Innovation by Design
Dr. B. K. Chakravarthy
Department of Engineering Design
Indian Institute of Technology, Bombay

Module – 08
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Lecture – 51
The Innovation timeline
Changing ecosystem

Good morning all of you.

Student: Good morning sir.

Thank you. So, we will now go to the second part of our series in the serial innovation domain, it is very interesting that when does serial innovation happen? It happens when you are in the same product segment that is same product you are doing innovation every 10 years or every 5 years depending upon how the product is going forward.

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Today we are going to discuss the bullet dispenser which is the center part which is the big you know what I show you as the bigger product. Though the Z line was so successful, it you know swamped the market; all the petrol pumps showcase the Z-line petrol pump. So, what happened how could you actually upset that or how could you offset that and come up with another product is a very important lesson for us. And

please see how this happened. In fact, when I was doing it, it was like research for me. I was doing research in this area to see how I can come up with a methodology for innovation.

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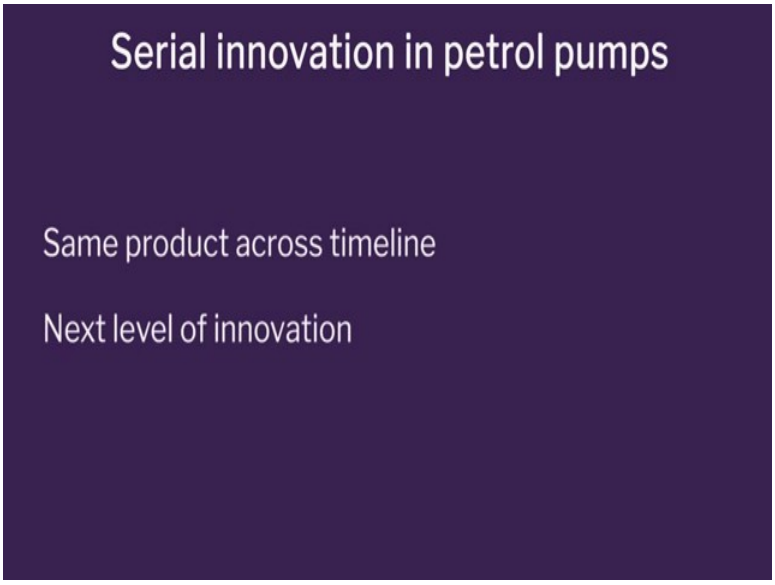

So, same products you know across different time lines, and you are taking it to the next level of innovation.

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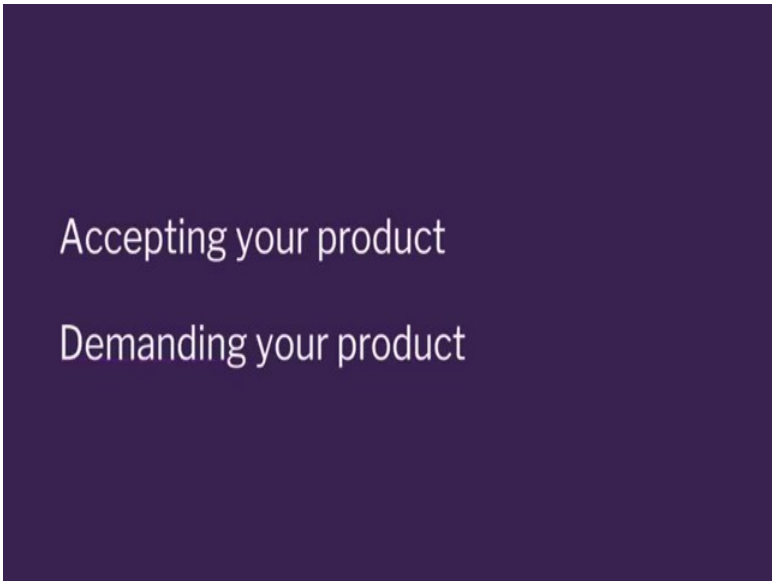

So, here why I am showing you this serial innovation is specifically because finally, it is the users at the multiple levels of users, how they are actually accepting your product, and how they are demanding and requesting for your products, so that is the part.

