ISB- Product Management

Week 1: Product Development and Management: Key Concepts & Principles

Video 1: Module Overview

Hello, and welcome to the introductory module for Product Development and Management. What's the focus of this module? I think we'll focus on developing a proper mindset for product development. We'll end up with the framework, but basically our attention is going to be on strategies and processes that are necessary for developing new products, but also developing new product markets. The framework is going to focus on how we use market insights to drive the product development process.

So, we're not going to start developing the product from research, but the idea is, can we rely on market insights to figure out what is it that customers want and use those insights in order to drive the product development process. There are five learning objectives in this module. Number one is we need a change in mindset. We need to look at the mindset of successful product managers, successful product and brand managers and see how we need to think a little bit differently.

The second thing we will do is we will focus on how we manage innovations in order to fuel the product and the growth strategy. So, the idea is not business as usual. The idea is how do we drive the future? How do we grow? So, that’s the second objective. The third objective is to see how we can anticipate the challenges that we will face along the journey. What will be the challenges along the product life cycle? What will be the opportunities along the product life cycle? So, if we can anticipate them, then we are in a better position to take advantage of them orto guard ourselves against the challenges.

The fourth objective for this module is to understand the role of marketing and role of brand strategy in managing business performance. So, yes, we introduced new products in order to get an edge in the market. But this product development by itself is not going to do it. So, we need to look at what's the role of the brand? What is the role of marketing strategies, distribution, pricing, etc. to make sure that the product succeeds.

The final learning objective is to develop a framework and describe that framework that we will be using for the rest of the programme. So, it will follow this introductory module.

Video 2: Changing Mindsets

Developing successful products and product markets requires a change in mindsets. Let me give you some examples of what I'm referring to. It's been my experience that very often product managers, most companies I talked to think of pricing has been cost plus. Let's figure out some ways to keep our cost structure down, therefore we can keep our prices down, and the lower price is going to give us a competitive edge in the marketplace.

That is not really the right approach to take because the value is what is important. it's not the cost of producing a product of service, what is really important is the perceived value that the customer is getting. And so, that's one of the things I want to stress. And the value is going to depend on the quality of the products, not just the cost is going to depend on the support services, and it is going to depend on the perceived features, what is it they're better at doing compared to competition, etc. So, one thing is, let's focus on value and not and not on cost and price.

The second thing to remember is that we need to focus on the differential needs of the segments of the marketplace. Not everybody wants the same products. And we need to be able to position how our product is different from the competition and how we can serve the marketplace, how we can serve the market segment better than the competition.

This is going to depend, actually quite a bit on what I call intangibles. What are the intangibles? The intangibles are the brand, the trust. There's a reason why people prefer to buy a Samsung, or they prefer to buy an iPhone. And so, you know that's the emotional attachment that people may have you know with the product. The second thing to understand is, what is the kind of engagement that customers have.

So, for example, with the automobile dealer, if I'm not getting good service, it destroys the relationship actually with the manufacturer. If the dealer is not, not doing a good job. And that brings into account the supply chain. The third element to understand is that human capital can be quite important. In many cases, especially in the services sector, what is happening is that the company, the product manager, is promising certain outcomes. We will do this, and we will do that. But the delivery is in the hand of the operations people. This is the frontline employees who are serving the customer, and so human capital is going to be critical.

The final element is really, the intellectual property. Can we protect our differential advantage compared to the competition? And just maybe, for example, in the form of a patent. And this is what the pharmaceutical companies do, and if they have a patent that protects the point of differentiation that is obviously helping them, you know, win the war, you know, with the competition. The estimate is that the value of intangibles can be even more than 75% of the value of the physical product.

The third element I want to now focus on is something I call value migration. As we look over the product life cycle, what makes us successful and competitive in the early stages can be quite different from what is going to make us successful in the long run. As an example, on the front end of a life cycle, what is critical? R&D is critical, the design people who will make our product look distinctively different from the competition? That will be important? What is the durability and the capability of the core parts that are going into the product? You know, for example, the battery life of a cell phone; Those are the kinds of things that are going to be important.

However, as we move further into the life cycle, what becomes important, then, over that life cycle is going to be the brand, is going to be the services that you're able to deliver, so often we have a problem with the product, but it's how quickly we fix the product And, that's what I mean by services. How quickly we can take care of the problem, is really what is adding to our capability in later stages of the life cycle.

And finally, what we're looking for is customer solutions. What do we mean by customer solutions? If we're buying a VCR in the old days or if we are looking at cell phones today, what we're doing is we're buying hardware, but we also need the content and the software to go along with the hardware and finally, what we need is in case there's an issue, we need to have the mechanisms to take care of it.

So, product solution includes all these different elements and that together add to the value that we're able to provide. Notice, it is important therefore, to not only think of product development, but also to think of market development. And these two issues go hand in hand, in the front end of the life cycle we are far more concerned about product features. How are we going to differentiate the product? Subsequently, we are far more concerned about how we manage the product inthe marketplace.

So, let me take you through a quick look at the agenda for this module. So, we've already talked a little bit about the mindset, the need to move away from cost and price, and I will elaborate on that a bit more. Second is we'll take a slightly deeper dive into some marketing basics, things like segmentation and differentiation, what risk and return are for finance, what assets and liabilities are to the accountants, the basic elements of marketing strategy and product market strategy, is really segmentation and differentiation. So, we'll elaborate that a little bit more. We will also, you know, define the scope for a product you know, where do we compete and how do we compete? So, it’s important to define what will be the parameters. What will be the boundary? Because very often we see overlapping boundaries. If you look at something like a Kindle, the content on a Kindle can also be read on a cell phone.

So, these boundaries overlapping, are we competing on price? Are we competing on product features? Are we competing on some things that we can do that the competition cannot and so on? So that was the third element defining where to compete and how to compete. Then we're going to get into the thick of it a little bit about design thinking, which is how do we design products where we're starting from the customer, not starting from R&D.

So, we'll be talking about design thinking. We will also be talking about how we develop the market to make sure that the product is successful. Then we will look at several examples, of how the management issues change over the life cycle, how the product market evolves, and therefore, how things change. In this context, we're going to look at Samsung, and how Samsung strategies are different for different products, how the market refrigerators are different from how the market cell phones and also how that changes the country life cycles. So, for example, if we look at the strategy that a company like Samsung has, in marketing refrigerators, it's a littledifferent in India, where there's still a lot of market to be penetrated. Compared to, let's say, the West, whether where we have already market saturation, so very, very different ways of looking at things. We're going to look at the automobile industry, which many of us are familiar with. And in that context, we will talk about how Honda as a company, developed from motorised bicycles. It was nothing other than a bicycle with a small little engine attached to it. How that company transitioned from a bicycle maker, to producing the Honda NSX, which won the Grand Prix. I think six years in a row. so, we're going to look at that evolution. We will then end up with the value creation framework, and the final item that I will cover in a few minutes is what do the other modules do that follow this particular module?

Video 3: Pricing Basics

The first move is to focus on value and not on cost and price issues. Let me give you some very good reasons why you need to forget your Economics 101 course. All right? So, as I said earlier, often companies do the pricing based on cost, 20% plus cost. And everybody probably remembers this formula for a price elasticity of demand, which is saying, what is the percentage change in quantity sold compared to a percentage change in price. And the logic is that if you can sell 20% more by reducing the price by 10%, your price elasticity of demand is 2. And the economists will say, 'It's a good idea for you to cut your price because you can then increase your revenue'. So, that is the common logic. And the reason why they're making that mistake is because they understand the cost a lot better than value. Value, in the customer's mind, is something that is harder to measure because it's so much easy to just to go to cost plus kind off pricing.

What does Economic 101 tell you? It says that the demand curves in their price, you know they are supply curves. Now, they talk about the fact that in perfectly competitive markets and commodity-like markets, a very small change in price can lead to a big change in demand. And the reason is the assumption that they're making for commodity markets is that the information is perfect. So, you and I, as customers, know the exact difference between products A and B. And if product A is better, why would we pay the same price for Product B, or why would we indeed pay a higher price for Product B? So, rational people don't do that. The second thing is that if I have a good product, you, as a competitor, will copy it.

So, that product differentiation is going to disappear. And that is what is forcing this very horizontal demand curve, where a small change in price is going to lead to a big change in demand. That's the commodity markets. And the other extreme is a vertical monopoly. And it doesn't matter. If you're the only game in town, you can charge anything you want. And that is why the government and the competition commissions of the world are trying to make sure that the markets stay competitive. So, let me pose a small question.

Supposing I tell you, the price elasticity of demand is 3; meaning, for a 10% cut in price for this particular product, the quantity sold will go by 30%. The margin on this product is 20%. And the question that I'm raising is, should we cut the price by 10%? I'll tell you why it's wrong. When you cut your price by 10% and your margin is 20%, your net margin is now 10%. So, in order to reach the same level of profitability, you're going to have to increase your unit sold by 100%. 30% isn't going to do it. What I'm trying to tell you is you don't have to be a rocket scientist to move inventory by cutting price. You've got to be a lot smarter to figure out how do you sell more, how do you get more profits without going down this lane of cutting price. All right?

