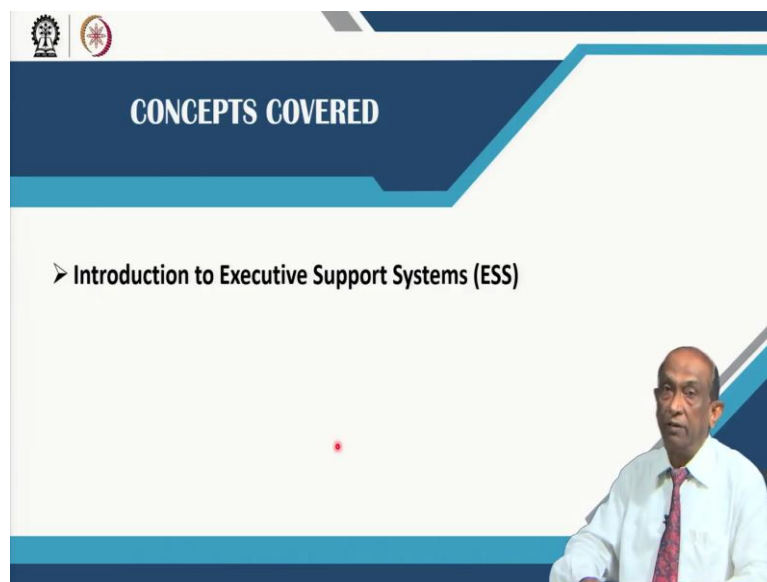


Management Information System
Prof. Kunal Kanti Ghosh
Vinod Gupta School of Management
Indian Institute of Technology, Kharagpur

Week – 10
Module - 03
Lecture – 48
Executive Support System

Hi, welcome to the 3rd module of the 10th week on ‘Executive Support Systems’ as part of our course on “Management Information Systems”!

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So, in this lecture, we will be giving you an introductory concept of the systems to support the high level managers or the executives of an organization. Systems to support executives are also known as Executive Support Systems abbreviated as ESS.

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Introduction to Executive Support Systems (ESS)

- ❖ ESS is also referred to as Executive Information Systems (EIS)
- ❖ Senior managers need systems that focus on strategic issues and long-term trends, both in the firm and in the external environment
- ❖ They are concerned with questions such as:
 - What will be the employment levels in five years?
 - What are the long-term industry cost trends?
 - What products should the firm make in the next five years?

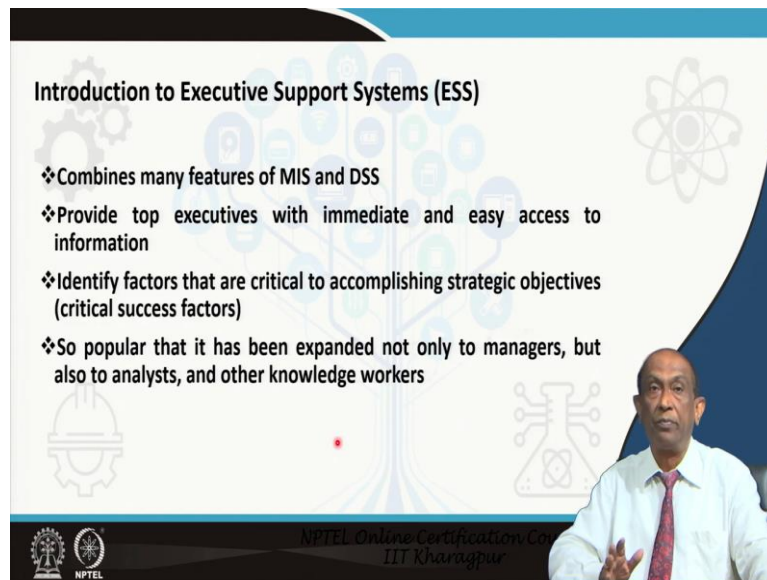
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Executive support systems is also very popularly known as executive information systems. So, in many organizations they call it EIS, in other organizations they call it ESS. The senior managers that is the executives in any organization they need systems that focus on strategic issues and long term trends, both inside the firm and in the external environment.

