Business Data Management
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Lecture 4
Review of Data and Questions

Professor G Venkatesh: So, Milind we have got all the data from Omkar. Can we just take a fresh look at the data again I mean he explained it but I think it is a good idea for us to go through it and…

Professor Milind Gandhe: I think it is very good because that data is quite heavy.

Professor G Venkatesh: It is quite heavy.

Professor Milind Gandhe: So let us go through it once.

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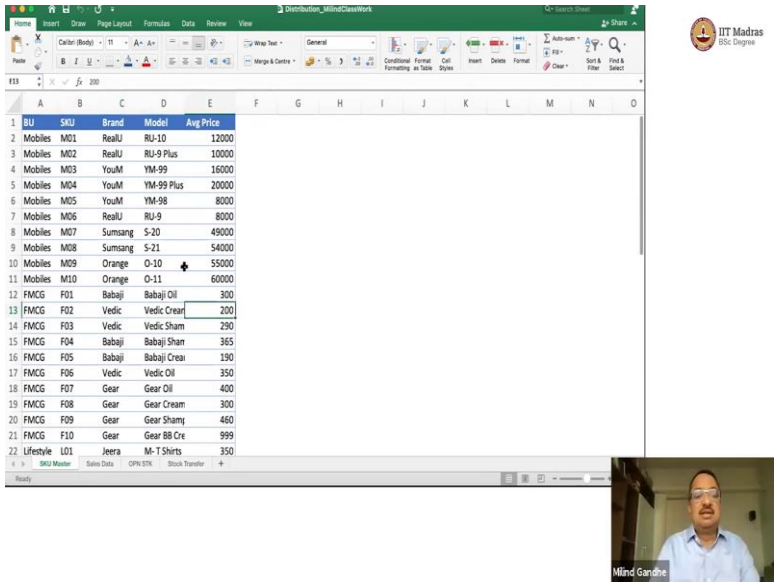

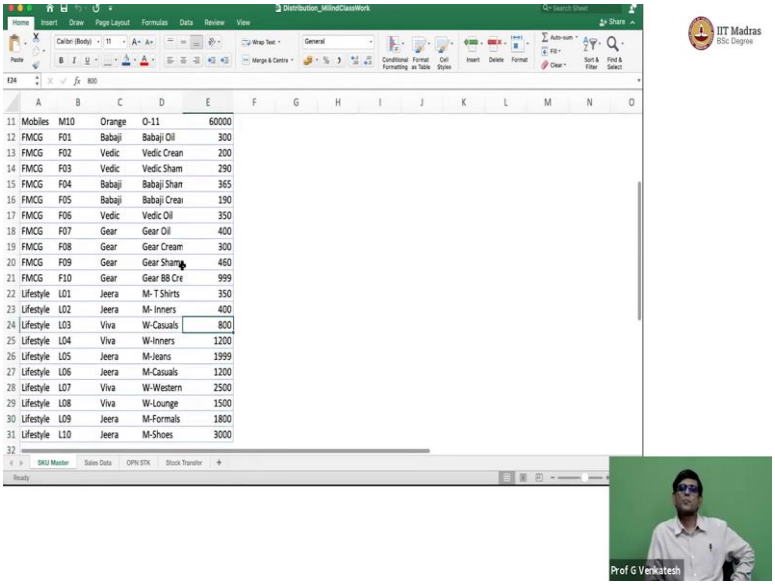

Professor Milind Gandhe: I think the data basically it is 4 sheets. He has given us like the master list of what he has in stock. So, he has got mobile brand RealU model RU-10 SKU and say one roughly 12000 rupees in price. So basically, he has got SKUs, 30 SKUs across three sort of business lines.

Professor G Venkatesh: It is units. He calls it business units.

Professor Milind Gandhe: Business units and the price points are also quite varied actually as you can see, I think FMCG has the lowest price point, mobile has the highest price points. And then lifestyle is somewhere in the between…

Professor G Venkatesh: Middle.

Professor Milind Gandhe: Its somewhere in the middle.

