Business Analytics: A way forward to Decision Making

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Abstract: The increasing amount of data and its interpretation for drawing business benefits is one of the challenges being faced by the enterprises of the day. This problem is only going to get worse day by day. In this context Business Analytics has acquired significance to deal with critical business information . Business Analytics refers to the skills, technologies, applications and practices for continuous iterative exploration and investigation of past business performance to gain insight and drive business planning. Business analytics focuses on developing new insights and understanding of business performance based on data and statistical methods. Currently organizations are struggling with lack of insight, inefficient access, inability to predict. Analytics consist of techniques that are used to get better insight into business and thus make smarter and faster business decisions. Analytics solutions are of three types that include Descriptive analytics, Predictive analytics and Prescriptive analytics. Applications of Business Analytics in Banking, Insurance, Retail, Health Care , Telecommunication, Manufacturing, Government.

Keywords*: *Decision Making, Analytics, Planning, Insight

Introduction

The increasing amount of data and its interpretation for drawing business benefits is one of the challenges being faced by the enterprises of the day. This problem is only going to get worse day by day. In this context, Business Analytics has acquired significance to deal with critical business information. According to Wikipedia, Business Analytics is defined as follows:

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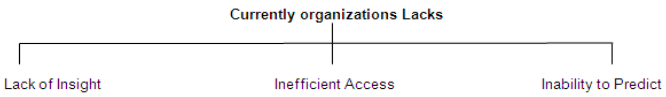
Currently organizations are struggling with:



Lack of insight:- The managers frequently make un-informed decisions due to which the companies face a lot of problems in terms of profits.

Inefficient access:- Due to the scattered information in organizations, the managers are unable to access relevant information and are unsuccessful in completing their tasks.

Inability to predict:- Due to lack of effective predictive capabilities in managers the organizations are suffering with scarcity of decisions that effectively drive the business in a successful way.

Business Analytics can aid the decision makers in making effective, well informed decisions and make the company answer key business questions in an effective way.

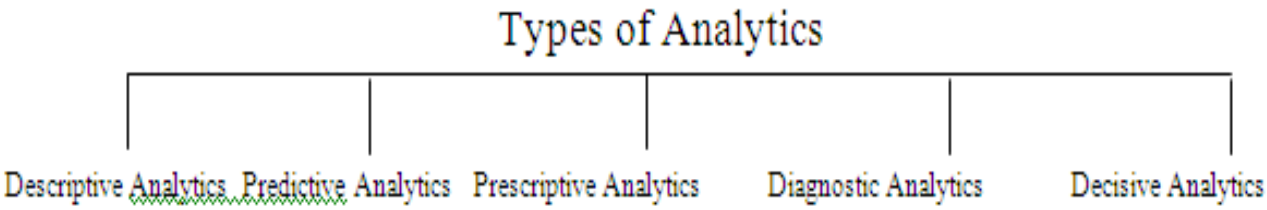
Types of Analytics

Analytics consist of techniques that are used to get better insight into business and thus make smarter and faster business decisions.

Analytics solutions are of three types that include Descriptive analytics, Predictive analytics, and Prescriptive analytics.

Descriptive analytics:- It mines historical data to provide managers with information that enable them to take effective informed decisions. It combines data from disconnected sources and then provides complete information on previously occurred events.

noted that each of mentioned technologies/terms are not strictly different and that there is a lot of overlap between them. OLAP:- OLAP is an acronym for OnLine Analytical Processing. It comprises of software tools which enable users to do adhoc querying and analysis on multidimensional data to discover patterns and trends in data. They allow business users to perform fast and effective analysis on large amount of data. Operations such as slice and dice, roll-up,



drill-down, pivot can be performed to analyze the data. By using drill-down operation, summary data can be drilled to get more detailed data.

Predictive analytics:- It comprise of statistical and data mining techniques that help in analyzing current and historical data to predict future trends, events and behavior patterns. These techniques find application in situations where past occurrences are used to predict future outcomes and hence are very useful in finance, insurance and retail industry.

Prescriptive analytics:- It suggests a set of actions based on the outcomes of both descriptive analytics and predictive analytics. It provides a reliable path to an optimal solution and enables managers to take decisions in a large and complex data environment.

Diagnostic Analytics : It is used to beta test which is aimed at finding data quality issues making you aware of them and helping you fix them

Decisive Analytics : To create the models or visual analytics to support human decisions and reflect reasoning

Understanding Business Analytics

Contemporary organizations are data rich, but information poor. Companies are concentrating on more data for constructing a knowledge-based society and making huge amount of investments for storing and processing large amounts of data to make better decisions. Business Analytics consists of a group of approaches, organizational procedures, tools and technologies to make smarter decisions. Some of the more commonly used ones among them are described below. It should be

Query, reporting and analysis tools:- They consist of tools/technologies which allow the business users to run queries on data from single or multiple data sources. They make the wealth of information available in the databases to generate reports in the form of tables, charts, graphs and crosstabs by which easy analysis of data can be done. Some of the reporting software are jaspe rReports, Pentaho and KNIME.

