
ROLE OF PREDICTIVE ANALYTICS IN BIG DATA: AN EXPLORATORY STUDY

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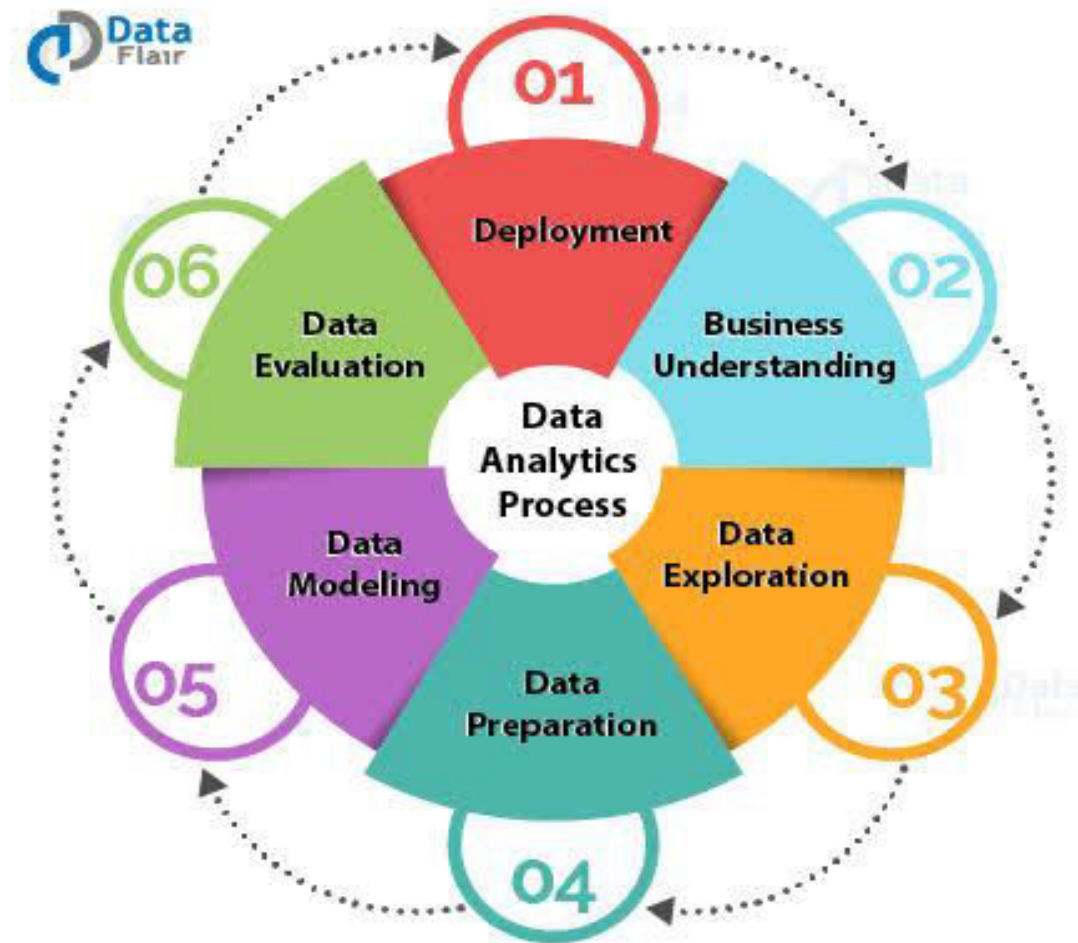
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Big data is the term used to represent a collection or availability of extraordinarily huge quantities of structured and unstructured data that are nonetheless expanding exponentially over time. In other words, because the data is so massive and complicated, none of the conventional data management technologies can successfully store or process it. Big data is crucial because it enables the processing of several benefits, boosts operational effectiveness, and optimises company procedures. Big data is crucial for societal and business goals. The information was gathered from a variety of sources, including weather sensors, social media posts and sharing, video, audio, and more.

Today, there are many methods to use big data to expand businesses and employ outside intelligence when making judgments.

Usually, the data is either too large, moving too quickly, or requiring more processing power than is available in business situations. Big data can facilitate more effective decision-making and enhance business operations. Big data frequently consists of data sets that are too large to be collected, vetted, managed, and processed using commonly used software tools in a timely manner. A group of techniques and methods together referred to as big data are employed in order to unearth significant hidden values from vast datasets that are diverse, intricate, and of an enormous scale. Every hour, Wal-Mart oversees more than a million consumer transactions. From its user base, Facebook processes 40 billion photos. To efficiently analyse huge amounts of data, big data needs some form of technology. Data fusion and integration, genetic algorithms, machine learning, signal processing, simulation, natural language processing, time series analytics, and visualisation are a few of the technologies used.

The structure of this essay is as follows. We define big data at the outset of the essay. We draw attention to the fact that one of the numerous aspects that big data sets have is not just size. The frequency of data generation is another important component of big data. The debate is then expanded to include a number of different big data types, such as text, audio, video, and social media. We look at big data via an analytical lens.



PREDICTIVE ANALYTICS

The discipline of advanced analytics known as predictive analytics is utilised to forecast unknowable future events. Predictive analytics analyses current data to produce predictions about the future using a variety of approaches from data mining, statistics, modelling, machine learning, and artificial intelligence.

