Business Analytics for Management Decision
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Lecture – 01
Introduction to Business Analytics

Hello everybody this is Rudra Pradhan, course instructor of Business Analytics for Management Decision. First of all thank you everybody for choosing this subject and welcome you all to these lectures. We are about to start our first lecture and we like to highlight the details before we start the introductory lecture.

So, let me first give you the details course plan.

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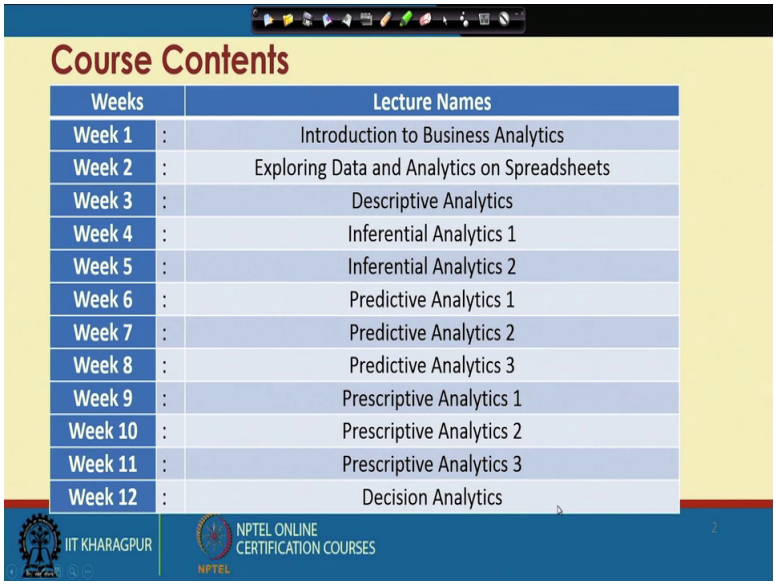

So, we have all together 12 weeks schedule. So, in the first week we will start with Introduction to Business Analytics, second week exploring data and Analytics on Spreadsheets, then in the analytic sites we have all together four modules, first module descriptive analytics that will be covered on week 3 then second module will be inferential analytics that will be covered on week 3, week 4 and week 5. And next will be predictive analytics we have week 6, week 7 and week 8 respectively. Then we have prescriptive analytics these are three modules, so we have a week 9, week 10 and week 11 respectively and then finally, we have decision analytics that will be on week 12. So, these are all our course plans.

So, today we start with the Introduction to Business Analytics and that to the first week's course contents.

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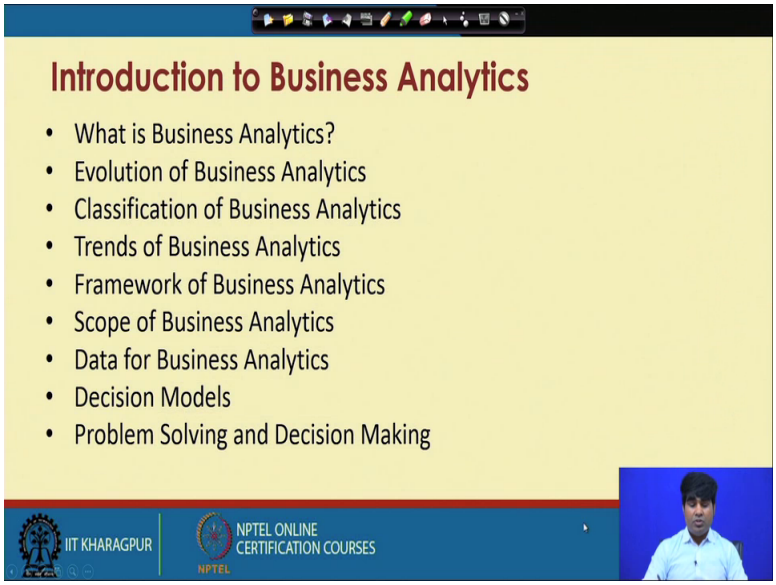

So, here is we have the details the structure which you like to discuss for this first week, we all together 5 different lectures. So, 5 lectures will be covered through all these components. So, first component is what is all about business analytics, second one evaluation of business analytics, then third module will be classification of business analytics, then we will cover trends of business analytics, next framework of business analytics, then scope of business analytics, then data understanding for business analytics and we have decision models and then finally, problem solving and decision making.

In fact, the course has two different contents. So, business analytics and then management decision so that means, by default the course has two divisions business analytics and management decision. So, the literary meaning of this particular subject or the basic objective of this course is to take it a management decision by using analytics tools.

Of course this is related to some of the business problems. So, that means, we technically have some kind of you know business problems and corresponding the availability of data. Then the idea is we like to choose some kind of you know analytics, maybe descriptive analytics, maybe inferential analytics, maybe descriptive analytics, maybe

prescriptive analytics to solve this business problem and then finally, we will come to take care management decisions.

Since all the business problems are very complex and with respect to dynamics and the changing environment. So, the complexity the degree of complexity is very high. So, as a result we need some kind of you know analytics tool to solve this business problems; that means, the complex business problems.

So, now before we start the particular structures, let us know fast what is all about the analytics and order these scopes and what are the kind of you know trends. Once you acquainted with the all these analytic concept then we will go to some kind of you know application area. So, let us first know what is exactly business analytics and how is this kind of you know trend and then the application area.