So, if I ask a second question, what is the optimal price in perfect markets? Now, many of you will remember in the Economics 101 course that the instructor said that in perfect markets, if there's profits to be made, somebody is going to compete and cut that price. And you will keep fighting until you all end up in a situation where marginal revenue is equal to marginal cost.

Now, tell me, if marginal revenue is equal to marginal cost, who is making any money at all? And the answer is nobody. All right? So, what are we doing in marketing? We're saying, 'Look, we can't play this commodities game. We got to decommoditise the market'. And what is happening then in that decommoditised market is our margins are going to be higher. And what is also happening is that we have a little bit more money to play around with in order to do product improvement, to be able to afford the advertising, to be able to provide incentives to our distributors. So, if you don't have that margin, you're not able to do any of those things.

So, what is my message in all of this? Is get a revenue premium? But use the revenue premium to generate a profit premium. How do we go about doing it? It is managing cash flows and not revenue. So, forget revenues; think about cash flow. The second part is, let's think about segmentation and differentiation. Why we are better? And the last thing I want to show you are these three symbols. I am sure you recognise who these companies are. And I am sure that most of you hold these companies in reasonably good esteem. You don't even need to say what these companies are, and it is valuable to do that.

When you're able to get a distinctive brand which embodies all the good that you're putting into your products and services, that's when you end up with something that is very close to a legally sanctioned monopoly. You know people love Apple for a reason. People use Amazon Prime for a reason. And you and I, or at least I, have been using Outlook for you know over two decades. So, if somebody came in and said, 'Raj, we've replaced the Outlook with a better performing UNIX product, and you'll be much happier'. I'll tell you. I'll take my sword out and start chopping some heads.

So, let me take you through another reason why you should not cut price. Let's say we have two well-behaved competitors, Coca-Cola and Pepsi. Let's say, within a market, geographically defined market, they both make money. Pepsi makes 100 units of profit; Coke makes 100 units of profit. Then, somebody at Coke's decide, 'Let's do a marketing research study'. And they find out, indeed, that customers are price sensitive. So, following the good old economic textbook, they go out and cut price. What happens is Coke makes more money; 120 units of profit. Because the total unit of profit was 200, 100 plus 100; now, one company is cutting costs, so the total profit is less than 200. So, along comes Pepsi, and they make only 60 bucks or

60 units. They are going to do some research, and they found out that Coke had cut the price.

So, what do you do as a competitor? You're going to cower and cut your price, as well. And both companies are going to end up with a smaller profit. It would not matter a wee bit. If Pepsi had done the marketing research study, we would have ended up in the same situation with Coke responding. So, the important thing is to say are Pepsi and Coke really bashing each other up?

It looks like they are; their competitive strategies. But if you go to a grocery store, whether it is Big Bazaar in India or we're talking about Walmart or H-E-B in the US, you will find that if Coke is advertising today, if they have a price promotion today, Pepsi doesn't have it on the same day. So, they may be competing in the marketplace, but there sure are not typically competing on the same day. So, one of the things to remember is not only fools compete on price, but winners also find a way to differentiate and innovate.

So, that is how you're going to be able to compete. The other thing to remember is, it's often good to be nice people. So, don't have your sword drawn out. The problem is that much of management literature has come, can be traced back to the Greco-Roman way of thinking, where the idea was to take out your sword and win. And the way you won is if somebody lost. You're not just cutting your price you're cutting the margin.

And if your margin was 10% and you cut your price by 11%, you're in deep trouble. You'll sell more, but every unit that you sell, you're going to be losing money, and you don't want to do that. And also remember, that the role of marketing is to make the markets imperfect. So, there's a structural barrier for competition between Samsung and Apple, there's a structural barrier for competition between the Coke's and Pepsi's of the world.

One final nail in the coffin. Globally, the net margin on products is about 8.5%. Now, if you can command, relative to competition, a 1% price premium. I'm not talking about a lot. 1% price premium compared to competition. Then, your net margin goes up from 8.5 to 9.5%. 9.5 divided by 8.5 is a 12% increase in profitability. And if you can somehow get away with a 5% increase in price differential without it impacting your cost structure very much, then a 5% price premium compared to competition is leaving you with a 59% profitability premium. Just remember that. The value of pricing is incredible.

Video 4A: Marketing Strategy and Product Development

I would like to now talk about, what are some of the very, very basic principles of marketing? and What do they imply for product development and product management? So, as I mentioned earlier, what risk and return are to finance segmentation and differentiation are to marketing? If we look at the market and, in this case, let's say, the people who have a blue heart, people who have a red heart. So, we have people who prefer different things.

So, what we're trying to do is break them into segments, and then we're saying not everybody needs the same products. So, if somebody likes apples give them apples, if somebody likes oranges, let's give them oranges. That's what it boils down to. But we also then have to say, how is my apple better than somebody else's apple? And how are my oranges juicier or whatever compared to somebody else's? So, this is what we're trying to do primarily in segmentation differentiation. I'm going to give you a one-page summary of marketing strategy.

This is my summary of marketing strategy, but it will take us we'll cover 80% of what we need to understand when it comes to Product Development and Product Management. First thing is that we need to be different from competition. Now, it's not just about pricing, what is our competitive edge? Do we have some features?

Now, I was probably one of the very first users of BlackBerry. And BlackBerry had a very distinctive feature that I did not have to call a phone number in order to retrieve my messages and my emails, those emails were pushed to me. And because I was always so busy, I appreciated the fact that I didn't have to waste my time retrieving my messages. So, that push technology is what differentiated BlackBerry, and that's how they took over the market, from Nokia as an example.

So, Differentiation and Positioning. But Differentiation and Positioning relative to what? Relative to what the customers want and what our company is capable of doing. So, who are the segments that we're going to target? But importantly, which part of the market, which market segments we're not targeting? So, let's focus on where we can succeed and let's leave the other part of the market to other people.

Now, we cannot do all of this alone, sometimes we're going to need channel members to help us. Sometimes we're going to need collaborators, people who are producing complementary products and services, again going back to if you're hardware you need software; if you are a car manufacturer, you need the dealers; and if you are, Procter & Gamble or Unilever, you need the retailers. So that sort of thing. Now, all of this is occurring within a context.

How you sell cell phones is very different from how you're selling groceries, and that is very different from how you sell an automobile, which somebody maybe buying every five or six years. So, the context is going to determine how you're going to go about in that practice. So, in consumer-packaged goods, as we call them in the US, or fast-moving consumer goods, as we call them in the Commonwealth, what will happen is, in those instances, we give people an incentive to try a product. We say, we give them free samples, or we say, 30% off at the front end of a life cycle when we're launching a brand, but you can't give free samples of cars away.

So, what do we do in the context of cars? We still want them to experience the product, so we take them for a test drive. All right? So different ways of achieving thesame thing, which is to get people familiarised with the product in terms of what we can do, what we cannot do. So, what the top management is typically concerned about is where in the marketplace are we going to compete? Which product category, which geography, and as product managers we have to worry about, how are we going to compete? And that really boils down to one thing that I've told you to keep in mind, is how are we making the markets imperfect? And how is that de-commoditisation of the market is leading to loyalty, brand loyalty and our customer retention, because in the long run, you have to sell the product and services over and over again to be profitable in the long run.

In a nutshell, what we're saying is we need to figure out where to compete and how to compete, and how are we going to be distinctly different, and that means that we have to figure out what is the value that the customer wants, to be distinctively different, and of course, we also have to worry about how are we going to extract the value, if you're going to do all this hard work, the last thing we want to do is just meet the competition's price.

So, how are we going to extract the value? And this value could be, you make money now, you make money later.

Microsoft is famously known for giving away free products, and the idea is, hey, you can pay us when you upgrade and then because it's such a great product and you become so dependent on it, please pay forever. Let me now move to what I mean by which market? So, what do you see out here is the electronics market, it starts with the silicon? You need equipment that will convert that silicon into a chip, and that silicon conversion takes place in a fab, as we call it.

So, we have a company like Applied Materials that is making the equipment that is used to make semi-conductor chips. Then you've got companies like Intel or Taiwan Semi-Conductor, that are developing the chips that are going as components into a cell phone, into a PC, into various electronic gadgets. So, the components then go into a device and the devices can be part of a network. So, these are different markets, if you will, along in a particular industry, and the question is, where are we? I mean, where are we going to compete? We can't be at all over the place. So, supposing we decide, look, we're going to take a closer look at devices. And within devices, we're going to take a closer look at the smartphones.

That's where we intend to go. The market for smartphones is probably increasing at the most rapid rate within India than anywhere else in the world where approximately 25 to 30 million customers are coming in on a monthly basis into the smartphone market. So, we've decided where to compete, now the question becomes, how do we compete? So, we need to start looking with a fairly narrow focus on what is needed to succeed in the smartphone market, all right? So, very often when I'm in meetings, I'm on the PC and I'm on Zoom talking with somebody, and at the same time I can put myself on mute, and I'm talking on my cell phone on WhatsApp with somebody else.

