

Toyota Production System
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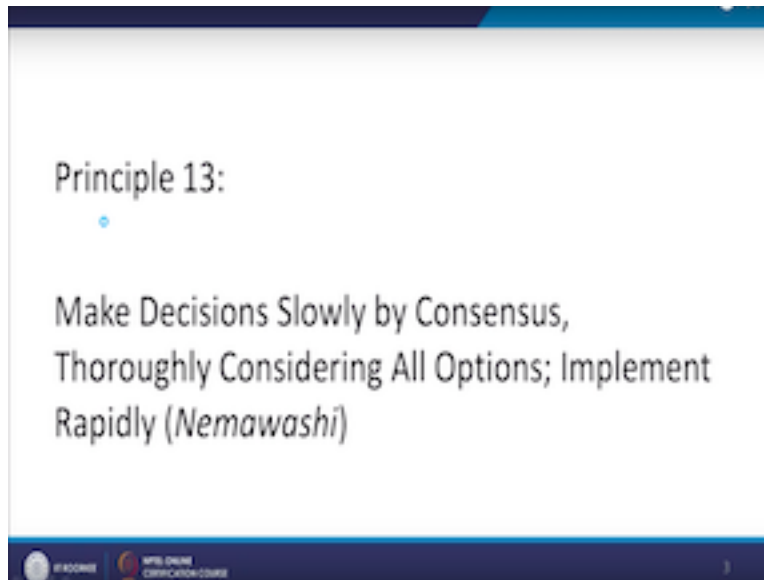
Lecture – 21
Developing Decisions with Consensus

Welcome friends, now we are moving into the fifth week of this course on Toyota Production System and in last four weeks we have discussed that what are the foundations of Toyota production system. We started our journey with 4P model of Toyota production system and then we expanded the discussion with the help of various principles of Toyota production system and now we are into the 4th P of Toyota production system that talks about problem solving.

In last session also we discussed this particular concept that a continuously solving root problem is a key for becoming a learning organization and a Toyota production system finally emphasizes that we have to be a learning organization and know in our next two sessions we will be discussing more about that how to have the problem solving approach in your organization and what is the meaning of learning organization.

It is not simply adopting the best practices but to develop the best practices is also a very important aspect of the learning organization. So that is what this 4th P of Toyota production system talks about. Now the principle which we are going to discuss the 13th principle of Toyota production system which is actually the focal of this particular session.

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That is make decisions slowly and involve all the stakeholders in your decision making process and you also need to consider all possible alternatives. Do not focus only on a single alternative rather try to develop many options and then through consensus of all these stakeholders develop your decision and then once you have developed the decision then implement it with full force and that is in Japanese language known as Nemawashi.

So Nemawashi is all about the that how you are developing your decisions you are taking enough time in the planning of decision and then the implement becomes much easier. Now that is what we are going to discuss that how to have this problem solving approach and how to develop that consensus and how to consider alternative options for your decision making process and then you have to implement it with full force and do not waste much time.

And automatically you will see when you have a very thorough planning with your decisions implementation becomes much easier. Now you consider two situations

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- If you have got a project that is supposed to be fully implemented in a year, the typical American company will spend about three months on planning, then they will begin to implement. But they will encounter all sorts of problems after implementation, and they will spend the rest of the year correcting them.
- However, given the same year-long project, Toyota will spend nine to 10 months planning, then implement in a small way such as with pilot production and be fully implemented at the end of the year, with virtually no remaining problems.

The first part is about the American organization, and this I am talking with this back to Toyota and later we can generalize it to any Japanese organization. Now what it happens that in a typical American company if you are having a project, so that project is a time-bound activity we know and it has to be completed within one year. Now in a general scenario and it does not only applicable to a typical American company, but it is also applicable to a typical Indian company also.

That we spent around three months of time on the planning activities and then we start implementing it and we will encounter many problems during the implementation stage and then we will expand almost the rest of the entire year for correcting those problems to fix those problems. So that is how it happens you see in India Infrastructure projects, they are very good example. That how this kind of system is happening in those infrastructure projects.

So whenever we are starting a infrastructure project, we immediately make a initial survey and based on that survey we start doing the work and then we realize that there are forest areas and we require clearances from the ministry of forest and there are environmental issues, there are certain social issues also and all those things take so much of time that in most of the cases in India, our project implementation is delayed by so much of time that project loses its relevance.

