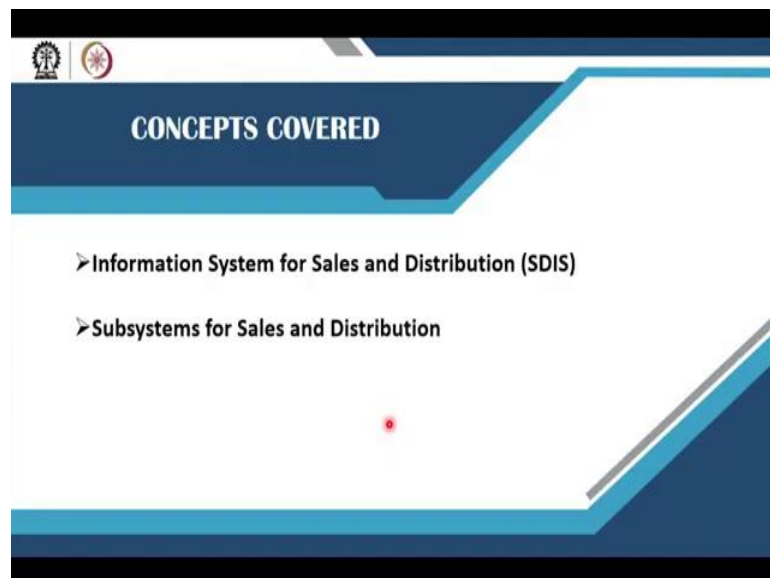


Management Information System
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Week - 06
Module - 02
Lecture – 26
Information Systems for Sales and Distribution

Welcome to the 2nd module of the 6th week on our course on “Management Information Systems”! Today we are going to discuss the features of ‘information systems to support sales and distribution function’.

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So, we will be also discussing the various subsystems within that sales and distribution system which is also known as SDIS. This is acronym for Sales and Distribution Information System.

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Information System for Sales and Distribution (SDIS)

- ❖ Sales and Distribution Information Systems (SDIS) provide support for,
 - ✓ sales and distribution function of,
 - any organization's products and services

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The sales and distribution information systems provide support for sales and distribution function of or related to any organization's products and services.

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Information System for Sales and Distribution (SDIS)

- ❖ Sales function is concerned with,
 - ✓ contacting the customers,
 - ✓ taking orders,
 - ✓ selling the products/services,
 - ✓ Following-up on sales, and
 - ✓ providing customer support

The slide features a background with a stylized tree diagram and various icons. The NPTEL logo and 'NPTEL Online Certification IIT Kharsgpur' are visible at the bottom.

The sales function is concerned with contacting the customers, receiving or taking orders from them, selling the products or services, following up on sales and providing required customer support.

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Information System for Sales and Distribution (SDIS)

- ❖ Sales function is also responsible for,
 - ✓ ensuring that the accounts receivables due to the organization is minimized

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The sales function is also responsible for ensuring that the accounts receivables due to the organization; is minimized. In order that sales function can achieve these objectives information must be provided to them at the right time. And, this is possible if we can design, develop and deploy an effective sales and distribution information system.

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Information System for Sales and Distribution (SDIS)

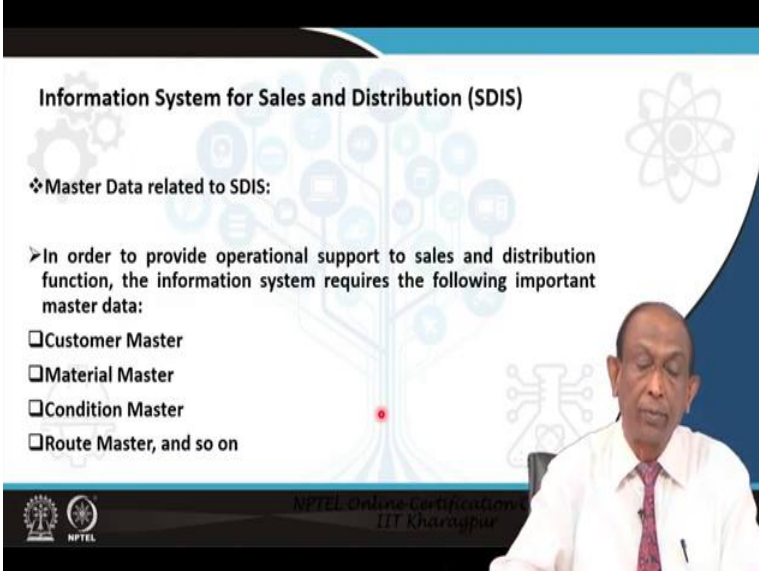
- ❖ Subsystems of SDIS:
 - Sales Forecasting
 - Sales Force Automation
 - Sales Order Processing
 - Sales Analysis and Reporting

