Principles of Management
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Lecture – 14
Forecasting and Premising - I

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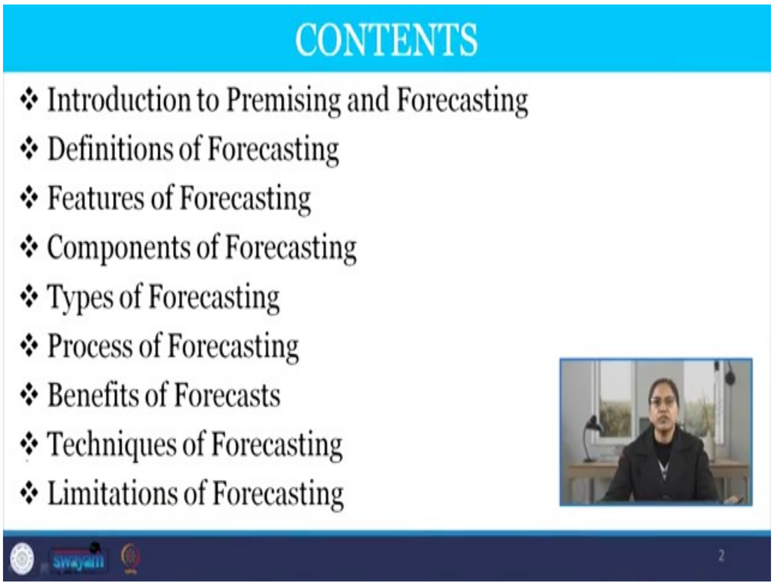

Today in the lecture we will be discussing Forecasting and Premising. So, brief introduction about the contents of forecasting and premising, introduction to premising and forecasting. And then we will discuss about definitions of forecasting, various features of forecasting and components of forecasting, various types and the process of forecasting, what is the benefit of forecasting, the various techniques of forecasting and its limitations.

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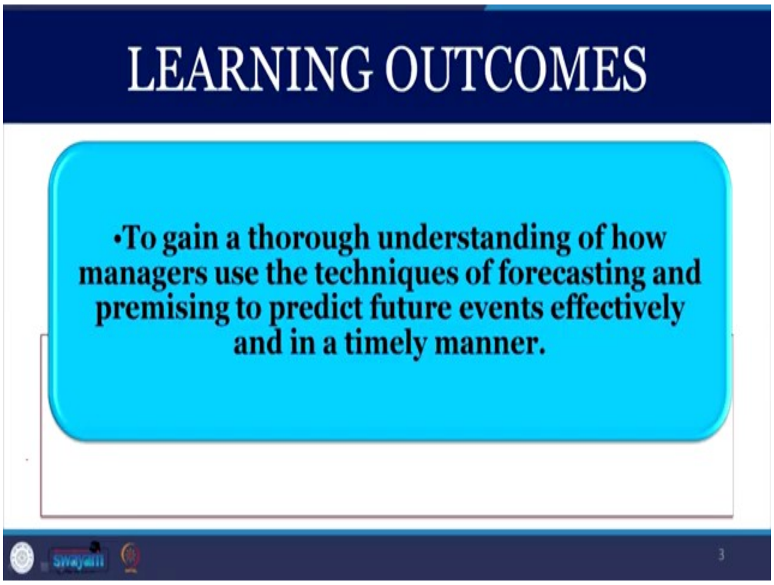

And I will briefly discuss about the learning outcome. Learning this forecasting will help us to gain a thorough understanding of how managers use various techniques of forecasting and premising to predict future events effectively and in a timely manner.

So, let us just start understanding what is planning premise and what is the purpose of it. Planning premises are the anticipated environment in which plans are being executed, plans are expected to operate and environmental forecasting includes values and areas of forecasting, forecasting with Delphi technique.

Then further we will discuss about the techniques of assessing environment; as a business organization expands its business or a new venture comes up. So, environmental assessment is very important; because without which there are chances of the business not taking not being very fruitful.

