Entrepreneurship Essentials
Prof. Manoj Kumar Mandal
Rajendra Mishra School of Engineering Entrepreneurship
Indian Institute of Technology, Kharagpur

Module - 05
Lecture – 24
Lean Startup – II

Hello and welcome. We shall continue our discussion on the Lean Startup from the previous session. We will be talking about, we will be defining minimum viable product and then we will compare the traditional method of product development with lean product development and then we will end with an example of lean product development or lean startup altogether.

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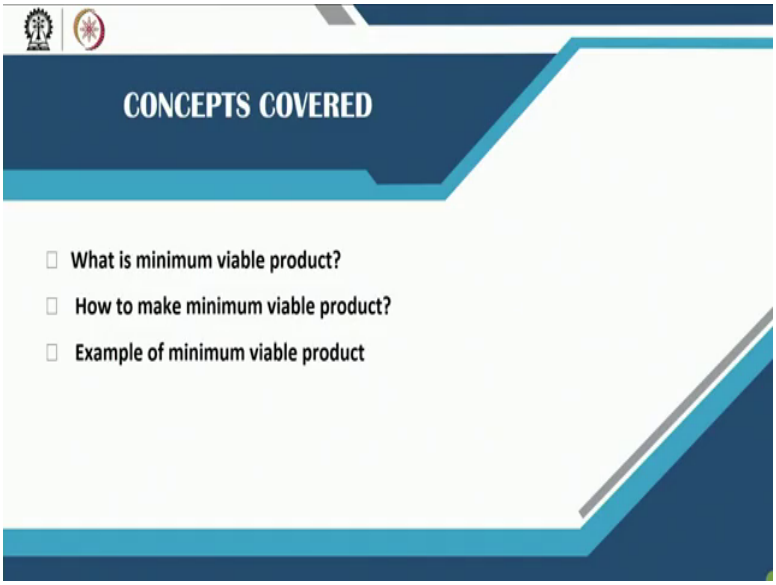

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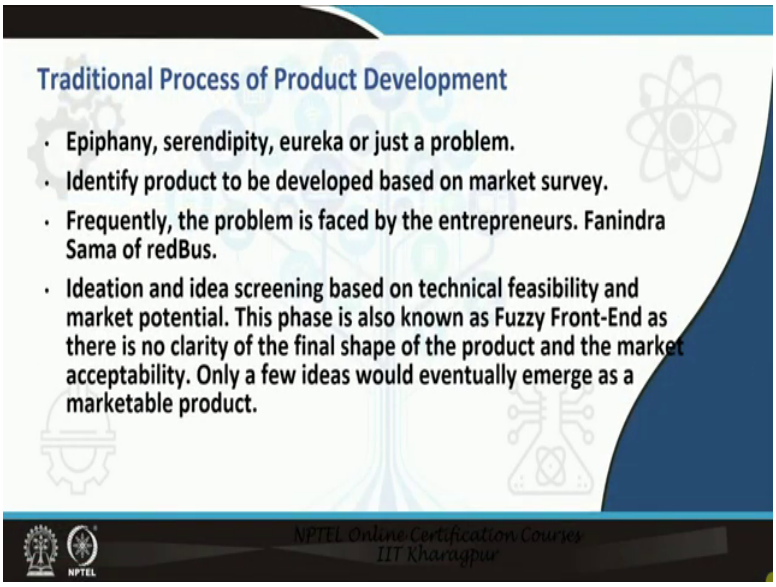

So, traditional process actually involves either a planned research and development that you have a problem and then you decide different parameters different factors for developing a solution. And then think over maybe you have an epiphany moment or a serendipity or suddenly there is an eureka moment and then you start building that.

You identify product we developed based on market survey. You do market research and then it comes out that market is actually demanding a product of certain kinds, we start building them. Frequently the problem is faced by entrepreneurs like if you are really facing a problem on a daily life, you can actually start building that.

And many many entrepreneurs actually started building product based on the problems that they face like Fanindra Sama of redBus. He was trying to catch a bus to go somewhere and then he realized that there is information asymmetry and there is no information available

with anybody trustable information and there is a need that can create huge convenience for a huge number of people.

So, he started building an app through which one can real time understand whether there is vacant seats available in a particular route or it is not and if they are available, you could book it immediately rather waiting and going to a bus stand or somewhere to make the ticket by the time actually that ticket might have been might be sold. So, a solution came when a company evolved and he became successful entrepreneur.

Ideation and idea screening based on technical feasibility and market potential. This phase is also known as fuzzy front end as there is no clarity of the final shape of the product and the product on the market acceptability. Only a few ideas would eventually emerge as a market marketable product or market will actually buy that product.

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So, initial estate actually is critical for saving initial resources and eventually going to market. So, traditional process involve you design, develop, test, refine and then you go to market to see whether customers are actually buying. So, by that time you have put all the infrastructures in place. Check the design for manufacturability of course, before going to market before commercial production, you need to check for manufacturability. There are many many things which cannot actually be manufactured in a standard setup.

Cost and demand analysis pricing go to market strategy. You see how the cost is you may have may cost plus pricing and then go to market. This is a traditional process not lean process and create awareness. So, advertise or whatever means you would like to lunch manufacture distribute through distribution network and sell or sell online maintain or improve quality that is how a traditional mentality works. This is contrary to lean strategies that is the point of discussion today.

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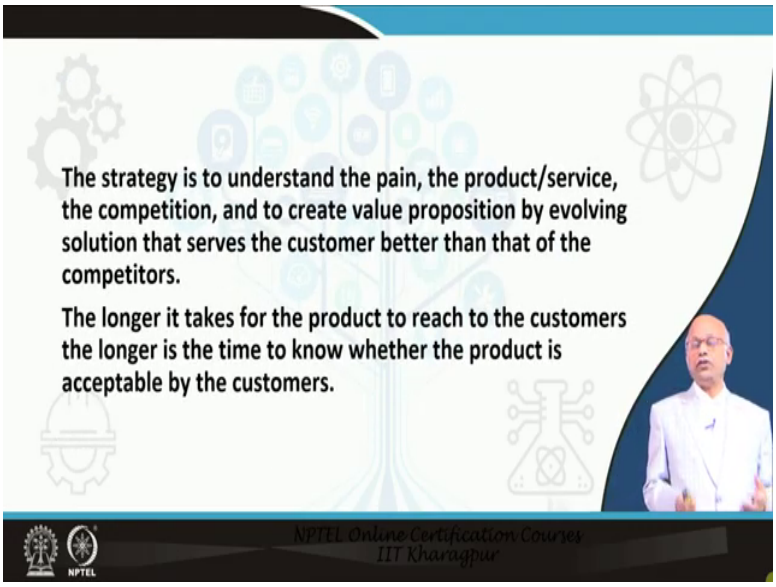

The strategy is to understand the pain, the core strategy whether you adopt traditional method or lean strategy the strategy is to understand the pain, the product service, the competition and to create value proposition by evolving solution that serves the customers better than the other competitors.

The longer it takes to produce to reach to the customers, the longer is a time to know whether the product is acceptable by the customer. In the meantime, you spend a lot of money; you spend a lot of resources in the form of manpower in the form of material. So, all everything goes down the drain.

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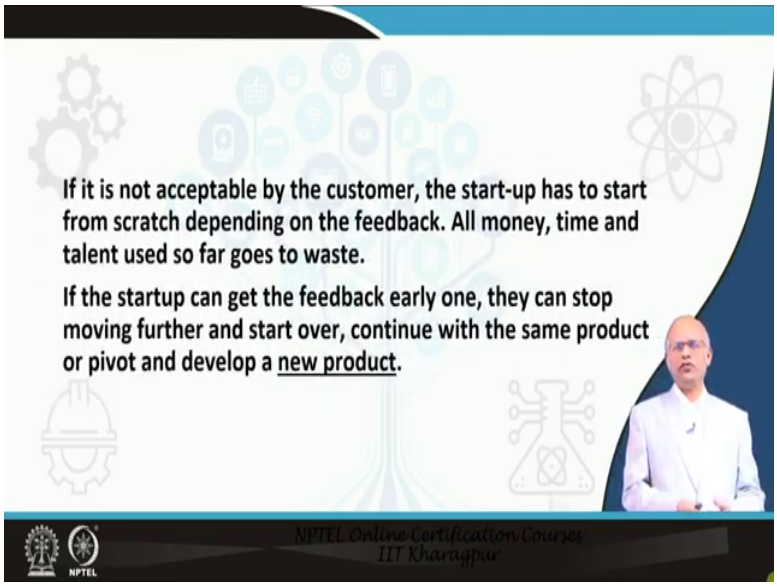

So, this time is crucial time resources. If it is not acceptable by the customer, the startup has to start from scratch depending on the feedback. If they say that some fine tuning is possible if it reveals that customers will be with some refinement, you can start from there or you have to pivot all money time down the drain.

If the startup can get feedback early one, they can stop moving further and start over whether they have to steer the path left or right or pivot taking a u turn can all be decided hourly one rather than spending more money. Continue with the same product or pivot and develop a new product.

