

# Analytics: The Art and Science of Better

Forget spreadsheets. Organizations that are winning in this down economy are using automated analytical tools to take a more scientific approach to decision making through observation, experimentation and measurement to improve their business processes. Their results: innovative and revenue-generating improvements and savings.

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# Mining Data for Intelligence, Creativity and Insights

**Analytics software enables the collection, classification, analysis and interpretation of a wide range of data for better decision making.**

BY SANDRA GITTLEN

**F**or years, organizations have relied on rudimentary tools (spreadsheets, OLAP cubes and the like) as the mainstays in driving business improvement. Three-ring binders full of columns and rows of numbers are used to predict complex, business-critical outcomes. Yet these same tools, while necessary, are no longer sufficient; they are incapable of enterprise-size scaling, and too tedious to pore through.

Even analytics professionals, who mine data for a living, know that spreadsheets, pivot tables and OLAP cubes are limiting and, in some cases, detrimental to organizations. Such one-dimensional tools deter them from their scientific roots, where they would get to experiment by formulating a problem through observation, measurement and analysis reporting. That methodology can lead to the holy grail of data-driven insights that enable better decisions. Getting there requires treating data as a strategic asset. When organizations reach that understanding, it is easy to see how successful analyt-

ics initiatives transcend tools to take into account elements such as people, process, culture and technology.

With robust analytics software, data analysts and other decision makers within the organization get back to more of a test-center setting to truly study information gathered throughout the enterprise. That information is wide-ranging (transactional data, customer conversations in the call center, through email, on the Web, etc.) and typically quite noisy.

Analytics software provides an integrated environment that enables the collection, classification, analysis and interpretation of data to reveal patterns, anomalies, key variables and relationships.

This unique and rich insight, when used in a business context, cuts the noise and fosters better allocation of scarce resources, achievement of objectives, and accurate assessment of and preparation for future scenarios. And case studies overwhelmingly show that the use of analytics tools encourages employees to be more creative and achieve their full potential while improving the business overall.

A great example of this can be seen at Beverly, Mass.-based Oxford Global Resources, a leading IT and engineering recruitment firm with more than 20 offices worldwide. For Oxford, being successful means being able to predict in-demand technology skills and attract consultants with that talent before the rest of the market catches on.

In the past, the company had relied on data gathered into spreadsheets to accomplish this goal. However, the information, which had to be manually assembled from multiple systems at each location, was often inconclusive. Even though Oxford had profession-

als on staff skilled in data analysis, they suffered from the limitations of their tools.

So the data analysts, led by Scott Beyer, vice president of strategy and marketing, partnered with their IT team to bring SAS® Enterprise Business Intelligence for Midsize Business in-house. They were able to integrate data from across all the various systems and offices into a single data warehouse and provide Web-based reporting on key operational and trend data to their managers across the globe.

This has allowed them to improve core business processes, including identifying the hottest IT and engineering skills and alerting the field sales team so they can target their efforts accordingly, Beyer said.

Oxford also uses SAS Enterprise BI to show the sales team how they are performing based on tenure, region and other key metrics. “We have combined financial data, human resources staffing data and phone system data to create a holistic picture of each salesperson’s performance,” he said. That information is available to managers and sales people via a Web-based portal, so together they can enhance individual and overall productivity.

With SAS as the backbone of operational and marketing analytics, the company said it will achieve \$225,000 in annual savings in productivity and efficiency and \$400,000 in annual accelerated revenue realization.

## Multidimensional vs. Flat View

Aberdeen Group, in its January 2009 report, *Beyond Spreadsheets: The Value of BI and Analytics*,<sup>1</sup> identified business intelligence/analytics as the most important technology to impact businesses in the next two to five years. And

though the research firm said many organizations will try to extract business intelligence using spreadsheets, that strategy is flawed.

“Organizations are falling back on spreadsheets as a means of providing the output from BI systems to users who either do not have the analytical skills required, or for whom access to BI capabilities is simply too expensive. This thought process may be erroneous when the costs associated with uncontrolled use of spreadsheets are factored in,” Aberdeen reported.