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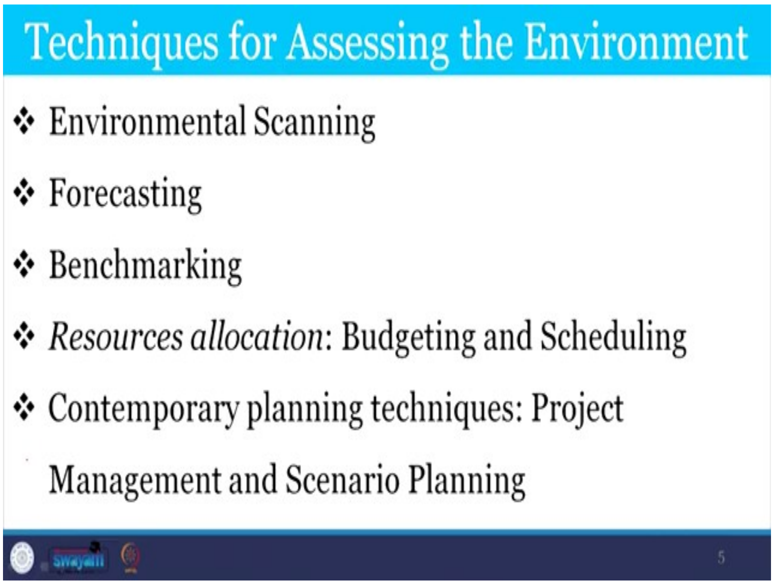

So, we will discuss about what is environmental scanning, various methods of forecasting, benchmarking, allocation of resources, budgeting and scheduling; then contemporary planning techniques like project management and scenario planning. So, in this discussion we will be discussing one after the other all these aspects in more details.

The various techniques of allocation of resources like budgeting, scheduling, linear programming, breakeven analysis, contemporary planning techniques and scenario planning. Before that we will first go through what is environmental scanning. Managers in both the small and large organizations use environmental scanning which is a screening of large amount of information to anticipate and interpret change in the business environment.

As we have already discussed in environmental scanning, a business environment cannot forego the changes which have happened in the environment. So, the political changes, the economic changes, the technological revolution and also the sudden emergence of crisis like situation, which will have a huge impact on the business environment. For example, in the present pandemic that is the COVID-19 situation has created a huge uncertainty in the business environment.

All the organizations— the manufacturing and the services have been greatly impacted by the uncertainty in the business environment. So, therefore, extensive environmental scanning is likely to reveal issues and concerns that could affect an organization's current or planned activities.

So, if an organization is not able to assess this environment, it will not be able to perform effectively. So, research has shown that the companies with advanced environmental scanning systems increased their profit and revenue growth. Organizations that do not keep on the top of environmental changes are likely to face repercussions and the adverse situations.

For instance, I will give you one example of Tupperware, the company that created airtight containers, easy to use plastic food storage containers; which enjoyed unprecedented success during 1960s and 70s; it was selling its product at home hosted parties where housewives played games, socialized and saw product demonstrations.

However, the transformation in the US society, the popularity of Tupperware parties began to decline because no one had time to spend the company's North American market share fell from 60 percent to 40 percent while Rubbermaid a competitor that marketed its plastic food container storage containers in retail outlets increased its market share from 5 percent to 40 percent.

So, environmental scanning gained importance by the early 1990s. Again, the most American women had no desire to go to Tupperware party or knew how to find Tupperware products. Yet Tupperware's president predicted that before the end of 1990s the party concept would be popular once again.

And this example shows how one successful company can suffer by failing to recognize how the environment has changed. So, transformation in the business environment need to be assessed by using various forecasting techniques, by assessing and understanding the data and analyzing its strengths. So, we will also discuss about the competitor intelligence concept. One of the most fastest growing areas of environmental scanning is competitor intelligence.

So, let us learn in more detail what is competitor's intelligence. It is a process by which organizations gather information about the competitors to know who they are, what are they doing, what is their business, what is their strength, their core competence and how will and how what they are doing which will affect the present, which will affect the company or which will affect us.

Organizations use competitor’s intelligence in its planning. And one example is Dun & Bradstreet, a leading provider of business credit marketing and purchasing information to companies that need this information had an active business intelligence division.

The business intelligence division manager gathers together a team of sources that is research services, internet, personnel contacts and other external sources and develops plans to counteract competitive attack. Competitor intelligence experts suggest that 80 percent of what managers need to know about competitors can be found out from their own employees, suppliers and customers.

So, competitor intelligence does not necessarily involve organizational spying, advertisements, promotional materials, press releases reports filled with government agencies, annual reports. One want ad, newspaper reports and industry studies are few examples of readily accessible sources of information.

