Manufacturing Strategy
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Module No. #04
Lecture No. #17
Some Specific Order Winners & Qualifiers

Welcome, friends. This is the seventeenth session, of this course on Manufacturing Strategy. We are discussing, since last few sessions, about various Order Winners and Qualifiers. We discussed, Order Winners and Qualifiers, are the important thing, for developing your functional level strategy. Most of the time, marketing department was responsible, for understanding the markets. And, on the basis of their understanding, other functional activities used to respond.

But, it is important, that all functional activities, understand the market. That, why a customer is purchasing your product? How can we provide, that type of qualities, that type of characteristics, in my product, because of which, product is being purchased, by the markets? And therefore, the concept of Order Winners and Qualifiers, that is important concept, for Manufacturing Strategy also. We started discussing, Order Winners and Qualifiers, for specifically operation-related characteristics.

Those characteristics, which can be developed, or for which, you can say, operations activities are responsible. We started the discussion, with price. That, how price, is a very important Order Winner and Qualifier. And, how operation, can provide you low cost, with the help of cost reduction, with the help of lean activities, with the help of knowledge of experience curve. Then, we discussed, second important Order Winner and Qualifier, that is related to delivery.

That, how to provide, delivery reliability, or on-time delivery. And, how to improve, your delivery speed. So, two dimensions of deliveries, were discussed. Then, we discussed, fourth Order Winner and Qualifier which is again related to operation role, that is quality. We discussed, two important dimensions of quality. One is, the conformance, to the specification. And, second is, fitness to use.

Fitness to use, is the customer's perspective. And, conformance to specification, is the manufacturer's perspective. So, that is also important part, for fulfilling the characteristics, because of which, a customer is purchasing your product. Now, coming to more such Order Winners and Qualifiers, in this session, we are going to discuss, one important order winner qualifier, that is the responsiveness.

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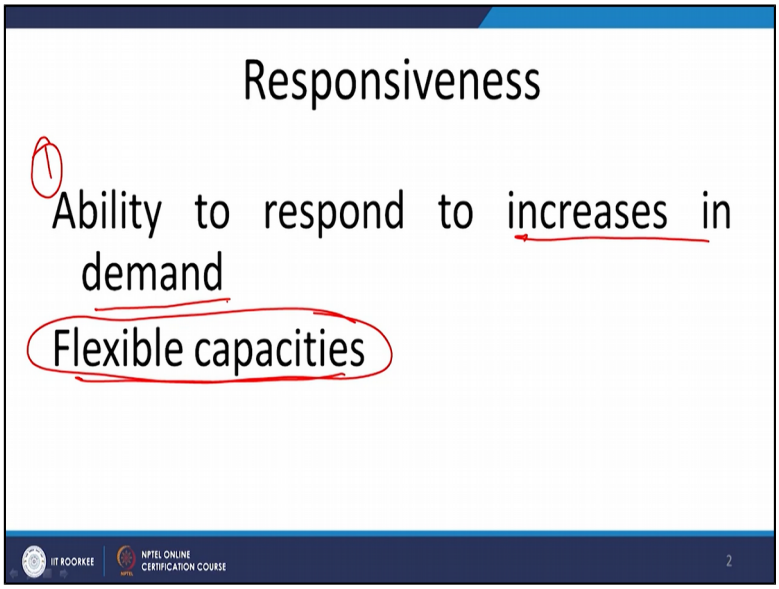

How quickly, you can offer products, to your customer? And, the responsiveness, is not only with respect to, how quickly you are able to, fulfil the requirement of the customer, rather responsiveness is also can be seen, in the light of how can you fulfil the, varied demand of your customer. So, varied demand. Now, we are taking in terms of, if your demand level, the volume of demand, changes. If different level of volumes are there, can you fulfil, can your operation fulfil, that varied level of demands or not.

Some organisations, may have some constraints, that if your demand increases. For an example, if I am dealing in an emergency product. And, there is sudden increase, in the demand of those product. Last to last year's, there were lot of environmental problems, in national capital region, during the month of, October and September. We used to see, that this was, smog. Now, because of sudden increase in pollutants, in the environment, there was an increase in the demand of air filters.

