

Manufacturing Strategy
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Module No. #04
Lecture No. #19
Developing an Operations Strategy: Methodology

Welcome, back. This is the nineteenth session, on this course on, Manufacturing Strategy. We are discussing about, the process of developing, the operations strategy, in last few sessions. As, the first few steps, in the process of developing, operations strategy, we discussed that, Order Winners and Qualifiers, are the most important thing.

If an organisation, if a company, is able to identify, the correct Order Winners and Qualifiers, then rest of the operations strategy can be developed, very smoothly. And, we discussed, in our last few sessions, some very specific Order Winners and Qualifiers, their specific characteristics. And, those Order Winners and Qualifiers, which are particularly relevant, for the manufacturing, or operations activities.

And then, we also discuss, some Order Winners and Qualifiers, which are not very specific to operations. Other functional activities, like marketing, etcetera, or research and development, contribute, in getting those Order Winners and Qualifiers. So now, moving ahead, in this process of developing the operations strategy, in this session, we will be focusing on, the methodology of developing the operations strategy.

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Analyse markets		Develop an operations strategy		
① Agree markets	② Determine market order winners and qualifiers	Identify key strategic task	Review current performance and identify improvements	Prioritize investments and developments
Agree ⁽ⁱ⁾ current and future ⁽ⁱⁱ⁾ markets in which to compete CY + 2 → + 4 → + 10 →	Determine the order winners and qualifiers for these markets	Identify key order winners and qualifiers supported by operations and translate them into strategic tasks	Assess how well operations currently supports these strategic tasks and identify areas for improvement	Prioritize the investments and developments to improve support of strategic tasks

So, let us first see, that what is this overall, the broad methodology, the broad process, of developing an operations strategy. So, the development of this operations strategy, can be divided, into two major phases. The first phase is this, analysis of the market. And, on the basis of this analysis of market, you take some actions. And, that is the part of your, development of operations strategy. Now, when I say that, analysis of market, so this also consist of, two broad activities.

One is, you have to agree, on a particular market. Which market, your company want to serve? So, the first important thing is, agreeing on particular markets. Now, agreeing the markets, again has, two components. The one component is, the current markets, and the second component is, the future markets. It is possible, that your future market, is also the current market. The market, which you are serving today, you will like to serve the same market, tomorrow.

And, it is also possible, that today you are serving a different market, and tomorrow you may go to a different market. So, you have to first decide, that what are your current markets, and what will be your future market, in which you will like to compete. And, many a times, because you feel, that over a period of time, we may not be able to develop, the different types of competing strategies.

We may not be able to develop, different type of competencies. Therefore, we need to identify, future markets, where our current competencies can work. So therefore, we need to see, that what is my current market, and what is my future market. And, this future market

may be, two, three different markets. One market, which is from, current year + 2 years, then current year + 4 years, current years + 10 years.

So, depending upon, the planning horizon, you want to set for your organisation, you may see, many future markets also. It is not, one future market. It may be, many future markets, after a particular time interval. So, that is the first step, in analysis of market. We will discuss this point, in slightly more detail, in our coming slides. Then, the second part, of analysis of market is, you need to determine, market order winners and qualifiers.

What are the specific, Order Winners and Qualifiers, for your particular markets? Particular markets mean to say, the current market, and the future market. Because, you have identified your current market, CY, which is available, at the current time. And then, for the future markets. So, you have to identify, Order Winners and Qualifiers, for these markets. So, for all these markets, Order Winners and Qualifiers, may be same, may be different also. So, let us see, that what do we mean by, these particular things.