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The subsystems that comprise a sales and distribution information systems are the sales forecasting subsystem. The subsystems to support sales force automation, the sales order

processing subsystem and the fourth one which is also very important; sales analysis and reporting subsystem.

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Information System for Sales and Distribution (SDIS)

❖ Master Data related to SDIS:

➤ In order to provide operational support to sales and distribution function, the information system requires the following important master data:

- Customer Master
- Material Master
- Condition Master
- Route Master, and so on

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The master data which is captured and maintained in the sales and distribution information system is very important. And, the various master data pertains to customer master where all the attributes related to a customer are being captured. Material master data, where all the attributes or the characteristic properties associated with the products that are being sold by the organization is being maintained.

The condition master data basically, the different conditions through which the products are sold is being captured. Because, this condition master data is highly relevant for determining the price of the product. And, the route master data; the different routes through which the products will be dispatched to the customers are being maintained within the sales and distribution information system.

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Information System for Sales and Distribution (SDIS)

❖ Sales Forecasting Subsystem:

- Based on the planned marketing mix and outstanding orders,
 - ☐ sales are forecast, and
 - ☐ a full marketing plan is developed
- *Sales forecasting* is an area where any quantitative methods employed must be tempered with human insight and experience

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The first thing that is important is the sales forecasting subsystem. Based on the planned marketing mix and outstanding orders, sales forecast is being carried out and a full marketing plan is developed from the subsystem. Sales forecasting is an area where any quantitative methods employed must be tempered with human insight and experience.

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Information System for Sales and Distribution (SDIS)

❖ Sales Forecasting Subsystem:

- The actual sales will depend to a large degree on the dynamics of the environment
- Qualitative techniques are generally used for,
 - ☐ *Environmental Forecasting*
 - ✓ An attempt to predict the social, economic, legal, and technological environment in which the company will try to realize its plans

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The actual sales depend on to a large degree on the dynamics of the environment. And, hence quantitative models for predicting the likely sales on to the future planning horizon may need to be revised based on the experience, intuition and judgment of the sales and

marketing managers. Sometimes, sufficient data may not be available in the system to carry out these sales forecasting activities through quantitative models.

In that case various qualitative techniques are generally used for forecasting the sales of a product and services. For example: when the company is introducing a new product or a new service, then the likely sales for that product or the revenue that is obtained or going to be obtained from that service cannot be obtained or cannot be determined through quantitative techniques alone. Because, the past data related to those products they do not exist in the sales database.

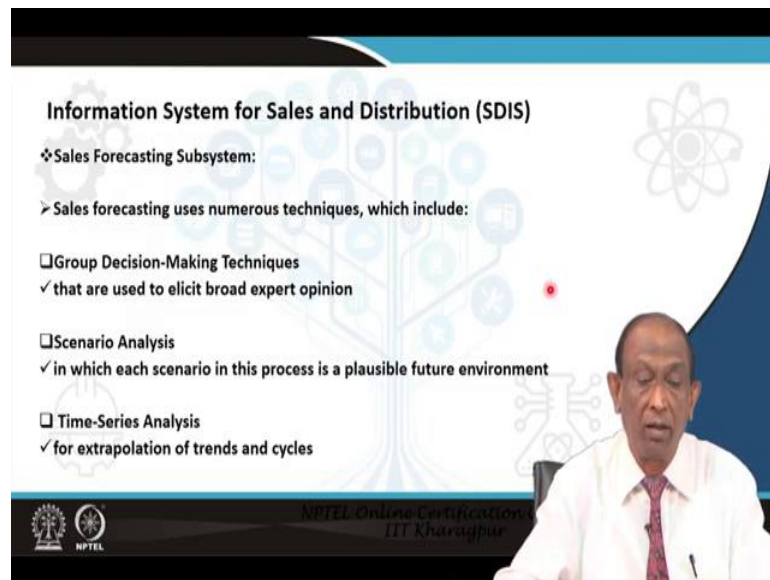
Maybe at times sales managers they try to find out consumption history or sales history related to similar products and to try to apply various quantitative models. But, in real life those techniques are not adequate. Similarly, one thing must be kept in mind that quantitative techniques deployed for forecasting of sales, mainly depend on certain assumptions. And, one of the important assumption is that, the past trend is going to continue in the future.

