Top 11 Analytics Trends

Several interconnected trends in analytics are relevant for companies looking to advance their analytics efforts.

They include the following:

1 Ease of use. Analytics in the past, especially more advanced analytics, often required command-line code. Today, vendors have made interfaces easier to use and visualizations easier to construct. Preparing and blending data has also become easier. And emerging automation techniques for more advanced analytics enable the software to actually suggest a model using the variables of interest and an examination of the data.

This increasing ease of use means organizations can succeed early and then build on that success to become more data driven.

2 The democratization and consumerization of analytics. Connected to ease of use, more organizations are "democratizing" BI and analytics to enable a broad range of non-IT users, from the executive level to frontline personnel, to do more on their own with data access and analysis via self-service BI and visual data discovery.

Part of this trend also involves making analytics more consumable (i.e., more accessible to different parts of the organization) often by operationalizing or embedding analytics into a business process. See trend #5.

3 Business analysts using more advanced techniques. Also connected to ease of use is the move from the statistician/modeler to a new user of predictive analytics—the business analyst. These analysts are using more sophisticated analytics techniques such as predictive model building. They might build relatively straightforward models. They may collaborate with the statistician to build the model or validate it, or other controls may be put in place before the model is productionalized. This often frees the data scientist/statistician (typically a scarce resource) to build more complex and sophisticated models.

4 Newer kinds of analytics. In addition to predictive models, other kinds of analytics are emerging to drive business value. These include text analytics (analyzing unstructured text), social media analytics, geospatial analytics (analyzing location-related data), and clickstream analysis (analyzing customer behavior on websites).

All of these techniques are starting to become more mainstream and can provide important insight, either by themselves or in combination with other techniques. Others, such as the Internet of Things (IoT) analytics are starting to gain steam. Typically, the more mature an organization's analytics efforts are, the more it makes use of newer forms of analysis.

5 Operationalizing analytics. When you operationalize something, you make it part of a business process. Operationalizing analytics is important because it helps make analytics more actionable and hence drive more value. For example, a statistician might build a predictive model for churn. The model is then embedded in a system, and the model scores customers as they call in. Based on this score, information flows to a call center agent as part of a business process—say, to up- or cross-sell or take other measures to retain the customer. The agent doesn't need to know how the model works but can make important use of the output for business advantage. Operationalizing analytics also helps make it more consumable.

6 Big data. Referring to ever increasing amounts of disparate data at varying velocities, big data is the buzzword du jour. However, it is much more than that. An important point about big data is that it is driving the use of existing techniques as well as the development of new techniques for data analysis.

Big data is also driving the use of newer infrastructure such as Hadoop and multi-platform data warehouse environments that manage, process, and analyze new forms of big data, non-structured data, and real-time data. This might include NoSQL databases, DW appliances, and columnar databases. Other technologies such as in-memory analytics are also gaining steam. Leveraging big data processing tools allows analysts to perform queries on larger data sets— providing more robust models and deeper reports.

7 New development methods. Unlike with BI reporting, analytics often demands that users explore the data and try different visualizations and analytical techniques before they can arrive at insight. Analytics thus often demands a different methodology from what has been used for traditional IT projects to develop applications. Instead of "waterfall" methods and cycles that only deliver at the end of (usually) one long cycle, many organizations are employing agile methods. These faster, incremental cycles have helped guide organizations toward greater business-IT collaboration, faster and more iterative development cycles, and ultimately higher quality and satisfaction.

8 Open source. Open source is rapidly becoming more popular for infrastructure as well as analytics. Hadoop is a prime example of how these technologies are becoming important in analytics. Commercial distributions of Hadoop are becoming more powerful. On the analytics front, the emergence of the R language is also evidence of the growing popularity of open source. Many analytics vendors are already incorporating support for R into their packages. The open source Python programming language is also increasingly popular for analytics. Open source is important because it enables the rising innovation happening around the analytics ecosystem.

9 The cloud. Although it has taken longer than some expected for the cloud to be used in BI, it is now entering the mainstream. One reason organizations are trying to move toward the cloud is to offset costs with zero capital expenditure on infrastructure, maintenance, and even personnel—often making BI more cost-effective. Additionally, deployment is faster. Organizations are making use of various types of cloud deployment and delivery options for BI and analytics. For example, data generated in the public cloud is often analyzed there as well. This analysis might be basic or complex. More often, companies are capturing big data in the cloud and experimenting with it there. Based on the analysis, certain data is brought on premises to the data warehouse.

10 Mobile BI and analytics. The increasing adoption of mobile devices has opened up new platforms from which users can access data and both initiate and consume analytics. Executives on the go can apply analytics to gain deeper insight into business performance metrics, while frontline sales and service personnel can improve customer engagements by consuming data visualizations that integrate relevant data about warranty claims, customer preferences, and more.

11 Storytelling. As analytics and advanced analytics becomes more main stream, being able to tell the story with analytics is becoming an important skill. A data story—a narrative that includes analysis—can move beyond recounting of facts to weave together pieces of analysis that make an impact and move people to action. TDWI is seeing two different kinds of data stories emerging. The first is the one-time storytelling with a classic beginning, middle, and end. This is often a presentation style of storytelling which includes a call to action at the end. A more modern kind of storytelling is dynamic and often changes through time. It might use some sort of online dashboards or storyboards that are updated when new data arrives. The analysis is typically shared with others who comment and build an iterative and often interactive story.