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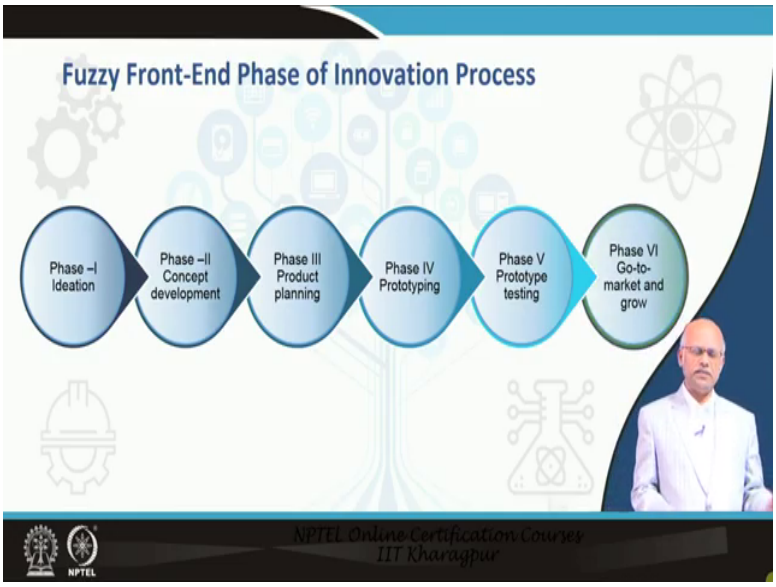

Fuzzy front end, there is no clarity. So, there are ideation phase that you build a concept then product planning, then you prototype testing go to market. It is a standard linear method.

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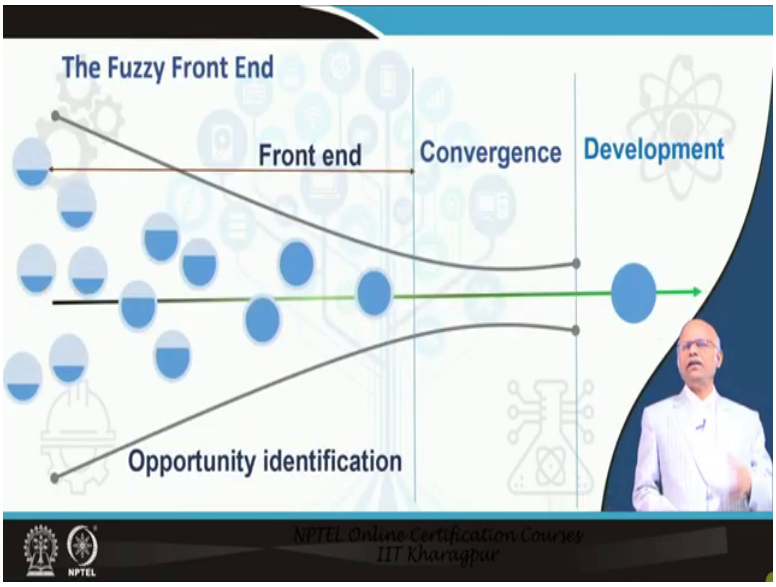

And there will be many ideas at the beginning you keep on trying and eliminating which are not possible some are possible eventually converge and then start developing the product.

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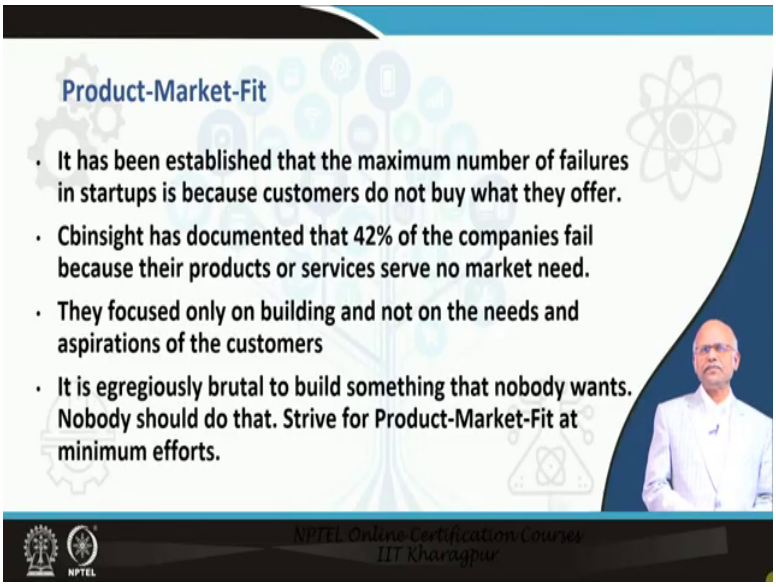

But then most important thing is product market fit. Customers are going to buy something which they will think that serves their purpose there that ameliorate their pain better than the competing products or it is cheaper with efficacy sufficient efficacy and all that.

So, it serves a purpose and they will buy else they will not buy and it has been established that 42 percent of the startups fail because they failed to produce something that customer would buy or they produce something that customer never buy. They focused only on building.

So, on technology, on cutting edge that we are doing something that nobody else has been doing. So, this there is no reason why customers will not buy they may not even think of the customer at the time of building whereas, it should be just the other way around. It should be customer, customer and customer.

So, customer should be on board; you should take that their opinion, their feedback whether you are whatever you are designing customers actually are interested in that or not. It is egregiously brutal to build something that nobody wants, nobody should do that strive to for product market fit at minimum efforts. So, that you save all your money that you have for doing something better if it is not a product market fit, you can redo with the same resources.

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Now, Eric Ries has written a book called the law The Lean Startup. This is not the first time that the concept of lean came to the marketplace. In fact, this is an extension of lean manufacturing. So, from lean manufacturing and agile development mostly software development, Eric actually has combined the two and proposed lean startup that is a wonderful philosophy, but then lean concept was always there.

In the next session, we will be talking about the genesis of lean in detail. He says how today's entrepreneurs, use continuous innovation to create radically successful business is the topic of the book.

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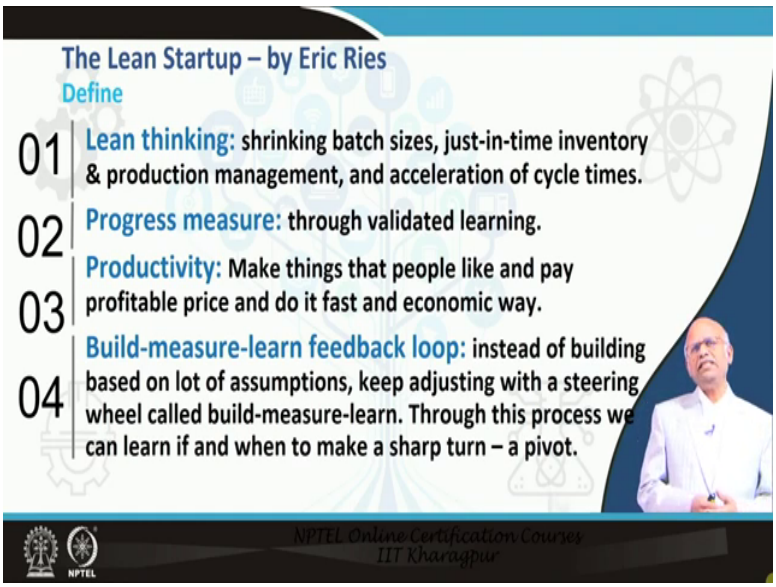

So, the lean startup lean thinking first of all. So, you think in terms of batch sizes just in time inventory and production management and acceleration of cycle time. I will just explain only one say, inventory management. Suppose you are maintaining an inventory of say a 100 rupees or say 100 thousand rupees or 100 lakh rupees. Let us talk about 100 without the unit. Now suppose 100 rupees worth of inventory is 1 month inventory. So, you are maintaining 1 month's requirement of inventory that cost to 100.

Now, suppose bank interest rate is 15 percent. So, you even though it is a monthly inventory every month you are maintaining the same inventory. So, your annual interest towards

inventory will be 15 percent of 100 which is 15. Now suppose you manage the inventory better so now, suppose you manage with inventory of only 30 rather than 100 in a month. So, your annual inventory total is only 30 rather than 100. So, you will pay interest only up to 4.5 or say 5 rather than 15.

So, just by cutting down your inventory from 100 to 30, you are saving 10 out of 15 which is saving some almost like say 66 percent of your interest cost. So, likewise you have to think in lean philosophy. So, that everywhere you can cut; similarly you can cut and then you can save lot of money.

Measure the progress through validated learning whatever you are doing, you get customer feedback early one. So, that you have a fair idea. So, you are a your more learn it person because you have the data that customers do not like this features, they like more of that features those features.

So, eventually you through this learning, you can come back and refine the product. So, before you go to the next round; if you have this knowledge with you, build a better product. So, in the next round customers will have less complain and more acceptable more acceptability.

Productivity: so, make things that people like and pay profitable price and do it as quickly as possible. So, you have you are your productivity is up meaning that you your turnover is up, you complete your product development in a shorter time. So, you save money and resources.

Build measure learn feedback loop. The core of Eric Ries lean startup book is the cycle the loop feedback loop build you based on ideation, you build something, then you take it to the customer, you measure the level of their satisfaction or dissatisfaction. Use that learning to make newer ideas build again. So, that whole loop completes as long as you are not making sufficient progress, but then progress should be made quickly. And that is what is about lean.

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Eric says startup should create disruptive innovation continuously only, then they will have natural competitive advantage otherwise, they will have to struggle. But if you can disrupt the present state of technology state of business with new business model innovation, then chances of success are much greater.

Empower people to think out of the box like for innovation, you have to have a new culture new system. You have to empower your people to think that they can they are free to think out of the box and they have less risk in adopting their thought process and executing that. If they think that if I think something difficult and then I fail to do that my job is at stake, they will not think out of the box they will not even think and they are even if the thing, they will not try.