These executives are concerned with finding answers to questions such as what will be the employment levels in five years of time from now, what will be the long term industry cost trends and how that is going to impact our business? What products should a firm make in the next five years, who are the executives that need to be promoted in the upcoming financial year?

These are the different types of questions and finding answers to these questions is not that easy. It is a challenge and executive support systems help the top level executives in finding some sort of answers to these questions.

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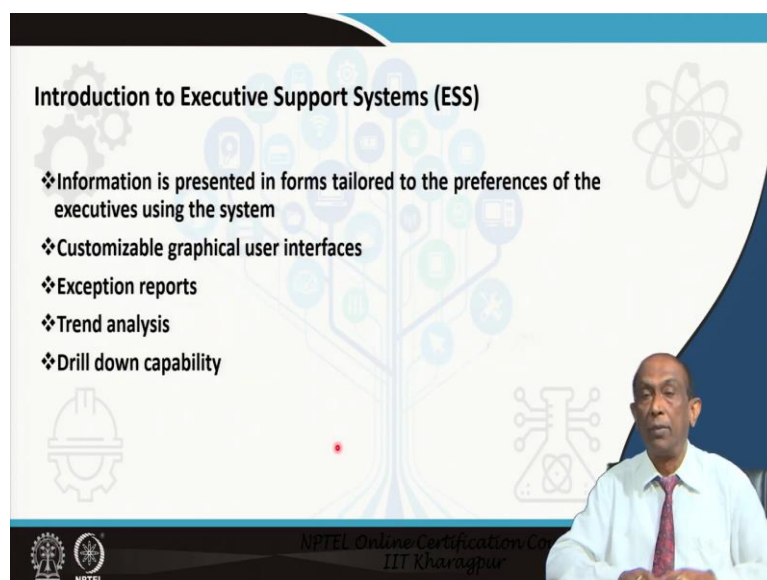
Introduction to Executive Support Systems (ESS)

- ❖ Combines many features of MIS and DSS
- ❖ Provide top executives with immediate and easy access to information
- ❖ Identify factors that are critical to accomplishing strategic objectives (critical success factors)
- ❖ So popular that it has been expanded not only to managers, but also to analysts, and other knowledge workers

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So, EIS or ESS whatever you might call it, provide top executives with immediate and easy access to information. EIS help managers to identify factors that are critical to accomplish strategic objectives that means, the critical success factors for framing strategies are identified with the help of ESS. ESS has become so popular that it has been expanded not only to managers, but also to other analysts and the knowledge workers of any firm.

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Introduction to Executive Support Systems (ESS)

- ❖ Information is presented in forms tailored to the preferences of the executives using the system
- ❖ Customizable graphical user interfaces
- ❖ Exception reports
- ❖ Trend analysis
- ❖ Drill down capability

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In executive support systems, information is displayed or presented in a form or in forms that are tailored to the preferences of the executives who are using the system. There are graphical

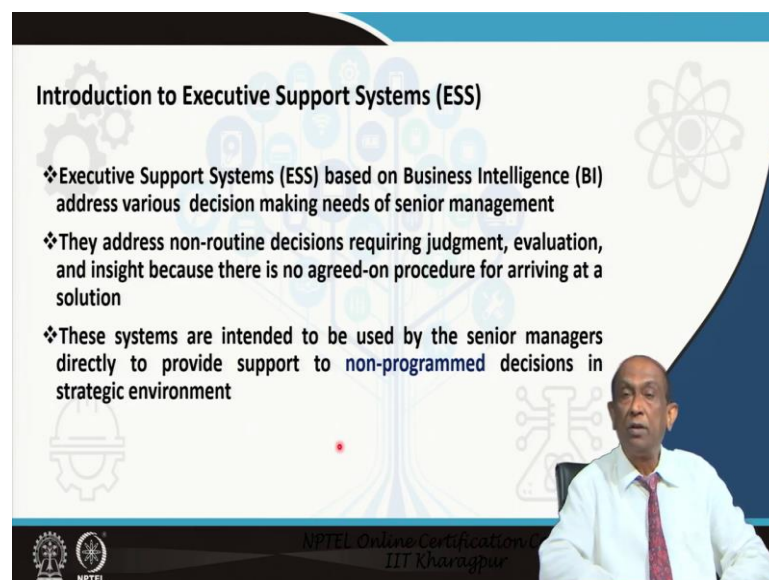
user interfaces for displaying or presenting the output and these graphical interfaces are customized or developed according to the preferences and the likings and dislikings of the executives, who will use them.