As earlier stated, it can also be procured from the employees, suppliers and customers; I would cite one example: Procter and Gamble had obtained a Unilever’s competitive intelligence or competitors intelligence with the help of some of the employees. So, there are chances of corporate espionage, employees would be using the resources of organizations and sell it to its competitor.

So, these issues also come up when the competitor tries to procure product knowledge of other companies or say brand knowledge, product knowledge of its competitors. Attending trade shows and debriefing the salesforce can be other good sources of competitor information.

So, there are various trade shows and salesforce meetings through which people can also gather information about the products, the services of its competitors. Many firms even regularly buy competitors products and have their own engineering study, their own engineers studied them through a process called reverse engineering.

So, the competitor's knowledge can be procured through various ways through its employees, through suppliers, through various trade shows and attending the salesforce meetings as well as the by learning from the products and services by its own engineers which is called reverse engineering.

So, the technological innovations can be also learnt through reverse engineering process. In addition, the internet has opened vistas of a large source of competitor's intelligence as many corporate webpages include new product information and other press releases.

Let us discuss about another concept called global scanning. As we know that global scanning is an important environmental scanning method, it depends on organizations involvement in global activities. Nowadays, as companies are expanding to different world market; so, global scanning is very important before we launch a product worldwide.

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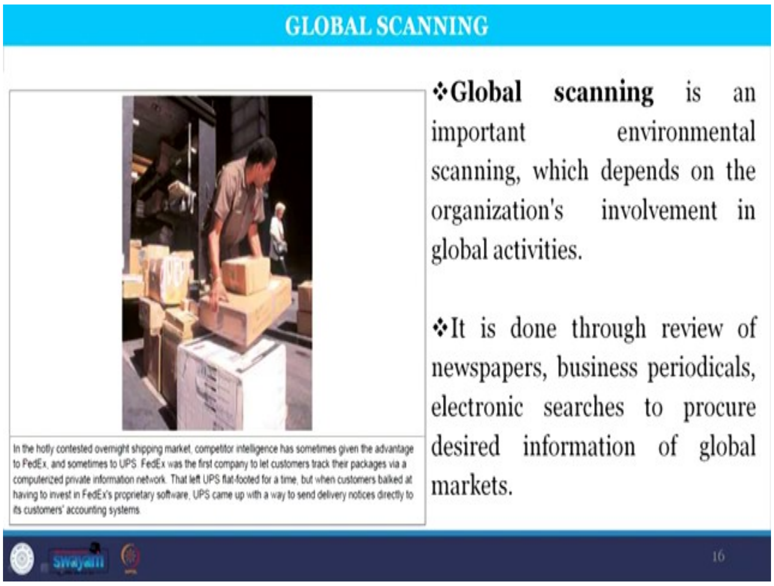

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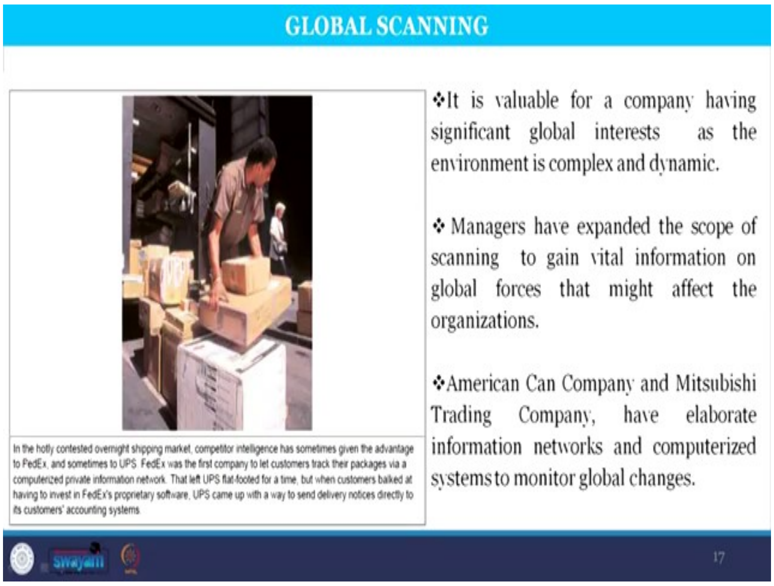

It is done through a review of newspapers, business periodicals, electronic searches to procure desired information of global markets. And it is a valuable source for a company having significant global interest as environment is complex and very dynamic. So, managers have expanded the scope of scanning to gain vital information on global forces that might affect the organizations.