So, what we do is within the 5G Market, we take a closer look. What is it that Samsung is doing? What is it that LG is doing? How is iPhone positioned for the future? And there, instead of looking at the broad spectrum, now we're doing narrow casting, and we're trying to see how we can differentiate ourselves relative to competition on price, on product features, etc.

And so, the thinking at this stage is that about execution at the ground level, this is not looking at the market at 30,000-foot level and saying, we're going to go into 5G, the question is, how are we going to go about doing it?

Video 4B: Marketing Strategy and Product Development

So, I'm now going to talk very briefly about how one might be able to compete in the market, and this is based on the work of Professor Jagdish Sheth. He was one of my mentors. As an example, he was a full professor at the time I was a doctoral student. So, he's been at this game a long time. He's written a book called 'The Rule of Three.' And what he has discovered in this very thorough analysis, that as markets mature, as we go with the product lifecycle, there's consolidation in the industry. And because of that consolidation, there are three or four major players who we term as generalists, who play the game of volume and scale. The idea is to push the market share and based on the economies of scale, win the game, and these people are providing a full line of products. They use all the possible channels in the marketplace to get the product either to the customer, and their game is based on volume.

On the other hand, we have some people who are specialists. These people have differentiated products, and what they're doing is they're not playing the volume game. They're very sometimes, very niche players, but what they're able to do is extract a much larger margin. And as you can see, they can therefore extract a much larger return on assets. So, return on assets are higher for these differentiated competitors, market share is going to be higher for the major players. If we look at industry after industry, as somebody increases market share, somebody is losing market share. And because the game is on volume, somebody is going to lose the volume game. And what Professor Sheth has shown is that companies like Toyota and Volkswagen, are playing the volume game. And as they increase their share of the market, companies like Chrysler and Fiat have fallen into the ditch, and they've gotten into some real trouble because they can't play that game.

On the other hand, what we see is a company like Porsche are highly differentiated. And while Toyota has about 13% or 14% of the global market, Porsche has less than 1% of the global market, yet the cash flow at Porsche is very, very high. And if Toyota makes, just coming up with estimates. If Toyota makes about $1400/1500 per car, Porsche is making close to $40,000 a car. So, they may sell a fewer number of automobiles, but they are very, very profitable.

Now, if we go to cosmetics, you've got Unilever and Procter & Gamble playing the volume game, and we've got Estee Lauder as a company that may be playing the differentiated game. And if you want to go to cell phones, you've got Samsung and Xiaomi playing the volume game. And on the other hand, iPhone was playing a niche market originally. And Nokia and BlackBerry fell into the ditch because of the changing of the guard so to say and the changing of technology. But what iPhone has shown is that you can play the differentiation game and the volume game. At least in the United States they've been able to do that. They have not been able to do that in Asia yet, but what we've seen is that this adage that you had to do one or the other, isn't necessarily true. There's no reason why you cannot be a volume player and be a differentiated player at the same time.

Video 5: Marketing Strategy and Product Development (Continued)

I will now focus on why we should develop new products rather than defending our existing business. So, the answer is very, very simple. Most companies have a goal, they have an aspiration to grow. All our products go through life cycle, what was hot yesterday is going to you know being on the deathbed 5 years from now, so we need to replace our existing products and services. And we also want to stay ahead of the game compared to the competition.

So, these are the reasons why we want to get engaged in very active product development. We just don't do it once in a while, it has to be a continuous activity, continuous improvement, every now and then we have a product that is entirely new to the world, but most of the time we are improving on things that we were doing yesterday. So, we need to look at both aspects. Now, if I look at product life cycles and I've got three colours, the purple lifecycle, the green life cycle, and the yellow life cycle.

They will all go through their own product life cycles, and ultimately, you will see that the revenue and profits are going to be dipping down and the company may have an aspiration of growth and the difference between the aspiration and what is going to be the reality is then giving a profit gap. And our job then is to figure out where we are, where should we be going, how can we get there? And we need to chart out the future but some anticipation of what is going to happen to the past. So, this is why product development is a very important element of our growth strategy.

The framework that is often used in management is really over 50 years old. It's called Ansoff's Framework, and he put in a very, very simple two by two, he says look, if we're going to grow, we can grow with existing products and existing markets. You don't have to go out, you can stick to existing products and existing markets, but then you have to capture share from somebody else. You have to increase the penetration of the market in the markets that were already serving. You can also grow by taking new products to the existing markets, and that is typically termed as product development, you have the same customers, but you're trying to give them new products, improved products, and that's product development.

On the other hand, you could stick with existing products and say, hey this product was developed for India, or for the US, or for Middle East. Now what we're going to do is we're going to modify it and see how we can take it to other markets and that is called market development. When we're having a new product going to new markets, that's entirely a new business, right? And that is what we call diversification. So, this is Ansoff's Framework, from over five decades ago and his advice was, let's look at the advantages and disadvantages of doing each of these four things before we decide to march off in one direction or the other.

Today, you will see there's a lot of conversation going on about things like brand equity and customer equity. How does this all fit into Ansoff's Framework? The answer is actually very simple. Okay so for example, if I take Ansoff's Framework and I add the existing products column, if I look at penetration and market development, that is the value I'm getting out of my existing products, and that is my brand equity. On the other hand, if I take new products to existing markets and new markets, that is the value that new product development is bringing to the table. So, this is we're looking at the columns.

On the other hand, if we had gone row-wise by increasing market penetration in existing markets as well as developing new products for existing markets, what we're doing is this saying, how much value are we getting from that market segment? How much value are we getting from existing customers? So, we start calling that customer equity. And if on the other hand, we take new markets, new customers with existing products and new products that becomes customer acquisition strategy. How are we adding value by acquiring in a new customer?

So, you could be enhancing the value of the company through brand equity, through new product value edition, through customer acquisition and retention, and of course through customer equity itself, and that is what is going to drive the value of the firm. So, these positions, what is it we're doing with respect to new product development and how that is going to be adding value to our company. Ansoff's Framework has been further developed by Professor Aaker, and Dave Aaker said, look, we not only need to look at products and services and segments, we also need to worry about the channel, because a retailer can integrate backwards similarly, a manufacturer can integrate forward.

For example, FedEx and Kinko's combined to further integrate FedEx's presence in the marketplace. Another example would be Apple. Apple said, look, I don't want to be at the mercy of retailers who will have our own stores, so they went in competition with their own distributors. Amazon now has a brand called Amazon Basics. And by the way, when it comes to flashlight batteries and so on, the number one brand in the world is not Duracell or Energizer, the number one brand in the world is Amazon Basics for batteries.

Similarly, we could be looking at Nike. Nike now has a direct to customers, so we don't need to go to a store, we don't need to go to Foot Locker, we don't even need to go to a Nike store, what we do is we just order it on the phone and the direct to customer delivery takes place.

So, we're seeing a lot of changes in the marketplace, especially because of the pandemic that we went through, but irrespective of that, those changes would have taken place anyway, why? Because the technology was coming in place. What the pandemic did, it just accelerated the diffusion of direct to customer markets.

Video 6A: Product and Market Development Processes

Now, we're going to look at how do we move from ideas to products? Also, how do we move from product innovation management, product development to developing the market-to-market development? Should we be looking at market needs before we develop the products, or should we develop the products and then worry about who wants to buy it? And is there a process difference between making incremental improvements versus making major changes in a category and coming up with somewhat new to the world products? It is very rare that we come up with new to the world product. And if you look at the new to the world products that were not around earlier on which have had a major impact on how we behave, how we live, it is things that have made our lives more convenient.

So example, you take a microwave oven. It is not a product innovation anymore, but it had a huge impact on our lives. Same thing at mobile phones. I mean, just imagine, could you go back to your wire line phone and be sort of on a leash in terms of where you could use the phone? Also, when we go to the financial sector. It used to be you had to go through a broker. Now, all you do is you type in your account number on the website, and you get an instant update on all the stocks and bonds that you may be holding.

So, things that have made a big change in our life, they have very often come as new to the world products, but they don't come up every day. How you manage those is going to be different from doing the incremental changes. So, the two ways of thinking, the scientific community, the engineering community has a sort of a product development idea that let's do some research. Based on that research, let's come up with some designs. Let's test those designs. Let's manufacture them. Let's put them in the market and see what happens. So, this is typically how we were taught to think and engineering start with product development out of research and development before you go to the market. Nowadays, the last five years or so, everybody has been talking about design thinking, how you need to start with an inspiration, perhaps, but you need to look at what that inspiration, what that idea actually means to the customer.

