Innovation by Design
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Module - 03
Start of section 6
Lecture – 18
Concept generation: Checklists, ideas and affinity clusters

I must to confess on a very important aspect here, before these jawans came to IDC and sat in our studio I was also a little naive. I would imagine 'are inko kya poochenge? bottle toh itna simple hai', such a simple product why we need to ask them? And we were going ahead in the design process and then suddenly what happened is where the faculty are sitting together in a jury. And the faculty said if you do not talk to CRPF jawans, we are not going to clear your project. Then we went and got all these people in and then the project took the right direction.

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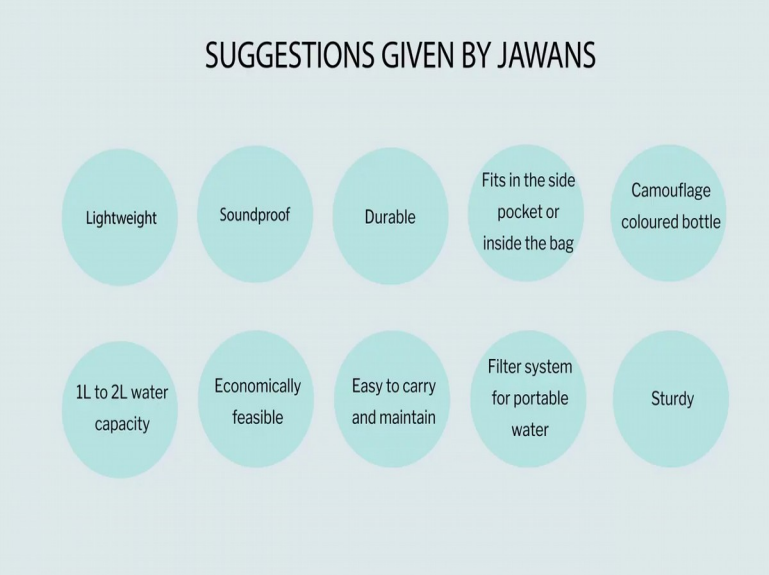

See how important our other colleagues are in the whole journey of design and then here we have the you know a suggestions given by jawans. It should be lightweight soundproof, durable, should fit in the side pocket of their large haversack, camouflage coloured they were clear about colour they said we want solid colours and camouflage colour like our dress.

So, they said two liter water capacity we want to carry at least 2 liter before we get to another water source. It should be economical, easy to carry and maintain at the location and it should be very very sturdy. So, we create a check for ourselves what should we do in this bottle design.

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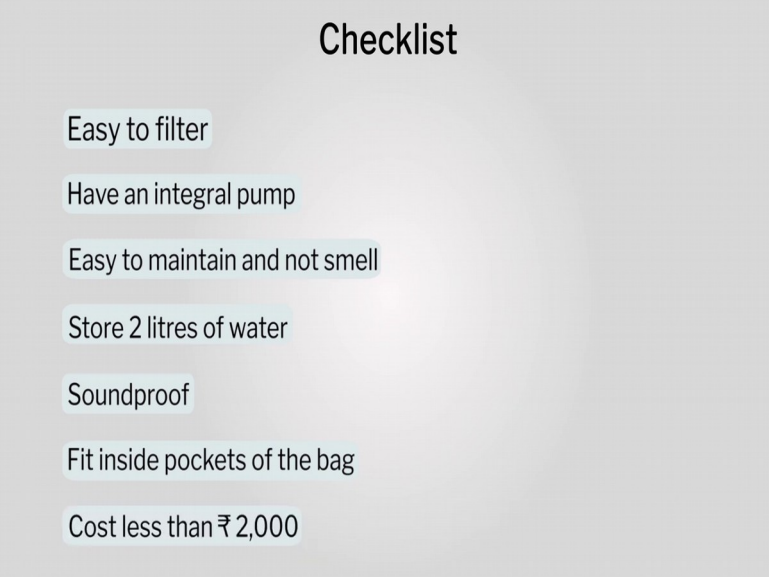

So, we must start again with number 1 - should be easy to filter, should have an integral pump, should be easy to maintain and not smell, should store 2 litres of water, should be soundproof, should be suitable to carry inside pockets of the bag cost less than rupees 2000. So, we made this you know sort of check list for ourselves. So, once we have this checklist we can go back in all the ideas and see whether they are following the requirement or not.