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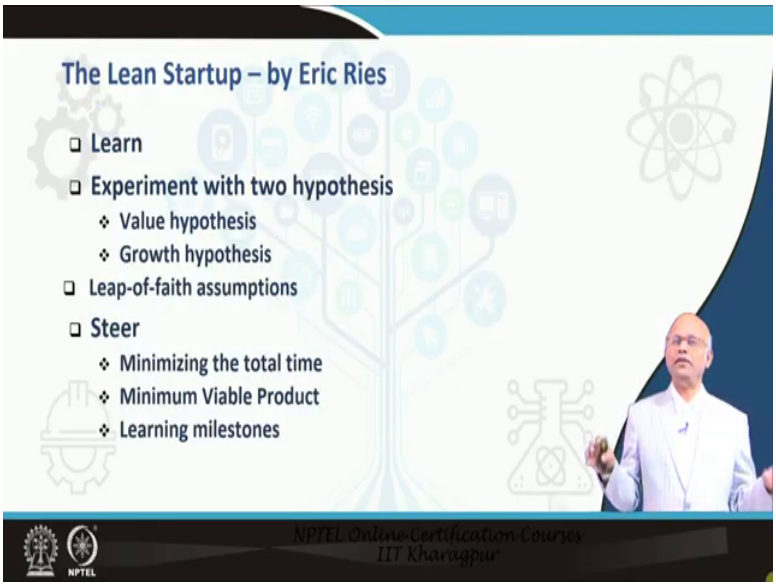

So, that culture has to be there in the organization that think out of the box and do not worry about risk of thinking. So, learn experiment with lean hypothesis actually lean philosophy is based on two hypothesis or say a startup in general based on two hypothesis before you start. One is value hypothesis, another is growth hypothesis.

Based on these two hypothesis actually you build, you start building a product. So, before you build the product to make two hypothesis; one is value hypothesis; that means, you through this product or whatever product you have in mind that will create sufficient value for your target audience. Meaning that will give them more value for their money compared to the competitor. So, they will buy your product.

Growth hypothesis says that there will be sufficient customer and they will come repeatedly to buy our product and we will grow. But then the whole thing only if it is disruptive if a

product is disruptive, then there will be occasions when there has to be a leap of faith assumptions. Leap of faith and hypothesis are slightly different. Hypothesis is based on some available data meaning that some people have done something, but it is yet to be proven.

So, you make another hypothesis gather data and test your hypothesis. Whereas leap of faith is done based on something non existent. Meaning that you feel that something will happen though you have no data to back you up. So, you make that assumption and move forward to see if it is successful. You go with a positive mindset that it will definitely be successful because your gut feel says that and then the market will actually tells tell you whether they really it really is going to manifest.

One example that is frequently talked about in this particular contest is that of iPod. When Apple came out in the iPod, it was a disruption of existing business model. Existing business model as part of existing business model where this product was introduced, there were existing products like portable music system is already there in the marketplace which is iPod and which was there is Walkman.

And there are many other products, but then they used to use a cassette or a CD player CD. So, there are two components; one is the machine another is the container of the media of the music whereas, there was no system of music download.

So, Apple made that leap of faith assumptions that people will download music by making payment and when they came up with iTunes store and iPod, people actually started buying iPod and they have started paying to download iTune and it was a successful business that turnover went up from 10 billion dollar to 50 billion dollar. So, this is a huge success because most people think that because Apple actually disrupted the business model by which it particularly it gave lot of convenience to the customer.

So, it is just not just disrupting. You can disrupt anything negatively, positively, drastically, aggressively, but then it has to give a lot of convenience to the customer lot of benefit to the customer. What it gave is customer could easily conveniently download the music without really going to a store and picking up choosing or most of the times some particular number

was not available. So, this is lot of inconvenience. In iTune, you could search and immediately get it with too much of convenience. So, that is how it becomes successful.

A core part of Eric's lean startup is steer. So, there are will using the will you steer either left or right or for front or back. So, if you are making a minimum viable prototype meaning minimum viable product meaning a product that has minimum that has some essential features that clearly differentiates your product from the competitor that of the competitors.

And it helps customers to understand the superior value proposition of your product compared to the competitors and they can make informed decision whether they should buy your product or their product. So, it can be done with minimum times through validated learning. So, learning is a milestone in this steering process.

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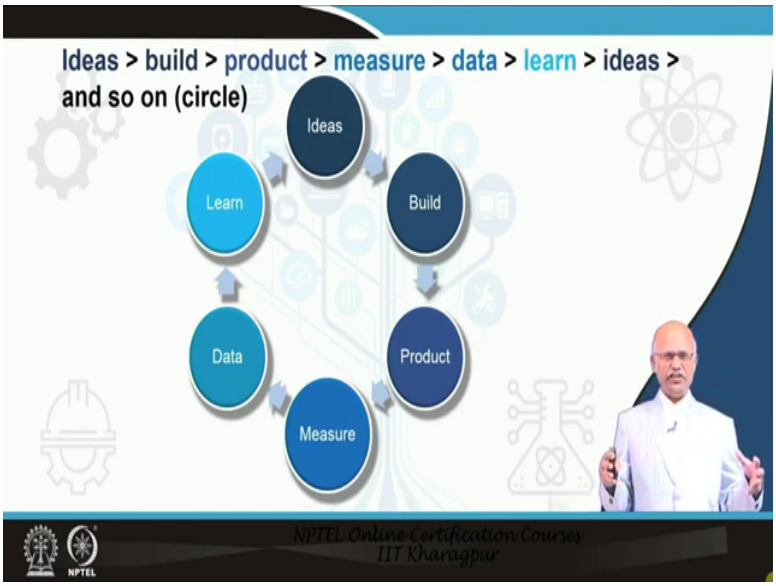

This is the steering. So, idea build then build the product, then measure, then collect data, learn and restart.

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It is very important statement. In fact, it is part of the title of the book we must always ask. What if the user does not care about the design in the same way that we do, it is very important. Why 42 percent of the companies are dying because they are not asking them this question.

Whether whatever they think about the product and they think that customer like should like this product and buy, do the customer also think that way-this question they do not ask. If they would have asked this question, they would have not built the product the way they built

or the product person at the build. They would have done something different and they would have been successful.

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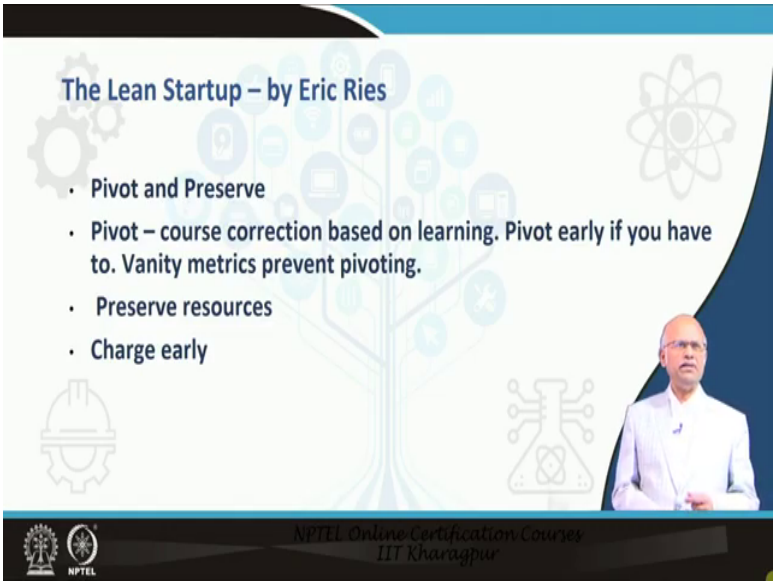

Pivot or persevere: pivot means you come back, persevere oh preserve persevere means if you do not preserve, do not pivot then you move forward with the same technology meaning that customers have already accepted your product. So, you persevere here in the same direction build more and more get more and more validated learning.

Pivot and preserve means you preserve whatever information you get and then do the loop all over again meaning you come back with the same come back with validated learning. Pivot helps you to make course correction and it helps you to avoid vanity metrics. We discussed during market research. Vanity metrics are those metrics which look very important or appears to be important or appears to be highly valuable, but they are actually not valuable.

Like footfalls in a mall may be a metric that people will be happy that there are say footfalls are increasing people, some management might think that this is a wonderful thing so many people are coming. But maybe they people are coming and just doing window shopping and not really buying, it does not translate into sells that is not that is then it is vanity metrics. But suppose you talk in terms of sales that sales are going up, this is real metric. So, lean startup actually helps us to not really becoming satisfied with vanity metrics.

Suppose we develop something that many customer says that wow this is good, but they do not say that they will buy just because they say that this is good we build that. This is vanity metrics. But suppose they are ready to pay they say that yes I need this product and if the product is in the marketplace, I am going to buy it. This is the real metric that we should be chasing. So, preserve your resources; preserve your resources through valid through validated learning. So, you do not move forward and waste your money.

Charge early: so, some of your minimum viable product can be sold to somebody who is desperately interested he is under massive pain and he finds that your product actually alleviate his pain. So, he will be ready to buy and in case he is ready to buy that is a real validation. Somebody bringing out wallet and may willing to make payment is the real validation otherwise it may be a biased validation.

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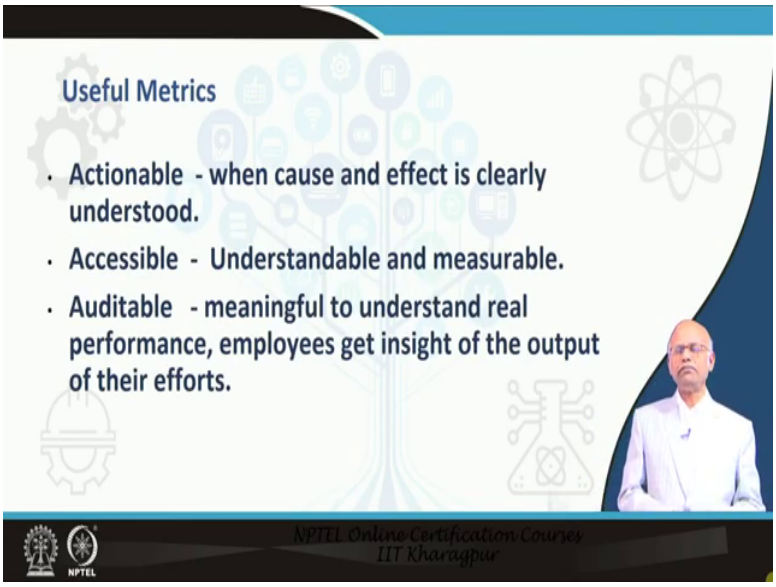

Metric that you should look for is actionable, accessible and auditable. Actionable meaning that should be meaningful and useful depending on the metric, you should be able to take some corrective actions and then that should give visible positive output.