Data mining:- It is the process that involves exploration and analysis of large volumes of data using a combination of machine learning, artificial intelligence, statistical analysis, pattern recognition, modeling techniques and database technology. It is used for knowledge discovery from large volumes of data. Some of the data mining software are Weka, R, Orange and RapidMiner.

Decision Support Systems:- It is an interactive computer-based information system that provides flexibility in taking business decisions.

Web Analytics:- It comprises of a range of techniques that consist of gathering, analyzing and reporting on web data to get better understanding of how a website is used by its users .By using web analytics an effective analysis on number of visitors of website, number of page views ,average visit duration, most requested pages, incoming and

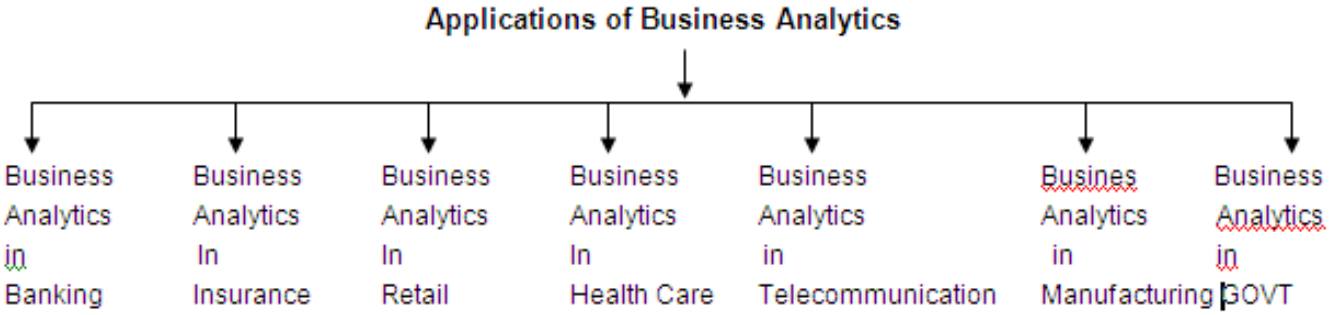
outgoing traffic can be made. It helps in doing better market research and optimizes website usage.

Statistical analysis:- It is a mathematical process that involves collection, analysis and presentation of reports on trends of data.

Dashboards:- It is a data visualization tool that helps to communicate/monitor organization's key performance indicators (KPIs) and thus help in making informed decisions. They provide a simple visual interface with minimum distractions using gauges, maps, charts, and other graphical elements of summaries, key trends and comparisons.

Applications of Business Analytics

Every organization has the need to manage and utilize its corporate data efficiently so as to stay in business and be ahead of the competition. Business Analytics platforms provide the necessary ability to the organizations to make effective and intelligent use of their data to make better business decisions. This section lists some areas of various industry verticals where business analytics tools are extensively applied.



Business Analytics in Banking

Customer segment analysis:- Business analytics can be used to segment customers into groups based on their opinions, emotions and attitudes about specific entities and target these groups with customized banking products and services which will be useful for increasing the reputation of brand. A better product targeting can be done based on customer segmentation due to which cross-sell and up-sell initiatives of a bank can be improved. New service initiatives from banks for the customers will a have lot of scope for success due to the above analysis.

Managing Risk:- There is a lot of pressure on bank officials to increase the quality and speed of risk reporting due to the increase in illegal financial transactions in banking activities. By using banking analytics, key questions related to products and geographies performance, new loans origination and who is likely to default on a loan and which customers pose high or low risks, can be answered. The answers to the above key questions will enable the decision makers in making decisions that will maximize customer value and minimize risk.

Fraud Detection:- Business analytics helps in detecting fraud across all transactions using a debit card, including debit signature, debit PIN and ATM. It monitors online banking, call center, interactive voice response and mobile banking channels to detect fraud perpetrated against monetary and non-monetary activities. It monitors electronic fund transfers such as wire and external debit to detect suspicious activities.

Business Analytics in Insurance

Improve customer care:-By using customer analytics a 360-degree view of customers can be obtained which can be used to build stronger, more profitable relationship with customer and provide better customer care. Analysis of both structured and unstructured customer data can lead to optimized customer interactions and communication.

Fraud Detection:- Frauds in insurance companies can occur at various source points such as claims, premium, loss or injury.

Effective fraud detection capabilities can be obtained by integrating data from various sources . The customer attributes such as bankruptcy, criminal cases and frequent address changes indicate a suspicious behavior. These categories of customers can involve in fraudulent activities and

can cause damages to the company. By using analytics, lot of data which is both in structured and unstructured format can be analyzed for fraud detection. Useful information related to fraud which is in unstructured data format can be analyzed by using text analytics.

Business Analytics in Retail

Retail merchandise management:- By using Business Analytics, the right products can be provided at the right price at the right place at the right time. Analyzing various important parameters such as traffic patterns, weather data and consumer demand the right product can be placed at right place. Real–time price comparisons with rival retailers can help the retailer in setting the best price for the product.

