Understanding Incubation and Entrepreneurship
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Module - 04
Paradigm Shift from Design to Entrepreneurship
Lecture - 07
From Users to Customers: Solar Oven Case-study

Yeah.

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So, Avinash please start your presentation.

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Yeah. So, yeah as Love sir said it is a journey and what we come through. Like it beginning as a designers we started with idea and it will be hit in the market, but you know as we goes and then we came across you know entrepreneurship that completely changed our perception about entrepreneurship and designing as well.

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So, let us see from the beginning this was a basic idea we had in our mind, that is like there is a box type solar cooker there is a existing product and there is a users we had in our mind that is high rise building users.

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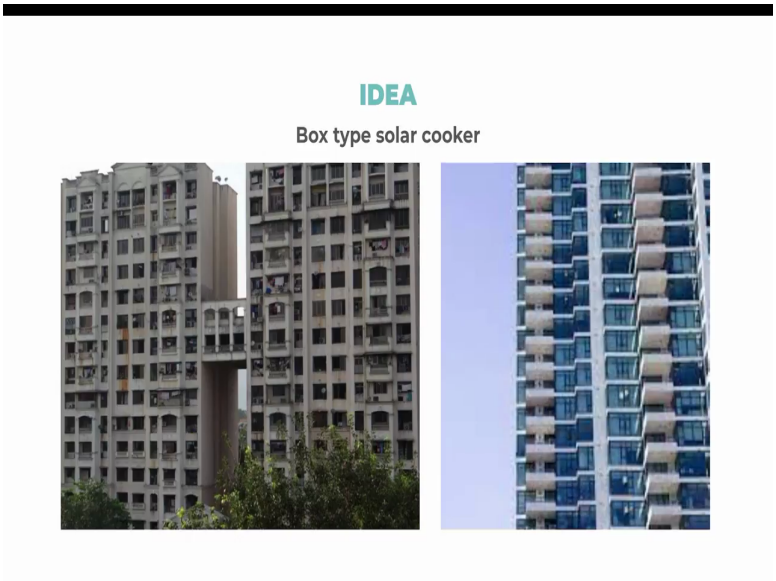

And how could this product this people or this user segment could work, because you know they are not even using the solar cooker at all.

So, Professor Chakravarthy has come up with the idea that, let us have this product redeveloped. It was our P2 project that time, when I was a student and how this product can be you know redeveloped for this user segment.

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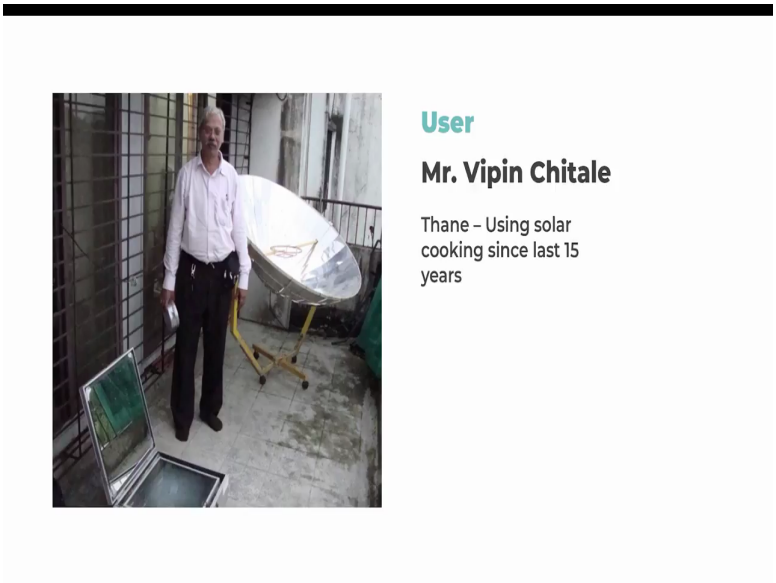

So, like we were into like user research and visiting different areas of Bombay and Thane and luckily we got this user and this is change our complete perception about, you know how people are using solar cooker in high rise building or in metro cities.

So, this picture actually tells you that this guy is having a big balcony in his flat in Thane area. And he was using that parabolic solar cooker and you know box type solar cooker heavily. I stayed there I had lunch with them and they told me a nice story that they are using solar cooker last 15 years and they were saving LPGs on you know because of using solar cooker and the taste was phenomenal I had lunch with them.

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And that change of perception and that change our focus as well. Because then in our mind these users could be every metro city living guy, who needed this solar cooker box. Because how this guy is using the solar cooker everybody could use it and then we are started you know getting behind this idea and how can we develop the solar cooker for this user.

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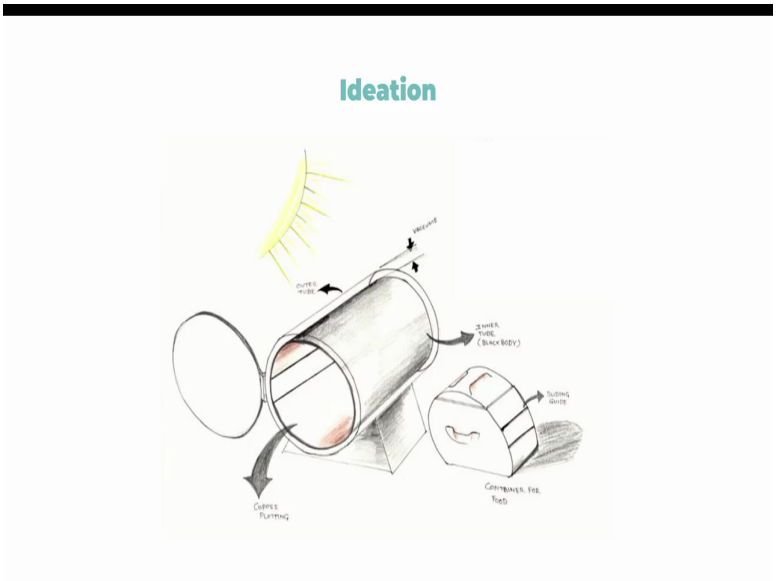

So, basic idea is like you can blow up the glass tube which is having a vacuum in between and you can put the food boxes inside and then you can start cooking.

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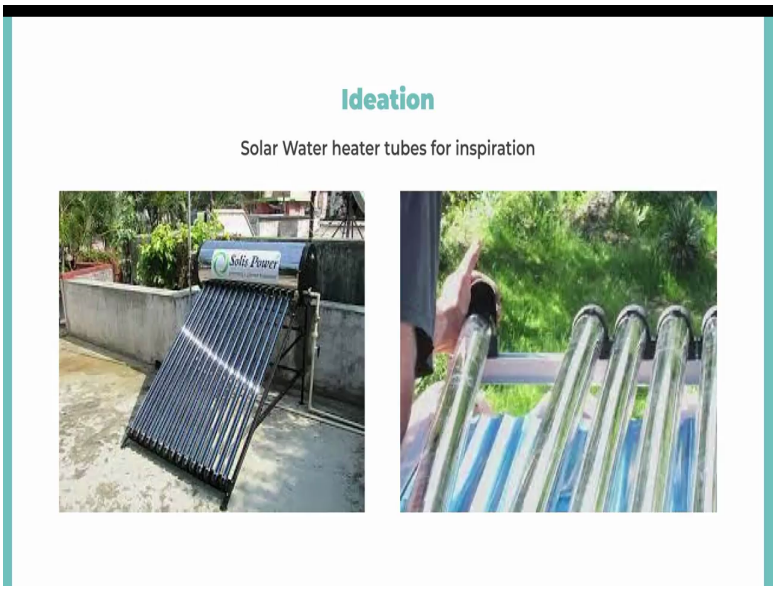

This was very basic idea came from you know water heater solar water heater tubes and we thought this could work.

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And we had a basic mock up model ready we just used a Bislery bottles cans and you know glass jars for it.

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And it worked we started getting temperature inside and it was phenomenal.

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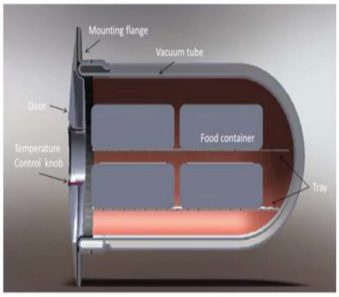
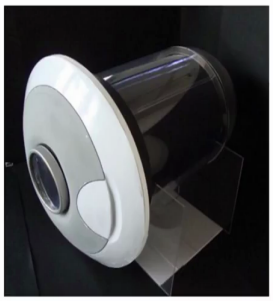
Concept

Non-working conceptual design





This was the you know final concept which I submitted.