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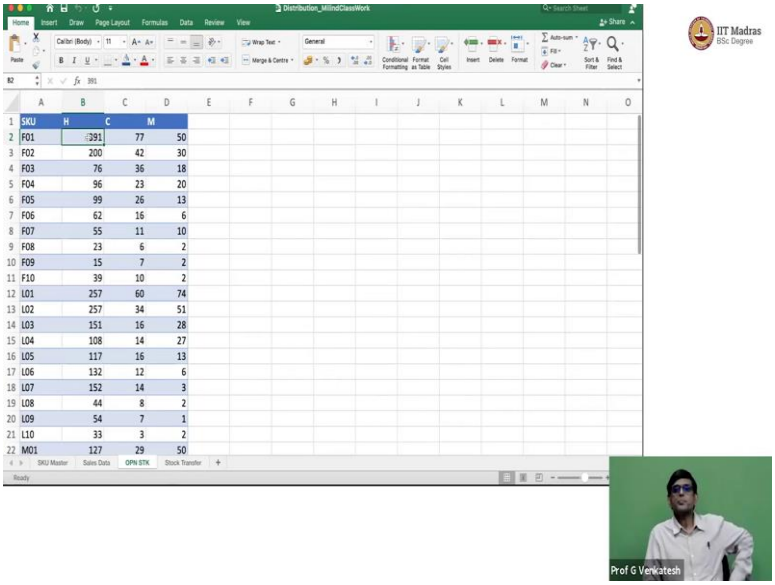

Professor Milind Gandhe: Then he has given us opening stock. So, he tells you how many units of which SKU, each SKU are there in the warehouse in each city?

Professor G Venkatesh: Each city.

Professor Milind Gandhe: So this is data as of the morning of April 1st. So our case study begins on April 1 2021 morning in 8 am. This is the stock that you have in each warehouse.

Professor G Venkatesh: There is Hyderabad, there is Cochin and there is Madras. So, we have Hyderabad Cochin and Madras, three centers, three warehouses and the stock in each warehouse is given.

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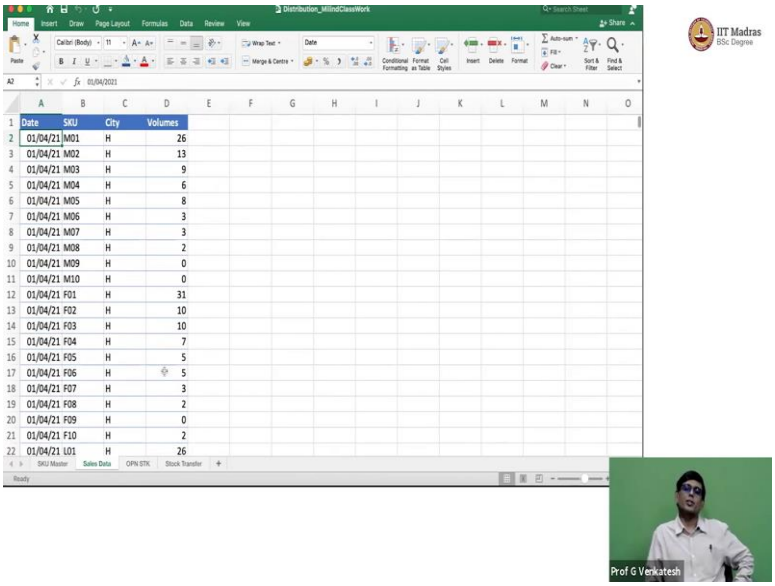