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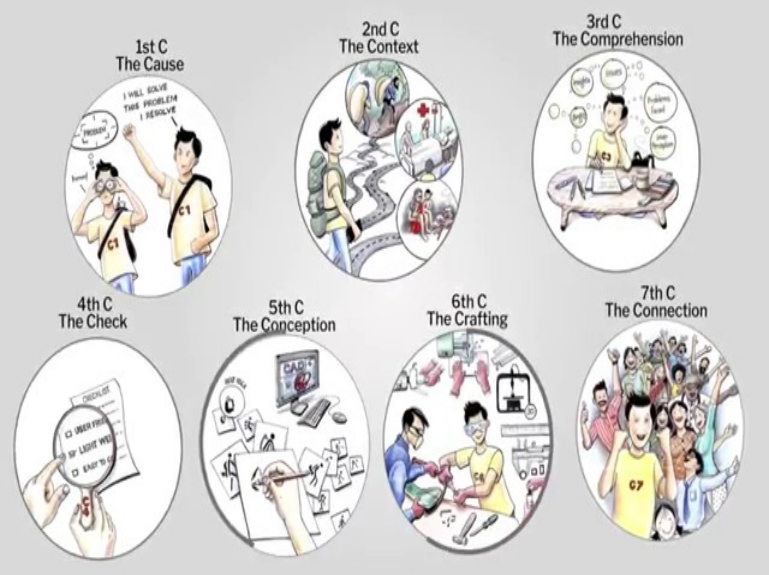

So, our last C you know part two is connection with petrol pumps.

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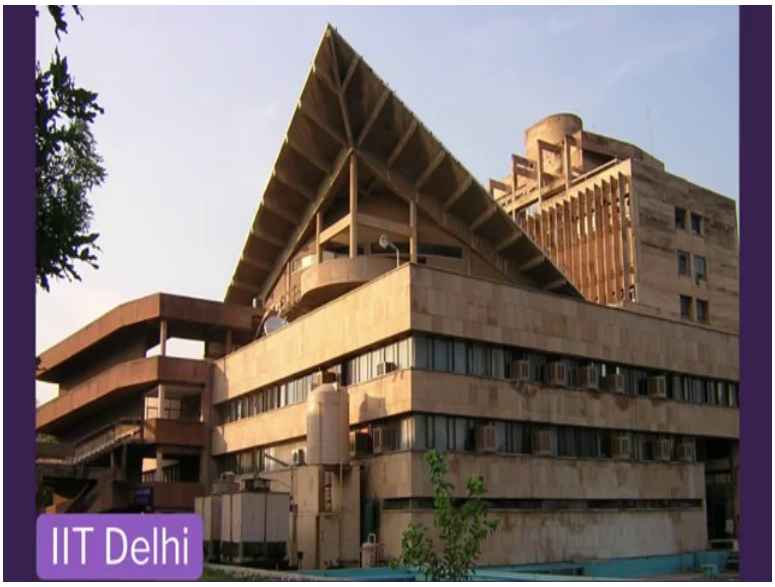

So, very interesting thing happened, once this deadline was very popular and you know like it was already 6 to 7 years, and I got an offer to join as faculty in IIT Delhi to start a

new program in design. So, I accept this offer. I moved from Larsen and Toubro to academics, and then it started doing a lot of programs for industry.

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On telling them how creativity is important for engineering, how you know innovation methodologies are critical, how design thinking is very important of making those wonderful models to understand design details. So, why doing all that, the competitors head of R and D was one of my exposure works of industrial design. So, here for example, when I was looking at all these research and document I founded there is a life to a product. So, it is ethical if you start working on a new design in the same domain after the lifespan of that product is over.

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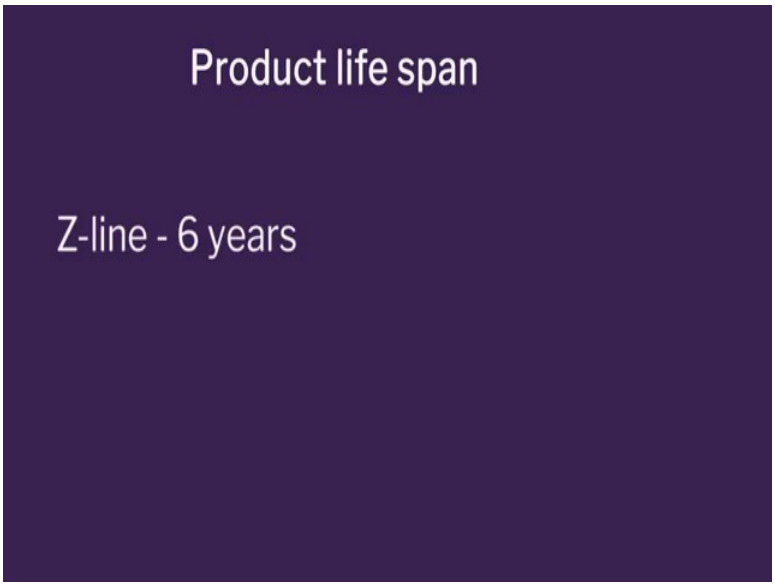