That is happening because of poor planning, that is happening because of poor initial decision making. On the other hand, if you see companies like Toyota or the Japanese organizations so in the same year long project, they will spend around nine to months of time on planning only. So they spend considerable amount of time on the planning part decision making part and then implementation becomes a much easier activity.

They will do a small way like a pilot production and it will be fully implemented at the end of the year. And when within three months you are fully implementing and normally you will see that virtually there is no remaining problems. So whatever problems are there that you have already corrected in that initial pilot and in the end of the year, you finally successfully implement the project so that is how this system of working is taking place.

Now somebody will say that both these companies are doing the project in one year any normal American company and a company like Toyota. So what is the big deal in it? So the big deal is that when you are fixing the problem then you are anticipating something in the beginning itself before implementation you are in a better position to take decisions for that and the cost of failure or cost of fixing that problem becomes much less.

If you are anticipating all such things in the decision making stage but when you are in the implementation stage for fixing the same problem, cost may increase tremendously. So that is making the process more cost effective that makes you more competitive in the business environment so therefore, we are advocating that we need to make slow decisions. Now many of you may have some questions also, because at present time speed is a very critical factor and we want everything within seconds.

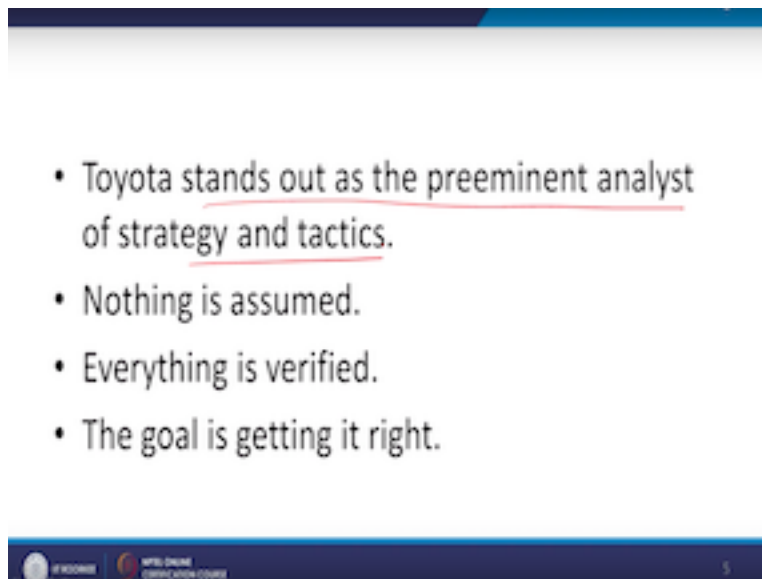
We are becoming more and more impatient and therefore we want faster solutions. So now in that environment when we are looking for faster solutions how this approach of Toyota with slow decision making process going to help. Therefore you will see that Toyota is able to maintain a long sustainable business pricing, than any other company which is believing in a fast solutions. We have nowadays on steps like rapid prototyping these concepts enable us to take decisions at a fast rate and connect fix the problem during the implementation stage. And the Toyota approach

says that we need to take all the things into consideration before implementation and then your implementation will be without any kind of errors. So that balance we need to see and during the course of our discussion, we will discuss that how this balance has to be maintained.

On one side we want speed, we want faster deliveries, we want our faster rate of new product development. And on the other side we have this concept which focuses more on planning part, which focuses on taking enough time rather you can say that 70% of the time in the entire project is only for the decision making only 30% of the time is for the implementation purposes. So these are slightly different sides of the spectrum and then we need to see that how to obtain a balance between these two sites.

So therefore if I see that with respect to this Toyotas way of slow decision making and then developing the consensus of all your employees all these stakeholders, what it says that,