Various exception reports can be generated as part of the output from this EIS. Executive support systems, they can display output in terms of trend analysis of the data that is captured in the system whether the key performance indicators are going up over time or going down. And another important aspect of executive support systems is the drill down capability.

Drill down capability means, suppose the system has displayed or presented a particular value of a key process indicator or some result has been presented to the executive or the top level manager. And that manager would like to see what the basis was; how these results have been arrived at; what were the underlying data or the rules or the assumptions that are responsible for presenting this data or for this output.

So, they can drill down and see they can reach up to the first level input data which is responsible for generating this kind of solution and that is drill down capability. They can go down stage wise.

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Introduction to Executive Support Systems (ESS)

- ❖ Executive Support Systems (ESS) based on Business Intelligence (BI) address various decision making needs of senior management
- ❖ They address non-routine decisions requiring judgment, evaluation, and insight because there is no agreed-on procedure for arriving at a solution
- ❖ These systems are intended to be used by the senior managers directly to provide support to non-programmed decisions in strategic environment

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Executive support systems based on business intelligence tools address various decision making needs of the senior management group of any organization. They address non-routine decisions that is very important, which is basically called non programmed decisions. Non-

routine decisions are a part of non programmed decisions, it is not taken on a daily basis, it is not the same kind of problem that they are solving.

This solution for non-routine problems or non-routine decisions require judgment, evaluation and insight of this top level managers because there is no established procedure or agreed on procedure for arriving at a solution for this type of problem. These systems are intended to be used by senior managers directly to provide support to such kind of non-programmed decisions. Particularly, where the impact of the solution is over a long period of time; that means, the environment is strategic.

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Introduction to Executive Support Systems (ESS)

- ❖ Programmed and Non-programmed Decisions
 - There are two types of decisions – programmed and non-programmed decisions
 - Programmed decisions are basically automated processes, general routine work, where
 - These decisions have been taken several times
 - These decisions follow some guidelines or rules
 - ✓ For example, selecting a reorder level for inventories, is a programmed decision

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So, coming back to programmed and non-programmed decisions, programmed decisions are basically automated processes mostly routine work, where these decisions have been taken several times in a routine manner and the decisions they follow some guidelines or rules some kind of a structured decision problem. For example, selecting a reorder level for inventories is a program decision.

Reorder level means to determine that particular level below which if the stock falls then you will raise a fresh order quantity and that reorder level determination is very simple. It this reorder level consists of two components. One is the safety stock that needs to be maintained over a period of time throughout the year maybe and to that you need to add the expected consumption over the lead time period and various well established procedures exist for computing that reorder level. So, it is a program decision.

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Introduction to Executive Support Systems (ESS)

- ❖ **Non-programmed Decisions:**
 - Occur in unusual situations
 - Decisions are new
 - There will not be any rules to follow
 - These decisions are made based on the available information
 - These decisions are based on the manager's discretion, instinct, perception and judgment
 - ✓ Investing in new technology is an example of a non-programmed decision

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Non programmed decisions occur in unusual situations. The decisions are completely new. There may not be any rules to follow. These decisions have to be made based on whatever information is available to the manager at that point in time and these decisions are based on the manager's discretion, instinct, their perception and judgment. For example, investing in new technology whether to invest or not is an example of a non-programmed decision.

