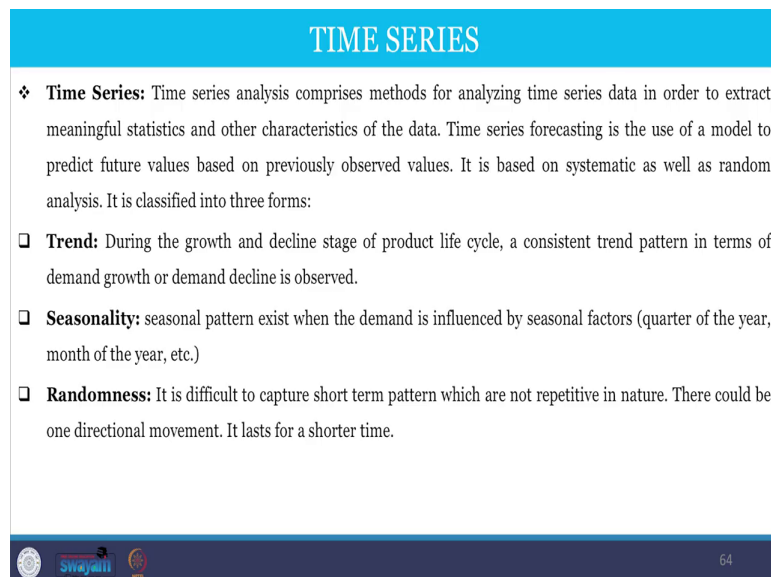


Principles of Management
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Lecture – 16
Forecasting and Premising – III

In this lecture, we will be discussing about time series, benchmarking, then regression methods and selection of appropriate forecasting techniques, other qualitative techniques in more details.

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TIME SERIES

- ❖ **Time Series:** Time series analysis comprises methods for analyzing time series data in order to extract meaningful statistics and other characteristics of the data. Time series forecasting is the use of a model to predict future values based on previously observed values. It is based on systematic as well as random analysis. It is classified into three forms:
 - ❑ **Trend:** During the growth and decline stage of product life cycle, a consistent trend pattern in terms of demand growth or demand decline is observed.
 - ❑ **Seasonality:** seasonal pattern exist when the demand is influenced by seasonal factors (quarter of the year, month of the year, etc.)
 - ❑ **Randomness:** It is difficult to capture short term pattern which are not repetitive in nature. There could be one directional movement. It lasts for a shorter time.

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So, let us start with our discussion on time series. Time series analysis comprises methods for analysing time series data, in order to extract meaningful statistics, and other characteristics of the data. As we have earlier discussed that use of quantitative methods is relevant in decision making. It gives managers to take decisions more appropriately.

So, time series forecasting is also an important quantitative method of data analysis, and it is used as a model to predict future values based on previously observed values. It is based on systematic as well as random analysis, it is classified into three forms one is trend analysis, seasonality and randomness.



What is trend analysis? During the growth and decline stage of product life cycle. A consistent trend pattern is in terms of the demand growth or demand decline is observed.

Seasonality seasonal patterns exist, when the demand is influenced by seasonal factors like quarter of the year, month of the year. Randomness it is difficult to capture short term pattern which are not very repetitive in nature. And there could be one directional movement; it lasts for a shorter time period.

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REGRESSION METHOD

- ❖ Regression analysis is used to find out the effect of changes of the relative **movements of two or more inter-related variables.**
- ❖ In the modern business conditions number of factors are responsible for the changes made in the variables.
- ❖ **For example:** if we take two inter related variables cost of production and profit, there will be a direct relationship prevailing between these two variables. It is possible to have an estimate of profit on the basis of cost of production, provided other things remain the same.

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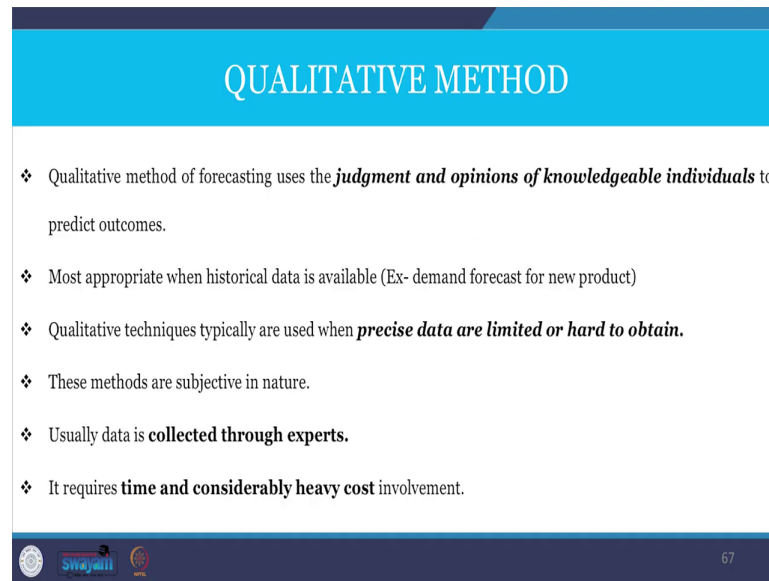
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After that we will also discuss about regression methods. Regression is used to find out the effect changes of the relative movement of two or more interrelated variables. Like earlier also we discussed the impact of customer relationship management of a customer loyalty behaviour, or tendency to be a loyal customer.