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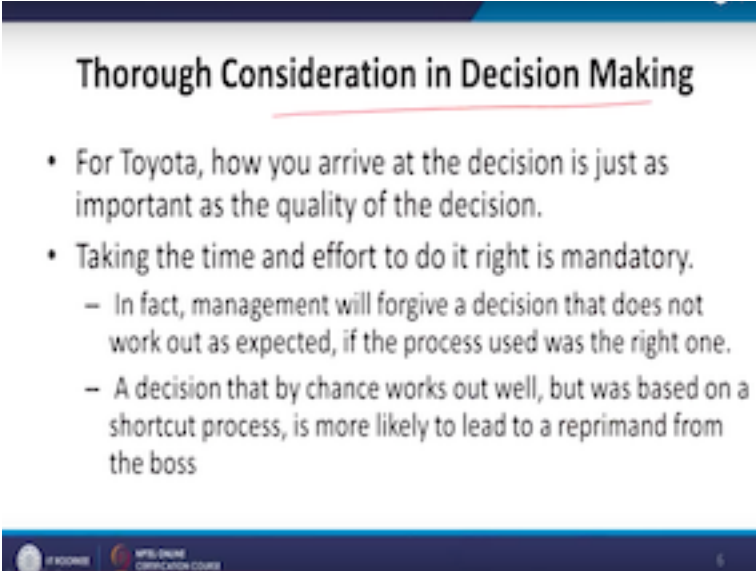
Toyota stands out as the preeminent analyst of strategy and tactics before applying any new strategy any new tactic they do thorough analysis, they go into the root of those strategies and that is one very important critical aspect about the success of a Toyota. Whether a new buyer meets Toyota company, whether a new marketer meets Toyota company whether a new product development meets Toyota company.

They all will have a shock of their life to see the working of Toyota organization. Because it is entirely working on some of the NT thesis of our conventional thought processes. In the Toyota way of working nothing is assumed that we do not take something as granted, so every time we go for in depth analysis of all our strategies and tactics. Everything is properly verified with facts, figures documents all those things.

Whichever is applicable those things are used for verification of the information. So information is not important but the verification of information is also considerably done in Toyota decision making process and the goal is to get the things right when you are going for the implementation, you should have the right strategy, right tactics, therefore at the implementation stage there should not be any need to redone or some kind of modification in your strategy and techniques.

Because you have gone into the route that what is going to happen and what will be your action based on those happenings. So therefore a Toyota does this kind of a very strong homework before implementation. Now as we are discussing that thorough consideration is done in the decision making process.

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Thorough Consideration in Decision Making

- For Toyota, how you arrive at the decision is just as important as the quality of the decision.
- Taking the time and effort to do it right is mandatory.
 - In fact, management will forgive a decision that does not work out as expected, if the process used was the right one.
 - A decision that by chance works out well, but was based on a shortcut process, is more likely to lead to a reprimand from the boss

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Now what does it mean that thorough consideration in the decision making process?. So for Toyota how you arrive at the decision is just as important as the quality of the decision. Because as we have discussed many times when we were discussing the 2nd P process that the right

process will result into the right product and the same thing with respect to strategy with respect to your decisions also.

So whether your decision is good quality decision or not so good quality decision it will depend on the process which you are adopting on arriving those decisions and then what it says that management will forgive a decision that does not work out as expected if the process used was the right one. If you have done the right processing to arrive the decision but the final decision because of some reason is not giving the desired output.

You are still okay the top management will not ask you any question, but a decision that by chance works out well, you have not followed the proper process of decision making but because of some chance so you have achieved the desired result by a decision which is the result of some shortcut process that may lead to problems. Then your top management will not be happy with you, because you are just not following the right processes.

So again even in this decision making activity you can see the process part playing a very important role that you need to follow the right processes for achieving the right decisions. Quality of the decision is important but it is again believed that if the right process is followed you will achieve the right quality of the decision. Now how Toyotas excellence is achieved through this slow decision making process through all parts of decision making process. So let us discuss that in some more detail.

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Toyota's excellence is in the details.

Thorough consideration in decision making includes five major elements:

1. Finding out what is really going on, including *genchi genbutsu*.
2. Understanding underlying causes that explain surface appearances asking *Why?* five times.
3. Broadly considering alternative solutions and developing a detailed rationale for the preferred solution.
4. Building consensus within the team, including Toyota employees and outside partners.
5. Using very efficient communication vehicles to do one through four, preferably one side of one sheet of paper.

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Now thorough consideration in decision making includes these five important elements and out of these five important elements the first is what is actually going on and that is going to the place of problem to see on your own, what is happening at the shop floor, what is happening at the ground and that is going to Genchi Genbutsu that we have already discussed in our previous sessions.

That seeing on your own that is giving you lots of insights about the problem that will give you different perspectives and that will help you in developing more options more alternatives which is one of the core of Toyotas decision making process. So that is one important thing we have already discussed the other important thing is understanding causes that explain surface appearances and you have to ask her multiple times why?

And by asking multiple times this question why you will be able to generate that a what is going to be the root cause of the problem, so that we will be discussing in our coming session. Then

another particular point is broadly considering alternative solutions and developing a detailed rationale for the preferred solution. So whenever you are in a Toyota organization if you show to your top management that this is the solution I have developed for this problem.

