

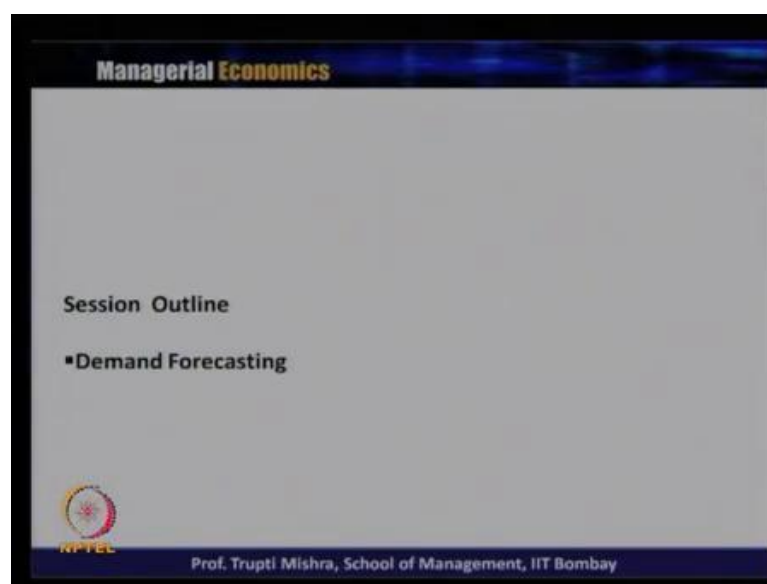
Managerial Economics
Prof. Trupti Mishra
S. J. M School of Management
Indian Institute of Technology, Bombay

Lecture - 15
Demand Forecasting

So, if you remember in your demand analysis, when we are discussing about it, we have identified there are number of factors, which affects the level of demand like what is the price of it? What is the price of substitute good? What is the income of the consumer? What is the future anticipation of price and what is the number of consumer in the market? Apart from this also, these are the information that helps us to know or helps us to decide the forms to know what is the level of demand, whether demand goes on a increasing way or demand goes on a decreasing way.

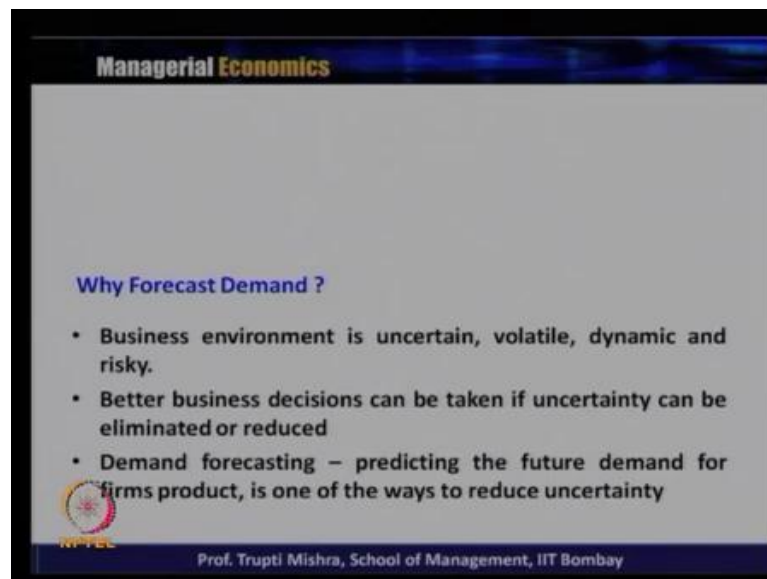
So, in today's class, we will focus on the forecasting of the demand, how generally the firms they does the demand forecasting keeping all the information used or may be using all these information whatever available to them for knowing what will be the demand for that product in the future. So, today we will talk about demand forecasting what is basically demand forecasting? What is the need? What are the different types of demand forecasting and what are the different methods to do this demand forecasting?

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So, today we will focus more on the subjective method of the demand forecasting. So, initially we will know what is demand forecasting? What are the different types of demand forecasting? And then we will talk about the subjective method of the demand forecasting. Now, why to forecast demand? What is the need or why generally the firms they do a market share way they do a market research to know what is the demand.

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The, if you look at the economic condition is always depends on the economic activities of the firm. And business environment whatever the business environment that is dependent on the economic activity. And since there is always a cyclical nature of the economic activity, sometimes it is expands, sometimes it is contract that way it also affect the business environment. And that is why there is a uncertainty, there is a volatility and there is a some amount of risk, if there is a plan and actually is not matching and also the dynamic, because every it is not a static condition business environment, every time its gets changes with the change in the related variable.

So, demand forecasting is required to know, because the environment is uncertain its it is volatile and its dynamic and it is risky. And better business decision can be taken if the uncertainty can be eliminated or the reduce. So, if I know that it is going to be uncertain whatever the decision I am taken it may not be optimal in the future time period. So, one has to reduce the, or the, eliminate the uncertainty associated with it. And then only that

can be a better business decision or that can be profitable or the successful business decision

So, demand forecasting basically predicts the future demand of the farm products. And this is one way to reduce the uncertainty, because now predicting the future demand, we will reduce the uncertainty that what will be the demand. And on that basis now the supply can be planned, now the price can be planned and there are other activities also can be planned. So, demand forecasting it is basically to predict the future demand of the farms product. And this is one way to reduce uncertainty and this way we can reduce the uncertainty may be the business decision can be also profitable and viable.

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Why Forecast Demand ?

- Some of the business decision-making aided by a good demand forecast are:
 - Determining the optimal level of output
 - Planning and scheduling of production, distribution & transportation
 - Acquiring inputs (raw material, labour, capital)
 - Determining cost and pricing strategy
 - Decisions on expansion and exit strategies for the product
 - Meeting customer order dates and customer satisfaction

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So, some of the business decision making that is added by the good demand forecast, if there is a good demand forecasting it helps in some of the business decision making. And what is the business? What are the, what are those business decision which gets good positive outcome by demand forecasting? Determining the optimal level of output, what is the optimum level of output that can be decided through the demand forecast? Because on the basis of the demand the output plan can be decided and whether at that output level that this is the optimal level of the farm, whether the farm needs to expand, whether the farm needs to contract, whether the farms needs to, whether they can expanded the increasing cost, whether they can expanded the decreasing cost. And on the finally, how they can determine the output level through the demand forecast

Then planning and scheduling the production distribution and the transportation. So, this demand forecast helps them in scheduling the production like the future demand forecast says that in the month of Jan, 20 units require the month of Feb, 40 units require. In the month of March, 50 units require, in the month of April, 20 units require on that basis the production scheduling can be done in a way. So that it delivers 20 units in Jan, 30 units in Feb, 40 units in March and 50 units in April, matching the demand it can just deliver that. So, the production scheduling can be done if the demand forecast forecasted demand is known for the specific time period also the distribution scheduling the distribution and scheduling the transportation.

Because it is not that every time the producer is the supplier of the product, if it is if producer is not the supplier the product once they produce they have to also plan the distribution and the transportation is how the end product reaches to the market to the retailer. And on that basis they know that Jan, 20 is require, how they have to plan that the transportation of the 20 units to reach the regular before Jan. So, this planning schedule of production distribution and transportation can be done if the demand forecast is known for the specific time period. Acquiring inputs, typically the raw materials labor and capital if, if you know that what is the requirement of output in the next couple of month, next couple of week.

