Innovation by Design
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Module - 06
Start of section 3
Lecture - 37
One product, many problems: Understanding user convenience

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Look at this slide. We will have to have a special locking, because we found out in our user study that the postman has to really hit the lock with the rock when it is rusted, so that he can put the key and open. And study the user context in the toughest situations. This is a very very important slide, where we say that, you have to study the user; who is my primary user now?

The primary user is the man collecting the letters not the person who is posting. Because, he is like, you know, has to be convenient to him, and the primary user's serious problem is during rain how will he collect letters and he has a very tough time balancing his

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umbrella.

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Why is it difficult to balance his umbrella? Because of post box is tall, if the post box is short he would have gone and could have taken the thing.

And then look at the keys. He got 10 keys and he is fiddling with the keys to open. So, we have to reduce the number of keys if possible, we can have a common key. So, most of the Check is coming from your study.

And then he has to place the timeline at what time he is clearing the letters and what is the next clearance tag.

If he is clear the letter 3 o clock, then he would again come at 3 next day; he has to say 3 next day or he has to say 6 o clock in the evening. So, those clearance tags go into the post box. So, we studied those tags too.

A number of times you cannot even reach the post box. There was so many motorcycles parked around it. How do you solve this problem? Is it the problem of the post box? Is it a problem of the people? It is both actually. How should your post box reacts, so that this person will not park his motorcycle next to the post box. That is our concern. So, I

have to design my post box in such a way that a person, you know, has to think twice before he park his motorcycle. And then issues of problems, see how they put cement concrete base around it.

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So, that, you know, you know, the rusting is hidden and then further rust inside. So, there is very humid inside the box and difficult to paint.
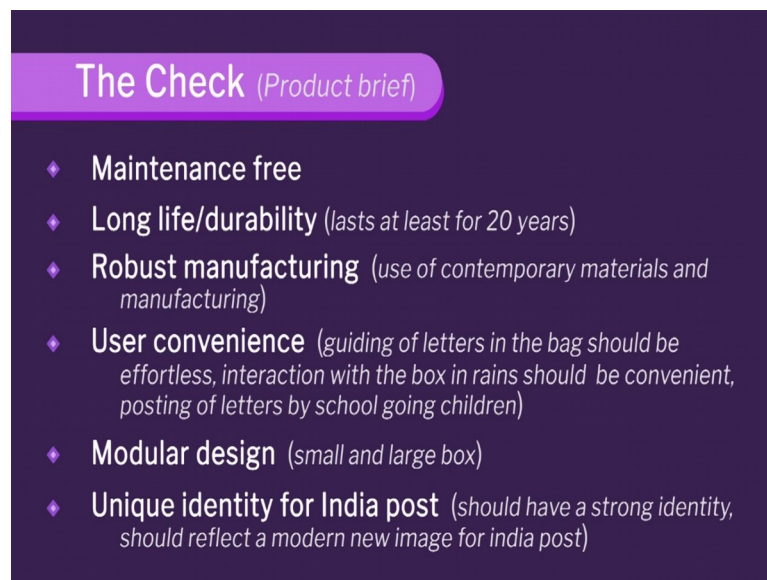
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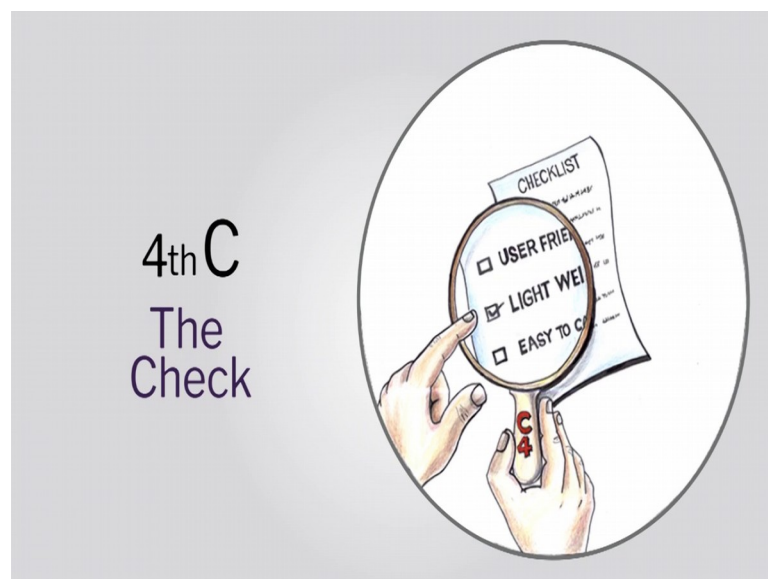
So, here we have the come up with the "Check". What is the check doing? It is giving us a clear direction basically, it is also telling us what the product brief should be, what you

should do with the product and it also tells us, you know, the design directions; now, let us see what the Check says. So, again to the everlasting credit of Mr. Srivastava who was the postmaster general in GPO. He gave us this one-line brief saying that if you can make it maintenance free, it will be great.

