Sales and Distribution Management
Prof. Sangeeta Sahney
Department of Vinod Gupta School of Management
Indian Institute of Technology, Kharagpur

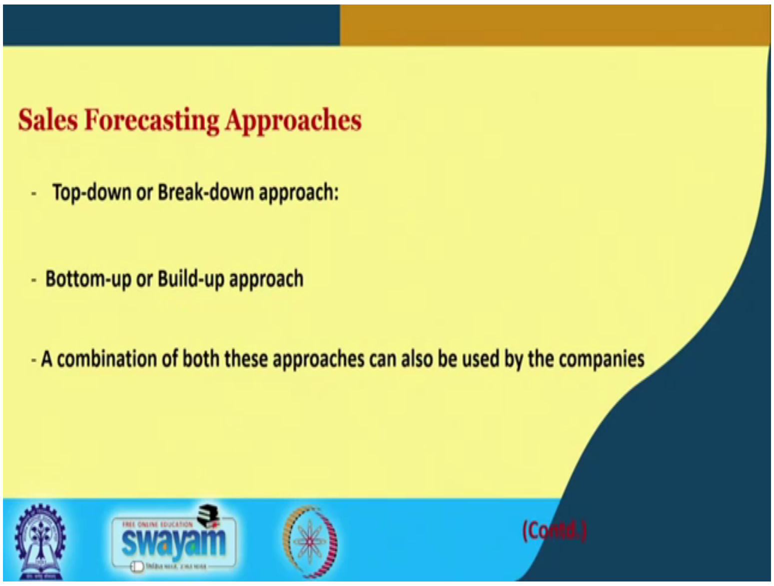
Lecture – 14
Planning, Sales forecasting and Budgeting

[FL]. Today we will be discussing little bit more on sales forecasting and budgeting. Today, we will be doing lecture 14, which is a part of the third module of this particular course called sales and distribution management. In the previous lecture, we have given a brief introduction on sales forecasting, where we spoke about the meaning of sales forecasting, its usage, it's relevance to different departments in an organization. And we also spoke about the types of sales forecasts. Today, we will be moving beyond and we will be discussing both sales forecasting and budgeting.

(Refer Slide Time: 00:45)

In this particular lecture 14, we shall be talking about sales forecasting approaches, so sales forecasting methods. And we should also be speaking about how to improve sales forecasting for an organization, how to come up with very accurate numbers or you know numerical digits with respect to sales forecasting. So, we shall start with the approaches, and then we will move onto the different methods and then we will see how should organizations developed a sales forecast which would be apt which would be something very accurate, so that the planning with respect to different departments can then be undertaken.

(Refer Slide Time: 01:25)



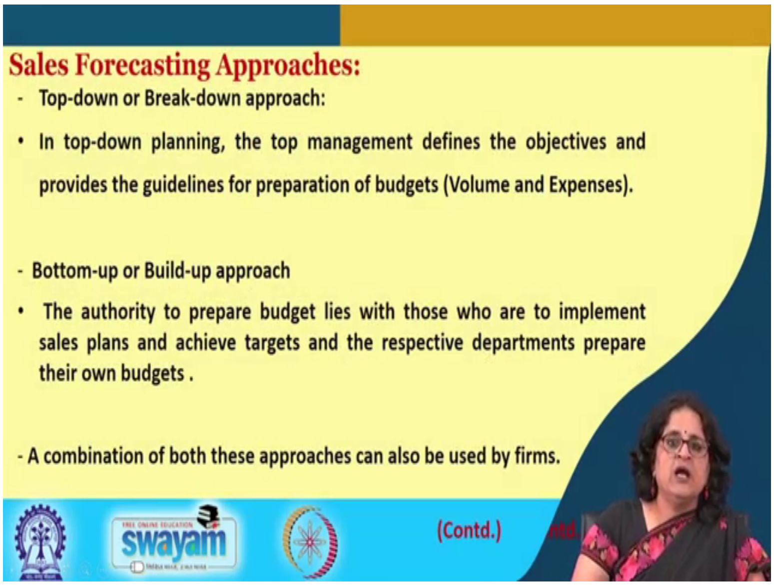
So, let us first start with the sales forecasting approaches. Now, when we talk about sales forecasting, we yesterday discussed that it is a way, it is a basically delineates or explains what the likelihood; what would the likely sales of that an organization would be able to earn either in terms of product or in terms of geographical territory or in terms of the time horizon be it short range, medium range or long range.

So, it basically you know gives in an idea about the kind of you know sales estimates which an organization could actually expect to earn for a particular product, in a particular geographic territory in a particular time period. We have also yesterday discussed the different you know concepts like you know the sales potential, the sales forecast, the company sales potential, the company sales forecast. We also talked about the sales quota and the budget.

So, we will now move forward and we will see what could be different approaches which could be adopted so as to obtain you know accurate or you know sales forecasts for a product or in a defined time period, in a defined geographical territory or a unit. So, what are the different kinds of approaches that may be adopted? Now, the first approach that we speak of is a top-down approach or a break-down approach the second is a bottom-up approach or a build-up approach, and the third is you know a combination of both.

So, when we talk about sales forecasting approaches, broadly speaking there are two approaches, the top-down approach which is also called a break-down approach; and a bottom-up approach which is also called a build-up approach. Of course, companies very often use both together, and this gives us the third approach which is the combination of both the top-down or the breakdown approach or the bottom-up or the build-up approach.