So, these kinds of impact assessment cause and effect relationship can be assessed. And, regression is the basis for predicting a concept to unearth a problem, like it is used in the modern business conditions number of factors are responsible for changes which are made in the variables.

For example, if we take the two interrelated variables of cost of production and profit there will be a direct relationship prevailing between the two variables. It is also possible to have an estimate of profit on the basis of the cost of production; provided other things remain the same.

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QUALITATIVE METHOD

- ❖ Qualitative method of forecasting uses the *judgment and opinions of knowledgeable individuals* to predict outcomes.
- ❖ Most appropriate when historical data is available (Ex- demand forecast for new product)
- ❖ Qualitative techniques typically are used when *precise data are limited or hard to obtain*.
- ❖ These methods are subjective in nature.
- ❖ Usually data is **collected through experts**.
- ❖ It requires **time and considerably heavy cost** involvement.

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After discussing regression, we will again move on to the next qualitative method which is method of forecasting. In the qualitative method of forecasting basically it depends on the opinion of experts judgement and opinion of knowledge professionals, or individuals consultants. And which will help in predicting the future events based on the experts practical or firsthand experience.

Most appropriate is when the historical data is available for example, demand forecast for a new product. Qualitative techniques typically they use when precise data are limited, or very hard to obtain. And, these methods are very subjective in nature, and it depends on intuition of the person. And usually data is collected through the experts, through interviews, through opinions, through case studies. And, it requires a huge amount of time and considerable cost is involved.

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QUALITATIVE FORECASTING TECHNIQUES		
Qualitative		
Jury of opinion ✓	Combines and averages the opinions of experts	Polling the company's human resource managers to predict next year's college recruitment needs
Salesforce composition ✓	Combines estimates from field sales personnel of customers' expected purchases	Predicting next year's sales of industrial lasers
Customer evaluation ✓	Combines estimates from established purchases	Surveying major car dealers by a car manufacturer to determine types and quantities of products desired

So, the few techniques that we will be discussing is jury of opinion, sales force composition, customer evaluation. Jury of opinion combines and averages the opinion of experts and polling the company's, human resource managers to predict next year's college recruitment needs.

So, jury of opinions I suppose in any case there is a meeting, the group of people have to take a decision. And each of them have a different opinion and then finally, the consensus is taken the opinion or the final decision is taken as a majority opinion.


So, combines an average is the opinion of experts, in any case whether it is in case of recruitment or in case of say decision about a particular product, developing a new product or launching a new campaign. So, launching a campaign, deciding a creative strategy so, everywhere that group of experts take decisions based on their own insights their own experiences which will finally, be concluded as a qualitative opinion.




Sales force composition combines estimates from the fields, the off sales personnel of customers expected purchases. In the context of decision sales force composition predicting next year sales of industrial, industrial lasers, customer evaluation and combines estimates from established purchases. Surveying major car dealers, by a car manufacturer to continue to determine types and quantities of products desired.

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THE DELPHI METHOD

- ❖ The Delphi method was invented by *Olaf Helmer and Norman Dalkey of the Rand Corporation in the 1950s.*
- ❖ The aim of the Delphi method is to construct consensus *forecasts from a group of experts in a structured iterative manner.*
- ❖ A group of experts making series of independent decisions.
- ❖ It is very similar to jury of executives method but in Delphi members are from inside and outside the organization.
- ❖ In this method there is no group pressure and more objective.
- ❖ To manage the process a facilitator is appointed.






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I will discuss about Delphi technique which is kind of expert opinion, which is kind of a qualitative technique which is mostly practised in the qualitative decision making. Delphi the name was invented by Olaf Helmer and Norman Dalkey of the Rand Corporation in 1950s.

The aim of Delphi technique is to construct consensus that is forecast from a group of experts, in a structured iterative manner. Delphi technique is a qualitative decision making technique and a group of experts, make series of independent decisions. In Delphi technique unlike brainstorming sessions the experts are not seated in one place, experts take independent decisions.

There is a difference between brainstorming sessions, which is also a kind of qualitative decision making. In a brainstorming session all the individuals or the experts who are involved in decision making, they are located in one place they are whereas, in case of Delphi technique. All the individuals who are involved in decision making technique or decision making process, they are located in different locations and they take independent decision.

It is very similar to the jury of executives method what we discussed now jury of executives or jury of opinion. Delphi technique is very similar to that combines an averages the opinion of experts. Whereas, in case of Delphi the people are in different locations, they are taking independent decisions.

