

Toyota Production System
Prof. Rajat Agrawal
Department of Management Studies
Indian Institute of Technology – Roorkee

Module No # 02
Lecture No # 08
Toyota Way in Action

Welcome friends, in our last session, we discussed about the role of culture in implementing the Toyota Production System, we discussed that it is not about tools and techniques, it is more about the concept and we explained the concept with the help of TPS house where we discussed that four elements including 2 pillars, 1 roof and 1 foundation. These 4 elements are crucial, they may be connected in different ways, but their interconnectedness is very important for the Toyota's actual performance.

Then, we also discussed that there are certain basic premise and 4 premises were discussed and based on those 4 premises. We discussed different principles of Toyota production system, we agreed on 1 point that it is the particular people centric philosophy and that people centric philosophy supported by certain tools techniques will help you to achieve the excellence. If that particular concept comes to your mind, then whether it is a manufacturing organization or a service organization, you will achieve excellence.

Now with this respect we need to see that Toyota Production System talks of philosophy, but, in the beginning itself, if you remember our very first session, we discussed that it is philosophy in action it is not simply philosophy, it is philosophy in action. And that is why this system is being followed this system becomes one of the most important point of attraction to achieve the excellence.

In India also we are a very religious country we follow different types of religions in this country. But those religions where action is given more importance, where you have some kind of action oriented activities those religions become more popular, because ultimately actions are going to help you in achieving the results without actions results are not possible. So, the reason why Toyota concepts Toyota way of manufacturing became so popular because of its emphasis on the actions.

So, now, in this particular session, we will see that with the example of Toyota itself, that how Toyota philosophy was implemented in Toyota itself, how Toyota concepts, those different principles, which we discussed in our previous sessions, that came into action in this Toyota organization itself. Now, when we are talking we need to see that there are certain shocking claims, which I am making now.

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- Toyota is one of the most conservative company from any aspect.
- Yet central to the Toyota Way is innovation ^①
never getting complacent and always staying a ^②
step ahead of trends in the market. ^③ *proactive*

Now one shocking claim is that Toyota is considered to be one very conservative company from all the aspects they have very conservative approach of product development, they have very conservative approach of marketing, they have very conservative approach of financial management. So, they are a very conservative company, but they have one conservative approach of continuous improvement.

They follow that the very old concept that you have to work like a tortoise not like a hare. So you need to continuously work and that approach of Toyota helps them in continuously improve their organization and in that, they continuously try to innovate by continuously improving their activities whether it is processes or products. So, you need to understand that conservative does not mean because when we read about Toyota through various sources and you will get confused, that Toyota you will look that it is a very conventional type of organization.

So, why is so much emphasis why a complete course is being designed on Toyota way of manufacturing, then you will realize that this conservative approach that conservative approach means you have certain norms for your organization, you have a concept a philosophy for your organization, and you are continuously working on that philosophy, that is the meaning of conservative approach.

The conservative approach is not that you are following something which is not going to help you. If you are having a philosophy well rooted into your organization and you are able to transfer that philosophy from one generation to another generation, that is the meaning of conservative approach and that is the approach through which they are able to continuously improve their organization and they are never becoming complacent.

Because they feel that there is no end to excellence, excellence can never be achieved. So, you need to continuously work towards higher performance. So, another important point of this conservative approach is that never getting complacent, there is nothing like 100% performance and therefore, that target is in front of you and you always know that I have to be closer to this target.

And you also know that if this target is always there, then only I keep working towards this target. So, that is the second important thing. So, one is it helps you in becoming innovative all the time, you are never becoming complacent. And the third is you are always trying to stay ahead of trends in the market, you are remaining proactive, you are becoming a flag bearer, you are setting the direction of excellence in the market.

So, you are yourself achieving the target, you are also achieving the new heights and you are setting a trend for others to follow you. So, these are three important things where the conservative approach of Toyota is understood that it is not that you are following some outdated practices it is about you are continuously improving yourself. Therefore, you are becoming an innovative organization, you are not satisfied with your performance, you say that I can do better therefore I should try for that excellence.

