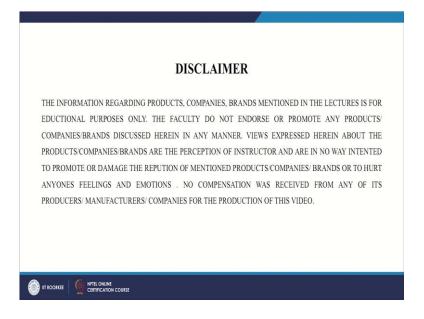
## Product and Brand Management Professor Vinay Sharma Department of Management Studies Indian Institute of Technology, Roorkee Lecture: 33 Product Innovation – II

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Welcome back to Product Innovation. I would be taking you towards a few other aspects of the discussion we had in the last session and let us see, what comes in store. See, after we discussed the key aspects related to innovation, here are aspects of innovation and value creation. Now I would be taking you towards a perspective around innovation. This is one of my favourites. Professor C K Prahalad was a visionary and he has contributed so much to the field of management and market development and especially strategy.

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Three aspects of Innovation and value creation:
 Cocreated consumers.
 Access resources from multiple sources.
 The emerging markets can be a source of innovation.

Source: Prahalad, C. K., & Krishnan, M. S. (2018). The new age of innovation: Driving cocreated value through global networks.

So, it has been taken from his book, which he wrote along with Krishnan and the name of the book is The New Age of Innovation published in 2018. This book talks about a new perspective associated with innovation. The three aspects of innovation and value creation, which Professor Prahalad and Mr Krishnan talk about is related to cocreated consumers or cocreation and consumers, whichever way you want to look at it. Access resources from multiple sources, that one can access resources from multiple resources and finally, emerging markets can be a source of innovation. Let us see the structure which they talked about. They talked about two pillars of the next generation of innovation. And definitely, that structure is coming up fast.

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The two important aspects or pillars are N is equal to 1 and R is equal to G. We will see what are these two pillars on the basis of the technical architecture of a firm, wherein one pillar as I said, is N is equal to 1, which can be deciphered as personalized, co-created experiences. The other pillar R equals to G is global access to resources and talent. And these pillars support the social architecture of the firm. So, from the technological architecture of the firm to the social architecture of the firm N is equal to 1 and R is equal to G. Let us see what it means. And this is an important thing, I would request you to focus on this, go to the text, read it, and you will enjoy it.

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## The key element of transformation of Business

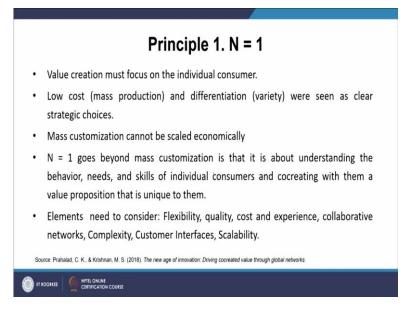
- The value is based on unique, personalised experience of customers- the focus is on the centrality of the individual N=1 (one consumers experience at a time).
- The focus is on access to resources, not ownership of resources.
- Value is shifting from products to solutions to experiences.
- No company has all resources it needs to create unique personalise experiences from the best source (R=G)
- · Flexible systems are a prerequisite and must be developed.
- · Resources in the ecosystem must be continually configured.
- Specific models must be developed to focus on one consumer from the millions.



The key elements of the transformation of business related to this structure are suggestive of the fact that the value is based on the unique, personalized experience of customers. The focus is on the centrality of the individual and N is equal to 1. One individual consumer's experience at a time. Do you recall something? At this moment, several organizations are keeping individual customers in mind when they are serving them. They are customizing several things to the specifications of individuals.

And many a times, when you are using a particular kind of a software, someone from the backend is actually monitoring your usage and supporting you. The focus is on access to resources, not ownership of resources. Value is shifting from products to solutions to experiences. No company, as the book says, no company has all resources it needs to create unique personalized experiences from the best sources R equal to G. So, multiple levels, and multiple resources can be accessed. Flexible systems are prerequisites and must be developed. Resources in the ecosystem must be continually configured; specific models must be developed to focus on one consumer from the millions.