And, as a result of that, many companies could not provide, the sudden increase, or they could not satisfy, the sudden increase in the demand of air filters. So, one particular dimension of responsiveness is that, how you can handle, how you can respond, to varied

level of demand, or if there is a sudden increase in the demand. In, some kind of a disaster situation, the demand of medicines, demand of woollen cloth, demand of packet drinks, all these things increase, because of sudden requirements.

Now, there are few companies, which have enough excess capacity. And, because of that excess capacity, they are able to meet, this sudden increase in demand. But, if you do not have, that excess capacity, you will not be able to fulfil, this sudden increase in the demand. Now, the question is, how much excess capacity, you want to have. Because, if you keep excess capacity, this is at the expense of some cost. So, on the other hand, price is also an important order winner qualifier.

And, you need to keep price, within some limit. But, if you want to fulfil, the excess demands, you need to have excess capacities, and, excess capacities, come at a cost. So, there is a trade-off. And, we need to see, that what is the optimum level of excess capacity. And, if you see that, you are getting regular sudden increase in demand, then it is advisable, to develop your own capacity.

If this sudden increase in demand, is not a regular phenomenon, then you may go for outsourcing, you may involve your workers for overtime. And, these short-term measures, are possible, to fulfil the additional requirement, additional demand, of your product. So, one particular aspect that, how do you fulfil, the demand of additional products, that is a separate matter. But, your ability to do that, ability to respond to increase in demand, is certainly an important Order Winner and Qualifier, in some of the markets.

And therefore, we talk of flexible capacities. If you have flexible capacities, where if demand is more, you can produce more, if demand is less, you can produce less. So, those flexible capacities, become a very important order winner for, many of the organisations. It is not coming under, the category of qualifiers. Most of the time, the flexible capacities, if you have this type of characteristic, in your organisation, then it is a very important order winner, in some of the cases.

Where, organisations are not able to predict, the exact demand, that I am going to organise a function, and how many people will attend the function. If I am not able to actually forecast, appropriately the number of participants, in that function, I will like to have, a service

provider, who can have the flexible capacity, who can give me, if number is more, then also I can provide you the service, if number is less, then also I can provide you the service.

So, the flexible capacity becomes, very important order winner, in that particular case. So, in not all the cases, flexible capacities are required. But, in some cases, where forecasting is difficult, when you do not have the historical data, and in that particular case, this flexible capacity becomes, a very important order winning criteria. Then, another important Order Winner and Qualifier, which is coming from the operations, that is product range.

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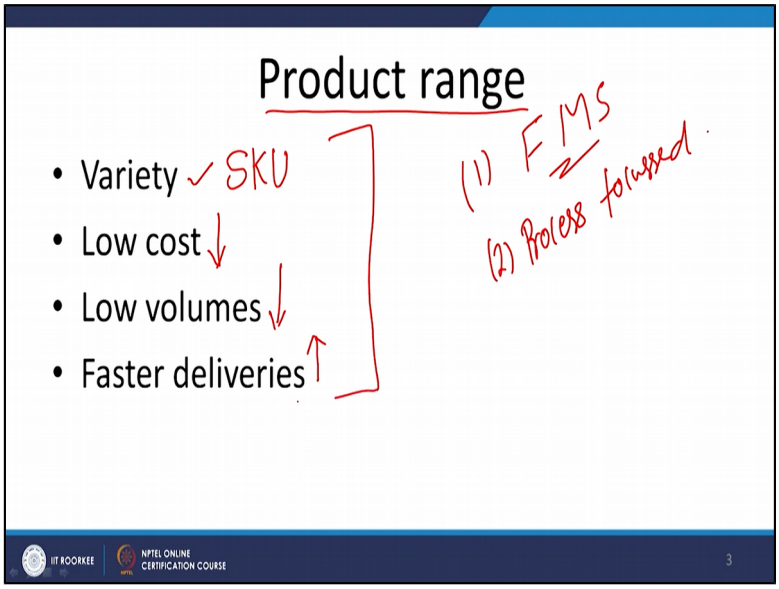

What type of product range, you have? We discussed, in one of our previous session, that we are moving, from similarity to heterogeneity. We now require, lot of diversification. We require, more and more customisation. And, as a result of that, it is expected, that organisations should be capable, to offer a wide range of products. Wide range of products, are required. Now, for wide range of products, you need to have, flexible manufacturing systems.

