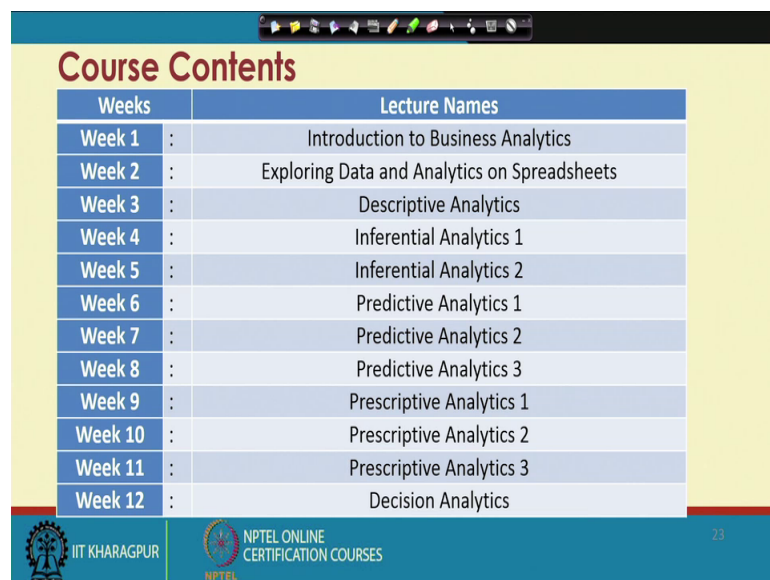


**Business Analytics for Management Decision**  
**Prof. Rudra P Pradhan**  
**Vinod Gupta School of Management**  
**Indian Institute of Technology, Kharagpur**

**Lecture - 02**  
**Introduction To Business Analytics (Contd.)**

Hello everybody, this is Rudra Pradhan here and welcome you all to this particular lecture. We are in the process of discussing introduction to business analytics and this is the lecture number 2 and here is we are going to discuss something related to same introduction to business analytics. So, this is again our course plan and we are still in the first week.

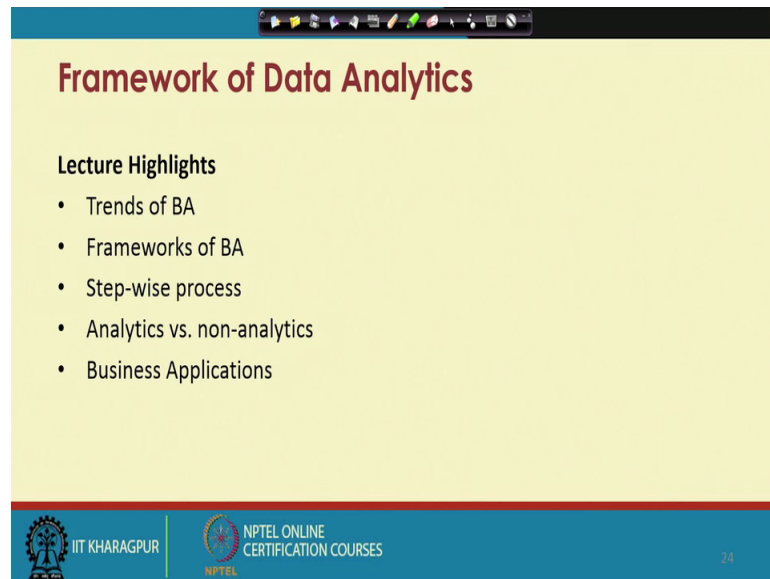
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Weeks	Lecture Names
Week 1	Introduction to Business Analytics
Week 2	Exploring Data and Analytics on Spreadsheets
Week 3	Descriptive Analytics
Week 4	Inferential Analytics 1
Week 5	Inferential Analytics 2
Week 6	Predictive Analytics 1
Week 7	Predictive Analytics 2
Week 8	Predictive Analytics 3
Week 9	Prescriptive Analytics 1
Week 10	Prescriptive Analytics 2
Week 11	Prescriptive Analytics 3
Week 12	Decision Analytics

And the lecture highlights will be like this and today we are going to discuss the trends of business analytics, frameworks of business analytics, stepwise process, then we like to understand the difference between analytics and non analytics, and then again we connect it with some kind of you know business applications.

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**Framework of Data Analytics**

**Lecture Highlights**

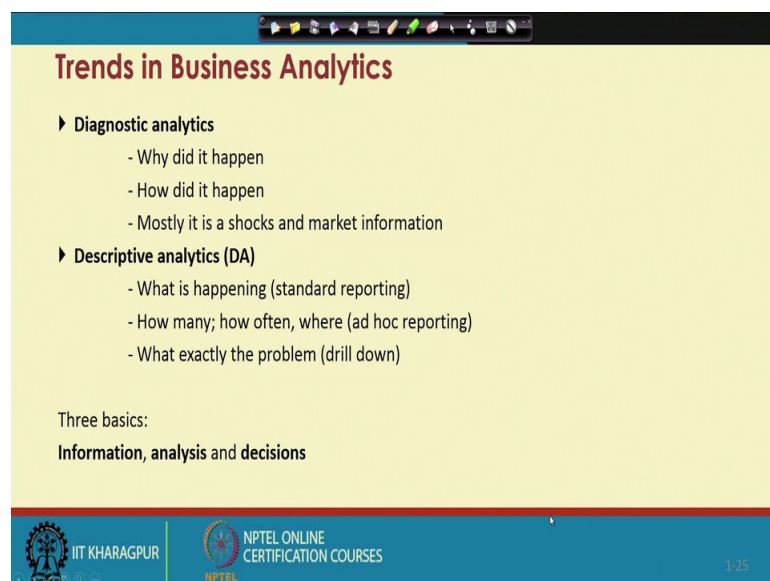
- Trends of BA
- Frameworks of BA
- Step-wise process
- Analytics vs. non-analytics
- Business Applications

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So, what we have already discussed you know.