So before listening to that solution top management normally asks you that what were the alternative solutions?. So it is very important to have alternative solutions you should not focus only on one preferred solution you need to detail out that preferred solution obviously but you also need to have that these are possible alternative solutions and then based on merits and demerits of those alternative solutions you have suggested this preferred solution.

So that is again a very important thing that developing the alternative solutions without alternative solutions the Toyota way of decision making is not complete. The next step in this decision making is building consensus within the team there may be people who may not be agreeing to your idea, so you need to do a lot of brainstorming within the team so that there has to be a consensus this will minimize your efforts during the implementation stage.

Because now everybody is part of the decision, so there will not be any kind of resistance and many a times depending upon the type of decision you are doing it may include Toyotas employees, they will be there most of the time, but it should also include depending upon the category of decision outside partners. Your customers and your vendors also, because partners are very important in Toyota philosophy.

So you need to include partners also if you are taking some kind of policy decision, you are taking some decisions with respect to strategy, new product development. So what you are thinking you also need to include your partners so that collectively you can implement that decision. And then finally using very efficient communication vehicles to do one through four, preferably one side of one sheet of paper.

Now what does it mean?. That one to four these things are only possible when you have a strong system of communication without a strong system of communication these first four points are not possible. And therefore Toyota came with a concept like one side of one sheet of paper that

means everything should be available on a single glance you should be able to see the entire decision making process on one sheet of the paper and that is only on one side of that.

So you do not go for A4 size of sheet go for the bigger chart and on that chart itself, you should be able to give your entire visual communication that is a going to help because visual memories are long lasting memories they create more impact. So therefore they actually mentioned in their literature that A3 papers where used for this purpose. But simply you can say that if you have a chart and in new chart if you are doing this kind of exercise, it will help us to see or how the decision will be implemented.

If you develop more documents which is running into pages and pages then it will be difficult for others to comprehend your decision making process but if it is available in a form of visuals and that visual in a single piece paper. That will create simplicity it will create more crispness and for you also it will give a good idea like in a PHD thesis in research papers we write the flow of research methodology.

So that research methodology flow is presented on a single paper but the same can we explain over tens of pages? so that single page flow diagram is more effective than the writing in tens and twenties of pages. So that is five step process, first Genchi Genbutsu we have already done five whys we will do and now we are going to discuss the remaining three items in this decision making process. Now the first that is rather you can say the third step in this Toyotas decision making process.

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3 Broadly Consider Alternative Solutions with a Set-Based Approach

As a young Toyota engineer, you attack a problem with relish. You carefully identify the cause of the problem, taking care to do a thorough five-why analysis. You then think and think and come up with a brilliant solution. You detail the solution and run in to share it with your mentor. Instead of evaluating the idea on its merits and congratulating you, he asks, What other alternatives have you considered? How does this solution compare with those alternatives? You are stopped dead in your tracks, as you were convinced you had the best approach.

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That broadly consider alternative solutions with this set based approach. So you have to consider alternative solutions and as I was saying that as a young Toyota engineer you are given a problem and you solve that problem and now after solving the problem you need to carefully do thorough five-why analysis and then you think and think and come up with a brilliant solution. Now you detail the solution and run it to with your mentor.

So you have followed a process of five-whys, you have got into a lot of creativity exercise and now you are going to your senior, the person who is mentoring you in the organization. Now instead of evaluating the idea on its merits and congratulating you, that mentor will ask you what other alternatives have you considered. So this is very important thing that what other alternatives have you considered?.