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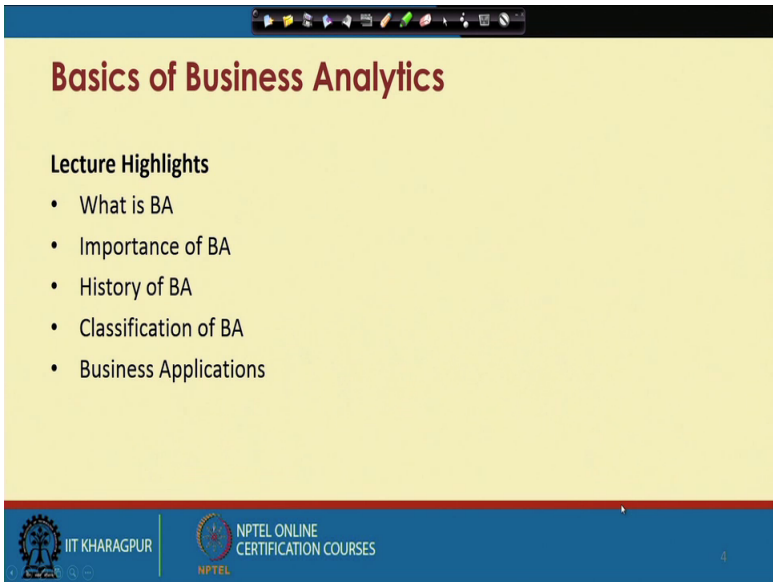

So, let us start with the first what is all about business analytics. So, the first lecture of course, I have already highlighted. So, we have 5 different lectures for this unit and this is the first lecture and that to basics of business analytics. So, let me first highlight what are the items we are supposed to discuss in this particular you know module.

So, first thing we like to know the structure of or the definition of business analytics then we will cover the importance, historical trend of business analytics, then classification of tools that is business analytics tools and then some business applications.

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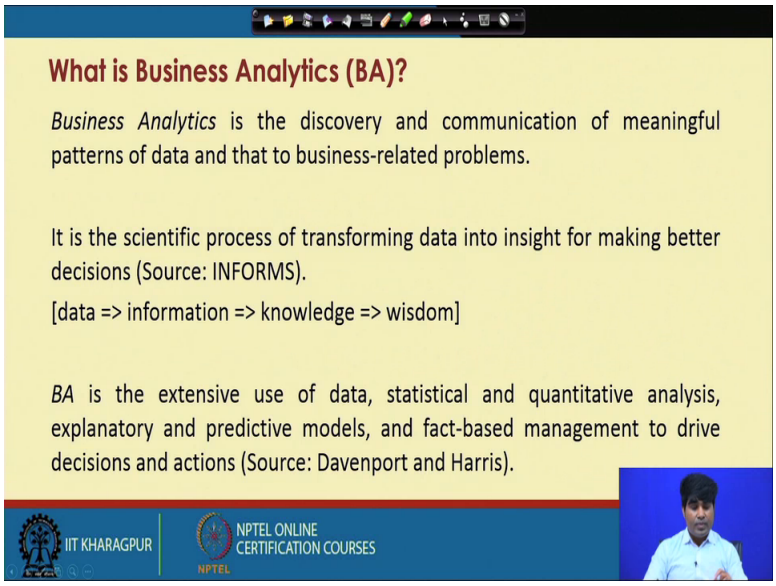

So, business analytics by default is a multidimensional concept we have a plenty of definitions to define the term business analytics. So, the simple language or the simple understanding is that it is the discovery and communication of meaningful patterns of data and that to some business related problems. There are you know various you know definitions are readily available by different authors and one such definition I am sighting here is like this. Business analytics is the scientific process of transferring data into insight for making better decisions. This is derived from informs.

So, now, by this definitions it is altogether movement from data to wisdom. So, in between, we have information knowledge and then we will come to wisdom. So that means, the data will give you basic hint, then information to understand the particular concept, then knowledge means we will get some kind of you know insights then wisdom means we are going to take some kind of you know better decisions or reliable decision which may be a as per our requirement or definitely which will be useful for this for any kind of you know problems which you like to highlight or we like to address.

So, business analytics is the extensive use of data statistical tools, quantitative tools, then explanatory and predictive models and fact based management to derive decisions and to take some kind of you know decisions.

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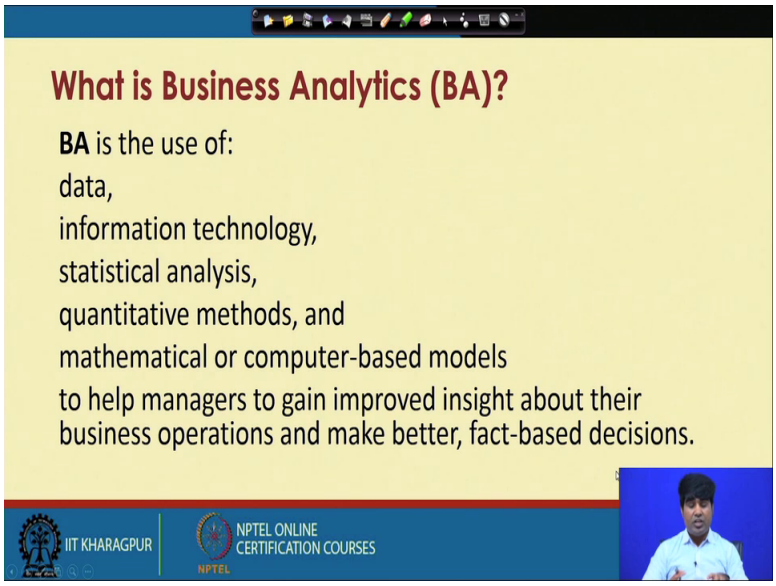