In fact, the firm found in its April

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**MATTHEW MIKELL, GLOBAL  
PRODUCT MARKETING MANAGER  
FOR SMBs, SAS**

2008 study, *Financial Planning and Budgeting*, that respondents felt “the likelihood of data corruption and human error is far greater when budget and forecast information is shared within spreadsheets.”<sup>2</sup> And in the *Beyond Spreadsheets* report, Aberdeen stated that spreadsheets can be characterized as a “clear and present danger” when it comes to information, security and risk management. The

research firm also noted that “spreadsheets, in and of themselves, serve to exacerbate the business pressures, as it is impossible to accurately integrate data from multiple applications using spreadsheets.”

Conversely, analytics tools can facilitate data collection, cleansing, analysis and reporting, and therefore reduce the opportunity for human error, provide the ability to reliably reproduce results, document, and continually improve the process. They turn the focus from people having to manually extract and manipulate data to being able to concentrate on creative problem solving using integrated data, regardless of source.

“Analytics help you understand inflection points in your business and the optimum investments to make,” said Anne Milley, senior director of technology product marketing at SAS. As an example, a call center could use analytics to determine optimal on-hold times for customers and then staff the call center accordingly. “That information is typically not sitting in a spreadsheet. Instead, you need to test and measure different options based on various metrics such as actual customer tolerance levels,” she said.

## A View to Remember

Another benefit of more robust analytics tools vs. general spreadsheets is the ability to generate highly dynamic, multidimensional visualizations/reports. Rather than printing static spreadsheets and graphs, data analysts can automatically produce highly visual, interactive presentations that engage the audience.

For instance, instead of simply looking at columns and rows of numbers, data analysts can show patterns as

1. Source: Aberdeen Group, January 2009. 2. Source: Aberdeen Group, April 2008.

points across a cube or as a movement across a line. “You’re going beyond sum and average to get people to think differently,” said Matthew Mikell, global product marketing manager for SMBs at SAS. “You can tell a fantastic story to upper management and allow the people you’re targeting to ask—and answer—more questions.”

More importantly, showing data in a compelling way supports your ability to challenge business as usual and foster new strategies. He said that if people can relate to the data, they are more likely to remember it and want to react long after your presentation.

Stephen Few, a well-known data visualization expert and principal at IT consultancy Perceptual Edge, pointed to the example of The Bay Model, a three-dimensional hydraulic model of the entire San Francisco Bay and the surrounding delta system that extends into the Sacramento and San Joaquin valleys. The U.S. Army Corps of Engineers relies on the model to study and anticipate the effects of various conditions in the area so it can construct preventative protections. “The engineers could have prepared a complex spreadsheet, using mathematical calculations alone to model this water system, but this wouldn’t suffice. Some things must be seen to be understood,” Few wrote.<sup>3</sup>

However, he warned that models must have the right balance of information. “If a model is more complicated than the thing it represents, it’s a bad model. If it’s so simple that it leaves out information that must be seen and understood, it’s a bad model,” he wrote.

Few also noted: “When supported by good visualizations, predictive analytics come alive in ways that not only help statisticians, but also make it possible for a much broader audience to

become involved in shaping the future.”

Organizations can use data visualization software to extend predictive analytics beyond statisticians to all business users. According to Few, “... most of the analytical tasks that non-statisticians face in the course of their work can be effectively handled using relatively simple visualizations and no more than a basic understanding of statistics.”

And sharing the burden results in being able to make better use of an organization’s professional statisticians. For instance, Few said, once statisticians have built a good predictive model, then by using analytics software, others can perform routine analysis, and “statisticians can keep their time free for more daunting challenges to the greater benefit of all.”

## A Team Effort

For analytics projects to be successful, business units, which might be used to going it alone or simply requesting reports from IT, must partner with IT from the outset.

“IT is the enabler for analytics that scale, including driving infrastructure strategy and determining how data will be collected, cleaned and dispersed, and results deployed throughout the organization,” Mikell said.

Rafe Donahue, associate director of statistics at implantable orthopedic device developer BioMimetic Therapeutics Inc. in Franklin, Tenn., agrees. Until he partnered with IT to deploy SAS® Visual Data Discovery for Midsize Business, the company relied heavily on third-party clinical research organizations to generate database reports. “We’d have to email them what query we wanted, then they’d say it’ll cost this much, and

we’d go back and forth. It would take weeks to get answers to simple questions,” he said.