American Can Company and Mitsubishi Trading Company have elaborate information networks and computerized systems to monitor global changes. Introduction to forecasting: let us now discuss about the second technique after the environmental scanning method. The second technique which managers can use to assess environment is forecasting.

Let us learn how forecasting helps business managers to take decisions. Forecasting is an important part of organizational planning and managers need forecasting to predict future events effectively and in a timely manner. Environmental scanning creates the foundation for forecasts which are predictions of outcomes.

Virtually, any component in the organizations general and specific environment can be forecasted. Predictions are usually difficult especially about the future as it is uncertain.

So, in a changing business environment, organization cannot rely on the past success or they need to continuously adapt to technological, social, economical shifts in order to be successful. Through accurate forecasting techniques, organizations can predict the future and do necessary in order to excel.

Organizations like Canon is successful due to its accurate forecasting about digital photography. Way back there was use of a real camera; now because the changes have taken place in the photography, in the digital revolution or digital photography section. So, the Canon could assess the business environment, the demands of the consumers and the technological revolution and it has transformed to digital photography mode.

Hence, though small or big, every organization should develop effective forecasting mechanism in order to be successful. The forecasting refers to statistical analysis of past and current movement in the given time series. So, as to obtain clue about the future pattern of events of those movements it is a definition given by Neter and Wasserman. What is forecasting? Some more definitions we will learn. Forecasting includes both assessing the future and making provisions for it.

The definition has been given by Henri Fayol. Similarly, Alan has also given a definition of forecasting which is called a prediction and its purpose is to calculate and predict some future events or conditions. So, we will be learning about the generic definition of forecasting and how it is used, how it is used in business decision making.

Forecasting is used as a basis for management planning and decision making. It is a process of predicting the future conditions based on systematic data analysis. Forecasting allows managers to predict future events effectively and it also gives accuracy of or forecasting with accuracy simplifies the process of planning.

It will help managers in planning future events. Environmental scanning establishes the basis of forecast which are predictions of outcomes. Then we will be discussing about the features of forecasting: involves future events and based on the past and present events.

Forecasts are created to predict the future; important for planning and forecasts based on the past and present events. Forecasts are not based on opinion and intuition, but are based on the facts, the data figure and other meaningful information.

So, all of them are necessary because they represent what happened to the business in the past and what is pertinent to predict the future events. It uses forecasting techniques. Most businesses use the quantitative methods particularly in planning and budgeting.

It provides basis of planning. Planning is not possible without forecasting and it considers all these factors which affect organizational functions. Forecasting can be made for short and medium-, and long-term duration. Various components of forecasting: economic forecasting, technological forecasting demand forecasting.

So, we will be discussing about the various components of forecasting in more detail. Economic forecasting predicts what the general conditions will be in future like inflation rates, GNP, tax, level of tax level of unemployment etcetera. Shared markets are based on economic forecasting of different national economic indicators.

Similarly, technological forecasting: it predicts the probability and future possible developments in technology. In cut-throat era, some organizations like Paytm have been very successful in the market due to correct technological assessment or analysis of the need of digital payment system. I would like to quote some more examples; COVID-19 has created an uncertainty in the business environment.

The education sector has also faced a major challenge, where the students cannot be available in the campus and the classes have to go on. So, we can see a sea change in the technological and the technological revolution or the online mode of teaching methods which were once predicted maybe few couple of years back.

So, the various tools, which are online teaching methods that teaching the platforms like Moodle then Webex. All these were our results of technological forecasting. We are able to deliver lectures to the students who are away from the classroom, but still can attend the lectures effectively.

So, the technological forecasting also is an important part of or important component of forecasting. And then moving forward, we will discuss about demand forecasting. Demand forecasting predicts the quantity and timing of demand for a firm’s product. It helps to cater the needs of customers in a timely manner.

Accurate demand forecasting helps in attracting the customer and increases sales operations of business. We will be discussing about some examples of demand forecasting in further classes. Types of forecasting; short term forecasting; it is for a short term varies from 1 day to 3 months.

Managers engage themselves in forecasting of a specific product. There is a little time to react to errors in demand forecast. So, the forecast needs to be accurate and time series analysis is often used for short term forecasting. Then we also have another method or another type which is called medium term forecasting. The time horizon for a medium term forecasting is 3 to 24 months.