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The Check (Product brief)

- Maintenance free
- Long life/durability (lasts at least for 20 years)
- Robust manufacturing (use of contemporary materials and manufacturing)
- User convenience (guiding of letters in the bag should be effortless, interaction with the box in rains should be convenient, posting of letters by school going children)
- Modular design (small and large box)
- Unique identity for India post (should have a strong identity, should reflect a modern new image for india post)

So, what will be our first strong concern make it maintenance free, everything else is secondary. Then comes the long life and durability, because it is a public product it has to have long life. And then robust manufacturing means all these problems your manufacturer should be so good, your material have to be excellent. So, robust manufacturing comes as a important concern.

Then you look at user convenience. The postman for example, should be able to, you know, put it in his bag very easily, the interaction with the box in rain should be simple.

And also children should be able to post letters should not be so tall, that children cannot post letters.

I am very happy to tell you that, as soon as he installed new post box on the campus, the parents actually gave letters to kids and said why don't you post we got new post box on the campus. So, you can actually encourage use of post box or make it more convenient for kids to post. Then there should be a modular design, because we found out that in festivals the huge number of letters come.

So, during festivals even an add-on box, so we say, you should have a modular design, a small one and a large one. And then you should have a unique identity for India post least, you know, but not the last that you have to create a new strong identity for India post and, you know, and you should reflect a modern new image for the postal department.

So, the check on the product brief are very critical when you make this list is very easy for you to work because you have a hierarchy of needs. So, the first need is paramount and I will not compromise the need for any of the other aspects. The durability is very important I won't compromise a durability from point of view of your robust manufacturing. But, robust manufacturing is important use the right material, so that my durability also is there and my manufacturing also is robust to similarly the, you know, design and the identity.

So, let us now go to the most important aspect of a lecture which is the "Creation" the "Conception",

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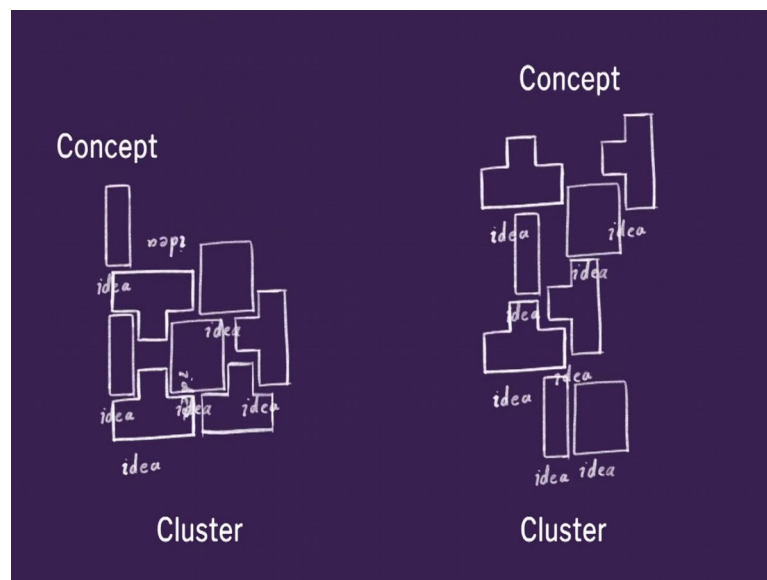
where we are trying to conceive multiple ideas; we group them into affinity clusters, we will explain each of this term beyond one by one. We create at least three concepts for every sort of project we have, three concepts are must and then we select the final design. So, this sequence for example, when you have multiple ideas, when you make affinity clusters you have, you know, around 30-30 ideas in each cluster.

Then when you make concepts you have one assimilated concept and then you design. So, this is a very interesting journey this needs specialized training. So, now I have put up this slide specifically for you and you can see that there are multiple ideas for each problem, but I only showing you one or two ideas for each problem. You can actually have 10 ideas for each problem and that is what we encourage generally, but we have for paucity of time and slides I am showing you one idea for one problem.

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Now, for example, you have this rusty and damaged boxes in this slide. So, what is happening over here, because of my steel is rusting. So, the best option is to use plastics which do not rust and plastics have round shapes, so that is idea number one, rounded shapes, no water ingress.

So, number two is use stainless steel, you know, stainless steel does not rust and then you have flat boxes for stainless steel; very simple straightforward ideas, but they only solving one issue about rusting of damaged boxes, ok. Now, go to the next one.

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Rusty and non-functional locks.

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How do you look at rusty and non-functional locks?

So, here you are looking at in this slide you are seeing how you can think of interesting ways of locking by using special lock. So, that one single key the postman can carry and he can sort of go everywhere and use the same key rather than using a padlock or a lock.