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A solar cooker which is mounted in the window which could have a rectangular interface as well, and it was a non working conceptual design which I made in that time.

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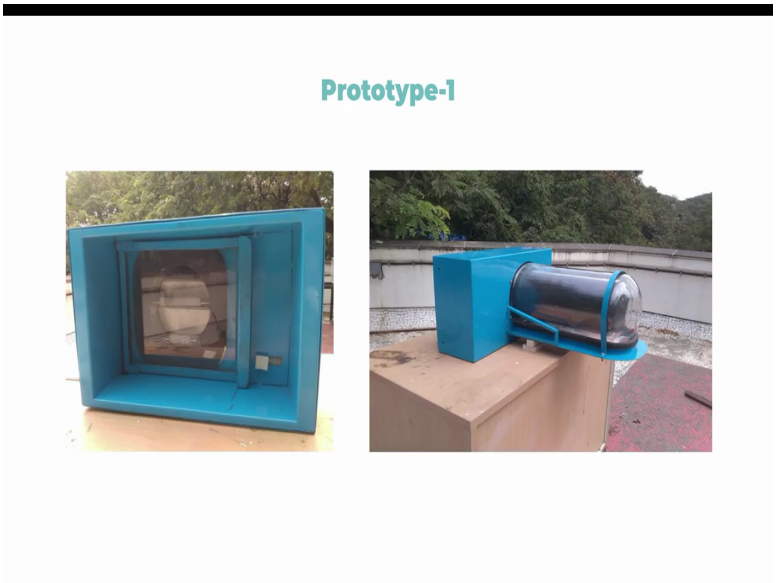

So, yeah then started working on you know real product which could work and which would show us a result whether it is working or not. The technology is right you have a two layers of glass in between you have a vacuum, sunrise coming inside and it is getting heated up. You know heat traps inside because vacuum is perfect insulation, everything is in place everything the technology is saying the physics behind it is everything perfect.

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But this prototype it miserably failed, like we did not got any result in this and we were shocked that how this is happening. Because physics is right technology engineering is right and what we where we failed and we not getting any you know result out of which.

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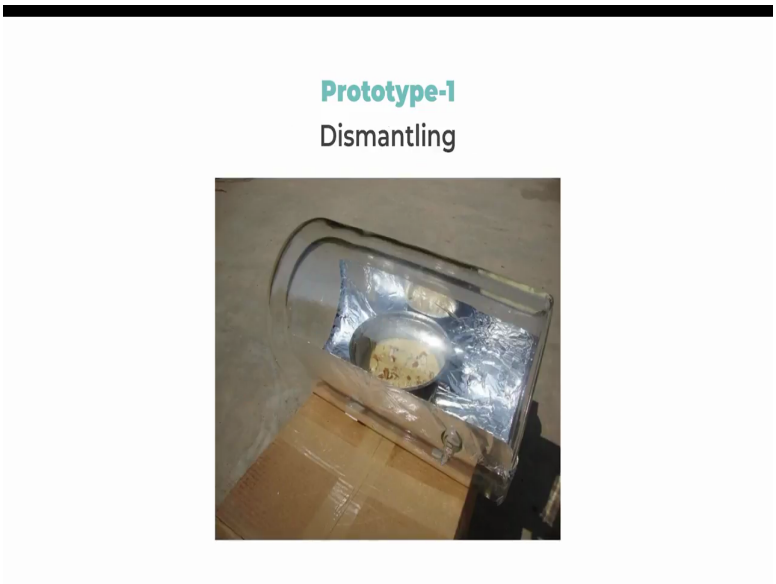

So, what we did we just torn apart that first prototype and we just put a reflector underneath.

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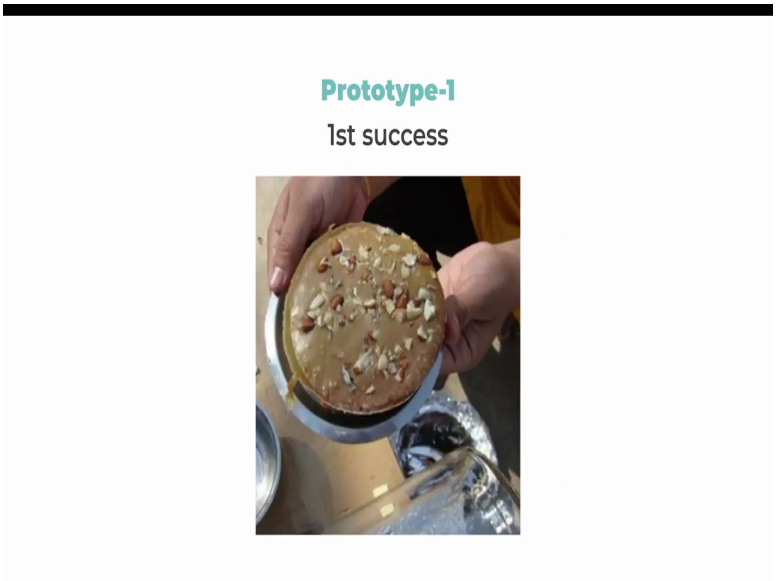

And then here it is like we our first success we able to bake a cake in it. But in not in Bombay but in my hometown Ahmednagar, where the plenty of sunlight available that time.

So, what we discovered here is it is not about you know technology it is not about our perception what we thought initially that engineering could work. But there are lot of things due to this prototype we learn a lot and then we started developing a different different.

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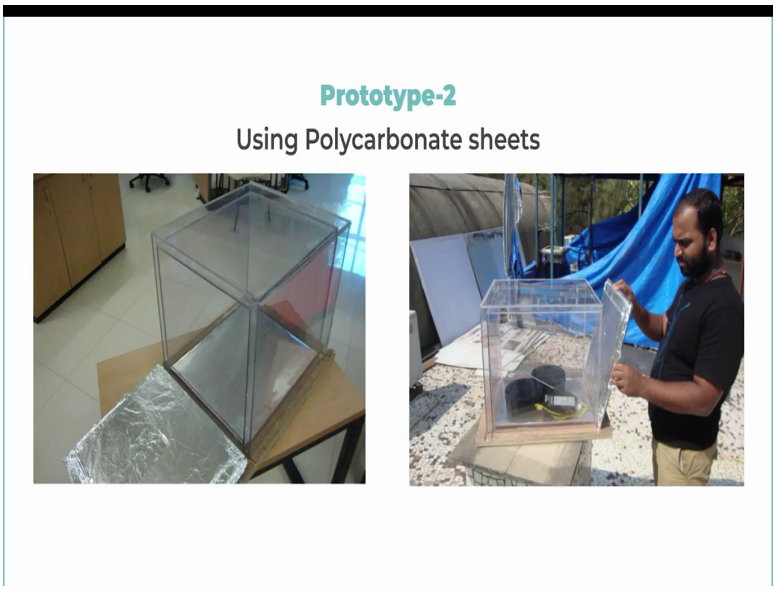

Because obviously, glass is very dangerous to mount in the window particularly in very high rise buildings in Bombay area or any metro cities. So, we started you know shift of focus to the material where we started using polycarbonate boxes.

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So, here you can see a multiple prototypes where we tested this theory, whether polycarbonate or glass which is the best material for our products.

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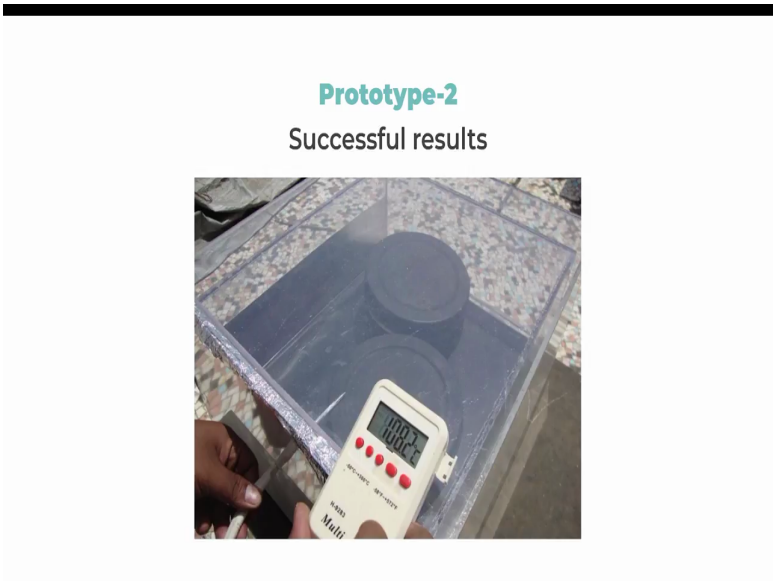

So, this box type these boxes actually gives us a result and we started cooking, then later on in the third prototype we started working on acidic. Let us say let us say I have a if we are using a polycarbonate there are different different methods to use the polycarbonate sheet.