And the similarity between jury of experts is the decisions is based on consensus of the decision independent decisions. So, but in Delphi members are from inside and outside the organizations not necessarily from within, but outside members can also be participants in the decision making it.

In this method there is no group pressure and more objective orientation, there is no conformity to group norms, there is no in group feeling and people will give their independent decision and to manage the process a facilitator is appointed. A facilitator will be one person or a moderator is a person, who will be coordinating with be with all the independent decision makers, the jury of experts.

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THE DELPHI METHOD

The Delphi method generally involves the **following stages**:

- ❖ A panel of experts is assembled from both inside as well as outside the organization. ✓
- ❖ Forecasting tasks/challenges are set and distributed to the experts to make their individual decisions.
- ❖ Experts provide their primary forecasts with justifications. These are aggregated to provide feedback. ✓
- ❖ Feedback is provided to the experts, to review their forecasts in light of the feedback and reach a level of consensus among themselves.
- ❖ Final forecasts are constructed by combining the forecasts of all experts. ✓

Limitations: It is time consuming process

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And the Delphi method and it happens the method generally involves following stages. A panel of experts is assembled from inside as well as outside the organization. A group of experts both within and outside the organization, they assemble and forecasting tasks or challenges are set and distributed to the experts to make their individual decisions.

Experts provide their primary forecast with justification. So, the experts give their views and, they will submit their decisions, but they also have to rationalize or they give justification for their decision. These decisions; the justification or the rational of the opinion, they have given and these are aggregated as and compiled and given back to the facilitator or the administrator.

So, the finally, it is submitted to the independent members again, they again revisit their earlier submitted decisions, and then they make some modifications and then submit it to the facilitators. So, it is not just a one step process, but there are several iterative process which is involved in Delphi method.

And finally, when there is a clear consensus emerging out of the feedback or the opinion given by the independent experts, then the moderator concludes. So, limitation is it is a kind it is a time consuming process. It is it does not happen overnight, but it takes several iterative steps.

JURY OF EXECUTIVE OPINION

- It consists of combining and averaging **top management's views about the future event.**
- Organization forms a committee to make forecasts from members of different departments.
- Independent forecasting analysis is performed and then send it in written form.
- In this approach, generally the executives from different areas such as **sales, production, finance, purchasing** are brought together. Thus, a **varied range of management viewpoints** can be considered.
- Committee members come together and discuss and agree one of the estimates or come up with new estimate for organization.
- Developing long-medium forecast by **asking group of knowledgeable executives their opinion** with regard to future values of the items being forecasted.

And the unique quality of this is the jury members are in different locations, they are in geographically dispersed locations, jury of executive opinion. It consists of combining and average averaging top managements views about the future events.

Organizations form a committee to make forecasts from members of different departments. People from different departments generally the top management give their views about the future events, independent forecasting analysis is performed, and then it is sent in written form.

In this approach generally the executives from different areas such as sales, production, finance, purchasing are brought together, thus a varied range of management viewpoint can be considered. Committee members they come together and discuss and agree on the estimates or come up with a new estimate for the organization. Developing long-medium forecasts by asking group knowledgeable executives their opinion with regard to the future values of the items being forecasted.

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JURY OF EXECUTIVE OPINION

- ❖ **Advantages of Method:** ✓
 - ❖ Its easy and simple to use.
 - ❖ Broad variety of opinions are considered.
- ❖ **Disadvantage of Method:**
 - Estimates are for whole markets and difficult to separate them for specific market. ✓
 - Reliability and accuracy of opinion is questionable (how up to date it is?) ✓
 - Members can easily influence each other (objectivity is questionable) ✓
 - Forecasts can be prepared **quickly without elaborate data.**
 - Presence of **powerful member in a group** may prevent reaching consensus.

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Jury of executive opinion advantages of this method is it is easy and simple to use, broad variety of opinion are considered. Disadvantage is estimates are whole market and difficult to separate them from the specific market. Reliability and accuracy of opinion is questionable. How up to date it is? Members can easily influence each other that is objectivity is being questioned, and forecasts can be prepared quickly without elaborate data.

So, presence of powerful members in a group may prevent reaching out at consensus. So, these are some of the advantages and disadvantages of jury of executive opinion.

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SALES FORCE COMPOSITE

- ❖ The Sale Force Composite Method is a sale forecasting method wherein the sales agents forecast the sales in their respective territories, which is then consolidated at branch/region/area level, after which the aggregate of all these factors is consolidated to develop an overall company sales forecast.
- ❖ The sales force composite method is the bottom-up approach where the sales force gives their opinion on sales trend to the top management.
- ❖ Since, the salesmen are the people, who are very close to the market, can give a more accurate sales prediction on the basis of their experience with the direct customers.

Advantage: Its simple and easy to use.