So, you are never satisfied with your current performance and you want to achieve a better results for yourself and you are remaining ahead of the competition you are trying to remain at

the forefront of new developments. So, these are important thing to understand about Toyota, that it is a proactive organization, it is proactive, that is the conservative approach that I always want to remain proactive.

I always want to remain innovative, I will never be satisfied with my performance. So, I have this type of conservative in my philosophy. Then to understand that, how Toyota is able to do this.

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The slide is titled "Lexus Story" with a checkmark. It contains three bullet points:

- Toyota was making high quality, fuel efficient and economical cars ✓
- Idea of making a luxury car had initial resistance.
- From Togo to Ichiro Suzuki

Handwritten annotations include a red underline under "Lexus Story", a red arrow pointing to "economical cars", a red arrow pointing to "resistance.", a red circle around "Togo", and a red underline under "Ichiro Suzuki".

At the bottom of the slide, there are logos for IIT ROORKEE and NPTEL ONLINE CERTIFICATION COURSE, and a page number "3".

That is very important from this concept of Lexus story, Lexus is a brand we all know from Toyota and how this concept came and how this important thing came into existence that is very important story and this will help us in understanding that how Toyota principles came into action in that organization. The story starts from this character known as Togo.

So, Togo was in USA and he was in charge of marketing in USA for Toyota. And since he was in charge of marketing, so he was continuously meeting many people in the market, there were large number of friend's circles for Togo. And there was always a discussion that which car he want to own. Surprisingly, most of the Friends of Togo, they wanted to have some different cars, but not Toyota cars.

Somebody wanted to have Benz, somebody wanted to have BMW somebody wanted to have Audi etc. But they were not wanting to have Toyota car. So, it was a very you can say sad

moment for Togo that he was having so many friends and they all were knew that he is from Toyota, but none of them were looking for Toyota car. So, that he thought that why cannot Toyota be known for luxury cars.

Why we will always be producing high quality fuel efficient economical car because that was the product segment of Toyota at that time. So, Toyota was known for high quality cars, good quality cars those cars which were having good fuel economy, and the cost of the cars were also very competitive, because Toyota was the company which linked these two things quality and economy.

So, Toyota was known for that, but Toyota was not known for luxury cars. So, this was a very, you can say pinching point for Togo. So, Togo went Toyota, Japan, and he presented this idea to the top management of the company that we should have luxury cars also now this was totally a new thing for top management of Toyota. So, they registered this idea, they said okay, now we are having a different segment of cars and we want to continue with that.

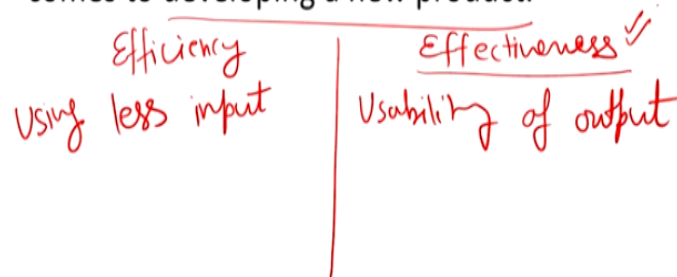
But we just discussed that innovation was one conservative approach of Toyota. So, some of them, some of the people in the top management got agreed that we continuously need to innovate, we need to have new products in our portfolio in our product line. And after some deliberations, they agreed okay, we should also have a luxury car. So, initially, there was some resistance, but finally, we will agreed.

Now, when they agreed for having a luxury car, then this project to Ichiro Suzuki. Ichiro Suzuki was a person a design engineer at Toyota, and people have compared this Suzuki like Michael Jordan, that he was a person charismatic person, charismatic leader who could inspire many engineers into it. So, this target, this project was assigned to this Suzuki that, okay, you develop this new product, and you develop a new luxury car for Toyota.

And Suzuki got into action and he started with the process of understanding what a luxury car would be. And for that purpose, they started doing some kind of qualitative research.

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- Efficiency does not equal effectiveness when it comes to developing a new product.