Trend analysis and Demand forecasting:-

Predictive analytics can be used to turn the past transactions of customers into future insight. Analysis on the buying trends and patterns of various customers with diverse interests can be used to predict future demand for a particular product and thus plan in advance. This analysis helps to gain better profits and also helps retailer make better inventory investments to minimize over/out-of-stocks.

Better promotional policy:- Business analytics software can be used to gather and analyze customer sentiment from the sources such as Facebook, Twitter, blogs and other social media. Based on the analysis made, retailers can predict the preferences and purchases of customers to provide them with real-time targeted promotions of their products. Market basket analysis is a key tool for retailers that makes use of algorithms to analyze customer transactions and relate it with previous purchases to provide a better promotional policy.

Business Analytics in Healthcare

Improve clinical effectiveness and patient satisfaction:- Analysis of data corresponding to patients with similar health conditions and history while treating a patient will improve clinical quality of care. The above analysis will enable better diagnosis ,better treatment, improve patient safety, reduce medical errors and improve patient satisfaction. The retention of patient will be high.

Improve operational effectiveness:- By using various dashboards such as executive dashboards, emergency department dashboards, bed management dashboards and case management dashboards in hospital management, key performance indicators can be analyzed in real-time. Due to the above analysis, the overall operational speed and adaptability to handle emergency situations will increase. Fraud Detection:- Analytics can be used to detect improper, erroneous or fraudulent health insurance claims by analyzing historical information and monitor current claims information. Due to the above analysis, there will be a significant improvement in financial and administrative performance of Healthcare industry.

Business Analytics in Telecommunication

Manage churn:- Customer service executives should use business analytics to retain profitable customers by developing customized products, loyalty programs and value added services as retaining customers is critical to long term growth and profitability of a company. Predicting the future value of customer with optimal retention cost will lead to better profits for the enterprise. Understanding existing customer usage profiles in a better way can make the company to take decisions to up-sell and cross–sell services to existing customers. Cross-platform advertising analytics will enable new media advertising campaigns to attract existing users with better calling plans and retain them for a long time.

Locate sales opportunities:- Business Analysts should use effective tools to discover the opportunities near to the existing sites. By the above analysis, there will be reduction in network expansion costs leading to increase in return on investment.

Improve asset utilization and optimize related labor costs:- Analytics software should aid telecommunication service providers to efficiently manage the deployed assets. It should enable operations personnel to take better decisions in terms of efficient asset utilization and improved use of labor to increase the productivity of organization with optimum cost.

Business Analytics in Manufacturing

Smarter supply chains:- Business Analytics tools offer real-time demand and supply visibility to the manufacturing enterprises and enables to maintain an optimal inventory level that keeps costs down. It enables to monitor end-to-end supply chain transactions in real-time and is also helpful in meeting fluctuations in customer demands. Advance warning of supply chain bottlenecks are generated to make faster decisions in terms of meeting the inventory demands. It analyzes the orders against stock levels of raw materials, machine production schedules, and out-bound shipping capacity. Business analytics tools generate alerts about delay in delivery and generate automatic reorder E-mails to suppliers when inventory levels fall below a threshold.

Reliable Financial Planning:- With real-time visibility into budget planning on a monthly, weekly or even daily basis, effective financial forecasting can be done that can position the organization to achieve higher performance at any instance of time.

Business Analytics in Government

Improve citizen and business services:-

At all levels of government, the main target is to provide optimal services to citizens. Due to the inability of government departments to match their initiatives to that of citizen demands and also the lack of insight to improve services, there is every possibility of decline in government performance. By using business analytics, government organizations can integrate data from core agencies related to finance, education, employment, health, etc to achieve better collaboration and operational efficiency.

Effective Resource Management:-

Analytics software can be used to balance resource shortage by creating an effective budgeting and financial plan .All the programs should be planned against a proper projected budget. By goal oriented program planning and monitoring of financial performance of various government agencies, the citizens can be given good governance. Crime prevention and prediction:- By deploying real-time dashboards to monitor crime activities and allocate more law enforcement officials at location in need, there can be more chances of reduction in crime activities. With the help of text analytics, more insight can be obtained from crime data such as hand written complaints, witness statements and e-mail. The above analysis can be used to reduce the crime activities.

Strengthen national security and defense:- To maintain peace and safeguard the citizens, the security agencies should be constantly supplied with accurate and trusted information that will enable them to protect national borders and prepare armed forces for the future. Business analytics software provides decision makers with consistent, accurate and trusted information that give clear foresight to security agencies in terms of defense readiness and operations.

Conclusion

In this era of globalization, Business analytics is necessary for all the organizations to be always aware of the current status of their business. To stay in business and compete with its competitors, all the organizations should focus on better utilization of business analytics tools. Recent innovations and trends in business analytics provide more scope for the managers to effectively use various tools in order to achieve better business value. The application of business analytics in various industry verticals is only limited by imagination.

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