Accessible information should be accessible by everybody so that they can take their own corrective measures. It should be understood it should be in an understandable format lot of data with no inferences is not going to help. So, there should be some model to really bring out the information out of the data useful information and it should be measurable.

Meaning that whether we are really progressing or we are not progressing and who is accountable who is not which team is doing better which team is doing worse all this should metric should tell us.

Auditable it should be meaningful to understand real performance whether the company is really doing good, product development effort is going well in the right direction, who all are doing good. So, that you can reward or censure accordingly.

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So, it should be metric should be meaningful, otherwise we should not gather that metric not waste money on that money resources. Lean process is a way to test your hypothesis continuously to adapt and adjust before it is too late.

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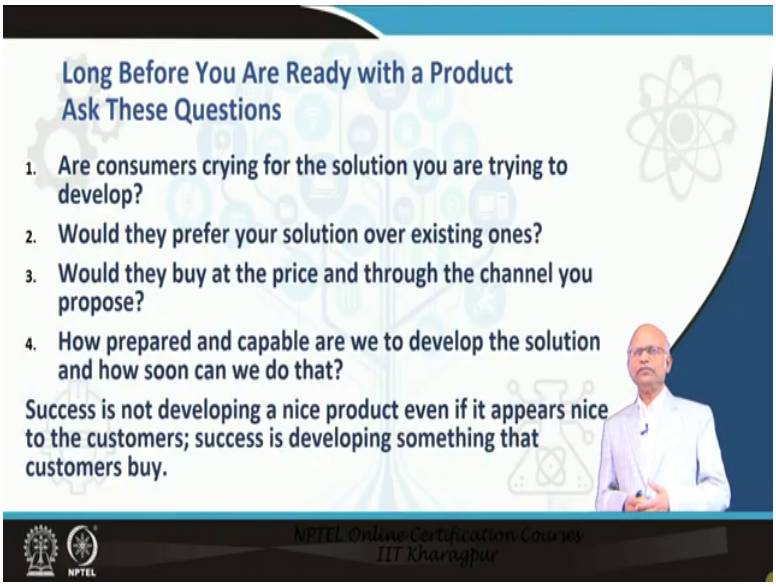

You should ask this question much before you go to market. Are consumers crying for a solution that you are trying to develop? Would they prefer your solution over competitors solution? Would they buy at the price that you are offering the product? If not, then what is the point?

You develop something that may be cutting edge, but then if customers are not willing to pay like this satellite company who put 66 satellites around the world, but then eventually customers who are not willing to pay. So, we should be care we should be asking that question at the or before we make commitment to make investment. How prepared and capable are we to develop a solution that is going to be liked by customer and we should be able to do that soon enough. So, that we preserve our resources.

Success is not developing a nice product even if it appears nice to the; nice to the customer, success is developing something that customer is right ready to buy paying money profitable money.

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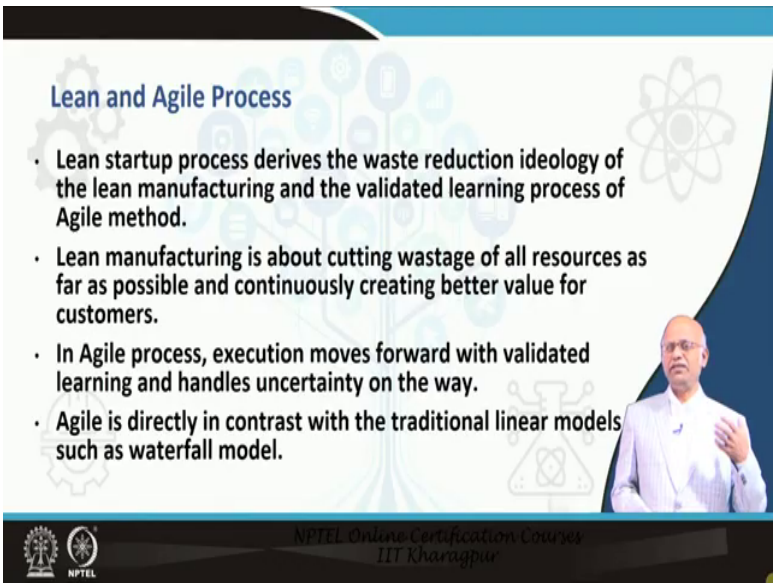

Lean and agile actually lean startup is a combination of lean philosophy and agile process philosophy. Lean is based on saving the wastage or avoiding the wastage. Anything that you waste or anything that you do not consider as waste, but customers do not bother about it that is waste. So, avoid doing that.

Suppose you have say 20 features on your product and you watch customer using the product and see which of the features the customers are using. Then you point out to the customer that they are not using a particular feature that are there.

Now see whether they are really interested in that or they say that we do not care about it, then eliminate that because every feature cost some money even if it is one paisa, it is money. So, if you can avoid some feature and there is no effect on the customer, you are not losing a single customer by doing that you should always try to do that; that is what is lean philosophy removing waste eliminating waste.

The agile process on the other hand is a circular process is a process of validated learning meaning that you do not go step by a step to develop a product linearly rather you complete some scale some steps and then bring customer on board or users on board. Let them use it and give you insight whether they would be interested in the product or they want something different. So, and then you can actually decide whether to move forward or take a u turn or right turn or left turn agile is directly in contrast with traditional linear model such as waterfall model.

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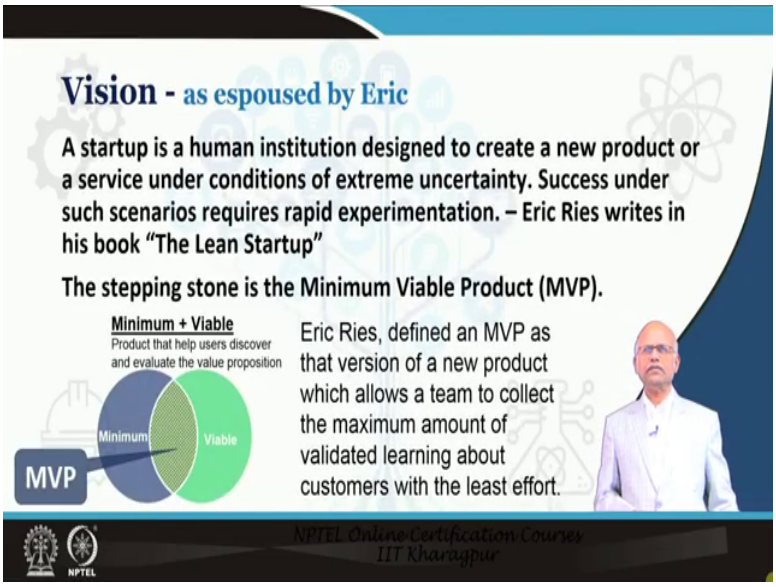

So, lean leans vision as per Eric is a start up is a human institution designed to create a new product or a service under condition of extreme uncertainty. Success under such scenario requires rapid experimentation. So, Eric Ries wrote in his book the lean startup. The stepping stone in is the minimum viable product. Eric Ries says he defined the MVP, Minimum Viable Product as that version of a new product which allows a team to collect the maximum amount of validated learning about customers with the least effort.

So, whatever the customer want wants, you build that the graph. The image shows precisely. You may have 100 types of minimum product, you may have 100 types of viable products, but what minimum product is a viable product meaning what customer will value you should build that. So, it is the superimposition part of the or the two circles where the MVP lies.

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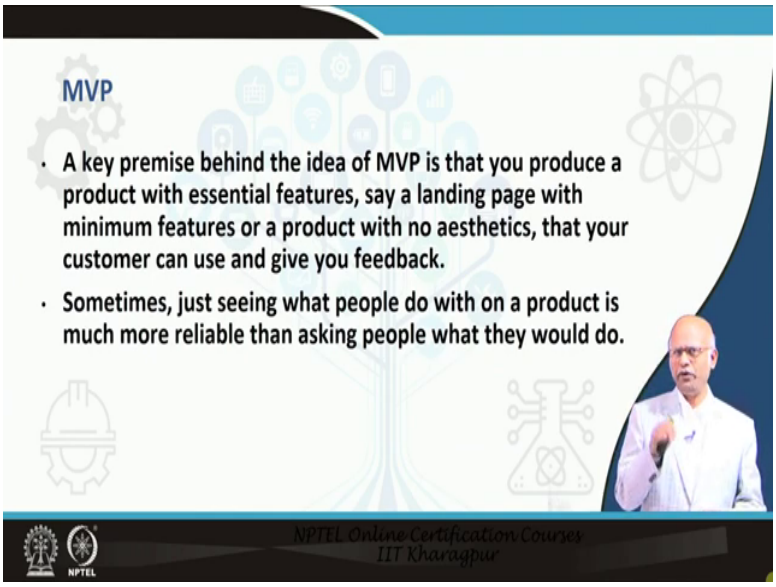

A key premise behind the MVP is that you produce a product with bear essential features say a landing page. Suppose you are thinking of a web page just build a landing page and see where customers are clicking are they are clicking or they are just going away looking at it. If you can identify where they are clicking, you understand that those are the places they are interested in etcetera.