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**Trends in Business Analytics**

- ▶ **Diagnostic analytics**
  - Why did it happen
  - How did it happen
  - Mostly it is a shocks and market information
- ▶ **Descriptive analytics (DA)**
  - What is happening (standard reporting)
  - How many; how often, where (ad hoc reporting)
  - What exactly the problem (drill down)

Three basics:  
**Information, analysis and decisions**

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So, far as trends in business analytics are concerned. So, we have in a; we have actually in diagnostic analytics, descriptive analytics, then relative analytics and prescriptive analytics.

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**Trends in Business Analytics (Cont.)**

- ▶ **Predictive analytics (PA)**
  - what actions are required (alerts)
  - what could happen (simulation)
  - what if the trend continues (forecasting)
  - what will happen the next (predictive modelling)
- ▶ **Prescriptive analytics**
  - how can we achieve the best outcome (optimization)
  - how can we achieve the best outcome w.r.t. effects of variability (stochastic optimization)

It is a game between **information** and **analysis**.  
**Analytics excellence leads to better decisions (Gartner)**

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So, now strict technically, in the earlier you know lectures we highlighted actually three kinds of classifications.

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**Trends in Business Analytics (Cont.)**

Competitive Advantage	Stochastic Optimization	How can we achieve the best outcome including the effects of variability?	Prescriptive
	Optimization	How can we achieve the best outcome?	
	Predictive Modelling	What will happen next if?	Predictive
	Forecasting	What if these trends continue?	
	Simulation	What could happen...?	
	Alerts	What actions are needed?	Descriptive
	Query / Drill down	What exactly is the problem?	
	Ad hoc Reporting	How many, How often, where?	
	Standard Reporting	What happened?	
	Degree of Complexity		

Source: <http://npTEL.nptel.ac.in/npTEL/715/default.aspx>

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So, first classification was the descriptive one that is descriptive analytics, the second classification was predictive analytics and third classification was you know prescriptive analytics. But actually if you look into our you know course structure., we have actually different kind of you know classification slightly different in fact, descriptive analytics, inferential analytics, predictive analytics, prescriptive analytics and decision analytics.

So, now, accordingly, here is we will have a different approach all together. So that means, these are all actually in all together in a similar lines, but still we like to highlight in a much better way.

So, actually the classification is like this. So, we have a structure called as a diagnostic analytics then will start with the descriptive analytics, then inferential analytics predictive analytics and prescriptive analytics. So, the first structure is actually called as a diagnostic analytics. By default here we do not use any kind of you know analytical tools, but still we like to understand the particular you know structure. So, the fact is like this until unless you know some problems or you know some issues we are actually not serious every time. So, we are actually serious in most of the time when there is a kind of you know issue that is what we called as actually like you know market information. So, sometime some kind of you know shock or some kind of you know problems. So, something wrong or something going other way around, then that will be that will be the starting point through which actually you look into the problem and look for, looking for identifying the problem and looking for the solutions.

So, that is how, so first item in the analytics field is called you know diagnostic analytics. So, it will give you some kind of you know heat that is called the route of the, route of the problems where it starts actually; that means, like you know we think like you know like you know smog once you find some kind of you know smog then you like to start the investigation. Until unless you know there is smog, you are not in a position to go in depth and you know or use some kind of analytics. So, it is a kind of investigation process all together. Since we are going to take some kind of you know management decision that to better management decision and that too through some kind of a business analytics tools. So, you should know actually the reality, the is reality like this, there should be some kind of you know smoke or some kind of hint or some kind of you know you know a kind of you know different kind of you know information or issue then that is the starting point through which you know you can start the particular process

The starting maybe means the smoke or the hint or the kind of you know information may be at the micro labels or at the macro labels. Sometimes you know at a you know particular organization level it may be it may be the issue or at the overall economy level or you know world levels it will be a kind of you know issue. Like you know simple example is you know global financial crisis happened you know you know 2009. So, like

you know these are the kind of you know you know point through which is something you can think differently and in this kind of an environment business analytics you know has a excel you know kind of an excellent role, or you know important roles.

So, the first requirement to entry to this particular problem is you know to get some kind of you know market information or you know specify the kind of you know problem areas. So, in a particular business or you know particular environment business environment you may have a plenty of problems and sometimes these some problems are readily visible some problems are not readily visible and if some problems are readily visible. So, then you know you can you know try to target as per the requirement or with respect to some of the constant or you know importance, but when there is a kind of issue big issue or you know big kind of you know in finance we call it you know shock. So, when there is kind of you know big shock, you cannot just sit then you have to you have to come forward and you know solve immediately this particular problem because you know this is very important without you know solutions the entire things will go in a different way.