Disadvantage:

- ❖ It requires more education and training, therefore expensive in nature
- ❖ Over estimate and under estimation is big challenge.

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Next point I will focus on is sales force composite. What is sales force composite method? In a is a self sales forecasting method, wherein the sales agent forecast the sales in their respective territory, which is considered as a branch, region, area, level after which the aggregate of all of these factors is consolidated to develop an overall company sales forecast.

The sales force composite method is a bottom up approach, where the salesperson gives his opinion. Where the sales force gives their opinion on the sales trends to the top management, it is not the top down approach. Where the management representatives only procure information from the people who are in the frontline, or who are there in the on the ground level, they give the details and based on their opinion the top management takes decision.

Since the salesman are the people who are very close to the market, they are the people who are working in the ground level, they are closer to the market they have a first-hand experience. And so, they can give a more accurate sales prediction on the basis of their experience with the direct customers.

So, advantage is; it is simple and easy to use and disadvantage is requires more education and training. As it is the sales force or the people who are working on the ground level, they need to be more trained; they require more education and training to take decisions. They have the information or they are directly meeting the customers. So, that itself will not suffice their ability to take decisions.

So, therefore, it is expensive in nature and overestimate and underestimate is a big challenge. So, with this limitation we can also look into some other methods of decision forecasting. Market survey is another qualitative forecast and is the market survey or customer survey method.

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MARKET SURVEY

- ❖ Another type of qualitative forecast is the market survey or customer survey.
- ❖ Most of the companies carry out market surveys about changing customers tastes, preferences, choices in order to modify their products and services with changing times.
- ❖ In this approach, the forecaster can poll, in person or by questionnaire, customers or clients about expected future behavior.
- ❖ **For example:** people can be asked about their probable future purchases of cars.
- ❖ This method is effective if the right people are sampled in enough numbers.
- ❖ It asks a set of “experts”—consumers or potential consumers—what they will do.

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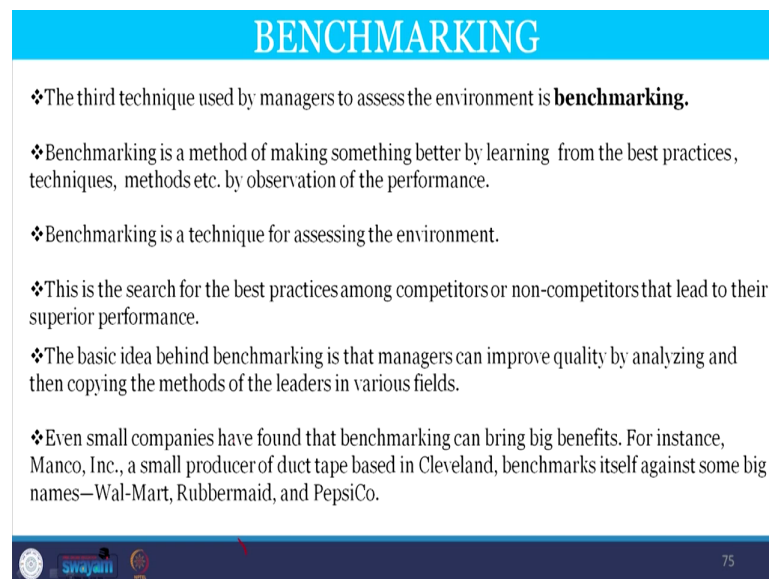
What is this? Most of the companies carry out market survey about changing customer's trends, and the tastes preferences, their choices. As we all know that we are in a dynamic business environment where each day we encounter a large number of change.

So, in order to modify the products and services so, what product is relevant today, may not be relevant tomorrow. Because, the customers' preferences are changing, technology is changing. So, with changing times we need to change and in this approach the forecaster will poll in person, or by questionnaire method, customer or clients about the expected future behaviour.

And for example, people can be asked about their probable future purchase of sales. They can be this method is effective if the right people are sampled in enough numbers. So, large number of sample is required, right sample is required and it asks a set of experts' consumers or potential customers like what they will do. So, with this what we have discussed so far.


We have discussed about Delphi technique, and the qualitative techniques in more detail, jury of opinion sales force composition, customer evaluation, Delphi method and jury of executive opinion, sales force composite, market survey. And next we will be moving on to another method of another method called benchmarking.

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BENCHMARKING

- ❖ The third technique used by managers to assess the environment is **benchmarking**.
- ❖ Benchmarking is a method of making something better by learning from the best practices, techniques, methods etc. by observation of the performance.
- ❖ Benchmarking is a technique for assessing the environment.
- ❖ This is the search for the best practices among competitors or non-competitors that lead to their superior performance.
- ❖ The basic idea behind benchmarking is that managers can improve quality by analyzing and then copying the methods of the leaders in various fields.
- ❖ Even small companies have found that benchmarking can bring big benefits. For instance, Manco, Inc., a small producer of duct tape based in Cleveland, benchmarks itself against some big names—Wal-Mart, Rubbermaid, and PepsiCo.