That is the primary requirement. Then only, you can offer, wide product of range. And, second important thing, you also need to have, process focused manufacturing system. If you have product focused manufacturing system, you cannot provide, wide range of products. Where you have, depending upon the type of product, what sequence of operations is required, you can decide. And, that is only possible, in a process focused environment.

Now, with respect to product range, we want, wide variety, that huge number of products. Or, in our standard terminology, we say, we need, more and more SKU's, Stock Keeping Units. Then, on one side, we want wider product range. But, on the other side, we want low cost also. That, you develop a system, which should be so efficient, that even if you provide mass customisation, the cost should not increase. So, that is another challenge, with the product range.

Then, when you are going for, very wide range of products, when you are providing, mass customisation, it is easy to understand, that the volume of each of these varieties, will not be high. So, you should be developing a facility, which is capable of producing low volumes. And then, another important thing is, faster deliveries. We want, as a customer, that product should be available to us, within no time. So, you see, there are lot of, contradicting requirements.

And, when these contradicting requirements are there, it is your ability of operations, which should be able to satisfy, with a proper mix of, these different types of requirements. You want variety. Volume is also not very high. Cost should also be low. Quality should also be good. Delivery should also be made within less time. So, all these are, different types of requirements. And, not all these requirements, are in the same direction. So, these requirements are coming from the, opposite directions.

And, that is again, a very important challenge, and very important skill of, operations manager, that how are you able to manage, all these different opposite kind of requirements, on your manufacturing function. So, this is another important, if your organisation is able to provide, these things, then probably, it is another very important order winner, for your organisation. That, you are able to provide, wide variety, low volumes, in faster deliveries. And, cost is also, you are able to check.

So, all these things put together, becomes another important order winner, which is operation specific. So, with this, we have discussed, most of those Order Winners and Qualifiers. Most of those characteristics, which are specific to operations role. Now, we will discuss, some of those Order Winners and Qualifiers, which are not particular to operations. Other functions can also contribute, in the development, or in providing strength, to these characteristics.

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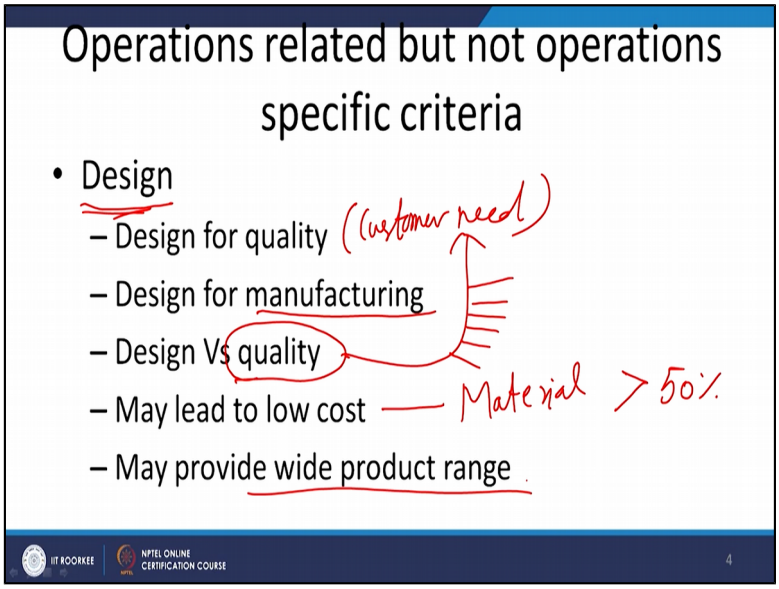

So, now let us start, with some of those functions. One such characteristic, is design, which is related to operation, but not specific to operation. Other functions: marketing, new product development. These functions also provide input, to the design activities. Now, in organisations, design is related, with variety of aspects. You design for quality, as per customer need. The new design for manufacturing. Whether the design, which you are developing, is easy to manufacture or not.