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Now, principle 1: Let us look at it. Value creation must focus on the individual customer, whenever I am talking about this individual customer and if we will go to read the text, you would realize that serving individual customers means that you practically can do that and you can practically remain connected to the individual customer in real-time.

That is the highest benchmark and then even in the product design stage, you may visualize what kind of finer customizations you would be doing. Or let us say, for example, there is one single customer at one corner of the server somewhere who requires something special. So, that product can be sent to that customer or sold to that customer, and that is the kind of ability that businesses have developed in due course of time. Low cost, mass production and differentiation variety were seen as clear strategic choices. Mass customization cannot be scaled economically.

N equals to 1 goes beyond mass customization in that it is about understanding the behaviour, needs and skills of individual consumers and cocreating with them a value proposition that is unique to them. Elements need to consider flexibility, quality, cost and experience, collaborative networks, complexity, customer interfaces, and scalability.

In today's era, all organizations wish to remain in touch with prospective customers, and their current customers and that to individually that means they are individually contacting everyone or let us say are in touch with everyone and getting a real-time perspective and feedback that can be several examples, day in day out.

You can just watch what kind of messages you are getting, what kind of inputs the organizations are getting from you, whether are you actually filling up forms or passing on the information to them, or somehow, they are enabling your choices. Have you noticed that your mobile phone company actually knows the name of the people in the photographs you have on your mobile phones and they are actually naming those in your storage. They are not deceptively intruding on you, they are actually facilitating you and because you have given them the legal rights to go for that, plus you are online in touch with them and they are actually noticing your preferences.

This is one of those examples, apart from several other measures, that organizations are using. This book talks about several examples and one of those is GoodYear Tyres. GoodYear Tyres have developed procedures to remain in continuous touch with its customers. So, as to advise them on safe driving, careful driving, useful braking, and useful brake usage and several other aspects and even, GoodYear Tyres which the book also talks about having sort of augmented their pricing methodology in terms of the usage related to their tires by their customers.

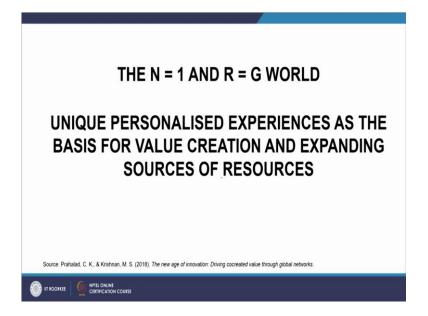
So, this is again a very unique kind of an aspect that organizations are coming all through. One very important thing you would realize in this example is that GoodYear Tyres or any tyre company for that matter there, which predominantly earlier were largely B2B kind of a business. Here direct business-to-consumer touch was minimal only through communication wherein you were trying to pull up the consumers and tell them that this kind of tyre is being sold by you. But this kind of change is bringing up B2B organizations into a B2C sphere, that is what this whole structure is all about, and that is where it is.

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## Principle 2. R = G The principle R = G refers to the approach to understanding the nature of the resource base of large firms and learning how to access high-quality resources at low cost. The challenges facing business in adopting the R = G perspective are the following. Access to Resources: all firms doesn't have access to all resources .Outsourcing is just one way to access low-cost, high-quality talent. Speed: Cycle time and speed are critical elements of the N = 1 world. Scalability: The need for the continuous scaling and downsizing of operations is a strategic imperative in the N = 1 world. Innovation Arbitrage: large firms better focus on small firms as sources of innovation Source: Prahalad. C. K. & Krishnan, M. S. (2018). The new age of innovation: Driving cocreated value through global networks.

Taking us towards an innovative thought process R equals to G refers to the approach to understanding the nature of the resource base of large firms and learning how to access high-quality resources at low cost. The challenges facing businesses in adopting the R is equals to G perspective can be categorized as access to resources, speed, scalability, and innovation arbitrage.