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So, benchmarking I will give you a preliminary idea about what benchmarking is and, how does it help? An organization to maintain its competitiveness, or the it is a, it is a technique which is used to assess the environment. Benchmarking is a method for making something better by learning from the best practices. The best practices techniques, methods, the products through observation of the performance of the competitors.

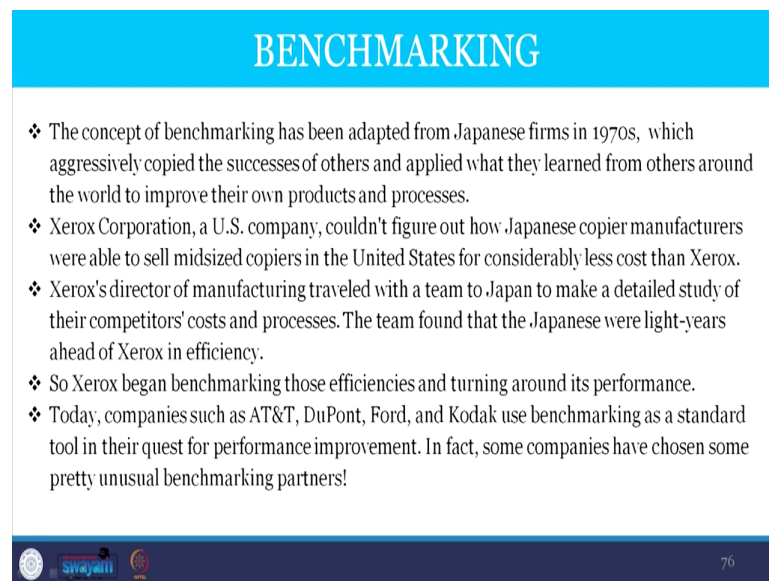
So, benchmarking is generally a technique to assess the environment, this is search for the best practices among the competitors, non competitors that lead to their superior performance. The basic idea behind benchmarking is that managers can improve quality

by analyzing, and then copying the methods of the leaders in the field in the respective domain.

I will be giving you some examples, of how leading companies have been effectively developing their products, their methods, the business models, by observing the benchmark practices in the industry, as well as learning from the best practices from anywhere.



So, even small companies have found that benchmarking can bring big benefits, a big change or a sea change in the in their business. For instance, Manco Incorporation a small producer of duct tape based in Cleveland, benchmarks itself against some of the big names like Wal-Mart, Rubbermaid and PepsiCo.

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BENCHMARKING

- ❖ The concept of benchmarking has been adapted from Japanese firms in 1970s, which aggressively copied the successes of others and applied what they learned from others around the world to improve their own products and processes.
- ❖ Xerox Corporation, a U.S. company, couldn't figure out how Japanese copier manufacturers were able to sell midsize copiers in the United States for considerably less cost than Xerox.
- ❖ Xerox's director of manufacturing traveled with a team to Japan to make a detailed study of their competitors' costs and processes. The team found that the Japanese were light-years ahead of Xerox in efficiency.
- ❖ So Xerox began benchmarking those efficiencies and turning around its performance.
- ❖ Today, companies such as AT&T, DuPont, Ford, and Kodak use benchmarking as a standard tool in their quest for performance improvement. In fact, some companies have chosen some pretty unusual benchmarking partners!

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So, what is benchmarking? The concept of benchmarking has been adapted from the Japanese in 1970s, which aggressively copied the success of others and applied, what they learn from others around the world to improve their own products and services.

Boeing has adopted the best practices from 3 M in while painting the aircraft. They have adopted the technology of 3 M. Similarly, there are several such examples of benchmark practices which are which I will be discussing in the lecture. Southwest Airlines is known for its global practices of customer satisfaction.

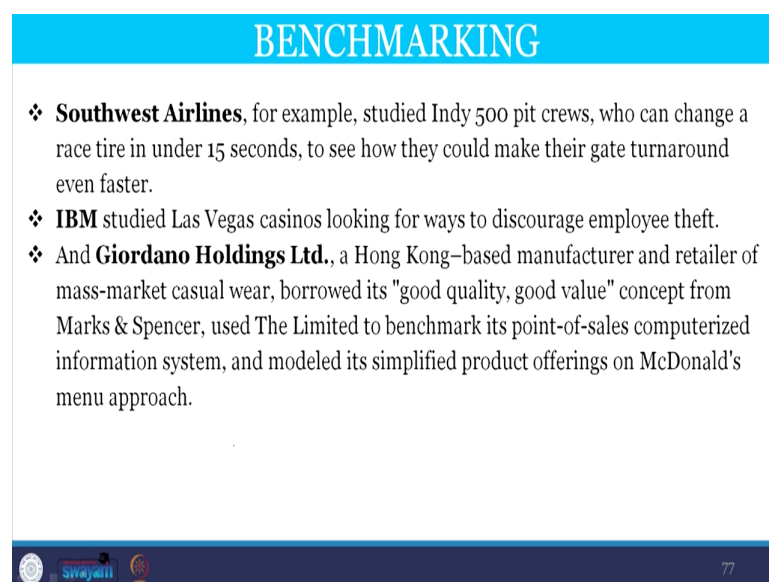
Similarly, in India the company Tata is known for its benchmark practices of employee satisfaction. Is it not good enough for the company's other organizations to also adapt the benchmark practices for customer satisfaction, learning benchmark practices from southwest airlines, for employee satisfaction, for learning from the Tata groups.

