

TECH Practices

By Rod Koch, CMA, PMP

From Business Intelligence to Predictive Analytics

I recently received an urgent e-mail from a colleague asking if a particular department in the company was “doing data analytics.” My stomach tightened as I attempted to visualize what exactly the sender meant by “data analytics.” Perhaps she wondered if the department had an interface to the corporate data warehouse and was using reports and dashboards to make informed decisions to positively impact the department’s revenue. Maybe she wanted to know if the department was using predictive models to forecast future demand. Or was she merely curious as to whether the department was using fact-based decision-making methods vs. to more subjective ones?

Attempting to answer her question led to many additional questions, but chiefly:

1. What are analytics, and how do they differ from business intelligence?
2. What additional benefits can predictive analytics bring above and beyond traditional business intelligence?
3. How do we move from business intelligence to predictive analytics?

What Are Analytics?

The term “business intelligence” has tra-

ditionally described the field of taking raw data and turning it into knowledge used to make business decisions (which thereby includes some form of data analytics). Forrester, a global research and advisory firm, defines business intelligence as “a set of methodologies, processes, architectures, and technologies that leverage the output of information management processes for analysis, reporting, performance management, and information delivery.”

Today, however, “business intelligence” is often used more restrictively. It includes the traditional data warehouse, associated dashboards, and end-user reporting, usually accompanied by data mining and analytics focused on the use of historical data. The value chain model of analytics, developed by research company Gartner, is a good way to visualize the transition between traditional business intelligence and predictive analytics (see Figure 1).

Last year, Gartner split its analysis of the advanced analytics market from the traditional business intelligence and analytics market. In Gartner’s view, advanced analytics focuses on predictive analytics while including some diagnostic and pre-

scriptive analytics. In contrast, the business intelligence and analytics market consists of traditional data warehouse functionality plus descriptive (and some diagnostic) analytics. Gartner estimated that, as of 2012, only about 13% of companies were doing predictive analytics. The company predicts that, by 2016, 70% of high-performing companies will be integrating real-time predictive analytics into their business operations.

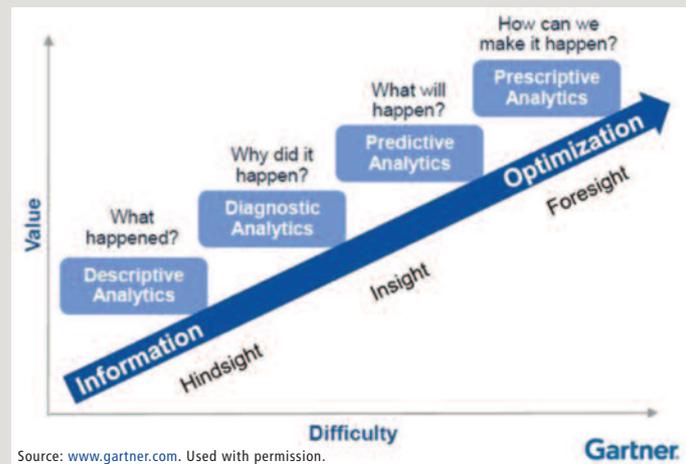
The Benefits of Predictive Analytics

The underlying assumption for implementing predictive analytics is that we will gain a competitive advantage if we can anticipate the future better. If we understand our customers better, we can anticipate their needs and increase our sales. If we can anticipate the impact of events and react to them immediately, we can minimize our inventory costs and maximize our profit margins. If we can determine when a customer’s purchasing habits have changed, we can spot potential fraudulent purchases or a new marketing opportunity.

By analyzing the data and utilizing advanced mathematical models, predictive



Figure 1: Gartner's Value Chain Model of Analytics



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analytics can provide actionable knowledge in a timely manner. Maximizing the business value of predictive analytics requires using the predictive model's insights immediately at the point of contact with the external customer or internal decision maker and urging them to take action. Thus the famous Amazon.com prompt, "Others who purchased this product, also bought product X," that implies you would be wise to follow in others' footsteps and purchase additional products as well. It isn't enough to analyze the data and extrapolate next month's sales forecast. The use of predictive analytics today implies analyzing the data and taking immediate steps to impact next month's sales forecast by presenting actionable choices and solutions to the external or internal customer at crucial decision points.

Roadmap to Predictive Analytics

While Gartner talks about the seismic shift in organizations moving from being application-centric to data-centric, most companies will experience more of an evolution than a revolution. Those that have invested in a traditional business in-

telligence platform will have a strong base of quality structured data stores to serve as a foundation for their analytics strategy. Companies coming late to the game will have access to better tool sets and methodologies that will help them get up to speed more quickly than in the past, especially if they focus on smaller targeted projects.

The traditional structured data stores containing internal data will continue to be important building blocks, but there's an increased availability of data coming from new sources that will challenge the dexterity of both camps. An investment in capturing and mining unstructured data is becoming more important, especially as it relates to social media. By analyzing tweets on Twitter or posts on Facebook, emerging trends can be identified quickly and acted upon in order to gain a competitive advantage.

Combining structured data (e.g., a company's internal customer information) with unstructured data (e.g., external social media feeds) will create powerful predictive analytics models. As more devices and components are constructed with the ability to capture data and connect to the Internet, large volumes of

new data are coming online, providing valuable opportunities for companies with the capability to create predictive models and generate real-time solutions.

Make the Transition

The roles of business intelligence and predictive analytics are quickly evolving and becoming more important for businesses hoping to compete in the global marketplace. While companies with a strong base in traditional business intelligence and descriptive analytics will benefit from their previous groundwork, there are opportunities for companies starting from a weaker base to move into predictive analytics in targeted areas that can quickly generate positive returns on investment. And what of the department my coworker asked about? Let's just say that 2015 will be the year it makes a strong move up the analytics curve. **SF**

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