So, altogether business analytics is the set of couple of attributes. So, first attribute is the data which is the pillar of this particular you know business analytics and business analytics for management decision, then information technology statistical analysis quantitative methods and mathematical or computer based models. The idea is to help managers to get improved insight about their business operations and make better fact based decisions. So that means, technically, we have to integrate all these components or attributes to get some kind of you know management insights which initially a in hidden and then with the help of some kind of you know tools or some kind of you know strategy will be like to highlight or we like to search for the a exact insights.

So, accordingly we can take some kind of you know management decisions.

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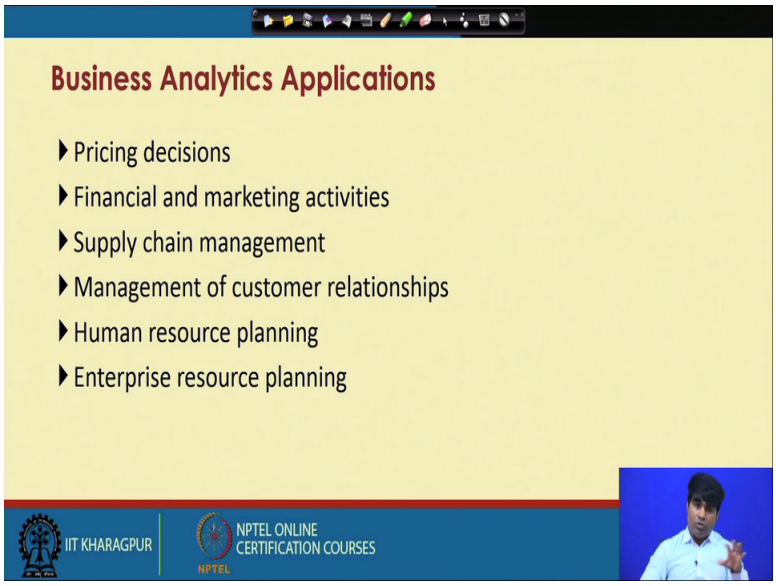

So, the definitions itself clarifies that you know it has lots of you know kind of solid structure through which we can we can get some kind of you know management decision. So, I will like to highlight here some of the application through which business analytics can be applied. So, these areas are pricing decisions, financial and marketing activities, supply chain management, management of customer relationship, human resource management, enterprise resource planning that CRP; that means, technically she the structure is the management decisions.

So that means, this particular tools that is the business analytics tool can be applied to all kinds of you know management. It maybe marketing, it may be a human resource, it may be finance, it may be operations, but it is like you know called as a potato, it can be connected to any kinds of you know management problems only requirement is you have to understand the problem then you have you have to know all these business analytics tools and you must be in a position to pick up a particular tools as per the particular requirement.

So, once you understand the problem and if you have a knowledge on business analytics tools then only requirement is a how to connect this particular tools to business problems and then by default we will get some kind of you know insights. So, once you do this process then you are in a position to take better management decisions.

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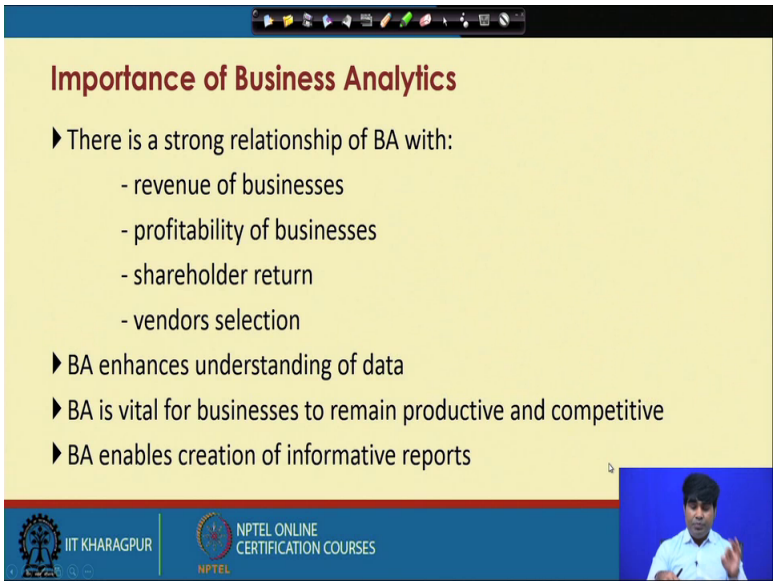

So, far the importance is concerns there of course, I have already highlighted these are the areas which you can actually apply business analytics, but by the way, it has lots of you know importance, why you need actually business analytics whether it is in marketing or whether it is in operation or whether it is in finance or any kind of you know HR or problems, we need actually analytics. So, definitely there is some objectives. So, the basic objective is to take management decisions or you know better decision. So, now why and for what grounds.

