

Toyota Production System
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Module No # 01
Lecture No # 04
Operations Strategy

Welcome friends, now, we are entering into the fourth session on this course of Toyota production system, we discussed about what is the system? What is a production system? And what are the different types of systems which are available? Based on all that input it is also important to understand that why we need to discuss a system of manufacturing developed by a company like Toyota.

So, for understanding the requirement of that we already discussed in our second session if you recall some of the global trends, but here I will like to take you to a different dimension. And the dimension is of competitiveness that how our functional areas can provide competitiveness and most of the time it is a general believe that competitiveness comes from the marketing type of areas.

I am not against marketing, but I want to point that different functional activities can help you to achieve or to obtain that competitiveness or it is also known as competitive advantage, competitive edge. Now, here particularly, we are talking that operations can also be a very useful weapon, it can also provide you a lot of competitive advantage which marketing can leverage. So, you see that, in our previous session, when we were discussing about systems, we were talking of integrative systems, how to have integration of various components of the system?

Now, this is a beautiful example, that operation provides some sort of strength and that marketing capitalizes on those extent and that is how the organization, your company will achieve a excellent level of performance a superior level of performance is sustainable advantage. And, here in this session particularly, we will be focusing on this particular aspect of competitiveness and competitiveness particularly from operations.

So, we have named a decision as operations strategy, where the strategic role of operation will be discussed. Now, for understanding this topic, let me take you to the fundamental question that what is competitiveness. Now what is competitiveness for this purpose as I was talking in a different session, that how you define happiness. So, the meaning of happiness is different for different person for me, happiness is in eating Rasgulla.

For you, happiness is in listening Jagjith Singh sings music for somebody else, happiness is in watching a soccer match. So, for all of us, the meaning of happiness or for where we derive happiness may differ. Same thing for different organization sources of competitiveness may differ, there cannot be a common source of competitiveness for all the organizations. Different organizations draw their competitiveness from different point of view. Now, what is this competitiveness?

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The slide features a title "What is a Competitiveness?" underlined in red. Below it is a bullet point: "Ability to perform in comparison to your competitors", also underlined in red. To the right of the text is a diagram with two labels 'X' and 'Y' on the left, each with an arrow pointing to a central oval labeled "Market 'A'". Below the diagram is handwritten red text: "Why customer chooses product from Y over X?". At the bottom of the slide, there are logos for "IIT ROORKEE" and "NPTEL ONLINE CERTIFICATION COURSE", and a small number "2" in the bottom right corner.

Now this competitiveness is our ability to perform in comparison to our competitors. If my competitor is providing product A let us say or with the help of an example, let us try to understand that these are two competitors X and Y they both are serving to same market this is market A now X is also serving a product to market A, Y is also serving the same product to market A.

Now why a customer A chooses a product of Y over X, why a customer why customer chooses product from Y over X that is the answer of competitiveness that customer in market A is choosing the product of Y or choosing the product of X over others that is defining the

competitiveness for you. Because either Y let us be more clear either Y is offering a product at a lower cost than the price of the product of X.

So, because Y is products are available at a lower price customer like me will go to Y's product. So, the Y's ability to provide product at a lower cost is his competitiveness, maybe Y is providing superior quality products than the products of X because I am interested in a superior quality product. Therefore, I am purchasing products from Y. So, providing the ability to provide products of better quality that is the competitiveness of Y.

So, for some reason, market A is purchasing products from Y over X therefore, that becomes the competitiveness. Now, continuously organizations are trying to develop more and more competitiveness more and more those abilities because of which they are able to fulfill the customers requirement in a more different manner than the competitors. And when you have a basket of those abilities, it will be difficult to compete with you.

Second thing when you have more such abilities, it will be very difficult for your competitors to imitate those things, if you have one or two ability, your competitors may imitate or your competitors may provide better abilities. So, you will lose your market. So, all the organizations however successful you may be, you are continuously looking to gather to collect more and more such abilities which are going to help you in develop your basket your portfolio of competitive abilities.

And that is the crux of the idea of any statistical advantage, you will have the advantage only because of your superior ability to fulfill your customers requirement. Then the next point that different functional activities influence your competitiveness. So, as I was saying that, most of the time, we believe that marketing influences the competitiveness maximum.

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Marketing influences competitiveness

- Identifying consumer wants and/ or needs
1- ↳ Product Development
- Price
2-
- Advertising and promotion
3-

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So, with this idea, if I see that marketing influences competitiveness, if I go with this idea, so in how many different ways marketing influences the competitiveness, so, marketing influences the competitiveness by primarily these three ways these are first the responsibility of marketing is to identify consumer wants and demands, that is the first important thing what my customer wants, identifying that thing and that is the most important role of marketing.