This will help the organization to adapt certain good practices which will help in improvising its own business. It is the year on year the companies can keep on improving their business performance if they adopt benchmark practices.

So, I will discuss about Xerox Corporation a US company could not figure out, how Japanese copier manufacturers were able to sell mid-sized copiers in United States for considerably less cost than Xerox. So, Xerox director of manufacturing travelled with the team to Japan to make a detailed survey of their competitors cost and processes. And the team found that Japanese were light years ahead of Xerox in efficiency.

So, Xerox began benchmarking those efficiencies and turning around its performance. Today companies like AT and T, DuPont, Ford, Kodak use benchmark practices as a standard tool in their quest for improving performance. So in fact, some companies have chosen some pretty unusual benchmarking partners.

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BENCHMARKING

- ❖ **Southwest Airlines**, for example, studied Indy 500 pit crews, who can change a race tire in under 15 seconds, to see how they could make their gate turnaround even faster.
- ❖ **IBM** studied Las Vegas casinos looking for ways to discourage employee theft.
- ❖ And **Giordano Holdings Ltd.**, a Hong Kong-based manufacturer and retailer of mass-market casual wear, borrowed its "good quality, good value" concept from Marks & Spencer, used The Limited to benchmark its point-of-sales computerized information system, and modeled its simplified product offerings on McDonald's menu approach.

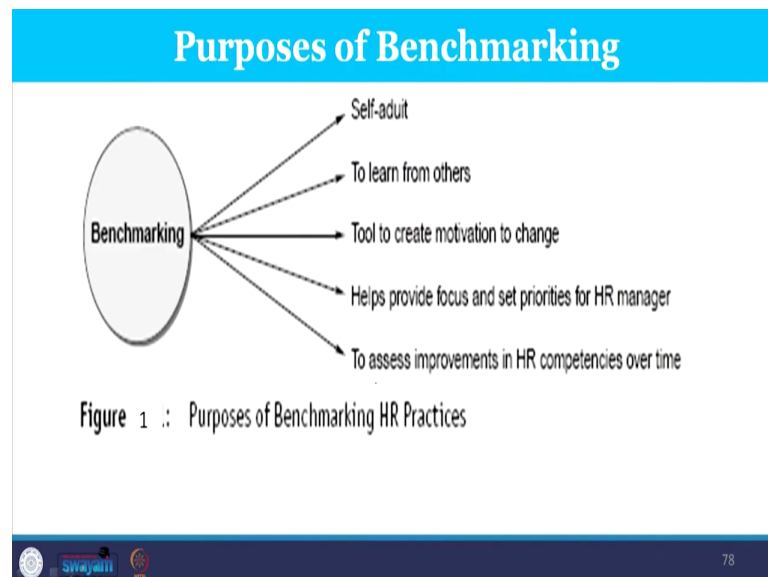
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So, Southwest Airlines as I told you for example studied Indy 500 pit crews, who can change race tire in under 15 seconds, to see how they could make their gate turn around

even faster. IBM studied Las Vegas casinos looking for ways to discourage employees theft.

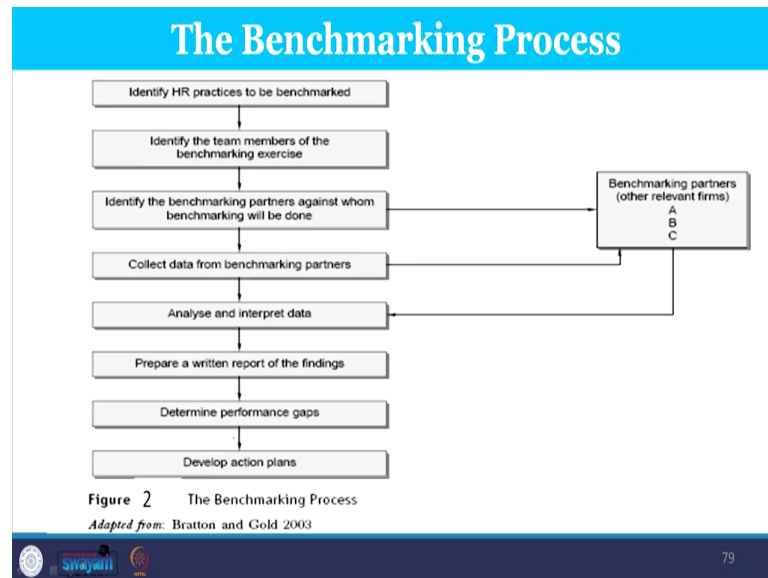
And, Giordano Holdings Limited a Hong Kong based manufacturer, and retailer of mass market casual wear borrowed its good quality, good values concept from Marks and Spencer, used to benchmark its point of sales computerised information system. And modelled its simplified product offerings on McDonald's menu approach. So, several companies have been learning from each other, learning different ways different methods to improvise its present operations.