So, that is how you know we are here to discuss some of the business analytics. So, how quickly you can get a solution when there is some kind of you know problems here solid problem or you know emergency problem. So, that is why, so the first item is nothing, but is called as a diagnostics analytics here we are not actually using any kind of you know statistical tools or you know quantitative tools, but we like to just understand the issue how it happens you know like you know we are like we address questions like this why did it happens.

So that means, something going wrong that is why were you know we are in a position to investigate, why did it happens, how did it happens, in what scenario, how you know how much in a kind of you know degree. So, these are the things you know have to you know first you know understand. Then that will give you some kind of you know starting to go into the reality or you know as per the requirement.

So, basically actually in management language or some kind of you know business language so it is simply called as you know market information. So, some kind of you know market you know it may be going very up or very going down, so (Refer Time: 07:46). It may be positive news or it may be having some kind of you know negative

news, but in any contest some issues are you know there and as a result we are in a process of you know some kind of you know significant investigation and there itself, so business analytics you know having a important roles.

Then the next structure is actually descriptive analytics. So, once you understand the problem is going on or it is happened. So, then next question is actually what is happening so; that means, the standard reporting. So, once this is there like you know some like you know like there is a accident right, when there is a kind of an accident; that means, it is the problem now.

So, now, we have to start the investigation how it happened, you know what are the ways we have to check and then what should be the future forecasting, what should be the kind of an optimum strategy through which you can control this kind of a you know you know problem or you know issues. So, you know what I can say that you know this is how the kind of you know environment through which you have to start the process, take the initiative and then looking for the best solutions and that too as per the a particular requirement.

So, in the descriptive analytics this the standard structure is like this we are we like to address like this what is exactly happening that is the standard reporting how many, how often, where is; that means, it is kind of you know ad hoc reporting. Then what exactly the problems so that means, you know we like to you know investigate in fact, little bit you know in depth right. So, first hint that is what it is called as a diagnostic analytics, then descriptive analytics little bit you know upper hand investigations like you know how, what, when, kind of you know things these are all things we have to first you know streamline. So that means, it is basically actually if you summaries these two it is basically the information analysis and decision.

So, now, so this is what actually happened then now little bit you know understanding about this particular you know happening then we are looking for now or we are in the search process to take a decision, what should what should we take the you know step future step and how you have to optimize the particular you know structure whether it is a kind of you know with a positive interest or you know negative interest, but we need some kind of you know decision, without such decision you are not in a position to solve

this problem. So, that is how, so we have to we have to look into this particular structure and then think about the solution.

So, the third particular structure is called as a predictive analytics. So, this is little bit you know more advance again so that means, it is the degree of search process. So, slightly little bit hint then little bit understanding then little bit in depth then you go it is a degree of you know in depth search what this is how the beauty of the component called as a business analytics. Once you understand all you know, once you look into this you know process then automatically, so you will get some kind of you know better insights and with the better insights you can come with you know better decisions. So, that is what actually we need and what is our you know requirement.

So, the predictive analytics basically addressing couple of questions like the previous ones, diagnostic analytics and you know descriptive analytics. So, here the questions should be address we like to address here what actions are required, what could happens, what is the trend continues, what will happen the next. So, these are all actually interesting now this is actually the search process. This is the actual search process and here the analytics plays you know very interesting roles.

Earlier you know just a little bit you know hint, then little bit understanding about the particular you know problem, but in the predictive analytics is the heart of the business analytics. So, before that you know we have a diagnostic and predict you know descriptive then predictive analytics will give you or you know prepares a kind of you know proper path it will give you some kind of you know stability kind of you know structure through which the past can be connected that is the diagnostic and descriptive analytics can be connected, and this is the path through which actually prescriptive analytics can be also connected properly.

So, that is how here you have to understand very carefully, so in the predictive analytics. And then you are supposed to address all these questions and then accordingly. So, you to understand the business analytics so that means, for the first questions which we have already raised called as what actions are required this kind of you know it is kind of you know warning actually alerts right. So, what could happen, so that is what you know it is kind of you know what could happen means, so that is what you know it is kind of what

could happen means if the a kind of you know structure continues its a kind of you know process of simulation.

Then what if the trend continues that is what we call as actually a forecasting right; that means, the whole idea is you know having the kind of you know hint, having the kind of you know descriptive analytics. So, you are in a position to find out a trend and that too in predictive analytics you are in a position to find out that particular trend. So, once you find out the trend that is what actually called as a forecastings, so that will be through that trend you can actually predict. So, you know whether it is increasing trend or decreasing trend or it is a kind of you know constant, whatever maybe the kind of you know structure, so the predictive analytics will give you a kind of you know path through which you know future can be predicted or you know we can go for you know future forecasting.