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Criteria	Customer A			Customer B		
	CY	CY +1	CY +2	CY	CY +1	CY + 2
Design (product specification)	40 ✓	40 ✓	40 ✓	30	40	50
Price	Q ✓	Q ✓	Q ✓	40	20	Q
Delivery Reliability	QQ ✓	QQ ✓	QQ ✓	QQ	QQ	QQ
Delivery Speed	30 ✓	20 ✓	Q -	30	20	Q
Quality Conformance	QQ ✓	QQ ✓	QQ ✓	QQ	QQ	QQ
R & D Support Services	30	40	60	-	20	50

Like, for particular product, you have 2 customers. We have already discussed, this particular example, in our previous sessions also. But, it is relevant, to discuss this example, again here. Like, for a particular Customer A, your order winner and qualifier, you see, this is your current year. And then, this is one year ahead of the current year. And this, 2 years ahead of the current year. Now, the design, which is one important order winner, is remaining same, for all 3 years. Price, is a qualifier. It is same, for all 3 years.

Delivery reliability. How much you are able to deliver, on time, that is an important order qualifying, or you can say, the order losing criteria. So therefore, we have, QQ here. This is order sensitive criteria, or this is an order losing criteria. Then, you see, delivery speed. Delivery speed, for the current period, is an order winner, having a weightage of 30%. But, this weightage is reducing, in the next year, it is 20% only. And, maybe after some time, it remains a qualifying criteria.

So, how you see, that changes taking place, in this delivery speed. Then, quality conformance, remaining a very sensitive criterion, order losing criteria. On the other hand, the R&D support services, are increasing, in the winning weightage. Because, initially, the weightage is 30%. And later, this weightage has increased to 60%. So, from current year to 2 years' advance, you see that, how some of the criteria are remaining constant, and some of the criteria are changing.

So, that is, one very important thing, when you are analysing the market. And, you see that, what are the Order Winners and Qualifiers, for these markets. So, we discussed only for a particular customer, that how for a particular customer, how for a current market. Particular customer means, how for your current market, these Order Winners and Qualifiers, are changing. Now, let us see, for a different customer.

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Criteria	Product A			Product B		
	CY	CY +2	CY +4	CY	CY +2	CY +4
Design (product specification)	45	35	25	50	45	40
Price	15	30	45	Q	15	40
Delivery Reliability	QQ ✓	QQ	QQ	QQ ✓	QQ	QQ
Delivery Speed	40 ✓	35	30	20 ✓	20	20
Quality Conformance	Q	Q	Q	30	20	Q

That, you see, that there are, three different customers. Now, you have, two different products. You have two different products, and you are serving, both these products, let us say, for the same market. Both these products, because, there may be large number of

products, which your company may be offering. So, here I am talking, two products, A and B. And, now you see, for these two products also, for the same market. Both these products, we are serving to the same market.

And, in the current year, the design has the winning criteria, with a weightage of 45%. And, for the second Product B, in the same market, design has 50% importance, in the winning criteria. Price, for Product A, has 15% winning criteria. It is a winner. While, for the second product, price is simply a qualifier. Then, you see, delivery reliability is same, for both the products, for Product A, Product B, in the same market. Delivery reliability, whether you are able to deliver, on time.

It is an order sensitive criteria. Then, delivery speed. For Product A, in this case, it is a winning criterion, with a weight of 40%. While, delivery speed, is a winning criterion, but the relative importance, is not so high. It is 20%. So, you see, here it is 20%, here it is 40%, for Product A, and for Product B. For Product A, the quality conformance, is a qualifying criteria. While, for Product B, quality conformance is a winning criterion, with a weight of 30%.

So, for the same market, two different products are having, different set of winning and losing criteria. And, the weightage of winning criteria, are also changing. It is 45% for design. While, it is 50% for design, for Product B. It is 40% for delivery speed. While, it is 20%, for Product B. Quality conformance for Product A is, qualifying. And, it is 30%, for Product B. So therefore, it is important, that we need to do, a very detailed thorough investigation, of Order Winners and Qualifiers, in analysing my market.

Because, as we saw, that for different markets, these qualifying winning criteria will be different. And, for same market, for different products, winning and qualifying criteria, their weightages, may be different. So, that is the first important thing. And, when we are going to develop, operation strategy, based on this input of analysis of market, whatever input we get, input in terms of our criteria, winning and losing, our weightages for those winning criteria.