(Refer Slide Time: 03:28)



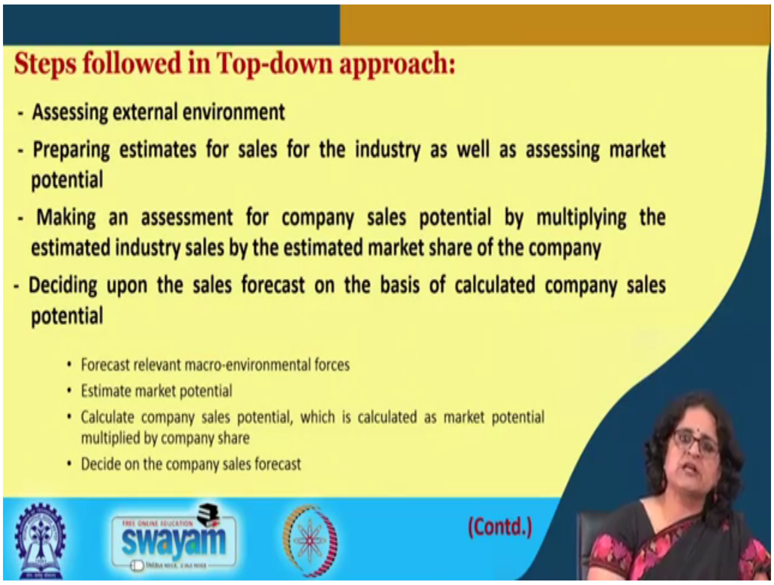
Now let us discuss what the top-down or breakdown approaches, and what the bottom-up or the build-up approach is. Now, in a top-down approach what happens is that the top management defines the various goals, the various sales objectives, the targets, and provides guidelines for preparation of budgets accordingly. So, the main the task here is actually done by the top management, and the long range plans medium range plans are further percolated down right to the bottom or to the lower level sales team or the grass at working at the grass root or the field selling team that actually accomplish these objectives. Of course, the top management defines these objectives, defines these goals which are very broad and the day today strategic planning lies with the middle and the lower level sales management team.

Also while the top management defines the broad goal, these are then for the broken down zonal original wise or branch wise, area wise so forth. But the activity or the task of forecasting is undertaken by the top management, who defines the objectives and provides the guidelines for the preparation of the budget, the second for the preparation of the forecast and correspondingly the budget. So, it specifies the sales volume it also specifies the selling expenses that could be allowable. And of course, all this is again than keeping in mind the net profitability or the desired profitability by a company.

The second approach which we have is the bottom-up or the build-up approach. And here the authority to prepare the sales forecast and the budget lies with those who are to implement, the sales plan and achieve the targets, and the different departments prepare their own budget. So, the authority to prepare the broad guidelines lies with those who are actually to implement these sales plans and achieve targets, and the different departments prepare their own budget. So, when we talking about the budget here, it has to be made clear that we are speaking both in terms of sales volume to be generated as well as the selling expenses that would be incurred.

Of course, a combination of both these approaches can also be used by the organization. So, in top-down planning the top management defines the objectives and provides the guidelines for preparation of the budget which would actually talk about sales volume and then the selling expenses. Also in the case of bottom-up or build-up approach the authority to develop the budget lies with those who are to implement the plans and achieve the targets, and then the different departments prepare their own budgets again which would specify both the sales volume as well as the selling expenses. A combination of the two can also be used.

(Refer Slide Time: 06:32)



Now, how do companies come up with the top-down approach, how do they actually you know build their sales forecast based on the top-down approach? First is assessing the external environment. To start with as we just said that the top-down approach involves top management. And the first thing that the top management actually looks at is the various opportunities and threats. So, it looks at avenues of growth, opportunities for growth, it also looks at threats which a particular business organization may face.

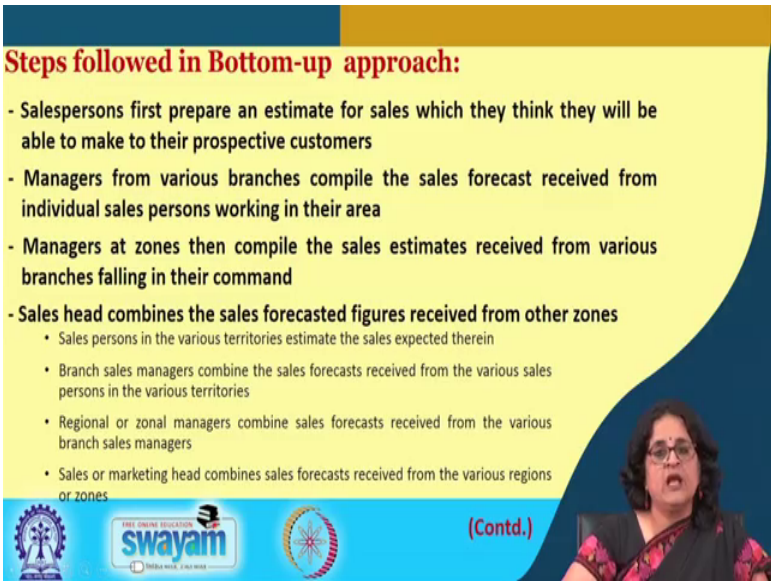
So, keeping in mind this keeping in mind that the both the opportunities and threats are something which are very vital and need to be taken care of, the first thing that the top management does while of you know you know using the top-down approach or the breakdown approach is to access the external environment. There after it prepares estimate for sales for particular industry and also assesses the market potential. So, it gives very macro picture it uses a very macro picture to see industry sales growth as well as assesses the market potential.

Thereafter, it makes an assessment of the company sales potential by multiplying the you know industry sales, the estimate industry sales by the estimated market share of the company, and then it decides on the sales forecast on the basis of the calculated company sales potential. So, with the top management start with the very macro approach to first study the opportunities and the threats on the external environment. And it looks at you know estimated sales for the industry, it studies the estimated sales for the industry, it prepares estimates for the industry sales as well as assesses the market potential.

