

Total Quality Management - I
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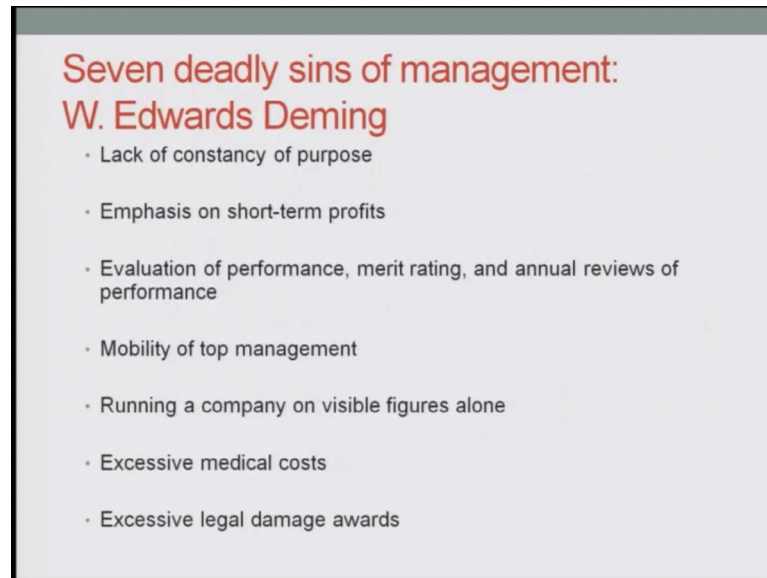
Lecture - 05
Management aspects of Quality - II

Welcome back my dear students hope all of you are fine and trying to learn this concept of total quality in an different perspective. So obviously, I will not be able to actually give you or tell, all the nuances of quality in it is best possible format. Because you have to do the reading from the book, if you meant remember that the book which had I written and told you. The first lecture about Montgomery that is the base book, based on which we have taken this concept of total quality management. What I am teaching and obviously, it is has a lot of quantitative techniques and statistical techniques.

And I did also mention, in the last class the name of Juran and Deming and also gave you the URLs. Which you can search in YouTube and have a look and understand what quality means for them and how it really had a huge amount of implication for different concept of manufacturing throughout the world. And for people who actually work in the shop floor people, who are taking this course and aware there is a handbook of juran. Which is quite a thick book and it is very practically motivated, made such that once you have a good idea of the basic concept of statistical quality control. You can utilize the book of Juran to understand.

That how quality can be improved can be brought into the picture. In any sphere of lies such that you actually get the essence of what does actually quality mean.

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So, with this I will start the fifth lecture. So, considering the earlier points of Deming the 14 points of Deming which were there, which I did discuss in brief and give you the overall feel of what the actual points were so Deming, also proposed 7 deadly sins of management from the point of view of quality. And what are these I will just discuss very briefly. Point 1 is lack of constancy and purpose. So, there is no consistent policy.

And there is no purpose, in the sense that my main focus is that in 1 day it can be severe example, trying to improve the quality in the next day. Considering say for example, financial aid is coming to an end. I generally set that quality can go for a toss, numbers are more important. I start manufacturing more and not taking care of the quality. The qualities of the products are very bad or the services which I am rendering are very bad. So obviously, that does not serve the purpose because my main focus, when we think that everything is going fine we should concentrate on quality.

And suddenly when things are not going fine well, numbers are important quality goes for a toss. So, that should not be the policy. They should be constant policy in a sense, that whenever you concentrate on quality. Whenever you concentrate on profit, it should be on a very rational basis. Such that the improvements keep happening, on an incremental way emphasize on short term profits rather than a long term profit. So, you basically analyze your problems; analyze your goals on a short term basis because, the amount of variations in life in business in any sphere is huge.

So, as you look down more along the timeframe. Putting a goal putting a end result is good, but basically trying to achieve that always without thinking what can be the consequences. Whatever it is, they may be business loss they may be. Say for example, the economy may change the technology, may change the business may be dead whatever it is they can be political upheaval. They can be say for example, the war whatever considering all these things, if you try to focus on your business on your services.

On a short term basis, it would give you step by step methods. So, that how you can basically reach your actual goal. Whatever the goal is goal may be, you want to basically be the best producer of say for example, a service where you want to give the best services, from the point of view doctor. It can be that you are trying to deliver goods or food and you want to basically, be able to deliver the hot food quality food right on time to all your customers. It may be say for example, you are a restaurant owner and you want to give the unique experience of any cuisine, the best possible way as hot food or south Indian idly dose sambar.