Now, using the IT-backed SAS environment, data analysts can develop hypotheses and quickly test them against clinical trial data. Donahue said this kind of instant access allows his team to be far more creative in a cost-efficient manner. In fact, he predicts the company will save \$100,000 in 2009 by performing analytics in-house. He’s also confident that the more of these checks that are done, the better the final product will be.

Milley calls this a clear example of how organizations can use analytics to make “the invisible visible.” She said such results are crucial to gaining executive buy-in. Once executives see the impact of applied analytics on the success of the organization, they are more likely to support and fund the efforts of business and IT.

## Beyond the Tool

People and processes play a major role in analytics. Most organizations will find that they’ll move from holding institutional knowledge in one person’s head to enabling a host of users to engage in creative problem solving.

To ease this cultural transition and to lay the groundwork for broader use in the future, Milley recommends that organizations see if an Analytical Center of Excellence (ACE) makes sense for where they are on their analytics journey. The ACE provides a foundation for gathering and sharing best practices and developing a cross-functional analytics community that reaches across the organization.

“Rather than operating in departmental or office-based silos, taking a holistic view of the whole business

process, which typically spans organizational boundaries, you will be able to achieve whole-process optimization versus achieving departmental goals which are often at cross-purposes,” Milley said. “For example, if risk is told to minimize credit risk exposure and marketing is told to maximize response for new credit card offers, by taking a broader view to maximize the customer lifetime value you can balance different goals in the near and long term to best suit your overall organizational strategy.”

Oxford’s Beyer, who heads up the ACE in his organization, said to get the most bang for your buck, you should focus your initial analysis project in a specific area of operational and strategic importance to the business. “Once you show how advanced analytics can provide insight and value to a critical issue, you’ll be more likely to get buy-in and will be able to build upon your initial success,” he said.

He also encouraged organizations to facilitate a feedback loop between data analysts, users and IT so that

everyone continues to grow in their knowledge of automated analytics.

If done right, IT and business will quickly see the benefits of SAS analytics software and services within their organizations. They will see data analysts, who bring an analytic perspective and creativity to the table, able to derive better and faster results from their efforts, and therefore improve the business overall. ▀

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## ANALYTICS AND THE SMB

**IF YOU THINK SMALL** and midsize businesses (SMBs) should stick to spreadsheets and avoid analytics tools, think again.

Though many SMBs might consider them too costly and complex, automated analytics tools are actually cost-efficient and well suited to the small to midsize organization. In fact, for many SMBs, analytics tools can lead to significant cost savings with little to no infrastructure costs.

Take ticket agent StubHub, an eBay company, as an example. The company spends a significant amount of time and effort trying to create like-minded consumers for targeted marketing. However, it found that SQL data extracts and Excel spreadsheets failed to provide the multidimensional view of the data needed to develop more precise strategies.

With SAS® Visual Data Discovery for Midsize Business, StubHub was able to generate predictive models that grouped “personas,” such as die-hard Miami fans who had moved to Chicago. Therefore, if the Dolphins are playing the Bears, StubHub can drum up business by sending this group a targeted email.

Matthew Mikell, global product manager for SMBs at SAS, said analytical software helps even the smallest company answer business-critical questions such as, “Are we seeing attrition? Can we cross-sell among customers? Are we losing revenue per client?”

“All businesses need to be able to answer these questions,” he said.

And relying on spreadsheets for answers can lead to costly errors. For instance, a building supplier with 20,000 SKUs tried to forecast sea-

sonal product needs in a spreadsheet and “hit the wall,” Mikell said. “He had a hard time resolving errors that generated in the formulas because there was just too much data.”

With SAS analytics, SMBs can clean and prepare the data to avoid such problems. They also can clearly identify the business problem they’re trying to solve.

Another benefit of SAS for the SMB is that as the organization grows, data mining analysts can develop an Analytical Center of Excellence (ACE) that channels best practices, creating a repository for institutional knowledge rather than having everything locked up in one employee’s or consultant’s head.

“Serious analysis requires serious tools. The process has to be programmatic, reproducible without guesswork, and able to be validated,” said Rafe Donahue, associate director of statistics at implantable orthopedic device developer BioMimetic Therapeutics Inc. BioMimetic uses SAS Visual Data Discovery to analyze data generated from its clinical trials.

