Design Practice
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Lecture – 19
Business relationships in concurrent engineering

Hello and welcome to the design practice module 19. We were discussing about the various influential dimensions in how to introduce a new line of notebooks in the computer in the market, which is plotted with already quite a number of products and C environment has to be planned. So, that it can upgrade the notebook to sort of higher capability with the limited source you know.

So, the price should not vary too much, but the capability should be reasonably high which can beat the competition. So, we started thinking about the various dimensions; like the product features or product complexities or even you know associated things related to the program structures and program future. We would now like to go for the fifth aspect of the dimensions which is related to business relationships.

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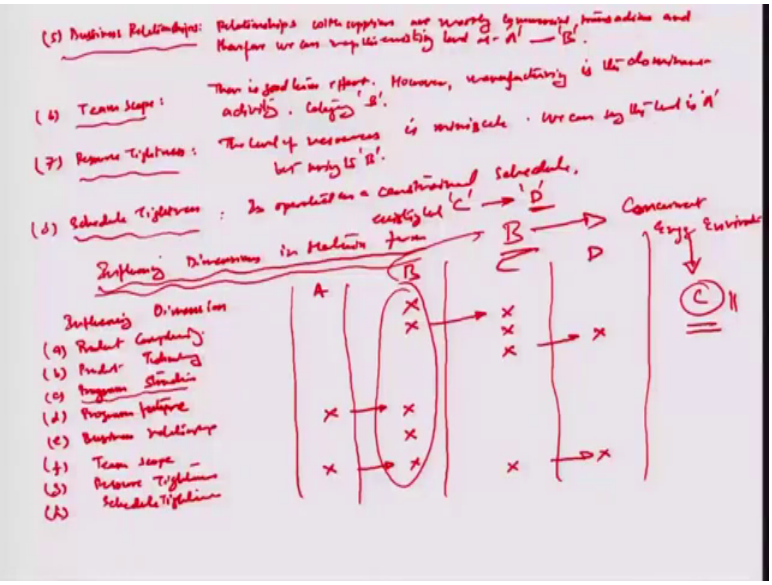

So, let us see what level this operates. So, we know that relationships to suppliers are mostly of commercial transactions. So, therefore, this level can actually be said as level a, the company buys mostly parts and assemblies. So, with the suppliers their relationship is as good as a buyer and seller and. So, it is at the very basic level of

operation. So, let us say we call it that relationships with suppliers are mostly commercial transactions.

And therefore, we can map the existing level at who level a; however, just some key suppliers may be involved in a sort of a, just in time relationship as and when needed, whatever is needed they provide, and so they involve some kind of a joint development referred. And so therefore, the level of business relationships in this particular case may be shifting to B which is probably a good idea. So, this a shifting to B, because of some suppliers were there and their trying to make a joint venture kind of a you know working model for promoting the just in time concepts related to such an industry.

Let us also talk about the sixth dimension, which is team scope. So; obviously, there is a very good team effort; however, manufacturing is the dominant activity given the level of the product design and technology, complexity and therefore, obviously, team score category in this case would be rated as B. If you go back to the influence and dimensions of the product so, level B indicates some kind of a dominant perspective, and here; obviously, it is manufacturing dominating. So, will say that there is good team effort; however, manufacturing is the dominant player of the key player, and so level B would be the most appropriate rate level in the situation manufacturing is the dominant activity.

And therefore, category B could be actually defined as the team scope level of dimension of the product, will also talk about two other aspects left over for the different dimensions; one is resource tightness. So; obviously, in this case the level of resource tightness is of the order of A in the beginning maybe B later on, because of price sensitivity of the product, you cannot manage to have abundant resources. In fact, strategies like just in time or you know inventory reduction is just with the goal of how to curtail the resources.

So, the level of resources is minuscule, and we can say that the level is currently A, but moving to B and then when we talk about schedule tightness; obviously, these products based on whatever the type of market is really need a very tight schedule. So, if you have planned the date of launch, the product should be ready at least a week before the lunch and. So, we are working on very stiff timelines, and therefore, it has to be extremely tight schedule that we are working on, probably the objective of introducing more products in the market and increasing market share will lead to constrained schedules of the level of,

let us say C which is going to soon go up to D, because you want to make it more want to enter another, you know level of competitions by introducing a new line ok.