Whatever, it is or you want to basically give the Bengali food rice dal, fish mutton. Whatever it is in such a way that people really appreciate, the quality as well as the warmth. Means that the way you deliver the product way you give the services. That also comes in that, it gives you a positive feel that how quality can be improved or can basically be brought into the services and the products. So, you emphasize only on short terms, not on long terms. Evaluation of performance merit rating and annual reviews of performance may become a problem in many of the cases. So obviously, evaluation is important or else how you are going to judge person performance.

Obviously the person has to deliver. His or her overall working in the manufacturing sector or the service sector or the organization has to be evolved. Evaluate and basically made that whether the person should be promoted whether the person should basically be given more time for promotion or whether some extra training is to be needed. So, all these things are required, but only trying to emphasize that merit rating is important numbers. In important in many of the cases does not serve the purpose; so mobility of the top management.

Obviously if say for example, if I put 1 person in the top helm of trying to run the quality and he or she is good suddenly after 6 months. I transfer that person to the other department HR and bring another person, who may not have the overall philosophy. May not have the overall acumen, may not have the overall the philosophy of working or may not have the mentality work on this quality. Then obviously, it in a sense a very wrong message to all the subordinates, who are working in this department of quality or department of statistical process control or the test facilities.

Which are being there and the people who had that, they may not actually get a very good feel that, what is the overall implication of the organization on the concept of quality? So obviously, the person who has been trusted or given the responsibility of running the quality; Show should be on a much more permanent basis. Running a company on visible figures, alone is not always right. So, in the sense that I see the market share is increasing. I see the profitability is increasing, I see the ratios are doing very fine may be good, but they would be some hidden negative points in the overall system.

Say for example, our market share is increasing and there are no competitors. I am not bothered about what is the quality the product, I am manufacture what if it whatever it is I sell it in the market and people have no choice other than buying my products. But say for example, after few years a new product or new company comes in the market, produces a much better product. And say for example, at that point of time my overall market shall crashes. Consider the example of I am said ambassador car, at that point of time no other car was there people who are forced to buy ambassador the quality was bad.

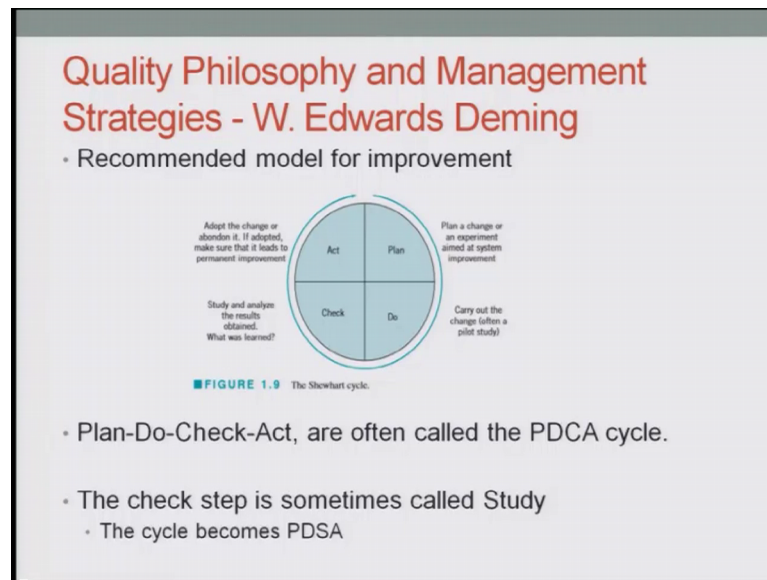
So, that was the example where a the ambassador car at that point of considered. They were the front frontrunners in car industry in India. Then as the market opened liberalization happened and now see what is the status ambassador has now. Become a different company and they had to be basically closed down the factory. And in whatever the methods, they tried it did not pick up; obviously, there were other issues also. But generally the more you concentrate on the figures, without actually considering what the other areas of an improvement. Obviously, that may have a negative reputation for your overall business in many of the cases. The negative facts are excessive medical bills and excessive legal damages.

So, excessive legal bills, medical bills legal damages would actually mean, that if people are always trying to basically find fault in the overall system. And try to basically skip the work or try to basically fight against the organizations head. Or if the labor union is very strong without strong in a sense negative sense; obviously, labor unions are important in many situations. But if the labor unions are very strong, in the negative sense and not trying to basically bring down the overall cost structure of the organization and it has a negative impact on the overall organization philosophy, then it is not good consider that you have some work.