If you are designing a hardware, then a product with no aesthetics just something that that serves the main purpose should be built and then take validation from customer. Sometimes just seeing what customers are doing is better than asking them question is give the product to them.

They will look at it, they will fiddle and then somehow they will click and then see that itself is a good knowledge. You will realize that some of the features they are not interested, some

of the features they are definitely interested. Look at their face, there will be a nomad with something and they will not be.

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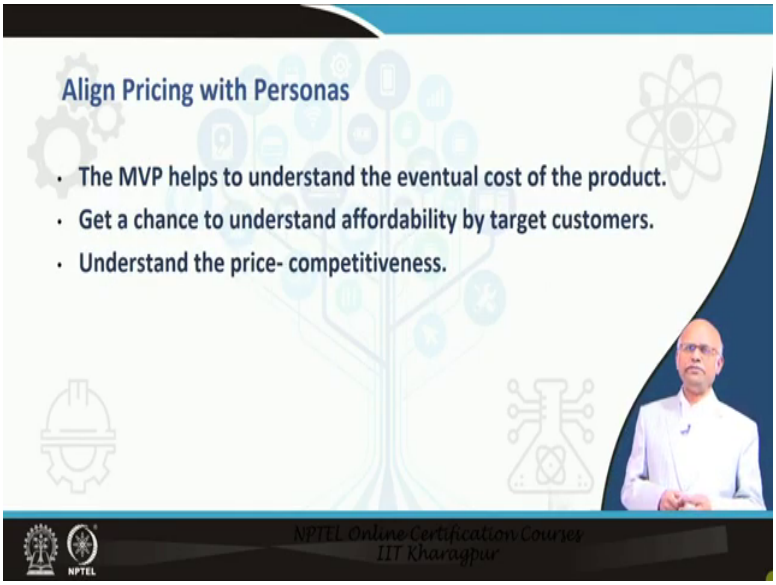

And in the process, you will be able to save lot of cost also in the final product. Suppose they are not interested in something some features, you will be able to eliminate them. Whatever you eliminate eventually that adds to the value for their money. Suppose they are paying 100 rupees for a product, now building that product see the cost of building that product can be reduced say by 5 percent. You can give 5 percent more value to the customer, you can sell it at 95 rupees making the same profit and customers are happier.

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Learning through failure is an integral part that is fine. Many people will say that I have learned a lot from my earlier failure, but are you a smarter person, have you got validated, are you a meaning failed forward guy meaning have you learned something that you are going to use it in the future or it is a part of your refinement process? You may always pivot just by failing you fail after a long time, you understand that you have made a lot of mistakes, but rather than doing that you can fail at the early get validated and then move forward that is what is learning in lean startup philosophy.

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So, Eric says the solution is to develop minimum viable product and put it through validated learning following the build measure learn cycle.

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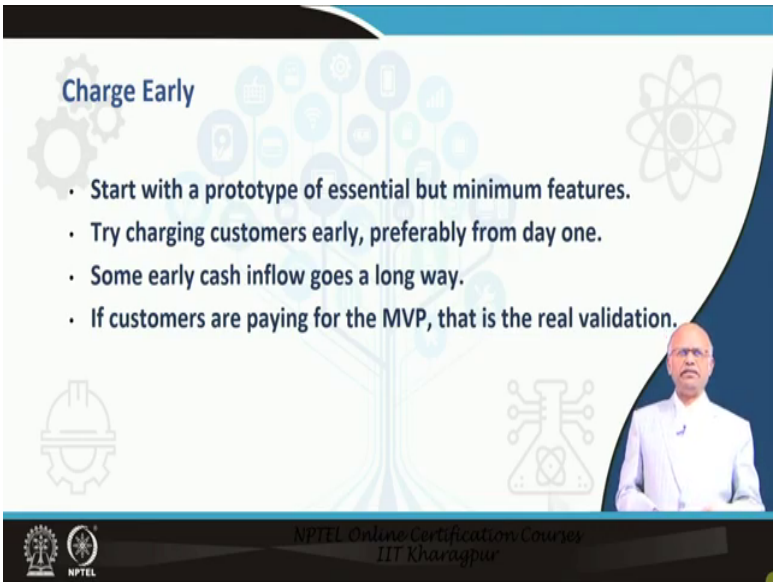

We will see the cycle; charge early is another very important part. Suppose you build a prototype where the hardware software or anything and it does some essential work for your customer. If anybody has real pain, he or she will demand that product. They will say that ok, give you give me the product; I am going to pay that does many things. Most importantly number one is it tells you that there is real pain that you are trying to sort.

Second it tells you that your product is actually solving that pain otherwise this people will not like to buy paying money. Third is you are getting some money, there is some positive cash flow any time or particularly at the early stage if there is some positive cash flow that go a long way in making your business viable.

Otherwise if you think that we will not charge early and we will charge when customers are absolutely happy that moment may come so late. It may not even come that you will end up a spending all your resources and money and then there will be no money to move forward.

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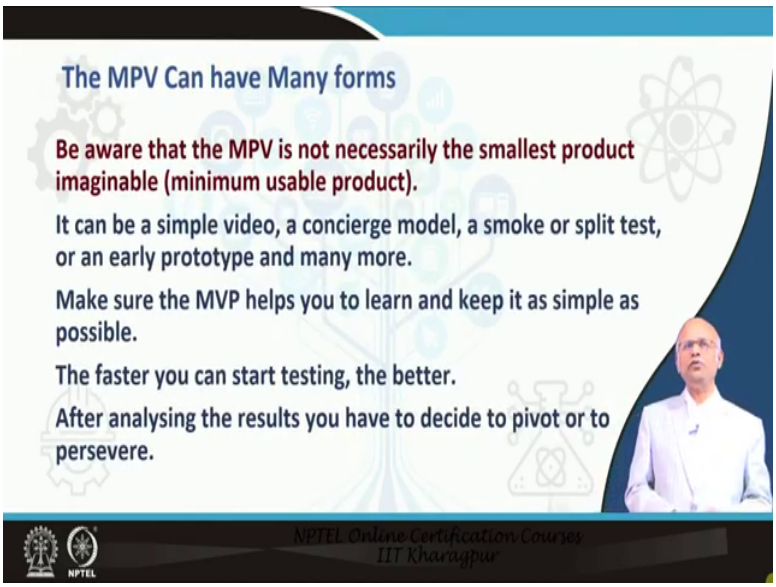

MVP can be of my many form. It can be simple video a concierge model a smoke; smoke for is a simple thing. To do a smoke test or AB test that we discuss. Make sure the MVP help you helps you to learn and keep it as simple as possible. The faster you can start testing the better after analyzing the result, you have to decide to pivot or to or to persevere either pivot back means take u turn or move forward and persevere.

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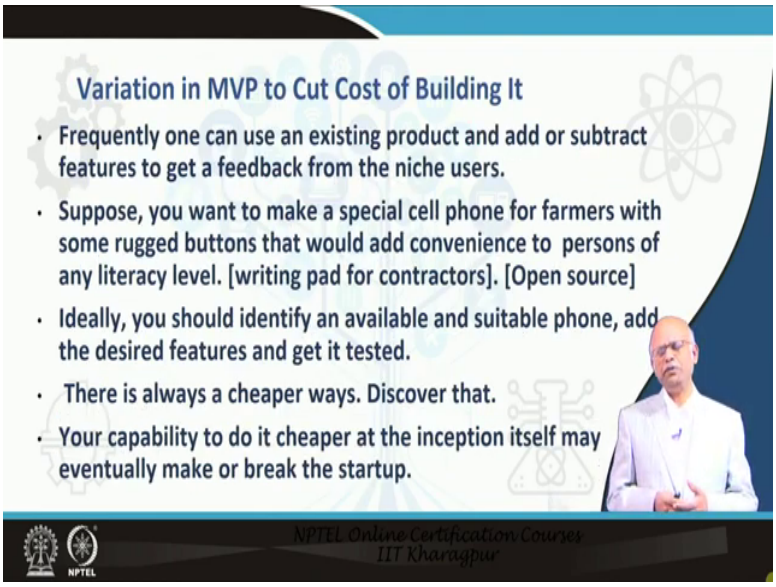

So, you can have various types meaning depending on how you choose your MVP or decide your MVP will make or break your a startup. Suppose you want to build a say cell phone smartphone for farmers and you want that there will be some big buttons some rugged buttons that is suitable for even his field when he is working in the field he can operate that and understand the weather, the demand supply or something real time. So, if you think that I will build the entire phone and then go to farmers to check whether he likes it is going to require entail huge amount of money maybe several lakhs.

Alternately you can buy a smartphone for maybe 10000 and add all those features and then take it to the farmer may be the total cost will be something like 25-30000 rupees or 50000 rupees. In the process, you save the money; you get to know whether farmers really like it do not like it. So, you can take decision otherwise, this whole money will go down the drain.