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Introduction to Executive Support Systems (ESS)

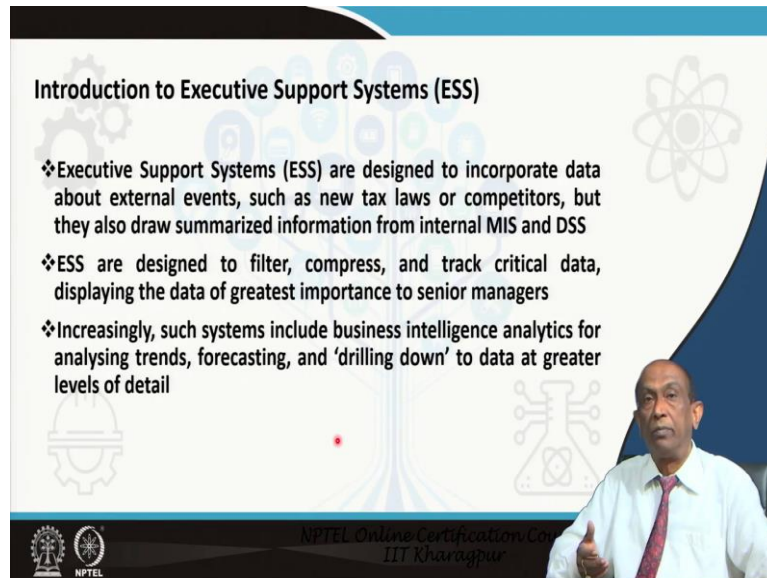
- ❖ **Executive Support Systems (ESS) present graphs and data from many sources through an interface that is easy for senior managers to use**
- ❖ **Often the information is delivered to senior executives through a portal, which uses a Web interface to present integrated personalized business content**

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Executive support systems present graphs and data from many sources through an interface which can be comprehended easily by the senior managers. Often such kind of information is

delivered to the senior executives through a web portal and this portal is basically uses a wave interface to display personalized business content.

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The slide is titled "Introduction to Executive Support Systems (ESS)". It contains three bullet points:

- ❖ Executive Support Systems (ESS) are designed to incorporate data about external events, such as new tax laws or competitors, but they also draw summarized information from internal MIS and DSS
- ❖ ESS are designed to filter, compress, and track critical data, displaying the data of greatest importance to senior managers
- ❖ Increasingly, such systems include business intelligence analytics for analysing trends, forecasting, and 'drilling down' to data at greater levels of detail

The slide features a blue and white color scheme with decorative icons of gears and a network diagram. In the bottom right corner, there is a small video inset of a man in a white shirt and red tie speaking. The NPTEL logo and "NPTEL Online Certification Center IIT Kharagpur" are visible at the bottom of the slide.

Executive support systems are designed to incorporate data related to external events, those events that have got a profound influence in arriving at the right kind of decisions. For example, new tax laws they have got lot of influence on the existing business or new competitors on the scene. These are all external events and ESS need to draw or capture these kind of information. Besides capturing data related to such kind of external events, decision support systems and MIS, internal MIS they are also input or they are also interfaced with the ESS.

So, executive support systems draw summarized information from internal management information systems MIS as well as DSS and also from the external sources, external events to help senior managers in arriving at solutions to non-programmed decision problems. Executive support systems are designed to filter, compress and track critical data displaying those data which are of the greatest importance to senior managers.

Increasingly, such systems include BI analytics also known as business intelligence based analytics for analyzing trends, forecasting and to incorporate drill down capability to identify data at greater levels of detail.

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Introduction to Executive Support Systems (ESS)

- ❖ For example, the CEOs of many multi-national companies in various sectors has Executive Support Systems that provide on their desktop a minute-to-minute view of:
 - their organization's financial performance as measured by
 - ✓ working capital,
 - ✓ accounts receivable,
 - ✓ accounts payable,
 - ✓ cash flow and
 - ✓ inventory

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For example, the CEOs of many multinational companies in various sectors they use EIS or executive support systems to get an idea of the minute to minute view of various financial performance measures on their desktop. These financial measures include working capital details, accounts receivable, accounts payable, cash flow and inventory performance related data. There are many more depending on the functional area, where the manager is interested to concentrate.