So, the idea is that you know in any kind of you know business. So, revenue is the key component or profit is the key component. So, business analytics can be applied to optimize revenue to optimize a profit or to minimize cost again some of the important items like you know a shareholder returns, vendor selections. So, these are the items you know you can forecast in a better way or you can take a decision in a more in a attractive way. So that means, in looking to this problems or you know these problem areas with the simple you know understanding you may not be in a position to would take a good decision or you know better decision. So, business analytics is a kind of you know supporting component. So, it will help you to take better decisions, some of the things may be or some of the insights may be in hidden. And with the help of business analytics you can find out the hidden picture and then you may be in a position to highlight or you in order to take better management decisions.

It can increase the understanding of the data sometimes you know the data may be available means readily available with respect to marketing you know problems or finance problem or operation problems. But you know once you go through all these data through some kind of you know analytics tools maybe descriptive analytics, may be inferential analytics, maybe predictive analytics then you can you can understand in a much better way. So, initially by look you cannot understand properly what are the insights in the particular you know data set then with the help of analytics analytical tools you can you know you can get better insights and with the help of you know help of these insights you can take a better decisions.

So, similarly business analytics is a vital tool for business to remain productive and competitive. So that means, it is a kind of you know why you need actually better management decision because analytics tools will give you some kind of you know foundations and it will give you some kind of you know strategic decisions through which you know your management decision will be more attractive or you know it will be a what we can say that units it will be very excellent as per you know requirement. Sometimes you know we will get some kind of you know quantitative judgment from the business analytics then with the help of you know quantitative judgment then we can put some kind of you know qualitative judgment and then finally, you are in a better position to address the problems in much attractive way.

So, these are the things you know we have you know, we can you know justify that you know business analytics as a lots of you know importance particularly you know managerial problems or you know business related problems.

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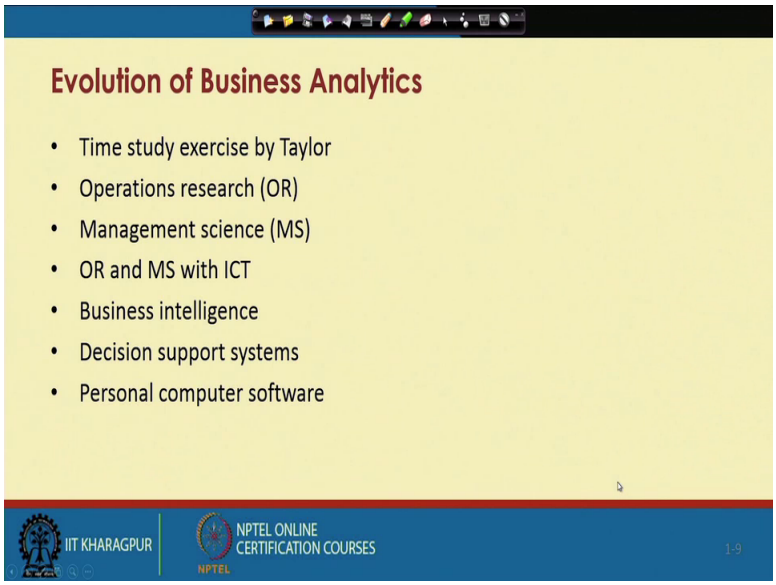

So, accordingly we are here to know some of the business analytics tools and then will you connect some of the business related problems. So, now, I will here give you some kind of you know hint about the historical trend about the business analytics. So, it is not something new actually, it started long back.

So, historically, the first structure about the business analytics starting with time study x, time study exercised by Taylor. Then historically it has a connection with the operation research, management science and again with the help of information communication technology, so the picture or the particular component is more highlighted or you know the importance is again a more you know more significant. Then business intelligence, decision support system and then with the evaluation of you know personal computer softwares.

So that means, technically, today's you also we have a plenty of you know softwares. So, with the help you know softwares or you know with the readily availability of softwares. So, now, the business analytics and the data and the kind of you know business related problems, so it is a kind of you know challenge and by default it is the kind of you know like in a demonstration kind of you know things you we will get some kind of you know insight and then with the help of all the insights, we are in a position to address certain problems. So that means, it will give you some kind of you know an attractive exposures through which you can solve or solve some of the business related problem.

See I means you know what we can say that you know it is a kind of you know subtract remain kind of you know environment. Since all these things are readily available, it will attract the party to come forward and to solve the business problems right. So, this is how, we can say that you know there is a high importance of you know business analytics in the recent environment or in the digital economic or we can say that you know in the ICT environment.

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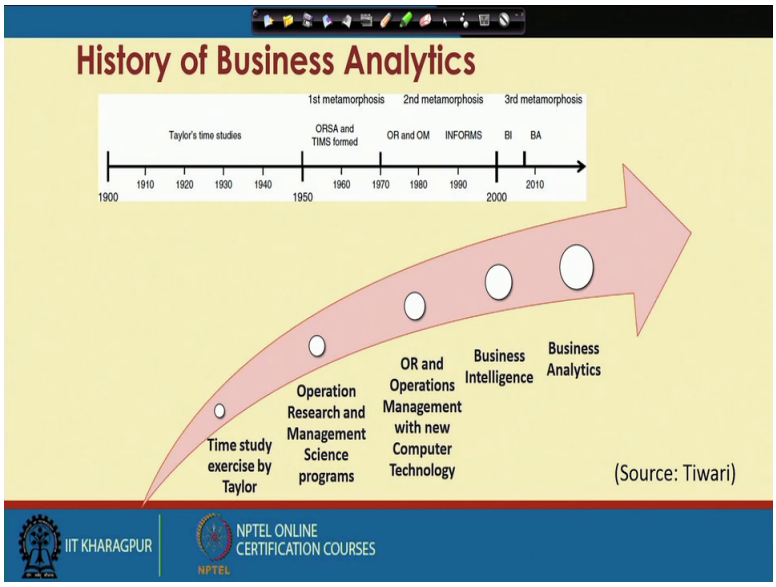