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- Strategy sets the direction of a business and points it at the market. ✓ *Fayol Unity of direction*
- Strategy development is an iterative process.
- Strategy can be market driven or market driving or both. *① IoT based manufacturing ② R&D ③*

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And, on the basis of that the strategy, which we are going to develop, that will show, the strategy will speak, that what is the direction of the business. And, it will point, the direction of the business, should always point towards the market. There are, various functional activities. We are primarily talking of operations. But, there are various functional activities. Marketing is another prominent functional activity. Human resource management is another functional activity.

Information system management is another important functional activity. Now, all these activities, should have unity of direction. And, this unity of direction, should be in the direction of the market. All these functional activities, should be targeted, should have, the market orientation. What market is expecting, all these functional activities. So, this is one very important thing. If, all these strategies, all these functional strategies, are not having, the same direction, same unity of direction, then probably, they make criss-cross.

And, when these strategies criss-cross, you will lose the very objective of your organisation. So, it is important, that the direction of the business, is set, by the functional strategies. And, functional strategies should have, unity of direction. And, that should be, in the direction of the market. So, understanding market, the input for the operation strategy, input for the marketing strategy, input for the information system management, input for the hr management, for all these functional activities, the input should be market.

And, I can take you, to the discussion of, Basic Principles of Management. In, Basic Principles of Management, if you recall, Henri Fayol, who is known as, Father of

Management. So, Fayol also gave, the principles of management. And, one of the very important principle of management of Fayol, which is unity of direction. So, I am just talking of, that principle of unity of direction, which was given by, Henri Fayol.

Well. Fayol mentioned, that the idea, or the direction of working, or the thinking of all the employees, at all the levels, in the organisation, should be towards, achieving the objectives of the organisation. If you have, different functional objectives, then the larger objective of organisation, cannot be attained. And therefore, this point of developing the strategy, is giving us that idea, that the direction of all the strategy, should be towards the market.

Then, second important point, which we need to keep in our mind, that the development of strategy, is not a straightforward process. It is not a straightforward process. Rather, it is more like an iterative process. You go forward, then you understand, you take some feedback, you understand that, we are not moving in the right direction. Then, you come back, and take some corrective actions. So, it is like, iterative process.

There are, lot of forward backward movements, in this strategy development process. It is not that, one after another, and then something will happen. So, it is not a straight process, rather it is an iterative process. And, when we say that, it is iterative process, the characteristic which is required, that there has to be a very serious top management commitment, towards the development of the strategy. Otherwise, if it is an iterative process, and top management commitment is not there, lot of resources is required.

And, management may lose interest. That, okay, there is no need to develop the operation strategy, or any other strategy. All these things will go, as per the requirement of, one particular functional strategy. Maybe, that is the reason, that most of the functional strategies are. Driven by the marketing strategy. So, when we say that, a strategy development, is more iterative process, we need to see that, how much resources are involved.

And, we need to have patience, to go for those round of iterations. It is not going to give you, immediate results. You need to wait, for getting the proper outcome, from these strategies. And then, other important thing about, development of operational strategy, is that, it can be market-driven, or it can be market driving, or it can be having a combination of, market-

driven and market driving. So, either, you can have a pure market-driven strategy. Or, you can have, a market driving strategy.

Or, you can have, some element of market-driven, and market driving. When, you recall the discussions we had, on the framework proposed by, Hayes and Wheelwright, where they have classified organisations, from internally reactive, to externally proactive. They classified organisations, into four categories, that organisations can be internally reactive, and can be externally proactive. Now, most of the organisations, where marketing is a very dominated phenomenon.

In that case, organisations, or particularly operational strategy, is internally reactive. But, when you are at stage 3, or stage 4, in the framework of Hayes and Wheelwright, in that case, either, you are directly taking input, from the market, to develop your operation capabilities. So, that is the market-driven strategy. When you are anticipating, that market will be moving in such a direction, and I should develop those capabilities, well in advance, so that, I can be the leader of those changes.

