

Overview of Digital Analytics

Karampreet Singh Walia, Hansraj Yadav, Himanshu Sharma

Dronacharya College of Engineering, Gurgaon, Haryana, 122001, India.

Corresponding Author: karamwalia520@gmail.com

Abstract: - Aimed at providing portable usability of the information and effectiveness in decision making process in order to extend the reach of the customers to the New-Age digital natives and also to enhance the analytics scope with the help of Big Data and Machine Learning. Data analytics helps organizations harness their data and use it to identify new opportunities. That, in turn, leads to smarter business moves, more efficient operations, higher profits and happier customers. However, it includes many techniques with many different goals.

Key Words:— *Data Analytics, Machine Learning, Data Mining.*

I. INTRODUCTION

The concept of data analytics has been around for years; most organizations now understand that if they capture all the data that streams into their businesses, they can apply analytics and get significant value from it. But even in the 1950s, decades before anyone uttered the term “data analytics,” businesses were using basic analytics (essentially numbers in a spreadsheet that were manually examined) to uncover insights and trends.

The new benefits that data analytics brings to the table, however, are speed and efficiency. Whereas a few years ago a business would have gathered information, run analytics and unearthed information that could be used for future decisions, today that business can identify insights for immediate decisions. The ability to work faster – and stay agile – gives organizations a competitive edge they didn’t have before.

II. DATA ANALYTICS TYPES

1. Descriptive analytics helps answer questions about what happened. These techniques summarize large datasets to describe outcomes to stakeholders. By developing key performance indicators (KPIs,) these strategies can help track successes or failures. Metrics such as return on investment (ROI) are used in many industries. Specialized metrics are developed to track performance in specific industries. This process requires the collection of relevant data, processing of the data, data analysis and data visualization. This process provides essential insight into past performance.
2. Diagnostic analytics helps answer questions about why things happened. These techniques supplement more basic descriptive analytics. They take the findings from descriptive analytics and dig deeper to find the cause. The performance indicators are further investigated to discover why they got better or worse. This generally occurs in three steps:
 - Identify anomalies in the data. These may be unexpected changes in a metric or a particular market.
 - Data that is related to these anomalies is collected.
 - Statistical techniques are used to find relationships and trends that explain these anomalies.
3. Predictive analytics helps answer questions about what will happen in the future. These techniques use historical data to identify trends and determine if they are likely to recur. Predictive analytical tools provide valuable insight into what may happen in the future and its techniques include a variety of statistical and machine learning techniques, such as: neural networks, decision trees, and regression.
4. Prescriptive analytics helps answer questions about what should be done. By using insights from predictive analytics, data-driven decisions can be made. This allows businesses to make informed decisions in the face of uncertainty. Prescriptive analytics techniques rely on machine learning strategies that can find patterns in large datasets. By analyzing past decisions and events, the likelihood of different outcomes can be estimated.

III. KEY TECHNOLOGIES

Machine Learning: - Machine learning, a specific subset of AI that trains a machine how to learn, makes it possible to quickly and automatically produce models that can analyze bigger, more complex data and deliver faster, more accurate results – even on a very large scale. And by building precise models, an organization has a better chance of identifying profitable opportunities – or avoiding unknown risks.

Data management:- Data needs to be high quality and well-governed before it can be reliably analyzed. With data constantly flowing in and out of an organization, it's important to establish repeatable processes to build and maintain standards for data quality. Once data is reliable, organizations should establish a master data management program that gets the entire enterprise on the same page.

Data Mining: - Data mining technology helps you examine large amounts of data to discover patterns in the data – and this information can be used for further analysis to help answer complex business questions. With data mining software, you can sift through all the chaotic and repetitive noise in data, pinpoint what's relevant, use that information to assess likely outcomes, and then accelerate the pace of making informed decisions.

Hadoop:- This open source software framework can store large amounts of data and run applications on clusters of commodity hardware. It has become a key technology to doing business due to the constant increase of data volumes and varieties, and its distributed computing model processes big data fast. An additional benefit is that Hadoop's open source framework is free and uses commodity hardware to store large quantities of data.

In-memory analytics:- By analyzing data from system memory (instead of from your hard disk drive), you can derive immediate insights from your data and act on them quickly. This technology is able to remove data prep and analytical processing latencies to test new scenarios and create models; it's not only an easy way for organizations to stay agile and make better business decisions, it also enables them to run iterative and interactive analytics scenarios.

Predictive analytics:- Predictive analytics technology uses data, statistical algorithms and machine-learning techniques to identify the likelihood of future outcomes based on historical data. It's all about providing a best assessment on what will happen in the future, so organizations can feel more confident that they're making the best possible business decision. Some of the most common applications of predictive analytics include fraud detection, risk, operations and marketing.

Text mining:- With text mining technology, you can analyze

text data from the web, comment fields, books and other text-based sources to uncover insights you hadn't noticed before. Text mining uses machine learning or natural language processing technology to comb through documents – emails, blogs, Twitter feeds, surveys, competitive intelligence and more – to help you analyze large amounts of information and discover new topics and term relationships.

IV. NEED FOR DATA ANALYTICS

Healthcare: - One of the most promising areas where it can be applied to make a change is healthcare. Healthcare analytics have the potential to reduce costs of treatment, predict outbreaks of epidemics, avoid preventable diseases and improve the quality of life in general. Average human lifespan is increasing along world population, which poses new challenges to today's treatment delivery methods. Health professionals, just like business entrepreneurs, are capable of collecting massive amounts of data and look for best strategies to use these numbers.

Banking and financial sector: -The world of banking has encountered unprecedented change over the past few years, and there's no reason to think it's going to subside any time soon. Every quarter brings new questions. How will changes in banking laws and regulations affect profitability? Which stress scenarios should be considered? Who are currently the "high-value" customers? What customers have the highest

Retail: - Businesses can use historical data and trend analysis to determine which products they should order, and in what quantities instead of relying exclusively on past orders because of the predictive tools.

Managing Risks: - Risk management is a major focus of the insurance industry. When insuring a person, the risk involved is not obtained based on mere information but data that has been analyzed statistically before a decision is made. Data analytics gives insurance companies information on claims data, actuarial data and risk data covering all important decision that the company needs to take. Evaluation is done by an underwriter before an individual insured then the appropriate insurance is set.

Delivery Planning: - From data analytics applications, these companies have found the most suitable routes for shipping, the best delivery time, most suitable means of transport to select so as to gain cost efficiency and many others. Also, data generated by these companies through the use of GPS gives them enough opportunities to take advantage of data analytics and data science.

V. CONCLUSION

However, data has become more available and accessible to more people therefore no longer at the disposal of data scientists and analysts. Almost everybody within an organization can make use of data for the increase of productivity and make very important decisions. Of course, proper use of data would have a positive impact on business and even the society in general.

REFERENCES

- [1]. <https://www.digitalvidya.com/blog/data-analytics-applications>.
- [2]. <https://www.vendhq.com/blog/how-retailers-can-use-data-to-boost-productivity-customer-service-sales>.
- [3]. <https://www.mastersindatascience.org/resources/what-is-data-analytics>.