Accordingly the input plan can also be done, what is the raw material required for that typical output, typical quantity of output? What is the required labor? What is the required capital? And that way the acquisition of the inputs can be done on the basis of the demand forecast. Demand forecast helps in determining cost and pricing strategy. If the demand is more then accordingly the pricing strategy can be done whether it is a big time period whether it is a optic time period. What is the kind of the output demand that helps in the pricing strategy that what kind of pricing can be done? And also it helps in determining that how the scale of operation should be. If the demand is more than the scale of operation is more the possibility is that at least the farm is getting some (()) of scale.

Similarly, the determining the cost like whether, whether it should be a increasing cost in the scale of operation, whether it is going to be decreasing cost in the scale of operation, this can be decided on the basis of the demand forecast. Then demand forecast helps in decision on expansion and exit strategy of the product. How it helps in expansion and

exit strategy of the product? If the demand forecast says that by the end of this quarter the demand has to be 100 units. Taking specific example, if it is 100 units and if a specific farm has a capability of producing only 80 units through the demand forecast it helps them that they have to expand the output in order to fulfill the market demand for their product. And they can do that expansion activity on the basis that even if now at the present time period the demand is not 100 units, because in next quarter it is going to be 100 units, they have to expand and produce 100 unit in order to meet the demand for the product.

Similarly, it also helps in the exit strategy of the product, if the forecasted demand says that the market for this product is going to down, there is no there is no demand for this product it going to decrease or may be, there is no proper there is no proper demand for this product. Generally that helps the farms to identify with that level of demand whether at least they are covering whatever price they are going to charge. And with that price whether they are covering cost of production or not. If the variable cost or production is not covering up they will prefer to go out of this market.

So, forecasted demand also helps in the exit strategy of the farm that if the, what is the level of demand with that level of demand whether the farm can survive in the market or not if. And if they can survive in the market, if they cannot survive in the market where they should exit or where they should shut down their operation it can be helped through the demand forecasting. Finally, the demand forecasting also helps in meeting the customer order dates and customers satisfaction. How this customer order date and how this customer satisfaction is related to the demand forecast? Because it will give us that, what is that demand from the customer in the different time period. And on that basis the farm can work on the o production scheduling the farm can work on the distribution, the farm can work on the transportation. And finally, that will that will help in that fulfilling the customer ordered dates on that specific date and also the customer satisfaction, because whatever demand they are doing in that time period that is getting fulfilled with the specific time period

So, forecasted demand helps in determining the optimal level of output, planning and scheduling production distribution and transportation. It helps in acquiring inputs raw material labor and capital it helps in determining the cost and pricing strategy. It helps in taking decision on expansion and exist strategy for the product and it also helps in

meeting the customer order dates and customer satisfaction. So, demand forecasting taking all this usefulness of the demand forecasting.

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Why Forecast Demand ?

- Demand forecasting is the starting point of fulfilling a customer order. Its accuracy is paramount.
- Based on the forecasted demand, a firm commits its resources, capacities and capabilities for a period of time to create goods and services that its customers value and are willing to pay for

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We can say that demand forecasting is the starting point of fulfilling a customer order. Its accuracy is paramount that accuracy of the demand forecasting is the paramount. And based on forecasted demand, a farm commits its resources, capability for a period of time and also the capacity to create the goods and services that its customer value and willing to pay for it. So, the forecasted demand helps the farm to do the commitment on the basis of resources on the basis of the capacity, on the basis of a capability for a time period to create goods and services for that customer and particularly customer what the, what they generally value for it.

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Why Forecast Demand ?

- A low forecast will result in lost sales opportunity and customer dissatisfaction
- A high forecast will lead to accumulation of inventory, resulting in higher costs and less profits for the firm
- Thus forecast accuracy plays a crucial role in determining the effectiveness and efficiency of a firm

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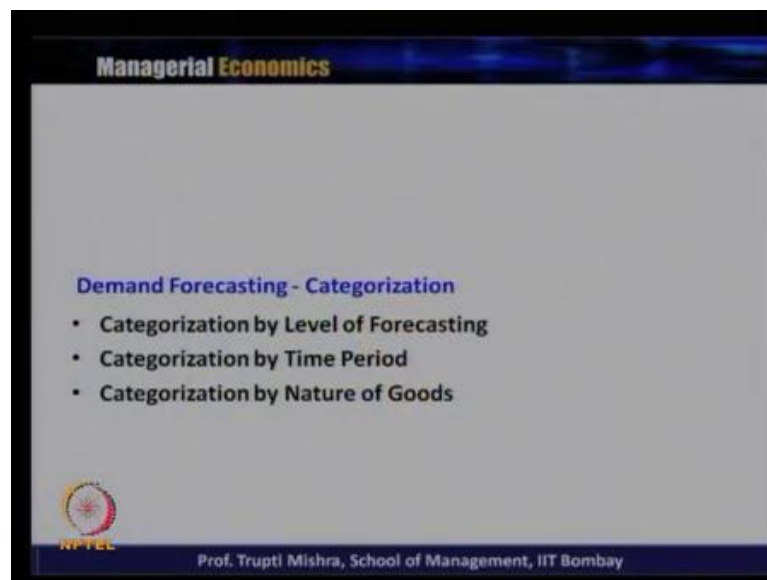
Generally if the forecast is low it will result in loss opportunity and customer dissatisfaction. If the forecast is not proper, if whatever the forecast is not appearing it is considered as the low forecast and what is the outcome over here? The outcome is a result in loss sales opportunity and the customer dissatisfaction, whereas the high forecast will lead to the accumulation of inventory resulting in a higher cost and less profit for the farm. So, if the forecast is not proper either it can be low or it can be high, if it low it generally leads to the loss sales opportunity, because farm is not ready to fulfill the demand. And because the demand forecast is showing at a lower not and that is why if it is not ready to fulfill the demand from the consumer. They lost the sales opportunity and the consumer get dissatisfied that whenever they demand for the product that is not getting supplied by the farm and there is a waiting time to get their product. Whereas, if the demand forecast is not proper and if it is forecasting very high, it will lead to accumulation of inventory.

Because whatever if it is high forecast the farm is already produced a higher amount of the product and if the higher amount of the product is produced. And if it is not getting sold in the market, because of low consumer demand that leads to accumulation of inventory which incurs a cost for maintaining or managing the inventory which results in the higher cost. Because you are producing at a higher level and that is not getting immediately sold and also that is why it gives less profit. Because supply is more demand is less and on the basis of basis of the basic market forces the firm has to the

firm has to charge a lower price in order to also dispose of some amount of the inventory if they cannot keep it for a longer period of time.

So, high forecast is not good, low forecast is not good, low forecast is also leading to negative outcome and high forecast is also leading to negative outcome for the firm. The forecast accuracy plays an crucial role in determining the effectiveness and the efficiency of the firm. So, when it comes to a proper forecast or good forecast it helps in the effectiveness of the firm or efficiency of the firm. Now, this demand forecasting is categorize on the basis of level of forecasting.