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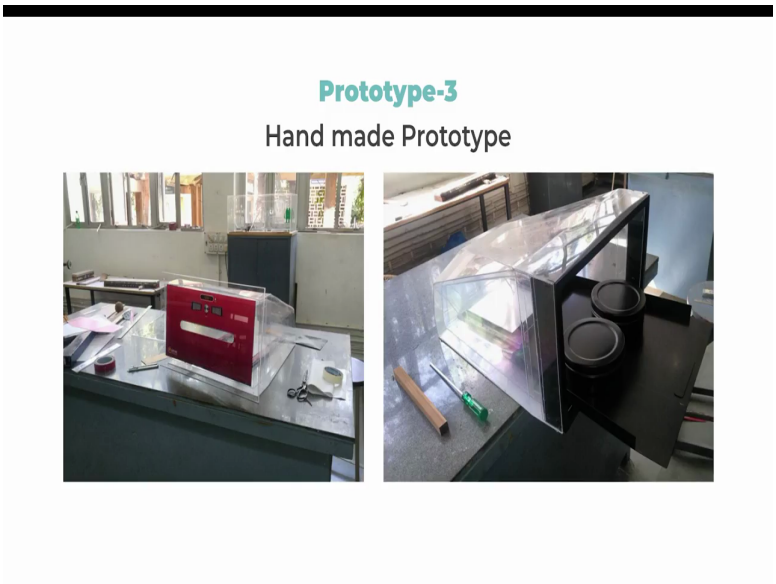

And this is very first hand made products which we made.

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This is for the presentation at Rashtrapati Bhavan in 2017 I think. And we presented this idea everybody loves this idea, that how it is going to fit in the window you can you know open the vents to control the temperature, you can have you know interface like a oven microwave oven nothing like a traditional solar box type solar cooker.

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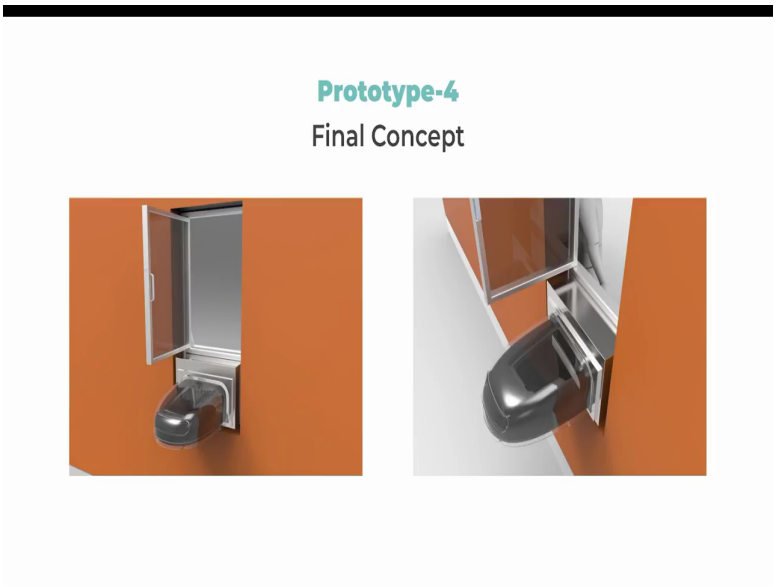

So, we were happy and we were like going about it and we developed this prototype which actually you know we use the vacuum forming manufacturing techniques and we made these products.

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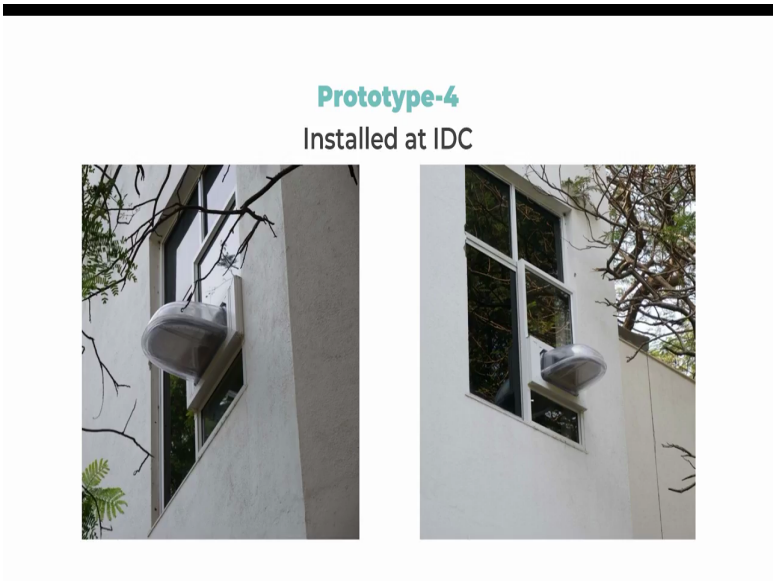

And we every day we are having lunch in this solar cooker we cooked our lunch in the office you could see in the IDC if you come.

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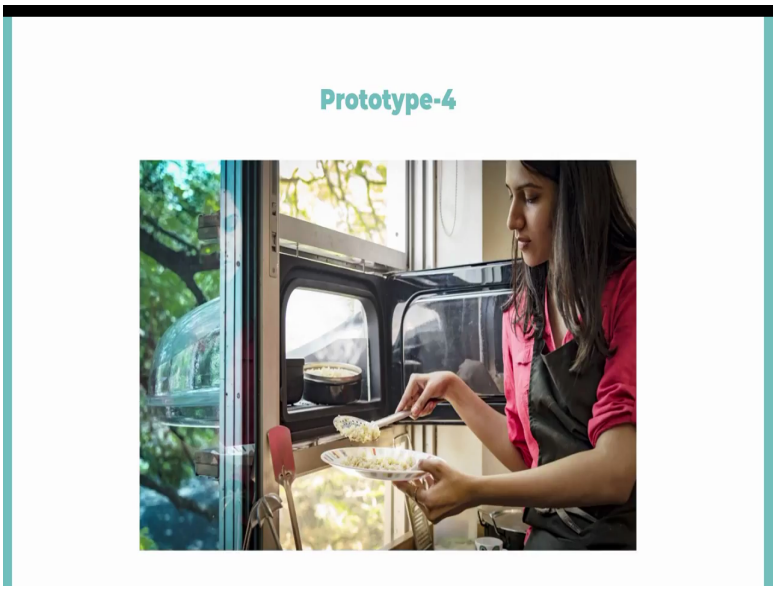

You can you know start cooking and use it.

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But what happen there are like when daily we are having different different tastings we use to cook different cuisines, like there are different dal rice, cakes, chicken, non-veg and vegetarian dishes and we were you know that is actually giving the results.

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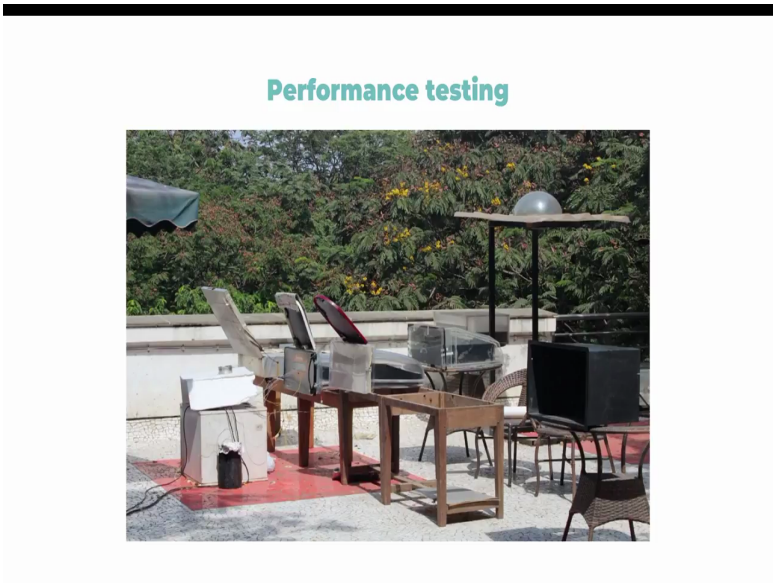

We actually you know set up a lab engineering lab you could see a lot of wires and sensors over there. And we were keep kept on trying and innovating on it the what kind of food boxes will be there, what type of coating will be there; whether adding the mirror and adding the reflector will enhance the you know its capacity or efficiency.