And it is related to aggregate planning that is sales and operational planning. They are used to build seasonal inventory, time series analysis and casual methods are used in this forecasting. Then lastly, we will be discussing about long term forecasting. Time horizon exceeds more than 2 years and it is used for process selection, capacity planning and locational decision decisions, judgment models and causal models are used.

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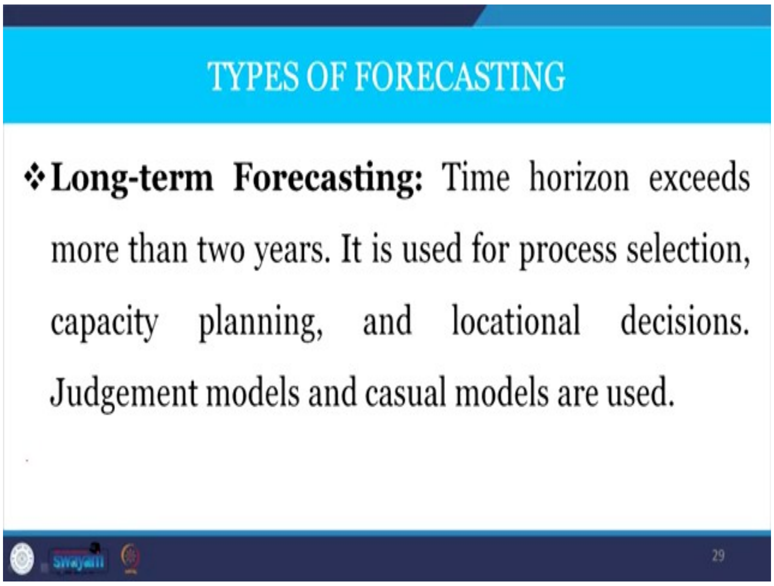

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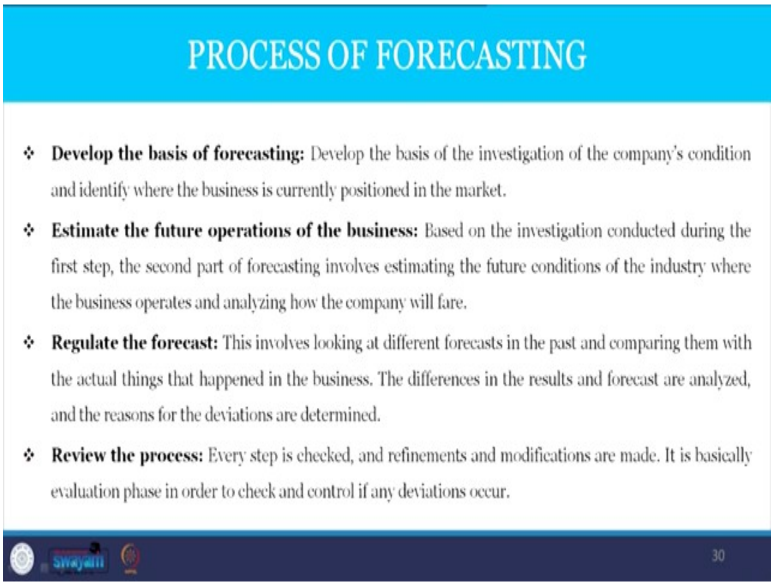

The process of forecasting develops the basis of forecasting, develop the basis of investigation of the company's condition and identify where the business is currently positioned in the market. Estimate the future operations of the business based on immediate or based on the investigations conducted during the first step. The second part of forecasting involves estimating the future conditions of the industry, where the business operates and analyzes how the company will fare.

The third point is regulating the forecast: this involves looking at different forecasts in the past and comparing them with the actual things. What happened to the business, the differences in the results and forecasts are analyzed and reasons for the deviations are determined. Review the process. Every step is then checked and refinements and modifications are made. It is basically evaluation phase in order to check and control if any deviations occur.