Then the next questions will be what will happen the next; that means, that is what actually a predictive modeling. So that means, the heart of this business analytics is nothing, but called you know predictive modelling. So, now, when you will go for you know predictive modelling so that means, we have actually the actual trend and then predictive analytics will give you the you know exact required trend, then you know that is what actually is the predictive modelling then; that means, technically, now, you have a predicted lines or you know predicted kind of you know informations. So, now, actual informations and predicted informations then you will get a particular structure. So, now, that particular structures you need to be a optimized further and that too prescriptive analytics you know plays a kind of you know interesting roles.

So, now, in the prescriptive analytics again we have to address couple of questions because these analytics are you know applied to you know address the questions only that is nothing, but to investigate and can get some kind of an inference. So, of course, the degree of inference the degree of structure is a different from starting with descriptive analytics to predictive analytics and prescriptive analytics.

So, this standard questions which you would like to address here in the case of prescriptive analytics is like this how can we achieve the best outcome. Since we have already have the kind of you know particular structures, so now, the first structure here we have like to address is the a best solution or you know best outcomes in the process



of you know optimization. But I would like to tell you that you know the particular analytics whether you know predictive analytics or you know prescriptive analytics it will give you some kind of you know optimality you know with the all possible alternatives right. So, we can you know we can fit a kind of you know structure through which you know we can find out some of the alternatives and then within the particular possible alternatives we have to find out the best alternatives. That is how you know business analytics can give you know better kind of you know understanding and better kind of you know decision.

Then the second similar kind of you know problem which you can address in the prescriptive analytics is how can we achieve the best outcome with respect to you know effects of variability, like you know stochastic optimizations for example, right. So that means, we are living in the real life scenarios, so with the given situation given you know kind of you know conditions and constants. So, you are in a position to fix a particular model and get some kind of you know output or you know decisions, but you know over the times this cannot be actually just you know you know simulated or you know it can be just you know copied you know continue.

But you know since there are lots of dynamics with respect to change or you know constants or something like that. So, the predictive analytics can help you lot to fix all these kind of obstacles and then come to a particular you know optimum decision. So, in all total so the analytics with the help of you know descriptive analytics, predictive analytics and prescriptive analytics, I am very sure we can solve a you know business problems and that too we can you know come with a better management decision as per the particular you know requirement.

So that means, here if you summaries it is the game between you know information and analysis and then the decision. So, we start with some kind of you know problem hint, then in collection of information, analyzing the information then get some kind of you know inference then or you know insights and finally, you come to you know kind of conclusions or you know better decisions. So, in short, analytics excellence leads to better decisions. If you choose better techniques better analytics and understand the problem perfectly and use the data properly or effectively then I am very sure a decision cannot be the other way around you can definitely get a better decisions if your structure

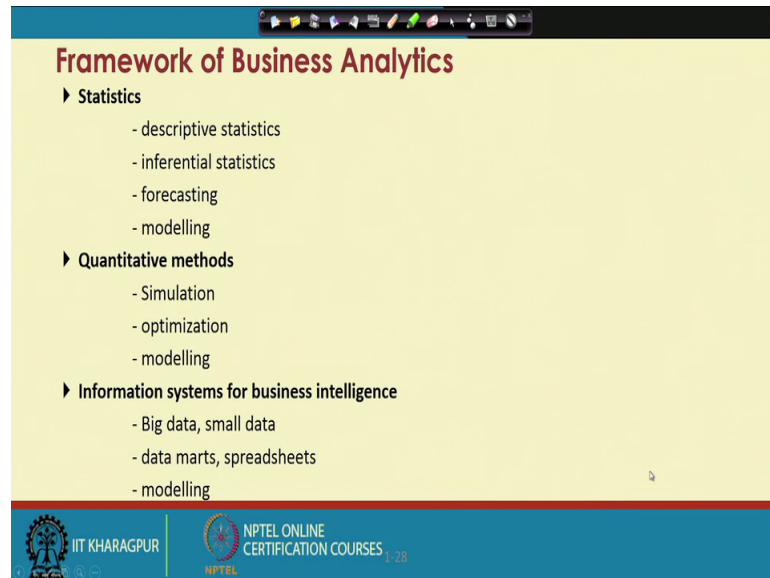
and you know understanding or the choice of technique is a very very perfect ones right. This is how you have to proceed.

I will give you some kind of you know structure here. So, just to you know connect with all these easy techniques but you know of course, we have discussed the diagnostic analytics, but this is not actually the kind of you know investigation procedure this will give you just simple kind of smoke where to start actually the or where you have to start the kind of initiative. So, here the three most important thing is called as you know descriptive predictive and prescriptive, and these are the actually items which are actually you know supposed to address during you know during the analytical process. So, now, here actually the thing is like this you know, it is kind of you know degree of you know in depth search or if I if I put in other different ways.

So, what happened, how many, what exactly, what actions, what could happened, what if the trend continues, what will happen next if something going kind of you know change that is what we called you know robustness check that is how the trend is like this. So that means, it is the you know structure is like you know in depth, in depth, in depth, in depth and then get the kind of you know insights until unless you go in depth, in depth, in depth you are not in a position to get better and better and better insides. So, that is why in order to go in depth, in depth, in depth search you are supposed to know in depth in depth analytical tools.