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On the basis of the time period and on the basis of the nature of goods. So, that mean demand forecasting is can be on the basis of level of forecasting, on the basis of the time period or on the basis of the nature of the goods. So, if the categorization is on the basis of the level of forecasting, what are the different level? One if firm level and second is the industry level.

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Categorization by Level of Forecasting

- **Firm level**
 - Refers to forecasting of demand by an individual firm for its products
 - Most important category for a manager for taking important decisions related to marketing and production
- **Industry level**
 - Refers to demand forecasting of a product in an industry as a whole
 - Provides insights into the growth pattern of an industry
 - Relative contribution of the industry in national income

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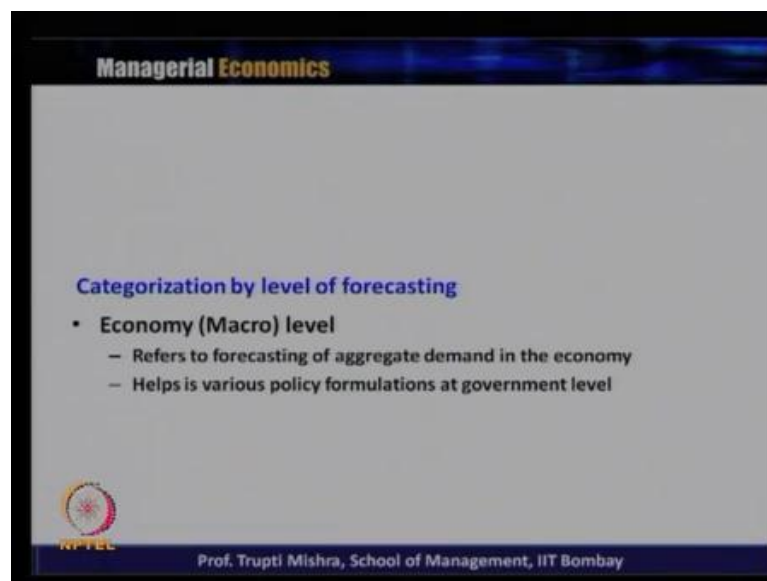
So, in case of firm level, it refers to the forecasting of demand by an individual firm for its product. So, level of forecasting the first level comes in the firm level and in firm level this is the forecasting of the demand of the individual firms for its products. So, typically when the individual firm does the forecasting for their demand for their product this is firm level and here the most important category for a manager for taking important decision to the marketing and production.

So, this firm level forecasting, demand forecasting helps the manager for taking important decision related to marketing and the production. The second level of second categorization is based on the industry level forecasting. And what is industry level forecasting? It refers to a demand forecasting of a product in an industry as a whole. So, it is not about a specific firm product rather the products which comes from the industry as a whole. So, there may be multi product like if you consider suppose PNG.

If you look at the product in all the segment of all the segment whether it is food, whether it is non food, whether it is non food and also in the FMCG. So, FMCG also they have variety of product. So, when the demand forecasting is done for all this product, what is the demand forecasting for PNG as a whole that becomes the industry level. And what is the firm level for a typically for a toothpaste for a soap if the demand forecasting is done may be it is for the dove soap or the garnier shampoo.

In this case, generally this is the farm level. So, industry level forecasting is done as the demand forecasting of the entire products of all the industry. It provides insight into the growth pattern of the industry, because as a whole the demand forecasting is good. And through the demand forecasting they are coming to know that the products they are going to do well in the market in the long run, because of their increase demand this provide a insight in to the growth pattern of the industry. And this is also helps in finding out what is the relative contribution of the industry in national income, because through demand forecasting they will know that what is going to be the revenue? What is the going to be the, their contribution? What is the going to be the growth in the income? And through that also they can find out what is the contribution of this specific industry in the national income. Same way what is done in the sectoral level also, it helps in finding out what is the growth of the sector in the long run and also the growth of the contribution of the sectoral income in case of the national income.

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Then if it is in the economy level or the macro level. So, when the categorization by the level of forecasting, it is from the micro level to macro level. Macro level; we talk about the farm level forecasting and then we talk about the industry level forecasting. And finally, we reach to the larger scale of forecasting that is the economy or the macro level of forecasting. Here the forecasting refers to the what is the forecasting of aggregate demand in the economy. So, this is combining together all the sector all the industry, all the farms that at a specific time what should be the aggregate demand for all the products

coming out from the various sector in the economy in a specific time period that is done through the economy forecasting level or the macro level forecasting.

And generally, this forecasting helps in policy formation for at the government level that what should be the different policy? Whether it is the sales substitution policy, whether it is the production policy, whether it is the regulated policy or the planning, This generally helps the government in formulating different policy, and also for planning in the next time period. And this, this in the macro sense and the firm level is generally in micro sense. Then the categorization comes in the form of the time period.

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So, categorization here, so there are 2 type of, 2 type of categorization; one short term and second one is the long term. Short term is generally the forecasting usually for a period of time that is less than 1 year and long term is time horizon of 5 to 7 year and it can also be extended through 10 to 20 years. Now, what is the forecasting? What we do in the short term? One, with this is a time period is less than 1 year it never crosses the 1 year, and long term we can do it do the forecasting for a time horizon of 5 to 7 years and also it can be extended from 10 to 12 years.

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The slide is titled "Managerial Economics" and contains the following text:

Categorization by Time Period

- Short term
 - Avoid underproduction and over production, inventory, cost on variable factor, sales target and appropriate pricing
- Long term
 - - manpower planning, long term capital requirement, investment decisions, interdependence of industry.

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Now, what kind of forecasting we do in the short term? In the short term, this is to avoid generally this short term forecasting is done to avoid the under production and the over production. And also to take a decision that what should be the inventory level, what should be the cost on the variable factor? What should be the sales target and what should be the appropriate pricing strategy? To take a decision on all these thing, generally the short term forecasting is done. And long term forecasting is for the man power planning, long term capital requirement, investment decision, what should be the interdependence of the industry?

So, generally its avoid generally, this long term is mainly for the man power planning, long term capital requirement, because if you look at if you are doing a forecasting from 5 to 7 years that generally helps in planning for next 5 years that what should be the demand and on what basis should be the output? And how this output is to be produced and how the demand to be, demand to be satisfied? So, long term forecasting is mainly for the man power planning, long term capital requirement, investment decision. And what should be the interdependence at the industry level? To take a decision on then generally the forecasting helps. Then the categorization is on the basis of the nature of the goods. And here we will take two categorization; one on the basis of the consumer goods and second on the basis of the capital goods.