I can bring those changes in the market, that is the market driving strategy. Sometime, initially, market driving strategy takes, longer time, longer resources, and may not be profitable immediately. But, once market achieves, those requirements, once market feels that, yes, these changes, or these things, these characteristics, are important for us, then you actually start getting, huge amount of profit, huge amount of margin.

And, many of the organisations, try to develop, some of the capabilities, in anticipation. And, for some of the capabilities, they see that, how market is changing, and accordingly, change those capabilities. So, that is the third case, where part of the capabilities, are developed in anticipation, and part of the capabilities, are according to changes, whatever happening in the market. So, you have, a balance of market-driven, and market driving, in this third case.

And, if you are following the market, whatever changes are happening in the market, you are developing your capabilities, competencies, accordingly, it is a market-driven strategy. When you are anticipating, that how something has happened, and those things will happen, in our case also, like for an example, to get the market driving strategy.

In, some of the, part of the world, now we are having a concept known as, Industry 4.0, where lot of automation is happening, in operations level, in manufacturing level, where robots are coming, where sensors are coming. And, you are having, huge amount of automation, in manufacturing setup. Now, that kind of things, will going to happen, in Indian manufacturing sector also. So, now, if Indian manufacturing sector starts developing, capabilities to meet, the requirement of high degree of automation, that is the market-driven capabilities.

Because, market is changing like that. And, slowly, these things will happen, in India also. So, we are developing, those competencies. So, if I am going for, IOT based manufacturing, that is my example of, market-driven competencies. Now, this is one part. Now, second thing is, tomorrow, if I feel, that customers may not like to purchase, costlier products. And, customers will like to only, take those products on rent. And, there will be a different model, of using the products, in the sharing mode.

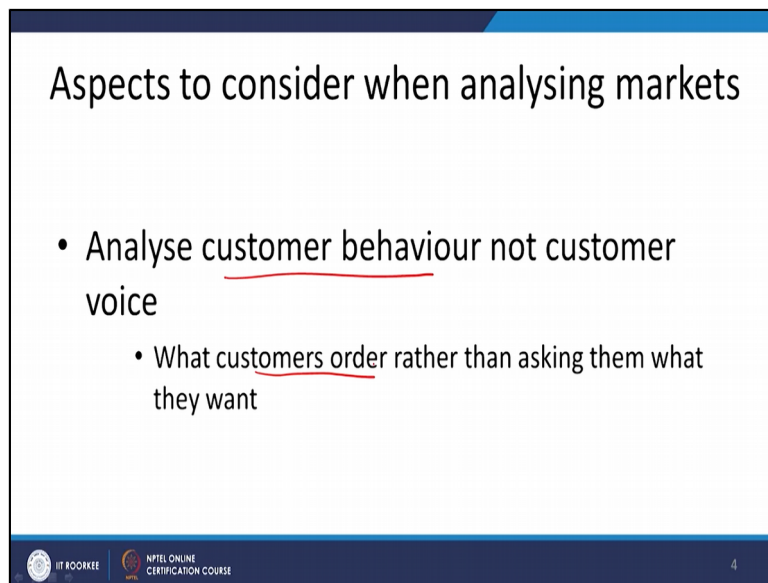
So, I need to develop, more robust products, which can be shared, by different users. And, if I anticipate, this type of thing is going to happen, in the market tomorrow, and I develop product capabilities, I develop my research and development facility, which can produce, newer type of products, which can handle, variety of users. Normally, in present circumstances, we have one product, for one user. But, maybe tomorrow, if I purchase a car, and that car can be shared, by 4 different users, living close by.

So, that is a different type of model. And, in that case, we require more robust products. And, for developing those robust products, I need to strengthen, my research and development facility. So, that is an example of, market driving. Once, I have that type of product readily available with me, then I can propose, that you can go for, sharing of the products. So, that is market driving strategy. And, obviously, there may be some resistance initially, for that type of new phenomena.