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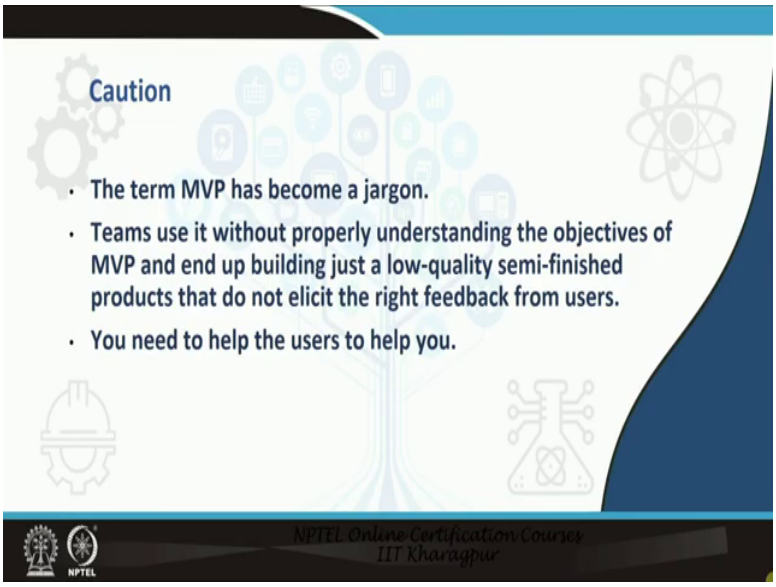

The term MVP has become a jargon and most people think that I am doing something that is an MVP. That is really not MVP, it should be it should have essential features which the users can evaluate and give you useful input useful feedback.

If you just build something, some low quality product that is not MVP that the customer or the users are going to tell you that this is a nasty product and this is not going to be any useful any use to you. You need users to really test the real feature that they are interested in. But then do not worry about the look and feel of that.

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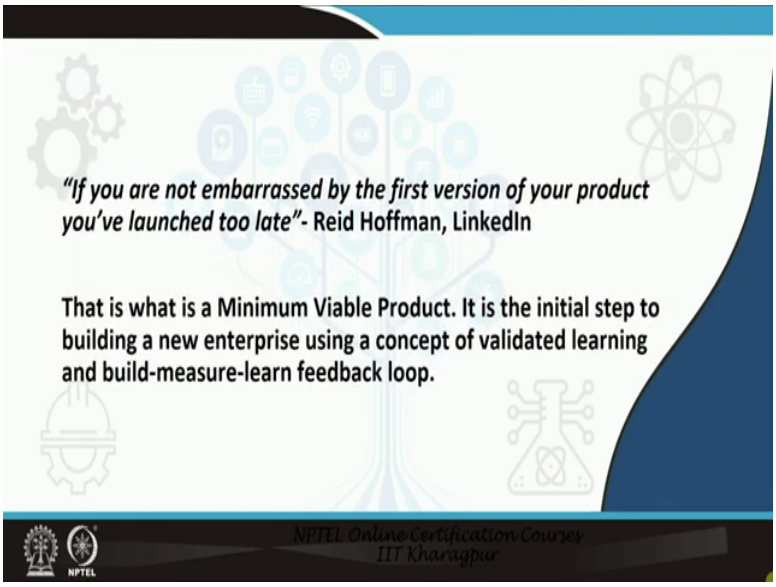

Reid Hoffman of linked LinkedIn says "if you are not embarrassed by the first version of your product, you have launched it too late"- meaning that you have waited for the product to emerge as a wonderful looking product only then you went to market for validation. Do not do that, do it early; get it take get it validated much earlier.

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So, in there should be you should think deeply about your MVP and then what should be the format. It should be just enough for the consumer to test its usefulness that is it. So, go early build it go early.

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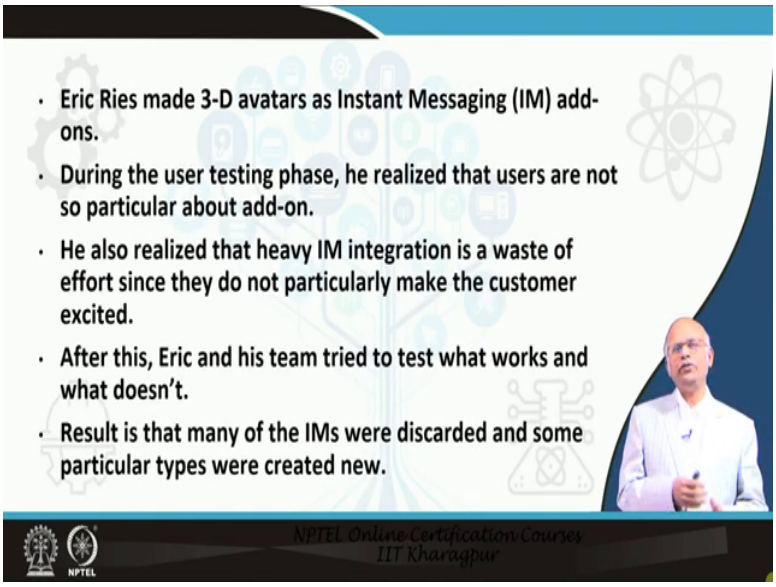

This is an example Eric actually was working on building IM for instant message messaging add on some avatars or something, but he was interested in doing more and more complex models, but then he thought is it really meaningful to the customer.

So, he did some survey and customers say who do not care about the complexity or anything. If there are a variety and simplicity that is good enough so, Eric thought why am I wasting so much of time money and all that behind the behind this complex design. So, they started making more variety rather than more complex design and in the process they made money they got this validation done.

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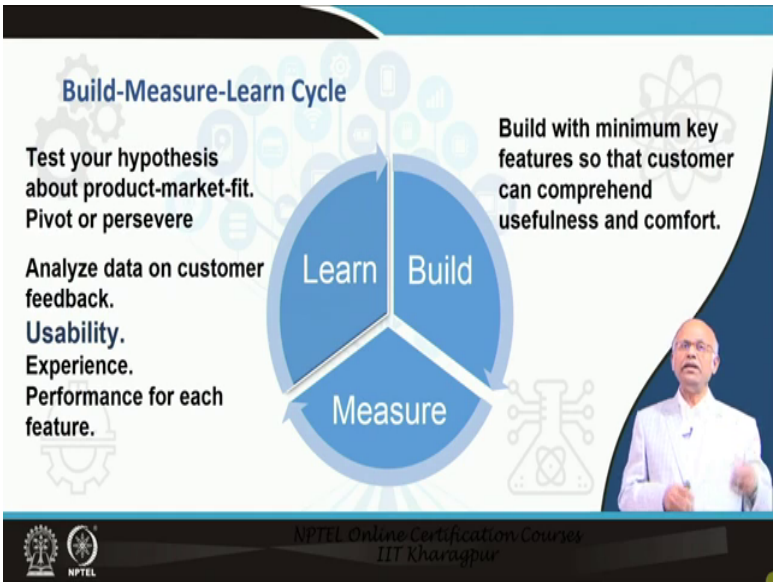

Build, measure, learn cycle should follow that very carefully.

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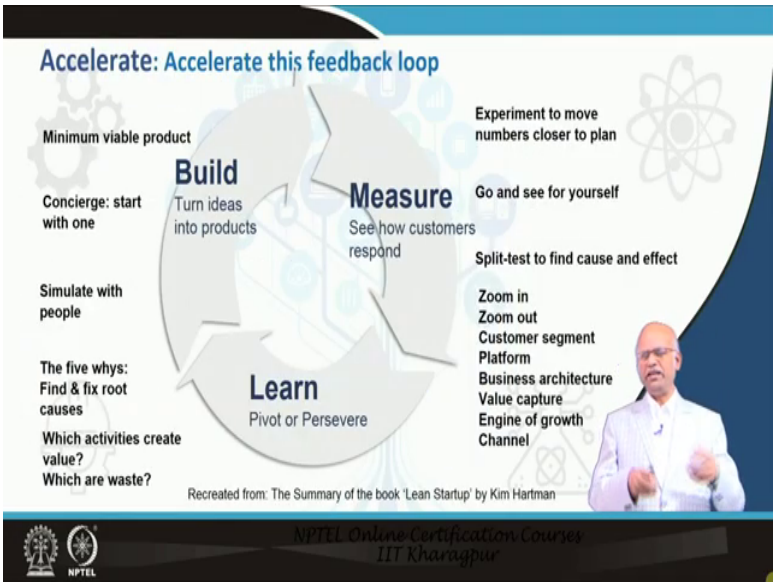

So, build with minimum key features, then measure the customer satisfaction, learn what actually they are asked there one thing and they are not work one thing and then build it again. So, experiment to move number closer to the plan meaning how many times you will experiment or what kind of features that you are interested in what is your plan you move forward.

Go and see for yourself, it is very important. Bill Gross repeatedly said that you should go out, see the customers, meet them, observe them using something even competitors product see what features they are using more. So, that you can add it you can accentuate that and what they are actually thinking that it is not there you can put incorporate that in the product and then eventually we will get a better product.

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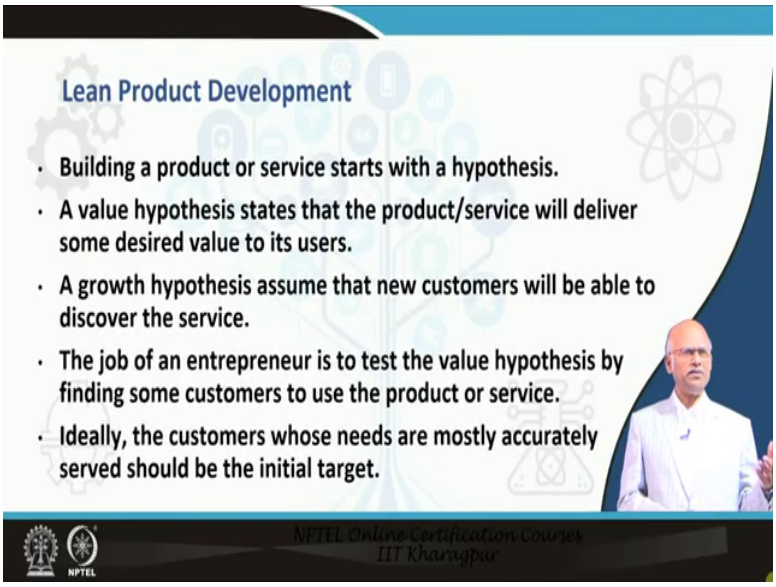

Building a product or service starts with hypothesis value hypothesis. We have already explained that. Value hypothesis is whether we are putting enough value. So, customer will look at it as a superior value proposition. Growth hypothesis will there be sufficient customer and will customer come repeatedly. So, that is your growth hypothesis.