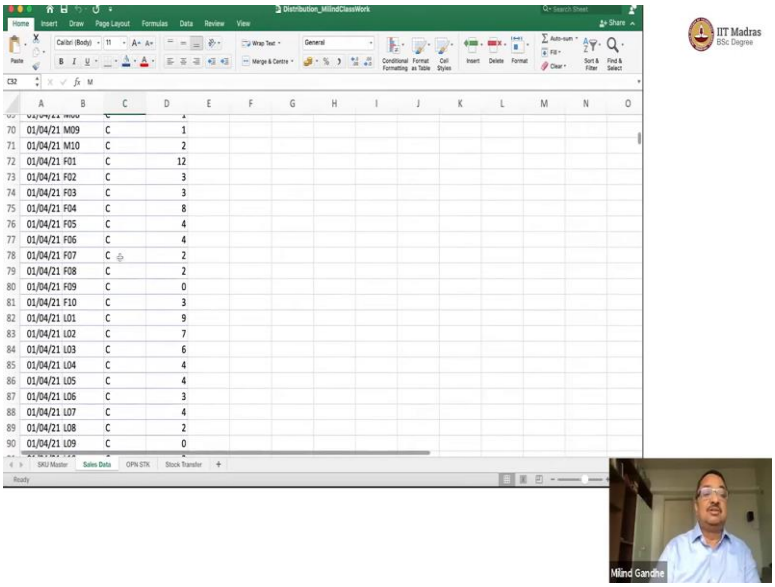

Professor Milind Gandhe: For each of these cities, for each of the warehouses he has given us how much are the sales.

Professor G Venkatesh: So 26 units of M01 got sold on 1st of April like that in Hyderabad.

Professor Milind Gandhe: So, later on you can see there will also be how many units of M01 got sold.

Professor G Venkatesh: From Madras. So, this is raw data from, transaction data not even transaction data, it is accumulated to the transaction data. Because you have 26 units sold means basically is accumulated, he found 26 units of M01 sold on

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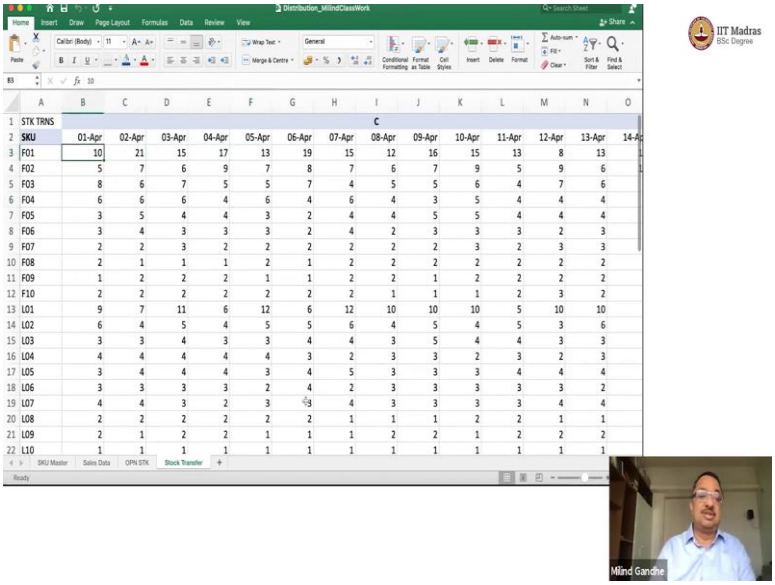
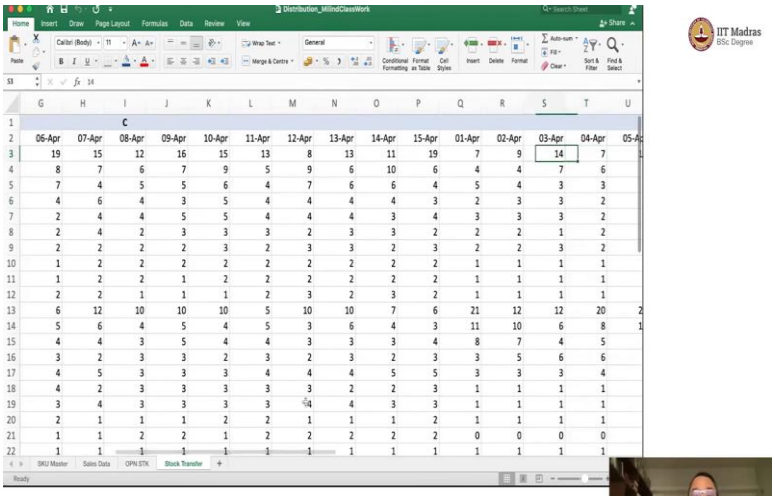