It combines management, IT, and business process modelling to create predictions about the future by utilising a variety of data mining, predictive modelling, and analytical tools. Future hazards and possibilities can be determined using patterns revealed in historical and transactional data.

When assessing risk under a certain set of variables, predictive analytics models capture correlations between numerous parameters and assign a score, or weightage. Businesses can successfully analyse big data to their advantage by implementing predictive analytics.

By identifying patterns and connections in both structured and unstructured data, business users can produce predictive intelligence by using data mining, text analytics, and statistics. Structured data, such as age, gender, marital status, income, and sales, are

readily usable for analysis. Textual information from contact centre notes, social media posts, or other types of open text that needs to be extracted from the text together with the sentiment and used in the model-building process are examples of unstructured data.

Organizations can use predictive analytics to be proactive, forward-thinking, and anticipate events and behaviours based on the data rather than on hunches or preconceptions. Prescriptive analytics goes a step further and offers options for decisions that will take advantage of the forecasts and their ramifications.

Fig.1. Predictive analytics process

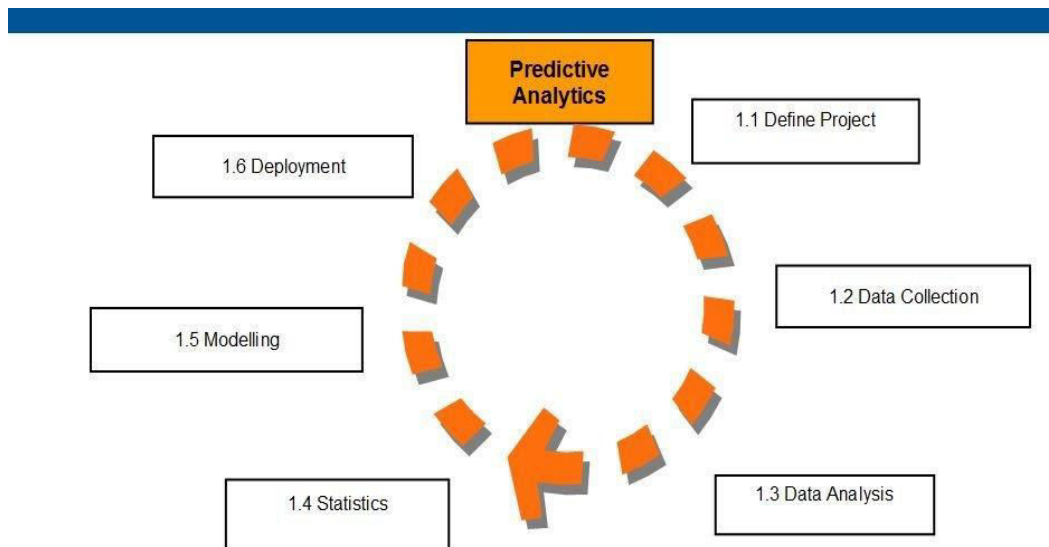
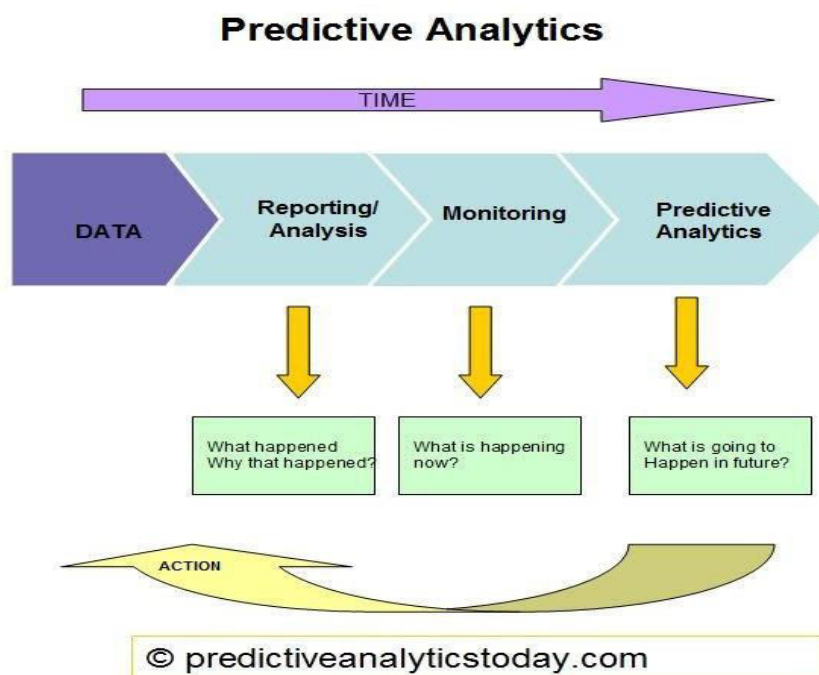


Fig.2 Predictive analytics value chain



Predictive analytics is helpful in CRM (Customer Relationship Management) in areas like marketing campaigns, sales, customer care, etc. The goal is to efficiently focus their efforts on evaluating the most in-demand products and predicting customers' purchasing patterns.

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