But, maybe, slowly and slowly, you will see that, people will be adjusted, to these new kind of models. So, that is market driving. And, in third case, you may have, some component of IOT, you have some component of sharing, and then, both these things happen, simultaneously. So, you are using, market-driven and market driving approaches, in your

strategic development. So, these are some of the important things, we need to keep in mind, while developing the strategy.

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Aspects to consider when analysing markets

- Analyse customer behaviour not customer voice
 - What customers order rather than asking them what they want

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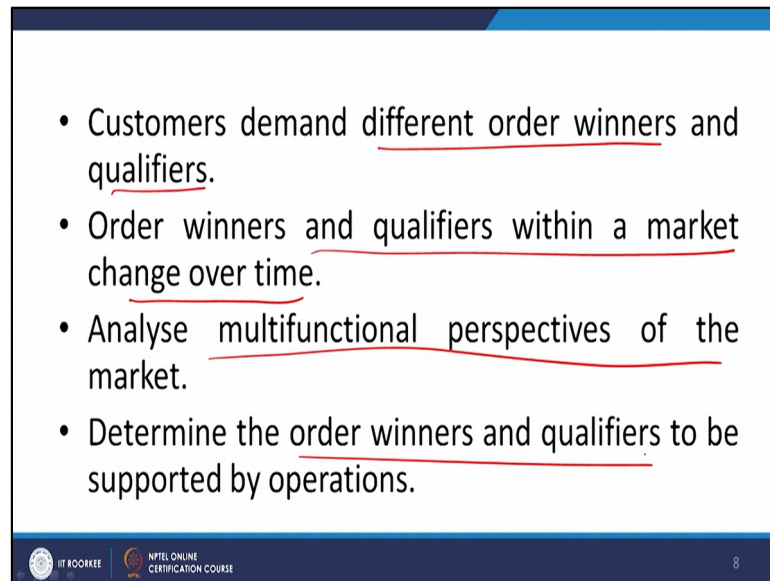
Now, when we are developing, our operations strategy, and as we discuss that, two broad phases are there. One part is related to, analysis of market. And, second part is based on that, development of the operations strategy. Now, when we are developing, the market analysis, so we need to see, one important thing is, that we need to analyse the customer behaviour, not the customer voice. Now, what is the difference between, customer behaviour, and customer voice.

Now, what type of action, customer is taking, that is the customer behaviour. And, what customer is speaking, that is the customer voice. So, what type of orders, a customer is placing, that is customer behaviour. So, you need to analyse, that what type of orders, what type of purchase order, what type of Products, a customer is purchasing. So, that will give you a, more clear picture, a better picture, for understanding your markets.

Because, when customer is speaking, he may speak lot of idealistic thing, which are not possible. And therefore, it is more important, that what customer order, what type of products customer is purchasing. And, on the basis of that, you can analyse the market, much better, then by asking, customers, what they want. So, this is something, which we all need to keep in mind, whenever we are analysing the market.

We need to observe the customer's behaviour, by seeing their purchase pattern, what type of processes, what type of investments, what type of product characteristics, they are investing in. And, on the basis of that, you can see that, what is the behaviour, or you can analyse, what type of qualifiers, winners, this customer is looking for. So, we have already discussed this, that how, order winners-qualifiers are changing, from customer to customer, from one period to another period.

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- Customers demand different order winners and qualifiers.
- Order winners and qualifiers within a market change over time.
- Analyse multifunctional perspectives of the market.
- Determine the order winners and qualifiers to be supported by operations.

And, to summarise, these three examples, which we have just passed through, that customers demand, different types of Order Winners and Qualifiers. So, many a times, we have discussed, this type of phenomena, that in different markets, customers require, different types of Order Winners and Qualifiers. Then, Order Winners and Qualifiers within a market, also change, over a time. So, we have discussed this, with the example of CY, CY1, CY2, that how, these Order Winners and Qualifiers are changing, over time, in the same market.