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What is the purpose of benchmarking? Benchmarking is a self audit method, learning from others tool to create motivation to change. And helps provide focus and set priorities for the human resource managers, to assess improvements in the competencies over time.

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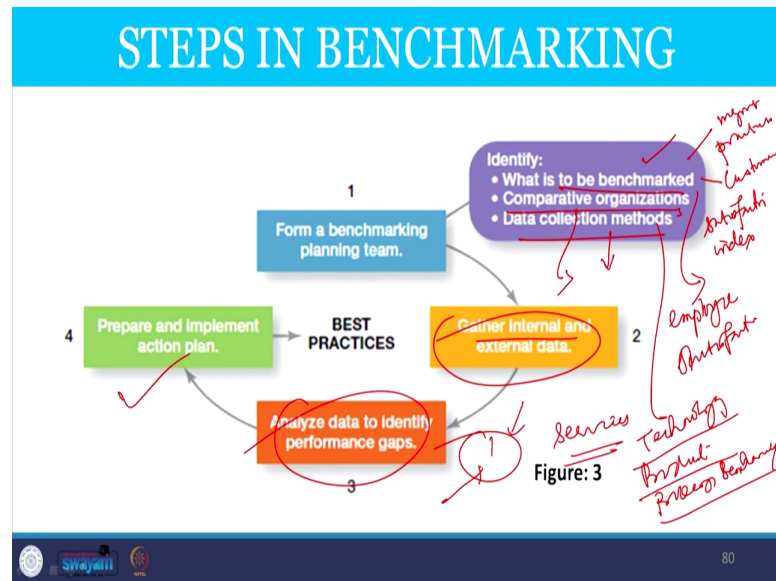


So, this helps overall the company to improve itself year on year and the benchmarking process includes, identifying the best practices, identify team members of the benchmarking exercise, identify benchmark partners against whom benchmarking will be done. Which are the companies from whom you can learn the bench best practices?

Collect data from benchmarking partners. So, it is not done simply by, but by collecting gathering information or data. Analyze and interpret the trend, analyze the data and prepare a written report of the findings. Determine the performance gap between the present company and the after adopting the benchmark practices.

Depth and further, if you see any kind of improvement you can say take corrective actions, develop action plans, and collaborate with the benchmark partners or relevant firms from whom you are about to learn the benchmark practices.

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So, steps in benchmarking practices starts from forming a benchmarking planning team. So, there has to be an organization which adopts a benchmark practice. Should go for a step by step method of adopting or procuring the best practices, there should be a benchmarking team.

Which will identify, what is to be benchmarked, whether it is what practices to be benchmarked, whether it is the management practices, management practices, the customer satisfaction score, customer satisfaction index or whether the employee satisfaction score, or the technology to be benchmarked, or say product to be benchmarked or process to be benchmarked process benchmarking.

So, these are various methods through which you can know, whether it is process or the product or the services to be benchmarked. So, there are various ways through which you can benchmark your company's performance, you can procure the best practices learn the best practices.

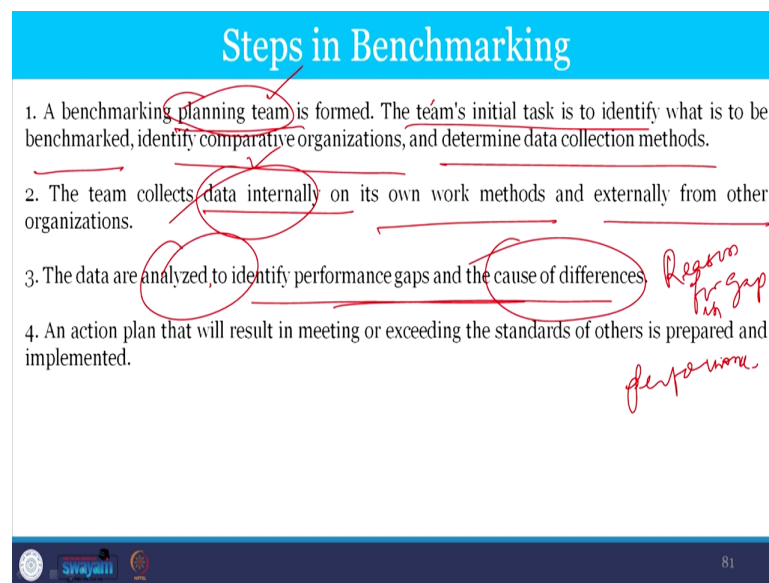
Comparative organizations, next is which are the competitive organizations. Which organizations need to be benchmarked from whom to learn, data collection methods what are the various ways through which you can gather data. And next is gather internal and external data.