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The slide is titled "Managerial Economics" and contains the following text:

Categorization by Nature of Goods

- Consumer goods
 - Durable – new demand/ replacement Demand
 - Non durable – income level, social status, age, education and occupation of consumers
- Capital goods
 - Derived demand
 - Long term growth

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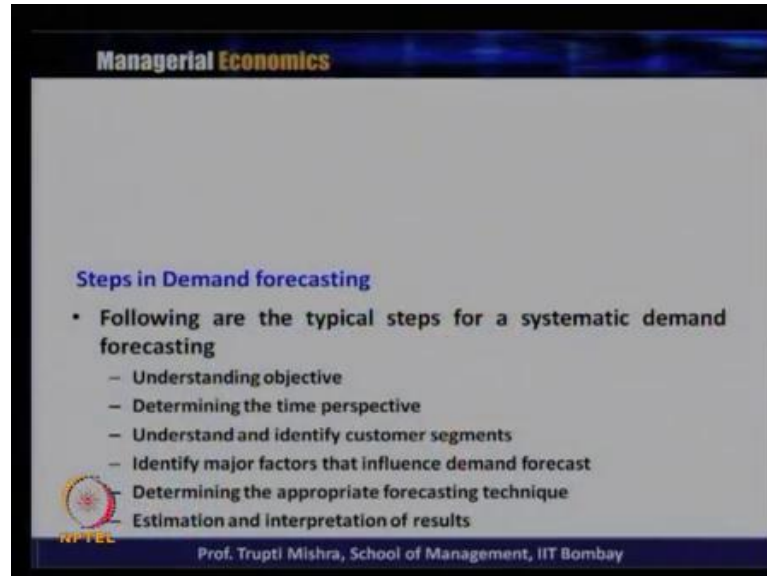
So, in case of consumer goods generally, the categorization we do the forecasting is needed, if it is the case of the durable goods either it is new product all together new demand or the replacement demand. And in the non durable generally, the demand defers on the basis of the income level, on the basis of the social status, on the basis of the age, on the basis of the education, on the basis of the occupation of the consumer. So, non durable the demand depends on this and also on the basis of the gender.

So, this durable non durable consumer goods, the forecasting is different, because for this durable the forecasting is mainly on the basis of what is that new demand going to come and what is the replacement demand? Whereas in case of non durable, the demand changes due to all these factors and the forecasting has to be done when there is a change in the income the forecasting has to be done. What happens when the social changes, the forecasting when the age changes, the forecasting when the education level changes and also the occupation of the consumer? The second categorization is on the basis of the capital goods. Here typically the nature is great demand, because the capital goods is get the capital good is used to get produce the consumer goods. So, if there is a demand for capital goods that comes from the derived demand from the consumer goods.

And that is why this forecasting of the capital goods, demand for the capital goods generally that helps in the long term growth other than the short term whatever other than the short term assessment rather than it helps in the long term growth. Now, these are the

states for the demand forecasting, because the demand forecasting is a it is a, if you look at it is a very adjustive process.

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And these are the following are the steps, the typical steps for a systematic demand under forecasting. Now, what is the first step? First step is to understand the objective. Now, how to what is the objective for, what this forecasting is being done? Whether to know the inventory, whether to know the demand, whether to understand the time, whether to understand the about the product, whether to understand the, whatever the dimension they want to know. We for the first things is to understand the objective why the forecasting is being done.

The second is determining the time perspective means whatever the goal within what time period this goal has to be achieved. So, determining the time perspective whether it is a short term, whether it is a long term. Then understanding a identifying the customer and segment like if the product is about the younger generation, the customer segment has to come from the younger generation. If the customer segment is from the working people, if the product is for the working people, the customer segment should be the working people. If the product is for the kid then basically we have to identify the parents who is having the small kid.

So, the first is to understand the objective, second is to determine the time perspective and third is to understand and identify the customer segments. Then after identifying the

customer segment next task come as the identifying the major factor that influence the demand forecast, because whatever factor that influence the demand forecast, we need to moderate we need to (()) that. And that is how we need to identify the major factors that influence the demand forecast. After doing this determines the appropriate forecasting technique, what is the appropriate forecasting technique to forecast specific about the specific product in a specific time period and with a specific customer group. And finally, after determining and identifying the appropriate forecasting technique, we need to do the estimation and interpretation of the result

So, these are the steps generally being followed when it comes to the level of forecast when it comes to do the forecasting, understanding the objective, determining the time perspective, understand and identify the customer segment, identify the major factor that influence the demand forecast, determining the appropriate forecasting technique and finally, the estimation and interpretation of the results. So, there are two methods of demand forecasting; one that is subjective methods of demand forecasting and second there is a quantitative method of demand forecasting.

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The slide is titled "Managerial Economics" at the top. Below the title, the main heading is "Subjective methods of Demand forecasting". Under this heading, there is a bulleted list:

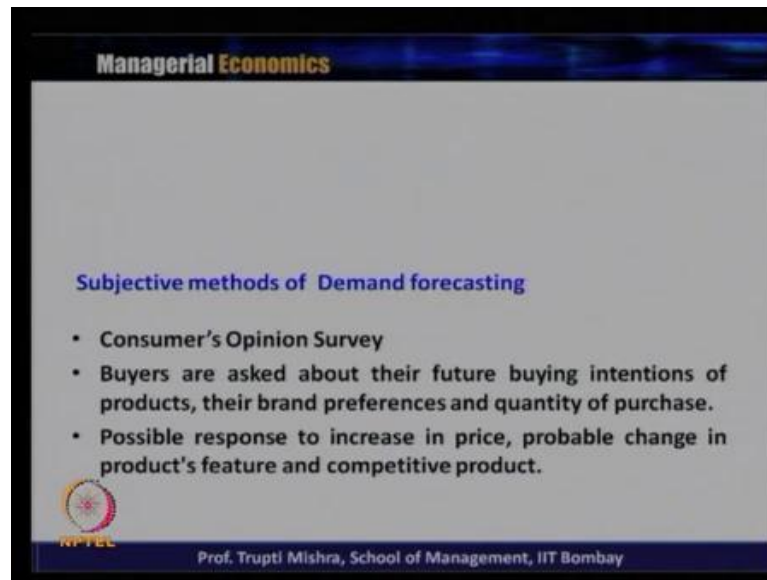
- Deals with
 - What do people say
 - What do they do

Below the list, it states: "Useful in forecasting for new product or new market for which no past data available." At the bottom left, there is a small circular logo with the text "NPTEL" below it. At the bottom right, the text reads "Prof. Trupti Mishra, School of Management, IIT Bombay".

This subjective method of demand forecasting also known as the qualitative methods of demand forecasting and this basically deals with two question, what do people say and what do they do? So, this qualitative method of demand forecasting generally depends on two question or deals with two question what do people say and what do they do? And

this is generally this subjective method or the qualitative method of demand forecasting is useful in forecasting the new product new market for which there is no past, past data available or no information available.