And, for a new product the managers they really do not know what will be the level of acceptability of that new product; whether the past trend will at all continue in the future or not. And, hence time series analysis or so called different smoothing techniques which are normally used for forecasting of sales may not be applicable. Qualitative techniques are also used for environmental forecasting, because the environment plays also a very important role in determining the likely sales for a product.

An attempt to predict the social, economic, legal and technological, environment in which the company will try to realize its plans is very important. And, for such kind of environmental forecasting, quantitative techniques are not applicable.

Qualitative forecasting techniques for example, Delphi have been used in the past. But, in today's context lot of other qualitative techniques are deployed and the data needed for those may sometimes be obtained from the sales forecasting subsystem.

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Information System for Sales and Distribution (SDIS)

❖ Sales Forecasting Subsystem:

➤ Sales forecasting uses numerous techniques, which include:

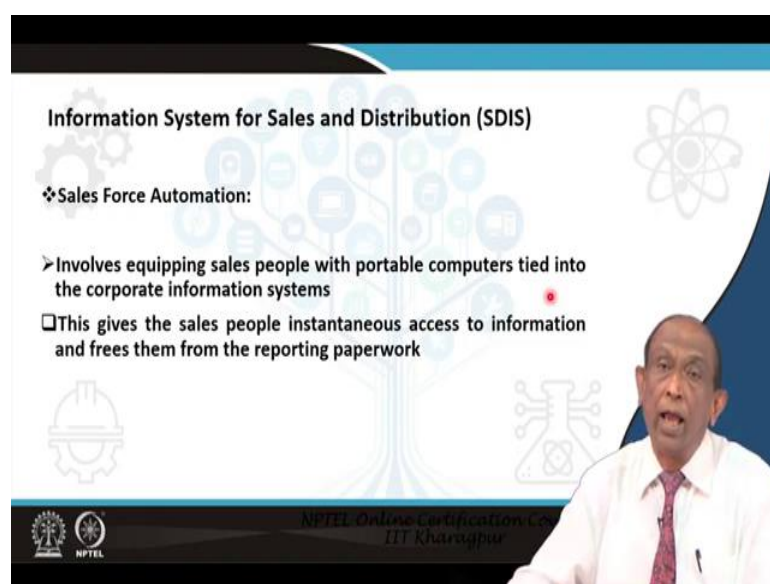
- Group Decision-Making Techniques
 - ✓ that are used to elicit broad expert opinion
- Scenario Analysis
 - ✓ in which each scenario in this process is a plausible future environment
- Time-Series Analysis
 - ✓ for extrapolation of trends and cycles

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Sales forecasting uses numerous techniques including group decision making techniques that are used to obtain broad expert opinions.

Next scenario analysis in which each scenario in a particular process is generated and its feasibility is also analyzed and tried to be validated. Among the quantitative techniques that are popularly being used for forecasting of sales, time series analysis for extrapolation of trends and cycles is very-very important.

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Information System for Sales and Distribution (SDIS)

❖ Sales Force Automation:

➤ Involves equipping sales people with portable computers tied into the corporate information systems

- This gives the sales people instantaneous access to information and frees them from the reporting paperwork

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If you look at any time series analysis, you will see that time series, any times, any data; sales data plotted over a period of time comprises a time series and that time series has got various components. For example; there can be random perturbations or variation in sales around an average level.