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We hired actually renewable energy students interns to research on it and how it is working and what physics behind it and how it is. We actually compared it with the traditional box solar cooker and we are getting very phenomenal results compared to traditional box solar cooker.

But one thing here we are forgetting you our users. We still had that user in our mind that Mr.Chitale who had a big balcony and using his solar cooker and we thought everybody will start you know buying this solar cooker and use this solar cooker. But we never thought what is the motivation behind using that solar cooker to Mr.Chitale actually.

And it is not about the technology if it is working, it if it is you know high efficient and innovative. What is the user perception behind using the solar cooker, that we forgot and we

kept on you know inventing and innovating on our product and we thought we have a brilliant product in our hand.

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We went into Ahmedabad there is a food festival and for our surprise like in Ahmedabad if you see there is a it is a big city, but not like a Bombay. There is a very few high rise building, but there are you know different different apartments and bungalows over there.

So, individual houses over there and people actually using it with because there is plenty of sunlight over there and they liked it. We also presented our solar cooker in Bombay area, but only enthusiastics are approached us and then said they were very happy to see a new kind of solar cooker, but they are suspicious about using solar cooker in Bombay area they said like [FL].

So, these kind of questions we are getting from Bombay people, but in Ahmedabad everybody was like wanting solar cooker [FL] fit [FL]; when it is it will be available in the market and they were jumping on it.

So, then we started thinking about like whether this is for a high rise buildings or metro cities or whether this is for Tier 2 cities or where you know people have a terraces and whether they are actually in a from the initially they are using solar cooker traditional solar cooker and whether they will replace this solar cooker with their traditional one.

So, we were wondering and then we started you know professor Love Sarin was there and he we started idea program. And very first question he asked like what is the motivation behind using the solar cooker, who will use the solar cooker. So, basic pitch we wanted to develop and you know.

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Notice what he said right the motivation the pitch and what is this pitch you may have heard maybe in the lean startup session by DDC.

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So, the pitch thing the value proposition why it is valuable to the user. You know when we think about that many times the common mistake that we do is, it is fast or it is economical or the design is good.

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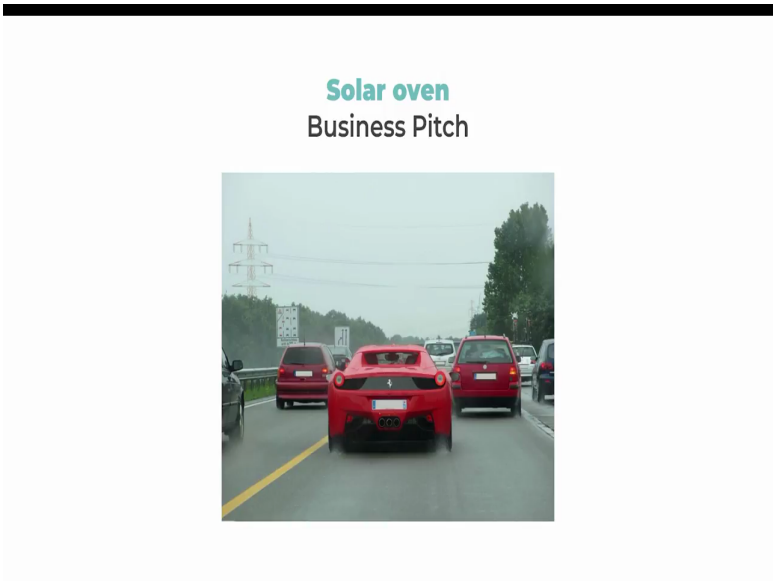

But if I get a fast car maybe a Ferrari or whatever and I have to drive from where I live in Palava to Powai where I have to go for office. And I get stuck at Shilphata for 2 hours what is that fastness going to give me? What is the benefit I am really getting out of it?

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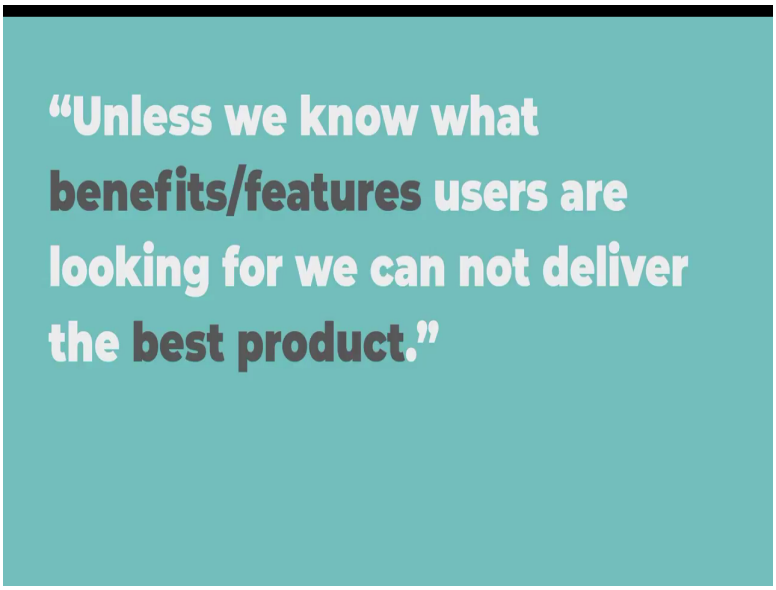

So, unless we know what benefit the customer is looking for on this drive I am not looking for a fast car, there is no way I can drive fast my current car cannot drive to its full potential right. What I am looking for is maybe comfort, that I have to sit for 2 hours in the traffic can I be comfortable there right.

So, the benefit is what is the most important thing, some features may be there for one customer to give them one benefit, some features may give another benefit to another customer segment.

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So, different customer segments may want different benefits you know quickly I will take an example a pen.

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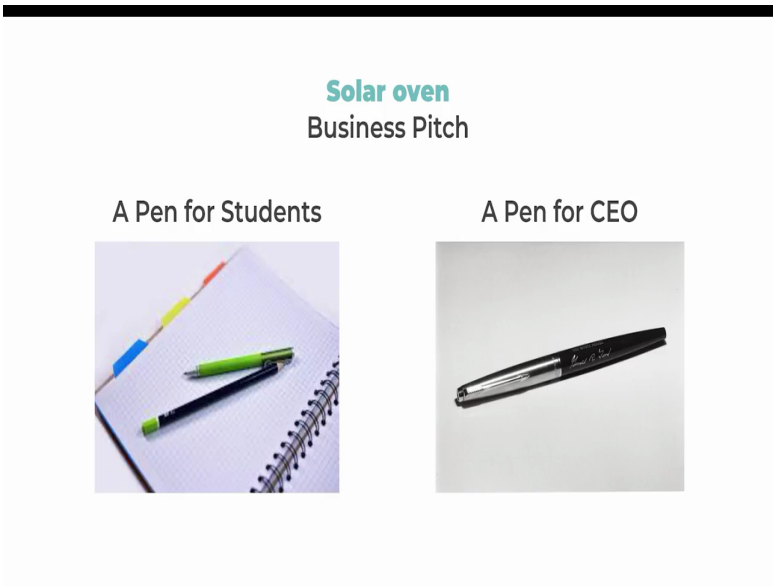

A pen for a student serves very different benefit then are pen for a CEO, who is meeting with you know Prince of Qatar to sign an MoU in front of press right.

So, they need very different pen and different features to deliver that benefit that they need you know to either just do a writing or to actually show off and all that. So, Avinash yeah please go ahead.

So, these basic questions we started asking our users, we started meeting you know ruler area users, we started meeting Tier 2 cities users. So, here we decided we finalize the pitch and we decided like going with the semi urban and rural areas, where actually people are concerned with the you know fuel cooking fuel.

