PREDICTIVE ANALYTICS: A STUDY, INCLINATIONS, APPLICATIONS & CHALLENGES

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ABSTRACT—Big data is currently a buzzword in both academia and industry, with the term being used to describe a broad domain of concepts, ranging from extracting data from outside sources, storing and managing it, to processing such data with analytical techniques and tools. Nowadays the increase of data variety considered very dispute problem for analysis. So innovative methods are mandatory for analytics especially in big data where the data in characteristic very complex and unstructured. The analytics is the process of analysis to predict concealed pattern and association among data. The main objective of this survey paper is to provide the exhaustive view of different predictive analytics applications and approaches. Analytics methods focused with dissimilar perspectives based on applications and data variety. Some of the application discussed is big data in hotel governance, higher education, health care, data e-governance, consumer orientations. This paper presents different predictive approach processes and its applications.

Keywords: Big data, Predictive analytics, Predictive analytics Process, Predictive analytics Applications.

1. INTRODUCTION

Predictive analytics is a category of data analytics aimed at making predictions about future outcomes based on historical data and analytics techniques such as statistical modelling and machine learning. The science of predictive analytics can generate future insights with a significant degree of precision. With the help of sophisticated predictive analytics tools and models, any organization can now use past and current data to reliably forecast trends and behaviours milliseconds, days, or years into the future. Predictive analytics draws its power from a wide range of methods and technologies, including big data, data mining, statistical modelling, machine learning and assorted mathematical processes. Organizations use predictive analytics to shift through current and historical data to detect trends and forecast events and conditions that should occur at a specific time, based on supplied parameters. With predictive analytics, organizations can find and exploit patterns contained within data in order to detect risks and opportunities. Such models enable the assessment of either the promise or risk presented by a particular set of conditions, guiding informed decision-making across various categories of supply chain and procurement events.
2. PREDICTIVE ANALYICS

Predictive analytics is the branch of the advanced analytics which is used to make predictions about unknown future events. The data mining and text analytics along with the statistics, allows the business users to create predictive intelligence by uncovering patterns and relationships in both structured and unstructured data.

3. PREDICTIVE ANALYTICS PROCESS

3.1 Project Definition

Define the project outcomes, deliverables, scoping of the effort, business objectives, identify the data sets which are going to be used.

3.2 Data Collection

It prepares the data from multiple sources for analysis. This provides a complete view of the customer interactions.

3.3 Data Analysis

Data analysis is the process of inspecting, cleaning, transforming and modelling data with the objectives of discovering useful information, arriving at conclusions.

3.4 Statistics

Statistical analysis enables to validate the assumptions, hypotheses and test them with using standard statistical models.

3.5 Modelling

Predictive modelling provides the ability to automatically create accurate predictive models about future. There are also options that provides the best solution.

3.6 Deployment

Predictive Model Deployment provides the option to deploy the analytical results in to the everyday decision making process to get result, reports and output by automating the decisions based on the modelling.

4. APPLICATIONS OF PREDICTIVE ANALYTICS

4.1 CRM(Customer Relationship Management):
Through predictive analytics marketing campaigns, sales, and customer services are objectively achieved. This can be used in analytical customer relationship management throughout the customer life cycle right from the acquisition, relationship growth, retention and customer win back can be better planned and strategically addressed for retaining customers and addressing them more clearly.

4.2 Health Care

Usage of predictive analytics in the health care domain can aid to determine and prevent cases and risks of those developing certain health related complications like diabetics, asthma and other life threatening ailments. Through the administering of predictive analytics in health care better clinical decisions can be made.

4.3 Collection Analysis

These applications optimise the allocation of collection resources by identifying collection agencies, contact strategies to reach out to them, legal actions to increase recovery and cost reduction of collection.

4.4 Cross Sell

Through predictive analytics applications attached to various touch points connected to the customers a detailed analysis on the customer spends, usage pattern of certain purchases they make regularly, customer behaviour can obtain with which ultimately to efficient cross sales or selling additional products to customers. This way organisations dealing with multiple products can effectively increase its sales volume and profits ultimately.

4.5 Fraud Detection

Predictive Analytics can aid to spot inaccurate credit application, deviant transactions leading to frauds both online and offline, identity thefts and false insurance claims saving financial and insurance institutions of lots of security issues and damages to their operations.

4.6 Risk Management

The best portfolio prediction to maximise returns on the capital invested, probabilistic risk assessment to yield accurate forecasts are some of the important benefits of using predictive analytics.

4.7 Direct Marketing

Predictive Analytics also aids in identifying the most effective combination of product versions, marketing material, communication channels and the timing to be used to target a given consumer in the current environment where the dynamics are constantly changing and gets challenging for a business to compete and run successfully.

4.8 Industrial Applications

Predictive analytics is used in insurance, banking, marketing, financial services, telecommunications, retail, travel, healthcare, pharmaceuticals, oil, and gas and other industries.

4.9 Underwriting

Perhaps one of the biggest benefits that can infiltrate into underwriting is providing information about the likelihood of illness, default of loan/insurance and bankruptcy. Predictive Analytics streamline the process of customer acquisition by closely predicting the future risk behaviour of a customer through the application data.
5. CONCLUSION

With low volumes of data, intuitive decision making would work. As the data size has grown to incredible proportions, human ability to make completely intuitive decisions has been reduced. As a result, data-driven decision making has become more prevalent to ensure a reasonable path for success. This situation makes sense as it is easy to see that data are not diminishing but rather increasing. These data-driven decisions are based often on quantitative models created using a typical closed-loop process, that is the predictive analytics process.

REFERENCES