So, now historically again, this is how the trends which we have already highlighted and historically it has started from 1900, then you know till today the growth is a growth of you know analytics is a you know in a kind of you know increasing rate. So, it is the trend is actually very very significant now and with the help of against what I have mentioned digital economic and then the availability of softwares, availability of you know data. So, now the particular you know tool was get, so the particular field is a very high value or you know high importance. So, that is how we are here to know all these techniques and we will connect some of the business problem so that we can know how it is happening and you know what are the ways we can solve some of the business problems.

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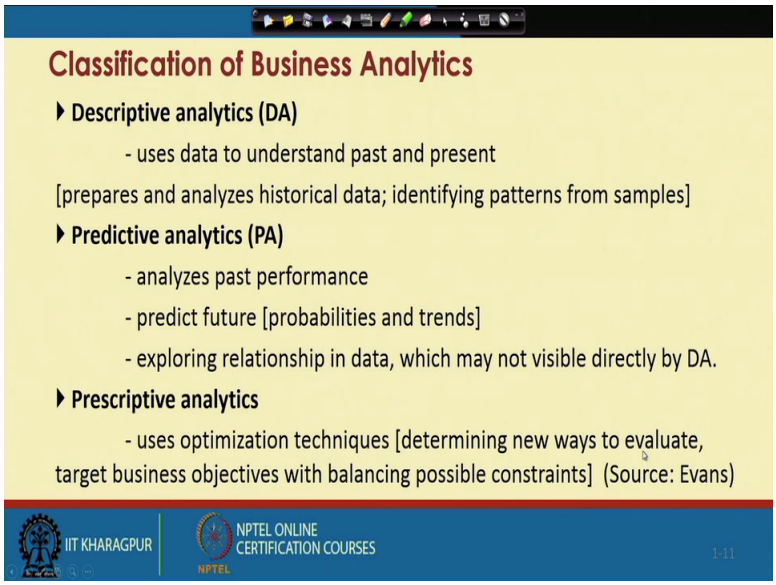

So, now, in the next component we like to highlight here the divisions or classification of you know business analytics.

So, what I have already mentioned that business analytics there is a history behind it and then here is we will classify some of the tools as per the particular requirement. So, by default here is we have three different classifications. So, for as a business analytics is concerned. So, the first division is the descriptive analytics, second division is a predictive analytics and third division is a prescriptive analytics. In the descriptive analytics, the idea is a just to use data and then to understand the past and present pattern.

So, what will; you this just like you know inspections, eye inspection just you look the look into the data then you understand the fast and you know present scenario. Because usually data is recorded over the time then by default we call as a historical data. So, now, when data is recorded over the time then; obviously, there is a past and there is a present, so we like to know what is the past and what is the in our present trend. So, the information basket will give you some kind of you know inference. So, accordingly we will prefer analyze as per the particular you know business requirement.

Then second one is predictive analytics. So, here is we like to analyze the past performance of a particular business problem then we like to predict the futures. So, now, when you have actually past informations then you can understand the past pattern and then on the basis of you know past trend then you can actually predict the future one. But

over the times when we when we are looking for a particular business problem. So, within the particular problems we have a several variables which may have some kind of in a relationship until, unless you establish this relationship you are not in a position to predict the future. So, now, we are, that is how we are in the process of knowing predictive analytics it is not just to know the past trend and to present trend then we are here to know the possibility of relationship among various problems and that to business related you know issues.

So, the last one is the prescriptive analytics here we like to use optimization techniques to address the business problems so that means, historically or, for as the structure is concerned business analytics structures is concerned, we have a three different you know all together. So, first one is the descriptive one, then the second one is the predictive one, then the third one is the prescriptive one. In the descriptive one just you have to look into the particular data then connect with the particular business problem. So, it is just you know kind of you know a informal kind of you know message to indicate something so, but predictive analytics will establish the relationship with the help of you know data and with the help of you know business problem and then it will help to predict the futures.

So, now once you find out the past and present trend and the future trend, then on the basis of that then we have a prescriptive analytics to take a decision what are the possible values your decision variables or decision kind of you know things so that you know management can be reached at the highest level. So, that is how the broad objective of this particular you know subject that is the business analytics.

So that means, these three analytics has a high correlations you know. So, you know the ultimate you know structure is the prescriptive analytics. But prescriptive analytics has a connection with the predictive analytics and predictive analytics has a connection with the descriptive analytics. So, if you miss anyone then you may not in a position to highlight the problems in a more attractive way. So, that is why, what is the reason what is the solution that; you are supposed to look into the data then connect with the descriptive analytics, connect with the predictive analytics, then connect with you know prescriptive analytics. This is how you have to reach a destiny and then that destiny will give you some kind of you know better decisions and on the basis of you know decision you can actually predict here you know business performance.