STK TRNS														
							C							
SKU	01-Apr	02-Apr	03-Apr	04-Apr	05-Apr	06-Apr	07-Apr	08-Apr	09-Apr	10-Apr	11-Apr	12-Apr	13-Apr	14-Ap
F01	10	21	15	17	13	19	15	12	16	15	13	8	13	
F02	5	7	6	9	7	8	7	6	7	9	5	9	6	
F03	8	6	7	5	5	7	4	5	5	6	4	7	6	
F04	6	6	6	4	6	4	6	4	3	5	4	4	4	
F05	3	5	4	4	3	2	4	4	5	5	4	4	4	
F06	3	4	3	3	3	2	4	2	3	3	3	2	3	
F07	2	2	3	2	2	2	2	2	2	3	2	3	3	
F08	2	1	1	1	2	1	2	2	2	2	2	2	2	
F09	1	2	2	2	1	1	2	2	1	2	2	2	2	
F10	2	2	2	2	2	2	2	1	1	1	2	3	2	
L01	9	7	11	6	12	6	12	10	10	10	5	10	10	
L02	6	4	5	4	5	5	6	4	5	4	5	3	6	
L03	3	3	4	3	3	4	4	3	5	4	4	3	3	
L04	4	4	4	4	4	3	2	3	3	2	3	2	3	
L05	3	4	4	4	3	4	5	3	3	3	4	4	4	
L06	3	3	3	3	2	4	2	3	3	3	3	3	2	
L07	4	4	3	2	3	3	4	3	3	3	3	4	4	
L08	2	2	2	2	2	2	1	1	1	2	2	1	1	
L09	2	1	2	2	1	1	1	2	2	1	2	2	2	
L10	1	1	1	1	1	1	1	1	1	1	1	1	1	



			C											
06-Apr	07-Apr	08-Apr	09-Apr	10-Apr	11-Apr	12-Apr	13-Apr	14-Apr	15-Apr	01-Apr	02-Apr	03-Apr	04-Apr	05-Ap
19	15	12	16	15	13	8	13	11	19	7	9	14	7	
8	7	6	7	9	5	9	6	10	6	4	4	7	6	
7	4	5	5	6	4	7	6	6	4	5	4	3	3	
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6	12	10	10	10	5	10	10	7	6	21	12	12	20	
5	6	4	5	4	5	3	6	4	3	11	10	6	8	
4	4	3	5	4	4	3	3	3	4	8	7	4	5	
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4	5	3	3	3	4	4	4	5	5	3	3	3	4	
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2	1	1	1	2	2	1	1	1	2	1	1	1	1	
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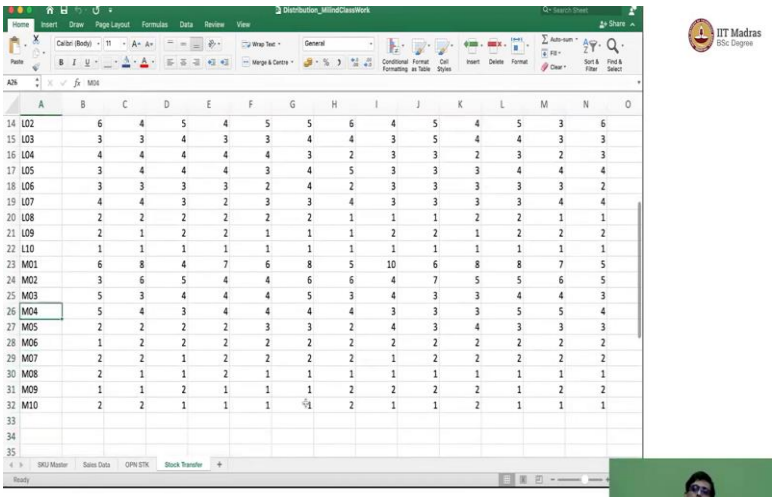

L02	6	4	5	4	5	5	6	4	5	4	5	3	6	
L03	3	3	4	3	3	4	4	3	5	4	4	3	3	
L04	4	4	4	4	4	3	2	3	3	2	3	2	3	
L05	3	4	4	4	3	4	5	3	3	3	4	4	4	
L06	3	3	3	3	2	4	2	3	3	3	3	3	2	
L07	4	4	3	2	3	3	4	3	3	3	3	4	4	
L08	2	2	2	2	2	2	1	1	1	2	2	1	1	
L09	2	1	2	2	1	1	1	2	2	1	2	2	2	
L10	1	1	1	1	1	1	1	1	1	1	1	1	1	
M01	6	8	4	7	6	8	5	10	6	8	8	7	5	
M02	3	6	5	4	4	6	6	4	7	5	5	6	5	
M03	5	3	4	4	4	5	3	4	3	3	4	4	3	
M04	5	4	3	4	4	4	4	3	3	3	5	5	4	
M05	2	2	2	2	3	3	2	4	3	4	3	3	3	
M06	1	2	2	2	2	2	2	2	2	2	2	2	2	
M07	2	2	1	2	2	2	2	1	2	2	2	2	2	
M08	2	1	1	2	1	1	1	1	1	1	1	1	1	
M09	1	1	2	1	1	1	2	2	2	2	1	2	2	
M10	2	2	1	1	1	1	2	1	1	2	1	1	1	