Thereafter it takes a more micro approach which is more company specific. And so it makes an assessment for the company sales potential which it does by multiplying their estimated industry sales by the estimated by multiplying the estimated industry sales by the estimated market share of the company. And thereafter, it decides on the sales forecast on the basis of the calculated company sales potential.

So, what it involves is one forecasting the relevant macro environmental forces which is the external environmental forces looking at the opportunities and threats, and then estimating the industry sales always the market potential. Once it is decide taken into you know estimated the market potential, it then has to calculate the company sales potential which as I said is calculated as a market potential multiplied by the company share, company market share and there after it decides on the company's sales forecast. So, this is how you know the top management uses the top-down approach or the break-down approach and calculates you know sales forecast, and tries to do it in an apt manner in a very accurate manner, so that further planning can be done.

(Refer Slide Time: 09:43)

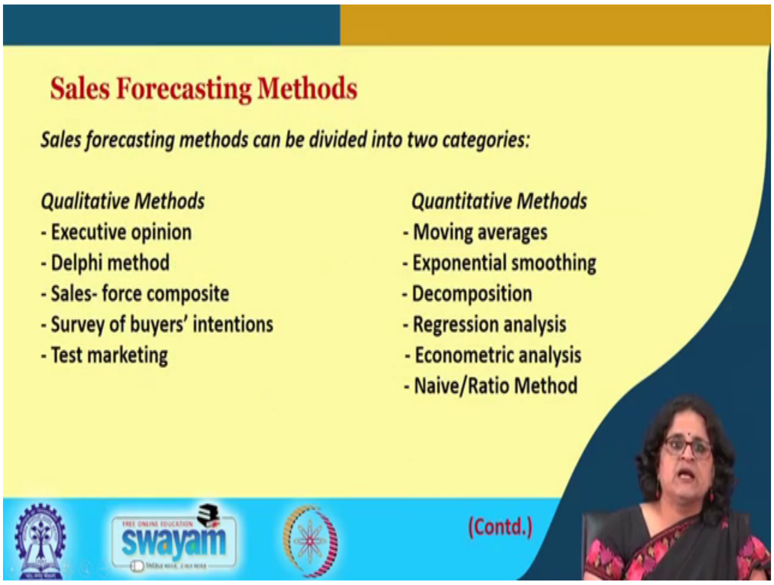


Now, there is another approach which is the bottom-up approach or the build-up approach. In the case of the bottom-up approach or the build-up approach, the sales person first prepares an estimate you know he prepares an estimate for the sales which they think they will be able to you know make to their perspective customers, they will be able to earn the kind of sales. So, they make an estimate of the sales which they feel that they would be able to earn. And then a managers from various branches are compiled the sales forecast received from the various sales people working in their area. The managers at the zone then compile the various sales forecast which they have receive from the different branches for we know under their command. And the sales head then combines the sales forecasted figures received from the various zones.

So, what it involves is that the sales persons in the various territories, they first estimate their expected sales in their own territories. Thereafter and they report to the branch manager. The branch sales managers of the different branches combine the sales forecast received from the various sales people in the various territories, and they report the same to the zone or to the region. The regional managers or zonal managers then combine the sales forecast received from the various branches or from the various branch sales managers. And then the sales or the marketing head combines the different figures which is received with respect to the sales forecast from the various regions.

So, so, so, it is something which is you know which moves from the below where people at the branch you know sales people at the branch report what their estimates could be to the branch head, the branch heads collate the same from the various sales people and report to the zonal manager or to the regional manager. The regional manager or the zonal managers collates these figures which they received from the various branches you know, and they then report to the sales or the marketing head. And the sales or the marketing head then combines the various forecast which is received from the different zones or from the different you know regions into a into a figure, so that is how bottom-up approach is used.

(Refer Slide Time: 11:53)

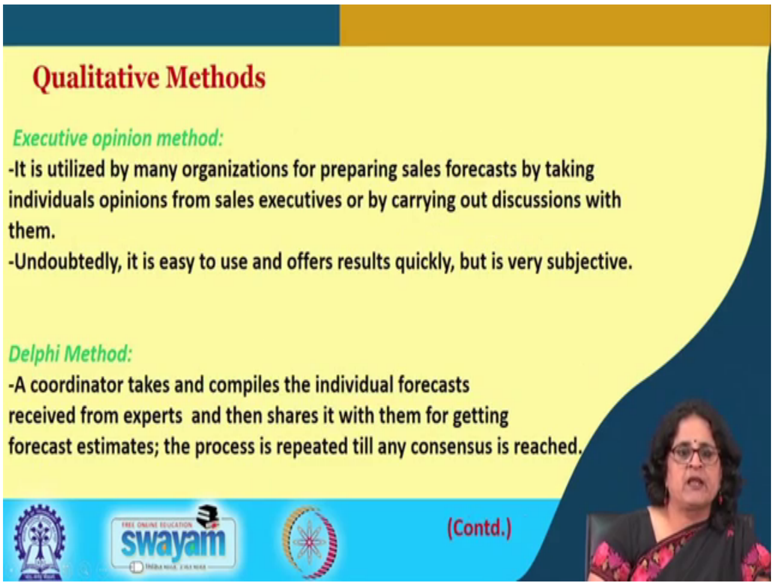


Now, let us now come to the various methods for sales forecasting. Sales forecasting methods can be divided into two broad categories, quantitative methods and qualitative methods. The quantitative methods are different from the qualitative once at the sense they are more numeric they are more number oriented. And the other hand, and quantitative methods are also based on quantitative data. On the other hand, qualitative methods are subjective they are based on expert opinion they are based on secondary data and expert opinion. And so you know they are less number oriented, they are less numeric in nature and they use a very different approach. Of course sales forecast ultimately will be a numeric or a number yeah, but the approach used to calculate the two is very different.