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Introduction to Executive Support Systems (ESS)

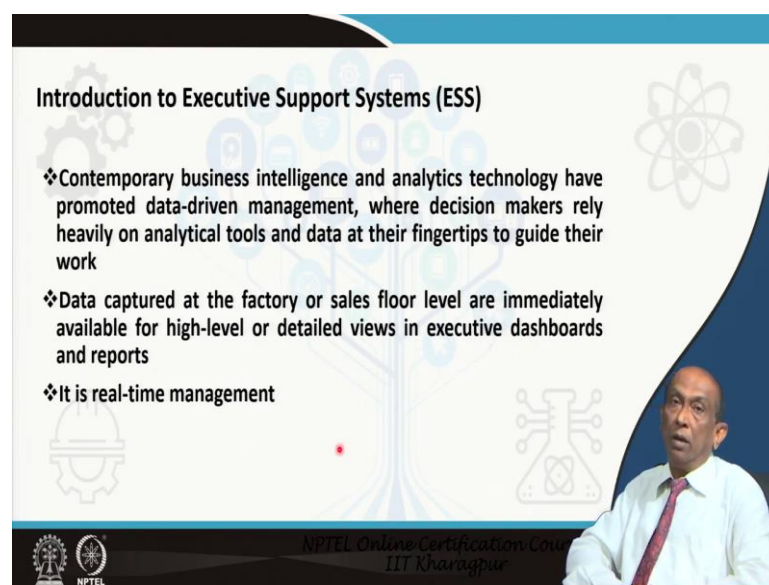
- ❖ The information is presented in the form of digital dashboard, which displays on a single screen graphs and charts of key performance indicators for managing a company
- ❖ Digital dashboards are becoming an increasingly popular tool for management decision makers

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And these information is presented in the form of digital dashboard which displays on a single screen graphs and charts of key performance indicators that are required for managing a company. So, the KPIs, KPIs means the key performance indicators are displayed graphically or through charts on the screen of the senior managers.

And these digital dashboards are becoming increasingly popular tool for management decision makers, primarily, for the reason that this charts and pictures are worth much more compared to these reports and in the form of table tables and you know written displays.

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Introduction to Executive Support Systems (ESS)

- ❖ Contemporary business intelligence and analytics technology have promoted data-driven management, where decision makers rely heavily on analytical tools and data at their fingertips to guide their work
- ❖ Data captured at the factory or sales floor level are immediately available for high-level or detailed views in executive dashboards and reports
- ❖ It is real-time management

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The slide features a background with faint icons of a gear, a tree, and a circuit board. A small red dot is visible on the slide. In the bottom right corner, there is a video inset of a man in a white shirt and red tie speaking.

Contemporary business intelligence and analytics technology have promoted data driven management, where decision makers they rely heavily on analytical tools and data at their fingertips to guide their work. Basically, today it is the age of analytics in various methodologies related to business analytics and machine learning is embedded in the current day EIS.

Data which are captured at the factory or sales floor level are immediately available for high level or detailed views in executive dashboards and reports that are generated in ESS. So, ESS basically is all about real time management.

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Introduction to Executive Support Systems (ESS)

- ❖ Information base for ESS is often external, unstructured, and even uncertain.
- Exact scope and context of such information is often not known beforehand
- The required information is intelligence based-
 - Market intelligence
 - Investment intelligence
 - Technology intelligence

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Information base for executive support system is often external, unstructured and even uncertain. The exact scope and content of all such information is often not known beforehand. Such kind of information which is required for ESS is mainly intelligence based and three kinds of intelligence is captured in this kind of ESS. They are market intelligence, investment intelligence and technology intelligence.

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Introduction to Executive Support Systems (ESS)

Examples of Intelligent Information

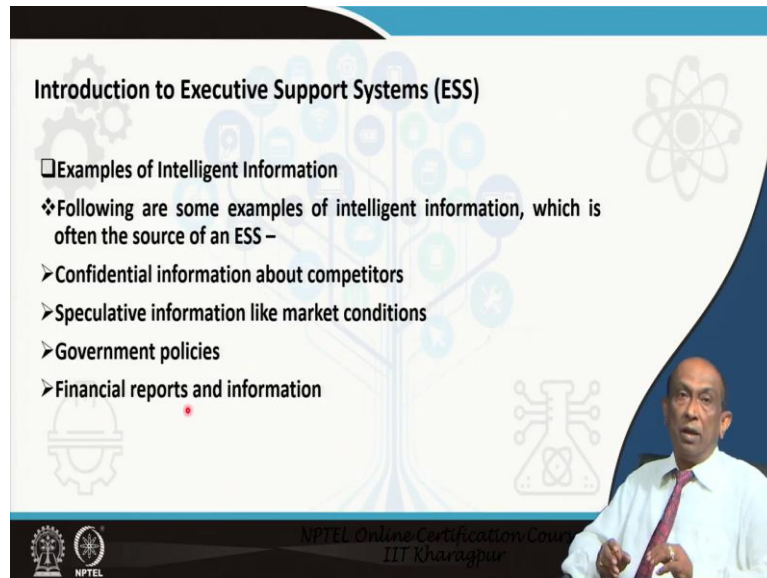
- ❖ Following are some examples of intelligent information, which is often the source of an ESS –
- External databases
- Technology reports like patent records and so on
- Technical reports from consultants
- Market reports