Look at that idea through the lens of the customer and they call it empathy. How do we idea it? How do we improve on that concept and then how do we develop prototypes and so on? So, it's saying we go from customer to the market and design the product to the customer's needs. Well, this actually has been the approach that people in marketing have always taken. We have always started with customer needs. Now, maybe engineering and technology has started with products, but the way we are going to deal with it in this course is really saying, "How do we assess what the customer wants before we start designing things?" Now, there are really two steps if I oversimplify things.

One is the technology strategy step where we're looking at product development, and out here we're actually covering a lot of terrain, and I have no intention of covering everything in that terrain. This is a busy chart, but we are movingfrom idea generation to idea screening. Ideas can be a dime, a dozen. The question is, based on market requirements, et cetera, from 100 ideas, which are the 10 or 15

ISB | Executive Education

ideas that are worth pursuing. And then we start worrying about testing those ideas in the market, and one of the things we talk about is a proof of concept, the proof of value. And nowadays you've heard the term the minimum, you know, value that is available for the product that would make the product acceptable in the marketplace. So, you have heard about MVP. Another thing that I would like to mention is something called QFD. QFD stands for quality, function, deployment, and what QFD refers to is how can we convert what the customers thinking? What the customer needs are? How do we convert them into product specifications? Let me just give you a very quickly example. If you're young at heart and you want to buy a sports car, but if you got into the car and the car was very silent, you may not think it is very powerful.

So, there's a tendency for people to correlate power with sound and vibration. So, you need to let certain level of sound and vibration to be in, in order to be able to give the customer signal that this indeed is a sporty car. Also, research has been done that shows that people make judgement about the quality of a car. These are consumers. I'm not talking about engineers. Consumers make judgments about the quality of a car based on the click that they hear. And they open the door and they shut and there's a click.

That click is supposed to signify a better-quality perception compared to a third. Don't ask me how all these things have been discovered, but this is the notion behind quality, function, development. Let's figure out, what is it the customer is looking for? And let's design the products in such a way that those perceptual needs are also met in addition to the engineering needs. So, you still need a powerful engine in a sports car, but you also need mechanisms by which you can demonstrate. So, maybe what we need to do is that don't have too good a muscular, leave a little bit of sound coming out of the car, so people think they're driving something more powerful. So, this is that the fine-tuning states, so we often go from maybe 100 ideas to 4 or 5 that may be worth taking to the marketplace.

And then we have to figure out how do we launch it? So, we have narrowed down our product scope. But when we go to the market, we're trying to discover ways in which we can make our realities become a dream. And out here we have to conceive, how are we going to launch the product? And again, it is very contextual. If you take let's say, the movie industry. In India, we are producing roughly 2000 movies per year, divided by 365 that is six movies a day.

So, if I have been launching a movie today, within a week, I'm going to have 30 more competitors. So, what is important is my ability to capture share of the movie theatres or to capture shares of the screen and today to be able to capture the shares of the video screen. All right, so distribution becomes very, very important in short cycle environments, and that's what we need to do when we're focusing on those products which have short life cycles. How do we quickly get them into the market? We have to have a business model in place.

How are we going to make money? Is the money going to be made on product sales, or is it going to be made on services that we deliver over time? So, sometimes you give the product away, you then make money on annual service contract. You also have to worry about how are we going to fund this new product venture? So, that's where the venture growth strategies come in and value extraction, value creation become absolutely important at that stage . In the early stages that we' re focusing on refining the product. In the later stages we are saying, "All right, how do we make some money out of this?" Now, what I'm then saying is that the innovation strategy is going to vary across the product lifecycle. What we do on the left side of the screen in product development is very different from what we do on the right-hand side when we have to fine tune the product, so it is more acceptable in the marketplace and things of that nature. Broadly, what we're doing is removing from idea and concept development to actually having a product on hand, having a product developed and how are we going to launch the product? Then we're going through a growth phase and saying, how do we manage the growth? How do we fund the growth? How do we get the working capital in place? And then what we are doing is we are saying, How do we manage the risk? By this time, new competition is coming in what loo ked like a nice playing field. All of a sudden, we have a huge number of competitors, and the question is, how do we manage that competition? And then ultimately, how do we take this idea, which was a private idea maybe in a small company? Are we going to go to an IPO? Are we going to take this product on a global basis? So, these are two phases: product development and market development, and they absolutely have to go hand in hand. And in a short cycle environment, we need to know how to accelerate the growth of product market penetration, so that becomes very, very critical. 20 years ago, we could take our own free time in terms of developing market development strategy. But now you've got to think of market development value during the product development.

Video 6B: Product and Market Development Processes (Continued)

An important thing to remember, as we're going from idea and concept development to product development and launch, to managing growth, to managing risk and ultimately, maybe taking it to an IPO, is to realise that this is a pretty risky venture. From based on the estimates that I have seen various by industry, the death rate of ideas is very, very high and you might notice on this chart I've got at the bottom valley of death. It turns out that well over 95% of ideas, you know, they don't survive.

These are good ideas while they last, but either they run into trouble with manufacturing and development, or the market isn't accepting them, or a competitor beats you to the market. For a variety of reasons, the accident rate is very high when we come to new products. Therefore, when we get out of the valley of death and we have now some Proof of Concept that appear to be working, it becomes very important to pay attention to them and accelerate their growth as much as possible, to protect it from other competitive products, etc. And so, you have to pay a lot of attention to how the market is accepting.

And then finally, when it's looking at okay, this idea has worked in this particular geography, it becomes a risky venture to take that idea from one geography into another geography, because we're now talking about new distribution systems, new government approvals, and so on and things of that nature.

But do remember that while we're doing this, while we are managing the product development cycle, we also have to manage the risk cycle. And the risks are very, very high in part of development.

Video 7: Managing Product/technology Life Cycles

We are now going to talk about what we can do to ensure that products are adopted successfully in the marketplace. What are the risks involved? How do we overcome some of them? And also, what are some of the differences in managing products at different stages of the life cycle? How do we manage them in the early stages compared to the later stages? What has to be the difference in our processes that we put in place? So, with that, let me talk about why technology has become like bananas. If we go and look at technology life cycles, it used to be that products took 20, 30, sometimes 40 years to get from the lab into the market.

Now, what’s happening is, as you move towards the right-hand side, you will see things like the Internet or we look at the cell phone and the life cycles, as you can see, are very, very steep in this graph, is going from 0% adoption to a 100% adoption. And it took a long time when it came to adopting things like refrigerators and colour televisions, but today, the life cycles are much shorter.

Now, what does that mean? In a short life cycle environment, technology depreciates. Just as a banana after a week gets rotten, if we look at our cell phone, the cell phone that I'm using is only 18 months old, but I could buy that cell phone for literally 20% of the price that we paid for it 18 months ago. So, the value of technology depreciates very, very quickly. And therefore, there's a need for speed. As the life cycles are getting faster, you know we are having to deal with more and more bananas. And so, all right, so what do we do now? This is a framework that was developed by Geoffrey Moore, and this goes back to the '90s actually. What he talked about is the fact that when we come up with a new idea and new technology, there's some people who always enthusiasts.

They'll try anything, any gizmo that seems to attract them. So, that part of the market is fairly quick. But then you got pragmatists saying, "Well, I'm just going to see if this thing works." And so, they wait for the market to develop, for the product to evolve, and they're not going to buy the first version of it. And then, we have some people who are conservatives. They're saying, "Well, why should I take the risk? Let somebody else take the risk. Let the pragmatists take the risk, and we will take a product after it's been curated, and there'll be some sceptics who will never end up by using it.

Now, what is happening is between the innovators and the pragmatists, is we have a bit of a chasm. We need to figure out how to close that chasm, and this chasm can be actually years in the making. Many of you may not know that RCA first developed colour television in the '30s. But it was in the early '90s that they came up with a ready-for-market model. For this, product development taking place, but this picture is circa 1953, and Dr Sarnoff is there demonstrating a colour television in 1953. Now, it took almost 20 years for colour televisions to reach 50% of the households in the

United States; Why? Because who wants to buy an expensive colour television when there's no colour programming? Right so, simple as that.

So, this is again an example of an ecosystem. You got product; then you got to have some content with it. The second picture I'm going to show you is from 1956. This is your first video recorder developed by a company called Ampex, and they used to sell these video recorders for about $50,000-$60,000.

They only had three or four customers like ABC, NBC, PBS, maybe BBC that could afford it. And it wasn't till 1963, that Neiman Marcus company, a retailer, offered the first video recorder for $30,000 in 1963. And VCRs did not make it into the market, as you know, till the late '70s and '80s. And this is when the Japanese miniaturised them, and that is when the market was established.

Now, what I'm trying to say is simply because you have a great idea and you have a proof of concept, doesn't mean that anybody is rushing to the door to buy it from you. You got to get the price down; you got to get the complimentary products in place. So, what we want to do is to figure out ways in launching new products so we can bring the mainstream market to the product offering as soon as possible. So, this is a big challenge. And how do we move the market, so it comes to the product? And the second thing that we want to do is make sure that we maintain our position in the marketplace.

