Business Analytics with Excel

DATA AND
ARTIFICIAL INTELLIGENCE

Introduction to Business Analytics

Learning Objectives

By the end of this lesson, you will be able to:

- Explain the concept of analytics
- List and describe the types of analytics
- List the areas of analytics with relevant examples

A Day in the Life of a Business Analyst

As a business analyst of an organization:

You are required to improve productivity and collaboration and enhance customer support while keeping the historical data as the base.

You are also required to do a performance analysis and risk analysis.

To achieve these tasks, you will be learning a few concepts, such as types of analytics, and areas of analytics, that will help find a solution for the given scenario.

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Introduction

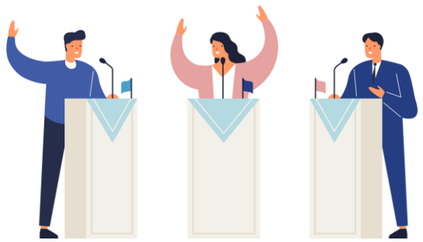
What Is Analytics?

In today's data-driven world, analytics play a critical role in business as well as a variety of other industries like:

Sports

Finance

Business



Government

What Is Analytics?

Analytics is a scientific process used to examine the raw data to draw meaningful and logical conclusions.

Study of Analytics

The study of analytics often involves historical data to look for the potential trends of the past to:

- Understand the effects of certain decisions
- Evaluate the performance of the business

Study of Analytics

The goal of doing a proper analysis is to improve the business by gaining comprehensive knowledge of past trends and decisions.

Business Analytics: Example

- The Operations Head of a multinational tire company wants to do a detailed analysis of defects during the tire production at its various manufacturing plants across the globe.
- Every time there is a defect during the manufacturing process, the defect is stored with a predefined defect code.

Business Analytics: Example

Implementing proper analytics

Perform analysis for every product, on every machine, and for every operator.

Obtain results

How many defects are there in each plant?

Optimize the performance

Do a predictive analysis keeping the historical data as the base.

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Types of Analytics

Types of Analytics

There are four distinct types of analytics:

Descriptive
Explains what has happened

Predictive
Depicts what could happen

Diagnostic
Determines why it happened

Prescriptive
Talks about what should happen

Descriptive Analytics

Descriptive analytics is known as the simplest class of analytics.

It allows breaking a big chunk of data into smaller pieces, extracting relevant information from the data.

It provides a brief synopsis of what happened.

Descriptive Analytics: Example

Descriptive analytics for customer data includes finding answers to the following questions:

- How many different segments of buyers are we dealing with?
- Where are these buyers located?
- How do high-value customers differ?
- What are they interested in?
- What is the regional breakdown of these buyers?

Diagnostic Analytics

Diagnostic analytics is the best option to go for if one wants to dig deeper into the data collected and have a better understanding of why things happened.

Predictive Analytics

Predictive analytics help condenses data.

It uses different statistical, data modeling, and data mining techniques to study the latest and past trends.

It allows business analysts or data scientists to make predictions.

Predictive Analytics: Example

Predictive analytics for the marketing campaign will look for answers to the following questions:

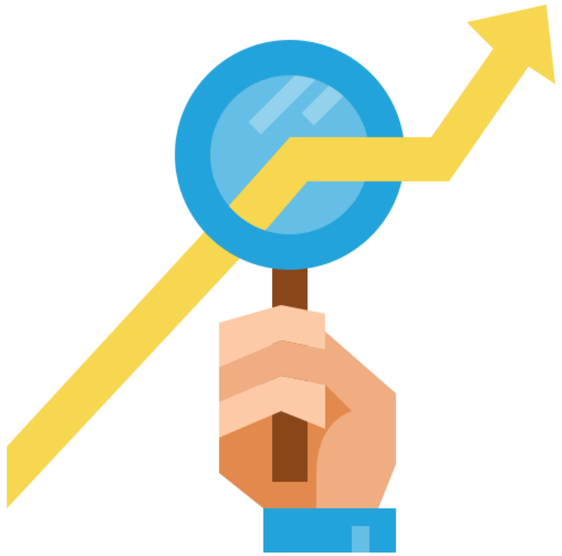
Who will respond to this campaign, for what product, and through which channel?

What are the potential values for each customer and prospect?