So, we have actually simple analytical tools, complex analytical tools, so again within this simples we have a lots of variety within a complex city complex kind of analytics we have a variety. So, how best you can understand all these tools how best you can you know connect these tools with you know softwares and how best you can actually connect with computer based model for you know kind of programming. So, that you know things can be more attractive as per the requirement and you are always in a better position to take you know good decision and that too as per the management requirement. So that means, it is actually very challenging task kind of things it is altogether excellent challenging process.

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**Framework of Business Analytics**

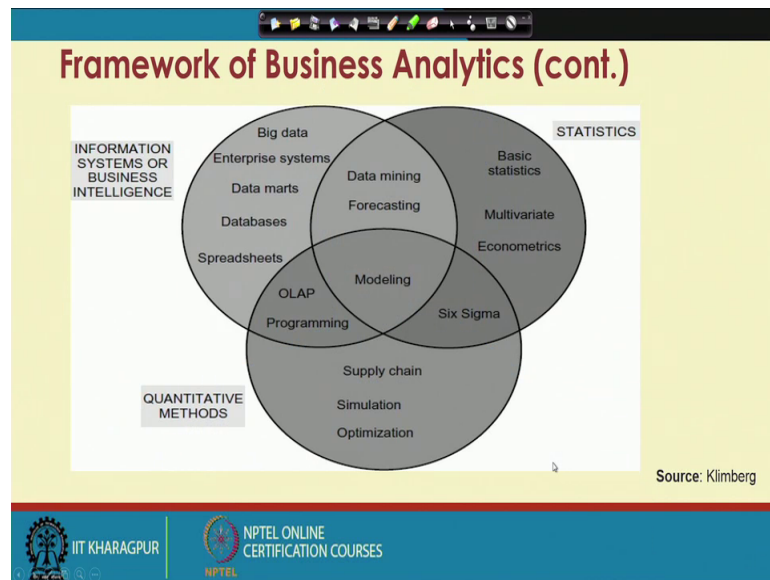
- ▶ **Statistics**
  - descriptive statistics
  - inferential statistics
  - forecasting
  - modelling
- ▶ **Quantitative methods**
  - Simulation
  - optimization
  - modelling
- ▶ **Information systems for business intelligence**
  - Big data, small data
  - data marts, spreadsheets
  - modelling

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All together we have actually two different structure and then the information technology can added as a third important factor in the particular you know business analytics process. So that means, actually business analytics all together has the connection between you know statistical tools, optimization tools and then the computer based you know information systems that is you know you can say that in business intelligence.

So, now, here some of the tools like you know statistic descriptive inferential statistics, forecastings, models etcetera then a quantitative tools, simulations, optimizations and then modeling, and similarly information system for you know business intelligence, that is big data, small data, data marts, spreadsheet, modelling these are things which are you know you know frequently highlighted in the course of business analytics. Let me give you a better structure here what exactly the business analytics Framework.

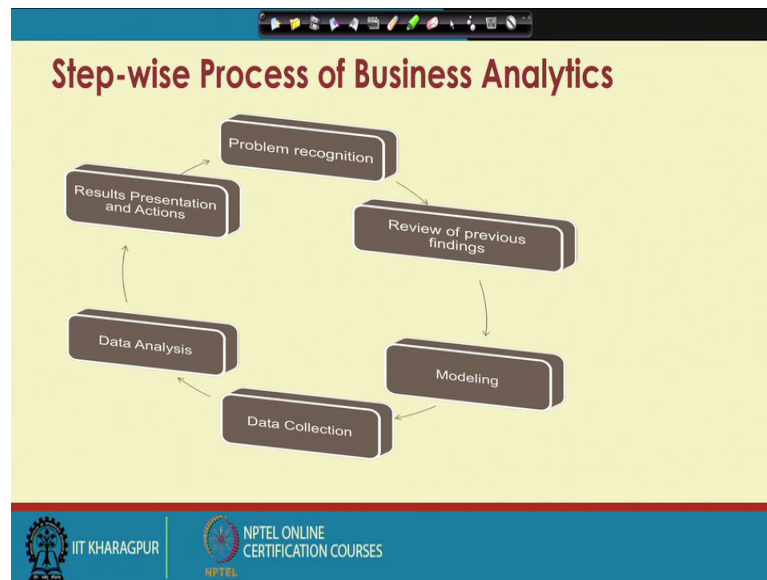
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So, it is actually what I mentioned very beginning that you know that you know in the first lecture it is a multi dimensional concept all together. We just like to integrate few things and you know just like you know what you can call you know it is nothing, but called as innovations you know some are the things are there just you are connecting then you are creating a new kind of an environment or new kind of you know process through which you know get better inference or you know better decisions

So, three things are which I have already highlighted, the statistics sides, quantity method sides, then information system for you know business intelligence. So, now, we have actually some kind of you know you know cross correlation among these you know items. So, how best we can actually connect properly as per the business requirement that is the beauty of this particular you know subject or what you can call as you know business analytics.

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So, far as you know search process is concerned to get a better management decision it is. In fact, you know continuous process all together. Like you know what I mentioned you know it is a starting with you know diagnostic analytics that is just to get some kind of you know heat smoke or anything like that then you know start you know connecting with descriptive analytics and to understand little bit much you know higher. Then through predictive analytics or you know prescriptive analytics you will get some kind of you know better decisions or you know best decisions.