Quantitative methods use data which is very you know number oriented and numeric and qualitative methods use opinions, they use h you know opinions from customers opinions, from experts, from share partners, and based on past experiences, based on past based on opinions based on attitudes of a customer of a experts sales forecast is determined. So, let us discuss the qualitative and the quantitative methods.

But what are these qualitative methods, qualitative methods could you know we have the executive opinion method, the Delphi method, the sales force composite method and the survey of buyer's intention method and of course, test marketing. So, these are qualitative methods of sales forecasting. We also have the quantitative methods which are moving averages, exponential smoothing, decomposition, regression analysis, econometrics, and Naive or the ratio method. So, let us discuss these approaches one by one.

(Refer Slide Time: 13:46)



Now, a first let us talk about the executive opinion method. Now, many organizations they prepare their sales forecast by taking opinions from sales executives. And by indulging in discussions with them, they take opinions from people working in at the grass root, working in different branches, working in different territories, they take you know feedback from them with respect to a particular companies products, competitors products, customer needs wants preferences changing you know trends or changing needs wants and preferences. So, they take this feedback from them.

They also take you know based on this feedback they ultimately arrive at a sales forecast which they which would tell them the kind of sales volume and the kind of selling expenses that would be incurred in a particular territory in a particular time period by sales people working in those area. So, so, so, it is this is what we refer to as the executive opinion method. Now, many times the opinion here is not only taken by the sales people, it could also be taken by sales managers, owe by very senior managers who were once upon a time you know based in a particular branch or a particular region or particular zone. And these senior people are asked further opinion about with respect to customer priority is there, the needs wants preferences there in those geographical territories or those branches or those zones.

And based on the experiences, based on their experiences, the senior managers they give their opinion, and these this opinion is then you know collated and numbers are arrived at with respect to what a sales forecast could be in a particular region, in a particular time period, for a particular products. So, executive opinion method here would involve both the sales people as well as the sales executives at the middle level or even at the senior level.

The second method again a qualitative method for sales forecasting is the Delphi method. Now, in Delphi method there is a coordinator, who takes you know individual forecast who asks for individual forecasts and compiles these individual forecasts which he receives from the different experts. And then its then he then he shares it with them again for getting forecast estimates, process keeps getting repeated till a consensus is reached.

So, in the case of Delphi, the coordinator or maybe the person whose been designated with the task of calculating sales forecast, contacts experts, contacts a people who are who are you know who have knowledge who has skills, who has experience in selling a particular kind of product in particular territories. So, these experts are chosen by the coordinator. And the experts are ask for their valuable opinion with respect to sales of a particular product in a particular territory.

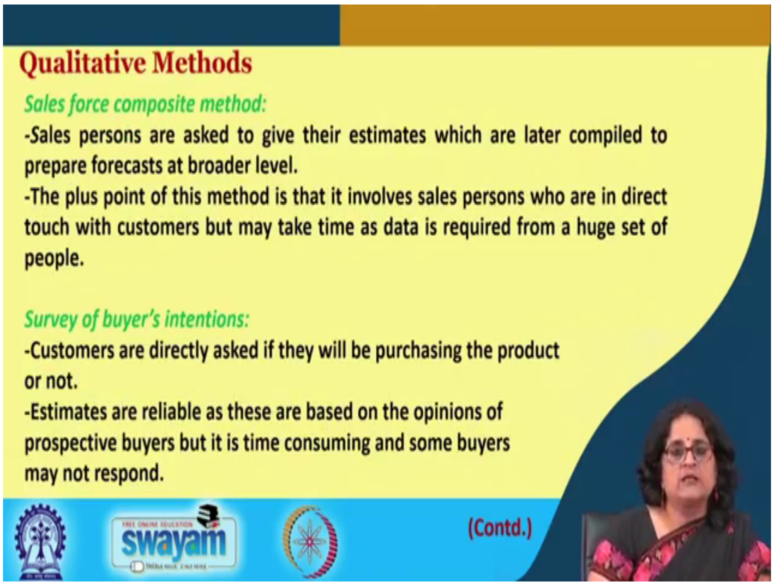
And once these estimates are received from various experts, these are collated by the coordinator. And he may again send them back to the experts for further you know opinion or for further suggestions. And the process is repeated till a consensus with respect to numbers is reached by the different participants or the different experts who have been a part of the sales forecasting method, was being a part of the Delphi method.

So, the process is very iterative in nature. For example, there may be expert who gives a figure which is very positive or very optimistic, another expert may give a figure which is a not so optimistic or no so positive, and another may give something which is a little more pessimist or negative, another may give an opinion which is which is somewhere middle in the range. So, these different estimates are shared with the other say shared with each other again, and as much as possible a try a consensus is tried to be reached between the experts and one particular figure or you know range of within which sale forecast could be you know sales forecast could a particular range is then established where a forecast could lie in. So, this is what we talk of as the Delphi method.

Now executive opinion method as well as Delphi method, they are both very subjective in nature. Of course, in the case of executive opinion method, it is easy to use; results may be obtained quickly because these are people within the company. And they would be more willing to give quick feedback or give quick inputs. However, in the case of Delphi the process as little time consuming. It may take a couple of months two or couple weeks or maybe a few months to arrive at a particular consensus, and so it is a it is time consuming and the slow process.