So, the lifespan given to this Z-line pump was 6 years, and it was already 8 years when MIDCO came to me. So, we said please come we will work on this project. So, he sent his CEO of the company (Refer Time: 02:31) here. The top management support is very important because you know the innovation process it is a very expensive process right.

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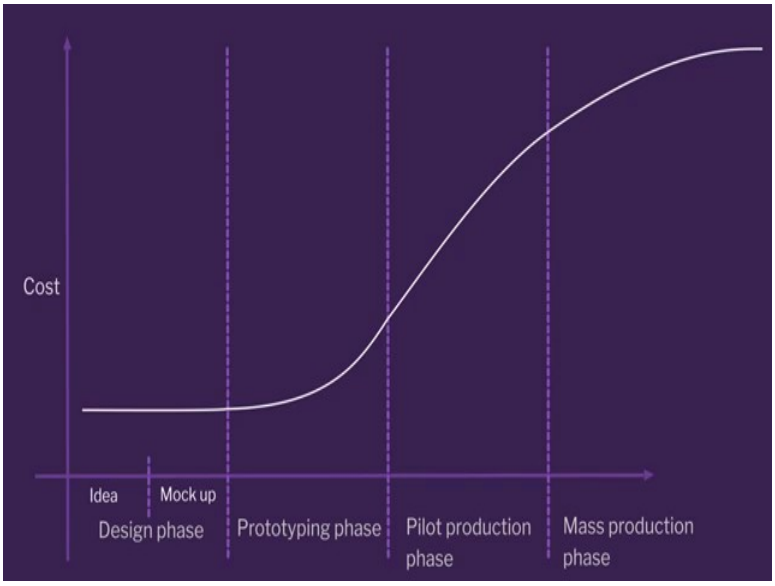

The expense built up while you go in the process, the idea and design phase is not very expensive, whereas, the prototyping phase and the mass production phase is very

expensive. And just imagine when a company is not doing well, will they have enough money?

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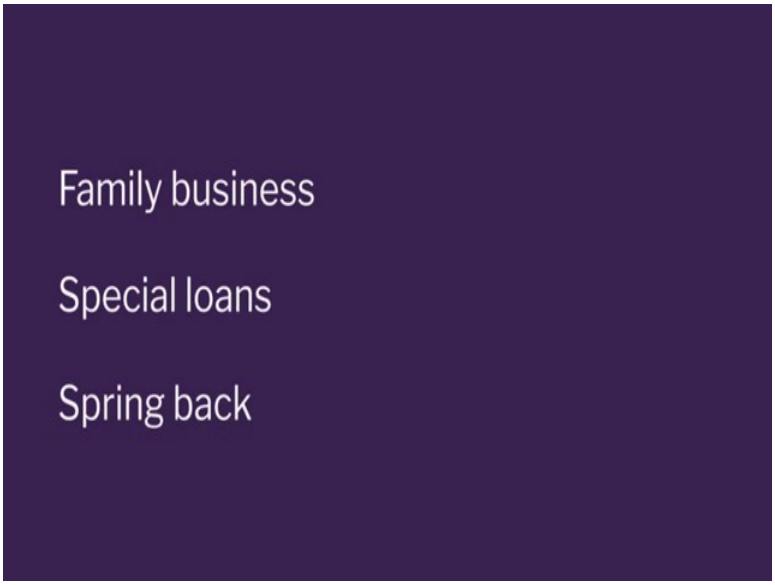

The CEO of the company there was in the family business. So, he took you know special loans and said I have to spring back and I have to work with the best in the country including collaborations for various engineering components, and we will do spring back.

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So, this Mr. Arup Chatterjee the CEO of the company came back to IIT, and said you have to work with us. Now, that your faculty you should work with us, and you should produce a pump, they did not say at that time that you should they know replace this Z-line or whatever they said you have to design a pump, so that we also get me in the market. All on the same framework what I learned in L and T, remember I was very clear.