A company which adopts benchmarking practices, need not necessarily survey the other company from where you have to learn the best practices. But, there is a need for internal

assessment. Whether the current practices need any revision or you need to necessarily adopt the benchmark practices.

Analyze data to identify performance gap, the present performance and after the benchmarking practices have been adopted, is there any kind of change. So, the gap analysis has to be done and then prepare an implement action plan. So, this gives you a complete overview of the various steps in benchmarking.

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A benchmarking planning team so, concluding this lecture here, I would like to say that steps which are followed in benchmarking steps. First step includes benchmarking planning team is formed. There is a planning before benchmarking practices are adopted, a benchmarking planning team need to have a group of people, who can visualise, who can see the best practices anywhere from any industry.

And the teams initial task is to identify, where what is to be benchmarked, identify comparative organization. So, the team has immense amount of task to identify the organizations from where you have to learn the best practices. And determine various ways of collecting data.

The team collects data internally so, the team before you learn from the others, they have to also gather data internally on its own work methods and externally from other organizations. The data are to be analyzed to identify the performance gap. So, data

collection, data analysis forming a team are very important and also analysing the competitors' intelligence.

Identify the performance gap and the reasons for this gap, reasons for the gap is also. Reason for the gap in performance is equally important, then only you can justify the action plan that will result in meeting or exceeding the standards of others is prepared and implemented. So, this will give you a kind of what are the steps in benchmarking. And further suggestions for improving the effectiveness of benchmarking.

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Suggestions for Improving Effectiveness of Benchmarking

1. Link benchmarking efforts to strategic objectives.
2. Have the right-sized team—between six and eight people is most effective.
3. Involve those individuals who will be directly affected by benchmarking efforts.
4. Focus on specific, targeted issues rather than broad, general ones.
5. Set realistic timetables.
6. Choose benchmarking targets carefully.
7. Observe proper protocol when gathering benchmarking information by dealing with the appropriate individuals.
8. Don't collect excessive, unnecessary data.
9. Look at the processes behind the numbers, not just at the numbers themselves.
10. Identify benchmarking targets and then be sure to take action.

Linking benchmarking efforts to strategic objectives, so benchmark practices need to be aligned with the strategic objective of the organization. Have the right sized team what we need to take care is it should be the benchmark practices, benchmark practices should have a kind of alignment with business strategy of an organization. That is the business plan of action.

For example, what we learned is cost minimization the business strategy, if we recall what we learnt earlier cost minimization strategy, innovation strategy innovation and niche or focused, niche or focused strategy or focus. So, any organization before adopting the benchmark practices, they need to see a kind of alignment with the business strategy.

The next one is while forming a team, the team should have a right size between 6 to 8 people effectively not more than that. And, then involve those individuals who will be directly affected by benchmark efforts. Those individuals should also be because without taking consent of the people who would be affected by the benchmark, would again dilute the effectiveness of or dilute the incorporation or adopting the best practices.

So, what we have understood is the focus should be very specific targeted issues rather than the broad and general ones. If you want to adopt learn the best practices of a particular product, development of a product innovation designs so, take that quality improvement. Toyota is best known in the in automobile segment, automobile sector for its quality products.

So, if you want to learn the best practices from Toyota. So, just the quality improvement process need to be benchmarked, and choose benchmarking targets very carefully. Observe protocol when gathering benchmarking information by dealing with the appropriate individuals.

So, when you are say when you are gathering benchmark information, you need to contact the right person that is very important do not collect excessive unnecessary data. So, gathering data is very important look at the processes behind the numbers not just the numbers themselves. Identify benchmark targets and then be sure to take action.

So, what we have learned in this session is we started with a discussion of various qualitative methods of forecasting. And, we discussed judgement and opinion that qualitative methods, basically emphasised on jury of opinion, sales force composition, customer evaluation, Delphi technique of evaluation sales force composite, market survey. And, then we elaborately we discussed about benchmarking and its impact on organizations performance.

So, we have concluded that benchmarking, there is like benchmarking is a process of self audit, to learn from others, learning best practices it its process, it will focus on it helps to assess improvements in improvement continuous improvement over time up. And benchmarking process includes and like forming a bench benchmarking planning team.

Identify what is to be benchmarked? How data is to be collected? Comparative organizations need to be identified and then gather internal and external data and identify

the gap and prepare and implement an action plan for benchmarking. So, with this I would like to conclude this session.

Thank you.