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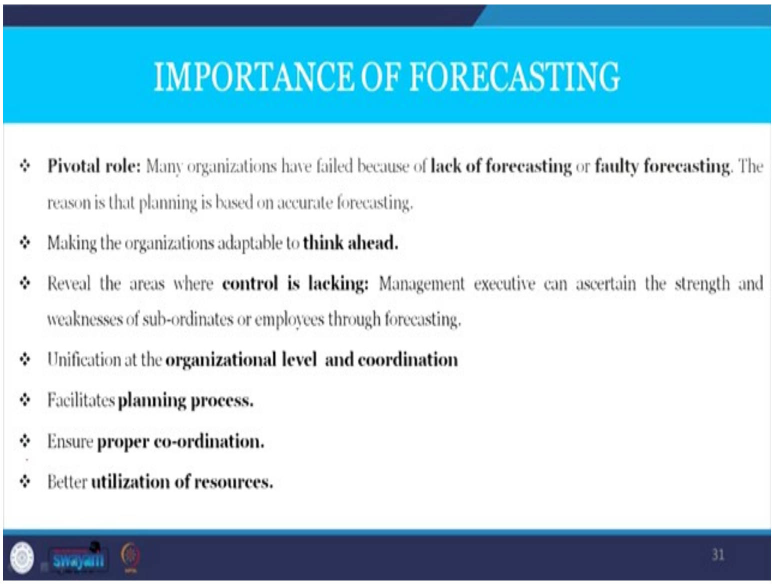

Then we will discuss about the importance of forecasting, what role it plays. Many organizations have failed because of lack of forecasting or faulty forecasting and the reason is that planning is based on accurate forecasting.

Making the organizations adaptable to think ahead, reveal the areas where control is lacking: management executives can ascertain the strengths and weakness of subordinates or employees through forecasting. Then unification at the organizational level and coordination, facilitates planning process and it ensures proper coordination and better utilization of resources.

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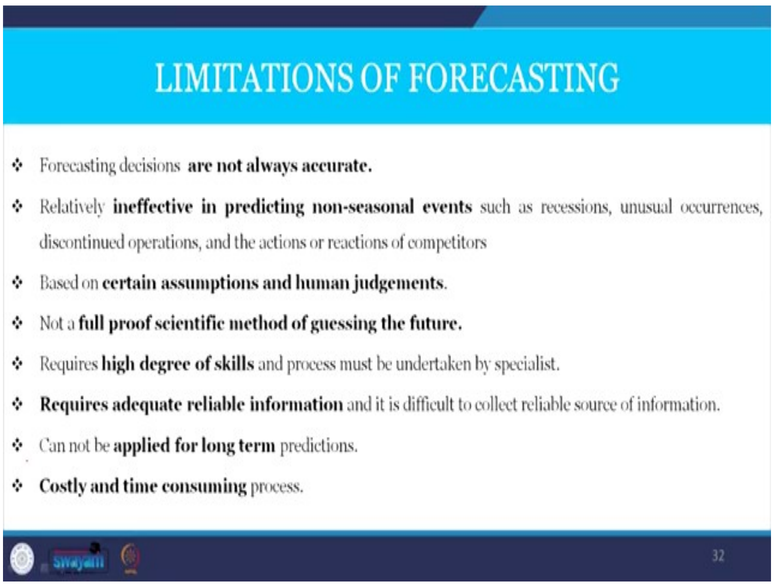

The limitations of forecasting: forecasting decisions are not always accurate. As I told you, we cannot predict everything in advance because there are environmental uncertainties like what we have discussed in the examples. Like a COVID-19 crisis which the organizations last year would have predicted many things even the planning for initiating a new business or planning for setting up a new plant or the manpower planning, but because of a crisis like situation has emerged.

So, the planning cannot be; so, sometimes the forecasting decisions are not very accurate because of the uncertainties associated with the business. The uncertainties could be because of the sudden emergence of warlike situation, the sudden emergence of a pandemic and the natural calamities.

So, therefore, forecasting cannot be always accurate. Relatively ineffective in predicting non seasonal events such as recession, unusual occurrence, discontinued operations and the actions or reactions of competitors; based on certain assumptions and human judgments not a foolproof scientific method of guessing the future, requires high degree of skills and process must be undertaken by specialists.

Requires adequate reliable information and it is difficult to collect reliable sources of information, cannot be applied for long term predictions costly and time consuming process. What are the various forecasting techniques? Forecasting techniques fall into two categories: one is quantitative and qualitative forecasting methods.