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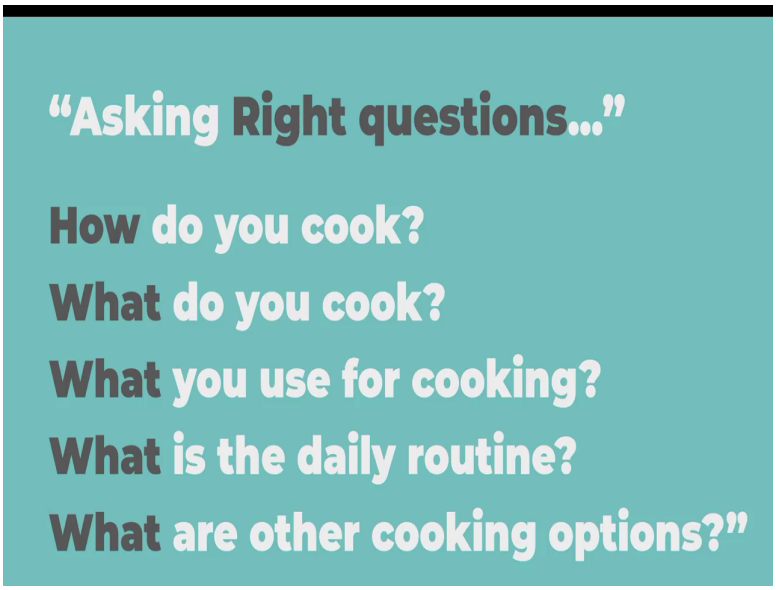

And we started asking these questions to the users we are not directly asking them. Do you know solar cooker? Or will you use the solar cooker? Or have you used the solar cooker?

The basic questions behind should be its like what they you know used for the cooking? What are the options they have? What they cook? How is the daily life they are going you know the day to day life? Why they buy the solar cooker? Why what is the motivation behind it? What is the problem they are trying to solve? So, these questions we started asking and we get only one answers.

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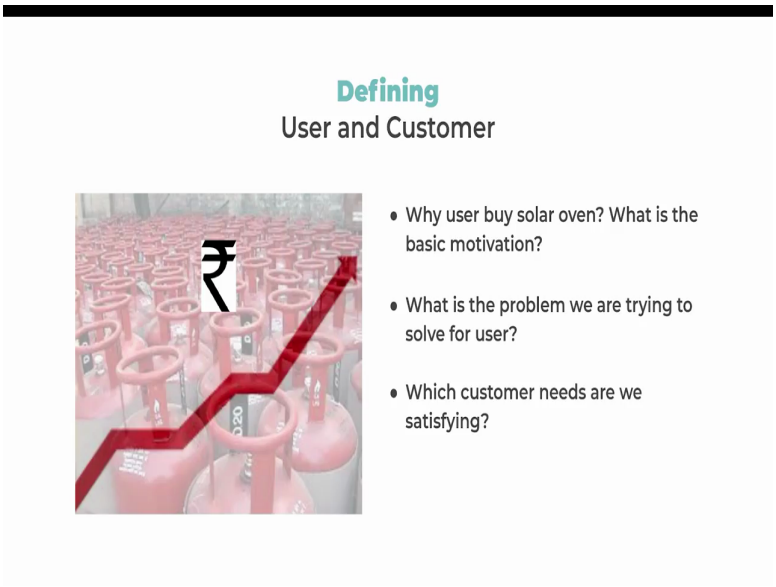

That cooking fuel cost is rising. That is the very basic motivation behind it. If there is any other option to them which can save their LPG gas cost, that would be phenomenal that they would like to try and work it out.

Because we cannot directly replace the LPG stove because it is very convenience. Specially people who lives in metro cities and Tier 2 cities those are going on day by day using the LPG. It is very convenient, you can you know anytime you can start cooking you can cook anything on it.

So, it is definitely not replacing the solar cooker which we had, but if we started using half of our cooking time on the solar cooker because they have plenty of sunlight in you know

available. They definitely save their LPG cost up to 40 to 50 percent and they can recover their cost within 3 years of the solar cooker.

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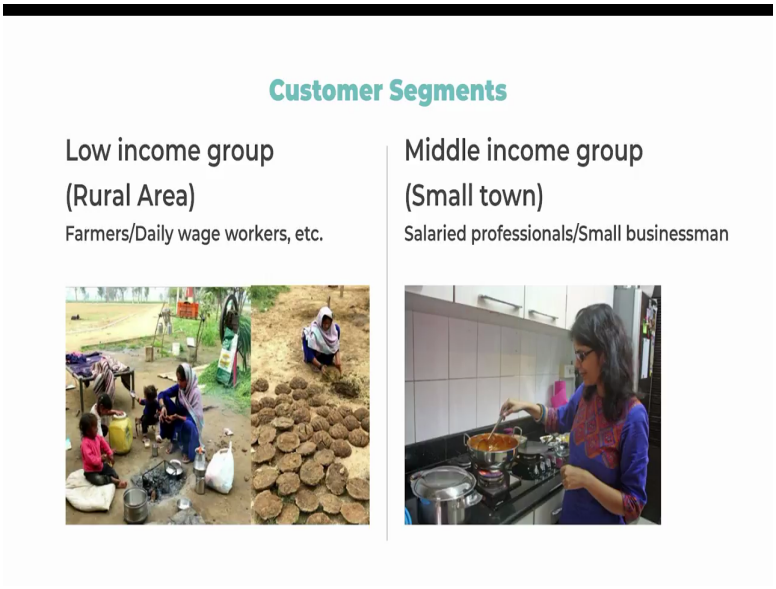

So, that we started using and what customers needs actually we are satisfying. So, that is also the very big questions we started asking and to our surprise we actually started focusing shift our focus to rural areas and Tier 2 cities and middle class and lower middle class income group, who is actually concerned about the LPG cost raising.

So, you can see the low income group in rural areas who actually does not have any fuel cooking fuel options for them which is like you know.

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To collect the woods or to collect this rural area persona if you see, they use to go you know 15 to 20 kilometers away in the jungle to collect the woods. And it was like hectic task to the woman and it actually task of a woman who she use to go get up early in the morning or like doing all the chores in the day.

But for this particular task they have to spend like 3 to 4 hours in the jungle that is very dangerous. In other hand in the in the in the middle income group you can see they using the LPG stoves, but they are also concerned and alarmed about the LPG cost raising LPG cost.

So, these groups actually motivated and they are looking for you know option for LPG or cooking fuel.

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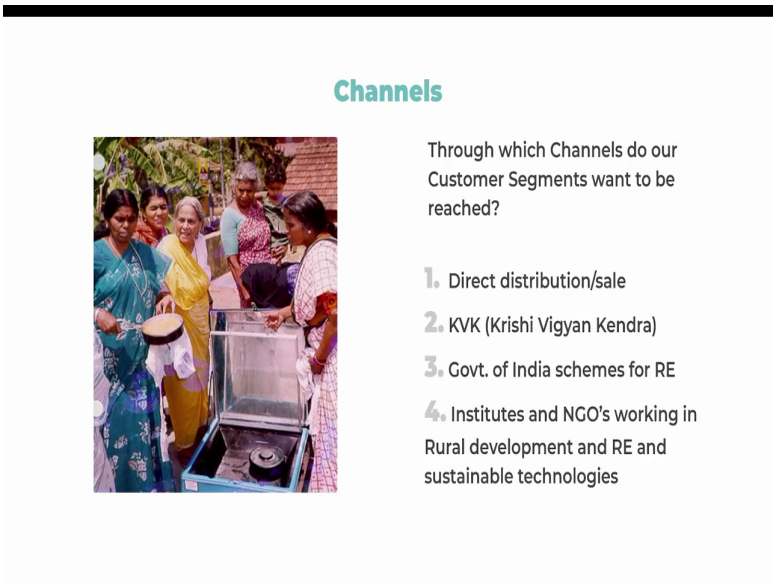

So, then what channels we want we would like to go ahead like it is like, we wanted to find a channels who through whom we can reach our customers. So, there are different different customer segments which we talked in last slide.

It is in ruler area we have to go in direct and direct distributions and sales. There are Krishi Vigyan Kendras in all over in Talukas, so each Talukas Krishi Vigyan Kendra. So, this Krishi Vigyan Kendra is the center of all the farmers and rural areas people used to go Krishi Vigyan Kendra train them for different different you know new tech and employing employable technology, what they can use and you know get employed for it.

So, dissipation of new technology through Krishi Vigyan Kendra could be a good start point for us. Government India Government of India have a different scheme and renew for

renewable energies through those scheme, we can distribute the solar cooker that we are looking into.

And different institutes and NGO's working in rural development renewable energy and sustainable technology that could be a good start for us. And we are actually you know contacted a different points where people are already using the solar cooker or known about the solar cooker or they are into the field of solar cooking and sustainable cooking or they are like a eco friendly and sustainable groups who are into kind of solar energy development areas.