And the work can need to be done by say for example, the regular workers, but if the regular workers are not willing to work and basically pass on the responsibility for the work. On the temporary workers or on the workers who are taken on a contract then; obviously, your contractual employment increases. You have to pay them extra amount of money or the salary or the wages. Whatever, it is through this contractual labor over and above the regular salary which you are paying to the regular workers. So obviously, that would have a huge amount of cost implications.

So, these have to be stopped in such a way that, you can basically bring everybody into board and into confidence saying that leaves leaving aside the profitability which is important. Obviously, manufacturing increase is important, but quality philosophy should also be imbibed in to the whole system. In such a way that that becomes also a part of parcel of discussion and way of life for an organization for a human being for whether from the manufacturing sector or the service sector whatever it is. So, Deming recommended a concept of cycle.

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Where, the cycle is such a is considered in such a way that, there is always continuous improvement at the overall process. So, recommended that the model I improvement in this way. So, basically this is known as the shewart cycle. And again as I stated I have taken all the general concepts, the diagrams from the book which was Montgomery's total quality management concepts or statistical process control book. So, the general philosophy is that you plan something you do. That means, at work you check what is the action and based on the action on the feedback. Which you have you act and then basically, whatever the final feedback is coming; you basically plan it according the end work.

So, what does plan mean. So, it goes in a clockwise direction, if you see this slide. So, basically the inner areas are in the first quadrant, if you are considering, their is plan then it goes to do then it is check and an act. What does plan mean? Plan means a change or an experiment aimed at system improvement. So obviously, you have some plan and you want to basically emphasize, how the system can be improved. And then in the second state, which is do you carry out the change often a pilot study; you want to basically improve the paint both of the factory.

And you want to basically, align the layout in such a way that the overall throughput increases. So obviously, you are not going to do it immediately you will basically have a pilot project. Try to understand; what are the implications which machines have to be

improved, whether training has to be given to them and the employees or the shop floor workers and whether it will actually increase or decrease the throughput. Whether safety precautions have to be increased, whether the crane movement has to be changed or whether the gangways have to be basically realigned.

So obviously, you cannot do with for the whole factory, you do a pilot project. Do that and understand what are the implications then you check. What do you check you study and analyze the results obtained from the pilot project? And you will try to understand the based on the actual motivation. Why you did what are the learning implications, did they improve, did they decrease or they were the same level? Did the cost increase cost remain the same or did cost decrease that the overall quality increase, did the overall throughout increase. Was the market share able to take care of the reduction in the production or basically increase in the production, considering that if it is a manufacturing only.

So, once you get the feedback you analyze that, then you go in to then next stage. Which is the fourth stage, it basically it is adopt the change or abandon. It if the change is good in the overall perspective. Quality is improving, cost is decreasing employees are satisfied or your market, share is increasing and your actual raw materials usage is decreasing. So, I am giving you very in a very nutshell the bullet points, they would be definitely much micro level studies. Which need to be done in order to understand how the overall pilot project basically and gives the information based on which you are going to act.

So, if those things are positive you act on that, if they are negative; obviously, you would not be taking up that pilot project in the real scheme. So, if adopted make sure that it leads to permanent improvement. So, it means that the pilot project, which we are done and you get feel that, is doing good. So, this overall positive effect of goodness should be percolated in the system permanently. It does not happen that in the first 2 runs later on. When you take up the project, the overall work improves and then later on third starting. The third year or the third cycle again it goes back to square one. So, that should not happen.

So, what you do is that, in this PCDA cycle or the shewhart cycle. The plans do check act are done accordingly. Based on the detailed studies and then you act and get the feedback

how things are doing. The check step is sometimes called the study. The cycle becomes also not the PDCA, can also be either named as PDSA cycle.

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**Quality Management Philosophy:
Joseph M Juran**

- Three components
 - Juran Trilogy of planning, control and improvement
- Planning
 - Identifying external customers and their needs
 - Planning for quality improvement on a regular basis
- Control
 - Statistical Process control
- Improvement
 - Project by project improvement
 - Higher quality than current levels
 - Breakthrough and incremental improvement



For source of image see reference

So, this is the picture of Juran. So, you have seen in the Deming picture and all the 14 points. Positive points, how it should be improved and all the negative points, we should be desisted and I did discuss May not in details. But I will urge the students, who are seeing this lecture. Who are taking part at the lecture please study different concepts of Juran and different concepts of Deming.

So, that will give you the feel, that what actually the quality meant when it actually came into the fore front of importance. So, the quality management philosophy is Joseph and Juran and the 3 concepts are Juran trilogy are basically planning control and improvement. So, you always plan what are the planning, is that you try to implement and control it. And once the control is there, you try to basically see the how the improvements had happened. And try to basically make those improvements as a permanent. Structure in the overall process, then once you are you stabilize with improvement again you basically plan.