In this we have the seepage of water is a serious problem and the seepage of water happens because of stagnation of water on the tops, edges which are not closed.

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So, you are coming up with, you know, designs which are rounded tops, which are like tapering houses, so you do not have any water seepage inside. Then you have seepage of water again in an another idea where, you know, make up for the dust in the box. So, this idea is for the dust. Look at that post box which is fully,

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you know, muddy and no water is going in. So, you need to put up on a pedestal, you know, something new, your ideas are not your original, but you are imbibing some of the learning's from other places. So, I know that if there is lot of dust and mud I need to have a pedestal for storing.

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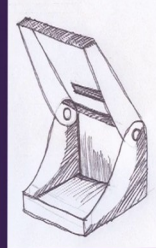The difficulty in gathering letters what are you doing, you can have a tray inside and put in your bag or you can have, you know, letters stacked inside. These ideas coming from the cheque collection boxes. In the cheque collection boxes have very narrow box. So,

when you put the check envelope inside just sits already stacked, this is not possible in our case, but all ideas are welcome when you are doing ideas. So, this is inspired from cheque collection boxes.
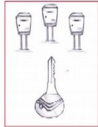
Look at this wonderful idea for difficulty of collecting letters. This way we can make door big because current letterboxes have very small doors. So, it is very difficult to take out the letters, if the door itself opens like big then your collection is very very easy.

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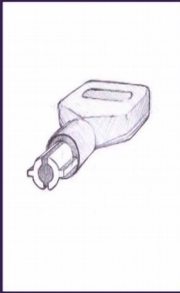
And then for the multiple keys there was an idea that you can have a common key or for a region in the same, you know, number and same lock. So, one pin number one key will open everywhere or you can have a specialized lock which we already discussed.

Cumbersome and time consuming installation, you look at those earlier boxes which had this large cages which went into the soil. So, you have to dig the soil, you have to put concrete inside and you have to, you know, assemble them it was bad for rusting. So, here you come up with, you know, better ideas or, you know, mount them on walls or you put them on, you know, concrete platforms where you just bolt them to the platform. These are not new, these are all coming from lampposts and the streetlights you see all of them are bolted.

So, you can use concrete structure and bolt your post box. So, that in case as a problem you can open it up and bolted elsewhere. So, there is a ease of moving the box.
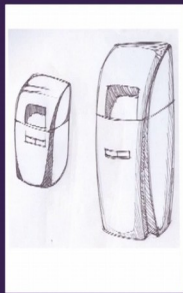
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And then if there is a need large volume post boxes during festivals. So, there are two options here, you have an add-on box or you make the box itself large. Look at the large box square box. So, you can have different, you know, ideas for different requirements.

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Again, we are looking at modular design, you can have a small box and a big box, you know, as shown in this slide where you have two designs. And today also we have two designs in our country. We have those small boxes which are in all the district
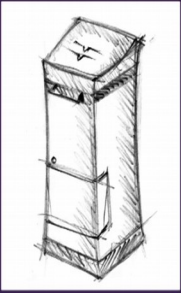
headquarters and most of the villages. The importance of the box not being recognized so, what can you do for the motorcycle parking?

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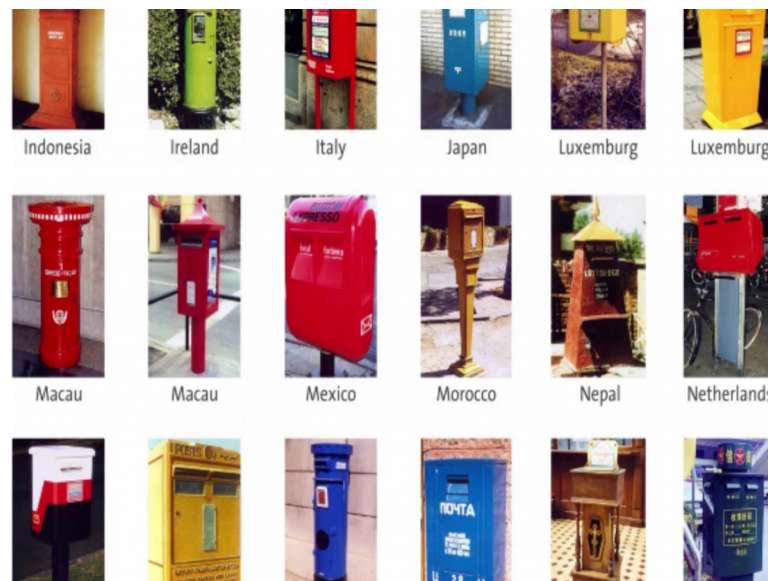You make your letterbox very prominent. So, can you make your product look important? So, it should have a presence, it should make it look important. So, we have, you know, lot of ideas for this very interesting shapes.