So, remember shot and throughput time is one of the dimensions for increasing market share and profitability, and of course, the program manager has this requirement of improving the profitability of the program. So, we will say that the schedule tightness is quite constraint is operated on a constraint schedule, you want to grab as much of market share is possible. So, let us say it was C, existing level is C and it should go up to D ok.

So, that is the expected level that it should go up. So, if we summarise all these influential dimensions or influencing dimensions into matrix form, let us see what happens how many Bs or how many C's are there, which will try to determine what is the average level. So, we have let us say on one side the influencing dimension and we have all these different categories A B C D, where will see what is the existing level of the mapping.

So, the first influencing dimension that is the product complexity we know is, currently at level B ok. Similarly products technology we just defined to be at level C or let us say it was at B, and it was supposed to go to level C, because of the existing competition when we talk about program structure, the current program structure is already at level C given that you already in the line of business. You have a large infrastructure in place and this should be withheld. Let us see based on whatever is the scenario right, now remember you have to be competitive. So, you cannot afford to have any more edition in terms of you know size of staff etcetera.

So, then we talk about program futures, so; obviously, currently the program future is based on C, but the dimension is slowly moving to D in the competitive scenario. You have to make certain investment decisions in terms of automation etcetera and. So, therefore, it has sustainable model. So, one has to think of this future. Of course, there is quite a bit of competition which is in the market, but will not you know.

So, because of that competition we need to change a little bit of the other dimensions, which are important here. For example, the business relationship; So, business relationship currently is at a lower level, it is only at A, because people are just sort of you know transaction based, as far as interrelationships are concerned; however, there

are certain vendors who have started this concept of moving into as, and when needed to supply, and so therefore, it move up to the level B.

Similarly, if I had, look into team scope. So, we know that the team scope currently is at level B and will continue to do so for some time. There is no way that we can introduce any kind of you know competitive prospective here. Still it is buy and large manufacturing based, and is going to remain manufacturing base, because line of notebook consults concerns about that manufacturing.

So, then we talk about resource tightness, and; obviously, resource tightness is quite keep, we are going to become cost conscious. So, as a company, and so therefore, one cannot afford to have any more resources then what is being utilised. So, the currently level is A, but it is going to move up to B, because of price sensitivity and then of course, when we look into schedule tightness.

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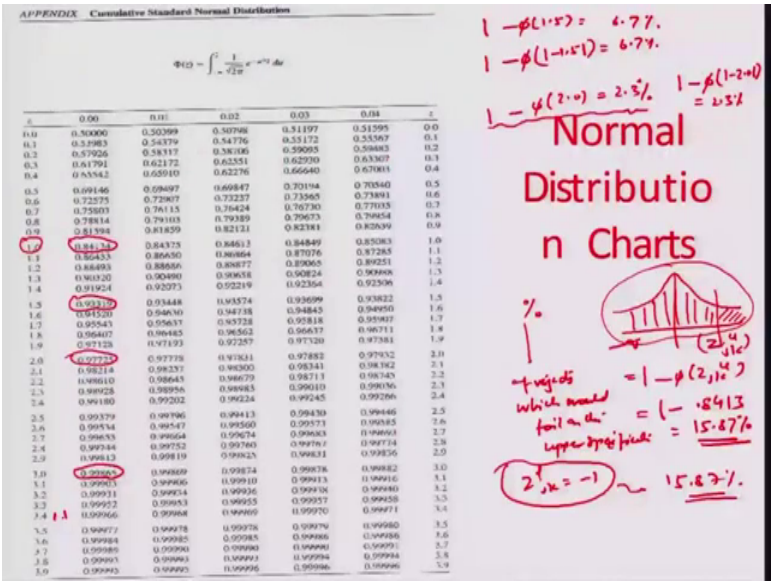

Schedule tightness is already provided as c, but it is going to move up to B, because of the extremely competitive environment in which once operating. So, if you look at the various levels at which all these different dimensions are placed currently, we find maximum number of dimensions to be placed in level B. And so therefore, B is currently the concurrent or it can be concluded that B is currently the concurrent engineering environment, and which the system is operating right now. And of course, there is a need to increasingly migrate to C, because that will help us to gauge the various you know

resources or of the route, the various resources in a manner, so that we can be participating in the fierce competition which is already there in the market.

So, having said you know this thing that there is a certain level, we have already A mapped what is the level and we have already map, where we have to go, all it is left over now for us to see, is that in phase two what do we tweak in terms of the different elements which comprise the concurrent engineering management environment. So, that we can operate at level C ok, given our level B at this current junction of time, and so once we are able to divert the resources to convert it into level C in terms of the C elements.

