Data Analytics

The science of analyzing raw datasets in order to derive a conclusion regarding the information they hold

Data analytics processes and techniques may use applications incorporating machine learning algorithms, simulation, and automated systems. The systems and algorithms work on the unstructured data for human use.

These findings are interpreted and used to help organizations understand their clients better, analyze their promotional campaigns, customize content, create content strategies, and develop products. Data analytics help organizations to maximize market efficiency and improve their earnings.

Uses of Data Analytics

In this article, we are going to discuss different uses of data analytics. And will discuss the application where we will see how data is an essential part of different sectors. So, let's discuss them one by one.

Data is of much importance nowadays. Data helps you understand performance providing the clarity needed for better results. Data helps you improve processes so that you can reduce wasted money and time and also to understand consumers well.

Uses of Data Analytics :

1. **Data in business :**
   In Data Analytics there are many advantages of data, but without the proper data analytics tools and processes, you can't access these benefits. Raw data is also very important and you need data analytics to unlock the potential of raw data and converted into useful information for the business.
   Example –
   Record of the potential customer, records of customers like name, address.

2. **Data in healthcare :**
   Data is extremely useful in this field of medical and healthcare. Most of the medical devices are

big data-oriented. In Data Analytics uses of data has gone to such an extent that in the healthcare sector each record or you can say data is very essential where doctors can check person through the heart and temperature monitoring watch which is critical information of any patients and kept to be as data fitted on patient's hand and prescribe him with related medicines.

Example –

Patient records like name, address, contact no. etc., treatment records, Records of Doctor's profile are the examples in healthcare.

3. **Data in media and entertainment :**

   The business model runs on collecting and creating the content, further analyzing it, then marketing and distribution of the content. We can run through customer's data along with observable data and gather even minute information to create a customer's detailed profile. The benefits of big data in the media and entertainment industry include forecasting what the target audience wants, planning, optimization, expanding acquisition, and retention suggest content on-demand and new.

   Example –

   Records of the team, the time duration of media project, location, etc.

4. **Data in transportation :**

   Data in transportation is very crucial. For proper communication and for proper synchronization of transport medium you need data and to analyze the information you need data analytics. Data potential is to analyze how many passengers traveled from any source to destination and with the help of data analytics it can be processed in real-time for the smooth functioning of transportation.

   Example –

   feedback of customer, transport time, source and destination records, customer traveled history, etc.

5. **Data in banking :**

   Banking is a very crucial sector. Data here is very beneficial and helps in fraud detection in the banking system. Using big data, we can search for all the illegal activities that have taken place and can identify the misuse of credit and debit cards, business precision, you can say for customer statistics modification, and in public analytics for business.

   Example –

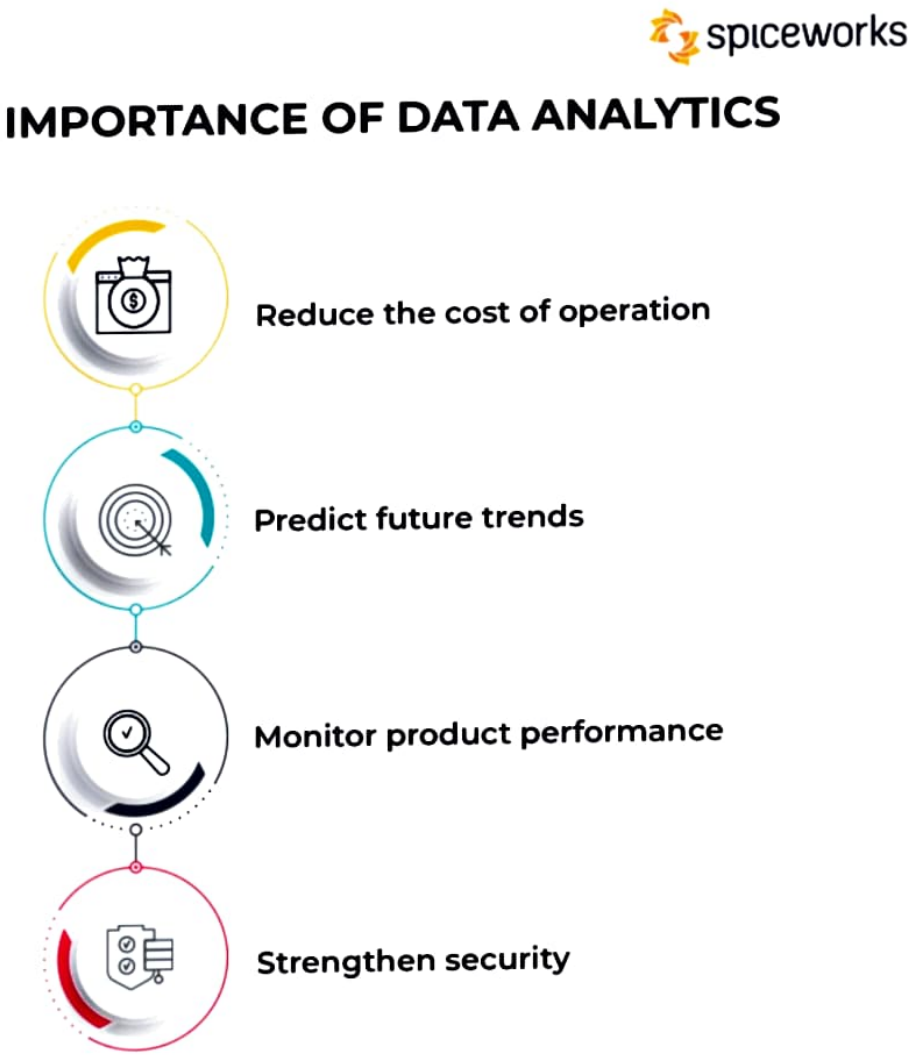
   Employee records, Bank name address, and branch name, customer account records, transaction history, etc.

