Advanced Analytics

Advanced Analytics brings together the algorithms, along with machine learning capabilities, to find the answers hidden in the vast amounts of data. Often, the answers could be determined in real-time or very near real-time. Besides, with the machine learning capabilities, the systems get 'smarter' over time because there is more data to learn from, and therefore they become more adept at determining actions or outcomes.

There is much to know from data. It can help predict when the next natural disaster may strike or anticipate an accident before it actually happens. These are but some examples of what Advanced Analytics could do.

What It Is

According to Gartner, Advanced Analytics is the autonomous or semi-autonomous examination of data or content using sophisticated techniques and tools, typically beyond those of traditional business intelligence (BI), to discover deeper insights, make predictions, or generate recommendations. Advanced analytic techniques include those such as data/text mining, machine learning, pattern matching, forecasting, visualization, semantic analysis, sentiment analysis, network and cluster analysis, multivariate statistics, graph analysis, simulation, complex event processing, neural networks.

Advanced analytics is often applied on big data. Big data is a term for data sets that are so large or complex that traditional data processing application software is inadequate to deal with them. While the term "big data" is relatively new, the act of gathering and storing large amounts of information is not.

The capability to analyze large volumes of data requires analytical engines that can manage this highly-distributed data and provide results that can be optimized to solve a business problem. Analytics can get quite complex with big data.

Advanced Analytics Applications

Cross-industry use cases of advanced analytics are becoming quite common, giving a clear indication that the beginning of a data-driven business environment is taking hold. The key element to an organization's success in this data-driven world will be determined by having access to a talent pool that understands data and can map various business scenarios using data as well as the appropriate advanced analytics platforms that can be quickly configured to show the requisite insights on-demand. Below are some of the cross-industry use cases.

Churn Prevention

The mark of a successful business is repeat customers. The cost of retaining a customer is far less than acquiring a new one. Churn analysis gives a clear understanding of factors affecting customers to identify which customer are most likely to switch to a competitor. To lower customer acquisition costs, it's important to take corrective action before a customer drops out. Using this data, companies can implement a targeted and cost-effective retention campaign in a timely fashion.

Customer Lifetime Value

In marketing, Customer Lifetime Value is future projection of the net profit over the entire future relationship with the client. Advanced analytics helps identify how much combined profit a customer represents for the life of that relationship, enabling organizations to know how much time, effort and expense it can afford to invest in marketing

activities and business operations either overall or toward the specific customer or customer segment that he/she belongs to.

Customer Segmentation

Customer Segmentation analyses leverage advanced analytics to help provide an understanding of the traits and attributes that define the different types of customers within the customer base. The analyses identify and separate the customer base into distinct groups with common characteristics to help gain a deeper understanding of the profile of each segment, as well as to uncover the significant similarities and differences between the behavior and demographics of each segment. The end result is to help inform business planning and marketing decisions to improve overall business performance.

Sentiment Analysis & Text Mining

In today's social media world, companies are increasingly employing teams to manage, review and monitor what is being talked about them and their products. Sentiment analysis is one such application in the realm of advanced analytics toolkits wherein multiple social media channels can be monitored in real time to understand the sentiment about a product or service or the organization's reputation amongst different demographics. With text mining, the possibilities are limitless.

Up Selling & Cross Selling

Strong customer relationships are key to every business as they result in stable revenue streams. Advanced analytics can enhance customer relationship by recommending the right mix of products at the right time. It can be tailored to appeal to specific market segments to increase both the value to customers and the revenue derived from those customers.

Product Propensity

There is still a disconnect between retail merchandising and marketing functions. To maximize profitability, marketing campaigns need to be tailored in order to push the right products to the target customer base that have the maximum propensity of buying those. With advanced analytics, customers' online behavior from social networks can be mashed up with their historic purchasing behavior and understand what will influence their future purchase decisions.

Sales Forecasting

Sales forecasting with advanced analytics starts with the combining of internal customer data such as win/loss ratios, delay factors, close rates, and completeness of the sales process, with external data that indicate a customer's propensity to buy (these data points could be as diverse as company revenue, executive changes, and social media activity). Forecasting algorithms then use machine learning to look for patterns in these large volumes of data, in ways and speeds not humanly possible. The relationships spotted in the data are then used to score each deal in the pipeline and predict its likely revenue.

Predictive Maintenance

For many companies, a lot of CapEx investment is tied up in industrial assets that require periodic maintenance. Sudden malfunctions of technical equipment can stop a business on a dime, resulting in unmet delivery expectations, potential contract penalties, and lost revenue. With advanced analytics, routine maintenance is being replaced by need-based maintenance. Based on analysis of various parameters that gauge all aspects of the functioning of these

machines, advanced analytics is being increasingly deployed to determine the next time a maintenance action might be required.

Quality Assurance

Customers have tremendously high expectations for quality. Not meeting these expectations results in lower satisfaction and loss of loyalty, increasing customer churn, and reducing the success of business. Moreover, quality issues can lead to a large customer support overhead and high warranty costs. Advanced analytics for quality assurance can detect quality issues at an early stage and predict their severity – before these issues become a problem to your business. Act on this information to provide feedback and revise production, to govern your customer support, and ultimately keep your costs under control and make your customers happier using quality assurance analysis.

Next Best Action

Understanding customer segments as well as defining the primary focus markets are critical steps for any organization. Driven by models capturing life-event patterns, buying behavior, social media interactions, and other aspects, Next Best Action can decide which customers need to be approached and on which channel, create the right message to send out to increase loyalty, intensify interaction with your organization and drive revenues.

Risk Modeling

Risk intelligence uses forward-looking risk concepts and tools to make better decisions, alleviate threats, capitalize on opportunities and create lasting value for companies. Organizations with high risk intelligence tend to make more informed business and security decisions than those with low risk intelligence. Advanced analytics gives organizations clearer visibility into the challenges associated with managing many types of risk in key areas such as operations, regulatory compliance, supply chain, financial services, e-commerce and credit.

Fraud Detection

Fraud prevention isn't just about basic regressive analysis. It's about connecting the data points to discover potential fraudulent behavior before it happens. This starts with finding interactions between products, locations, and devices and then mapping those data points to individual users, customers, and/or employees. This approach effectively connects together vast quantities of knowledge with all of the people who somehow interacted with that knowledge.

These are some of the cross-industry use cases. The actual scope and scale of advanced analytics applications extend far beyond what can be described here. With the right analytics platform and application of advanced analytics, an organization can change their modes from being reactive to becoming proactive by using real-time analysis and insights to drive next-best actions across the enterprise.