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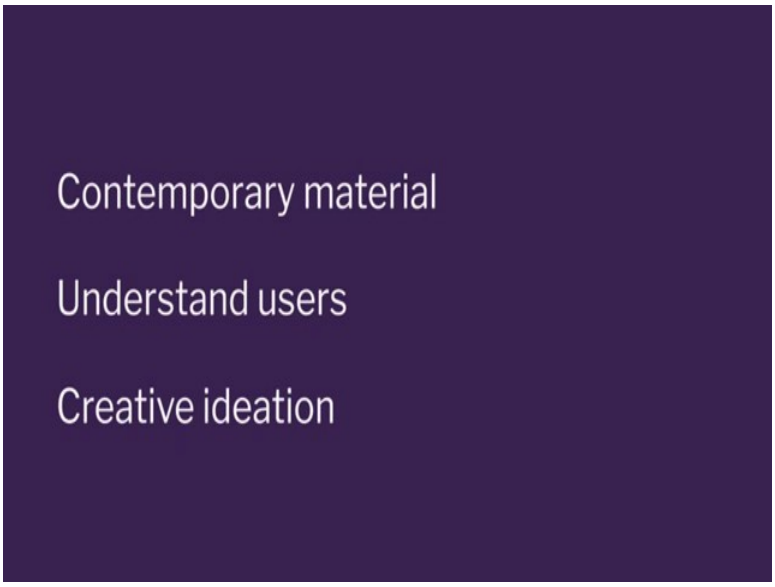

Contemporary materials, understand users to the best possible way, bringing up creative ideation at every stage, let it be manufacturing, technology, creative ideation is a must. So, these three pillars were used every time. So, use the same three pillars again for this process.

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So, we took it as a student project, and we you know started the journey. Now, we look at what MIDCO were selling. This was what they were selling before the Z-line came up. This was 3 years ahead of the Z-line. And after Z-line came up nobody was buying this pump.

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Our electronics was superlative, our shape was phenomenally new, our manufacturing was excellent, our quality control was very, very good and cost was low. Cost was low because we designed for low cost of sort of production.

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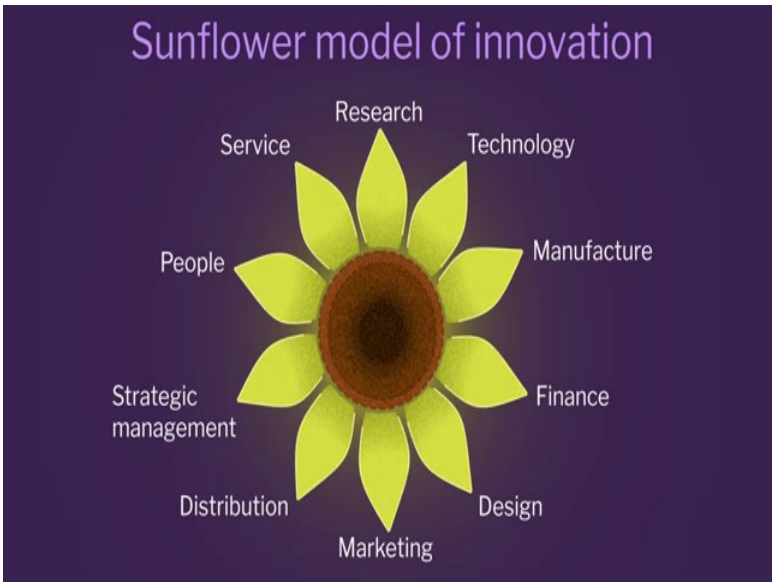

Every part of the sunflower model that petals I showed you were excellent. So, this pump could not compete. So, when compared to Z-line you are seeing that the MIDCO is a very small company; one-hundredth or one-thousandth of the size of Larsen and Tubro. And what was advantages, it was a single product company, they had no other business other than petrol pumps. And they came into petrol pumps after manufacturing gas cylinders.

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We need three important things when a new company comes in, you need to have investment in manufacturing, investment in human resource, and biggest challenge is that human resource for design was very difficult to get. And then we looked at you know customers were far more demanding over the years. So, it is already 8 years since we did the Z-line and lot of things changed in 8 years.