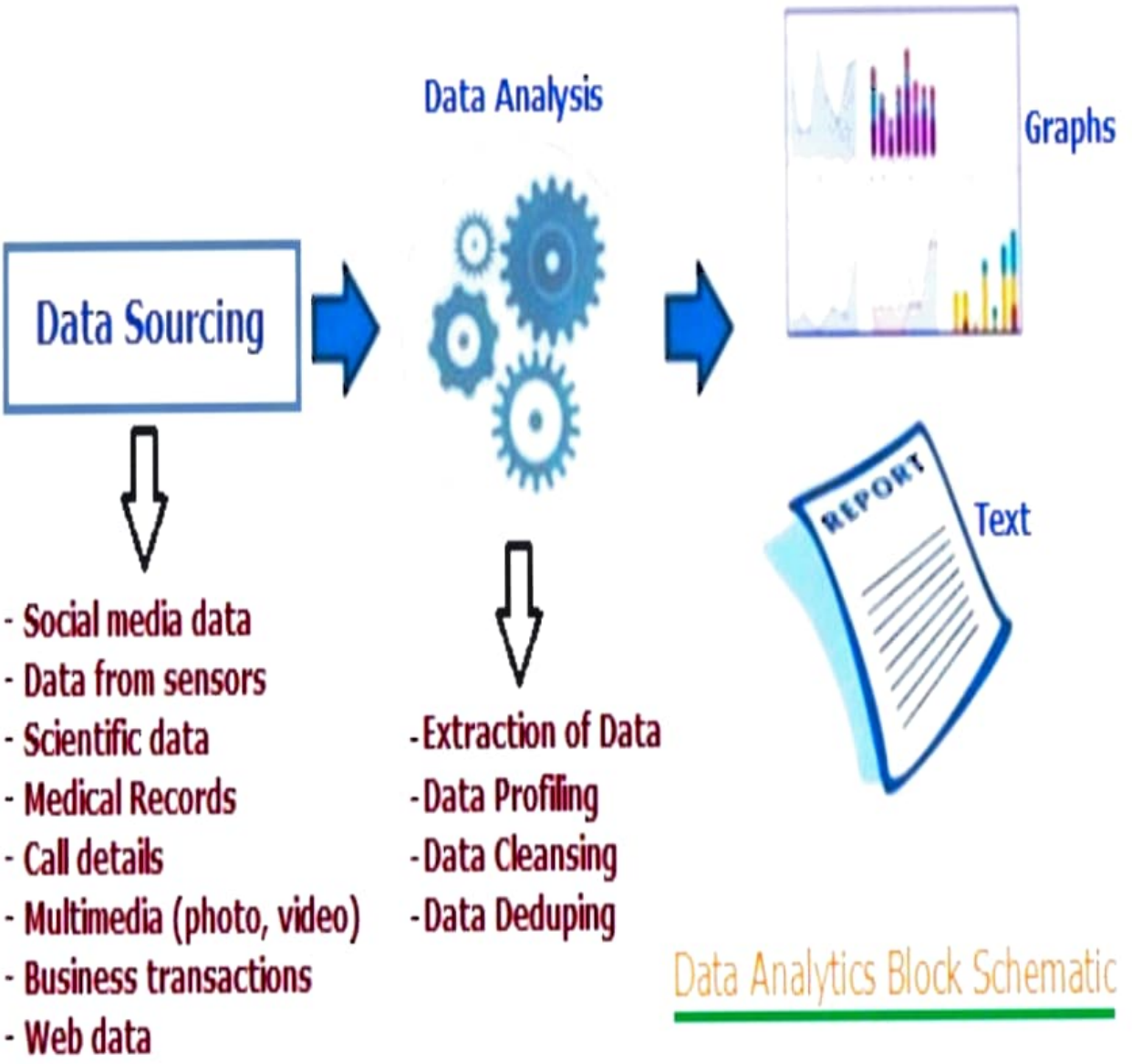
Types of Data Analytics

There are five types of data analytics. One can employ all of them in making a complete data analysis depending on the problem, but that is often unnecessary. However, it is essential to know each type of data analysis.