Who will stop the subscription to the service and when?

Prescriptive Analytics

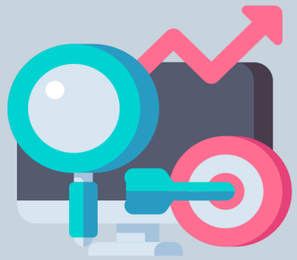
Prescriptive analytics improves decision-making by identifying the optimal option among a variety of options.



Prescriptive Analytics

Prescriptive analytics is the last phase of business analytics and is related to both descriptive and predictive analytics.

Descriptive analytics provides information about what has happened.



Prescriptive analytics optimizes decision-making by determining the best solution available among various choices.

Predictive analytics helps forecast what might happen; it is probabilistic.

Areas of Analytics

Areas of Analytics

Here are some examples of areas of analytics:

Industry-focused analytics

Financial analytics

Performance analytics

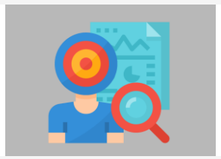
Customer analytics

Risk analytics

Customer Analytics

Customer analytics is a process that helps organizations make critical decisions and deliver offers that are anticipated.

Customer Analytics



It allows organizations to take necessary decisions based on customer insights.

It uses techniques such as market segmentation, predictive analytics, data modeling, and visualization.

It plays a pivotal role in the prediction of customer behavior.

Customer Analytics: Example

All telecom companies use different marketing methods for customer acquisition and retention.

Financial Analytics

Financial analytics is a new way to drive competitive advantage.

Explore and Forecast

It helps financial executives explore different ways to answer specific finance-related questions and forecast future financial situations.

Greater Value

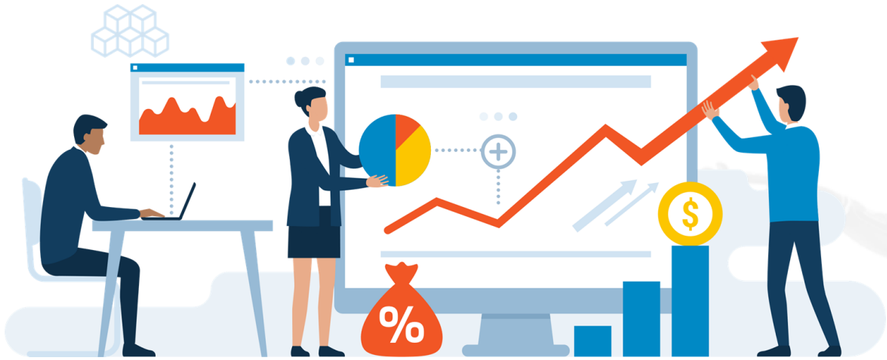
It helps the finance department to bring greater value to the organizations.

Multiple Views

It helps the companies take multiple views of their data and derive insights that will help them take necessary action.

Financial Analytics: Example

Consolidated financial statements showcase the company’s financial position.



These statements provide a detailed overview of the company’s financial position to investors and creditors.

Performance Analytics

Performance analytics uses data and technology to analyze business performance for improvement.

Performance Analytics: Example

In human resource management, the performance of the employees is monitored regularly.

Performance analytics allows companies to take corrective actions to improve the performance of employees in time.

Risk Analytics

It foresees future uncertainties to evaluate a project's success or failure.

It helps organizations manage and mitigate risks.

It allows decision-makers to make wise decisions and take corrective actions.

Types of Risk Analytics

Quantitative

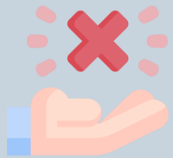
Quantitative risk analysis quantifies possible results specific to a project.

It evaluates the possibilities of various adverse events numerically.

It predicts the losses a company would go through if any of these possibilities come true.