Now, if my marketing team is able to understand that how the customer requirements are changing over a period of time, that is my superior ability to understand my customer. Sometime a very good organization may be there, but that organization may not be able to understand that because of some reason, customer requirements are changing and I am unable to capture those changing requirements.

Therefore, I may lose my market to my competitors. So, this may happen. So, marketing provides the most important ability to understand your customer, because everything revolves around the customer. So, the first important superior capability of marketing is understanding the customer and you have to continuously track what is happening with your customer.

The second important thing with which, because coming back to this first point, few more things to add, once you understand your customer, what are the wants, needs of the customer, accordingly, you will design the product. So, your product development is totally dependent on this consumer wants and needs. If I take you to an example of rural marketing in India.

Many companies miserably fail in rural marketing the primarily the basic reason for failing into the rural markets is this reason. Companies are not able to identify correctly, the needs, the wants, the demand of the rural customer and therefore, they are not able to develop the correct products, which rural population require and therefore, those products are failing continuously. So, the first important ability of a company is with respect to marketing's influence to understand the customer.

Second is once you understand the customer, how much to price that is also a very interesting thing. We all have a very recent example of Reliance Jio that Jio was aware that in India customers have a very typical love for low cost product and therefore, they introduced a mobile service facility with a very low cost model and for initial some periods, it was almost zero cost.

So, because of that, they were having that ability to provide products at a very low cost, they were ahead of all their competitors and they change the entire landscape of Indian mobile market. So, that is another important thing that by price, you can influence the competitiveness if so you know that, how to win a price war, you are suddenly going to be a very important competitor and you possess a very important competitiveness which is required for winning the markets.

And third, since the era in which we are living, it is full of social media, it is full of large number of channels, which are continuously affecting our thought process, whether it is electronic channels, whether it is print media, whether it is social media, so you are getting a lot of information we are living in information age. So therefore, your superior ability to advertise to promote your product that also provides you a lot of competitiveness.

So, those products, where you have a little less demand, but because of superior promotional activities, because of heavy advertisement you are able to influence the competition. So, that is another important part, which marketing influences. So, these are the three important ways in which marketing can influence the competition. But if you come to operations role in influencing the competitiveness, you will see that there are large number of factors.

In marketing we just discussed 3, one is your ability to understand the customers wants and needs your ability to provide the competitive price and then your ability to provide very intense advertisements and promotional activities. But if you see the operations role, that how operation can influence the competitiveness.

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Operations influences competitiveness

- 1- • Product and Service design
- 2- • Cost ↓ Reduction.
- 3- • Location
- 4- • Quality
- 5- • Quick response



You have product and service design that is the first important thing through which you can influence the competition. If you are able to come though, there is a role of marketing into it, because if marketing gives you correct feedback, what is the requirement of the customer, then only a good product design a good service design may emerge. So, it is not stand alone operations role, but certainly, once those requirements of marketing are available, then converting those requirements into a product into a service is the responsibility of the operation profile.

And developing a superior product which is exactly as per the requirement of the customer, both things are important, equally important, capturing the requirement of the customer is very important and then converting those requirements into the form of a product that is also equally important. So, that is the first source of competitiveness, which operations profile provide that developing a product which as per exactly the requirement of the customers markets that is one.

The second is cost, what is your ability to reduce the cost no one wants to spend more money no one wants, however rich you may be, but you always like to give less amount of money for these

services for the products you are using. So, we all want to spend less nobody will like to if this pen can be available to me in 5 rupees, I will not like to give 6 rupees or 5 rupees 50 paisa for this pen.

Rather I will be more happy if somebody gives me this pen in 4 rupee 90 paisa. So, cost is a very important factor and we continuously look for reducing the cost. So, cost reduction is an important aspect and who can reduce the cost it is only operations profile, which can help us in reducing the cost whether you follow a Toyota Production System, whether you follow lean manufacturing, whether you eliminate the waste, whether you minimize the defect, whether you minimize the variations, you do JIT, you have very good material management system, you have excellent inventory management system, all that is required for lowering the cost of your processing.

And this all put together will help us to reduce the cost of my final output. So, that is again a very important aspect which operation profile provides us third is location where to locate my facilities. Obviously, if I am talking of the location of ambulances, if I am talking location of ATM's. So, I will like to look at ambulance on the hotspots which are more accident prone areas, I will like to look at my ambulances in those areas, I will like to look at ATM's on the basis of convenience.

So, identification of locations for different types of facilities, whether it is manufacturing facility, whether it is warehousing facility, whether it is retail facility. So, different aspects provide us the option of location and the best possible combination of various factors, which can provide you locational advantage that is again a superior competitiveness. If I am living in a society, so, obviously, I will like to open a bank account, I would like to keep a locker in a bank which is most convenient to me.