However, it is estimates arrived in because of the Delphi and because of executive opinion are something which are wise, there is lot of collective wisdom which goes into it. And so these are you know these are popularly used qualitative methods.

(Refer Slide Time: 19:24)



A third is the sales force composite method. Now, just as we said in the previous slide, where we talked about the executive opinion. So, here while the executive opinion is more to do with the middle and the senior, the sales forecast is not to do with the sales people at the field. Sales people are asked to give their own estimates which are later compiled for a branch or for a zone and so forth.

And broadcasts and forecasts are then calculated for broader levels. The positive part or the positive you know point about this method is that it involves sales people who are in direct touch with the customers who are at the grass root, who are a you know who have huge amount of experience in dealing with the day-to-day scenario and the day today market conditions. And so they are in tune with what is happening in the external environment, they know the customer, they know the changing needs wants and preferences, they know the competitor offering. So, so, so this is a very it is a very practical and a very realistic a picture that they can provide.

However, arrive a generalizations, and large data set is required large amount of you know people large number of sales people may be involved in an exercise. And this maybe this may take time and is data would be required from a huge set of people. Another problem with this kind of method is that a people sales force may often give figures which are not very you know realistic in terms of sometimes they may try to show that if the real picture lies with a number x, they would you know given number x minus 10, or x minus 100 so forth. So, that the targets which are expected from them are not very high.

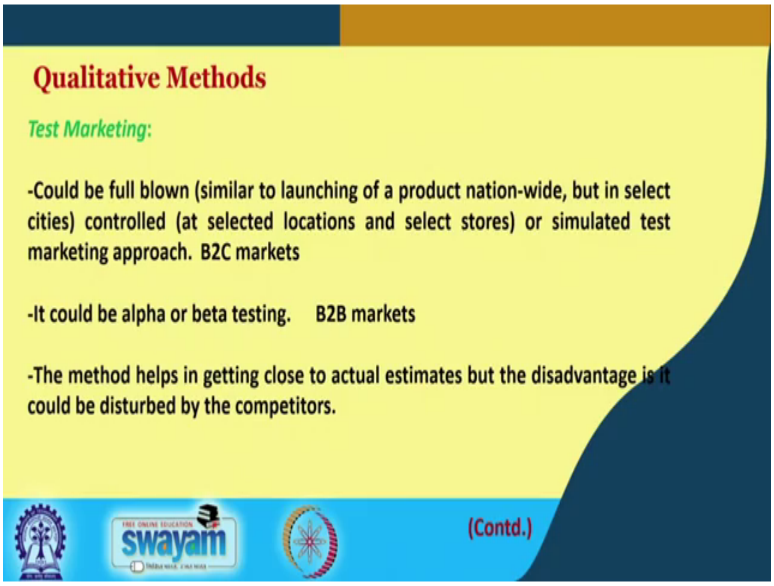
Of course, that is something which has to be taken with the pinch of salt, because the factors that the kind of inputs that the sales force provides a something which is very true which is very realistic. But yes of course, this real is somewhat this realistic a you know data may often be you know brought down you know by them a fearing the fact that if they give the true picture or the true numbers, they may be asked to achieve very high targets which may not always be possible.

There may also fear that some of them may lose their jobs, because it may be thought that there is you know the number of people who are already employed by the organization a sufficient enough to earn you know sales in an I mean even if the sales forecast is low they would not you know give the true picture because they would fear loss of job. So, it could be both ways they could either a shy away from giving the true number because they fear higher targets or they may shy away for giving you few numbers because they may fear lose of loss of jobs. So, in both these cases the sales force may gift bring to light or report findings which are not true or not realistic, but some somewhere finger figures which are low.

Another qualitative method which is used by organizations, survey of buyers intention, where the buyers are directly asked if they would be willing to buy a certain product. So, survey conducted, and buyers are interviewed there, they asked whether they would buy a product or they would not buy a product, whether they intend buying it in the future, if at all when or if in the some the they may also get to know whether buyers would actually be buying or would not be buying, or if they would be buying, how sooner or later is it going to be. So, such estimates are you now give the give inputs into calculating the forecast for the company.

Experts are sorry; estimates are reliable here as these are based on the opinion of the prospective buyers. But again it is a very time consuming exercise and the rate of non-response may be very high. Especially if this is not an interview based, but if it is a questionnaire based lot of people may not even respond to the questionnaire or to the or may not even want to be a part of the survey.

(Refer Slide Time: 23:43)



Another qualitative method which can be used is the test marketing. Now, test marketing here which is generally done for during new product launch could be full blown, or it could be controlled, or it could be stimulated a simulated. Now, first let us talk about what full blown test marketing is. In the case of full blown test marketing, it is very similar to launching of a new product nation-wide, but this is done in very few cities in very select cities, 5 or 6 cities in a particular country are chosen, and the product is launched as if it is a nation-wide launch. And then customer response is studied; and based on this forecasts are determined.

Another a method could be the controlled test marketing. In control test marketing, only selected locations are chosen and within the selected locations only select stores are chosen as subjects of study. So, people who visit the stores are a part of the sample. And based on the people who visit these few stores in these selected locations, sales forecasts are determined.