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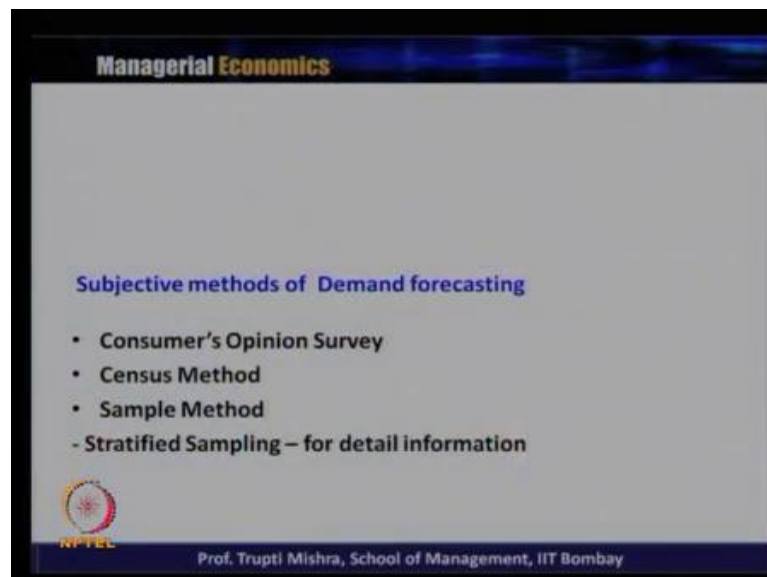
Under this subjective method of forecasting the first method is consumer's opinion survey. Now, what is this consumer's opinion survey? As the name suggests the buyers ask about their future buying intention of products there are brand preferences and the quantity of purchase. So, generally here a survey is conducted and the survey is conducted among the buyers or among the potential buyers. Now, what is the question being asked to them what whether they are going to buy this product in the future or you can say that what is buying intention of this product in the future. If they are buying this product, which brand they will prefer and what is the quantity they are going to purchase? So, the first question is whether they are going to buy this product second is if they are buying this product which brand they are going to buy? And second if there is after identifying their brand, what is the amount they are going to buy? And also additional apart from this three question, buyers are also asked about some additional information like if the price of this typical brand is going to increase are you still going to buy the product?

Or your shift to buying some other product or are you still going to buy the same quantity or you are going to buy a different quantity? So, the possible response to

increase in the price with respect to the quantity, with respect to the brand, probable change in the product picture like here the question comes as you like the product or you want any feature to get changed with this product? So the or the other question can be if the company is changing the feature of the product are you still buying this product or you are shifting it to a other brand or you are changing your quantity if the product feature is getting changed?

And what is their response with respect to the competitive product whether you feel any product is better this then this product, what you like about this product? So, in this case of consumer opinion survey the first question is being asked first three question is what is the whether they are going to buy this, if they are going to buy this which brand are they going to buy and what is the quantity they are buying? And apart from this also there is some additional information they ask in the consumer opinion survey about the possible response to increase in the price, probable change in the product features and also the competitive product. So, this consumer opinion survey is done in 2 methods; typically the survey is done in two methods. One is census method and the other is the sample method.

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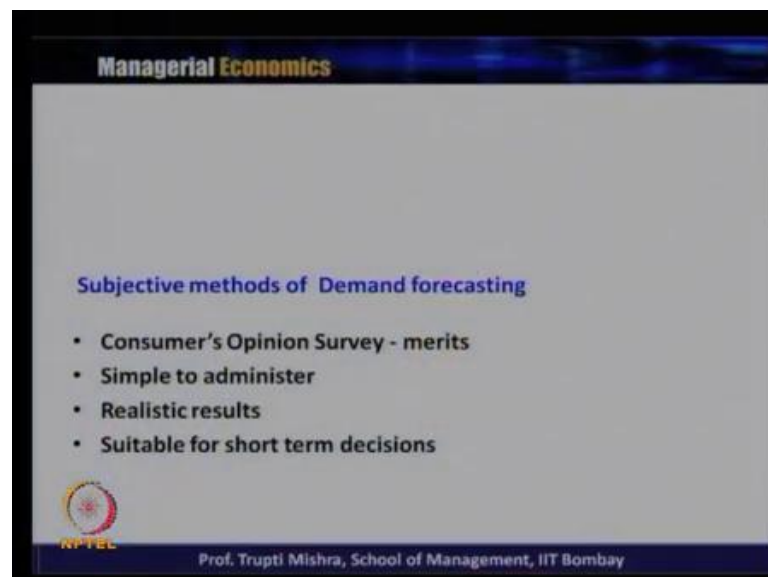


As the name suggests in case of census method, the entire population is being considered. So, if you feel that the consumer group is 100 people here the information will be collected and the survey will be conducted with all this 100 people. But in case of

sample method, a representative of this 100 will be taken the entire 100 people will not be taken, the entire 100 consumer will not be survey rather out of this may be 20 percent 25 percent of people from this represented sample will be chosen. And they will be taken under the survey will be taken on them and on the basis the estimation will be done. So, census method is one where the entire consumer group is taken in to the survey and sample method is one where the representative sample of the entire group will be taken for the survey.

So, consumer opinion survey if it is used if it is the small group generally they use the census method, but which is time consuming and also costly. Otherwise, they take a sample method which is generally deals with the representative sample and here the challenge is to identifying the representative, proper representative sample will give the insight about the entire consumer group. Stratified sampling is being followed if there is some detail information required about the product, otherwise the census method and sample method is generally used in case of the consumer opinion survey. Now, what is the merits of this consumer opinion survey?

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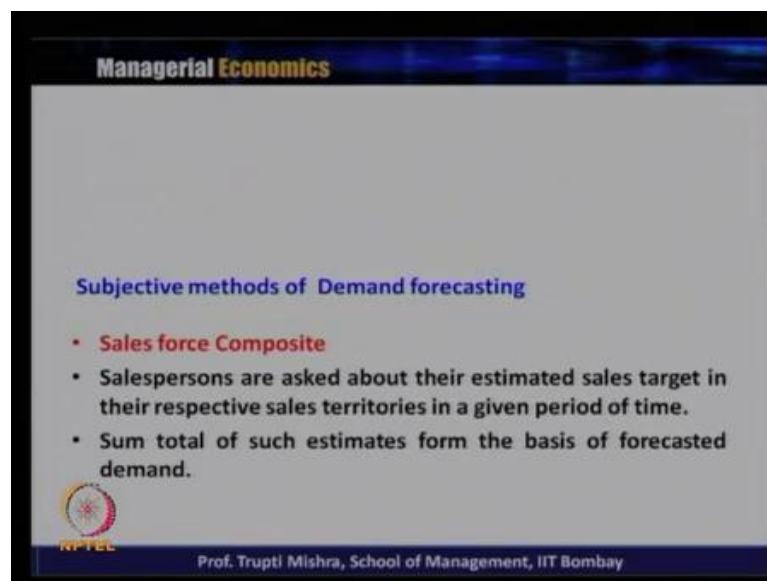


It is simple to administer just prepare the questionnaire based on whatever the information require. On that basis, the question can be framed and you have to go meet the consumer to know the answers or to know the response. It gives realistic results, because you are meeting the person who is actually buying the going to buy the product

and generally suitable for the short term decisions. And what may be the demerits here in case of the consumer opinion survey? If you are going to follow the census method, generally it is costly, it is time consuming. And when it comes to the consumer opinion survey the one more demerits also the way they are responding to the question also at time period and when they are buying.

There may be the change in the thought there may be the change in the way they are buying it or their buying behavior. And in the case the consumer opinion survey will not help in the forecasting the demand. If the behavior has to be change, same during responding the question. And also when they are actually buying it then only it will be it will be helpful for demand forecasting otherwise it will not be helpful. Then we will talk about other method of subjective demand forecasting that is generally the sales force composite.