Or, put it in, different words, do you have, manufacturing facilities, to develop this design or not. You developed a design, which requires CNC Machine, Computerised Numerically Controlled Machine. But, you do not have a CNC Machine, in your factory. So, how will you produce, that type of design. So, you need to see, whether the design is, producible or not, whether the design is, you can fabricate the design or not. So, that is the ease of manufacturing.

So, that is another important aspect, in the design. Then, design versus quality. On, one side, you are designing for quality. And, on the other side, there is another important issue, that design and quality. Now, when we are designing a product, we are designing it, with some standard protocols. While, quality has, a very different dimension, a very different perspective, one important perspective is, customer need.

Another important perspective, we discussed in our, one of the session, that there are eight different dimensions, through which you can understand the quality. Like, what is the performance? What are the features? What is the reliability? What is the durability? What is

the maintainability? What is the aesthetics? And, what is the perceived qualities? So, these different dimensions of quality, we have already discussed.

Now, whether you are following, those dimensions, with design protocol, that is the issue of design versus quality. So, we need to see, that on one side, we should be fulfilling the different dimensions of quality. We have proper answer for, all those dimensions of quality. And, at the same time, we are fulfilling the protocols of design. Now, design can also help us, in achieving the low-cost. You can achieve low cost, with the help of design.

So, that is also possible. We need to develop new designs, which can help us, in reducing the cost. How, it can reduce the cost? Because, large component of our product, is coming from the material, which contributes, more than 50%. Material cost, is more than 50%. Now, if you develop, if you improve the design, where you can reduce the material, or you can change the material.

If a product, were earlier made of, some costly material. And then, the newer versions of products, are made of some cheaper materials. Then obviously, you are able to achieve, the objective of low cost. So, in reducing the cost, in our previous sessions, we discuss that, cost reduction is done through experience curve, cost reduction is done through lean activities, cost reduction is done through continuous improvement, etcetera.

But, a significant part of cost reduction, can be achieved, by new designs. And, most of the organisations nowadays, are doing, this cost reduction by design. Because, lot of development is taking place, in the field of material engineering also. So, new materials, which can provide you, similar kind of properties, but available at a lower cost, can be used, as a substitute of the older materials, which were costlier.

And, therefore, we can provide, new products, which are designed, on the basis of these new materials, which are available to us. And, this will significantly reduce, the cost of our products. So, when we see that, new products are cheaper, than the previous products, one of the reason is, new materials used in them. And, new materials provide, almost similar kind of properties. The development in the field of, alloys, composites, etcetera, have also reduced burden, on the natural resources.

And, at the same time, these are providing us, alternative materials, which are available at low cost. So, design can provide you, lot of cost saving, because of change in materials. Then, if you have, a very good design department, this will also help you. Just now we discussed, that how product range, is one important Order Winner and Qualifier. So, if you have a very good in-house design department, it can provide you, wide variety of products.

So, wide variety of product, can only be enjoyed, when you have an in-house design department. If you are outsourcing designs, you cannot enjoy that kind of competency, in providing the wide design, or wide products category. Some of the best toy companies in the world, Leo, etcetera, they are popular, only because of their ability to provide, a wide range of products.

So, they are providing wide range of products. And, the success of that wide range of products, is their ability, or their in-house design department. So, if you have in-house design department, you can also provide, wide product range. And, that we just discussed, that how it is an important Order Winner and Qualifier. So, design plays, a very important role. And, marketing new product development, are also equally responsible, in this design capabilities.