The job of an entrepreneur is to test value hypothesis by finding some customers to use the product ideally customer who needs are mostly accurately served should be the initial target customer with the pain right pain.

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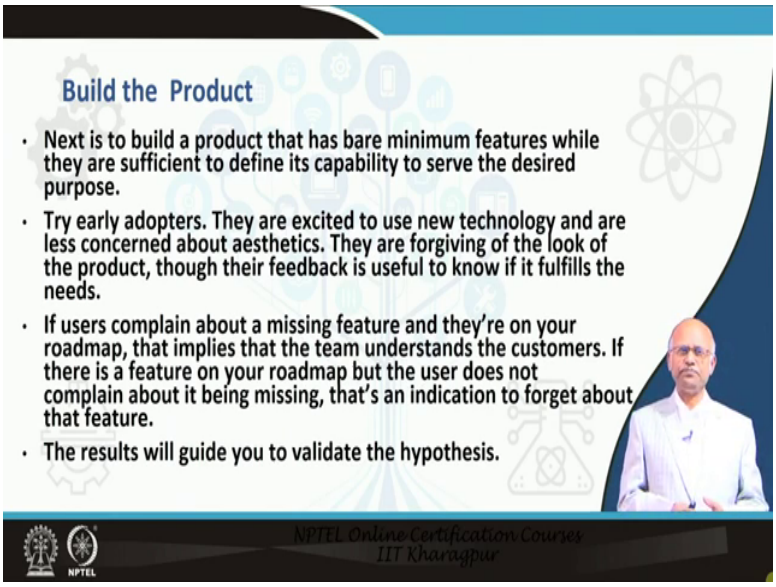

And then you build the prototype. The results will guide you to validate your hypothesis.

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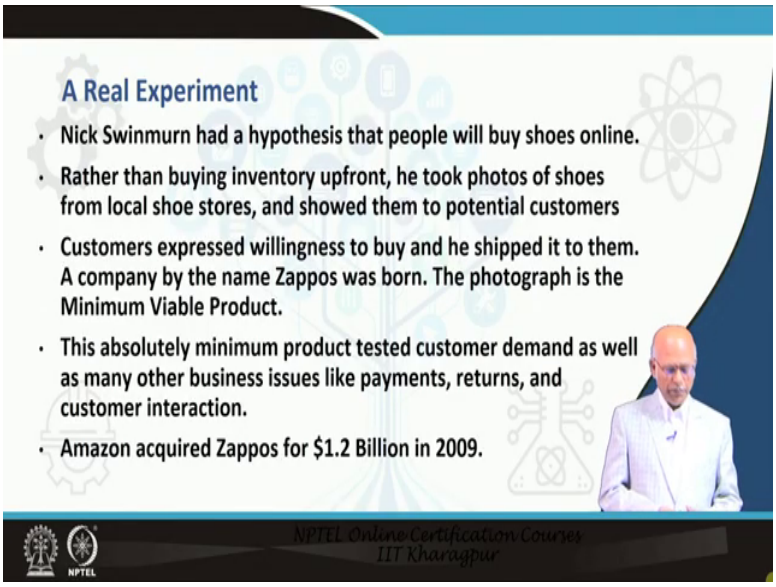

Now, I will just conclude by giving this example. Nick Swinmurn of Zappos, he was from a very ordinary family. They did not have a business background. So, lot can be learned from this, I have some reference given there. If you read the whole story will be highly revealing on motivation about starting a startup.

He had a hypothesis that people will buy shoes online just in just a hypothesis rather than buying inventory upfront he took photos of shoes from different malls and exhibitions from local shoe store and exhibition and showed them to potential customers.

Customers expressed willingness to by looking at the photo itself and he shipped it to them multiple pairs actually and then customers who visible pair customer did not like he just got it

back or with his own expenses on his own expenses and then the pairs that they liked, he got the payment later after supplying payment on delivery.

So, eventually a business was born that business was sold to Amazon for 1.2 billion dollar. He started in 1999 and he sold it in 2009. So, in 10 years, he made a value of 1.2 billion dollar.

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The journey, he majored from a film studies in U.C. Santa Barbara and graduated in 1995. He joined a job where he got a salary of 1000 dollar a month, paltry salary. He joined a online car selling company and tried to do all odd jobs so, as to learn everything about business just because he wanted to start a business. After 9 11 months of work, he started 4Students dot com. Majority of the university graduates in at least that I know of think in this line.

4Students dot com as a site where you could email other students and get deals on shopping. So, if somebody knows about a deal, he will immediately tell you that there is a deal. He shut it down very promptly, he could not find a particular pair of shoes in a mall and thought an online portal would give him lot of options that is not possible in a brick mortar store because they have a limitation of inventory.

Whereas, in online store, there is no limitation of inventory, you can collect from 1000 stores or different manufacturers also and an upload and people will have a wonderful selection wonderful choice.

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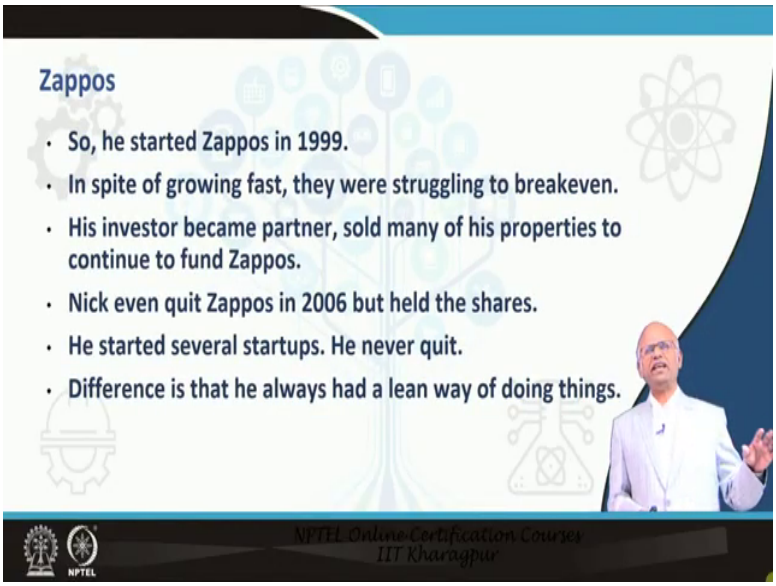

So, he thought this can be a business. Most people said this is absurd because nobody wants to buy shoes online, but they want to try the shoe, walk in the shoe and then only they would like to make a decision.

But then he started Zappos against all advice and eventually of course, Zappos was not doing that well even though their turnover increased increase up to 500 million or so, but then at some point of time Nick Swinmurn realize that we are not going anywhere we are not making lot of profit. So, he actually quit Zappos, but he did not quit the percentage share that he held.

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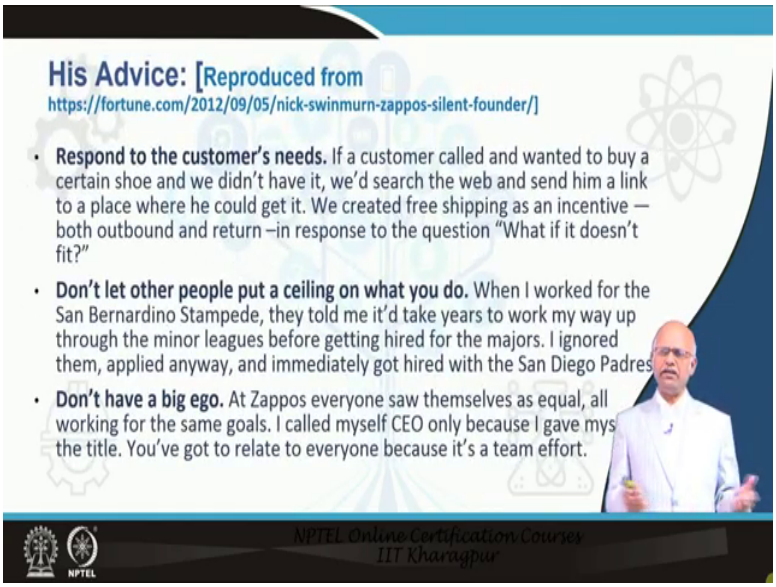

He started several other startups, he never quit meaning he was always in business. Difference is that he always had a lean way of doing things and eventually he made his own money because he was holding the shares in Zappos and even when it was sold, he got his share.

He is advising, it is very important respond to the customers need and look what he is to do. Even if a customer would not receive not get whatever he or she was looking at his site, Swinmurn would be contacting the customer after getting the information from other sites. He does not earn anything, but he wanted to serve the customer best so, that the same customer may come again and again.

So, even if he did not have the stock, he gathered it from some other store gather only the information. Do not let other people put a ceiling on what you do. Many people suggested Nick that do not start a online shoe shopping shoe selling business if you are not going to buy, but he did that and he was successful. So, do not listen to people; do not have a big ego; ego actually kills everything.