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Subjective methods of Demand forecasting

- **Sales force Composite**
- Salespersons are asked about their estimated sales target in their respective sales territories in a given period of time.
- Sum total of such estimates form the basis of forecasted demand.

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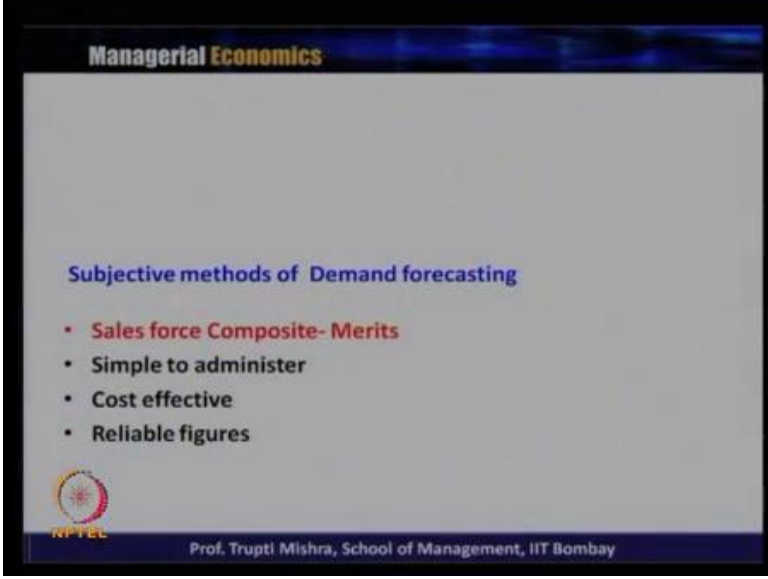
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And what is sales force composite? Here the sales person are asked about their estimated sales target in their respective sales territory during a given period of time. And sum total of such estimate form the basis of the forecasted demand. So, here it is the next level rather than the consumer here rather than going to each consumer in this method generally the sales person will be asked, what is their sales target? Because when the sales person is identifying this sales target, that is on the basis of the consumer demand.

So, if you take the sales target that is nothing but the consumer demand in the specific time period in a specific reason.

So, the sales person are asked to about their estimated sales target in their respective sales territory in a given period of time and that will be taken together to estimate the form of the basis of the forecasted demand. So, here suppose there are 10 sales person they will ask what is your estimate of sales target in this year for the given period of time in this particular year in this particular segment. If that gives that is the total consumer demand and we can say that this is the forecasted demand, but what are the again challenges over here? May be it is easy because we are not targeting each and every consumer who is using or going to buy this product, rather we are, we are targeting the sales person who, sales person who itself represent may be the 1000 consumer or the 2000 consumer. And they gives a better picture when it comes to that what will be the consumer demand. So, it is simple to administer because you are not going to one to one, it is also cost effective, because the number gets reduced.

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Subjective methods of Demand forecasting

- **Sales force Composite- Merits**
- Simple to administer
- Cost effective
- Reliable figures

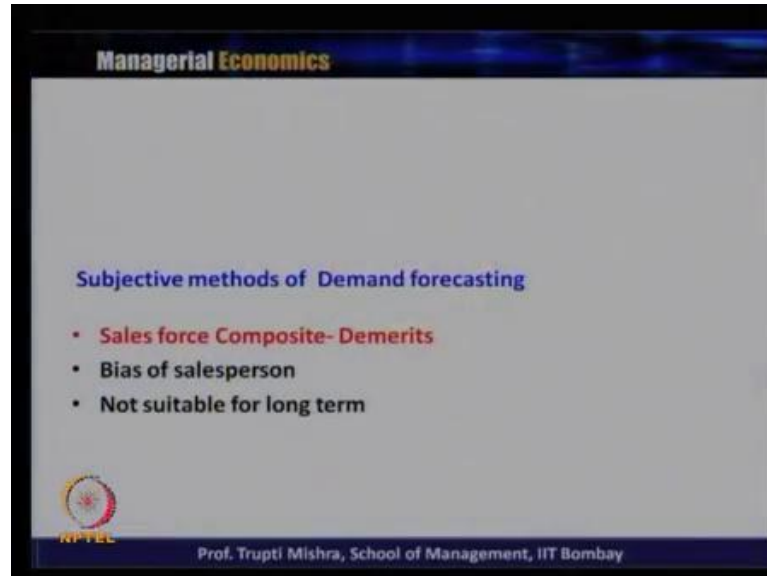
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So, the survey when the survey is being done the number comes down and the cost effective. And it gives more reliable figure because since the person who is getting the interview is the sales man, and sales man they have more information about the buying behavior. How the consumer when they are responding to something whether this is

actually; this is their buying behavior whether there is a biasedness or what. And what are the demerits of sales force composite?

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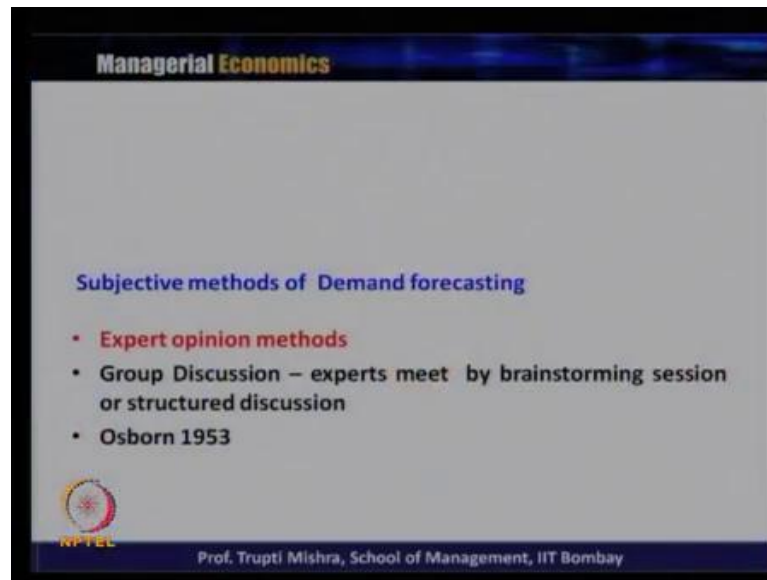


Because since this is the one person who is representing the entire consumer group whether it is 1000 consumer or 100 consumer or group of consumer. If the sales person is biased, the entire consumer group is biased, and in that way it will not be the true representation of the consumer demand. And that is why the demand forecast is not going to be proper. But if the sales person is optimistic the consumer demand will be optimistic, but it may not happen when it goes to the individual consumer is not optimistic. So, as you know if the sales person is optimistic we need to assume that there are 1000 consumer, all of them they are optimistic

And similarly, if the sales person is pessimistic, we have to assume that the entire 100 100 consumer group or 1000 consumer group they are also pessimistic and in that way the estimate of the consumer group changes and demand forecasted changes. So, if it is optimistic generally we will lead into a situation of high forecast and if it is pessimistic we will lead to a situation of a low forecast. This is not suitable for the long term and also this is not suitable for the, when you do the aggregate for all the recent, because sales person is the income of that particular territory. So, taking their estimates, we need to understand that this may not be the total consumer demand. So the careful identification of the sales person representing all the territory that will only give the true

picture of the consumer demand or the forecasted demand. Otherwise it may be the regional based demand, it cannot be the macro sense it cannot be the demand for across all this territory. Then there is one more method known as the expert opinion method.