So, but this particular process cannot be static it is a continuous process because some of the things in the real life scenario or you know business environments are very dynamic with respect to change of the you know environment, so you have to actually you know connect accordingly. You know we frequently you know take care of all the changes through robustness and through sensitivity analysis. So, we will discuss details all these in the later stage, but this is how the particular process is you know kind of continuous manner.

So, now, starting with you know every problem you know or every investigation starts with you know some kind of you know identification or you know hint or you know issue or you know debate or you know shock kind of you know things. So, something what we call you know start the process or you know start the actions then the investigation you know or search process will start like this. So, so hint most, so this will

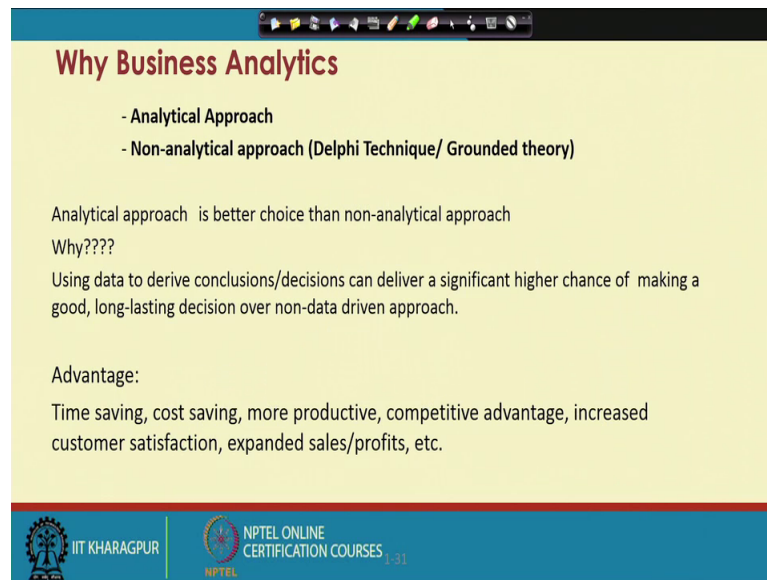
be the route and through which how it happened what should be exactly the kind of you know you know solution or what should be the possible solution. So, hint should be fast actually that is what actually called as a problem identifications or you know problem recognition.

So, once you do that then the flow will be moved like this. So, review of previous findings so that means, obviously, if you get some kind of hint or identify a problem. So, the first requirement you know requirement is the just see whether there is any such kind of you know first you know problem you know solve problem like this. So, that means you can have some kind of you know quick solution there right. So, that is why, if some quick solution are there and the problem can be solved there by these you know availability then you can solve if not then you know then you have to put some kind of you know add ons right. So, the add ons maybe some analytics or some variables or some kind of you know constants or something like that. So, then you know you can process like this.

So, then you know rework the previous findings then you model properly then on the basis of you know moulding then in order to go for a in depth kind of you know structure or you know investigation you need actually informations to collect you know information that is what we called as you know data. Then you go for you know data analysis that you know further you know some kind of you know better information. So, that you know you are in a position to take some kind of you know a good decision or you know better decisions.

Then once you analyze the data then you have to actually come with some kind of you know results and on the basis of you know results. So, you will get some kind of you know inference or then accordingly you can take some kind of you know actions right. So, now, on the basis of this actions, so the management decisions can be taken and then you are in a position to hit the wall as per the requirement.

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**Why Business Analytics**

- Analytical Approach
- Non-analytical approach (Delphi Technique/ Grounded theory)

Analytical approach is better choice than non-analytical approach  
Why????

Using data to derive conclusions/decisions can deliver a significant higher chance of making a good, long-lasting decision over non-data driven approach.

Advantage:  
Time saving, cost saving, more productive, competitive advantage, increased customer satisfaction, expanded sales/profits, etc.

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The question is you know why business analytics. So, we have two different approaches all together. So, like you know the subject itself will give you the structure like you know analytics, analytics, analytics, but if not analytics then what it is called as actually what non analytics. So, we have we can solve the particular problems without using actually analytics tools like you know descriptive analytics predictive analytics and prescriptive analytics. So, we have a structure what we call as you know an analytical approach the techniques like you know Delphi techniques grounded theory are still there actually to solve similar kind of you know problems through some kind of you know experts opinions or some kind of you know discussions right.

So, these are ways we can actually solve the problems. But you know the solution through analytical approach is always actually a better and this will be more authentic more reliable and so far as validation is concerned it will be at the highest rate of course, I am not in the sentence committing to the non analytical approach, but still you know in the other sites when you are you looking for solution by Delphi technique or grounded theory it is usually through experts opinion, but actually actual fact is that you know without having sufficient information and technique. So, sometimes it may be not in a position to take you know better decision, particularly you know the business problem that too in a complex kind of you know environment it is not so easy actually to get some kind of you know better decision as per the particular you know requirement. So, that is why the whole idea actually to justify that you know analytical approach is

always you know better choice and this is you know the high requirement for any kind of you know business problem and that too in a complex business environment or you know dynamic business environment.