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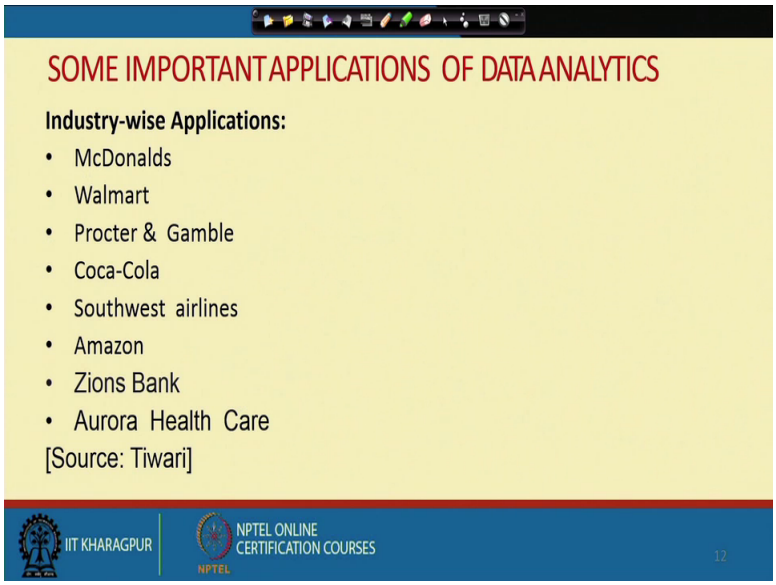

So, I am here to highlight some of the important applications. So, like whatever we have discussed the kind of structure, the classification history and the kind of connectivity. So, now, I will give you some of the practical area as we are actually business analytics are frequently used. So, some of the important applications and this is a basically industry specific.

So, we have a plenty of examples and some of the important one we are highlighting here. So, first one is the McDonald's, Walmart's, then Procter Gambles, Coco-Cola, Southwest airlines, Amazon, Zion's Bank. Aurora health cares and then I will go in details, so to know how actually these are all you know these companies are you know applying business analytics to predict certain things.

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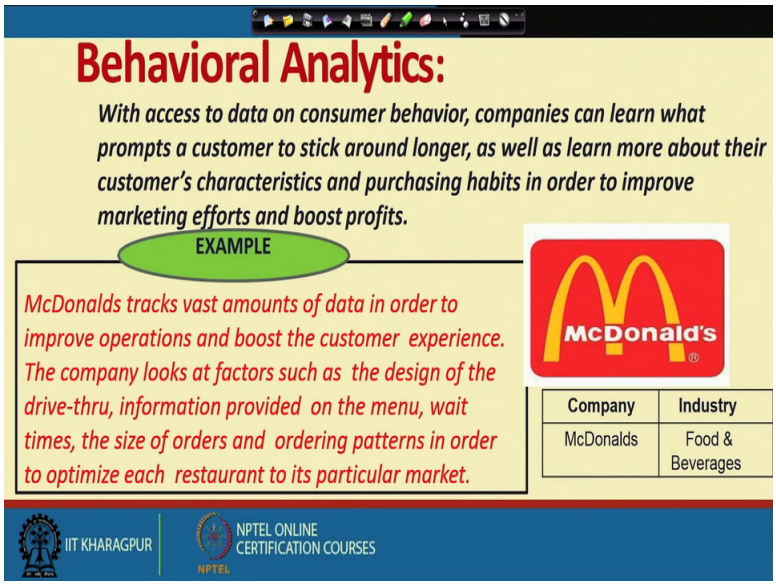

For instance McDonald it is a company name and they use the business analytics tools for their you know industry food and beverage. So, just to you know understand the business reality or you know business environment. Since it is actually food and beverage industry, now, obviously, the fast and requirement is a to go for you know customer satisfactions so that is the customer side and again. So, for as a industry is a concern they have to look into there you know profit side.

So, with the help of business analytics, they are in a position to detect how to go for you know customer satisfactions. So, until unless you go for you know customer satisfaction then company may not actually reach in a position to enhance there you know sales and enhance their profit. So, here I am sighting some of the exam examples connected to you know McDonald's and that to they use through business analytics to predict certain situations.

So, here with accessing data on consumer behaviours company, company can that means, McDonald can learn what promotes a customer to stick around you know longer as well as learn more about their you know customer features and pursuing habits in order to improve marketing efforts and boost profits. That is what I have already explained. So, generally, these are the industry; that means, the corporate environment slightly different than you know other environment because the beauty of this corporate environment that is or business environment is a they have you know plenty of you know data and some

datas are already recorded and some datas are with the help of digital economic now on you know on the process actually. So that means, about the time, we have actually plenty of you know availability of you know data. For instance the industry like you know McDonald, they have the data you know every hour or you know every hour every day, month basis, day basis, week basis, annually. So, it has you know beautiful classifications so far as a data structure is concerned.

So, that is how analytics can be applied here in a big to solve their you know problems. Of course, they are you know they are doing there you know best in a competitive environment, but still business analytics can help them more competitive and that to they can attract more customers and they and that is at the sometimes they can also enhance there you know profit (Refer Time: 26:06).