So, we are now going to actually look at the various elements, the major elements which are going to define the concurrent engineering environment, and will do the self assessment format or mode, as we had learnt in a few tables earlier, the related to the development methodology the communication, the organisation as such are the requirements for the particular product.

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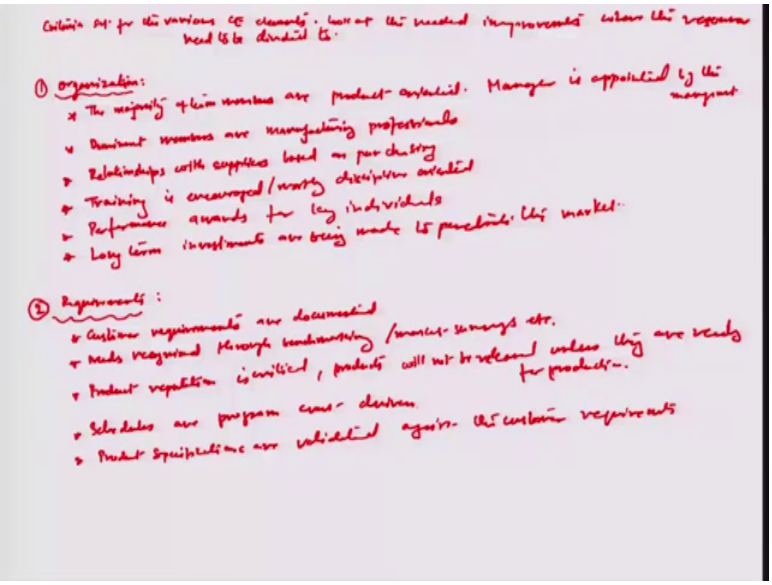

So, in this particular module let us start understanding you know the criteria set for the various elements. I would just call them C elements and A such look at the needed improvements, where the resources need to be directed. So, one has to understand the resource limitation is always A of paramount, consideration to all these management environment setups, and therefore, resources are abundantly available. So, you have to

justify what resources you are putting in what particular portion of the elements to grade up from level 1 to level 2, level A to level B or B to C whatever, so that you can ultimately meet the concurrent environment to be C as for as the influencing dimensions of the product line are concerned.

So, here for example, let us look at the first aspect that is organisation. So, what kind of organisation is involved in this particular product line? So, we learn a few things about the organisation; one aspect is that the majority of team members or product oriented, the product manager being appointed by the management. So, let us just product oriented manager is appointed by the management.

Also there are certain dominant members which are mostly manufacturing engineers. So, the membership, team membership is all about those dominant members. So, probably category A, if you just recall what we have discussed in the organisation table of self assessment, we had different categories A to D, where we will talk about the various aspects of organisation; like team membership, team leadership. The team interaction, business relationship, teaching or educational functions or responsibility authority a function management decisions so on and so forth.

So, we are going to categorise each and every aspect of the current organisation in terms of the levels, at which these different sub elements are position for it to define the current level of the organisation, and then look at some of these elements that how given a certain influencing dimension changing from category B to category C would necessitate A sub element of this organisation, to go into a different category. So, that we could achieve the phase one functions. So, that is how the concurrent engineering environment is setup.

So, again if you look at the other aspects of the organisation; in this case the team is manufacturing engineer dominating. So, we will let us say that the dominant members are manufacturing professionals in this current setup so, second of unidirectional team. Although there are certain you know other advisors which you receive from time to time from design influencing the (Refer Time: 15:56), but the domination in terms of decision making, is mostly done by the manufacturing. The relationships, that are there in the business level with the suppliers and mostly based on purchasing.

So, it is like a buy and sell kind of relationship, probably first level again level A. So, relationships with suppliers based on purchasing, there is some scope; however, of design and development exchanges which some key suppliers or their very well identified suppliers, and their probably situated close by. So, they can go for just in time model and other things related to you know a certain level of interrelationship is stake holding is involved ok, mutual stake holding is involved.

When we talk about the training module or training functions, training is encouraged, but mostly discipline oriented. So, in this kind of a setup it is only the particular subject in question, that is used for training purposes. There is no motivational training as such which needed, because it is a very fix setup. Also there are some performance awards and they are mostly for key individuals. So, it is an individual achievement centric setup. The organization is in that manner and; obviously, there is an aspect of long term investments being made to penetrate the market. So, we will just say that long term investments are being made to penetrate the market.