Professor Milind Gandhe: And finally, he has given us how much stock got transferred from Hyderabad to the daughter distribution units.

Professor Milind Gandhe: So how many units got transferred from the mother DC to the daughter DC on each day of each SKU? So this is actually a fairly large piece of data as you can imagine. You can see it is like 15 rows like this for Chennai. And sorry 15 columns and for Cochin and 15 columns from Madras. And 30 rows each. 30 fields. So it is a large piece of data. So this is the data that he is given us G V.

Professor G Venkatesh: We need to let us refresh. What questions? Quickly we can… It is good idea to put it up whatever questions.

Professor Milind Gandhe: Let us look at the question.

Professor G Venkatesh: Something about sales, something about stock out. I think stock out…

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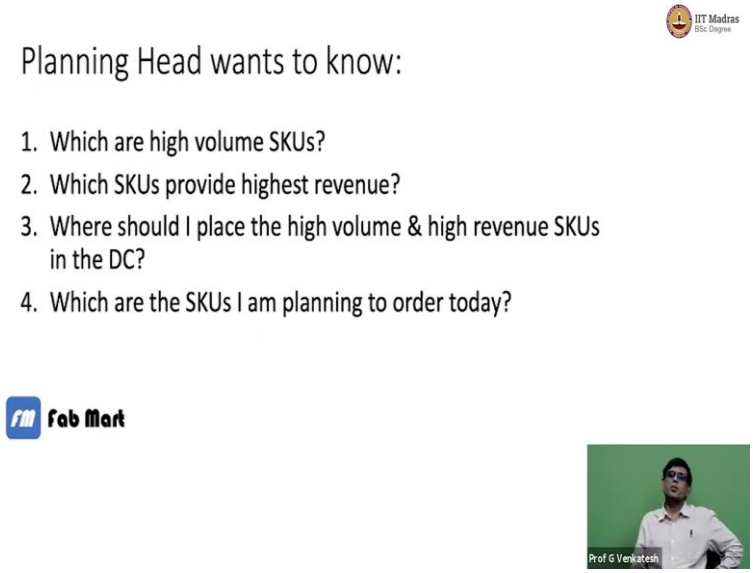

Professor G Venkatesh: Sales information you want to look at whether or not there has been stock out.

Professor Milind Gandhe: So this is the data that is available. We just saw that and there is 15 days of data or so the planning here wants to know, which are the high-volume SKUs, which SKUs provide a highest revenue. And then he wants to know where to place the high volume and high revenue SKUs.

Professor G Venkatesh: High volume means number of units.

Professor Milind Gandhe: Number of units.

Professor Milind Gandhe: Price is there in the SKU master it is there.

Professor G Venkatesh: The master had it. Master had the price.

Professor Milind Gandhe: So, we will have to do some computation to get the revenue it will not be there straightforward.

Professor G Venkatesh: It is not straightforward. Because you have to add even more volume, you have to across you have only given set of words you have to add. And high volume over the whole period you have to add overall 15 days.

Professor Milind Gandhe: So, I think what the most logical thing is to do it on a day by day basis. The same it was the unit that we know the SKU that hold highest…

Professor G Venkatesh: On the scale, you may have high volume in one day and another SKU may volume another day. So, you could do both, I think. We will see. Then where do I place high volume and high revenue SKUs in the DC.

Professor Milind Gandhe: if you remember G V what Omkar was saying is that the layout of the warehouse is very important. And he wanted us to help him plan in the warehouse where he should, place each SKU ?