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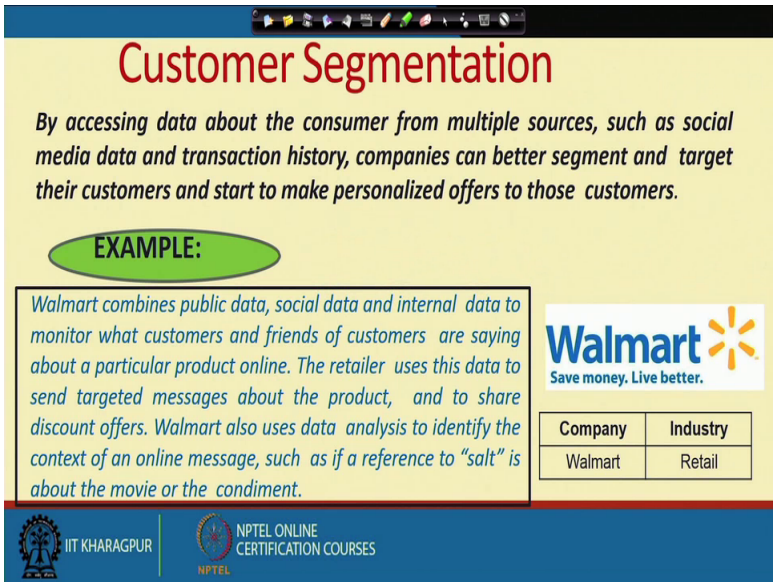

The second modules is you know Walmart and this is the company and they fly business analytics in there you know retail sectors. So, again same way, they are you know assessing the data, from the customers from multiple sources such as you know social media data, transaction history, companies, you know with the help of you know social data and transaction history, the company can create a better segment and target there you know customers.

Obviously in business market segmentation customer attractions or you know very keywords and you know sometimes you know without the help of you know business

analytics tools, we are not in a position to have good market segmentations or you know good customer attraction strategy. So, you we must have some kind of you know plants and that to with the help of you know business analytics tools to take you some kind of you know better decisions.

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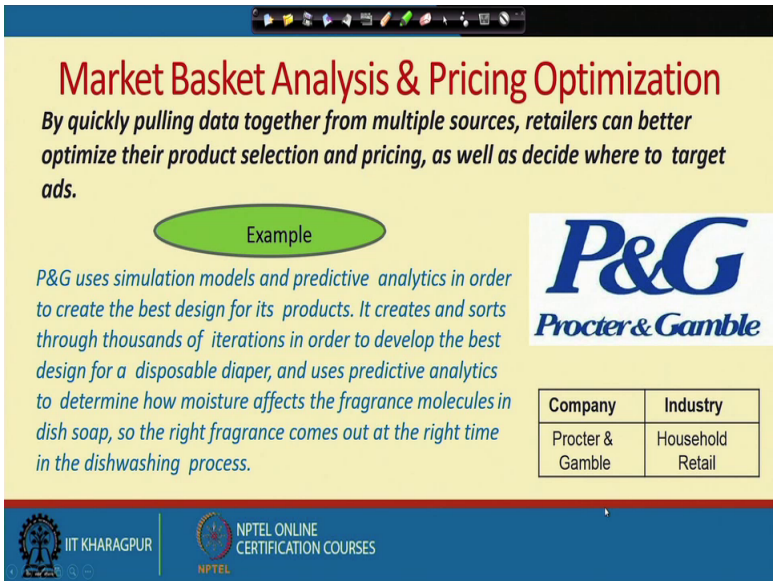

Another example is a Procter and Gamble and that to they fly a business analytics tools for their, you know house hold retail sectors. Again same similar you know strategy. So, that they try to you know access the data and they can go for you know optimizing their product, selections, then pricings, whether therefore, they will go for you know differential pricing policy, your uniform pricing policy or some kind of you know customer attraction strategy. So that means, these are the areas you know, every companies are trying to you know explores. So, you know by simple structures you are not in a position to find out to a better management you know decisions. So, business analytics again help them to come to there you know particular objectives so far as you know maximizing their profit is concerned and a attracting customer is a concerned.

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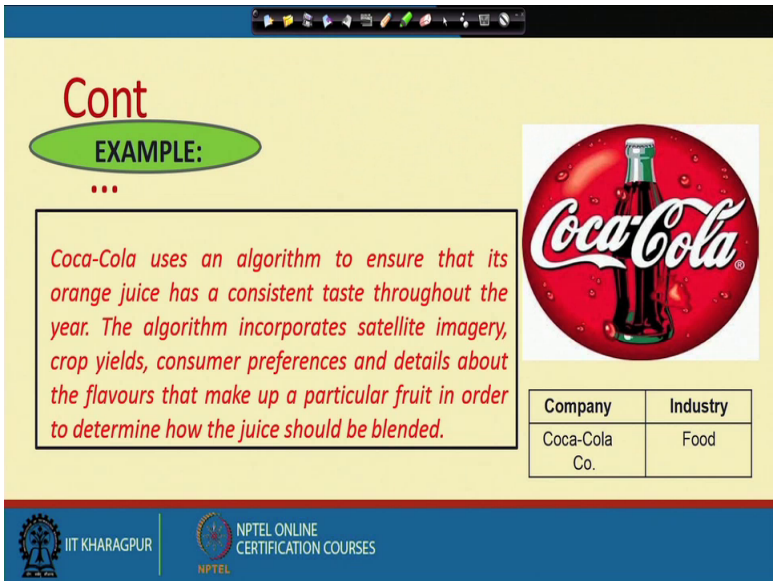

The another example is again Coco-Cola and they you know, it is a very interesting where they have applied the business analytics and they have actually a created a kind of you know tool box you know or you know algorithm they can connect with you know satellite. So, they which can you know predict the crop yields consumer preference and details about their flavour and that makes the kind of you know, makes the kind of you know product as for as the customer requirement.