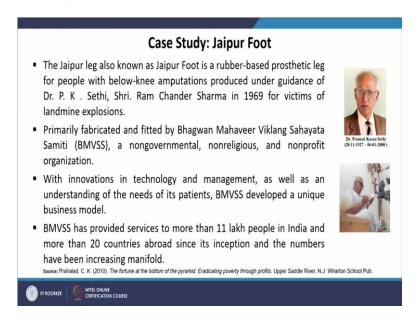
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The N is equal to 1 and R is equal to G i.e. World is related to unique personalized experiences as the basis for value creation and expanding sources of resources and it is a

wonderful example. We all have heard about this, it is a very popular organization and their contribution to India and to humanity is huge, Jaipur foot.

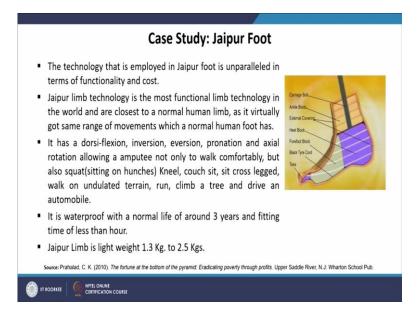
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The Jaipur Leg, also known as the Jaipur Foot is a rubber-based prosthetic leg for people with below-knee amputations produced under the guidance of Dr P.K. Sethi, Sri Ram Chander Sharma in 1969 for victims of landmine explosions. Primarily fabricated and fitted by Bhagwan Mahaveer Viklang Sahayata Samiti, a non-governmental, non-religious and nonprofit organization.

With innovations in technology and management as well as an understanding of the needs of its patients BMVSS developed a unique business model. BMVSS has provided services to more than 11 lakh people in India and more than 20 countries abroad since its inception and numbers have been increasing manifolds since then.

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Jaipur limb technology is the most functional limb technology in the world and is closest to a normal human limb as it virtually got the same range of movements which a normal human foot has. It has a Dorsey flexion, inversion, eversion, pronation and axial rotation allowing an amputee not only to walk comfortably but also squat, sit on hunches, kneel, crouch, sit, sit cross-legged, walk on undulated terrain, run, climb a tree and drive an automobile.

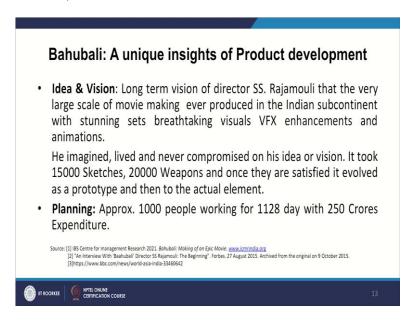
I have seen their video, and believe me, I could not believe my eyes when I saw a person jumping down from a tree and riding a bicycle as good as a normal person. It is a wonderful sight basically and it is a massive task that they have done. It is waterproof with a normal life of around 3 years and a fitting time of less than an hour. Jaipur limb is lightweight from 1.3 kilograms to 2.5 kilograms.

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There are design considerations. The upper foot is designed to simulate normal foot movements and provide a quality solution for the masses. The design process emphasizes the following activity and mechanical requirements.

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And there have been constraints also, for example, poverty has always been a concern and constraint and then there are implications associated with that. But Jaipur foot tried to meet all the constraints, through several kinds of developments in their processes, and understanding of consumers and we have been talking about design thinking and innovation just to remind you.

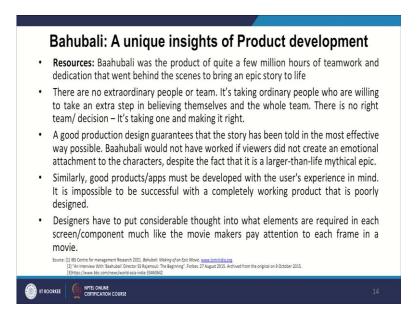
You will go to their website, you will go to their YouTube videos and you would realize what specifically I am mentioning here. They have been focusing on material science, they focus upon human understanding, they focus upon needs and have been empathetic to the consumers. They are sensitive, they do focus on sustainability and they focus on the price, they focus on the constraints, everything. And that is how they have become one of the unique most examples to be discussed as a case study almost everywhere in this world. So, I salute them.