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We give below some of this intelligent information, which is often the source of an ESS. For example, external databases, technology reports like patent records and so on, technical

reports from consultants and market reports is often the sources of data which are captured in ESS.

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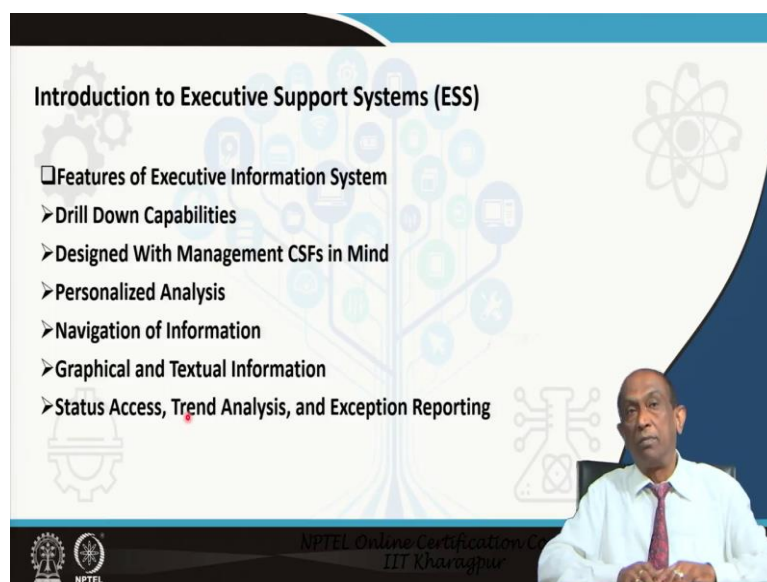
Introduction to Executive Support Systems (ESS)

- ❑ Examples of Intelligent Information
 - ❖ Following are some examples of intelligent information, which is often the source of an ESS –
 - Confidential information about competitors
 - Speculative information like market conditions
 - Government policies
 - Financial reports and information

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Also we capture confidential information about competitors, speculative information like market conditions, government policies, financial reports and information as part of the executive support systems.

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Introduction to Executive Support Systems (ESS)

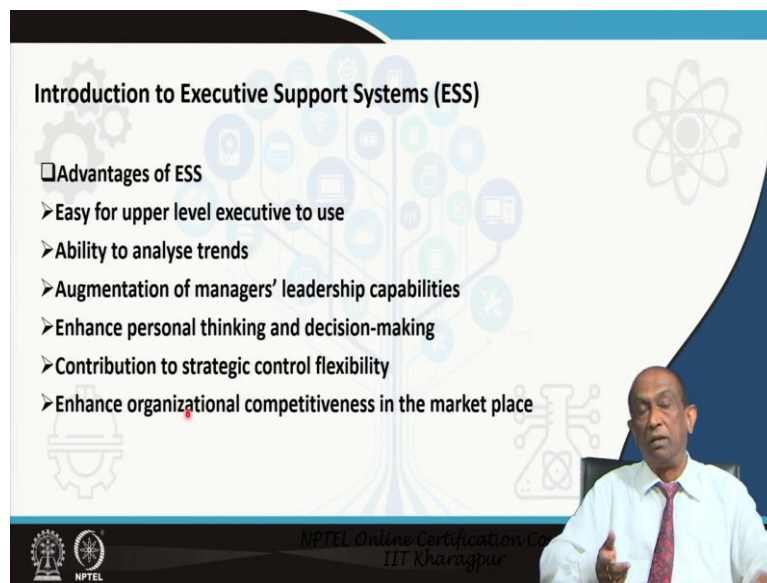
- ❑ Features of Executive Information System
 - Drill Down Capabilities
 - Designed With Management CSFs in Mind
 - Personalized Analysis
 - Navigation of Information
 - Graphical and Textual Information
 - Status Access, Trend Analysis, and Exception Reporting