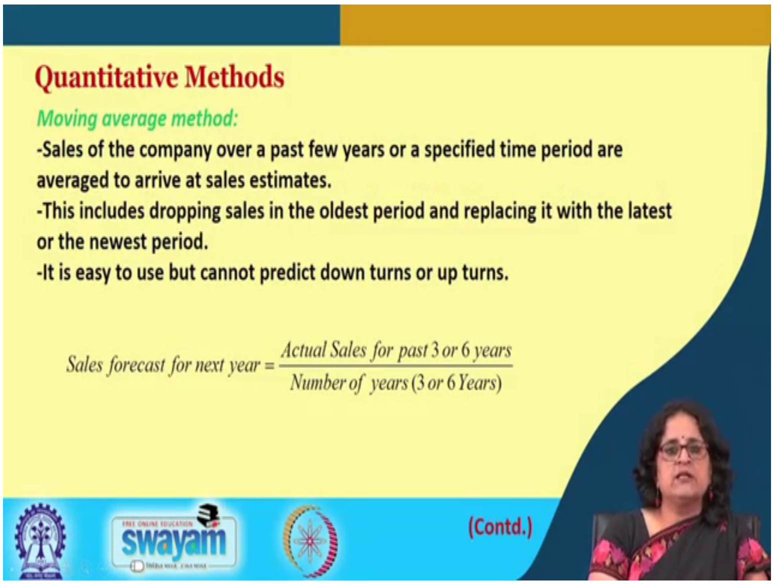
The third is a simulated test marketing approach. And in the case of a simulated test marketing approach 20 or 30 you know prospective buyers are called a product is shown, you know and demonstrated and the customers are queries are you know handled, customer a doubts are cleared. And then of course, it is again require a customer asked whether they would want to buy the product or not by the product, what their reaction is studied.

Now, this kind of a full blown or a controlled or a stimulated test marketing approach is generally used in B2C markets or in business to consumer markets. There is there could be another kind of test marketing which is in the form of the alpha and beta testing which we see more in the case of B2B markets where alpha testing is done while a within the organization itself. And the beta testing is done at the clients end.

Again based on the alpha and the beta testing, companies arrive as says forecast figures. The method test marketing as a method a helps in getting a close to very actual estimates which can be you know, but the problem is that this could of course, be affected by the competitive strategies.

For example, in you know in the case of like for example, in test marketing the product is a kind of launched, and the four p s are clearly you know no not only to the customer per also to the to the competitors who may you know imitate or copy there the mix and with the different marketing strategy, there may be may be ability to gain much more than what the first whoever could do. So, this is a problem with and so the sales forecast that are determined through test marketing may proof to be faulty. So, so that is why test marketing as a qualitative method is often not used alone. It is used with other qualitative and quantitative methods.

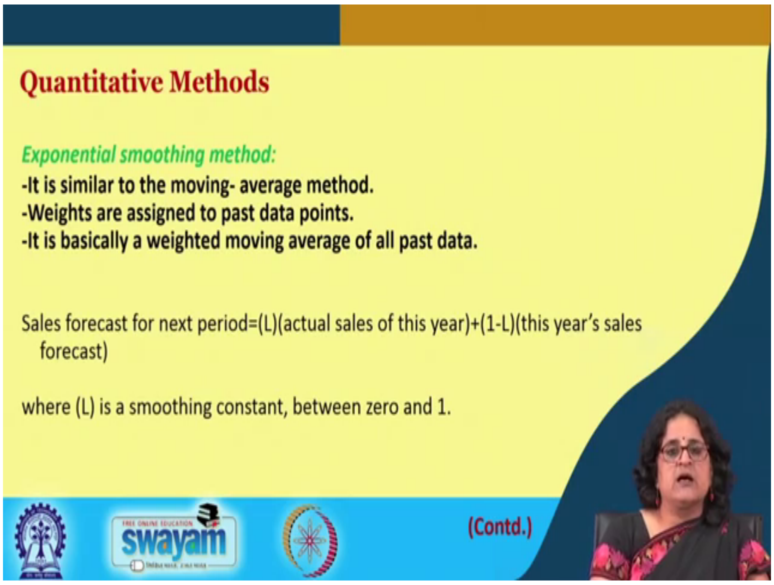
(Refer Slide Time: 27:04)



Now, let us come to the quantitative methods of sales forecasting where the first method is the moving average method, a where the sales of the company over a few past few years of the specified time period or averaged to arrive at sales estimate. So, it includes dropping sales in the oldest period, but and involves replacing it with the latest or the newest period.

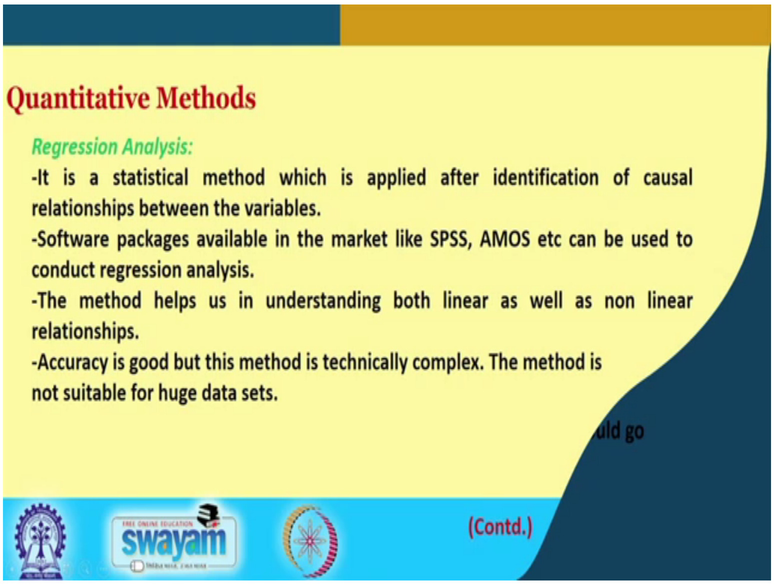
So, so the sales forecast for the next year would be determined by actual sales forecast for the past 3 or 6 years divided by the number of years which could be either 3 or 6 years. And in this way that based on the actual sales of the last 3 years or 6 years based on data which is available with the company sales of forecast for a company could be determined.