Now I take you to a different realm of our discussion, which emanates from our existing discussion, that is new product development. Let us see what it brings to us. And I will slightly take you towards the entertainment world. We have talked a bit on a serious note, let us talk about Bahubali one of the important examples. In due course of time, there have been wonderful successful movies, which have been produced in recent times. And in India also, we have come a far way as far as movie production goes, but this movie actually, was received much with an accolade and a great reception by viewers and it was a humongous success.

Not only because of the storyboard and the script it had, but everything, almost everything and let us see briefly this movie, so as to take our discussion to the next stage. Let us talk about the idea and vision associated with this movie. Long term vision of director Mr. S S Rajamouli, is that the very large scale of moviemaking ever produced in the Indian subcontinent should be there. That means he wanted a scaled-up kind of perspective around stunning sets, breathtaking visuals, and several other elements like animations.

He imagined, lived and did not compromise on his idea or vision. It took 15,000 sketches, 20,000 weapons, and once they were satisfied, it evolved as a prototype and then the actual element came in. Approximately 1000 people working for 1128 days with 250 crore rupees of expenditure. This movie was planned and structured.

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Bahubali was the product of quite a few million hours of teamwork, and dedication that went behind the scenes to bring an epic story to life. There are no extraordinary people or teams. It took ordinary people who are willing to take an extra step and believe in themselves and in the whole team. That is where the human resource perspective of coherence of ideas, focus and togetherness comes in, there is no right team or decision. It is taking one and making it right that is how their philosophy was when they were actually coming up with this movie.

Good production design guarantees that the story has been told in the most effective way possible. Bahubali would not have worked if viewers did not create an emotional attachment to the characters despite the fact that it is a larger-than-life mythical epic. Similarly, good products must be developed with the user's experience in mind. It is impossible to be successful with a completely working product that is poorly designed. Designers have to put considerable thought into what elements are required in each component, much like the movie makers pay attention to each frame in a movie.

I would request you to watch it again for 10-15 minutes. If you want you can go for a repeated watch. But again the point is now when that movie produced, just imagine the kind of production systems they would have generated. If you want to go deeper into the Insight associated with such kind of a production system you can watch how it was made from the technological perspective, which is nowadays being used and as far as movie making goes and while they were doing this, they were imagining the viewer's response, how the viewer would get engrossed in almost every scene.

Ultimately, the movie is a collection of scenes actually. Now that is where the whole coherence perspective, technology, storyboard, narrative, digitalization and everything comes in. And that is what new product development is all about, although movies are being made for N number of years. But in today's contemporary times, if you are producing an epic kind of movie with a traditional outlook, with a traditional storyboard, with war and bravery as the context with some beauty in it and larger-than-life images.

How would you keep the audience attracted, because in contemporary times, the choices of people have changed a lot and we know that? So, how would you keep them up with you? That is one of the most important elements to be discussed, and when we talk of the development of this movie, product developers rule to include only the best features in the product and package it in the most presentable format.

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Bahubali came up with an engaging story and attained the core benefit of the product. And there are several other elements like the execution and marketing and marketing practices associated with that. The kind of communication modes they utilized, how they reached to almost every consumer without telling them the story, how they created a sort of a charm towards the upcoming movie in the minds of the consumer not only for the first part but also the second part before the first part. And that is the beauty of imagining the complete communication process along with the production process.

Then the user retention, so that all the viewers they watch, who have watched the first part should watch the second part, and people who could not watch the first part should watch the

first part and then the second part. That is the beauty as far as their marketing team had in terms of the processes, which are developed around marketing exercise. And this is what product development is all about.

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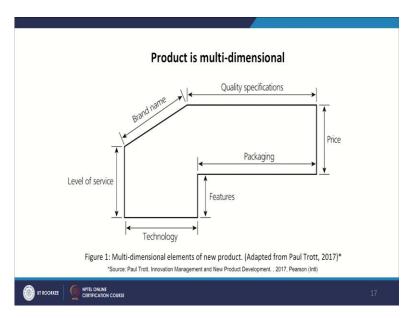
What is a new product? It must be seen with several elements around whether the smartphone was indeed a new product or merely existing technology repackaged. So, can we look at a new product with this kind of perspective? Does the provision of different packaging for a product constitutes a new product? A product is a multi-dimensional concept, it can be defined differently and can take many forms, tangible product features and intangible aspects as well.