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Subjective methods of Demand forecasting

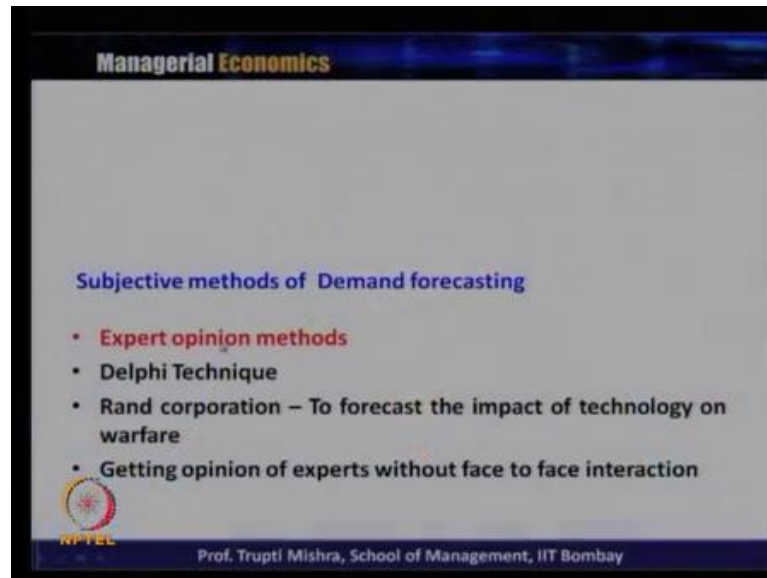
- **Expert opinion methods**
- Group Discussion – experts meet by brainstorming session or structured discussion
- Osborn 1953

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And what is expert opinion method? Here generally the expert is being chosen they are called they have called for the group discussion. And in the group discussion either it is by a brain storming session or for a structured discussion. And through that their opinion will be being asked for specific, whatever the objective whether it is about the, about the demand forecasting or about the segmentation identification of the new segmentation identification of the new market demand for the existing product or may be the demand for new product. Whatever the objective on that basis the group discussion will be moderated. And the group discussion will be either in the form of brain storming session or in the form of the structured discussion.

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This expert opinion method is developed by (()) in 1953 and it has actually, if you look at it has 2 techniques, the expert opinion method one is group discussion where the experts meet where they do the brainstorming session or the discussion and their opinion will be taken to forecast the demand. And second is the Delphi technique and the Delphi technique is developed by rand corporation. And here this rand corporation they developed this technique post cold war to forecast the impact of technology on the warfare

And here Delphi technique how it is different from the group discussion? Getting the opinion of expert without face to face interaction, basically the expert will be chosen and there will be and it is not that they have to meet in a group, individually they can give their opinion not on the basis of face to face interaction and on the basis of their opinion the demand will be forecasted. So, in case of expert opinion method again it has subdivided in to 2 methods; one is group discussion whether the expert meets do a brain storming session and give their opinion and on that basis of opinion the demand forecasting is done. And second is the Delphi technique and in case of Delphi technique the opinion is getting, the opinion is received not through the face to face interaction. And once they get the expert opinion or the basis of the expert opinion they do the estimate of the demand forecasting.

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Subjective methods of Demand forecasting

- **Expert opinion methods - merits**
- Experience of experts
- Time and resources – not required

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What is the merits of the expert opinion method? The experience of the expert generally helps in getting the realistic figure. And there is always and there is always a the whatever the requirement of time and resources that is not valid here, because when you do a survey unit time or also you need resources. But in case of this is just a matter of one when you do the group discussion you call the expert and you have a session, or if it is just the expert opinion, you go meet the person get the opinion and come back. So, in this case the time and resources is not required and also the experience of expert helps in getting a more realistic figure.

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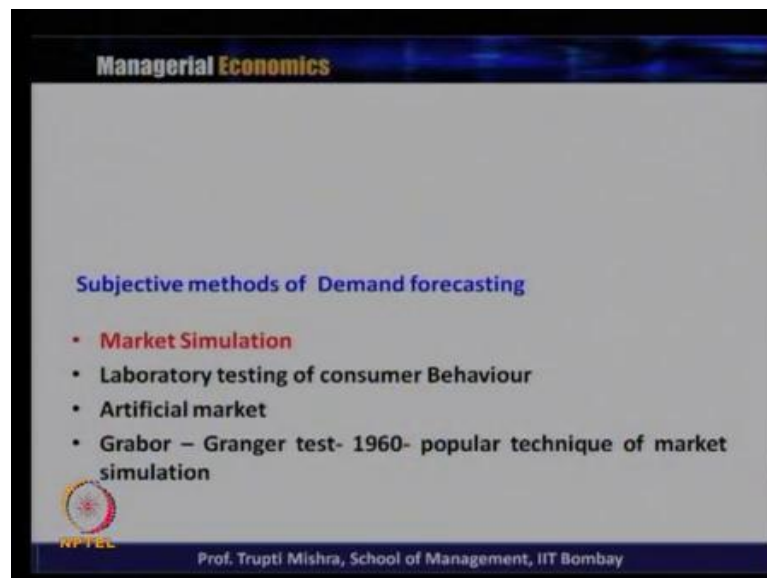
Subjective methods of Demand forecasting

- **Expert opinion methods - Demerits**
- Bias
- Risk of loss of confidential information to rival firms

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What are the demerits? Here the challenge is to again identify the rational or the, may be the proper expert to understand the objective of the firm, or the objective of the typical producer why they are doing the demand forecasting. If, if the expert is biased, then the demand forecasting goes for a toss because the entire demand forecasting will be biased. And the second demerits over here is that there is a risk of loss of the confidential information to the rival farms. Because if it is going to the expert, you are sharing some information and if you are sharing some information in the public domain, the possibility is that there is loss of this confidential information of this typical farm to the rivals which is not suppose to be in the public domain or which is not suppose to be revealed.

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Then the other kind of subjective method of demand forecasting is market simulation. And in case of market simulation it is like laboratories testing of the consumer behavior. Here the artificial market will be developed and people artificial market will be developed. And there will be simulation on the basis of the, how the buyers they are going to behave or they recruit the consumer behavior in a specific time period. They will be given the money to do the buying, do the purchases, and on that basis they will do the record the buying behavior and they try to make it a artificial market. So, this typical simulation is developed by Grabber Granger in test at 1960 and this is a popular technique of the market simulation. And here if you look at how it works.

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Subjective methods of Demand forecasting

- **Market Simulation – merits**
- Consumer behaviour
- Helps in Absolutely new product

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Generally, the artificial market is created and the buyers will do their purchases. And on the basis of when they are doing the purchases their buying behavior their consumer behavior will be recorded and that will help in the market simulation. What are the merits? The merits is that, this is the first kind of method where the consumer behavior is being captured in the situation where they are doing the buying. And generally it helps in, helps in doing the forecasting for the absolutely new product, because consumer get acquainted with this, and when they see the product on the basis when buying behavior changes and that is a good way to do the demand forecasting.