Finally, for organizations concerned about not having an IT team to support the necessary infrastructure in-house, SAS offers alternatives to on-premise software, such as hosted services. Then, as your business expands, you can easily bring your SAS platform in-house without losing all your analytics. “SMBs can’t afford to throw a tool out once they’ve outgrown it,” Mikell said. “SAS leaves the door open to flexibility and growth.”

# Analytics: Unlocking Value in Business Intelligence Initiatives

**Most companies are making a colossal mistake in how they are approaching the business intelligence challenge because they fail to realize data does not equal information.**

BY SCOTT STAPLES

*This article was originally published on CIO.com on April 14, 2009.*

Over the past few years, one of the hottest growth areas in IT has been in the business intelligence (BI) space. Companies have finally realized there is value in their data and have launched major BI initiatives in their organizations. But most companies are making a colossal mistake in how they are approaching this challenge because they fail to realize data does not equal information.

This is an important concept and bears repeating: **Data ≠ Information.**

To turn data into information, companies need a three-step process:

**1. Data Warehouse (DW)**—companies need a place for data to reside and rules on how the data should be structured.

**2. Business Intelligence**—companies need a way to slice and dice the data and generate reports.

**3. Analytics**—companies need to extract the data, analyze trends, uncover opportunities, find new customer segments, and so forth.

Most companies fail to add the third step to their DW and BI initiatives and hence fall short on converting data into information. Why is this happening?

It really comes down to an issue with nomenclature. The term “business intelligence” is the culprit here. Software companies like SAP (Business Objects), IBM (Cognos), Oracle, Microsoft and others in this space have put themselves in a great position by promoting the term, “business intelligence” to describe this sector. They are basically telling companies that if they buy their software, they will automatically have the tools-capability to gather intelligence to run their businesses. Plus, since these tools are providing “intelligence,” they come with premium pricing.

This has become one of the most effective software industry marketing campaigns in the past decade. There is no question these software companies have very good tools for things like reporting, data mining, creating dashboards, etc., but calling this “business intelligence” has misled IT organizations.

Why? All of these tools, and the strategy and structure behind them, are geared toward providing data to business users and not creating in-

formation for them. This is because the tools are really just pipes with a business user using the pipe to get data out of the data warehouse. In the simplest of terms, a data warehouse is a box and BI tools are pipes coming in and out of the box—basic plumbing.

While it is paramount to have a solid DW and BI infrastructure in place, real “business intelligence” can only occur when analytics is also added into the mix. The DW and BI infrastructure allow business users to query against existing data, but it is only analytics that enable business users to go beyond the current boundaries of that data.

This is because analytics is done by people and these people can look outside of the current data limitations in an organization and can even look outside the company walls for answers. This is what separates data and reports from information and answers. This is pro-

viding “business intelligence.”

When analytics is added to this structure, the entire offering becomes powerful. Analytics enables companies to move beyond reporting and into a higher decision-making and questioning mode. Analytics opens the door for things that will have maximum impact on the business: marketing campaign effectiveness, pricing, channel segmentation, customer treatment, supply chain optimization, risk mitigation, sales effectiveness, and so forth.

The only way to accomplish this, is to embrace the concept of analytics being a key component of any business intelligence plan. Business intelligence without analytics is just reporting.

So, instead of companies just talking about their DW and BI strategies, they must now accept analytics as a core component of business intelligence. This change

in mindset will solve the dilemma of data ≠ information:

**Current Mindset: DW + BI = Data**

**Future Mindset: DW + (BI + Analytics) = Information**

Analytics will be the next big value-add offering for IT organizations. The businesses which embrace it will grow. The IT organizations that own it and drive it will thrive. It is that simple. ▶

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# Analytics Versus Intelligence

BY KATHLEEN LAU

*This article originally appeared in Computerworld Canada, March 27, 2009.*

**B**usiness intelligence is an overused term that has had its day, and business analytics is now the differentiator that will allow customers to better forecast the future especially in this current economic climate, said SAS Institute Inc.'s senior vice-president and chief marketing officer.

"I don't believe [BI is] where the future is," said Jim Davis. "The future is in business analytics."

Classic business intelligence questions, said Davis, "support reactive decision-making that doesn't work in this economy" because it can only provide historical information that can't drive organizations forward. Business intelligence, he said, doesn't make a difference to the top or bottom line, and is merely a productivity tool like e-mail.