Professor G Venkatesh: We will produce the data. I think this we should discuss with him only, I think. This we will not want to know how to, we have no idea how he manages this warehouse and all. Once we have the data presenter in some form, I think it will help him to come up with this, we will do with him.

Professor Milind Gandhe: And then the final question the planning head I think, now, he has some more of the questions. But the next question is you know, which SKUs do I need to order today? This is a very good question.

Professor G Venkatesh: Because you want to make sure that there are no stock outs. Stock outs means that you do not have enough inventory, that you can service customers that is a problem. There is something else on cost.

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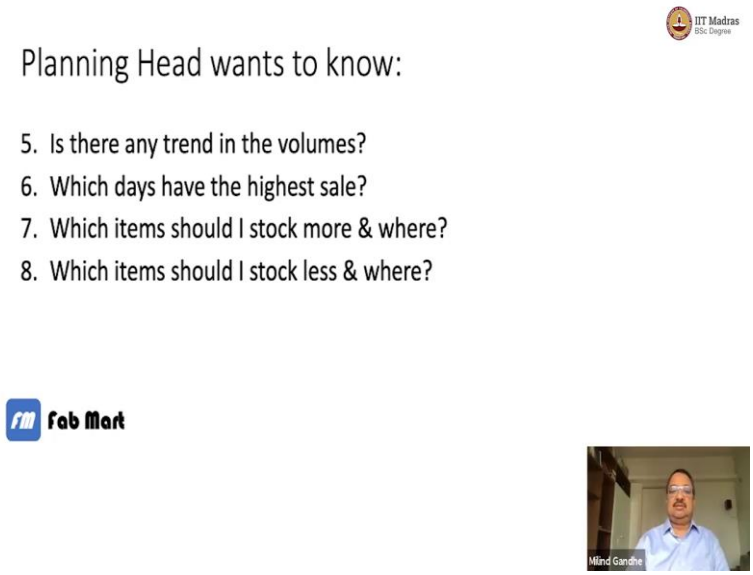

Professor Milind Gandhe: Then he wants to know is there any trend in terms of volumes. We are there some days that have very high sale?

Professor G Venkatesh: I doubt that we will see. Because in 15 days what are you going to see?

Professor Milind Gandhe: maybe you need a longer range. But let us see if there are some trend.

Professor G Venkatesh: We will figure out.

Professor Milind Gandhe: And then from a planning perspective, he wants to know which SKUs to stock more in which city and which SKUs should he stock less. This is also I think G V driven somewhat by this, you know, on the one hand, he wants to avoid stock out. On the other hand, he does not want to tie up too much capital.

Professor G Venkatesh: Too much stock. Cash is locked in if you miss. So, you have to figure out how much to manage inventory. It is complicated. I think that is okay. Again, this open for discussion with him.

Professor Milind Gandhe: Yes. But let us do.

Professor G Venkatesh: We produce the data I think we should able to discuss with him. We need basically stock; we need to know where the inventory is running low, where it is running high, what are the patterns there. And that is important. Those patterns, I think we should have a discussion.

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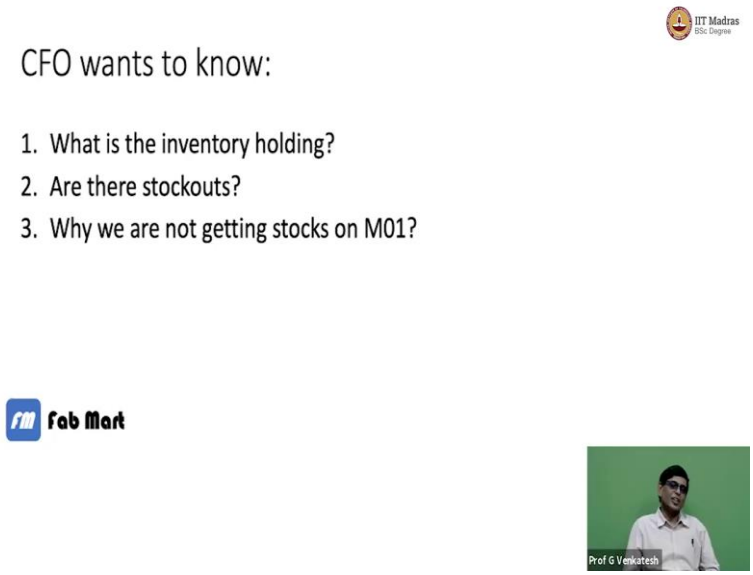

Professor Milind Gandhe: Then the CFO wants to know, what is the inventory holding? How much do they have in stock? And where? The second thing he wants to know is, are there any stock outs? This is I think required for all of these people whether he is the CEO or CFO, they are all looking at it from different angles, but they are all this is clearly a big worry for everybody in the company.