Along with this perturbations; there can be upward sales; there is a trend existing in the upward direction or there can be a downward trend along with these perturbations. There can be along with these trends the effect of seasonality. Also the effect of the business cycles on to this particular trend and seasonality needs to be captured and analyzed.

Various models exist and those quantitative models have been embedded in sales and distribution information system or the sales and distribution information system can be interfaced with decision support systems for forecasting of sales.

In such decision support systems, the model output that is generated that is interpreted by the sales managers. Because, one of the properties of decision support systems is interaction between the manager and the computer. And, upon interpretation of the model output, the manager can revise some of the estimates or can change some of the variables which predict the outcome.

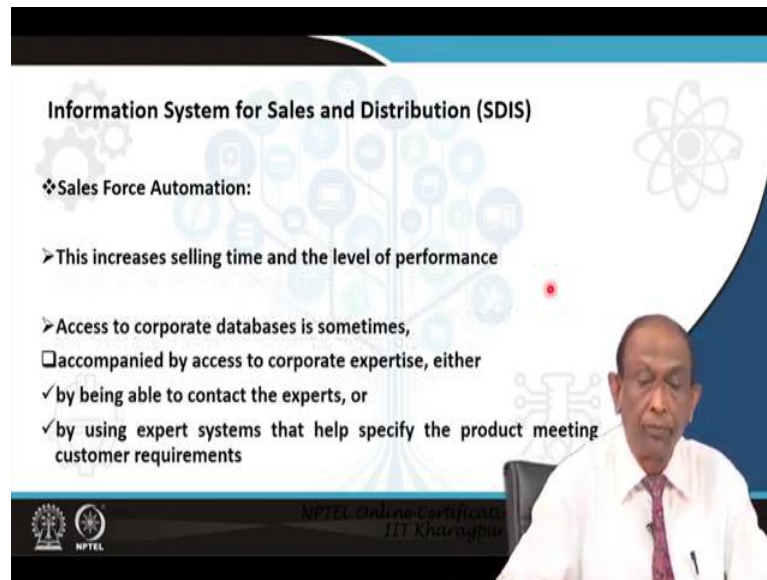
So, manager sales manager's intuition, judgment, experience they modify the output from this model. And, such kind of decision support systems are now very popular and form a part of the sales and distribution information systems which is also integrated with marketing information system. And, overall marketing and sales information systems get tightly integrated with other functional systems to form the integrated enterprise resource planning systems.

Next let us talk about the supporting role of SDIS in automating sales force. So, what does this sales force automation mean? It involves equipping sales people with portable computers tied into the corporate information systems. So, that the sales people they have instantaneous access to information. And, they also feed whatever field information they collect directly on to the corporate database on sales. And, this entire process frees the sales people from the reporting paperwork.

So, that they can concentrate more on their sales activities rather than you know spending time in preparing reports or writing down relevant information; when the

computer is tied with them. So, whenever they are getting any new information, they are feeding in the data. For corporate information, they can just tap into the corporate database thereby, they are freed.

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Information System for Sales and Distribution (SDIS)

❖ **Sales Force Automation:**

- This increases selling time and the level of performance
- Access to corporate databases is sometimes,
 - ❑ accompanied by access to corporate expertise, either
 - ✓ by being able to contact the experts, or
 - ✓ by using expert systems that help specify the product meeting customer requirements

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So, the sales force automation subsystem increases the selling time and the level of performance of the sales people. Access to corporate databases is sometimes accompanied by access to corporate expertise; either by being able to contact the experts or by using expert systems that help specify the product meeting customer requirements. More about these; expert systems in a module which will be dealt in later.

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The slide features a blue and white color scheme with a background of faint icons including gears, a tree, and a molecular structure. The text is as follows:

Information System for Sales and Distribution (SDIS)

❖ Sales Order Processing Subsystem:

- This subsystem provides support at every stage of the sales order processing cycle in the context of the following activities:
 - Enquiry by customer (Verbal/Phone/Mail/Order Form)
 - Inform the customer about availability of material

At the bottom left is the NPTEL logo, and at the bottom center is the text 'NPTEL Online Certification Courses IIT Kharagpur'.