"SAS is bucking the trend because analytics has come of age," said Davis.

The Cary, North Carolina-based business analytics software vendor held its annual SAS Global Forum, a user-run event, with 3,200 registered users.

At the event, SAS announced

enhancements to its Business Analytics Framework including data integration, collaboration, data analytics, new algorithms, and what-if scenarios for forecasting.

Gaurav Verma, global marketing manager for business analytics with SAS, said customers have to deal with ever-diverse and complex business issues, and are demanding tools with a short return on investment that enable "proactive, predictive, and fact-based decision-making."

Using the word "framework" and not "platform," said Davis, reflects the fact that the latter implies two to three years of implementation and an over-shot budget, a scenario that organizations must avoid. But a framework "implies an iterative approach" that renders a faster return on investment.

"The reality is, the framework becomes the platform over time," said Davis, referring to a company's ability to leverage existing investments.

Other announcements at the event include a new SAS Fraud Framework geared towards banks, insurance companies, and government entities, to help improve the monitoring of customer behaviour across user accounts and systems. It includes the SAS Social Network Analysis tool that analyzes all related activities and relationships within a network, like shared address, telephone number, employment and account ownership.

SAS also released a software-as-a-service offering for its Campaign Management software to more cost-effectively run marketing campaigns given tight customer budgets.

SAS customer StubHub Inc., a San Francisco-based online sports and theatre ticket marketplace,



uses business analytics to gauge the response to random, non-seasonal events and “bake” that into forecasting models. Ming Teng, director of analytics with StubHub, said the company is a small shop with a plethora of data it must manage, the challenge being to deploy efficient processes so its analysts have access to relevant data.

According to Gareth Doherty, research analyst with London, Ont.-

based Info-Tech Research Group Ltd., while it is a fair diagnosis that most business intelligence systems focus only on manipulating historical data, “part of SAS’ new marketing campaign is to reclaim the word ‘analytics’ and push for what they call business analytics, and to distinguish it from traditional BI.”

That said, Doherty thinks companies could definitely benefit from the forecasting that business analyt-

ics afford, but cautions that such tools “are by no means a crystal ball.” The issue is that companies without the expertise in statistical training would be incapable of fully leveraging the technology, he said.

The future of business certainly lies in the direction that SAS is heading, said Doherty, and that “if organizations aren’t moving in that direction, they should certainly be thinking about it.” ▶

# The Analytical Competitor

**Innovation and predictive analytics can transform your enterprise into a competitor on analytics.**

BY TOM FARRE

Consider the following enterprises that are using business analytics to outperform the competition:

- A gaming company boosts loyalty by analyzing customers' gambling losses in real time and notifies them when they're losing too much.
- An insurance firm collects information on customers' driving habits by offering a discount if they install a monitoring device in their cars.
- After analyzing the tastes of the *Wine Spectator's* reviewer, a winery reverse engineers its wines to appeal to those tastes.

These are just a few examples of "analytical competitors," a term coined by Thomas H. Davenport and Jeanne G. Harris in their book *Competing on Analytics: The New Science of Winning*.<sup>1</sup> Analytical competitors beat the competition by strategically applying business, or predictive, analytics to their daily operations. They use analytics to improve business processes and make the best decisions possible,

even counterintuitive ones. After studying hundreds of enterprises, Davenport and Harris found that top performers were 50% more likely to use analytics compared with the overall sample, and they were five times as likely as low performers to use analytics.

High-flying analytical competitors all select one or a few distinctive capabilities on which to base their strategies, and then apply extensive data, statistical and quantitative analysis, and fact-based decision making to support the capabilities. In short, analytical competitors use analytics to outthink and outexecute the competition—and, Davenport and Harris believe, "trends point to a more analytical future for virtually every firm."

CIOs and their teams have a vital role to play in establishing an analytical IT architecture with the right information, infrastructure and analytical tools, as this article and others in this Technology Briefing will illustrate. "CIOs play a crucial role in helping business executives understand the concept and potential of analytical competition, as well as how it relates to the firm's business strategy and position," says Harris, executive research fellow and director of research, Accenture Institute for High Performance Business. "They can contribute to the business by serving as advocates to help build the organization's analytical capabilities."