Now, at this moment, just visit the earliest most videos on this subject, wherein I was talking about Barbie Dolls. Dolls were always there, but Barbie came up as a new product. It established itself and it came up as a personality, a persona, which a girl dreams of, and several kinds of persona that girls want to carry. So, that is what new product development is all about. Each dimension of a product must be or is capable of being altered, these alterations create a new dimension and in theory, a new product, even if the change is very small, the product becomes a newer, kind of.

A new product can be in terms of being extremely new and not known to the customers. A new product can be in terms of an incremental change, which you have brought to the existing product with the perspective of the usage as well as the form. For example, typewriters got converted into keyboards and the screens now we type on our computers.

And furthermore, as I have been telling you, and you all know that we are going towards a dictation-based world. Especially, for whomsoever who wants to enjoy that and who are comfortable with that. So, that is how things are. So, see, we can look at a new product from several perspectives and that is why I chose this example of Baahubali to talk about how films are generally made. Then several kinds of films are made and we talk about them, but this had all those ingredients of being termed as a new product development story.

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Now, the last part of this session, is that product is multi-dimensional and why we say that product is multi-dimensional. We talked about this aspect earlier, but with reference to terminologies and concepts, which we discussed. But today we are looking at it with a composite view and especially in terms of being referred to as something as a new product and we are talking about how and how new product development should be pursued.

The multi-dimensional aspects are related to technology, features, level of service associated with the product, brand name, which again is very important, quality specifications, packaging and price. Are we going back to the fundamentals from where we started now while discussing a new product? Yes, we are, but now, we have enabled ourselves with a thought process related to the perspective of design thinking and innovation and imagining what should be termed and called a new product actually.

That is the beauty of this subject product management and this picture in front of you signifies product management. So, just keep this in mind, I will be building upon the story of

new product development from this image and I will be bringing on several, several examples for you.

One of my favourite examples in terms of new product development, wherein, I was referring to the energy-based kind of products is 'Earth the Sequel'. So I mentioned this solar ink. The other example, which can give you a glimpse of how new product development can be thought of and can be pursued is utilizing the up and down motion of the sea waves. So a company is focusing upon not only on the flow of the water, but the up and down motion of the sea waves to generate energy.

Another very great example, is wherein, sugar and yeast are used for developing fuel cells. I am not much aware of the scientific aspects of that kind of development, but you do just go to their website, and you would realize what kind of product they have developed. Then someone is using geothermal energy to generate energy. We are talking of a sphere of renewable energy, I have mentioned this earlier as well, but here you would realize that we are focusing upon the large needs of people, the larger need of people should I say. Several organizations are looking at technology, and features, such as printable solar cells.

Packaging, we can talk about later in this case. Price of course, technology is high priced in this case, because so, much research and development have gone into this, into the development of this product, level of service, which is to be associated with this and how would people adopt it? Why would people adopt it at the end of the day? Would they go away from the conventional usage of energy towards the printable solar cells-based energy systems basically?

So, that is where everything comes to. It comes to the fore and brand name would become, one of the key elements of propelling that and taking it to people. For example, Husk power systems and we are talking of energy, let me give you this example as well. Husk power systems, they are utilizing rice husk to be fed into a gasifier, to generate low-cost energy. Now, again, a wonderful example, from waste to energy. I will be utilizing such examples to explain almost everything in correlation as far as the whole scenario goes. But I want you to imagine at this particular stage, what kinds of innovative new products are coming all around us. So, those products would be becoming part of our lives, even before we realize that so much intensity has been given to the aspects and the development process of those products.

I will be coming back to you with lots of examples, with lots of insight on new product development in my next session, and the subsequent sessions which would specifically be focused on the relationship of almost all the aspects which we have discussed all through. I am enjoying talking to you. Hopefully, you are also enjoying the sessions. I will be seeing you again. Till then. Goodbye.