THE EVER-INCREASING VALUE OF ANALYTICS

THE WIDESPREAD ADOPTION OF DATA ANALYTICS BY ORGANIZATIONS OF ALL SIZES...

...has been growing at an accelerating pace for a number of years – then came the Covid-19 pandemic. Prior to the pandemic, organizations had leveraged analytics in many ways including for operational improvements, cost savings, enhanced marketing optimization and performance, market research and competitor analysis just to name a few. As the pandemic continues, the value of analytics has become more apparent.

Surveys are finding that although businesses are cutting back spending on many of their technology initiatives because of the effects of the pandemic, spending on analytics might not suffer the same fate. The justification for adopting, maintaining, or increasing investments in analytics (even during a period of economic stress) are, not ironically, justified by the data.

Information driven organizations outperform their non-information driven counterparts:

According to research conducted by the McKinsey Global Institute, information driven organizations are:

- Twenty-three more times likely to acquire customers

- Six times as likely to retain those customers

- Nineteen times as likely to be profitable due to their outstanding customer acquisition and retention capabilities.

Additionally, recent academic research cited by McKinsey found that companies that incorporate data and analytics into their operations realize productivity gains 5% to 6% higher than those of their peers. Such a productivity disparity can offer significant competitive advantages. Through various surveys, we know that when asked about the importance of data and analytics to business growth and digital transformation efforts, large majorities of respondents rank them as either very or somewhat important.

Covid- 19 has driven organizations to adapt their application of analytics to better understand the effects of the pandemic on their operations, to make better-informed decisions, and to improve communication to employees and stakeholders. A number of specific applications of analytics that have proven their value during the pandemic include:

- Creating or revising revenue/profit projections to facilitate business continuity and recovery planning

- Identifying tasks that would be more effectively performed through automation

- Assessing current skills inventories and gaps

- Gaining insight on the projected shortfalls of materials to facilitate product planning and supply chain management

Those organizations that have employed analytics to better understand and plan for the effects of COVID-19 will likely be more able to more adeptly transition into the post-Covid business world.
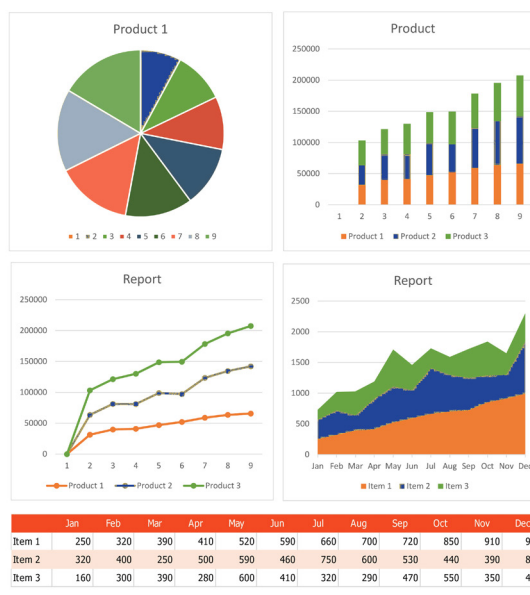
THE THREE MAIN CATEGORIES OF ANALYTICS

The term "analytics" is frequently used as a catchall for any assessment of an organization's data regardless of the purpose or sophistication of the techniques used. In fact, there are three main types of analytics that differ in their purpose, time focus, value offered, and complexity. Although not always the case, organizations tend to start with the most fundamental analytic techniques then, as they realize the potential value, move up the ladder of sophistication and complexity. The three types of analytics are descriptive, predictive, and prescriptive analytics. It's not that one type of analytics is "better" – they each have their purpose and in fact, can complement one another.

Descriptive Analytics

This is usually the starting point for most organizations' use of analytics. Good for answering the question "what happened?", descriptive analytics focuses on past performance and offers insights into that performance by mining historical data to spot reasons for past successes or failures. Most management reporting on sales, marketing, operations, and finance falls into this category of analyzing the past to better understand what happened.

One example of descriptive analytics is the aggregation and reporting on a company's sales over some period. The dashboard depicted below is indicative of the widely used descriptive analytic techniques.

Descriptive Analytics techniques is the most widely used of the three. According to analytics training organization Dezyre. com, 90% of organizations are now using descriptive analytics.

KEY PERFORMANCE INDICATORS

|	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Item 1	250	320	390	410	520	590	660	700	720	850	910	990
Item 2	320	400	250	500	590	460	750	600	530	440	390	850
Item 3	160	300	390	280	600	410	320	290	470	550	350	460

...the global market for systems and services related to predictive analytics will grow at a compound annual rate of around 21% through 2022.

Predictive Analytics

This category of analytics answers the question "what is likely to happen?" Historical data is combined with rules, algorithms, and occasionally external data to determine the probable future outcome of an event or the likelihood of a situation occurring. The foundation of predictive analytics rests on probabilities. This category of analytics takes historical data contained in the organization's CRM, ERP, HR, and other systems, and applies advanced techniques including machine learning models to highlight important trends and patterns. Then current data is used to make predictions about the future. Survey results indicate that somewhere between 20% - 25% of businesses now use predictive analytics with much wider use in industry segments such as healthcare and insurance. A report prepared by Zion Market Research found that the global market for systems and services related to predictive analytics will grow at a compound annual rate of around 21% through 2022.