The business itself is a dynamics and some of the constants and you know conditions are you know very challenging. So, that too in a competitive environment it is very difficult to you know deal actually with just you know non analytical approach, it is not easy actually to address the problem. If it is a problem is a very simple very what we can call as a very simple and you know within a particular you know control then you can address this through non analytical approach, but analytical approach is always have a you know challenging kind of you know things.

Of course, when you use actually analytical approach so the task is much higher than the non analytical approach you have to go in depth, then you have to collect data and analyze data use software. So, all these process will be always there, but still you know since you are putting more and more and more efforts then; obviously, the results can be cannot be just like that. So, it will be definitely it will be much attractive and as per the best you know requirement.

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**The Difference: AP/NAP**

Example: Decide to buy a car

Analytical Approach	Non-Analytical approach
Nailing down constraints- time, money, five feature requirement and five wish-lists	Process may start by test driving a car irrespective of any criteria
Prioritize on requirements and wishes Eg: good mileage is high priority while emission low priority;	You either begin creating your own criteria as you go along- may be rejecting some car and loving others based on what you "feels" good.
Based on must haves and constraints, shortlist cars for test-drive	
Grade each vehicle with a 1-5 score on each requirement and wish. Requirement graded with an extra point .	
Take average of requirement and wish list	

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This is the difference between actually analytical approach and you know non analytical approach. So, now, I am just connecting with a simple example, decide to buy a car right. So, now, you have to just you know purchase a car and with respect to you know with



respect to a particular requirement then you know sometimes you know how the problem can be generated. So, when you are using the car then you know these are the structure through which you can start the process, but actually I like to highlight here, why you need actually analytics.

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**Need of Analytics**

A year later after buying a car, XYZ started complaining about his expenditure on fuel/mileage.

To this ABC asked him :

- 1) Did your office is farther now than one year earlier (job change if any)?
- 2) If the car is giving lower mileage than expected or advertised?
- 3) Didn't you buy a car with higher mileage at first place knowing long travels?

**(XYZ answered NO to all the above questions)**

XYZ: He didn't know the cost would be this high and burden some to him. He really liked the car when he drove it.

**ADVANTAGE:** Using data to drive decisions deliver a significantly higher chance of making a good, long-lasting decision over non data-driven approach

Source: Tiwari

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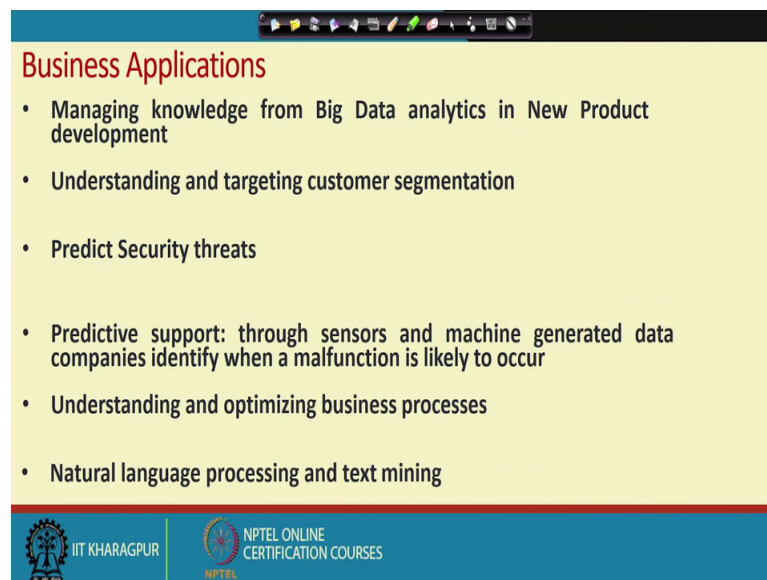
So, now, after purchasing the cars after a year you will find you know there are you know issues and started complaining. So, now, so I mentioned that you know analytics starts with diagnostics that is what we call as a diagnostic analytics. So, now, once you once you start complaining, that mean the issue started actually. So, that is how you have to explore what are the ways you can actually look for the solutions.

So, the first question you can address is you know since complain is there. So, with respect to you know expenditure on you know fuel or mileage this is actually one of the most important objective when you take a decision to purchase a car. So, did your you know office further now then in 1 year, I I like this job changes if any, if the car is giving lower mileage than expected like this you know these are all things actually you know some of the issues are you know hinted. And then we are looking for the kind of you know solution.

It is actually kind of you know search process and the search process something can be streamlined and can be materialized with the help of you know business analytics, so that means, technically the best advantage through using business analytics is like that. Using

data to drive decisions deliver a significantly higher chance of you know making a good, long lasting decision over non data driven approach that is what I like to actually submit here. So, surprise you know the distinction between analytic and non analytic approach is a concern. So, it is actually some kind of you know requirement.