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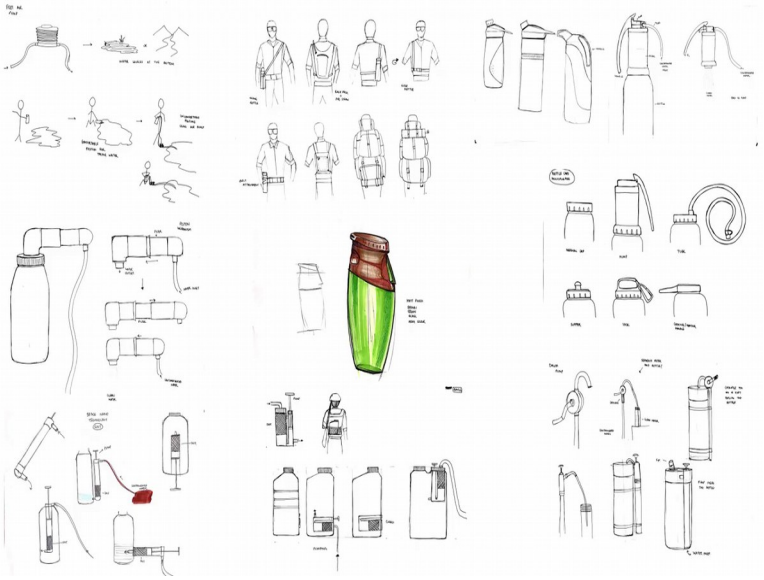

I am just showing you one slide of the ideas, but we here had at least 150 to 200 ideas you know for each problem there were some 10 to 15 ideas.

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So, for example, we considered ease of use as one idea cluster is this the only important condition in our requirement? No. So, we have ease of carrying also important cluster, then we had ease of pumping also as an important cluster. So, we have three cluster ideas, you know, are you able to follow the clustering method? So, whatever ideas you have you take them as cards and you start allotting them to 2- 3 sections. So, you

developed three groups of ideas put them into the boards and you have an ease of use cluster, then you have an easy to carry cluster, easy to pump cluster.

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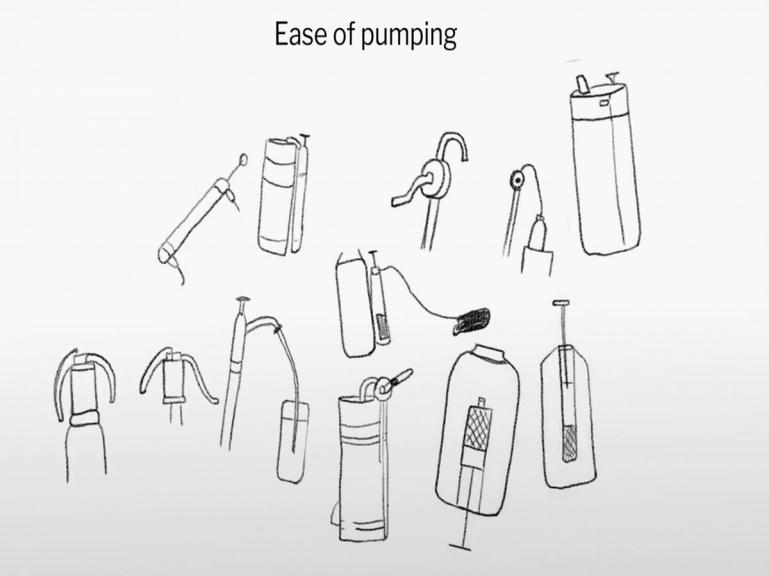

So, you put this ideas together as clusters and then you know call the affinity clusters. Then the process is you pick up one idea from the ease of use cluster and make it the champion idea and take all the other ideas to put in the champion idea and get one concept. So, your concept is power full right? It is build up of 10 to 15 ideas. Are you following me?

And here are the three concepts.