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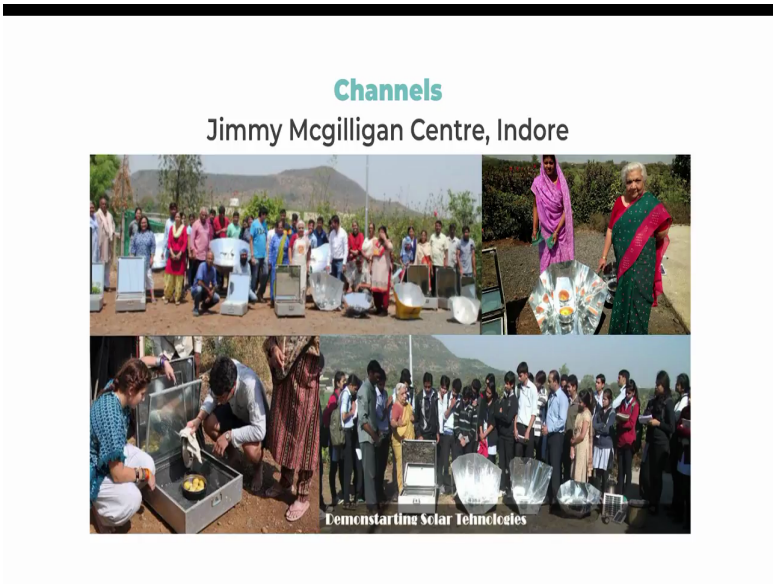

So, one of is Jimmy Mcgilligan Center in Indore, they actually distributed different types of solar cooker around Indore areas and different rural areas and people are using the solar cooker. And they benefited of solar cooking technology.

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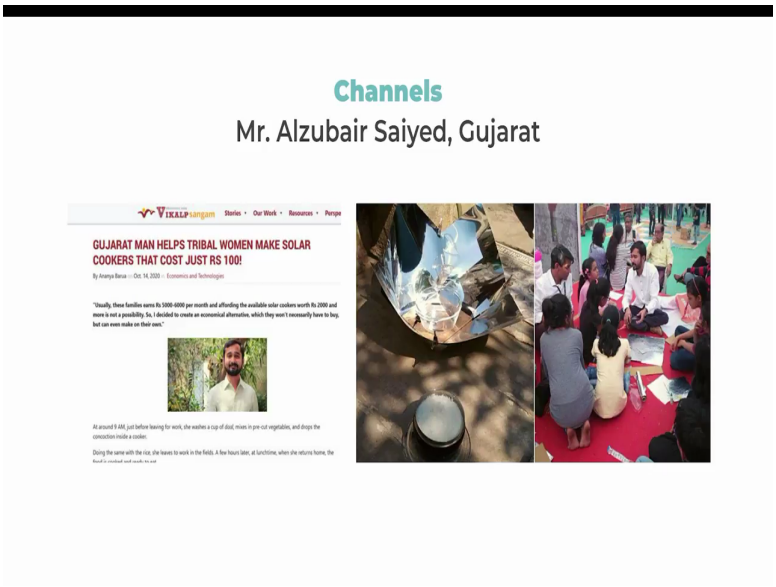

In Gujarat Alzubair one of the guy who started distributing the solar cooker which can hardly made in 100 rupees which are paper reflector paper model. They he used to go into rural areas meeting you know all these women's and you know training them on developing the solar cooker.

So, we also contacted this guy and we are looking forward to like you know collaborate with him and going to the user get to know them. Why they will use the solar cooker? How they are going already using the solar cooker? What kind of food they are cooking on the solar cooker? So, these kind of different inputs we will get from this.

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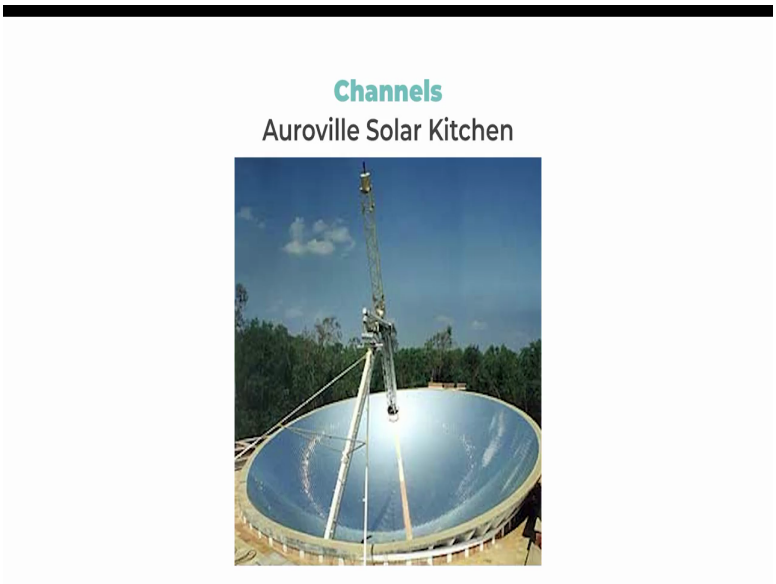

Auroville is also one of the great center for the start, there are people who are heavily engaging in sustainable and renewable energy product development. So, these kind of channels we are going to look into it.

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So, how will we get and keep growing the solar cooker customers.

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So, as we said we are get into exhibitions, food festivals as usual like last 2 years lockdown is happening, but as the lockdown is open the food festival will start.

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Customer Relationship

Food festivals and exhibitions

And then we will keep attending the food festival and keep going giving the demos for in this exhibitions.

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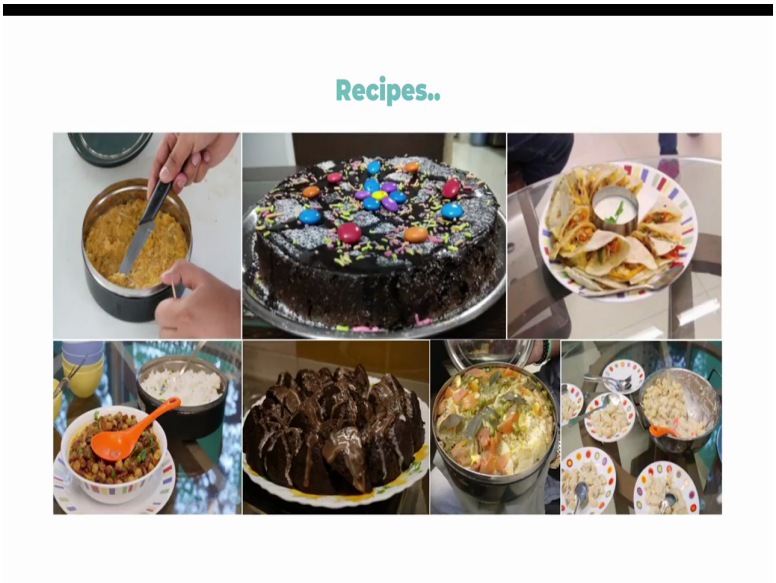

Solar cooking recipes we will we already develop a you know 15 to 20 recipes for the solar cooking in house.

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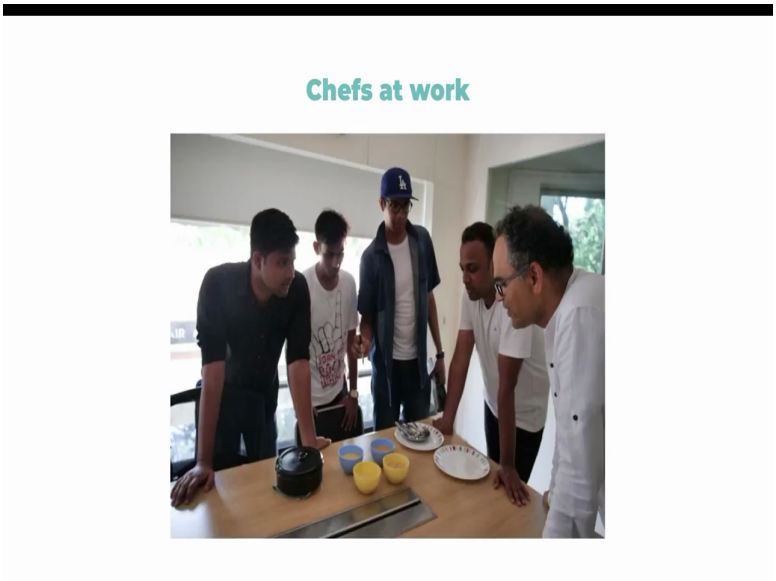

We actually hired chefs for this solar cooker and they developed like 15 recipes for different different cuisines. And cooking show like Khana Khajana with the Sanjeev Kapoor or any other celebrity chef, could be a good start. Where he can present the solar cooker and you know show a particular recipe made, in the solar cooker in sunlight that would be great.