Then the next subsystem associated with SDIS is the sales order processing subsystem which is the heart of any sales and distribution information system. This subsystem provides support at every stage of the sales order processing cycle in the context of the following activities. Enquiry by customer, the customer might enquire about the availability of the products in a verbal way, calling up by phone.

He may send mail; he can fill up an order form and then basically try to find out whether the organization has the product available with them. Whether they will be able to supply the quantity that has been ordered for the product by the customer, at the right point in time when the customer wants it; that information is also available from the sales and distribution information system. And, the customer is informed about that.

Suppose, the customer has ordered 100 units, the sales and distribution information system which is interfaced with the materials information system and the manufacturing management information system will capture the data related to availability of the stock. And, will inform the customer that ok, you have ordered 100 units, we have 100 units and depending on the lead time of supply; it will say that it will reach you on such and such date.

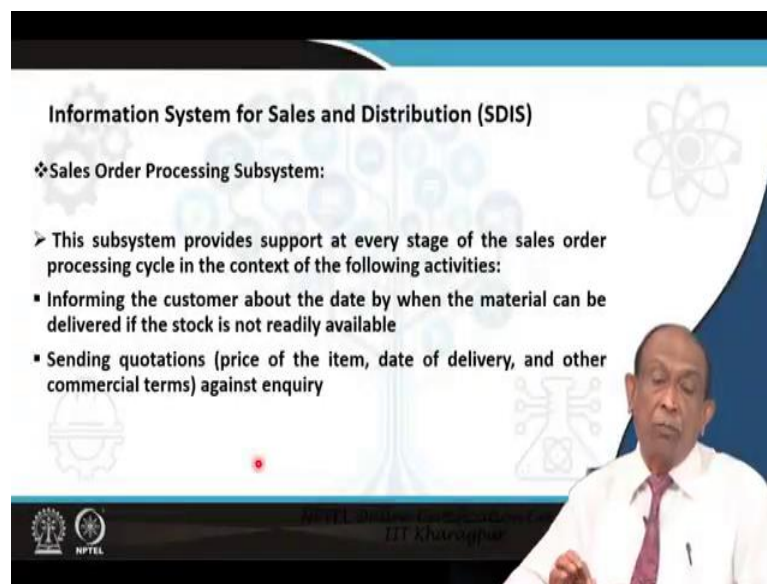
If the stock is not available, the sales and distribution information system will tell the customer; that we do not have sufficient stock. Can we send you the product in the next delivery lot? In that case a back order will result, if partial delivery is acceptable to the

customer then further sales activities proceed and they are supported by the sales and distribution information system. In committing a delivery date to the customer, another very important check is carried out by the sales and distribution information system.

What is that? The sales and distribution information system will get from the finance and accounting system the credit history of the customer. So, the credit rating check is done to find out whether this particular customer can be served or not. Whether the customer is paying at the right time, within the desired time limit, whether he is paying all his dues or not; if not his credit rating goes down. And before sending material or products to this kind of customers, special permission is required.

All these information related to the credit history of the customer is being captured by the sales and distribution information system.

(Refer Slide Time: 26:10)

The image shows a presentation slide with a white background and blue accents. The title is 'Information System for Sales and Distribution (SDIS)'. Below it, the text reads 'Sales Order Processing Subsystem:'. A bullet point states: 'This subsystem provides support at every stage of the sales order processing cycle in the context of the following activities:'. Two sub-bullets follow: 'Informing the customer about the date by when the material can be delivered if the stock is not readily available' and 'Sending quotations (price of the item, date of delivery, and other commercial terms) against enquiry'. In the bottom left corner, there are logos for NPTEL and IIT Kharagpur. A man in a white shirt and red tie is visible in the bottom right corner, appearing to be presenting the slide.

The sales order processing subsystem provides support at every stage of the sales order processing cycle. Informing the customer about the date, by when the material can be delivered if the stock is not readily available. That means, under back order situation also the system will commit the delivery date. The quotations are prepared by the system and in any quote price of the item, the date of delivery and other commercial terms against the customer enquiry is being sent to the customer from the system.