One example of the use of predictive analytics comes from the electric utility industry. Utilities have embraced predictive analytic techniques to help identify the likelihood of device failures in order to take remedial actions to reduce outages and help plan for anticipated service restoration. If done correctly this should minimize the number and duration of power outages thereby reducing revenue losses and manpower costs, and increasing customer satisfaction. The graphic below is an illustration of the use of this analytic approach.
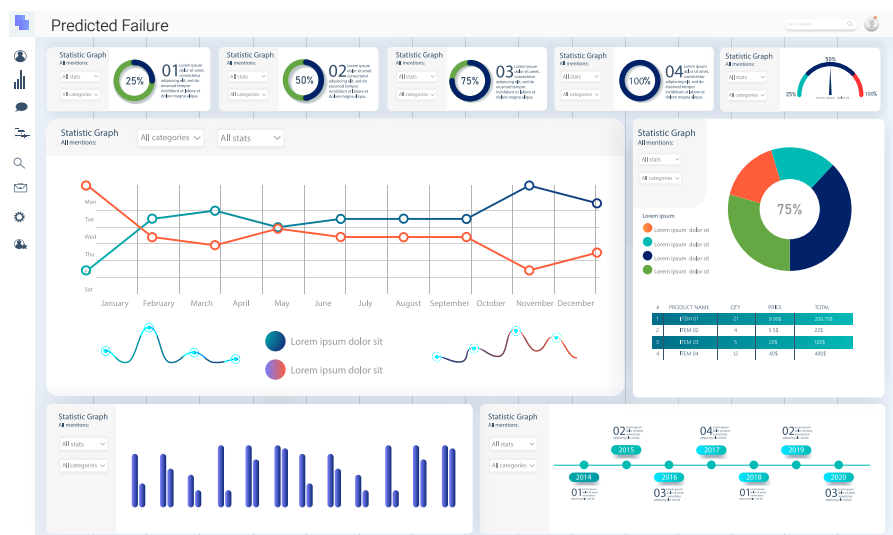
Prescriptive Analytics

Gartner research found that 11% of mid and large-size enterprises have some form of prescriptive analytics.

As the name suggests, this category of analytics answers the question "what should we do?" It suggests actions that leverage the results of predictive analytics and identifies the implications of each decision option. It offers insight into possible outcomes before decisions are made. Because this category of analytics is the most complex to master, it has been embraced primarily by larger, more resource-rich organizations. Gartner research found that 11% of mid and large-size enterprises have some form of prescriptive analytics. This is expected to grow to 37% by 2022. The chart below offers a market size forecast for enterprise spending on prescriptive analytics software; it anticipates a compound annual growth rate (CAGR) from 2017 to 2022 in excess of 20%.

Market Size and Forecast Growth Rate

Figure 1, Enterprise Spending on Prescriptive Analytics Software, Worldwide, 2017 and 2022