Types of Risk Analytics

Qualitative



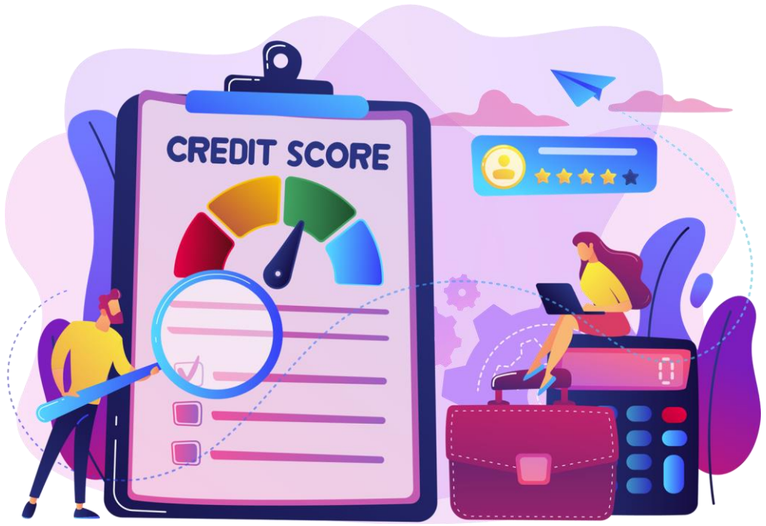
Qualitative risk analysis is performed on almost all risks and is not numerically defined.

It defines various project-related threats and risks.

It determines the extent of these risks and proposes corrective actions.

Risk Analytics: Example

In the banking industry, credit scores are built to predict an individual's delinquent behavior. It is also used to represent the creditworthiness of an individual.



Corruption

Corruption is unethical conduct by a person or a group of people to generate illegal profit.

It drastically affects the confidence and trust of the parties involved.

Key Takeaways

- Analytics is a scientific process that examines raw data to draw meaningful and logical conclusions from them. It is used across industries to derive crucial business decisions.

- Analytics has been divided into four different types, namely:
  - Descriptive, which explains what has happened
  - Diagnostic, which identifies why it did happen
  - Predictive, which determines what could happen
  - Prescriptive, which talks about what should happen

- Business analytics can be divided into several types such as customer analytics, financial analytics, performance analytics, and risk analytics.

Knowledge Check

Knowledge Check

1

Which one of the following is NOT a type of business analytics?

a. Descriptive analytics

b. Diagnostic analytics

c. Predictive analytics

d. Performance analytics

Knowledge Check

1

Which one of the following is NOT a type of business analytics?

a. Descriptive analytics

b. Diagnostic analytics

c. Predictive analytics

d. Performance analytics

The correct answer is **d**

Performance analytics is not a type of business analytics. The four distinct types of business analytics are: descriptive, diagnostic, predictive, and prescriptive.

Knowledge Check

2

Which one of the following is true about descriptive analytics?

a. It provides a brief synopsis of what happened.

b. It gives a better understanding of why things happened.

c. It uses various data modeling and data mining techniques to study trends.

d. It optimizes decision-making by determining the best solution.

Knowledge Check

2

Which one of the following is true about descriptive analytics?

a. It provides a brief synopsis of what happened.

b. It gives a better understanding of why things happened.

c. It uses various data modeling and data mining techniques to study trends.

d. It optimizes decision-making by determining the best solution.

The correct answer is **a**

Descriptive analytics allows you to break data into smaller pieces, extracting relevant information to get a brief synopsis of what happened.

Knowledge Check

3

Predictive analytics helps forecast what might happen; it is probabilistic.

a. True

b. False

Knowledge Check

3

Predictive analytics helps forecast what might happen; it is probabilistic.

a. True

b. False

The correct answer is **a**

Predictive analytics helps to forecast what might happen; it is probabilistic.

Knowledge Check

4

_____ is the practice of using data and technology to study how your business is performing to continuously make it better.

a. Performance analytics

b. Financial analytics

c. Risk analytics

d. Customer analytics

Knowledge Check

4

_____ is the practice of using data and technology to study how your business is performing to continuously make it better.

a. Performance analytics

b. Financial analytics

c. Risk analytics

d. Customer analytics

The correct answer is **a**

Performance analytics is the practice of using data and technology to study how your business is performing to continuously make it better.

Knowledge Check

5

Which of the following is an example of customer analytics?

a. Consolidation of financial statements

b. Corruption

c. Customer acquisition and customer retention

d. Human resource management

Knowledge Check

5

Which of the following is an example of customer analytics?

a. Consolidation of financial statements

b. Corruption

c. Customer acquisition and customer retention

d. Human resource management

The correct answer is **c**

Customer acquisition and customer retention is an example of customer analytics.