

UNDERSTANDING ADVANCED ANALYTICS



INSIGHT REPORT on Advanced Analytics
prepared by The Burnie Group

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WHAT IS ADVANCED ANALYTICS?

Advanced analytics is the application of software algorithms to large data sets. Its purpose is to generate valuable insight into behaviours and trends, to make predictions about future events, and to generate recommendations for business-improving actions.

The term “advanced” is used to differentiate the techniques used from the more basic data tools used in traditional business intelligence (BI). Traditional BI looks at large data sets to identify irregularities, which are then analyzed and presented in a predefined format. In comparison, advanced analytics aims to capture the unique characteristics of a customer, identify more complex trends, and alleviate future uncertainties. While BI can answer, “How many products were purchased and by whom?” advanced analytics can go much further: “How many products will be sold next season, and who will buy more if we adjust our targeting?”

WHAT ARE THE FOUR FUNCTIONS OF ADVANCED ANALYTICS?

There are four basic functions of advanced analytics, each performing specific processes to achieve a particular outcome.

Descriptive analytics – What happened?

Used to summarize historical data sets to identify underlying phenomena. Used to answer questions, such as “Which two products are customers buying together?”

Diagnostic analytics – Why did it happen?

Used to identify factors that contributed to a detected phenomenon. “There was a heat wave at the time of this spike in purchases.”

Predictive analytics – What will happen?

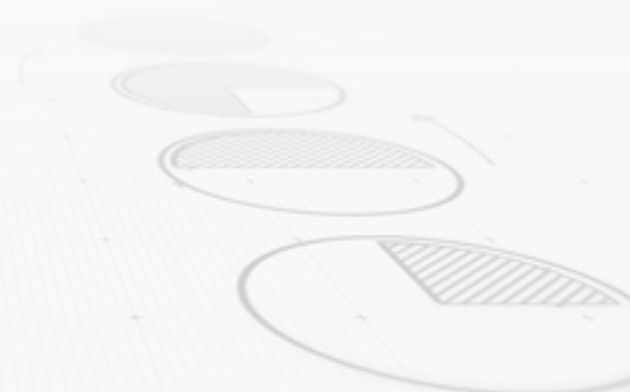
Used to determine future implications by examining the relationship between the event (identified by descriptive analytics) and the contributing factors (identified by diagnostic analytics). “How much revenue will be lost if there is a sudden drop in temperature?”

Prescriptive analytics – How can we make it happen?

Used to determine the best course of action given the data produced by predictive analytics. “What sort of promotion might mitigate the effects of the predicted event?”

Execution of the four functions includes the following techniques:

- Data/text mining
- Sentiment analysis
- Pattern matching
- Trend forecasting
- Visualization
- Semantic analysis
- Network and cluster analysis
- Graph analysis
- Multivariate statistics
- Simulation
- Complex event processing
- Machine learning
- Neural networks.



HOW IS ADVANCED ANALYTICS USED?

Advanced analytics is used in a variety of business improvement practices. Analytic data can be used to improve customer satisfaction, improve customer relations, or increase brand loyalty. Advanced analytics is also frequently used to anticipate patterns of use. These patterns can be monitored against a baseline for measurement and compliance functions, such as Know Your Customer (KYC). Specific applications include:

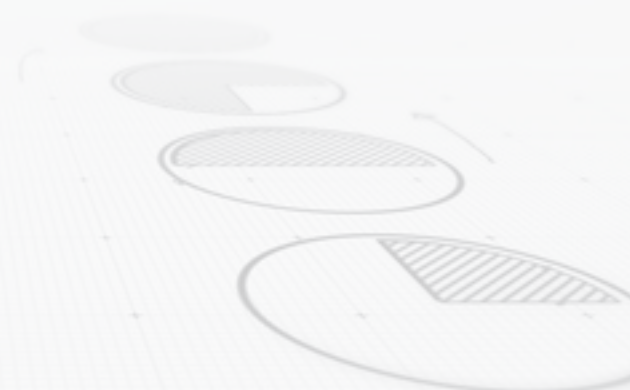
Customer preference management: A business can use analytics to identify and capitalize on a customer's preferences. Brand loyalty for a hospitality company could be enhanced, and profits improved, if the company makes targeted choices based on customer data. For instance, which room does the customer prefer? Do they frequent the hotel restaurant? Are they a regular internet user?

Campaign lead generation: Analytics can identify the successfulness of a specific TV, print, or social media campaign. It can additionally push web adverts based on a customer's purchase or search history.

Pricing elasticity and churn reduction: Analytics allows businesses to offer competitive prices while maximizing value. Locational data and purchase history can be used to push discounts for nearby stores. Regional data can reveal how many customers in a particular area typically leave a service when promotional pricing lapses.

Fraud protection: Analytics can be used to provide protection to customers. A bank may cross-reference a customer's credit card transactions with their mobile location data in order to flag possible fraud attempts.

Risk analysis: Analytics can generate a comprehensive view of a customer's credit risk level by evaluating other aspects of their financial behaviour, including their mobile payment history (pre- or post-paid?), their home electricity consumption, and the eBay purchase history.



WHAT ARE THE BENEFITS?

The major benefit of advanced analytics is that business decision making becomes better informed and accelerated. It also provides:

- Increased revenue opportunities
- Cost control prioritization
- Risk mitigation
- Increased customer retention and churn management
- Enhanced lead generation
- More effective marketing strategies
- Augmented data inventory
- Increased ROI

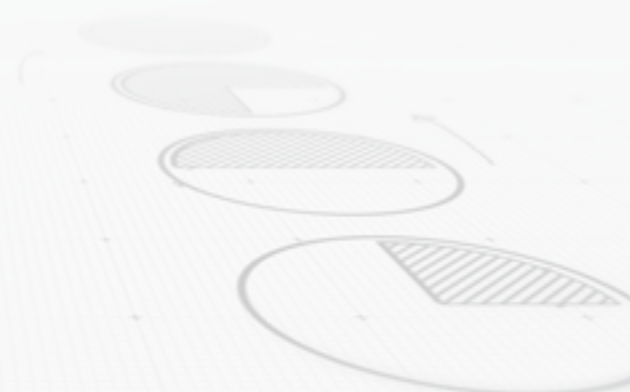
WHAT ARE THE POTENTIAL CHALLENGES?

Traditional BI is considered highly reliable, as it is guaranteed to produce accurate reports if it is provided accurate data. With advanced analytics, there is a higher risk of failure. Because the desired outcomes are specific rather than general, the appropriate data set must be prepared properly. Analytic algorithms will fail if not provided with the proper data. It is important to remember that advance analytics works in probabilities rather than guarantees. Forecasts need to be continually optimized and the results expertly interpreted.

Additional questions arise because of privacy issues involving personal data. In the case of fraud protection, is it acceptable that a telecom company sell a customer's location data to a bank? Does the bank have an obligation to its customer to use this data to provide them with a beneficial service? Should the customer be required to opt-in to this transaction? What is the cost of this data-sharing and who is required to pay it?

THE FINAL WORD

Advanced analytics is highly valuable for producing greater precision marketing. Many businesses, such as banks and telecom companies, possess huge amounts of data that can generate useful insights through the proper application of analytic tools. Use of analytics is a sizable opportunity and a potential differentiator for any business.



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