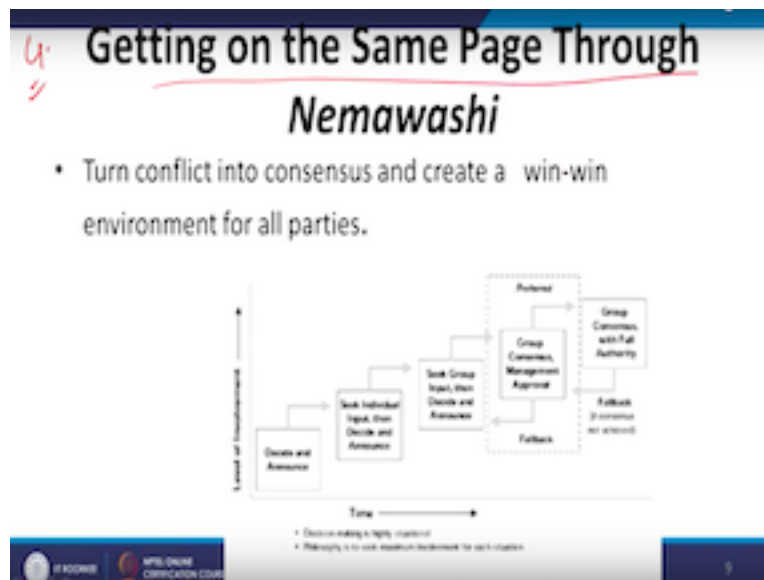
So in Toyota system of working every time you go to your boss with some solution so boss will always ask you that what other alternatives did you think?. And therefore the culture is to develop not a single solution but to consider various alternative solutions. Without alternatives it is never possible to follow the right process. So you need not to be creative in only one preferred solution, rather your creativity is required in developing various alternative solutions.

Then only you are a true Toyota way of decision maker. So then you see how this solution compare with those alternatives then you can have a comparative analysis between your various

other alternatives and your preferred solution. So you can have a comparison that these were the demerits and how your preferred solution is better than those other alternative solutions. So you are stopped dead in your tracks, as you were convinced you had the best approach

So if you see that you have the best solution, it means you cannot progress further. You have stopped learning and Toyota way of decision making is to promote the learning of individuals, so therefore the alternatives are very important in Toyota decision making process.

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Then the 4th point is Nemawashi, now what does it mean?. It means that the all the people all these stakeholders should be on the same page that means they should have the same wavelength and the same wavelength means they all should have consensus for the decision. So as we were discussing that whether they are the insiders, Toyota employees or your partners. You need to involve all of them and then you need to develop consensus within those people and that is Nemawashi.

So that is what we say turn conflict into consensus and the create a win-win environment for all parties. So when all the stakeholders are agreed to a solution it must create some kind of win-win environment for all of you. If for an example just to share, that I am operating a taxi services, now to monitor the behaviour of my taxi operator so I want to install GPS devices in all my cabs.

Now GPS devices which I have installing in my cabs so these are for monitoring of my driver behaviour, what my drivers are doing in the idle time etc, what is speed they have on highways, whether they are over the speeding, whether the engine is idle running, etc. So for monitoring the performance of my vehicles I am installing this GPS device but since I am creating a kind of control system on my drivers there is a natural resistance from the drivers and as an owner of those taxis, I want to monitor their behaviour.

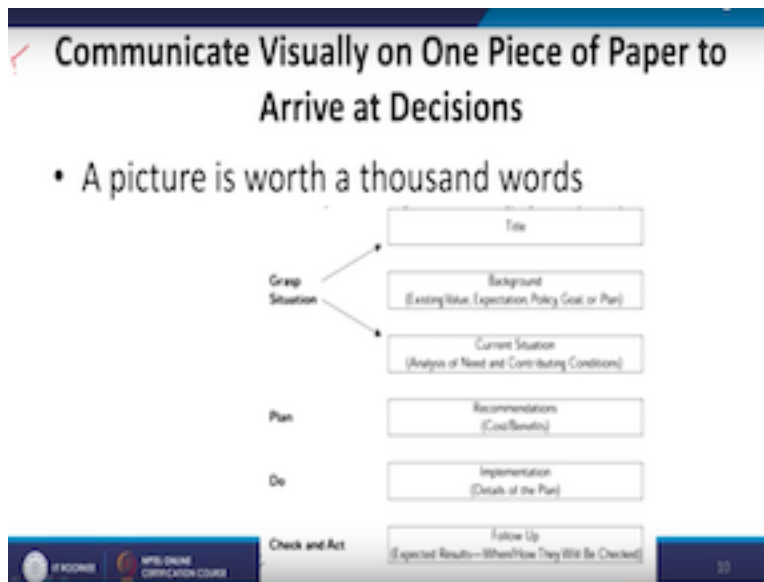
Now it is going to create a conflict and therefore we need to have some kind of consensus that because of better performance of my taxis now as I am going to help my drivers that do not follow this route, or do not over speed or do not keep your engine start in the idle situation. So whatever extra profit whatever extra revenue company is going to earn that will be distributed as part of their better performance.