And that most convenience is normally with respect to location where I am. So, if I am opening a new bank branches, which may be much cheaper, because of land, etc, but if it is in the outskirts of the city, and there is no colony, no commercial activity, no residential activities in that area. So, I will not be getting any business. So, I will like to open a branch where maximum

residential activities are there maximum commercial activities are there maximum industrial activities are there.

So, all these things are the part of location and therefore, this becomes again a kind of advantage, the old banks in all the cities of India, you see are available in the central area of the city, you can say that the main markets of the city because of at that is giving them continuously a sustained advantage because all the shopkeepers all the people living in that area, they normally open their accounts in those branches.

So, location is a very important aspect of competitiveness and that comes from the operations profile, quality does not require any kind of discussion, we all understand that how quality is important and it is now no longer dependent on inspection, we need to develop our processes, we need to strengthen our processes in such a way that they produce high quality they produce minimum variation they produce minimum defect.

We understand what is cost of quality and the customers also want superior quality products at lowest possible cost. So, if customers are looking for superior quality product, this is the responsibility or this ability to compete comes from the operation profile. So, that is also a very important low customer can say that okay, I can compromise with a little less quality.

We all want best quality, and operation is responsible for providing the best quality products that we want that company should be able to respond to our requirements within no time, we want quick response, faster response, we want less time of delivery and therefore you see all ecommerce companies, whether Amazon, Flipkart or any other company, you name they all are coming up with the models of faster delivery is that how to have faster delivery to the customer, because that is becoming one key aspect of your advantage.

And again, the role of operation cannot be undermined in quick response, how you shorten your processing time, by shortening the processing time you can reduce your lead time and this will ultimately help you in building the competitiveness with respect to quick responses.

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- 6 • Flexibility
- 7 • Inventory Management (IT) Walmart (Finished Goods)
- 8 • Supply Chain Management → Trade off. Lower Cost Vs Quick response
- 9 • Service

Then, another aspect is with respect to flexibility, how quickly you can change your systems. So that you can fulfill a variety of needs of your customers that is flexibility. So, now your ability to change your processing systems quickly that is again coming from the operations domain that is also in the current environment, it has become one very important competitiveness then material management that is also a very important source of competitiveness.

We want the minimum inventory and you can see this aspect in line with the cost discussion, we were doing few minutes back. That if I want to reduce the cost of my product inventory management plays a very important role. So here I am talking not only the inventory of WIP that is work in process or raw material, the inventory management of finished goods which helps me in quick response.

If I have readily available inventory that is going to increase customer satisfaction and how quickly I am able to provide products that is dependent on this particular aspect of inventory management. So, inventory management becomes a very tricky issue's these days. Therefore, we have separately mentioned it at a competitiveness because we want to what is tricky that it is a tradeoff and tradeoff between you want to lower the cost and at the same time, you also want quick response.

Therefore, how to manage the inventory is a very challenging issue. If you want to reduce the cost, you want to keep minimum inventory. So that your cost of keeping the material goes down.

But at the same time, you also want quick response you want shorter lead times and if you want shorter lead times you need to keep inventory.

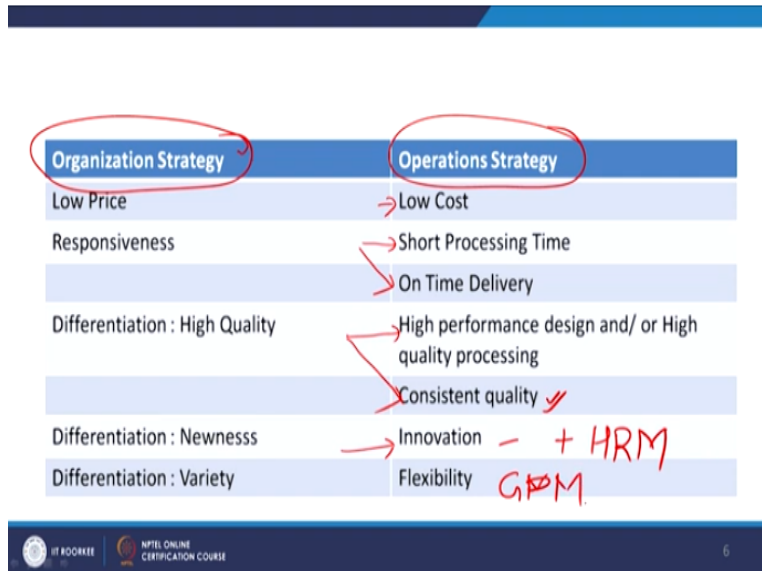
Now, that is a typical issue and as a operation manager, you need to develop that type of ability that you should be able to handle the challenges of these two different types of issues on one side, you want less inventory or another side you want higher inventory. So, how to develop a balance, how to do this trade off, that gives you a different type of competitive advantage. And particularly, I like to suggest here that nowadays we have use of IT and that use of IT is helping us tremendously in achieving this inventory management competitiveness.