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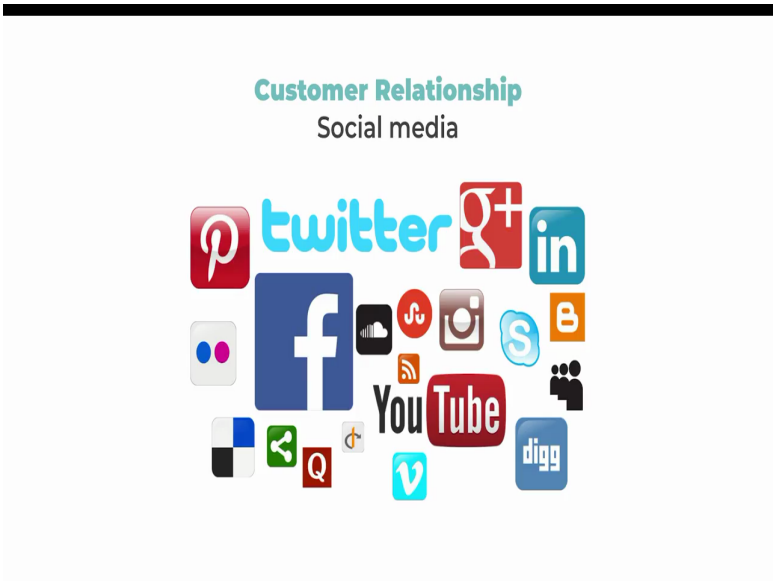

Yeah Social media is definitely also reaching in the rural areas people are watching and the you know network is available in rural areas. They are into different different social media and definitely this is also a good start for Tier 2 cities it will be good.

Connecting with Mahila Mandal's at rural areas and Mahila Griha Udyog, where they can you know dry pulses and dry medicinal plants and all. This could be also a good start and good users for us and they could also give us a good start and good consumer this thing.

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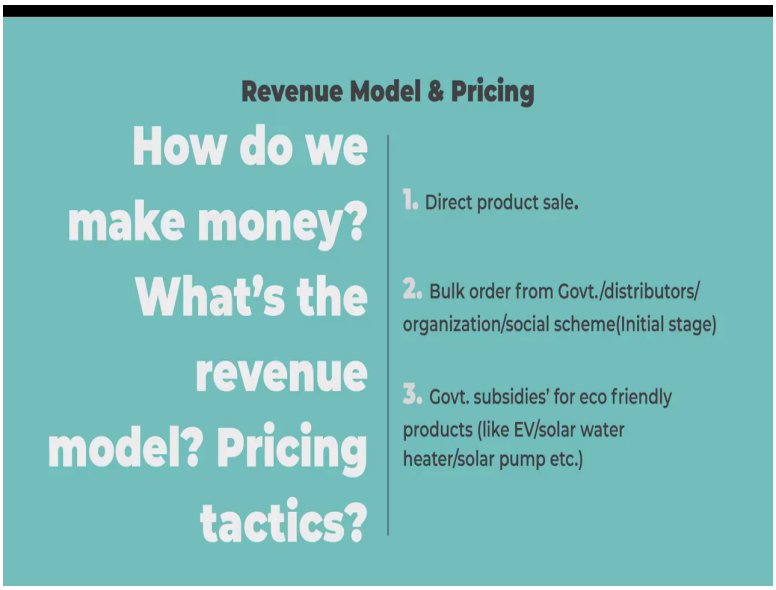

So, revenue model we are still figuring out how our revenue models will be, but there is definitely a government subsidies for this kind of eco friendly products particularly in solar. So, in bulk order distributors and organizations in social schemes for the initial stage before going to an direct sale into the product, we will we will we will find the revenue model for this yeah.

The in fact, you know Sarin you could actually you know throw a little bit more light on these channels and users.

Yeah.

Aspects and.

So, I am going to ask Avinash are these a starting set of assumptions? Or are these final right now?

These are all assumptions we are trying.

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And studying right now.

Alright. So, now, you tell me how will customer discovery or lean startup apply here, I will add to it.

Hm.

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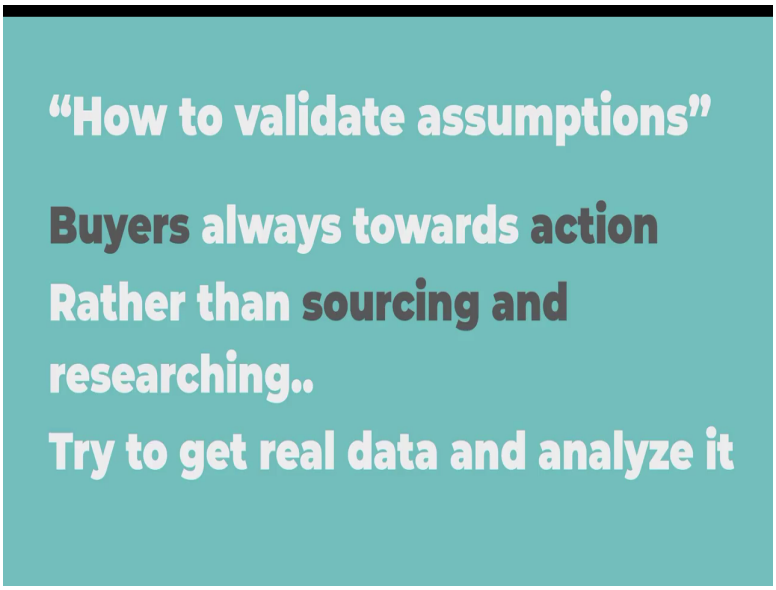

You start you know what would you do to validate verify these assumptions.

So, very first assumption is like food festivals and exhibitions and all that we tested and that we tried already. So, second one is like you know cookery shows and all showing cookery shows on the TV.

How will you find that?

A channel through a channel media channel, who whose you know having this cookery shows and what actually people would like to see in the cooking show.

Alright. So, I will add there. So, solar cooking demos ok you did some testing which is very good true.

Hm hm.

So, this is all lean startup model right. So, if you can then you act.

Hm.

You your buyers should always be towards action, rather than sourcing and researching many reports and keep analyzing, keep building models and you know killing it to death. Do not do that, focus on action try to get.

Hm hm.

Data try to get real data.

Hm hm.

Try to get sites from that data.

Hm hm.

From your real interactions.

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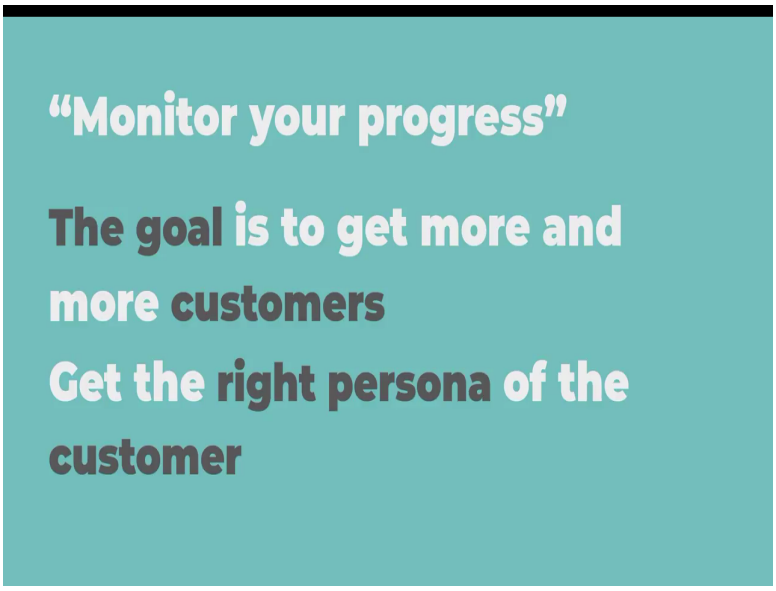

You see you got to interact with people you also need to start to monitor it.

Hm.

To know how well are you doing. If you make a change next time.

Hm hm.

Improve the conversion does it improve the conversation time the people spend.

Right.

Or more people stop, if you change the layout of your you know cooking stall or (Refer Time: 22:07).

Ha ha ha.

Or whatever right.

Yeah.

Or (Refer Time: 22:09) a different recipe.

Right right.

Would it make more people stop and ask keep monitoring. Some metric has to be there how much conversion is happening, and then as we improve the experiment as we refine our method as we refine our process.

Hm.

We know whether we are actually moving towards the goal or away from the goal. The goal is to get more and more customers as efficiently as possible. Cooking recipes whether people watch the shows.

Hm hm.

You may find it very hard to find the data from channels and from the shows unless you are really networked.

Hm.

And even they may or may not have a very nice distribution of what is the persona of these people, they may just have a number that ok this is the viewership. But what is the persona who is watching who is not watching.