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The slide is titled "Information System for Sales and Distribution (SDIS)". It features a background with a stylized tree and various icons. The text on the slide is as follows:

- ❖ Sales Order Processing Cycle:
 - Order confirmation after doing the credit check of customer
 - Check for completeness and accuracy of order entry
 - Update the sales person's incentive

The slide also includes the NPTEL logo and the text "NPTEL Online Certification Center IIT Kharsgpur" at the bottom.

Upon order confirmation from the customer and after doing the credit checking, the system helps to check for completeness and accuracy of order entry. And, also the system updates the incentive that is to be paid to the corresponding salesperson.

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The slide is titled "Information System for Sales and Distribution (SDIS)". It features a background with a stylized tree and various icons. The text on the slide is as follows:

- ❖ Sales Order Processing Cycle:
 - Inventory Sourcing (to define from where the material need to be sourced, externally from vendor or internally need to be produced)
 - Locate the nearest warehouse from where order can be served and transmission of order information to the warehouse (or generation of challan)

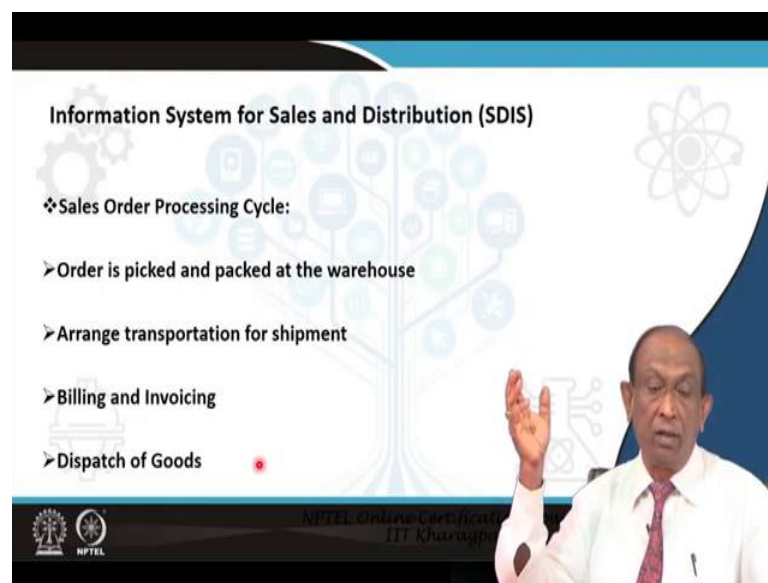
The slide also includes the NPTEL logo and the text "NPTEL Online Certification Center IIT Kharsgpur" at the bottom.

Then the sales order processing system subsystem will basically interact with the materials information system to define from where the material need to be sourced; whether this particular material or the product is to be procured from an external supplier or this is produced internally. This is basically known as inventory sourcing.

If the material is available within the organization, this system helps to locate the nearest warehouse from where order can be served and transmission of order information to the warehouse takes place from the system.

That means after locating that particular warehouse from where the product has to be dispatched on to the customer, a challan is being generated from the system and being sent to that particular warehouse for picking up that product. So picking, packing and dispatch, all these activities will follow based on generation of that challan.

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Order is picked and packed at the warehouse. Then this system has got the route master, with the help of the route master it will try to find out the optimal route through which the product will be dispatched on to the customer. The system will help the sales people to arrange for transportation and all other shipment related details will be generated through the subsystem.

Next before dispatch, the sales people have to prepare the bill or the invoice. And, whatever supporting data is required for that, it can be obtained from the sales and distribution information system which in turn has got interface with the finance and accounting system. And, then the dispatch of goods takes place. This is the entire sales order processing cycle. And, all the required support and help in terms of the information is obtained from SDIS.

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The slide is titled "Information System for Sales and Distribution (SDIS)". It features a background with a stylized tree and various icons. The text on the slide is as follows:

- ❖ Sales Order Processing Cycle:
 - Receipt of goods by customers and signing proof of delivery
 - Collection of payment
 - Communicate order status to customers on a regular basis

At the bottom of the slide, there are logos for NPTEL and IIT Kharagpur, along with the text "NPTEL Online Certification Course IIT Kharagpur". A man in a white shirt and tie is visible in the bottom right corner of the slide frame.