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Subjective methods of Demand forecasting

- **Market Simulation – Demerits**
- Considerable amount of time an money
- Behave differently

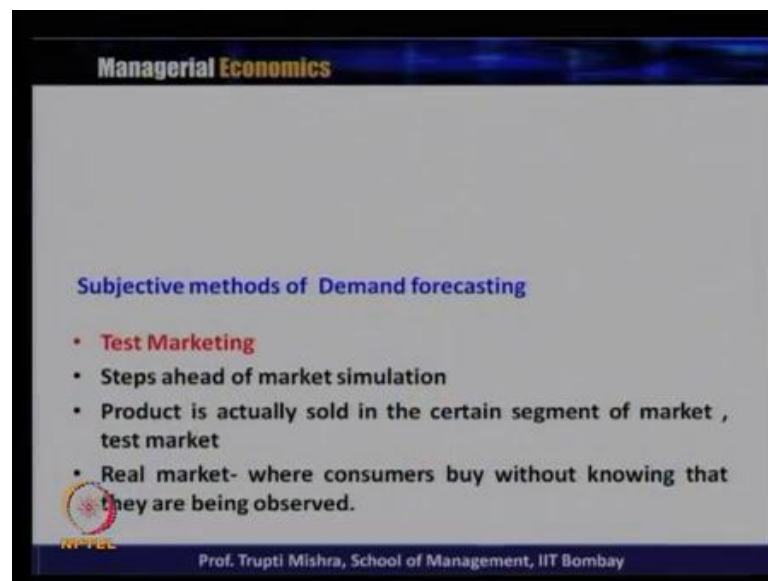
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Demerits; there is a requirement of the considerable amount of time and money. And it may happen that the way when the artificial market the way they are behaving they are not behaving in the same way they are going to the real world scenario or the market scenario. So, the possibility is that the buyers behavior differently and in that case the entire demand forecasting is on a different direction not in the proper direction either it go on a high direction or go on a low direction

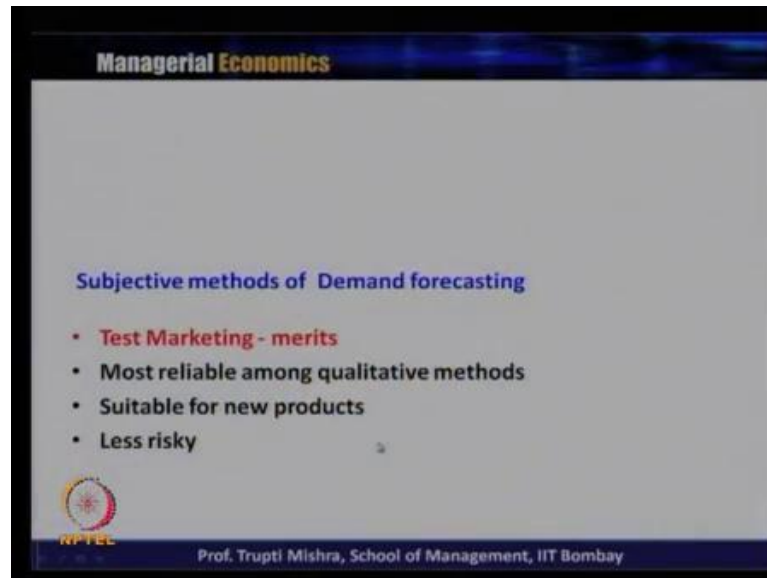
Then there is subjective method of demand forecasting that is test marketing. This is one step ahead of the market simulation and here actually the rather than creating a artificial market, it is in the real market generally the buyers do the purchases without and their behavior gets recorded. And here the purchase behavior and here the buyer does not know that their behavior is getting recorded.

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So, this is step ahead of the market simulation where we took the case of a artificial market, but here it is not the artificial market rather it is the real market. Product is actually sold in certain sector of the market, which is known as the test market. And where the consumer do the purchases consumer buy without knowing that they are being observed. So, in this case typically in the test marketing, the test market is developed consumer they do the purchases and the consumer behavior or the buying behavior is recorded. And when they are doing the purchases they are not aware of the fact that they are being observed or they are being recorded.

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Subjective methods of Demand forecasting

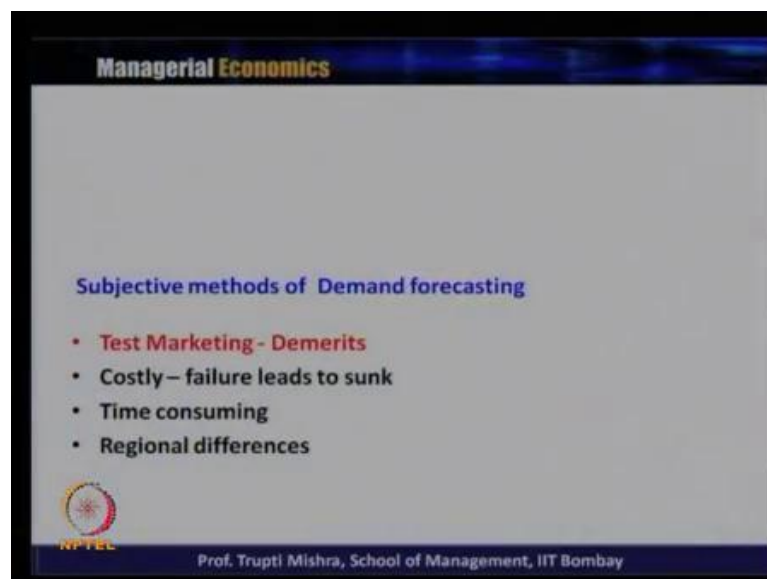
- **Test Marketing - merits**
- Most reliable among qualitative methods
- Suitable for new products
- Less risky

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So, this is a real market and this is generally called as the test marketing and this is more reliable among the qualitative methods, because it is a kind of real world scenario where the buyers are doing the purchases. And also they have no information that their purchased behavior is going to get studied or their purchased behavior is going to get observed. And that is why this is more reliable than the qualitative methods and suitable for generally a new product. And there is a less amount of risk, because the buyers' behavior is usually in the market not in the artificial market, it is costly.

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Subjective methods of Demand forecasting

- **Test Marketing - Demerits**
- Costly – failure leads to sunk
- Time consuming
- Regional differences

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So, if when they are launching a new product they are test marketing, the entire procedure is very costly. And if the product is not doing well the failure of the product generally leads to the sunk cost. So, it is very expensive and they have to plan carefully if they are doing test marketing at least some level of RND is required to know that whether the product is going to have some potential in the market or not. Because otherwise planning a product, producing a product, doing a test marketing and if it goes in the negative direction, the failure of the product leads to the sunk. It is time consuming and when we do the test marketing, we do it in a particular location, the purchase behavior is also recorded in the particular location.

So, there may be a regional difference which cannot be generalized into the entire market, because the behavior of the consumer in one segment of the market may be different from the another region of the market so this cannot be generalized. So, we will continue our discussion on this demand forecasting, typically on the quantitative methods of forecasting in the next session.