And a very good example for that is Walmart, the company like Walmart, they are able to achieve superior inventory management by their information technology application and they are able to provide almost all the products under one roof with the minimum possible cost. So, that gives you a superior ability of inventory management then supply chain management the ability to provide products at different markets.

Wherever your customers are there at what time they want product. So, developing that kind of distribution system is the role of supply chain management. And finally, what type of services the maintenance, the repair the guarantee, so that your customers are able to use these products with better satisfaction with better enjoyment, that is also a very important ability. Many a times our purchase decisions are based on the quality of service available for that product in my vicinity.

So, therefore, this is also important ability which is supported by it operation domain. So, we saw that marketing is providing three competitiveness, but operation can provide you nine competitiveness therefore, this session is devoted on operations strategy. Now, let us see quickly that if we have a particular type of organizational strategy, so how it translates into operations strategy.

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So this left column is about the organizational strategy and this right column is about the operations strategy. Like if the organization is strategy is low price. So, I will like to do things which can reduce the cost. So, the operation is strategy is low cost. So, if my cost is less, I will be able to support the organization strategy of low price if the organization is strategy is of responsiveness.

So, the responsiveness will be achieved by two things that I need to reduce my processing time I need to have shorter processing time, I need to do a lot of industrial engineering for that purpose that how to have processes which can reduce my overall processing time and then how to achieve on time delivery. So do not delay the delivery. So, these two things will be the important organizational operational strategy for achieving the responsiveness.

There can be different types of differentiation, now if I seen the differentiation with respect to high quality. So, high quality will be achieved through two things one, I should be able to design the high performance products and I should also be able to have consistent quality organization suffer that sometime whenever there is a drive for improvement of the quality, the focus goes on quality, but then slowly and slowly the graph decreases.

So, I have to be careful that I should be able to produce consistent quality if you want to have this competitiveness, differentiation on the basis of newness. So, innovation becomes your operation strategy, how to have better design thinking culture in your organization, how do you

promote innovativeness in your organization. So, it is though operational strategy, but it also involves a very important role of human resource management.

That differentiation with respect to variety and differentiation with respect to variety it is coming from flexibility that you should be able to produce wide variety of products. So, when wide variety of products are produced, that is only possible because of flexibility. And for that purpose, you need to have either general purpose machines or you need to have other CNC machines, which can offer you more flexibility.

Let us see some more organizational strategies, then differentiation is possible with respect to variety.

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Organization Strategy	Operations Strategy
Differentiation : Variety	→ Volume, flex.
Differentiation: Service	Superior customer service
Differentiation : Location	Convenience

And here you also need to see that how you are able to provide lower volumes, because when I am saying the variety related differentiation, I mentioning flexibility and volume two things. So, flexibility is our ability to provide more number of products, different variants of product, but at the same time, we are also should be capable of providing different levels of volume of those products.

So, these two things are very important thing which are coming from the operations side then differentiation with respect to services. Now, when I am talking differentiation with respect to

services, that means we need to provide superior customer service, how I can provide better customer service, whether I have a distribution network of services across the country.

For this purpose, the example of Maruti in India is one of the best example that they have their service centers almost every corner of this country and therefore, they are able to provide that type of competitiveness about their services. So, that is one important reason of the success of Maruti in India then location differentiation with respect to location. So, the convenience that customer should be able to approach those facilities without much difficulty.

If you see the design of Metro stations in any country is done in such a way that customer need not to travel did not to walk or not to hire a separate mode of transportation for reaching those metro stations. So, metro stations are normally planned in the main area of cities. So that it is convenient for customers or for passengers to approach the metro stations.

So, that is again a point of operations ability that your operation people are able to understand and then they are able to design the map the network of services in such a way that it is convenient for the customer to use those services. If you see that if just for an example, if we compare Metro services versus city bus services, if city bus services are convenient to approach for a customer and for Metro, a customer needs to hire either a rickshaw or a cab to first approach the metro station.

You can see that the use of Metro will reduce drastically because customer wants convenience. And if it is not convenient, they will not use those services, however good it may be. So, that is again a very important ability for any kind of service any kind of product. So, these are some of the important thing, which we discussed that how organizational strategies get translated into the operation strategy.

And with this, we will see that however TPS Toyota production system will help us in getting these operations strategy with the implementation of Toyota production system. We will see that depending upon our organizations requirement we will be able to develop that kind of competitiveness. So with this, we come to end of this session thank you very much.