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So, if we look at the features of any EIS then we will find that one of the important features is the drill down capabilities, designed with management critical success factors in mind. ESS

provides personalized analysis based on the preference of this senior level executives, who can navigate information through the ESS. They get graphical as well as text information as output in form of dashboards. They get access to various status, trend analysis and exception reports which are part of all ESS.

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Introduction to Executive Support Systems (ESS)

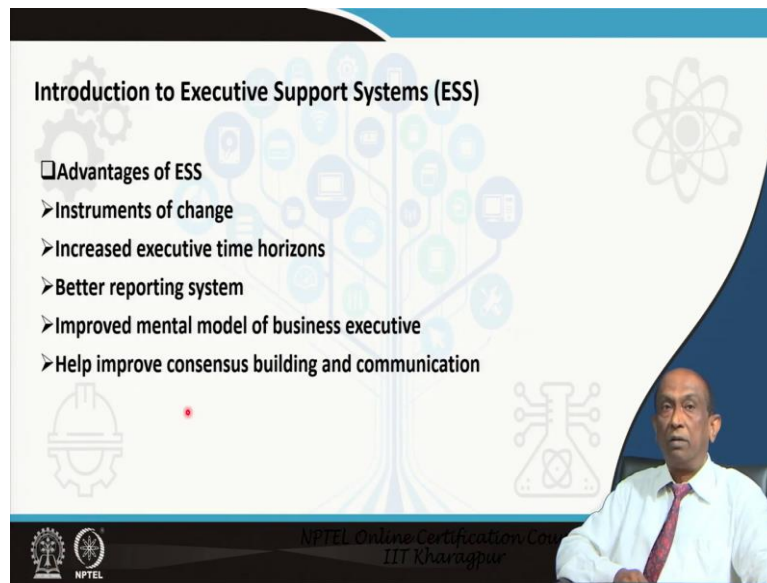
- ❑ Advantages of ESS
 - Easy for upper level executive to use
 - Ability to analyse trends
 - Augmentation of managers' leadership capabilities
 - Enhance personal thinking and decision-making
 - Contribution to strategic control flexibility
 - Enhance organizational competitiveness in the market place

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So, if we summarize to find out the advantages of executive support systems we will find that ESS or EIS are designed, developed and deployed in a manner which is very easy for the top level executives to use.

ESS has the ability to analyze trends. They provide augmentation of manager's leadership capabilities. ESS enhances personal thinking and decision making of executives. These kind of systems contribute to strategic control flexibility and enhance organizational competitiveness in the marketplace.

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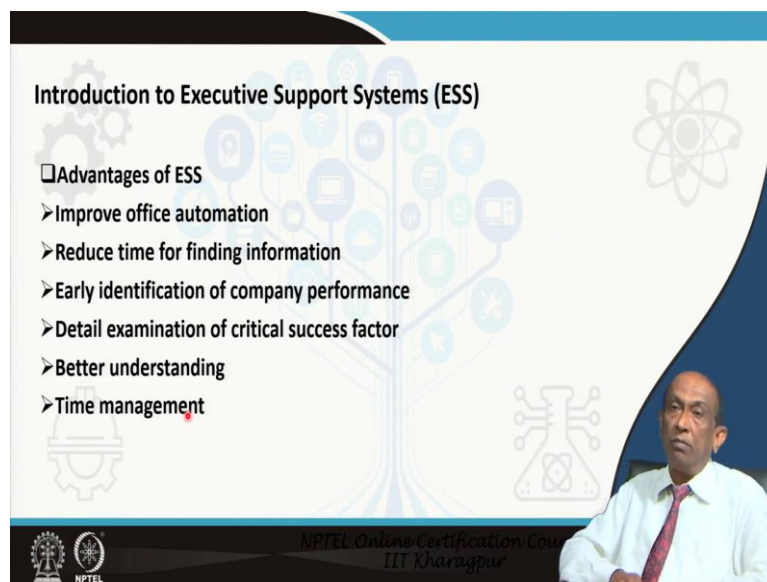
Introduction to Executive Support Systems (ESS)

- ❑ Advantages of ESS
 - Instruments of change
 - Increased executive time horizons
 - Better reporting system
 - Improved mental model of business executive
 - Help improve consensus building and communication

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So, executive support systems are instruments of change having better reporting system incorporating improved mental model of business executives and they help improve consensus building and communication.