So this is going to create a win win situation for my organization, so this is just an example that how I can turn conflict into the consensus and create a win win environment for all the parties and therefore you see that this is how it requires a kind of iterative system that where we are inviting the group inputs that where we are inviting the group inputs that decide and announce and on the basis of this, we have a preferred solution and again we take the you can say feedback from the group.

We go back to a group again and then with this kind of iterative loop we take finally the group consensus and then we have the full authority to implement and during that also we take a fallback action if requires that because of some reason if we are not able to achieve the objectives, so there is a fall back. Because if some time consensus is not arrived so you need to go back to your group to ask their version again.

So this is how we can go for level of involvement from individuals to group and that way your implementation process becomes a much easier.

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And then the fifth point which we were talking that is a creating visually on one piece of paper to arrive at decisions and in Toyota way they have mentioned it as A3 paper, but I say that even on charts in our conferences we have poster presentations. These all are examples of communicating visually, so a research paper which is running into 20 odd pages may not be able to communicate that effectively which you can say a simple picture can do and these are the important components.

If you see these are their that title background, current situation, and then we have followed the approach of PDCA the popular cycle that we have followed on the on the basis of PDCA we have given that what are the recommendations, how to implement and what is the follow up for this particular decision. So on one piece of paper you need to explain or you should be able to explain that how to implement or how did we arrive at a particular decision?. Now whenever for decision making,

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Prerequisites to an efficient meeting

- Clear objectives prior to the meeting. These are sometimes reflected in an agenda, but the agenda needs to be very focused on clear tasks and deliverables.
- The right people at the meeting. People expected to show up need to show up.
- Prepared participants. All participants know what they should prepare for the meeting and have done it.
- Effective use of visual aids. The A3 format is extremely effective.
- Separate information sharing from problem solving. Share information as much as possible prior to the meeting so that the focus of the meeting can be on problem solving.
- The meeting starts and ends on time.



We are doing some kind of meeting, so what are the important prerequisites for that meeting? That is mentioned here the first important thing that we have to have clear objectives before meeting that is point number one and if you are clearly able to explain that what are your agenda and this will create lot of clarity to other participants. If agenda items are not crisp they are not well defined.

So people will get confused and they will not be able to come with proper homework. The second important thing is identifying the right people at the meeting, that who all should attend this particular decision making activity. So that is also very important now third is prepared participants that all those people who are attending the meeting they should know that what is expected from them and therefore they should come prepared for the meeting with proper homework.


Then the other point is effective use of visual ads so that a preparation of chart etc that is also very important and this will help you like in A3 format charts will help you in making the meeting very effective. Then another important thing which is not only applicable to Toyota production system but in general also for doing effective meetings that you have to separate out information sharing from the problem solving.

You can share information before the meeting starts so that during the meeting we are more focused on the problem solving part because, we are doing this kind of brainstorming for the problem solving. So using that time for sharing the information is like a waste of time, so therefore you need to share the information before the meeting and use as much as possible time of the meeting for problem solving.

And the most important thing that is about the discipline that is start and ending of the meeting should be on time so this will help everybody for doing a effective contribution and they know that how long they will be participating in this meeting. So with this idea of efficient meeting, we will be able to generate the interest of everybody, we will be able to create a consensus situation and that consensus situation will help us to achieve the agreement.

Or the kind of a win-win situation for all my stakeholders all the partners and therefore this system of Toyota way of decision making is going to be very handy where we are taking enough time on the decision making part and then implementation will automatically become much easier. So that is what we are discussing that we are going to deal lot of learning from front makers and this will help us in is easier decision making.

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A Great Deal of Learning up Front Makes for Easier Decision Making

By going through lengthy and thorough information gathering and analysis in decision making, what does Toyota achieve?

1. It uncovers all the facts that, if not considered, could lead to a great deal of pain and backtracking further down the road. Execution tends to be flawless by most standards.
2. It gets all the parties on board and supporting the decision so any resistance is worked out before implementing anything. The cost of addressing this resistance when implementation begins is likely to be many times the cost of addressing it in the planning stage.
3. It achieves a great deal of learning up front before anything is even planned or implemented.

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Front makers means those who are actually facing the situation and that is where the concept of going and seeing the things on your own will come very handy. So this is going to be a very

important lengthy and thorough information gathering and analysis in the decision making and through this as we have already discussed Toyota has achieved a very cost effective way of decision making and through that cost effective way of decision making they are able to achieve superior competitiveness in their own field.

So with this we come to end of this session and we will discuss the concept of five-whys in our next session. Thank you very much.