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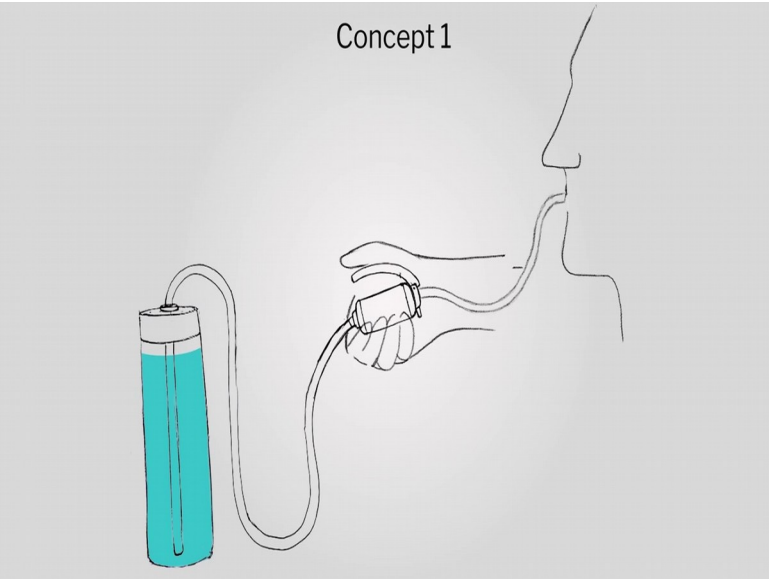

The concept 1 is ‘ease of use’. What is ease of use here? The bottle is the back, you have the pump in your hand and whenever you want to drink, you are pumping and you are drinking ok. This came out of those you know cluster of 20 ideas.

Then we have easy to pump idea. You have a small hand pump in your hand, you just move up and down and you get water you know easily in to your mouth.

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And then you have the easy to carry one. Easy to carry it does not have much failure no pipes nothing, it is all integrated, the pump is inside and you have the product together. So, now, all the three are very important criteria.

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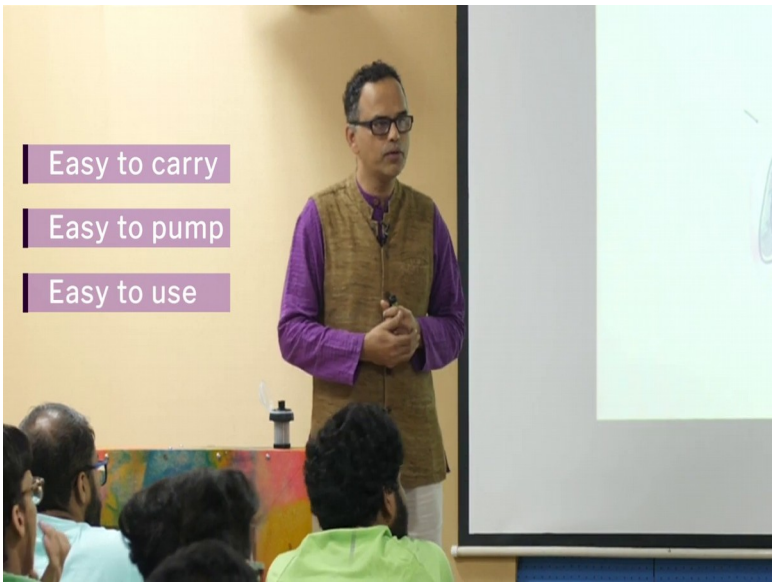

So, for example, the one which is easy to carry, should be it easy to pump and should also it easy to use. So, now, you need to select one concept and take them to the next stage of development.

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Evaluation Criteria	Concept 1	Concept 2	Concept 3
			
Lightweight	9	9	9
Easy to use	6	3	9
East to carry	6	6	9
Easy to maintain	6	3	9
Cost effective	3	6	9
Total	30	27	45

So, here we selected you know that particular last concept because it had much larger parameters. We found out that even though it is easy to carry, it is more easy to use than the pump in the hand. Because you are using it before filtration the water is getting into

your bottle and then you are drinking from bottle which is much more convenient, then drinking by your pumping you got it?

Why is concept three getting more value for easy to maintain? Because there are no pipes, no extra features and is much more easy to maintain and similarly it is cost effective larger points. So, this you know wins over the other concepts. So, you use that concept as your final concept.