So, that is how we understand the various parametric related to the organisation, regarding the second element; namely requirements, the various modalities associated are that. In this case the customer requirements are documented. So, you should actually have a good need finding mechanism and customer reviews are the basis or the whole processes customer review centric in terms of documentation etcetera. The customer needs a recognised through market surveys and competitive benchmarking. So, they have given a methodology here that needs recognised through benchmarking market service etcetera.

Similarly, in this case the product repetition is critical. So, products will not be released unless they are ready for production. So, that is another requirement related to the schedule types. So, the reputation is critical. Remember there is a high level of competition and so therefore, the reliability of the product is very major aspect to the high selling of the product or achieving of major portion, the market share by the product.

So, products will not be released unless they are ready for production. The regarding the planning, scheduling, the schedules are mostly program event driven schedules. So, that maps has case B or level B in the requirement matrix. And of course, the product

specifications in this case are validated through exact customer requirements. So, that gives as or defines the level for the validation based on which some documentation can be done. So, this is how you work on for the requirements. Similarly we have another communication module.

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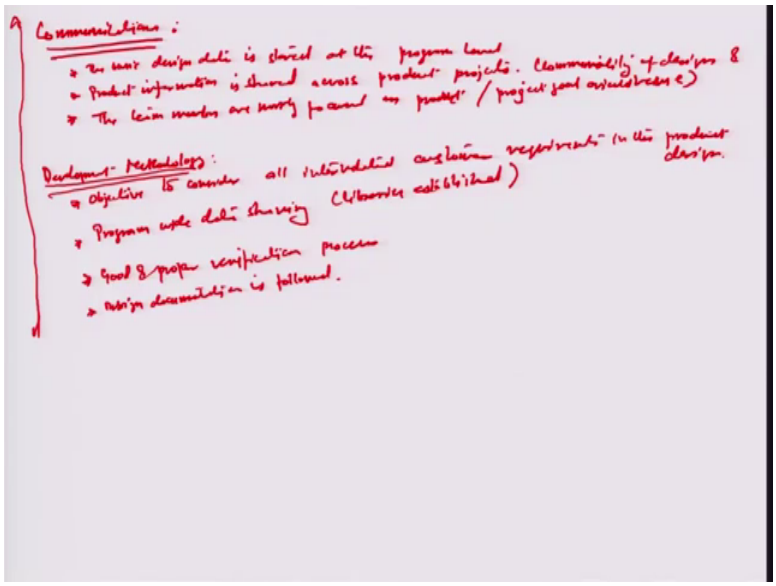

Which talks about the various aspects related to how the data, the design data is stored at the program level. So, in the communication module, the basic design data is stored at the program level, the production information is shared across just product projects. So, we are not concerned with entrepreneur's enterprise wide sharing of this information. So, just the local sharing is what, is necessary for communication module to be just an proper. So, product information is shared across product projects.

So, you can think of probably commonality of certain designs or reuse, if necessary the team members are mostly focused on the product or project goals. So, that is how the level of communication is going to be, mostly between the members and one on message. So, that how the communication module would be, and then finally, the development methodology; that is being utilised here in this particular set up on the existing modules or existing environment, is based on an objective to consider all interrelated customer requirements in the product design.

So, also the data libraries in this case have been establish across the program. So, let us call it program by the data sharing libraries established, and the design methodology is

documented and followed. So, there is a verification process also which is very thorough to ensure proper performance of products delivered to the customers.

So, good and proper verification process and design documentation is being obeyed. So, this kind of brings us to summary of all the different aspects or elements related to, what is the current level of the concurrent engineering and we will like to now rate everything in terms of again levels A B C and D, as per the 3 or 4 tables of self assessments, shared in this four different elements with variety of different sub elements, and see where is the current level, so that we can see.

Now that based on whatever phase one requirements are, for a grading the level from B to C what all sub elements can be changed in this whole matrix. So, that you can have a resource allocation based on the change, needed for different sub elements of this particular matrix.

This is the more important cracks of what is underneath to establish a certain C level and these are some sub elements for investment is needed if you want to upgrade, because resources scanty therefore you pin point us to where those resources are to be directed. So, that overall that B level of C can change to C level of the influential dimension of the product.

So, having said that, I would like to end today's module here, but in the next module, try to make a matrix based analysis of all these different phase two elements of concurrent engineering, and try to upgrade the level giving you clear cut indication of where the resources need to invested.

Thank you very much.