(Refer Slide Time: 27:52)



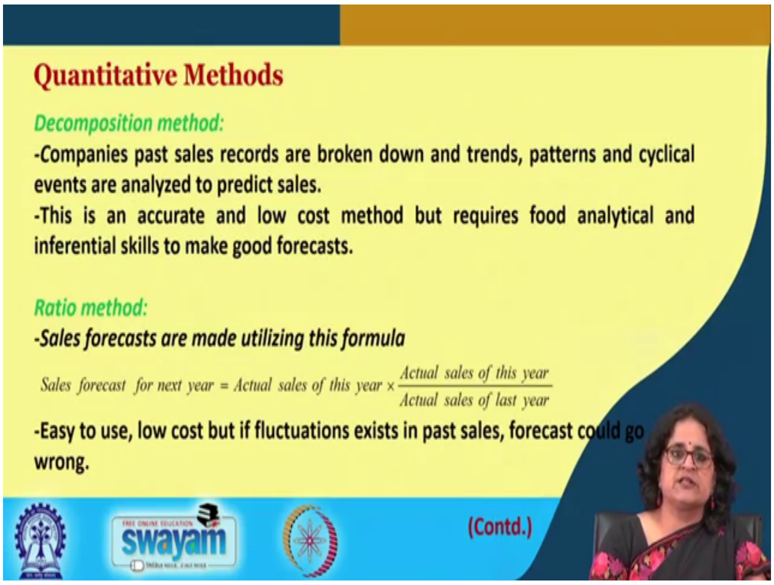
Then, we have the exponential smoothing method which is again a quantitative method; it is similar to the moving-average method. Weights are assigned to the different data point to the past data points and this is basically a weighted moving average of all the past data. So, sales forecast for the next period would be equal to L you know multiplied by actual sales of this year plus 1 minus L multiplied by this year sales forecast, where L will be taken as a smoothing constant a would lying between 0 and 1. So, again based on data which is available you know with the company and you know the exponential smoothing method could be used to determine sales forecast.

(Refer Slide Time: 28:28)



Then, we have the decomposition method by companies a past sales records are broken down, and trends patterns and cyclical events are analyzed to predict the sales. This is a very accurate and a low cost method, but it requires good analytical and inferential skills to make a good forecasts.

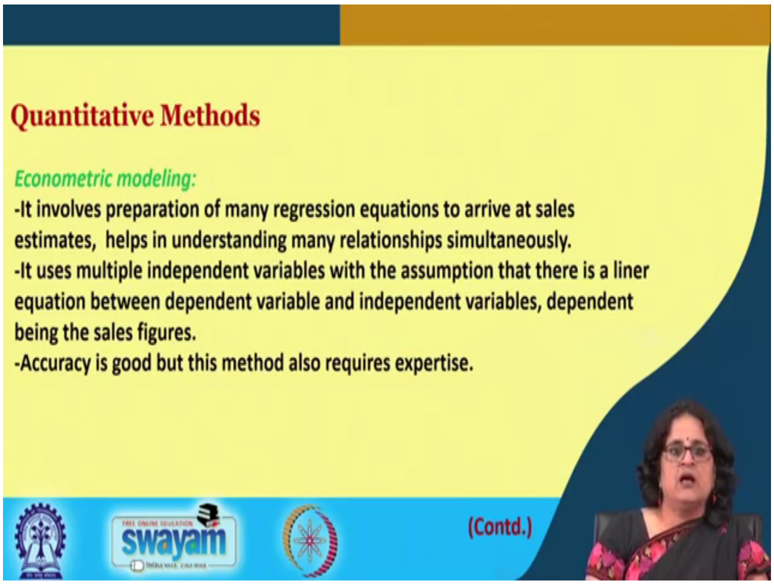
(Refer Slide Time: 28:59)



And then, you have the ratio method, where sales forecasts are made by the following formula; where sales forecast for the next year is equal to actual sales of this year multiplied by actual sales of this year divided by actual sales of the previous year. Again, it is easy to use low cost, but again if fluctuations exist in past sales forecasts could go wrong.

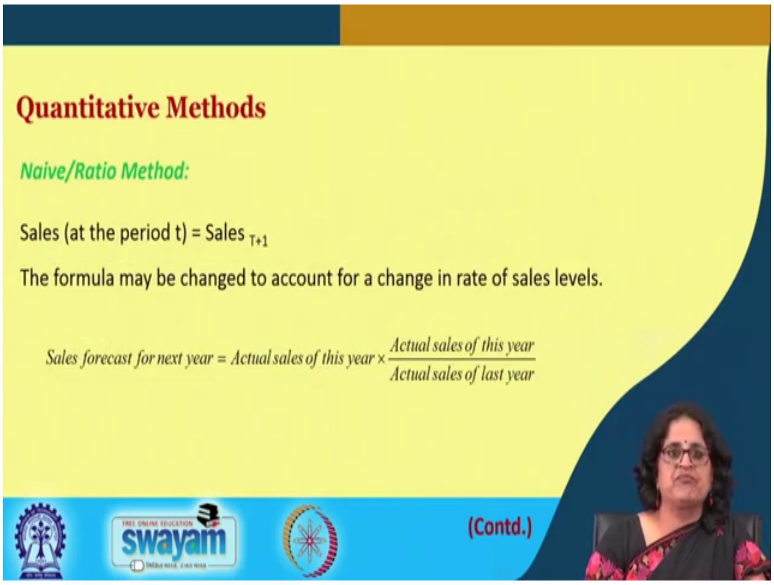
Then, we have regression analysis which can also be used as a quantitative method, where it you know it is used after identification of causal relationship between variables. Software packages like the SPSS, AMOS etcetera can be used to conduct the regression analysis. Of course, this method involves understanding both linear as well as non-linear relationships. And it is a very accurate method, but it is technically complex and not very suitable for huge data sets.