Then, another important thing is, we need to analyse, multi-functional perspective of the market. Now, the multi-functional perspective of the market, is very important. We are at this moment, analysing the market, from the operations perspective. But, we also need to analyse market, from the marketing's perspective. We also need to analyse market, from the human resource perspective, information systems perspective.

And then, we need to see, that out of those multifunctional perspectives, how many Order Winners and Qualifiers, to be supported by, operations activity. So, there has to be, point number 1, agreement by multifunctional perspective, that these are the Order Winners and

Qualifiers. And then, for the operation strategies point of view, we need to see that, how many such Order Winners and Qualifiers, are supported by the, operations.

So alone, analysing the market, analysing the order winner and qualifier, is not sufficient, a multifunctional perspective is more useful. Now, when we are analysing the market, and the first stage is, to agree on your current and future markets. Now, the litmus test, that you have achieved this status of understanding, or agreeing your market, is this statement, that you start saying, no. You are able to say, no, to some of the markets, that I am going to serve, only this market X.

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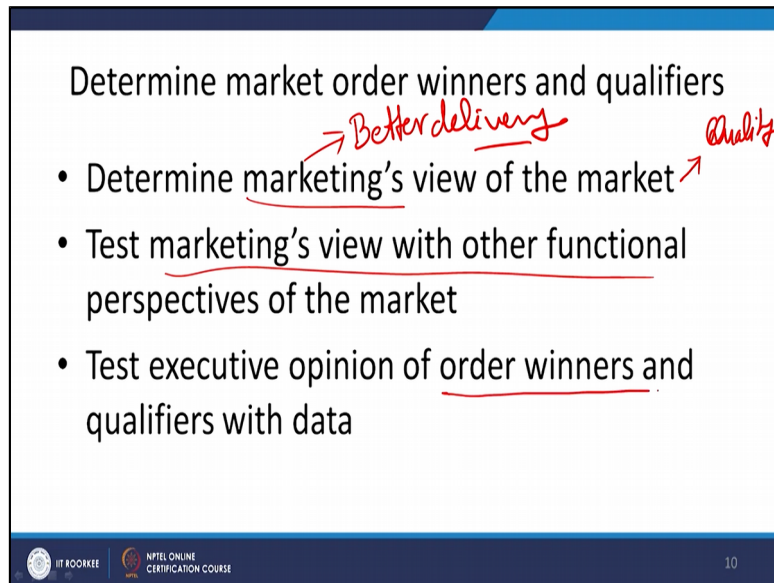
The slide is titled "Agree Markets" in a large, black, sans-serif font, underlined with a red line. Below the title, the text "The most important characteristics is start saying 'No'." is written in a black, sans-serif font. Below this text is a handwritten table in red ink. The table has two columns and two rows. The top row has 'X' in the first column and 'Y' in the second column. The bottom row has 'Yes' in the first column and 'No' in the second column. The table is drawn with red lines. At the bottom of the slide, there is a dark blue footer bar containing the IIT Kharagpur logo, the text "IIT KHARAGPUR", the NPTEL logo, the text "NPTEL ONLINE CERTIFICATION COURSE", and the number "9".

X	Y
Yes	No

And, I am not going to serve, this market, Y. So, when I have clearly able to say that, what I am going to do, to which market I am going to serve, that is the clear understanding that, now I have recognised my market. Many a times, organisations are not clear about, which market to serve. And, each market, they look as, new opportunity. And, in that way, they will serve, this market, this market, this market, all X, Y, Z, A, B, C, different markets, they will like to serve.

Because, they see that, each market offers, new opportunities to them. So, that is one way of thinking. But, what I am trying to say, that if you have this clarity in your understanding, that I am going to serve this market, and not going to serve this market, it means, you have agreed on certain terms and condition. And, only on the basis of that, you can say that, which market to serve, and which market not to serve, now.