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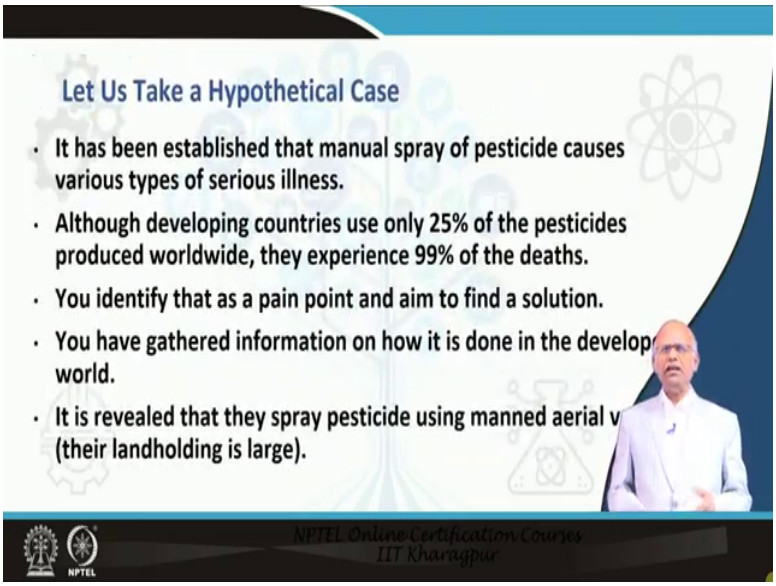

Let us take another hypothetical case. Say suppose you just put yourself in this whole scheme of things, you should be aware that developing country use only 25 percent of the pesticide whereas, Asian countries and emerging countries use 99 percent of the pesticides.

But then sorry developing country uses only 25percent pesticide and developed country use 75 percent of the pesticide. Whereas, 99 percent death happened because of pesticide in developing countries; only 1 percent death happens in developed countries for pesticide poison.

So, this is a skewed kind of statistics why so, because in developed country; they use drone for pesticide dispensing whereas, in our country people use manual tools for pesticide spraying. So, suppose you think that let us think of starting a business as to how we can help our farmers and avoid this kind of untimely death. So, you think that the drone is a new technology, let us use drone for doing this.

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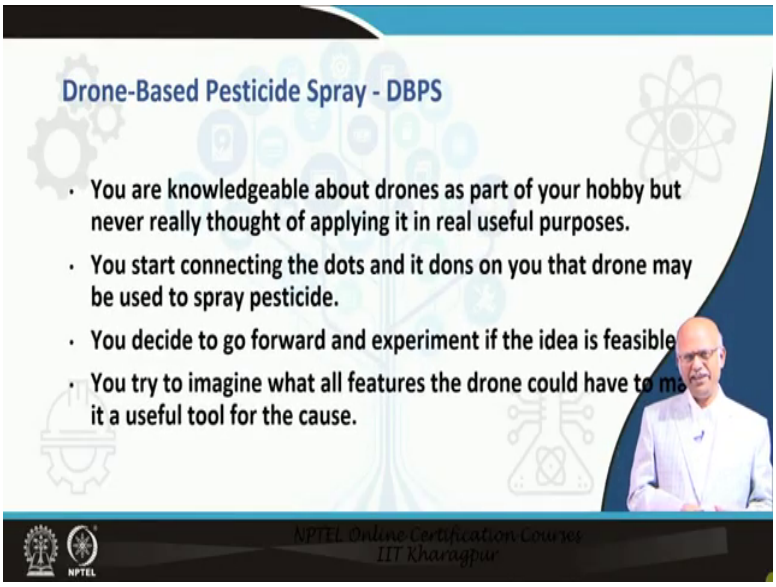

So, or maybe before even thinking of drone you explore as to what developed countries are doing and then you realize that they are using unmanned plane. So, you think that drone is the thing that should help. Now how should you start? You should start with a minimum viable proposition or product.

What is that? You should not actually start building a drone, you should buy a drone and just attach the pesticide tank or cylinder and then some releasing system. Show it to 1, 2, 3, 10 farmers; get their feedback. If they say that this is wonderful, we are ready to buy then start gradually start adding value and then eventually before you commit lot of capital and lot of other infrastructure investment move gradually.

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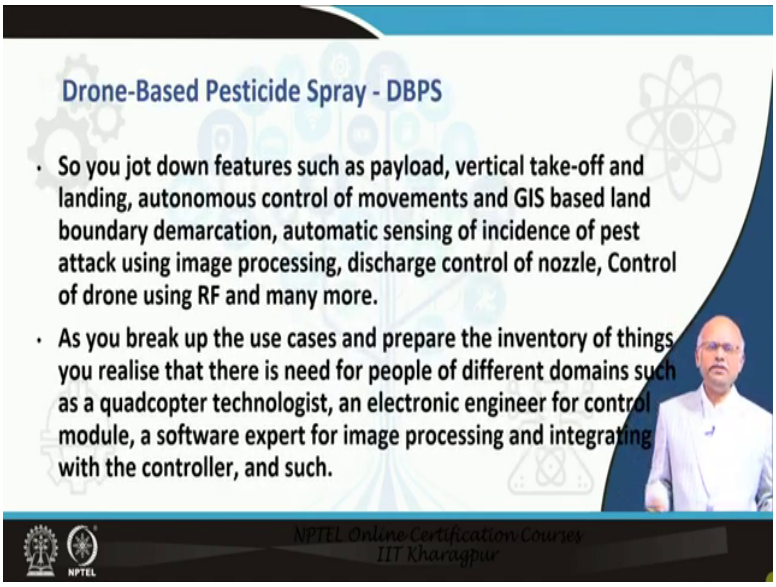

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So, that you do not end up spending so much of money that eventually you are if this becomes unsustainable. You can pause and read because I am running out of time.

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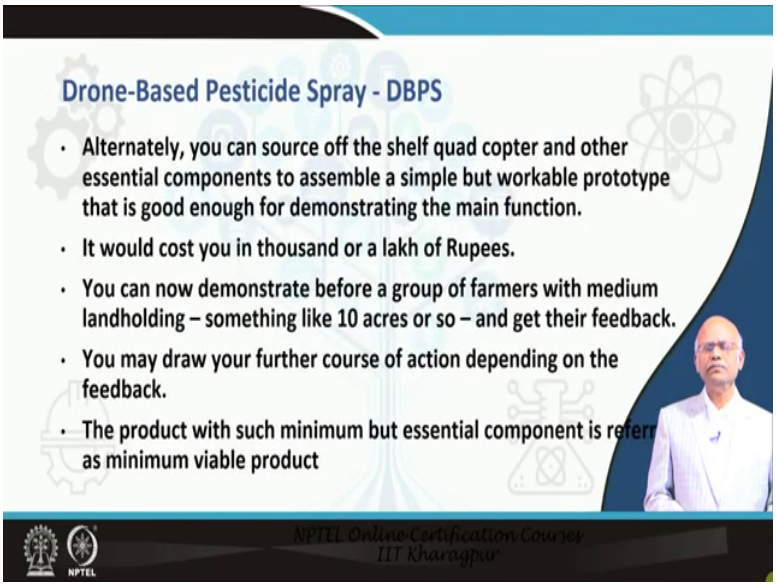

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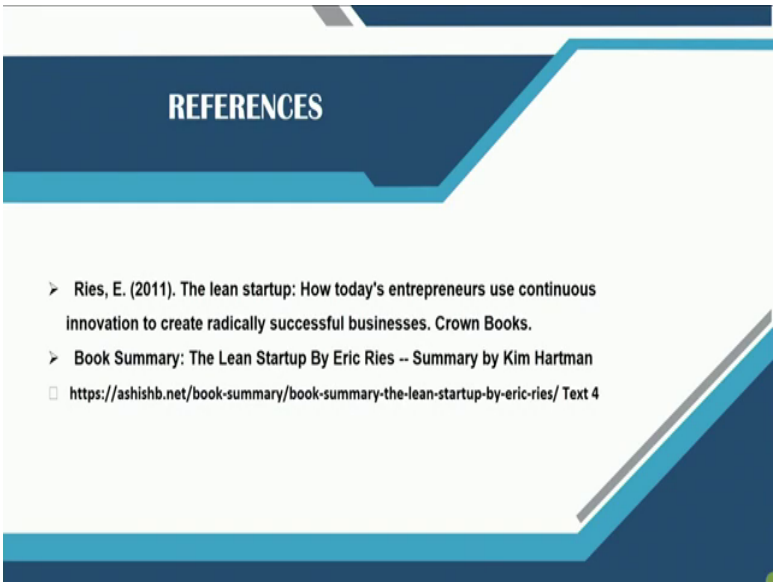

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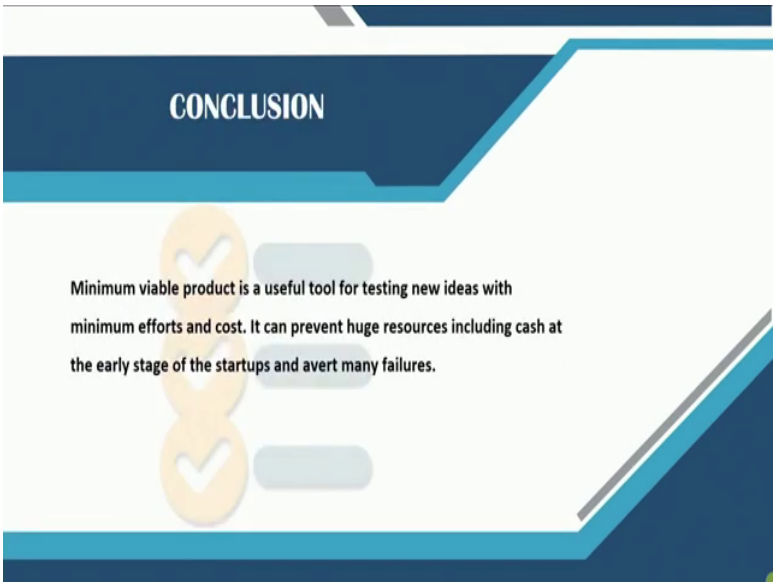

Some references and a brief comment.

Thank you so much.