And it is hard for the competition to take our share away because what's the point in developing a product-market only to have a competitor take it away from us, all right? I'm sure that when we look at companies like Motorola who were doing very well with the analogue technology for cell phones, that when Nokia came in with digital technologies and took their share away, or when BlackBerry came in and took the share away from Nokia, or when BlackBerry died at the hands of Apple and Android. Okay, so, we need to be able to keep up with change. Now, what are some of the factors that influence adoption? And this coming from game theory; it's also coming from sociology.

What we know is that competitive intensity in the sellers' industry is increasing. Everybody's fighting with each other. So, there's lots of product improvement taking place, prices are coming down, and that makes the products much more viable from the viewpoint of the consumers. The other important part is to notice is the buyers' industry. What is important out here is how relevant is the product. So, when we go to mobile phones and cell phones that were very expensive initially, who are the people that initially brought the phone? It was the corporate sector.

So, it was being paid out of corporate expenses. Later on, when the cost became lower, the buyer industry were also households. Now, just as companies compete with each other, if a technology will give a company a comparative edge against somebody, they are more likely to adopt it. Then the competition will say, "Oh, oh, we are at a disadvantage. So, we better keep up with these guys." Now similarly, if the industry is a household, you've heard the term 'Keeping up with the Joneses'. And "Oh, so and so has a refrigerator. So and so has a large panel television. So and so has this; we need to get it as well." Maybe we don't say it, maybe our children say it, okay? So, this is 'Keeping up with the Joneses.'

And out here, the insights from sociology become very important. You know, what are the searching costs? So, if I have a pretty good car, I've been driving a Nissan Maxima for several years. Am I anxious to change over to an electrical vehicle? Am I anxious to buy Tesla? The answer is no. Now, if I did not have any car, it is easier for me to justify that. And this is what we found in countries like India because there was no legacy technology; if we're talking about cell phones, we didn't have landline phones. And therefore, when cell phones came in, we immediately jumped onto the technology, and the rate of technology adoption in India was much faster because the risk was lower.

Same thing is happening now in digital payment systems. In the US while we're still using Visa and MasterCard and American Express, in India, you don't need them. What I can do is I can very easily transfer money from my cell phone from my bank into your bank account, and within seconds you'll get the notification. And if I have paid you, you'll say, "Raj, here's your product that you've already paid for." So, technological diffusion depends on the environment within which the technology is going to be adopted.

And as we see, when we come to the cell phone market, the competition and the way to market the product launch was quite different when it comes to Motorola compared to BlackBerry, compared to what is happening with the iPhone and Android system. Now, you see that they're coming up with product innovation every three to six months, and it's becoming a bit of a challenge to convince people who bought a fairly updated device a year ago to get them to update again. So, this is becoming a significant issue.

You're also seeing one system fighting another. So, you've got Android with Samsung and LG and everybody else on one side with Apple on the other side. So, literally, a war of technologies that was taking place and that is obviously going to influence. Now, this that is taking place between iPhone and Android is actually no different between the kind of battle that took place three decades ago between Beta and VHS. Okay, same battle. So, the question is, which is going to ultimately become the dominant technology? Now, of course, you could have two or more technologies that stay down dominant; it doesn't all have to come down to one.

The other thing to remember is that as we go along the life cycle, at the very early stages, it's important to get your early designs in, to get the people who are technology enthusiasts to get them to try your product. Subsequently, as we go into the growth phase, what becomes important is a shift from design to a shift to market development. So, it's no longer just a design game; it is the question of how do you get the distribution on your side? How do you get the financing in place if it is an expensive product? And things like that. The grey part is the first-time purchases; the yellow part is the repurchase.

It is in the repurchase side, that product differentiation and branding play an absolutely important game. So, it doesn't matter that you were a technology leader;

you got the market started. It doesn't help you to say, "I'm the one who came up with the first design." When we come to product differentiation and branding, who's got the better product now? Who's got a better delivery mechanism? And above all, who's got the customers in their pockets?

Video 8: Cost of Market Entry Delays

Okay. Earlier, we just talked about how technology is like bananas, and the need for speed, particularly in technology driven markets. So, it's really important to understand how important early market entry is. You know, what is the cost of being late? And many people don't realise what is the huge impact of being late, even by a few months.

So, what I'm going to do is, I'll take you through some research that has been done by my colleagues, and this is a work that was done by Glen Urban and Kalyanaraman at MIT. And what they did was they showed across different technologies that the second entrant into the market typically ended up with a market share that was about 60-70% of the first entrant.

So, think of a convenience store in a subdivision. We have a new subdivision going in, and I found the first entrant, you know, with the convenience store, I'm going to choose the best corner. By the time you come in, the best corner has been taken. So, you're going to take the second-best corner, and then the third party is going to be left with the next best corner. So, now what we're talking about is not corners in a real estate subdivision, what we're talking about corners in a customer's mind.

And so, the first mover is typically able to take a quality position in the customer's mind. The second mover is getting about 60-70% of the share. The third mover is getting 60-70% of the second mover, and so on. And this is the research that was documented by these guys.

Now, let me take that to what it all means in terms of being late. So, I'm just going to take the concepts that were developed by Glen Urban and his co-author and saying, 'Okay, how do we translate it into a cost structure?' So, this is something that we actually did for a company.

We're looking at the size of the DVD player market. It was about 500 million units at that time, so that's the market size. We also estimated, based on parallel research, that the market shares of the first three movers was going to be about 60%. So, out of that 500 million units, 60% of 500 million or 300 million units, were going to go to the first three movers, that was the best estimate. We also then took the assumptions from the previous chart that if the first mover has a market share of X, the second mover has a market share of 0.6 X, and the third mover is going to have 0.6 x 0.6 which is 0.36 X. If you add all of these are: X + 0.6 X + 0.36 X adds up to 1.96, which is 100% of that 300 million units, and therefore X is going to be approximately 50% of the 300 million unit, and so on. Now, what is the difference? The difference is that the share of the top three of that 300 million units is going to be 50%, 30% and 20% approximately. So, what is the cost of being second? The cost of being second is the difference between 50% and 30%. That are of 300 million units, that leaves you with 60 million units.

Now, supposing the contribution margin was about $15 per DVD player. So, $15 x $60M = $900M. There are 365 days a year, you divide $900 million by 365 and the answer is your cost per day of being late is $2.5 million.

Now, people do not understand that they say, 'Okay, we'd missed the deadline,' like I have been missing the deadline for this recording to some extent. And we fail to understand that missing the deadline and technology markets can be costing you millions of dollars a day if you're being late.

So, that is really the importance of the need for speed in fast cycle environments. And we are saying today that the markets are far more agile than they used to be 10 years ago. So, again, with the need of speed, please pay attention to the value of time.

Video 9A: Managing Across the PLC

Let's talk about the differences in managing products at different stages, various stages of the product life cycle. Now, what I'm going to do is show you a glimpse of what things are going to look like.

The green line is saying, what are the unit sales over time, and the red line is talking about profitability. You might notice that through the product development stage, as well as to the introduction stage, many companies actually losing money.
Why? Because getting the product in the market is not cheap, you know putting money into the working capital to make sure that the product movement is taking place, funding the distributors, etc., is taking money.

And therefore, we see that if you're not going to survive beyond the introduction stage, you're going to be losing a lot of money. It is therefore important to pull the plug earlier rather than later if you have signals that things are not going well, all right.

So, let's look at the typical stages in a life cycle, and what we see is that the slow start is accompanied by a rapid growth, and there's where we need to make some investments in developing the market. And that is then followed by maturity, where everybody else has the product in place as well.

And ultimately there will be some new technologies coming in, 5G replacing 4G, 4G replacing 3G, etc. And we've seen this happen, and particularly in the technology markets where we need to look at ways in which we can rejuvenate the market. Either we rejuvenate it with a new generation product or we may you know want to say goodbye.

Now, as we are going through these phases, particularly when we enter the growth phase, there will be other people who will notice that the market is going like gangbusters. So, everybody will want to jump on the bandwagon. And the blue line out here is showing how the capacity is developing in that industry. So, the black line is the demand and the blue line is the capacity, and what we see is because everybody has jumped on the bandwagon, capacity is now in excess of demand. Well, you don't have to be a rocket scientist now to predict that the difference between capacity and demand is going to lead to a market condition where there will be some price cutting.

All right, so if you look at prices along the life cycle, we'll see a big dip when capacity increases as well over the demand. And if you're a late mover to the market, this actually might be a good time for you to buy capacity by the companies that are going out of business. And then you enter with the next generation of technology by you know being a late mover. So, this is also a viable strategy.

Now, what we are saying, in effect is look, early in the strategy, early in the life cycle, we have to get our product into the market. The marketing community calls it pull strategies. This is advertising promotions to get the product accepted in the marketplace. At the later stages we're looking at push strategies, which is how do we incentivise the distributors so that when a customer walks into the store, they are beginning to see your product place better than the competition's product? And in between, of course, you're balancing you know push and pull. And later on, as we say, we have to worry about the exit.