Enterprise Spending on Prescriptive Analytics Software
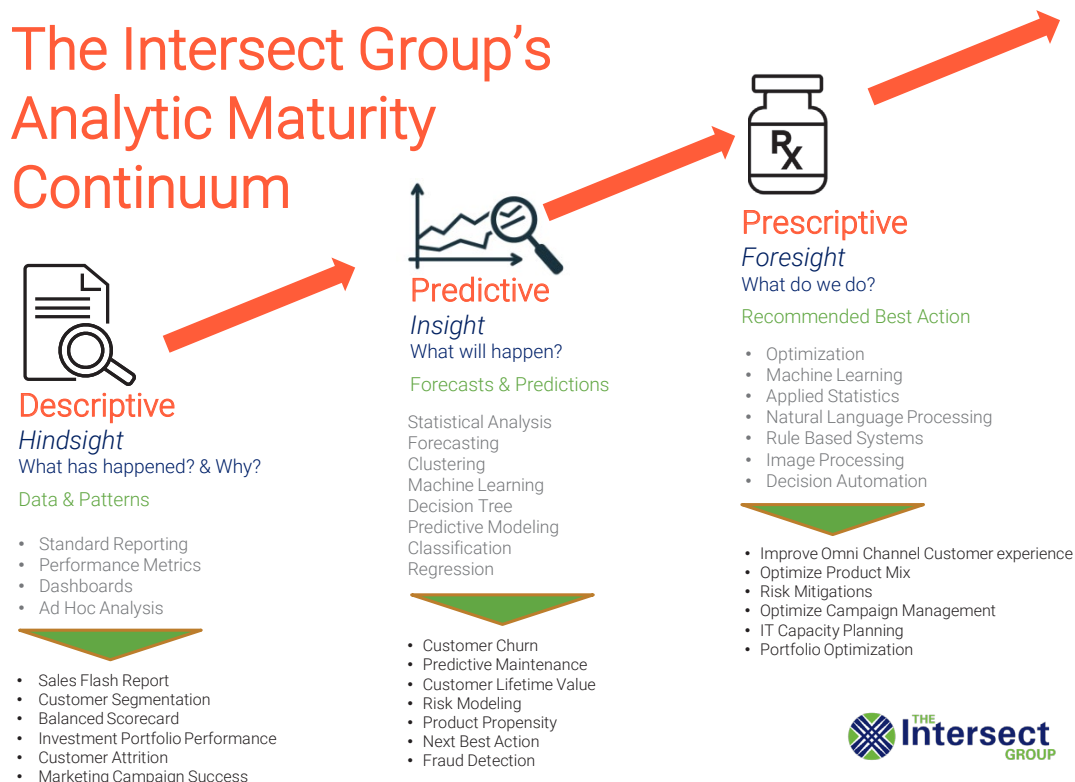
© 2019 Gartner Inc
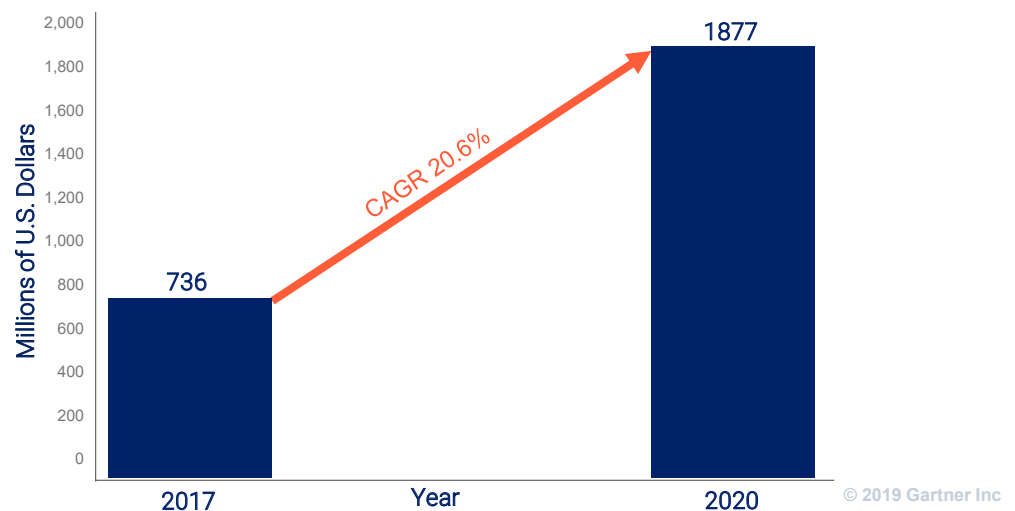
The graphic below illustrates an example of the prescriptive analytics process, including the relevant information required for identifying wireless customers that may have a propensity for switching carriers. This prescriptive approach tweaks certain variables to achieve the best possible outcome and then prescribes a course of action for retaining the customer.

UNDERSTANDING WHERE YOU ARE HELPS CLARIFY THE PATH FORWARD

Maturity models have long been used to depict the steps organizations take as they move into more sophisticated, complex, and invaluable levels of technology deployment. The diagram below illustrates the maturity model for analytics:

The Intersect Group's Analytic Maturity Continuum

Descriptive
Hindsight
What has happened? & Why?
Data & Patterns

- Standard Reporting
- Performance Metrics
- Dashboards
- Ad Hoc Analysis

- Sales Flash Report
- Customer Segmentation
- Balanced Scorecard
- Investment Portfolio Performance
- Customer Attrition
- Marketing Campaign Success

Predictive
Insight
What will happen?
Forecasts & Predictions

Statistical Analysis
Forecasting
Clustering
Machine Learning
Decision Tree
Predictive Modeling
Classification
Regression

- Customer Churn
- Predictive Maintenance
- Customer Lifetime Value
- Risk Modeling
- Product Propensity
- Next Best Action
- Fraud Detection

Prescriptive
Foresight
What do we do?
Recommended Best Action

- Optimization
- Machine Learning
- Applied Statistics
- Natural Language Processing
- Rule Based Systems
- Image Processing
- Decision Automation

- Improve Omni Channel Customer experience
- Optimize Product Mix
- Risk Mitigations
- Optimize Campaign Management
- IT Capacity Planning
- Portfolio Optimization

This depiction of the analytics maturity continuum offers organizations pondering how to more fully leverage analytics an idea of where they are in the journey and their next steps. Moving from left to right on the continuum entails the adoption of more sophisticated techniques, the acquisition or development of new skills, and cultural/organization changes. The investment required is offset by the ever-increasing value of the organization's data as measured by more effective decision making to improve service level performance, increase customer value, reduce costs, optimize marketing tactics, etc.

Organizations should also keep in mind that as the list of technical skills needed to move up the maturity model evolve from statistical techniques to Python, R, machine learning, etc., it becomes more important that their data scientists understand the business impact of their work. Analytics cut across business silos and in addition to knowledge of algorithms, knowing how to collaborate and communicate become more vital.