So, first we need to define as entrepreneur who is it that we are targeting and then as you go and start your customer discovery this is the data that you can collect you can ask from them you can collect that data how many shows they watch.

Hm

When was the last time they watched, how it influences them? When was the last time they cooked something that they watched on a show? When was the last time they bought something that was used by Sanjeev Kapoor in his kitchen?

Yeah.

So, evidence means real behavior real action.

Yes.

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Similarly, social media very important right.

Hm.

And to promote their product on social media. But does my user spend enough time on that social media they only get time on weekends, then my (Refer Time: 23:44) only on weekends. These in you know insights will only come when we actually go and talk to people and try to understand them as life is happening in their day.

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So, this is an example of someone who wants to market to someone you know who goes to coffee shops, who is a coffee consumer. These are all the details that they may note down or.

Hm.

Think about or they may try to build in the persona because then it gives us knowledge on who to target? How to target? Where to target? What matters to them? Which brands we can co promote with? You know what are their motivators? So, what words will capture their attention? So, everything right.

Right.

How much of this is about the product very very less. So, this is we need to keep in mind. I think that is mostly it that is the crux. So, for example, right now Avinash talked about the low income group and rural households and all right.

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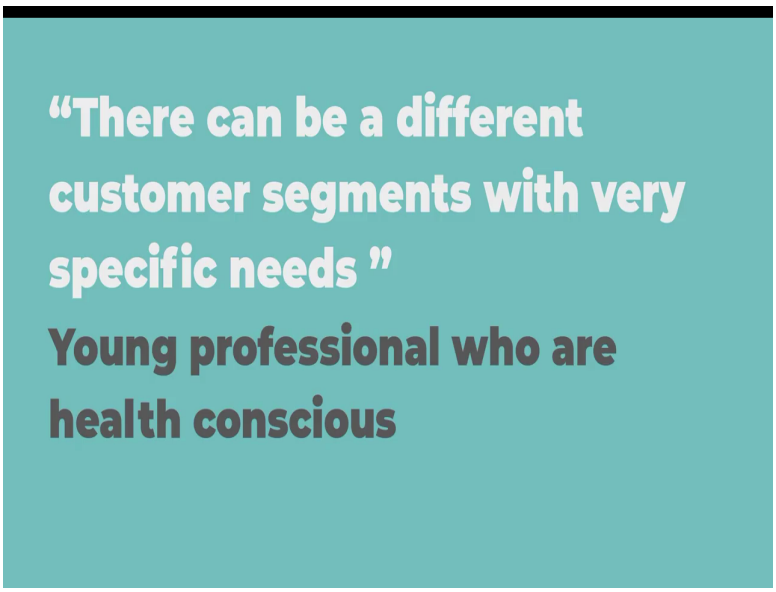

There may be another persona and the pitch, if I have to just pitch I just wrote it down to give an alternate example; that there can be different customer segments with very different needs.

So, one persona for example, I picked is maybe young professionals who are health conscious right.

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So, my pitch for that would be just an example, the young professionals who have started to see the signs of lifestyle diseases are always looking for options to have healthy meals.

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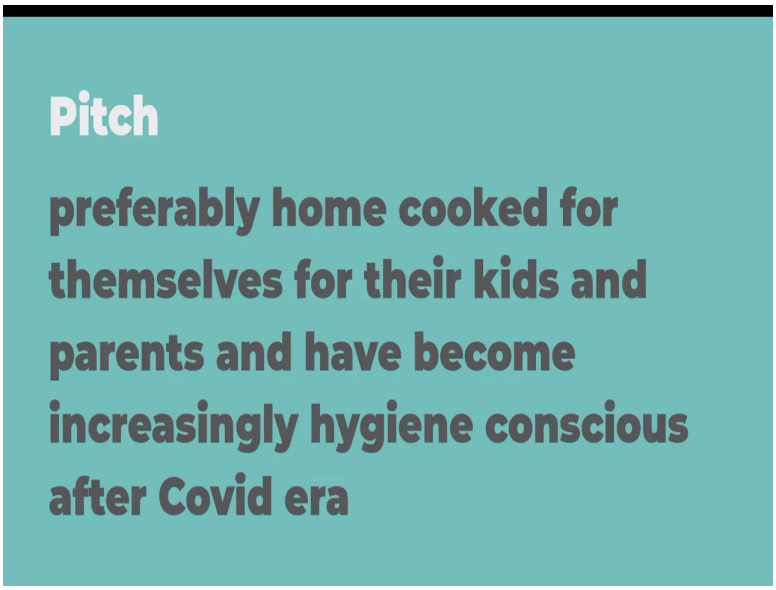

Preferably home cooked.

Hm.

For themselves, their kids and parents and have become increasingly hygiene conscious especially in the Covid era right.

Hm.

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So, now our solar cooker provides a healthy meal with more nutrition an assumption that needs to be tested. I am assuming right now, that it retains more nutrition because of less burning or whatever.

Hm hm.

Right, less oil home cooked without supervision. So, you do not need time to watch it over.

Hm.

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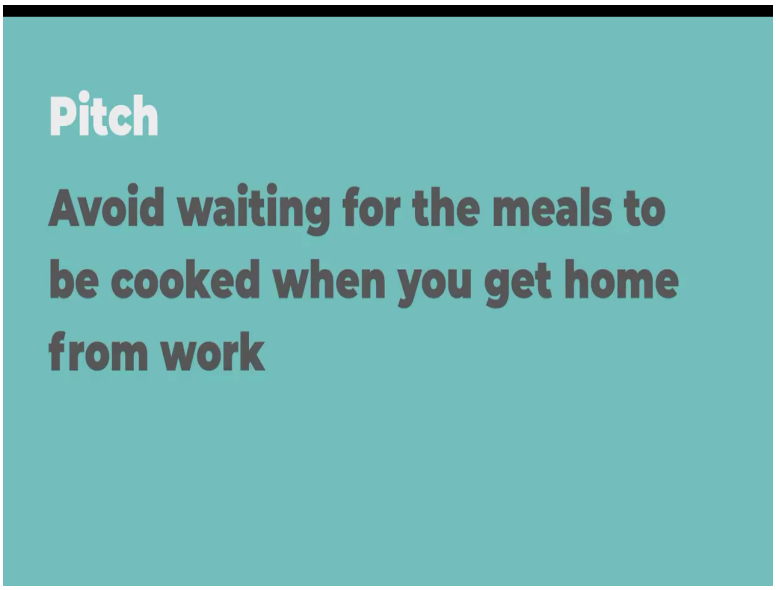

Avoids waiting for the meal to be cooked when you get home, because it is already ready to be served.

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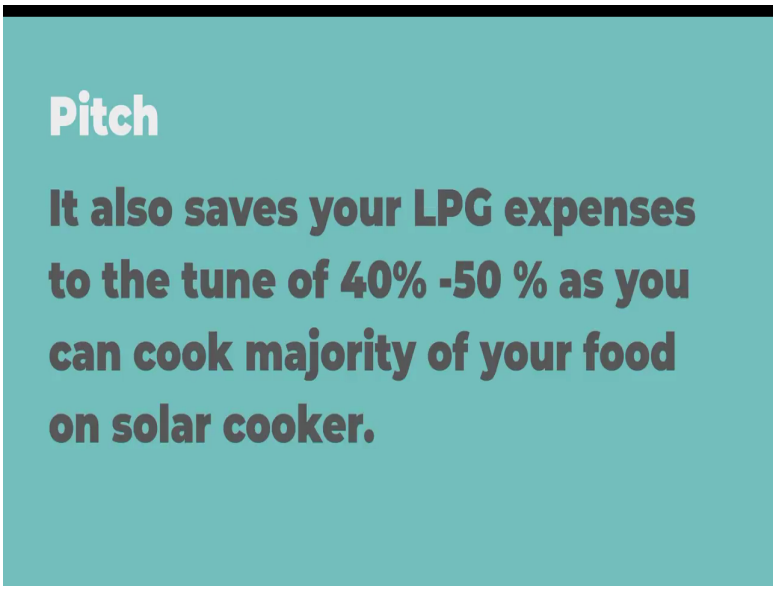

And to top it all it saves more than 50 percent of your LPG expense as you can cook majority of your meals through this right. So, different different you know value propositions health, home cooked.

Hm.

Into kids needs and parents needs and all that is getting combined here.

Sarin I think you gave this very good you know example of the oven itself with a different persona in mind. And you know like our students now have come up with a problem statement we wanted them to just get into the pitching aspect.

So, they would come up with the problem statement and with your right questions we will see how they will pitch it. Because whatever said now we have been hearing a lot, but till you do not get over there and modify it; it was not happening. So, we will need your help there.