So, that is how you know what I can say that you know business analytics has a several kind of you know importance in real life scenario. So, it is you know the requirement is know how to apply and how to integrate your business in a more attractive is the key kind of you know requirement. So, we have to think how we can actually connect sometimes you know, some of the industry they have the data, but they have no idea how to connect and how to predict the situation as per the business requirement.

Of course, these are the big companies they have there you know particular strategy, but the fact is that you know the this particular field business analytics filed is you know you know it is emerging like anything and with the help of you know softwares. And then you know digital economics, so the scope and the kind of you know the use is a much higher and that two in a different way, in a you know 20 to 30 years bake we may not have actually solid software to apply these techniques to reduce certain kind of you know business related problems, but nowadays with the help of you know softwares and the

ICT technology. So, we are in a better position to connect the data connect the techniques and to predict the business you know our problems or you know business objectives.

So that means, in totals, what I can do we can summarize that you know business analytics can give you know better decisions once you properly connect with the data, connect with the techniques and connect with a particular you know business problems. It is not the connection to a particular business problem; you have to first you know understand the business problem and then we have to understand the business analytics and then you have to understand the business data. So, now, all these three you can should together or they can go parallel, so that you know you are in a position to analyze predict and then you can you know optimize as per the business requirement.

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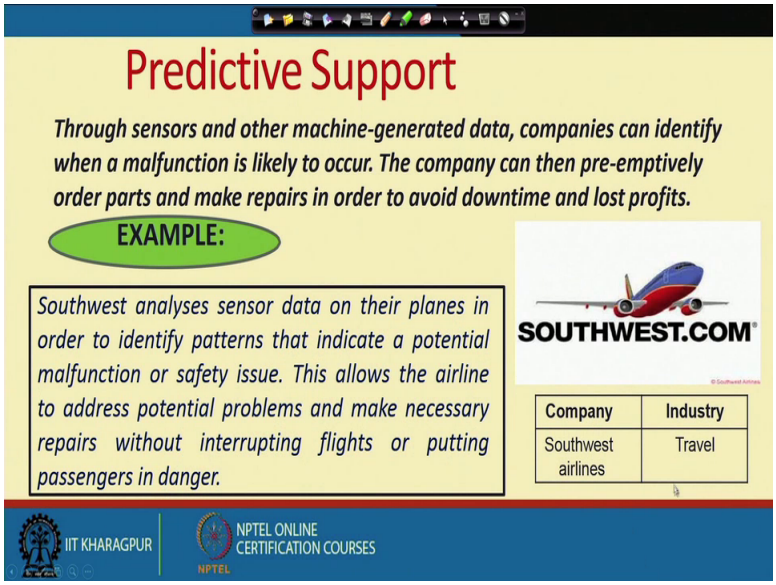

So, likewise, we have you know couple of other examples, which I have already highlighted. So, the same way, they have actually applied business analytics and then they you know they try to increase their, you know in profit levels by increasing sales reducing cost and you know attracting customers. So, these are actually, these are you know command objectives or broad objectives of you know every industry. So, they are on the way how to actually optimize all these things, but you know, but still business analytics can be applied in a more in depth and then they can get better insights and then they can predict accordingly as per there you know requirements.

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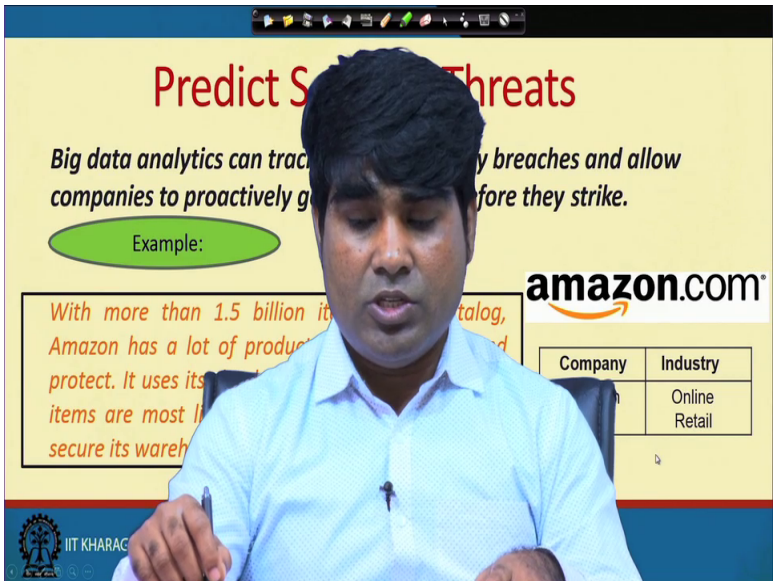

So, likewise some of the other important areas also like you know security threads prediction etcetera by Amazon.

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Then Fraud detections by this Zions Bank.

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So, likewise you know we have a couple of, this is a healthcare industry and sometimes they used business analytics to you know to understand the health environment and then accordingly they can you know predict there you know business structures.

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So, this is another example. So, and with this we can you know we can summarize here or close this particular slide now lecture.

Thank you everybody, have a nice day.