Professor G Venkatesh: It is the revenue leakage, leaking revenue basically.

Professor Milind Gandhe: And specifically, this SKU M01, they seem to be worried. So, they want us to look at M01.

Professor G Venkatesh: We have to figure out why they are interested in, maybe we will find out why they are interested in M01.

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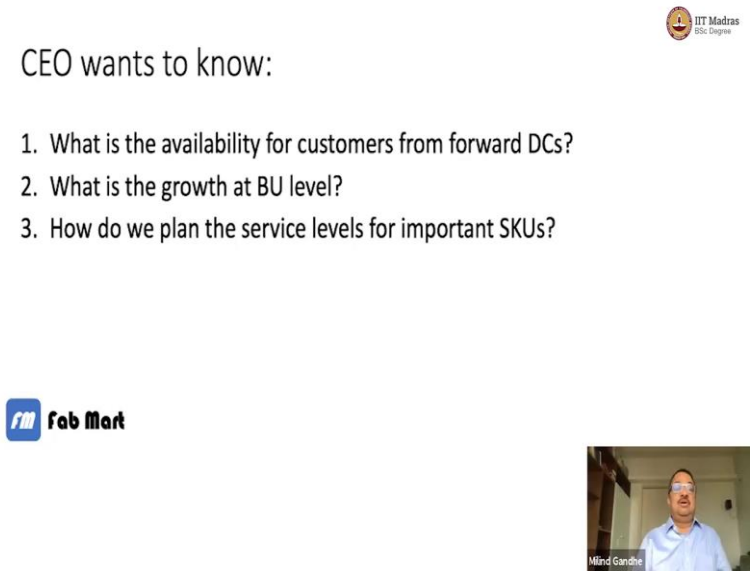

Professor Milind Gandhe: And then the CEO wants to know, what is the availability of products for customers from the forward DCs. So, they really do not want it to come from Hyderabad, it should be serviced from Madras

Professor G Venkatesh: That is what you mean I see. Good thing from Hyderabad to Chennai or wherever in advance, so that you do not have to supply it from Hyderabad each time that it will take time..

Professor Milind Gandhe: Second thing the CEO wants to know and this we should ask Omkar why this is an important topic for them. He wants to know what is the growth at the BU level.

Professor G Venkatesh: He wants to know that all the BU heads are working.

Professor Milind Gandhe: And the third thing he wants to know is how do you plan service levels for important esteems?

Professor G Venkatesh: What does it mean service level?

Professor Milind Gandhe: So if 100 people order an item and I have only 97 in stock then 3 are essentially I am not able to service. So, service level is at least this is what I understood from my conversation from Omkar but we should ask him in more detail. Service Level is basically if 100 people ordered and I was able to service 97 then service level is 97 percent.

Professor G Venkatesh: But we will know like only when the item is in stock then only you are going to allow him to order.

Professor Milind Gandhe: Well, you could take the order and then state that it will take 15 days to deliver…

Professor G Venkatesh: Or at least our, if our data allow us to register orders when there is no inventory. I do not know. We will see. We will find out.

Professor Milind Gandhe: Let us find, let us find out.

Professor G Venkatesh: Whether orders were, whether there were sales happening at the time of negative inventory. That is the question we are asking. I get a 0 inventory. I thought negative, if it is 0.

Professor Milind Gandhe: It is 0 and it is 0 inventory across the entire network. So, it is not 0 inventory in Madras, it is 0 inventory in Madras and Hyderabad together.

Professor G Venkatesh: Hyderabad put together.

Professor Milind Gandhe: Because if the 0 inventory in Madras I can still service it from Hyderabad.

Professor G Venkatesh: Service it from Hyderabad, I understand.

Professor Milind Gandhe: So, these are roughly the questions. So now let us go and look at the data.