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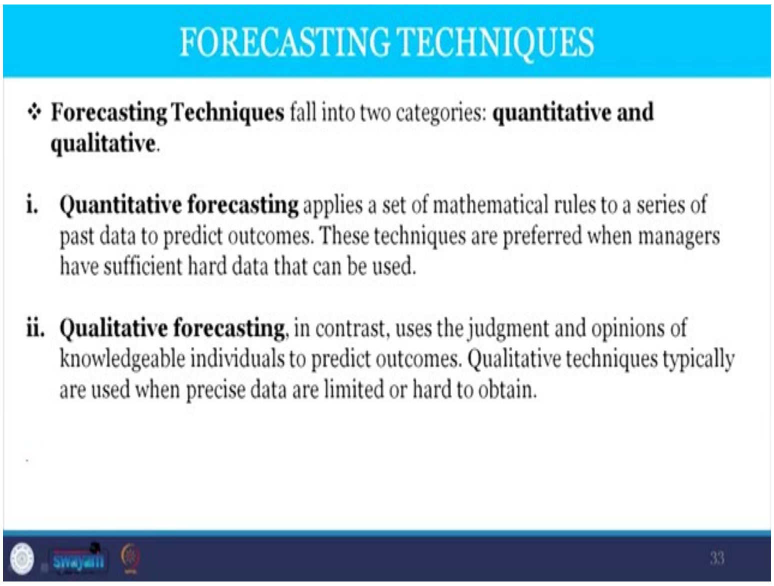

So, let us discuss what is quantitative and what is qualitative, how they are different and what situations they are more useful. Quantitative technique applies a set of mathematical rules to a series of past data to predict future outcomes. These techniques are referred these techniques are mostly used when managers have sufficient hard data that can be used.

So, qualitative technique or qualitative forecasting whereas in contrast uses the judgment and opinion of knowledge professionals or knowledge in knowledgeable individuals to predict events, predict outcome. Qualitative techniques typically are used when precise data are limited or hard to obtain.

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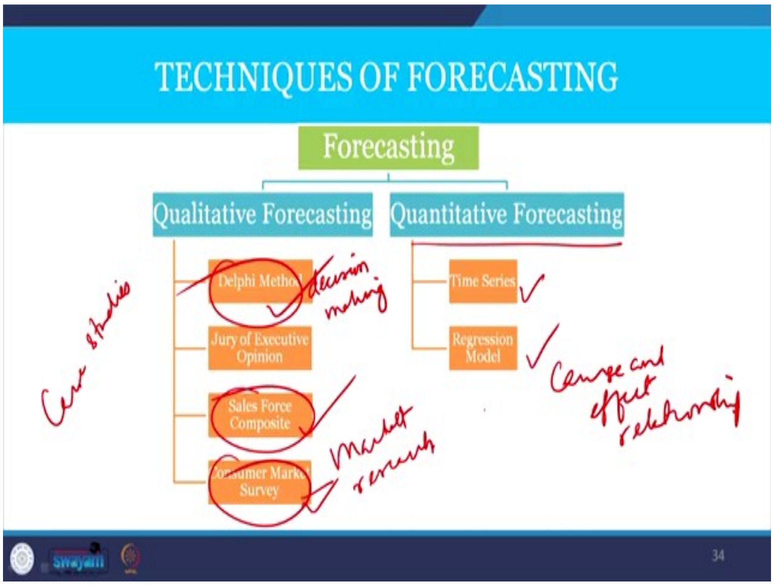

So, techniques of forecasting, as broadly described are qualitative and quantitative methods. In qualitative methods, we have Delphi technique, jury of opinion and salesforce, consumer market survey. Mostly qualitative techniques are used in the consumer survey and Delphi technique is used in decision making.

So, this is how we are using in decision making. Mostly, I will discuss in more details how it is used in market research. Sales force composition and the quantitative technique is used in time series, regression models, cause and effect relationship to know the cause and effect relationship.

So, Delphi method is a qualitative method, salesforce composite, consumer market research or consumer market survey. So, there are various types of qualitative methods which we will be discussing like case based studies or use of case studies. Then quantitative methods, time series regression models that we will be discussing in more details.