Importance of Data Analytics

These days, most departments in organizations use data analytics to examine present situations and predict future scenarios. The results of these actions can bring many benefits and advantages to an organization. These benefits include:





The companies which use data analytics tools perform better. It helps to increase revenue, decrease costs and increase productivity of the companies. As shown data analytics consists of data sourcing, data analysis and data representations.

Data Sourcing:

• The data are sourced from various sources which include both open and close data sets.

• It include both personal, official and public data from wide variety of sources.

• It uses scientific data from astronomy, Genomics, Biological research.

• It uses data from web such as log files, web indexing, text and documents.

• It uses official data from business transactions.

• It uses data from various sensors such as temperature, humidity, proximity for weather forecasting, surveillance etc.

• It uses personal data from social networks (facebook, twitter, google plus), call records from telecom service providers and medical records from hospitals.

• It uses photos or images and videos.

• Purchase transaction records from various online websites.

• GPS signals from various cell phone users.

Data analysis include following functional modules.

Data extraction: The process of extracting

and storing the data from data sources mentioned above is known as data extraction.

Data Profiling: The process of examining and collecting informative summary in the form of smaller database from the larger one is known as data profiling.

Data Cleansing: The process of converting sourced data from errors, duplicates and inconsistencies into cleaned target data is known as data cleansing or data cleaning.

Data Deduping: The process of replacing multiple copies of data into single instance storage in order to save storage space/bandwidth is known as data deduping or data deduplication.

Advantages of Data Analytics

Following are the **advantages of data Analytics**:

➡It detects and correct the errors from data sets with the help of data cleansing. This helps in improving quality of data and consecutively benefits both customers and institutions such as banks, insurance and finance companies.

➡It removes duplicate informations from data sets and hence saves large amount of memory space. This decreases cost to the company.

➡It helps in displaying relevant advertisements on the online shopping

advertisements on the online shopping websites based on historic data and purchase behaviour of the users. Machine learning algorithms are applied for the same. This helps in increasing revenue and productivity of the companies.

➡It reduces banking risks by identifying probable fraudulent customers based on historic data analysis. This helps institutes in deciding whether to issue loan or credit cards to the applicants or not.

➡It is used by security agencies for surveillane and monitoring purpose based on informations collected by huge number of sensors. This helps in preventing any wrongdoings and/or calamities.

Analytics

Following are the **disadvantages of data Analytics**:

➡This may breach privacy of the customers as their information such as purchases, online transactions, subscriptions are visible to their parent companies. The companies may exchange these useful customer databases for their mutual benefits.

➡The cost of data analytics tools vary based on applications and features supported. Moreover some of the data analytics tools are complex to use and require training. This increases cost to the company willing to adopt data analytics tools or softwares

Data Analytics Applications

Now that we know and understand what data analytics and its types are, we should also understand the different ways in which it is used. The truth is that it has use cases across many business verticals. Here are some of the data analytics applications across different industries:

- ***Retail*** Understanding customer needs and buying habits to predict trends, launch new products, and boost sales.

- ***Healthcare*** Analysing patient data for lifesaving diagnosis and treatment. Data analytics also helps in developing new drugs.

- ***Manufacturing*** Data analytics helps in solving complex supply chain issues, labour constraints, and breakdown of equipment.

- ***Banking*** Pointing out probable loan defaulters and detecting frauds

1. IT Sector

The major share (43%) of the data analytics industry in the market is in the IT industry. A few of the IT giants in India are Accenture, Tata Consultancy Services, Cognizant, Infosys, Capgemini, and Wipro.
The tech demand in this sector and the gross employee addition, is set to rise in the second half of the financial year 2022. Additionally, India has also noticed great innovation in many industries through the IT sector.

2. Financial Services, Banking, and Insurance Sectors

This is the second-largest sector, as it has a market share of 13.9%. It has observed several companies engaging in data analytics. India's fintech market is the third largest in the world. Several players, such as PhonePe, Paytm, Policybazaar, and MobiKwik, have made use of data analytics and AI to grow their businesses.

3. E-Commerce and Retail

In 2020, the e-commerce sector was at an estimated US$ 50 billion. The e-commerce business is responsible for driving 1.2 million transactions every day, according to NASSCOM. By 2023, this sector is expected to pass the US and become the 2nd largest retail market. These sectors own a 5.9% share in this industry and have used data analytics to predict trends, provide better customer service, and streamline their warehouse operations.

India has been heavily investing in big data to level up its efficiency since the year 2014. Big data is helping the government improve the living conditions of its citizens. The government has also taken many steps to create big platforms for big data that will make the acquisition and manipulation of large amounts of data.