You look at a company like Kodak. Kodak was the leader in the photography business, and they actually made all the right moves. They saw the digital technology coming. They were, in fact, an early mover with digital technology. And I know a little bit about this because I used to at that time work with Motorola. And Motorola was a technology partner to Kodak. Now, Kodak board was smart enough to say, look, we're going to move from silver halide, which is chemical to digital, and they actually went out and hired the number two person from Motorola to come in as the chief executive at Kodak. So, they brought in Mr Fisher, but despite everything, Kodak failed because Kodak as an organisation was full of chemical engineers. You cannot bring in electronics experts and make chemical engineers into electrical engineers.

So, what we see out here is a situation where a new technology came in, the digital technology, and over a period of time, it phased out the old technology. So, we have to be agile. We have to look at the new options that are coming into the marketplace and see how we're going to be able to adjust to that. So, let's not resist change, let's embrace change as is necessary.

The important thing to realise is that just as if we were going to bet on racehorses, for a short race, what we call a quarter mile race, you want to focus in on a horse that can run in spurts, very strong in spurts. But if it's going to be a two-mile race, then you need a horse with stamina. And so, there's a term that we use, that different horses for different courses.

Similarly, we may say, should we have different strategies for products that are different stages of the life cycle? And indeed, the answer is yes. At the early stages, we need to focus on innovation, then we need to turn over the baton to the sales and marketing people to see how they can grow the market. Then, when more competition has come in, we have to worry about cost efficiencies. We're not only a few players in town, we have lots of competition, so operational excellence is going to kick in. Later on, in order to boost the margins, what we start to worry about is the solutions and services that we can bring to support the product so that we can make a little bit more money. Now, what we see, therefore, and this rectangle is showing that in the early stages our margins are high, the volume is low, that's the rectangle. Later on, the margins are lower, but the volume is larger, and so this rectangle can be referred to as a profit pool. The profit pools, the shape of the profit pools is changing over the lifecycle of the product, and therefore we have to say that the strategy has to change.

But many companies, in my opinion, say, we've got to produce these metrics. We got to produce this market share, we got to produce this margin, we've got to produce this turnover. There's more attention to accounting outcomes than there is to strategy.

I think the important question is, given the stage of the life cycle, what should we be doing? And then the next question should be which metrics we should be using. At the front end of the life cycle, the top-of-mind awareness is very critical. In later stages, the retention rate becomes very critical, so we need to pay attention to the strategy before we pay attention to metrics.

So, again to re-emphasise, in early stages, we need to accelerate the market, there's heavy investment in brand. At later stages, we want to maintain our share in the market, the heavy emphasis becomes on brand loyalty, and in between we're trying to balance things. So, we're paying attention to growth and subsequently we're paying attention to keeping the costs under control.

Video 9B: Managing Samsung Brand Across Products and Markets

[Intro Music] All right, let me now talk about you know marketing and product development strategies at a company that I've admired over the years, which is Samsung, and how they have been managing products differently at different stages of the life cycle, but also how they have managed products across geographies. Because there's also something called the Country Life Cycle. And while we have mature markets in some product categories, we also have growth markets in the same product category.

So, let me talk about Samsung as a company. It started out, as many of you know, as a contract manufacturer, they didn't have their own products. They didn't have the original equipment. What they were doing is manufacturing work for different players in the market. And their competence, if you will, was actually based on operational excellence and keeping costs down.

In the late '90s, around 1997 there was something called the Asian financial flu, and these guys almost went out of business at that point in time.

Henceforward, we need to have differentiated products for us to survive in the long run, and they took certain bets and one of the bets that they took was to invest in the glass technology, computer displays. And we're talking about the displays and a handset and things of that nature.

And they became, at that point in time, what is known as original design manufacturers or ODMs. They were also an OEM; they manufactured their own products. In fact, Samsung was producing the colour TV for Sony, the Sony flat panelled Trinitron was actually a Samsung product with the Sony label at it.

All right, so what these are guys are doing is they now have a little bit of differentiation. And then took them another 10, 15 years before they got to be in the top 10 brands in a globally.

So, moving from contract manufacturing to a branded competitor was not a five-year journey. It was more like a two-decade long journey. And as you can see, these people are quite ambidextrous in terms of you know product development process, market development process, and branding.

Now if I look, what is it that the company is producing? And this is only a subset, they make handsets, mobile phones, they make printers, they make computer screens, they make PCs, they make notebook computers. They also make old to the world products such as refrigerators, washing machines, dryers, digital cameras on, on and on.

It is true out here, is that while some of the products are new to the world, products like 5G phones, they've got refrigerators, which are 70 years old in terms of technology. For the refrigerators today, are quite different from 70 years ago, but that isn't necessarily a new technology. It's an incremental improvement that are being made to refrigerators.

Now, what is it that Samsung is doing? They recognise that different products are different stages of the life cycle. So, at the front end they need to accelerate the presence of the product in the marketplace. So, they'll be focusing on branding, getting the trial, getting the awareness, getting people to make that initial purchase and at later stages for products that are at the later stages, such as refrigerators, what they want to do is they want to hang on to the shelf place, if you will, or if you go to a company like Home Depot, they want to make sure that the presence is felt in the distribution outlet. And what they also will focus on is brand loyalty programmes so people who are buying a Samsung, will stay and buy another something later on. And in between we have a balance of what is called push and pull strategies. All right, so this is the product setting.

Samsung also realises that depending on the development of a country, there could be some countries like India and Brazil that may be reaching a growth phase. So, what is happening in fully developed countries like Germany and USA is you are getting replacement sales. On the other hand, in newer countries or growth countries like Brazil, what they are getting is first time purchases. How you sell a product to first time people is different from how you sell to somebody who is already familiar with the product category.

So, what is happening is that the strategies you know for the developing market is quite different for the strategy's relative to the mature market. And again, it sort of comes down to building the brand early in the growth countries and maintaining a position and renovating the products coming up to superior products in the developed markets. In the developing markets, what do we want to do is start at the low end, get people to try the products, and then later on, you're adding the bells and whistles? So, the, the product design may be a little bit different in growth markets compared to mature markets. Certainly, the nature of marketing is going to be you know quite different.

Now, Samsung is a very astute player. We 've seen the battle going on between iPhone and Samsung for leadership. iPhone is dominating in the US, and perhaps Samsung has a lead in Asia. And now, Samsung has to compete against all the Chinese players.

Now, if I look at Samsung and I look at the growth markets, and I'm talking now in the context of mobile phones. In the growth markets, Apple does not have a dominant position. All right? Apple does have a dominant position when it comes to the US market, and they are also they're increasing their presence in Europe. Now, whatSamsung was concerned about is what happens in Asia if they're able to do to the Asian market what Apple did to the US market.

So, they wanted to be careful, they said, "What is it that we need to do?" So out here, they wanted to pre-empt Apple in Asia. And the story is that they wanted to look at the marketing investment in both increasing the size of the market. So, think of a pizza, can we make a bigger pizza. But can we also get a bigger slice of the pizza? So that is what they wanted to do.

And what we have known historically from analysis in multiple markets, they tend to over invest in developed markets, and they tend to under invest in emerging markets. And I've seen this over and over again from products that range from mobile phones to computers to even diapers. All right, so what happens is that there's much more attention to a market that's already big and where the margins may look higher in the short run.

So, what is important is to worry about what is the cost of not taking over the market. What's the cost of not innovating? Now, what is it that made Apple succeed in the US? Quite frankly, people did not realise that Apple, 20 years ago integrated forward with the Apple stores. And this is exactly what Samsung was concerned about to some extent, and they wanted to accelerate the availability of the products. So, think of it as brand access. You may have a great brand, but if the market doesn't have access to your brand, you're not going anywhere.

So, to improve the access to the Samsung brand, they launched their distribution networks, you know the Samsung stores. And if you' re going to build a large distribution system very quickly, it is expensive. And therefore, what they did was they went about Franchising.

So now, if you look at what's happening in India, you'll see a prevalence of Samsung stores and there are many more Samsung stores in India and Indonesia and South

East Asia than there are Apple stores. So, they sort of beat Apple to their own game a little bit. Now, of course, we know there's a global war going on and a lot of the global wars are taking place in India. So, whether it is Uber fighting a local conflict Ola or it is Amazon fighting against Walmart. Some of these battles are taking place in India, so it's an exciting place to be in, and we can look at the integration of product development and market development in the South Asian landscape.

[Outro Music]

Video 10: Customer Value and Solutions

Our focus now is going to shift to how your company should position itself to compete in order to create value, not to minimise cost to create value.

In effect, what we will do is we will look at the role of brand in a product success or failure. We will talk about the role of support services or complementary services such as repair and maintenance to ensure the success of your product. And finally, we will also talk about you know the importance of product design let's say relative to supply chain and the success.

Alright, so with that, let me turnover to what Mr. Ford said almost a century ago. He is famously known for having made the statement "You can have any colour car you want as long as it is black".