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Remember the Nepal idea, where they made in concrete and large with the taper, good idea. So, you can have different different ways of making your box very important. And then difficulty in bending and collecting letters.

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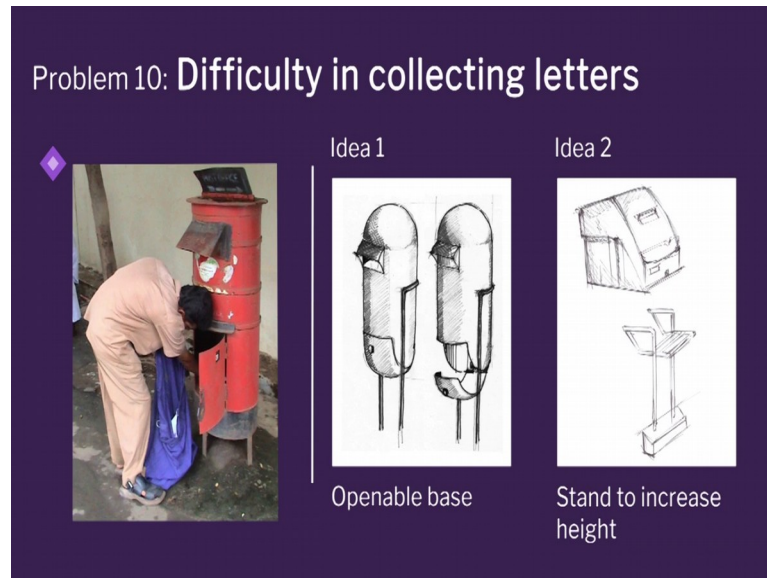
This is my favourite. In this design the post box opens from the bottom. So, what happens, you put your bag below and all the letters emptying into the bag. Is that very interesting? So, you can have a design where you do not have to take the letters and put them in your bag, you put your bag below and open the door and all of them come down. So, that is a very good idea or put it on a pedestal so, that you can collect the letters more easily.

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Poor maintenance makes the box looks dirty. So, what do you do for maintenance? Have surfaces which are clean.

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Posters on the letterbox, how do you prevent this from happening? So, actually you can avoid this all by, you know, yourself suggesting advertising. So, you put advertisements, so, the person who is actually putting advertisement will protect his advertisement.

So, then nobody else will put the letters or you make it difficult for people to stick by not by making the surface such that you can peel off because, every day the postman is going

to collect letters, so he can maintain the box you can actually peel it off. So, you have to have a surface which is easy to peel off. So, those are the two ideas which we came up with.

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And then putting garbage and stones and crackers for fun. There was a very interesting case where we studied the people, you know, because it makes a good sound before diwali and during, you know, people put bombs inside, so the sound is very good.

The posting slot was so convenient to put a bomb inside. So, what is design cue for us inside? So, make the posting slots are such that stones and you cannot light the bomb and put it inside. So, we narrow the entry, so that stones and things can't go in and only the letters can go in and the bottom idea is for areas where you are not able to sort of put a bomb inside because its got a, you know, travel inside and then falls inside its very difficult to make the bomb travel inside there is a flap inside cannot go in.

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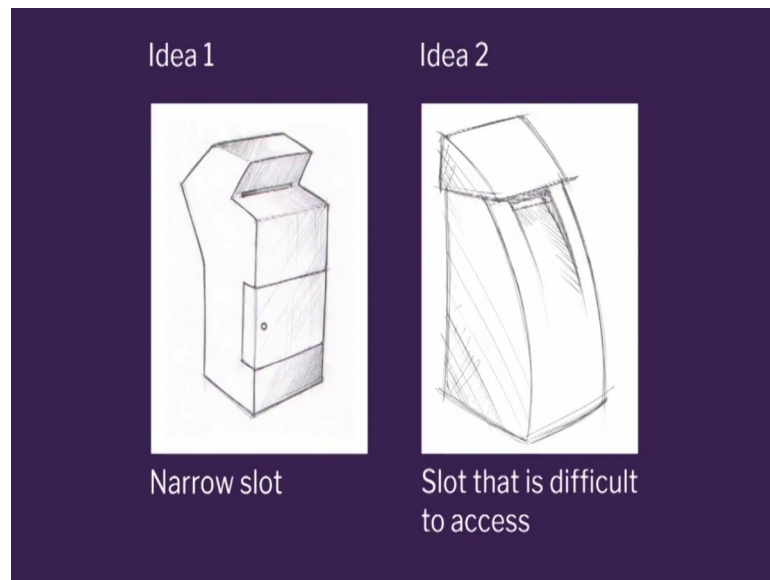
So, you can think of ideas ingress of. So, you can imagine how, you know, challenging it is, when you generate ideas, for all the problems you saw in the field. And is it possible to implement all this in the final design is a bigger challenge which we will discuss.