At this point, I would like to mention that whenever we are developing a new product it is important to understand that efficiency is not that important, but effectiveness is more important, because there is a difference between efficiency and effectiveness. And it is important for us to understand the difference between efficiency and effectiveness. Now, what is the difference?

That efficiency means using less input, whether you are able to produce products with minimum input that defines your efficiency, but effectiveness means, whether the output is useful for the purpose usability of output that defines your effectiveness. So, whether the output which you are producing is accepted is liked by the audience by the market that defines the effectiveness. So, efficiency versus effectiveness, this debate is very important.

Ideally, we should have both efficiency and effectiveness in a organization, but, when it comes to new product development, effectiveness takes the primary seat and efficiency is the secondary once the product is developed, it is being accepted by the market then obviously, efficiency becomes equally important. But at the development stage effectiveness is more important, because you have to understand the customer's requirement, why customer wants a particular product?

Why customer does not want a particular product and that is the important thing for designing developing a new product and Suzuki good the same thing for Toyota he went to USA and he started doing focus group interviews.

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Focus Group Interviews.

	Reason for Purchase	Reasons for Rejection of Competitors
Benz	Quality, investment value, sturdy	Too Small, weaker style appeal (vs. BMW)
BMW	Style, handling, functional	Too many on road
Audi	Style, space, affordability	Poor quality, Poor service
Volvo	Safety, reliability, quality, sturdy	Boxy styling
Jaguar	Most attractive styling	Poor quality, small interior

Focus group interviews, we know these are techniques for qualitative studies. So, initially Suzuki did two focus group interviews, almost 12 persons participated in each of these interviews. And he actually had almost identical groups for these focus groups. And he asked only two things because, the participants in these groups they were the owners of Benz, BMW, Audi, Volvo, Jaguar, these are the luxury brands.

So, they were the owners of these cars so, the question was asked that what is the reason of purchase of a particular vehicle and what is the reason of rejecting other brands. So, this was the initial way of development of luxury car at Toyota. And you can realize that one of the principal, which we discussed in our previous session, that making decisions slowly and implementing them fast.

So, now, this is particularly the starting of qualitative research doing everything on our own, that is understanding the customer requirement, and this is decision making in a slow way. And when you take into the views of those who are using luxury cars and trying to understand what is the reason of their purchase and what is the reason of their rejection of a different competitor, then you can get some idea that what type of values what type of attributes, what type quality standard my luxury car should have.

And the table gives you some important things just for the work Suzuki has done that those who are having the bench, they mentioned that we purchase the Benz, because of quality, the investment value and steadiness and we did not purchase other cars because either those cars were very small or they were having the weaker style appeal those who are having the BMW dimension that we purchase it because of style, it is comfort handling the functional easiness and they mentioned that those who were not having that there are many such cars already available on the road.

So, similarly, we had for Audi, Volvo, Jaguar that these are the reasons of their acceptance, and these are the rejection of by the competitors. So, this is the output of that focus group discussion. Now, the next particular thing for on the basis of this focus group discussion, that what Suzuki could summarize that we need to have a stylish car, we need to have a car which have good appeal for the customers.

And when the technical specifications was finalized that what should be the fuel economy, what should we the different type of components with respect to acceleration with respect to initial torque with respect to coefficient of drag all those things.

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Guiding goals for the Lexus

- Cut noise, vibration, and harshness at the source. *Toyota Way into a-hier*
- Maintain the “yet” concepts, balancing without compromising on traditional auto design trade-offs.

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So, and that one very important thing came into the discussion that is again based on one of the principal of Toyota solve the problem at its root that cut noise, vibration, and harshness at the source, what does it mean? It means that when this car was under production, when the

prototypes were made, a lot of noise was there and for reducing the noise, efforts were done to use some kind of dampers.

So that those dampers can absorb the noise, but still, the noise was not absorbed up to the expectation of a luxury car. So, the principles of Toyota way again came into action that instead of using the dampers, for reducing the noise, for reducing the vibration, we need to cut the noise and vibration at the source itself. So, that is a very important thing in the development of this Lexus car, that you cut the noise, you cut the vibration, right from the source from where these vibrations are developing from where the noise is coming, eliminate that problem from the root itself.