And try to see what the incremental things; you can do such that the process improves. Process means manufacturing services, whatever it is then again you basically control it, plan it control it. Make it as a part and parcel and basically bring those improvements as an incremental 1 in the overall process. And this cycle basic level improvement always

happens, on a regular basis it should happen on a regular basis. So, planning means identifying the external customers and their needs, what do the customer needs, they need a type of product, which is less costly or do they need a product, which is more costly, but has more features do they need a product.

Which is more robust, do they need their product which a lot of different of variability of use. SO obviously, you have to analyze that from the customer's point of view and try to basically implement that in your product. Planning for a quality improvement on a regular basis, as I said would also always be the emphasis of you as a product deliver a person. That means, you want to deliver the product to your customers or the service provider. So, your main aim whether your manager, whether your shop floor in charge where the general manager, where your CEO where the whether you are the CFO. Whatever it is your main emphasis is to improve the quality on a regular basis. In the control states, It will basically be a detailed study of the statistical process control.

And this is where we will be laying a huge amount of stress for this course. But obviously, those things have to be implemented. See that once you bring that in the shop floor, bring that in your basically service sector. How you can improve the quality, which you have been talking about. Yes I want to give the best product to my customers, but what are the tools I need to study. So, these we will study under the statistical process control, in a big way. And once the feedback of the statistical process control at actually utilized, then we go into the improvement state. Where we consider project by project the improvements whether incremental or in a big way does not matter. But improvement should be there, the higher quality then the current level should always be emphasized.

So, you want to improve the quality. Go on to a higher level, improve a level of understanding of the work give more better products and better services to the customer. Give them at a lower cost, give them more durability, give them more serviceability and before the customers can think, you should always be 1 step ahead of them. Trying to analyze that, what is the actual need of the customers for that product or for that service? Breakthrough, should be their incremental improvement should all would also be there. So obviously, I cannot make a big breakthrough in the level of product which I supply.


So; obviously, I will be going in an incremental way and whatever delta positive effect. I am able to bring in that product, in the services should also always there with an aim that

I want to basically have a breakthrough, such that the customers get a huge amount of benefit from the products of the services, which I am going to provide to them. Now the quality controlled concepts obviously, they have been a huge amount of studies from different statistician different type of quality personnel. But 1 very important person which you would like to mention here in our discussion is the quality control techniques different type of methods.

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Quality Control: Armand V. Feigenbaum

- Introduced the concept of company wide quality control in the book "Total Quality Control"
- Three step approach to improving quality
 - Quality Leadership
 - Quality Technology
 - Organizational Commitment
- 19 step quality improvement process



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Obviously, Deming Juran and others definitely did huge amount of this mathematical studies. But another person whose name we should mention in our discussion for a total quality management course is by the name of Armand v. Feigennbaum. So, he consider introduce the concept of companywide quality control on the book. Total quality control and in those different techniques, I have been discussed in a very nice manner. How would they can be utilized the 3 steps approach to improving quality, would be according to Feigennbaum quality leadership. So, leadership should always be trust, on the improving the quality to a person or set of persons who are really passionate about quality.

So, it cannot basically come from the shop floor, while the main managers are main general managers of the person. Who are at the helm of the affairs are not interested in quality, in that way the work does not happen. So, overall trust overall emphasis overall percolation of the concept of quality, would come from the top and slowly percolate

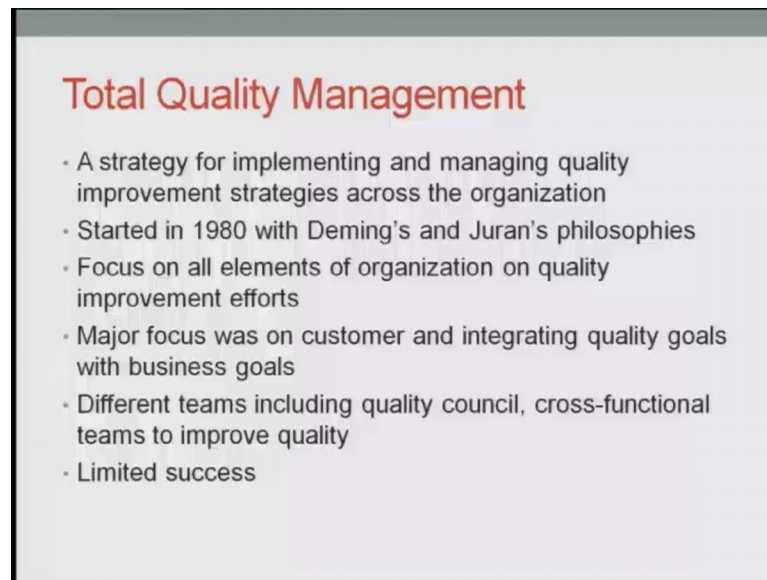
down the level to all the levels in the bottom layer. So, say for example, if you if we have a huge can, on full of sand and it is basically you start pouring water. So, you will see the water basically percolates through, all the level and goes into the bottom level.