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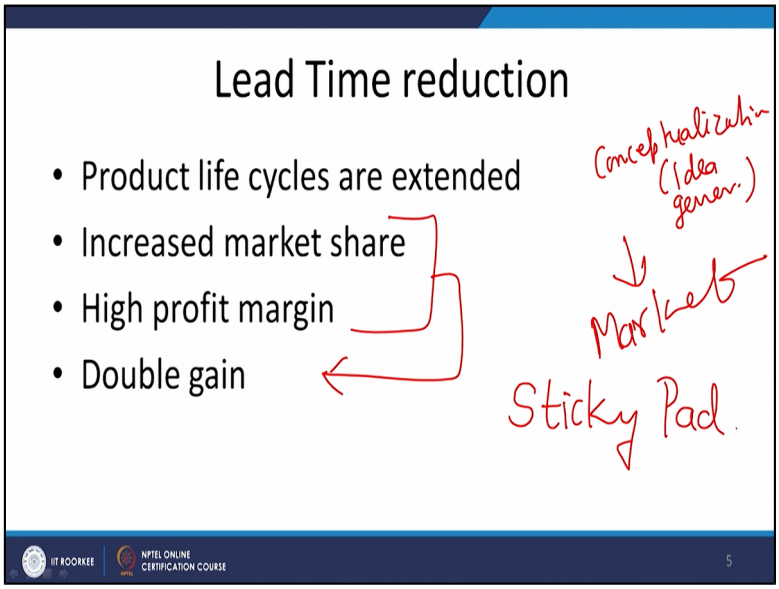

Then, another important factor, characteristic, is lead time reduction. Lead time reduction, we discussed, in one of our earlier session, in context of delivery speed, and on-time delivery. So, lead time reduction is, very much similar to it. But, many a time, it is not only the lead time reduction, but there are few other things also, which are associated, with this lead time

reduction. Now, when you go for lead time reduction, there are other possible benefits, like product life cycles, can be extended.

We are discussing this point, many a times, that product life cycles, are squeezing, are becoming shorter, day by day. But, if you are able to reduce your lead time, the time when you are conceptualising the product, and time when you are bringing that product to the market, if you are able to reduce this time, you can have probably, a longer product life cycle.

Then, you can also enjoy, increased market share. As your competitor, will have a lower market share, most of the time. Though, I cannot say, in a very generic sense, but in most of the time, you will see that, those companies, which are able to bring their products, on an early day, they will enjoy a larger market share. Higher profit margins, are also possible, with respect to those organisations, where lead times are shortened.

And, if you see that, increased market share, and high profit margin, if both these things are possible to you, this gives you the benefit of, double gain. Your market share is also high. And, your profit margins are also high. So, you enjoy, double gain. So, let us try to see, how this double gain is possible.

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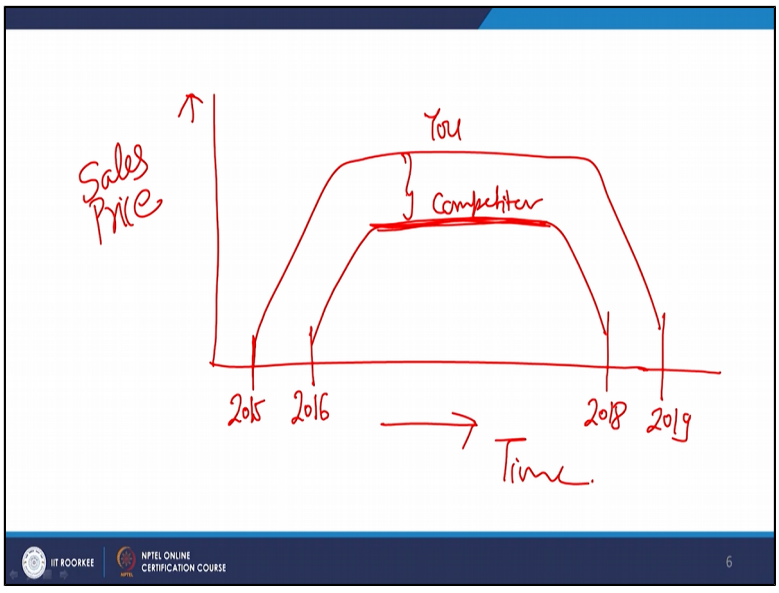

And, if I draw this curve, that is like this. And, this is your competitor. Now, in this particular case, you see, this is you, and this is your competitor. Now, here, on this, you can say, the sales price, and here, it is the time. Now, in this graph, you are able to see clearly, because

you have introduced product, on this particular day. You have introduced product, in year 2015. And, your competitor, is introducing product, on 2016.

So, here, your competitor is coming out of market, in 2018. While, you will come out of the market, in 2019. So, you are able to enjoy, this product for 4 years, while your competitor is there in the market, only for 2 years. So, that is one gain, which you are having. The increased market. Then, at the same time, you see, your competitor is able to get, this is the highest level of sales price, which your competitor is able to gain, while you are getting, this much additional margin.