"Who better than the CIO to understand that the data needed by the departments responsible for risk and fraud, for instance, can also be helpful to the marketing team," says Keith Collins, senior vice president

1. *Competing on Analytics: The New Science of Winning*, Thomas H. Davenport and Jeanne G. Harris. Harvard Business School Press, Boston, Mass. 2007.

and CTO at SAS, a leading provider of business intelligence (BI) with integrated analytics. “Who better to look across the business disciplines to understand where the opportunities are to leverage the power of analytics.”

## Predictive Analytics and BI

Though the term “analytics” is in common parlance, business, or predictive, analytics has a specific meaning: software that includes performance management tools and applications, as well as data warehouse technology. According to IDC, business analytics software is used to “access, transform, store, analyze, model, deliver and track information to enable fact-based decision making and extend accountability by providing all decision makers with the right information, at the right time, using the right technology.”<sup>2</sup>

This definition suggests a close

relationship between BI and analytics. Indeed, Harris considers analytics an element of BI, which covers the collection, management and reporting of decision-oriented data, as well as the analytical techniques and computer approaches that are performed on the data. If BI historically focuses on collecting transactional data and presenting historical results through queries and reports, analytics extends BI with a more proactive approach to solving high-value business problems (see diagram below).

“Data mining, data visualization, forecasting, optimization and other analytic capabilities raise the business value of the kind of questions you can answer,” says T.K. George, worldwide BI product marketing manager at SAS. “A historical report, while useful, is not as valuable as finding out, ‘What’s the best thing that can happen if I make this product-line decision?’ An executive using sophisticated forecasting

techniques can outcompete an executive who relies on a simple rolling average. With analytics, you begin to see lifts and changes that impact your strategy, you may recognize new niche markets, or you may start negotiating contracts with vendors ahead of time based on your forecast of peak productivity. Predictive analytics can improve your ability to compete and innovate.”

Analytic capabilities are making a difference across a wide range of companies large and small, George notes, including those in manufacturing, healthcare, life sciences, government and education. Analytics is also finding traction within business functions such as the office of the CFO, where it supports performance management, activity-based costing and compliance management. Similarly, Davenport and Harris found analytical competitors winning big in industries as diverse as gaming, cement manufacturing, insurance, professional sports, wine making and freight carriers, as well as among the more familiar online service providers, banks, retailers and telecommunications companies.

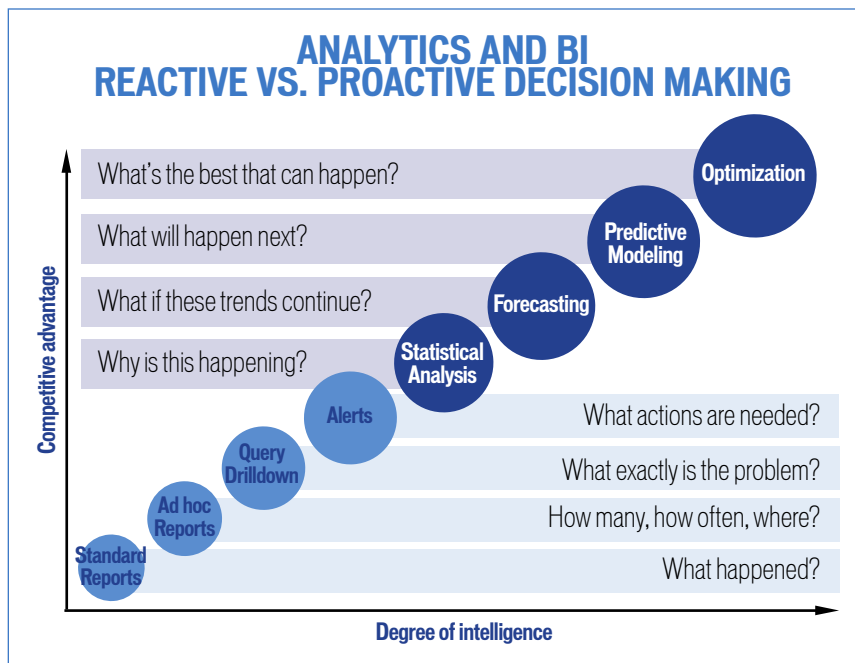
“If a company like CEMEX, which distributes cement, can find a way to compete on analytics,” Harris says, “almost any company can.”