So, all these things emphasis on quality do good improve your quality, give better products to the customer. Try to minimize errors, try to minimize wastage, tries to minimize scraps. So, all these things should come in a very nice way from the top management. In a very nice laid down procedure steps, such that the workers and the employees or the subordinates, who are there and down the level are motivated to consider quality as a part and parcel of their life. So, quality technology should be brought in into the studies, such that if somebody you wants to utilize different type of statistical process control and you see that the new CNC machines we there in the market can improve the quality.

So, these things should definitely be considered in a positive way. Such that they can be considered in order to improve the quality. Organizational commitment is also a very important factor. And I think it is 1 of the most important factors. So, as I mentioned the top management should always be motivated to understand that quality is the main thing, in trying to run the business. Apart from other factors like giving the products at a cheaper price or say for example, trying to increase the profitability of the form or try to give the shareholders the maximum benefit. So, all these things are important. But you should also remember that improving the quality in a very general sense.

Whatever the quality improvement can be improvement of quality for the vendors, improvement on the quality on the shop floor or improvement on the cleanliness of the shop floor. So, all these things would be considered as a part and parcel of quality for the overall structure. The 19 step quality improvement process would all, should also be implemented. Considering the point which Feigenbaum has considered, such that you are able to implement the overall system for quality in your organization.

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Total Quality Management

- A strategy for implementing and managing quality improvement strategies across the organization
- Started in 1980 with Deming's and Juran's philosophies
- Focus on all elements of organization on quality improvement efforts
- Major focus was on customer and integrating quality goals with business goals
- Different teams including quality council, cross-functional teams to improve quality
- Limited success

So, a strategy for implementing and managing quality improvement, strategies across the organization should definitely be there.

So, this concept started in the nineteen a late 1970 and 1980 with Demings and jurans. If you remember, I did talk about Deming and Juran. A little bit detail from their philosophies focus on all elements, on organization on quality improvement effort. So, every organization, every level of employees who are there in an organization specially, the people who are at the top should always be motivated to consider quality as an important thing, in their overall structure major focus should be. And was as mentioned time and again by me during the course, are the customers and in create integrating quality goals with business goals is very important.

So, as I if you remember I did mention that yes profitability is important, customer satisfaction is also important, shop floor cleanliness is also important, shareholders value is also important, increasing the market share is also important. So, you have to basically make a very judicious choice that how you can bring all of them at the same platform. Such that trust can be given that is a win situation for all. So, it does not mean that if I am able to basically sell a product at a higher value to the customer; obviously, in the market share in the time being, if there are no competitors would increase.

But in the long run if competitors come, consider the example of ambassador. It would definitely mean that the customers, who were buying the product from me, would

basically switch over to the competitors because he or she as the competitor, would be willing to buy a product and be in a position to buy a product at a much less value monetary wise, at a higher quality level. So, all these things should be incorporated in a such a way that, you make a judicious choice of quality, cost in a very nice manner. Different teams including quality control, cross functional teams to improve quality should always be interacting with each other.

And this information, that what is important for quality the team 1 and what is important for quality team 2, should not be at loggerheads. So, all this information that what I think as a team leader for quality team number 1 and say for example, what you think as a team leader for quality level 2, if they are at orthogonal directions. Which means that they do not match obviously, would have a negative implication of the overall organization. So, hence if you remember I mentioned that, top management is very important to understand the concept of quality such that it can be brought into the picture.

And in such a way that all of the sub layers or the employees who are there are on board, based on the concept of philosophy of qualities and how it can be brought into the picture in a way, such that they do not move into different orthogonal direction. But all of them basically join hand and in order to improve the quality and the overall business framework of the organization. So, limited success would basically imply that. if you are not able to do all the work in such a manner, such that there is some dichotomy obviously, would have a negative implication or overall business philosophy for which the company is aiming.

So, with this I will end this lecture and continue our discussion for another 2 or 3 lectures about the concept of the philosophy of quality and say for example, within another 5 6 lectures. Be going into the detailed, part of the different type of statistical process not the tools. But the basic concepts of statistical process controls, such that they can be utilized in order to understand, how the process techniques can be utilized, have a nice day.

Thank you very much.