Now, the question is, why black? Why not grey or some other colour? It turns out that what Mr. Henry Ford was concerned about was to increase the efficiency of the manufacturing process so he could outstrip the competition in terms of costs. So, with black colour, when you dip a car body into a vat of paint, you bring it out and then you put it in a furnace, it turns out that black absorbs more heat than white does.

So, you might notice in Scandinavia, people wear black clothes because sun is kind of scarce, and you want to get all the light and energy that you can absorb from the sun. So, people in the north wear black but on the tropics in India, the last thing we probably want to wear in the summer at least is black. You want white, so it will reflect the light and it would reflect the heat.

So, this was the reason why Mr. Ford wanted to use black, and his focus was really on speeding up the assembly line. He reduced the manufacturing time from about 12 hours to 90 minutes, an eightfold increase in productivity which of course, led the competition way behind.

Today, we still have the assembly line except the assembly line instead of being on rollers today, is basically an assembly line where the cars are hanging from hangers, but the process innovation continues even today. But what Henry Ford was saying is "Look, I'm going to give you a car that is good, but it's cheap". His value proposition was price, price, price.

So, if I look at this little chart out here, I've got product performance on the Y-axis and I've got customer service on the X-axis. Mr. Ford wasn't promising anything. He said, "You can have a basic car", and that was the positioning of Ford.

This went okay for a few years, and then along came a person called Alfred Sloan. Mr. Sloan is the founder of General Motors, and when we talk about the MIT Sloan School of Management, it is named after Mr. Sloan. What was his management innovation? He said, "Look, not everybody wants the same thing".

So, he's the one who's bringing in segmentation and differentiation. He says when people are starting out, they can't afford an expensive car, so they're going to give them a Chevy. After they got one or two promotions, maybe they can afford the Oldsmobile. When you're a senior manager, you can get a Buick and finally, when you have one foot in the grave, you can afford a Cadillac, right? So, this is what General Motors did under Mr. Sloan. This strategy was in place as recently as the 70s when I came to the US as a graduate student. At that point in time, the Europeans did not have the same scale. General Motors had 62% of the market I believe in 1970.

The Europeans didn't have access to a large market, it was fragmented into different countries. So, what they said is, "Look, we're going to make the money on margin, okay? We're going to put in performance. We're going to put in pazazz and what we can't do in scale, we will do in differentiation". So, this is where the market was when the Japanese came in and they started exactly where Mr. Ford had started in the mid-70s. Now, the question was, what should they do in order to migrate upwards? It wasn't particularly easy.

So, what we have seen happen over time is that when innovation takes place in the West, what companies do is for the highest price model they will put the innovation in. So, for example, GPS systems and General Motors were first put in Cadillacs. Then they came into other brands within the GM fall. And so, what they tend to do is basically put in product innovations and then migrate the innovations down into the category.

On the other hand, when we look at Asian companies, if I go back 40 years ago, Maruti in India is there, Geely in China is there. But companies like Toyota and Nissan have gone up the value later. So, the question really is, you know what needs to be done for companies to migrate up the Valley ladder? At the same time, those companies like General Motors or Ford or BMW, that had outsourced to Thailand to the Asian manufacturers, can they possibly migrate down now?

So, this is an interesting question. Is it easier to go up, or is it easier to come down? Now as an aside, I'm a little bit biased. I think it's easier to go up, but there will be people who will content, who will not agree with me. But that's okay. So, the question is, I want to answer. Is it hard to go up the valley ladder and why and what would you do to overcome the country-of-origin effect?

So, if I go back to the previous chart, I said Toyota and Honda and Nissan were starting at the bottom where Henry Ford was, how do you overcome at that point in time? In the 70s, nobody had any respect for Japanese cars. So, what is it they need?

to do? Of course, They need to build in quality. Of course, they will be the first company to hunt for differentiating features. So, they made small improvements, like made sure that the cars had proper cup holder small little innovations like that that made them. But also, they focused on reliability and quality. And what I want to do next, is really take you through the story at Honda, how they evolved over five decades from a company that made motorised bicycles into one of the leading companies in the world.

Video 11: Value Creation at Honda

Let us take a quick look at how a Japanese company like Honda went up the Valley ladder. And how Korean companies like Hyundai have been able to do it in faster time. So, let's look at these two companies. Let's start with Honda.

We look at Honda 50, 60 years ago, the Honda Motor company was actually a bicycle company, and I was able to dig out a picture from the early fifties. It's a bicycle with a small little rotor that is motorised. And of course, we know from bicycles they went to motorcycles, et cetera, and then they finally migrated into cars. And what you see today is basically an Acura, if you will, and it is a very, very far cry from the bicycles that you see, you know, towards the left.

So, let's look at how you park 6 Honda's in one garage, and what you will say is you'll see a racing bike on the top, right? The same engine is actually being used in what we call the wave runner. This is a small, tiny boat that runs on water and then again towards the right, you will see the Indian family vehicle, that little motorcycle with seven people on it. And it is the same Honda engine that is going into snowmobiles, that is going into lawn mowers, and so on and so forth. So, the Honda story is that they were really invested in small engine technology, and with that focus they could say with a fair amount of credibility, that when it came to reliability, and quality, and innovation, when it came to a small engine technology, we are amongst the best in the world.

How could they make that claim? So, one thing is that we today talk about platforms we are talking about how Amazon is a platform. Will the term platform actually came from engineering. It came from technology platform from product platforms. And if you think of Honda small engine technology as a platform; that platform is being used in motorcycles; it's being used in snowmobiles. So, Honda is a company because it made motorcycles, and snowmobiles, and power generators, etc. It can spread the cost of manufacturing. It can spread the cost of R&D, and it can also spread the cost of distribution across multiple products, so across products it can outspend the competition. That was one element. The other element is that earlier on, I referred to something called QFD, Quality Function Deployment, and Honda is one of the earliest companies to start doing that. In fact, if I go back 30 years, Honda took the design engineers from the lab, and they said you will go and work in the showroom for a few months, go and talk to customers, find out what they want, and then bring the customer ideas back into the lab to figure out what are some of the advantages. So, this was QFD in the early days, listen to customers what they want and then translate it into technological innovations. So, this is what Honda was doing.

So, let me take you to a practical problem. The Japanese started at the bottom left, and over a period of time they establish some credibility. So, from the Corolla, Toyota, Corolla, they moved to the Camry, and they established the Honda Accord. From Civic they went to the Accord. They establish their credibility. But that is when they ran into performance issues. So, Honda and Toyota were regarded as reliable, they were regarded as okay cars, but nobody was really excited about them, so to say, and that's the problem they ran into. Now, if they want to go up, if they want to jump over the European competition and some of the upper-level competition in the US, they really had to do two things.

What were the two things? How do we establish ourselves as higher performance products at the same time? How do we establish ourselves as great in service? How do we do this quickly?

Now, on the product development side, Honda benchmark their products and Lexus did a similar kind of thing. They benchmark their products against the European and the North American competitors on literally everything. Acceleration in the car, the sound it took to close the door to make sure that the sports cars felt powerful, that the luxury for cars felt comfortable. They converted all the customer preferences into engineering expects. So, that is how they built in product performance by benchmarking on over 300 features.

Now, how do you establish your presence on customer service? You know it's a new product. There is no service attached to it. How do you create that? So, there are two things these guys did. First is they said something like the Lexus, "We're going to give you a warranty for five years. No questions asked. So, if you run over a nail on the highway, it's our problem." So, there is no fine print. So, they extended the warranty. They put the money where the mouth was, start with one thing that moved. And while they spent about 900 million or maybe a billion dollars in developing their Lexus, as an example they spent from what I understand 1.4 billion in developing an entirely new dealer network.

So, now, if you go to a Lexus, you know dealership, they will change your oil while you wait. And while you're waiting, you can have Starbucks coffee, and you could be having a Croissant on while you waited. And if by any chance they cannot repair your car the same day, they will give you a loaner. And the loaner is actually better quality than your current car, because what they're trying to do is they're using this opportunity to get you to test drive the next generation car.

So, five-year warranty. Exceptional service. You go to Lexus today for repairs. When they give you the car, they have not only fixed the problem, but they vacuumed it and they washed it. And they say, Here's your new Lexus. Okay?

So, in effect, what these guys have been able to do a Lexus, Infiniti and Acura is basically through paying attention to the details on the service side, to paying attention to product performance, they have been able to generate a solution that has given them a superior you know place in the marketplace.

So, if you look at what has happened in the automotive market over the last century and I'm summarising it in less than a minute, we are moving from Henry Ford that was focused on price and cost to Alfred Sloan, who said, "Look, I'm going to focus on segmentation and differentiation and build brand loyalty." The Germans who came in and say, "Hey, we are about performance and price premium." To the Japanese who came in and said, "Oh, service, orientation, longevity, reliability and quality." And then the same people coming in and saying, "Exceptional service and building a brand." As you go over these steps, you will see that the switching cost becomes higher. It was easy to sit from Henry Ford's Model T to a Chevy which had some better features. It's very difficult to change, to switch over, when we're looking at the top of the ladder.