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Determine market order winners and qualifiers

- Determine marketing's view of the market *→ Better delivery* *→ Quality*
- Test marketing's view with other functional perspectives of the market
- Test executive opinion of order winners and qualifiers with data

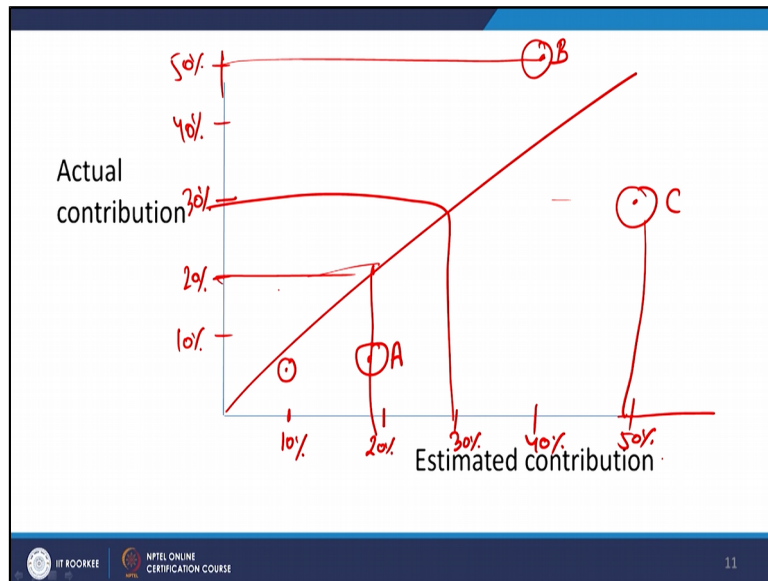
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Then, in the second step of, analysing the market, we determine multifunctional perspective. And, in this multifunctional perspective, the marketing view, of the market, is very important. We are analysing the market, from the operations view. But, determining marketing's view, about the market is, equally important. Then, you need to test that marketing view, with other functional views also.

So, marketing view maybe that, I as an operations perspective, see that, customers are purchasing products, because of superior quality. But, marketing may say, that customers are purchasing product, because of better deliveries. Now, if marketing is giving more importance, to on-time delivery, than the quality, so there will be a pressure on operation, that how to schedule your production activities, so that, you can achieve, the on-time delivery.

You can achieve, the delivery performance, more appropriately, than the quality. So, it is a kind of agreement, between different functional activities, about the Order Winners and Qualifiers. And then, you can test that, whether, the opinion of our personnel, is matching with the, market requirement or not.

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And, for that purpose, you can see that, what is the estimated contribution, and what is the actual contribution. And, you can see that, for an example, I say that, this particular phenomena, for my product, the contribution will come for this product, at 10%. But, the actual contribution, is coming, more than that. For another product, you are saying the contribution at the rate of 20%, 30%, 40%, and maybe, let us say, 50%.

Here also, you have, 10%, 20%, 30%, 40%, 50%. Now, you will see that, for some of the products, your estimated contribution, and actual contribution, will be on this line. Whatever you are estimating, and same contribution, you are getting. But, for some of the products, it is possible, that you have estimated 20%, but the actual contribution, is just 10%. For some other product, you estimated 40%, but the contribution came 50%.

For some other product, you are estimating 50%, but the contribution came 30%. So, there may be variation, that what your executives are feeling, that this much estimated contribution will come from this product, but the actual contribution, may not be similar. So, that means, you are not able to identify, correct Order Winners and Qualifiers. And therefore, this iterative process will come. You need to, again go to the market, to understand proper Order Winners and Qualifiers.

And, most of the time, your estimated contribution, and actual contribution, should match. That should come, on this straight line. That, whatever you are estimating, and if you are getting the same amount of contribution, it means, you have correctly identified, your markets. And, within those markets, you have correctly identified, your Order Winners and

Qualifiers. So, we come to end of the session, where we discussed, phase one of our operation strategy development process. Thank you, very much.