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And remember I was telling you about giving you the example of laptops last time, every year we are getting laptops which are better, cheaper, much more capable than your early laptops. The same phenomenon after 10 years lot of things changed. So, we need to look at everything in a new way. So, like luckily as soon as we started the work, the company was very aggressive. So, you all know innovation happens in warlike situations MIDCO completely out of market starving. So, now like you know within IIT luckily one of my students agree to do this project.

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Manoj Dubey, he was my student at that time in IIT, Delhi. He was a third or the fourth batch of design program over there. So, Manoj took up this case. We use the same formula of ideation, how we took inspiration, how we made multiple small models, how we did CAD modeling.

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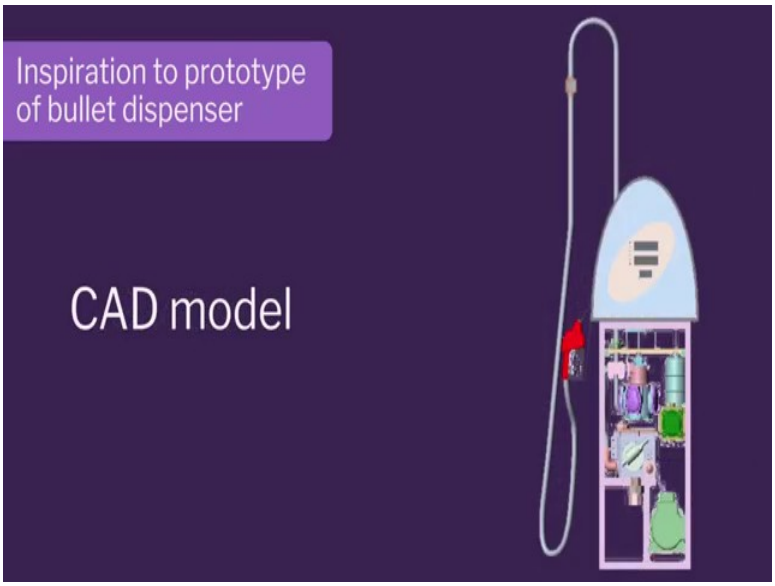

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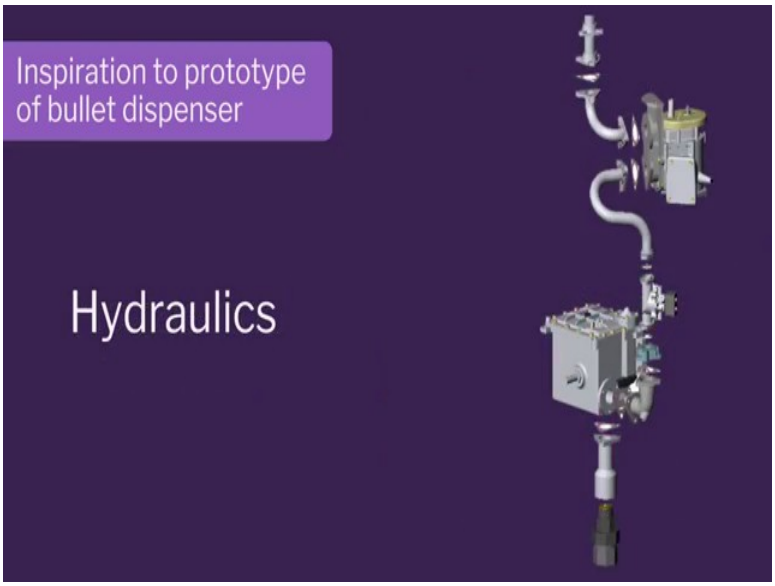