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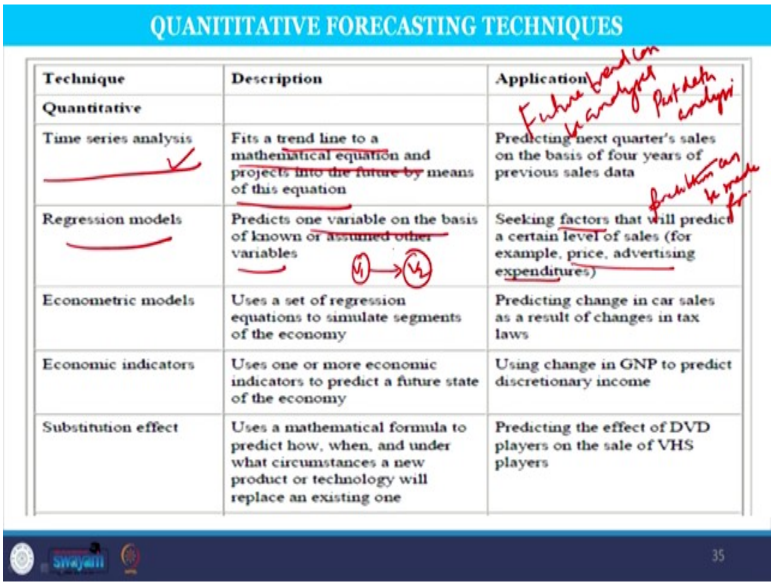
QUANITITATIVE FORECASTING TECHNIQUES

Technique	Description	Application
Quantitative		
Time series analysis	Fits a trend line to a mathematical equation and projects into the future by means of this equation	Predicting next quarter's sales on the basis of four years of previous sales data
Regression models	Predicts one variable on the basis of known or assumed other variables	Seeking factors that will predict a certain level of sales (for example, price, advertising expenditures)
Econometric models	Uses a set of regression equations to simulate segments of the economy	Predicting change in car sales as a result of changes in tax laws
Economic indicators	Uses one or more economic indicators to predict a future state of the economy	Using change in GNP to predict discretionary income
Substitution effect	Uses a mathematical formula to predict how, when, and under what circumstances a new product or technology will replace an existing one	Predicting the effect of DVD players on the sale of VHS players

What are these and how they are applied, which area they are more applicable? Time series analysis; let us go by the first we will discuss quantitative techniques and then we will discuss qualitative. So, time series analysis fits a trend line to mathematical equation and projects into future by means of this equation. This is used in predicting next quarter sales on the basis of the 4 years of the sales data.

So, based on past data analysis, future predictions can be or the predictions can be made or future trend can be analyzed or future trend can be analyzed. So, this is what we will be learning. Then regression models: what are these regression models? How does it help the managers to take decisions?

So, as we learned that in time series analysis, past data is procured to take to decide what is going to happen in future. In regression model, it predicts one variable on the basis of known or assumed other variables. That means with the understanding of one variable, it helps in analyzing the relationship between impact relationship between two variables; variable 1 and variable 2.

The impact of one variable on the other variable can be easily analyzed. Seeking factors it will help in knowing the factors that will predict a certain level of sales. Like in the time series what we discussed, looking at the past year sales data, we can predict how the sales will happen in next year.

Here, we can analyze the relationship between various factors and its impact on the sales; for example, the impact of price, the advertising expenditure and its impact on sales. So, what we have discussed so far? We have discussed about two techniques; one is quantitative and qualitative technique.

So, what we have discussed so far? We have been discussing about various forecasting techniques. Forecasting techniques fall in two categories. One is qualitative and another one is quantitative. What is a qualitative technique, what is a quantitative technique? As the name says quantitative technique emphasizes on mathematical rules and the quantity; that means, the numbers, the data. It applies a series of a set of mathematical rules to a series of past data to predict the future outcomes.

These techniques are preferred when managers have sufficient hard data. They have facts to take decisions; whereas, on the other hand when there is no data based on the opinion or observations of people decisions can also be taken; so, qualitative forecasting in contrast uses judgment, opinion of knowledgeable, individuals or knowledge professionals or the experiences of the experts to predict future outcomes.

Qualitative techniques typically are used when precise data are limited or hard to obtain. We will be discussing about the quantitative techniques and qualitative techniques in more details. I will summarize what we have discussed so far. We discussed about what forecasting is and we have also discussed about environmental scanning, the global scanning, competitors' intelligence.

And then broadly defining the benefits of the forecasting methods and the forecasting process we have discussed. And in the next lecture we will be discussing qualitative techniques like Delphi method, jury of opinion, sales force composition, consumer market survey and time series and the quantitative techniques like time series and regression models in more details.

Thank you. So, I would like to conclude the session here.