So, your margins are also higher, because of your, first mover advantage. So, this shows that, double gain is possible, if you move early. If your speed is high, if you are able to reduce your lead time, from conceptualisation, to bringing the product into the market. And therefore, concepts like accelerator, concepts like incubator, all these things, design thinking, rapid prototyping, all these concepts are becoming popular, so that, you can reduce your lead time of bringing new products into the market.

And, if you are able to achieve that, obviously, you will enjoy this double gain. You will remain into the market, for a longer period. And, you will also achieve, higher profit margins. So, this is another very important. You will have, increased market share, and higher profit margins, which will help you, in achieving the double gain. So, lead time is all about, how you reduce your time, from conceptualisation, or you can say, idea generation, to market.

So here, we want to reduce, this process of bringing the product to the market, from the idea stage. Earlier, it used to take, years. A very small product, very simple product, we all may be knowing, that product's name is, sticky pad. This sticky pad, took more than 10 years. This is such a simple product, and it took more than 10 years, to come to the market. Even in a most complicated electronic gadget, you cannot think of, taking 10 years' time, to bring that product to the market. So, we want, faster production.

We want, faster bringing of products, from the idea stage, to commercialisation stage. And therefore, this also provides you, a very important winning and qualifying criteria. But, in this, operation is involved. But, other than operation, we require collaboration of our vendors, we require collaboration of our suppliers, we require collaboration of new product

development team. So, there are different types of functional activities, which are required, in fulfilling the objective of this, lead time reduction.

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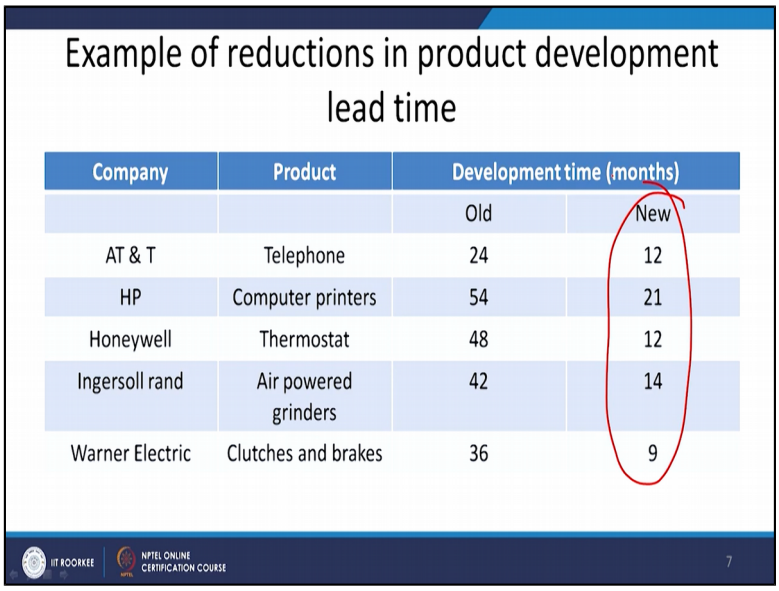

If you see, some of the examples, which will help you in understanding that, how companies have improved, their lead time reduction. And therefore, they are at the top of their respective fields. Very popular names like, AT&T, earlier, their product development time, was around 24 months, which they are now able to make up to the, 12 months only. HP, a very powerful name in the fields of computer printers.

Their earlier product development time was, 54 months. Now, it is 21 months. Honeywell, one of the leading name in the field of Thermostat, from 48 months to 12 months. They reduced to 1/4, for improving their product lead time. Ingersoll-Rand, from 42 months to 14 months. Warner Electric, again reduced the product development time, by 1/4. 36 months, reduced to 9 months.

So, capabilities of organisations, of reducing the product development lead time, becomes a very important characteristic, very important capability of, you can say, these organisations. And therefore, these organisations become, world-class organisations. So, with this, we come to end of the session, where we started discussions, on some Order Winners and Qualifiers, where operation and other functional areas, of the organisations, also contribute. Thank you, very much.