But then again, from the product development side, you cannot just focus on cost controls. What you have to do is you have to focus on the delivery, the performance and the customer centricity that will have to come in designing the new generation cars is very, very different from cost minimisation. So, your business model, which is based on differentiation and segmentation, has to take that into account and product development and market development and branding are just going in hand in hand.

Video 12: Ambidextrous Organisations

We talked about the evolution of the automobile industry. In particular, we talked about the evolution of Honda as well, and we saw how the company evolved from bicycle to motorcycle to an automotive manufacturer.

And but if you look at the story, this 100-year story of the automotive sector, we see how companies like Ford, like Chevrolet, they went to more differentiated products.

So, it was not just a Buick that was more differentiated from Chevy. We also saw that within Toyota, the Camry was more differentiated relative to Corolla, and simply the Accord was a little bit more comfortable than the Civic.

And then we saw how moving from product development focus, they then moved to customer centricity and the aspirational building in the aspirational brand.

And we saw that in the old days the Cadillac, in the more recent three, four decades ago that's when BMW and Mercedes came in, and more recently it is the Lexus and the Acura's and the Infinities that have had that kind of impact. So, we've seen them go through the cycle.

If I now look at Hyundai, they've gone through the same cycle. But they've done it a little bit faster. How they started with, for example, the Elantra, which was at the low end. And then the idea was to migrate to a higher value-added car like the Sonata. And now, what they've been pushing the last seven, eight years, is a sub brand called the Genesis, because they're trying to compete at the high end. So, what Honda and Toyota did over a 20-year period, Hyundai is trying to do over a 10-year period, and we will see this kind of a game kind of accelerating.

And if Honda was able to do it, I don't see any reason why a company like Maruti, coming from India is not going to be able to do it. We can learn from others, but it is going to have to come to differentiation and brand building. Otherwise, you can keep building the cheapest car and competing at the low end of the market. But this is not just true, with the automotive sector.

If I now look at other sectors, I look at companies like IndiGo, which is the largest airline in India now. I look at Dell or look at Federal Express. Just as Henry Ford was concerned about efficiency and cost containment for these companies, they're also concerned about operational excellence.

Then we look at companies like Pfizer, or Novartis, or GSK, and they're looking at product development the same logic that was in the automotive sector is now being applied to the pharmaceutical sector in this case.

And we can look across industries, whether it's American Express, or Apple, or Porsche, or Coca-Cola, what these people are concerned about is establishing uniqueness and positioning themselves as an aspirational brand because not everybody has an American Express, right?

And so, but the important thing to realise is that, while in the older days he said, "Look, you pick operational efficiency, or you look product differentiation, or you look at customer intimacy." And 20 years ago, we used to talk about core competence. Pick one of these three things to win. Today, picking one thing is not going to help you win. You actually have to do all three things in the marketplace. So, that is what I mean by an ambidextrous organisation.

You take Samsung it's ambidextrous, great in manufacturing, great in differentiation product development, very good also now, in branding.

I can say the same thing for Apple. I can say the similar kind of thing for Amazon. So, you need organisations to be ambidextrous.

Now, what does that mean? That in product management, if you're going to succeed in the long run, you have to focus on multi process excellence. It is no longer just product development. You have to be efficient. You have to be a customer centric. You have to be brand centric.

Second is we need to think about innovating the business, not just innovating the product, all right?

And the third element is rather just managing a linear supply chain from procurement, to manufacturing, to distribution, to keeping the customer happy. Now, what we have to do is we have to manage an ecosystem so that not only make the product available to the customer through the distributors, but we also make financing available. We also make insurance available. So, what we are trying to do is come up with a solution and whether we call it ecosystem management or solution management. It is really similar kinds of things.

So, this is you know what we need to do in terms of moving forward. And what I would like to do next is really focus on how we are going to build in all these capabilities over the course that is going to be delivered. So, this is just the first module, you've got 11 more modules coming. So, what I would like to do next is to show you what are those 11 modules going to look like in one slide.

Video 13: Product Management Course Overview

Let me now give you an overview of the entire course. There are really three elements to it, and three kinds of people have to work together.

So, one part is really product development. Okay, what is going to be the nature of the product? How are we going to differentiate it? So, one is the design side, the development side.

The other side of it is really, what is going to be the role of sales and marketing? What are we going to do in branding? What are we going to do to maintain the customer's interest in the product? So, we got product and market development going hand in hand, which I've been, of course, reinforcing through this entire module.

The third element is that it has to make business sense, ultimately. And that is where executives are going to come in; and ultimately, in making some of these major decisions that we were talking about.

For example, putting in a new distribution system for Lexus, you'll have the CFO weighing in; talking about spending millions of dollars, what are we going to get in return? So, those kinds of tough questions are going to be asked.

So, when we talk about product management, it is the product development, the market management, in addition, the financial management that is associated with this exercise, and it means all three types of people have to come together in order to make a viable decision.

So, what are some of the other modules that we'll be covering between now and the end of the course? Number one, we have to focus on opportunity identification. Where is it, we want to go? Why do we want to go there? Number two, we have to look at developing the concept. What is the idea? How do we refine it? How do we take some input from the marketplace? And so that concept development is going to be the next phase. Then we have to test the concept. We got some ideas from the marketplace; we're putting together in a sort of a test market. How do we get some feedback from the market to make sure that the customer didn't tell us x and we did y. So, we're going through concept testing.

The next element is going to be, how do we implement it in a design? So, elements of design thinking, getting the customer input into developing the prototypes, into testing the prototypes, and so on. So, this is on the product development side.

On the market development side, I had talked about things like coming up with solutions, and they will be using a procedure called conjoint analysis to tell us how important a brand is relative to price, relative to a particular feature. And this is a very, very innovative methodology that we use to kind of say what's more important to the customer, and therefore what should get the higher priority. We will also be refined segmentation and differentiation, as it is important, the next step is to figure out how do we get into more details about doing it? There will also be a module that is looking at comparative positioning. We'll also be looking at product pricing, but also product line pricing. So, how, when we look at, let's say Hyundai, and how Elantra should be priced differently compared to Sonata, compared to the Genesis.

We are also going to focus on developing not only the distribution system, but as I referred to, the ecosystem; not just a supply chain, but getting the financing and insurance and repairs and everything in place.

The second last element is managing the brand across the life cycle. We've talked about how things are going to be differentially important in the early stages compared to the later stages. We'll get into some more detail related to the role of the brand across the life cycle. And the final element, and this is where I will be coming back to you guys, also, is looking at, how do we manage the business? How do we manage the finances?

You know, what is it that we can do to make sure that the outcome is not only good from an engineering and design point, not only great from the customer viewpoint, but also great from the viewpoint of the company.

Video 14: Summary

Thank you for paying incredible attention to what I had to say. Here's what I was trying to do.

Number 1, it is very important to change the mindset from cost minimisation to competing on value, to competing on differentiation. I find this a major problem, a company or brand entering second, third or fourth, making a statement or we are just as good, only more cost effective, only cheaper; it doesn't work. And I've been at this for over 30-40 years, and nobody is interested in buying something just because it's cheaper, you know there has to be some excitement to it.

We then talked about the basics about segmentation and differentiation. And so, what this is saying is that product development has to go hand in hand with how the developed product is going to appeal to a particular segment. We're going to use this kind of understanding to define what is the scope for the product. What product markets are we going to compete and where are we going to compete? And then also, how are we going to compete? Whether it's in product differentiation or the way we approach to the market, how we advertise it, the segments we target, etc.

The fourth thing that we talked about was there's a big difference between design thinking, where we start with what the customer wants relative to saying, oh! we did some research, now where can we use it? The success rate is much higher if we start with what the customer wants. If we design the product and then let's hope customers buy it, you know you're asking for trouble.

Then we looked at the market development that was critical to the product success. Again, the complementarity between product development and market development.

We then took a serious look at how things had to change over the product life cycle, how we had to shift from product innovation, design, etc. to market development to operational efficiency. And we took you through a couple of examples. One was an example of Samsung and how depending on the product category, depending on the geography, they were coming up with different strategies.

We talked about the automobile industry 100-year journey in maybe five minutes. Then we homed in on Honda and subsequently Hyundai, to talk about how these companies were able to migrate from making some very, very basic products to differentiated products and now into global brands. And this takes a lot of effort and they had to fight the usual biases about country-of-origin effects and so on. So, products coming out of emerging markets over coming out of developed markets are going to have higher hurdles to clear, but that is what we need to do. And so, based on that, I was proposing that you do not ignore the value creation framework, where thevalue is added not only because of the product, but also because of product innovations, operational efficiency, and in the aspiration and the customer intimacy and the engagement with the customer. All this is very critical.

I will be back for some of the modules in the future, particularly when it comes to branding and financial performance. And I look forward to engaging further with you.

Thank you.