(Refer Slide Time: 29:46)



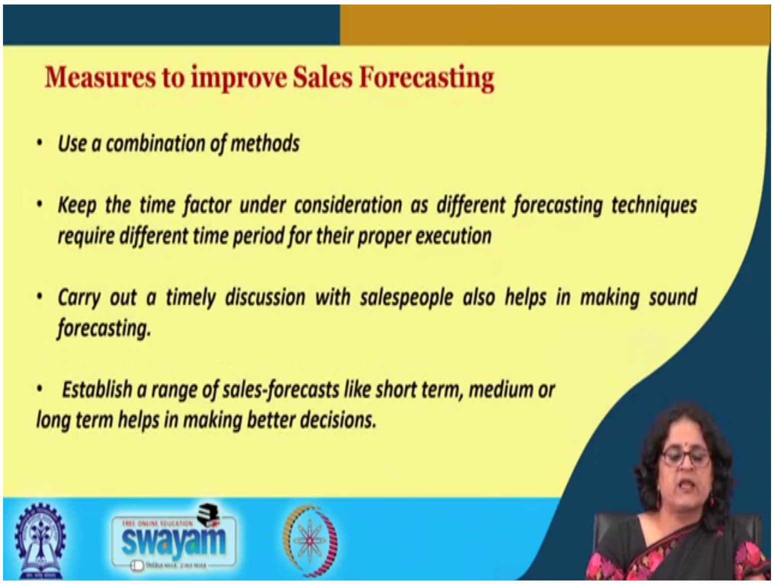
Then we have the econometric planning modeling which involves again preparation of many regression equations to arrive at sales forecast. It uses multiple independent variables with the assumptions that there is a linear equation between the dependent and the independent variable. Of course, the dependent variable being the sales figures, highly accurate method, but again it involves a lot of expertise to actually handle this kind of a approach.

(Refer Slide Time: 30:15)



Then, we have the naive method or a ratio method where the sales in a particular period T is equal to sales T plus 1. So, sales forecast for the next year is equal to sales forecast of this year multiplied by actual sales of this year divided by actual sales of last year which we just now mentioned in the previous slide.

(Refer Slide Time: 30:36)



Now, how do we actually improve sales forecasting? Sales forecasting given be improved one by using a number of methods. It is very important that both qualitative and quantitative methods are used even within qualitative methods, you know it would be wise to use a couple of approaches or within quantitative method it would be wise to use quantitative approaches together. So, so, so, so such findings could be corroborated then and would be more accurate.

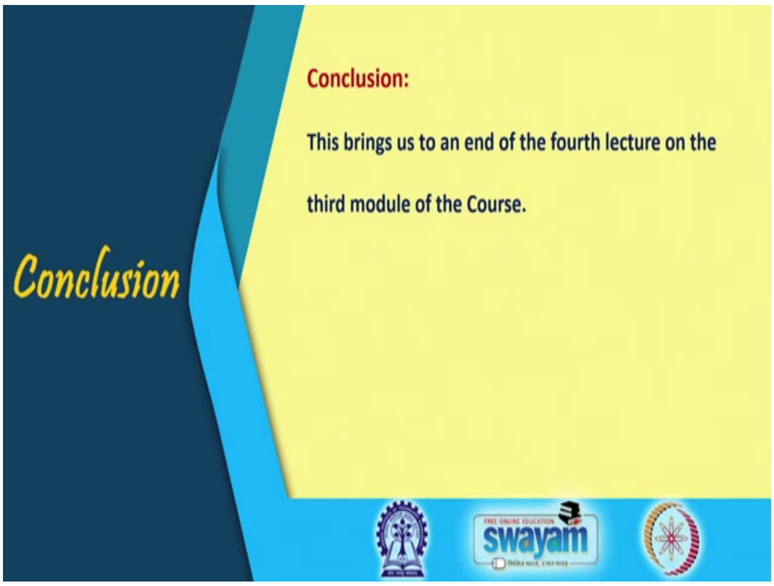
Also one should keep the time factor under consideration because different forecasting approaches require different amount of time, and carrying out a timely discussion with sales people also helps in making very sound forecasting. So, even if companies use a qualitative or a quantitative approach, they must also discuss with the sales people with the field selling team about the various forecast figures that have been obtained from used by using the qualitative or the quantitative approach. So, is the sales peoples feedback can also be vital help in finalizing on the sales forecast figures.

Also establishing a range of sales forecasting a short term medium term or long term can be fruitful for making better decisions, not only in the sales and marketing team, but across all different departments in the organization. As we have discussed yesterday that the sales forecast figures prove to be when it is fully helpful to immensely helpful to different departments in the organization.

(Refer Slide Time: 32:01)

So, with this we come to an end of the session. The references are Still, Cundiff, Govoni, Puri, Sales and Distribution Management 2017, Pearson India. Havaldar and Cavale, Sales and Distribution Management Text and Cases, 2017, McGraw Hill. And Havaldar and Cavale 2007 and 8, Sales and Distribution Management, Tata McGraw Hill.

(Refer Slide Time: 32:22)



So, this brings us to an end of the fourth lecture on the third module of the course. I hope you found this particular lecture fruitful.

Thank you.