know commitment and the perseverance and of course, the passion. If you come in and you are ready to commit to work, when you are ready when you ready to work things happen.

Yeah.

You know like until there is a possibility in every problem you know, we see a solution. We have learned all the dimensions of how this things happen at multiple levels, at a personality level you know you talked about you know like how the how they need to commit themselves. And at a methodology level we have the 4 Ds and you know it is really wonderful and thank you so much Ravi for this lecture.

Fantastic; no thank you Chakravarthy for inviting first of all. All the students everyone in the room good luck to you in finding your vision and may you succeed in that. Even if some good news that comes out of your life of this whole thing we are always happy to here. That is our true currency of teachers, it is not a salary, but what our students do is what makes us rich in that sense.

Thank you very much. Good day to all of you.

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