So, the product is now dispatched. The customers will receive those product and they will sign a proof of delivery. Then payment will be collected from the customer; based on the invoices that have been already sent to them.

So, all these activities are being supported by the subsystem. And most important is that, time to time the order status will be communicated to the customer on a regular basis by this particular subsystem.

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The slide is titled "Information System for Sales & Distribution (SDIS)". It features a background with a stylized tree and various icons. The text on the slide is as follows:

- ❖ Analysis and Reporting Subsystem:
 - Analysis of Sales by Regions, Customer Groups, Sales Persons, and so on
 - Sales Target versus Achievement
 - Performance of the Sales Outlets
 - Effect of Model Changes on Sales

At the bottom of the slide, there are logos for NPTEL and IIT Kharagpur, along with the text "NPTEL Online Certification Course IIT Kharagpur". A man in a white shirt and tie is visible in the bottom right corner of the slide frame.

The analysis and reporting subsystem of SDIS helps in analysis of sales by region, by customer groups, by sales persons and so on.

Various reports are; generated which basically highlight the sales target versus actual achievement, performance of the various sales outlets and the effect of model changes on sales.

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The slide displays the 'Information System for Sales & Distribution (SDIS)' interface. Under the 'Analysis and Reporting Subsystem' section, three items are listed: 'Seasonal Variations in Sales', 'Market Share and Trends', and 'Costs of Sales Campaigns versus Benefits Achieved'. The slide also features the NPTEL logo and the text 'NPTEL Online Certification Course IIT Kharagpur' at the bottom. A speaker is visible in the bottom right corner of the slide frame.

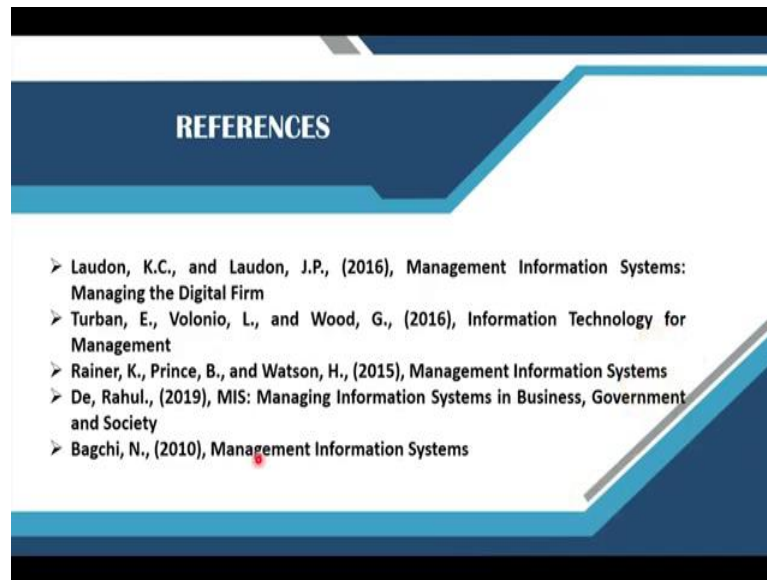
Seasonal variations in sales, market shares and trends, cost of sales campaigns versus benefits achieved.

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The slide displays the 'Information System for Sales & Distribution (SDIS)' interface. Under the 'Analysis and Reporting Subsystem' section, three items are listed: 'Timing of Special Sales Campaigns', 'Report on Deployment of Sales Force, and', and 'Consequent Achievement of Targets'. The slide also features the NPTEL logo and the text 'NPTEL Online Certification Course IIT Kharagpur' at the bottom. A speaker is visible in the bottom right corner of the slide frame.

Timing of special sales campaigns, report on deployment of sales force and consequent achievement of targets are some of the outputs that are generated from the sales and distribution information system.

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These are the references that I have used in preparing and delivering this module.

And thank you all for your kind cooperation!