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Introduction to Executive Support Systems (ESS)

- ❑ Advantages of ESS
 - Improve office automation
 - Reduce time for finding information
 - Early identification of company performance
 - Detail examination of critical success factor
 - Better understanding
 - Time management

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Executive support systems improve office automation. They reduce time for finding information, provides early identification of company performance. It gives them the facility to examine in detail the critical success factors. Managers they get a better understanding of the decision situation and it also helps in managing their times. Otherwise, non-programmed

decision environment requires lot of time for solution. ESS helps executives or managers to cut down on that time.

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The slide is titled "Introduction to Executive Support Systems (ESS)". It features a list of limitations under the heading "Limitations of ESS". The list includes: "Functions are limited", "Hard to quantify benefits", "Executive may encounter information overload", "System may become slow", "Difficult to keep current data", "May lead to less reliable and insecure data", and "Executive cost for small company". The slide also contains the NPTEL logo and the text "NPTEL Online Certification Course IIT Kharagpur". A video inset in the bottom right corner shows a man in a white shirt and tie speaking.

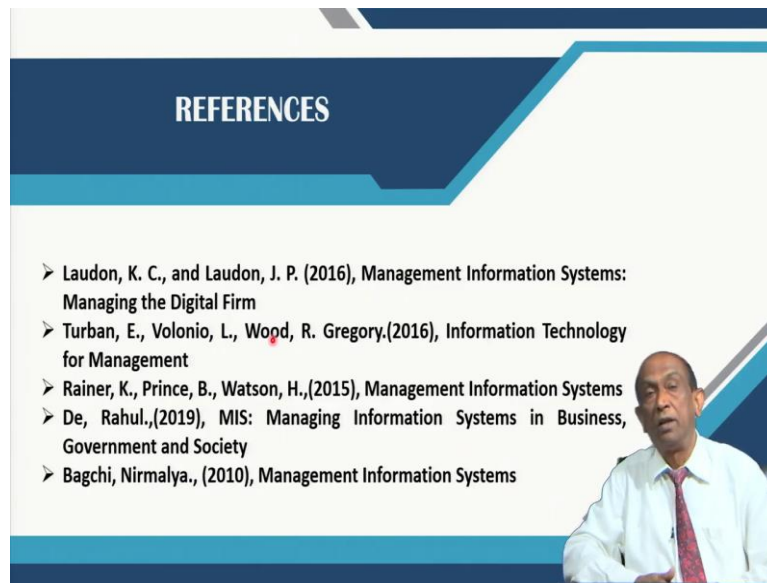
There are some limitations of course of ESS. Now, what are those limitations? The functions over which this non-programmed decisions have to be taken by the managers are limited.

Sometimes, it is very difficult to quantify the benefits that are accrued from deployment of ESS. Many a times, executives may incur information overloading. Sometimes with too many data, the system may become slow the executives might lose their patience. So, maintaining the response time is a very important challenge for the IT personnel.

Sometimes in various situations it may be difficult to keep the status of data current. Sometimes if the data is not updated on a timely manner, this may result in less reliable and in secured data because if sometimes if the data is not properly updated and if some there is tampering or some modification, it might happen ok, though the probability is less, but in many cases this might happen.

And also the, you know, the time that is spent by executives in specifying the requirement or even you know the executive costs that are incurred for development of these systems, you know, for a small company is quite prohibitive. So, these are the limitations of ESS. Other than that these systems have become very popular. Particularly, in large multinational organizations you will find the use of ESS by every top executive.

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These are the references that have been used in preparing this module.

Thank you all for your patience!