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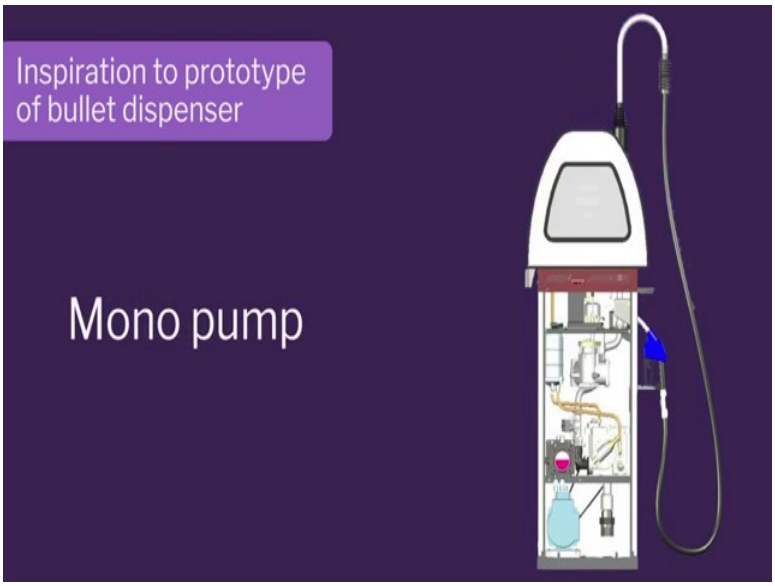

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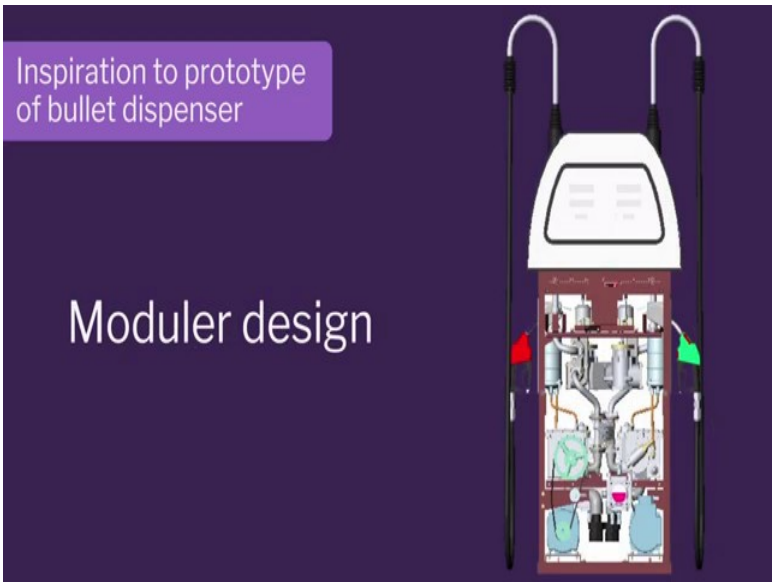

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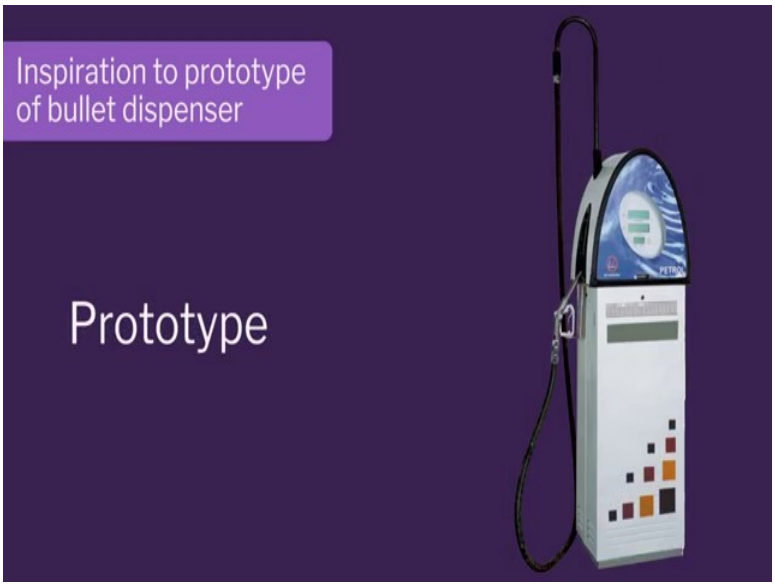

Today, I am going to discuss the management and the collaboration issue more in this because all others are constant, whereas in the Z-line I did not talk about that much because the L and T had all the structures inside very well. What happens in the designer joins the company, you get tremendous amount of synergy to take the project forward. So, Manoj Dubey had a joined the company with MIDCO, then MIDCO started a new department in design.

So, when you are doing innovation, sometimes your old human resource is not good enough for you, you have to bring completely new people. So, MIDCO completely hired new sort of staff new staff for doing design, CAD modeling, because all they did not know how to use CAD to take products forward. So, this is completely a new setup outside where the design was supposed to be taken care of.