So, this is something which is Toyota way in action this is Toyota way into action. And then this is another important thing, because there were many things which were the core of Toyota car company, they were producing good quality, economical and fuel efficient cars. So, these were already the core strength of Toyota. And now they were looking to produce a luxury car, it is like opening a company within a company it is like starting a altogether different product line it is considered like that in the Toyota.

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Luxury Car	Balance	Strength of Toyota
Great high-speed handling/stability	Yet	A pleasant ride
Fast and smooth ride ✓	Yet	Low fuel consumption ✓
Super quiet	Yet	Light weight
Elegant styling	Yet	Greater aerodynamics
Warm	Yet	Functional interior
Great stability at high speed	Yet	Great Cd value (low friction)

So, the concept of yet which we are explaining in the next table became very useful that you were already having a great high speed handling stability in the Toyota cars. But yet, you want to have a present ride, you want to have a fast and smooth ride yet low fuel consumption. So, these

are the side of table which are already the strength of Toyota and this side is something which is the expectation of a luxury car.

So, Toyota wanted to achieve the attributes of luxury car without compromising the strength of Toyota and therefore, this yet is for the trade off or this is for the balance that Toyota wants to have a fast and smooth ride for its new vehicle without compromising fuel economy, it wants to have a super quiet type of environment inside the car without compromising the lightweight, if you have heavy weight, obviously, a lot of vibrations will be absorbed, if you have a lightweight vehicle more vibrations will be there.

So, without losing the strength of lightweight, because lightweight will all result into economical vehicle. So, you want to have elegant styling of the vehicle for a luxury vehicle it is important without compromising on the aerodynamics, the resistance which vehicle is the air resistance, which is there on the vehicle that is important thing. The warmth is required for a luxury car without compromising the functionality of the interiors.

So, you may have a lot of you can say things in a luxury car, which are part of interiors, but they do not have any kind of functional usefulness, but in Toyota the interiors are having a lot of functional utility. So, without compromising the functional utility of those interior Toyota want to offer warmth also. Great stability at higher speed that is what required because luxury vehicles take a very far initial torque.

And then you want to achieve the stability also and low friction was already there in the total vehicles. So, if you have low friction, then the chances of toppling will be there. And therefore, you need to have a proper balance of the attributes of luxury car with the strength of available Toyota cars. So, that is also developed with the help of involvement of people that was developed, because for Toyota also, this was a new experiment.

They were going normally with the help of continuous improvement kind of way, but this particular way was not continuous improvement way this was developing a new car, which was requiring some kind of you can say a non-traditional way of development of the product. And therefore a lot of efforts were involved. And the outcome of this Lexus car from Toyota became a

very important learning opportunity that how the Toyota way is not related just with the continuous improvement, it can give us breakthrough innovations also.

So, this particular example, this particular story of Lexus, helps us that Toyota way is not limited to continuous improvement or incremental innovation, it is also related with breakthrough innovations, where you can all of a sudden change the gear of your working you were working at a particular level and then all of a sudden you change your level to a different height. The example of Lexus is very much coming from a automobile company.

And as we discuss that effectiveness is more important than efficiency in case of new product development and you need to understand the customer that was mentioned with the help of those focus group interviews. In India also, we have some examples where we did not follow these principles in such a manner or we followed these principles.

And therefore, if I see the example of Scorpio which came from Mahendra & Mahendra in India, that shows that how they took enough time in developing the product, they understood the requirement of the market that how do we want a SUV type of vehicle which can be a self-driven vehicle also and that Scorpio became a success story for company like Mahendra & Mahendra.

On the other hand, the example of Nano from Tata did not click so much because that effectiveness was not there, the target segment which was looking for a car and Tata tried to offer that car to that segment could not sell that car because of poor positioning, because it was not effective as a car for those people. So, therefore, it is a very important thing that we need to see effectiveness versus efficiency debate.

We need to see that how we are involving our different partners and how we are taking these principles into action. Without taking these principles into action these principle or these discussions has no meaning. So with this, we come to end of this session thank you very much.