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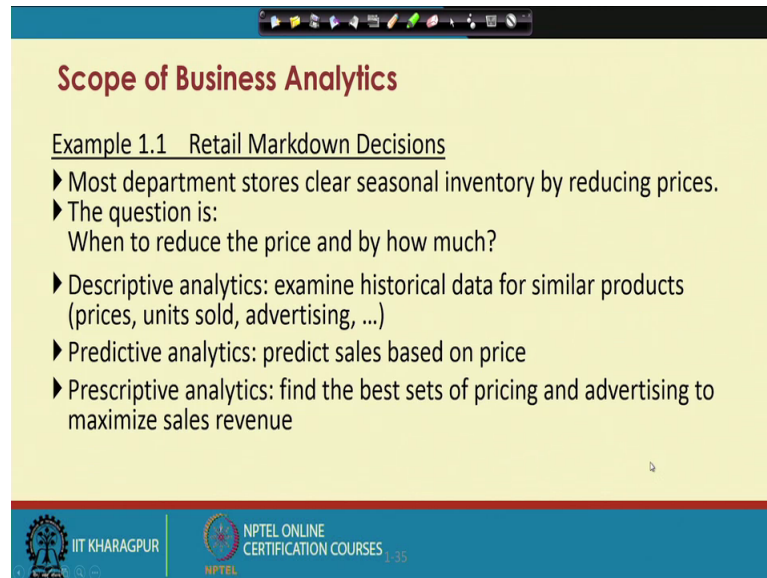
**Business Applications**

- Managing knowledge from Big Data analytics in New Product development
- Understanding and targeting customer segmentation
- Predict Security threats
- Predictive support: through sensors and machine generated data companies identify when a malfunction is likely to occur
- Understanding and optimizing business processes
- Natural language processing and text mining

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Likewise actually, there are many different areas where business applications can be applied, like you know managing knowledge from big data analytics in new product development market segmentations you know like you know say targeting customers all these things predict, security threats, predictive supports through sponsor machine generated data companies can identify all these kind of problems. And as per you know their requirements and understanding and optimizing the business process all these things are actually the different kind of structure through which actually you like to start the challenge and you know the kind of requirement.

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**Scope of Business Analytics**

Example 1.1 Retail Markdown Decisions

- ▶ Most department stores clear seasonal inventory by reducing prices.
- ▶ The question is:  
When to reduce the price and by how much?
- ▶ Descriptive analytics: examine historical data for similar products (prices, units sold, advertising, ...)
- ▶ Predictive analytics: predict sales based on price
- ▶ Prescriptive analytics: find the best sets of pricing and advertising to maximize sales revenue

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And some of the standard you know examples like this you know it is a little kind of you know decisions most of the cases you know we like to actually know what should be the pricing strategy what should be the selling strategy. So, whether you like to means how to control the sales and what are the variable through which you can control the sales, how price can plays a roles if you increase the price or decrease the price how sales can be a changing or you can reach the goal.

So that means, it is not actually the easy task for instance you know some of the instances you know price increase can enhance you know objective or you know for instance enhancing profit or revenue sometimes price decrease may can may give some kind of you know better results. So that means, it is not actually a simple ones in a simple understanding you may not in a position to address all these things.

So, through analytical approach or business analytics tools you can come to a particular position and you can take a right decisions and as per the requirement it cannot just like that actually. So, whether you like to follow the price increasing policy or price decreasing policy to reach you know or to get more revenue or more profit. So, there should be some kind of you know what I called as you know analytical kind of you know approach and that to have some kind of you know perfect you know model through which you know you can perfectly take a decisions otherwise you know your decision

maybe somehow you know different and it will affect your you know business process all together.

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**Scope of Business Analytics**

Analytics in Practice: ABC Entertainment

- ABCE owns numerous hotels and casinos
- Uses analytics to:
  - forecast demand for rooms
  - segment customers by gaming activities
- Uses prescriptive models to:
  - set room rates
  - allocate rooms
  - offer perks and rewards to customers

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So, these are you know various scopes through which again business analytics can be applied.

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**Possible Strategies for Business Analytics**

1. **Competing ON Analytics**
  - Analytics is THE key competitive advantage
  - Target Result – Sustainable competitive advantage
2. **Competing WITH Analytics**
  - Focus on one business process
  - Target result – Incremental profits
3. **Improving With Analytics**
  - Culture of analytics
  - Target result – Continuous improvement
4. **Revenue Through Analytics**
  - “Sell” data as a secondary product
  - Improved margins or market share
5. **Persevering Through Analytics**
  - Do what the competition does
  - The price of entry

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And before I conclude I will let, I will just highlight you know these are the areas through which actually you know you can apply different strategies for you know business analytics.

So, this standard 5 things I am supposed to address here: A competing on analytics, competing with analytics, improving with analytics, then revenue through analytics, then preserving through analytics. So that means, what I can say that you know, so these are the points which I am you know putting you would like to read and understand. So, then you can understand the beauty of this particular you know area or this beauty of this particular you know subject that is what called as you know business analytics.

So that means, what you know what I can say that you know business analytics can do anything as per you know your requirement. If you properly understand you must have a data and you can connect with you know proper technique if you could do that then; obviously, your problem definitely have a some kind of a solutions as per your you know requirement. There is no other you know kind of you know I can say alternative through which you can take a better management decision.

So, business analytics has a kind of you know has very important roles for predicting your management decisions.

Thank you very much, have a nice day.