## The Role of the CIO

What do the most successful analytical competitors have in common? Davenport and Harris note four common characteristics:

- Analytics supports a strategic, distinctive business capability, such as supply chain, pricing, marketing or customer loyalty.

2. *Worldwide Business Analytics Software 2007-2011*. IDC, Framingham, Mass. (Excerpt from IDC #208699).



- Senior management is fully committed to competing analytically.
- The company made a significant bet on analytics-based competition, with millions or even billions of dollars at stake, and perhaps the company's ultimate survival.
- Analytic competitors take an enterprise-wide approach to managing analytics, which may include a BI competency center for the effective use of analytics across the enterprise.

These factors make clear the importance of the CIO's team in facilitating analytical competition. A key responsibility is serving as the steward of the enterprise data that is the basis for BI and analytics. This role isn't new to the IT department, as basic BI functionality depends on accessing and managing the growing stores of transactional and unstructured data that every enterprise generates. Now that analytics has become an essential aspect of BI, the CIO must assume stewardship of the data that can lead to analytic insights.

The challenge is that departments within an enterprise often undertake their own analytic projects, drawing upon their own data marts. If they are successful other departments may follow, leading to the silos of inconsistent data that have dogged BI professionals for years. By understanding the information needs of the business and taking control of the BI/analytics function, IT can ensure that accurate data and analysis are made available throughout the enterprise.

"The key for CIOs is to think long term and enterprise-wide about how they're going to capture, cleanse, manipulate, analyze and present data across the enterprise, to ensure there's a common version of the truth," says Harris. "Then business managers can focus on the insights they've gained from the data, rather than arguing over

CIOs can help business executives understand the concept of analytical competition, and how it relates to the business strategy and position.

■ **JEANNE G. HARRIS, AUTHOR OF**  
 ■ **COMPETING ON ANALYTICS:**  
**THE NEW SCIENCE OF WINNING**

whose data and analysis is correct."

Also important is helping business executives realize the potential of the data that is within the IT environment, as well as the value of external and unique data sources. "One of the best ways to compete on analytics is to have proprietary data," says Harris. "Because if you have unique data, it doesn't matter what analytical capabilities your competitor has. The CIO can play an important role in helping to expand the vision of the business."

Harris cites several examples that show the value of external and unique data sources: the upheaval that FICO scores caused in consumer finance; a company that analyzes a competitor's website to understand its pricing and promotion

patterns; and the winery mentioned earlier that gained an edge by analyzing a wine reviewer's preferences, information that no competitor had. "The key is discovering what information would be really strategic to the organization," says Harris, "and then going out and getting it."

This, of course, implies a BI/analytics platform with the ability to access and mine both structured and unstructured data, including text, audio, video and the web. You'll also want analytics to be well integrated with the BI platform. An enterprise-wide data warehouse with a single metadata repository will make it easier for analysts to understand and share insights derived from the data. And any effort spent integrating heterogeneous analytics with BI could take time away from business innovation.

### Fostering Enterprise-wide Analytical Competency

Another aspect of IT's role in the enterprise-wide approach favored by analytic competitors is creating a BI competency center (BICC). "The business units have their own budgets and they can afford to buy the analytic software, and they may not want to get IT involved," says Kathy Lange, senior director of analytical consulting at SAS. "We often bring the business and IT sides together in a BICC to show them the value of sharing the responsibility, with IT being responsible for governance, standards and data management, as well as information delivery in a context relevant to the decision makers."

According to SAS, a BICC is a "cross-functional team with a

3. From SAS website, [www.sas.com/consult/bicc.html](http://www.sas.com/consult/bicc.html).

permanent, formal organizational structure. It is owned and staffed by the [company] and has defined tasks, roles, responsibilities and processes for supporting and promoting the effective use of business intelligence across the organization.”<sup>3</sup> Usually under the direction of IT, a BICC can provide a center of excellence for the capabilities needed to fuel analytic competition and support analytic projects throughout the enterprise.

“Most analytical competition begins with someone having a great idea about how to run the business—possibly a counterintuitive insight, such as a gaming executive realizing that it could be bad for business if customers lose too much money,” says Royce Bell, CEO of Accenture Information Management Services. “Where did this insight come from? Many analytical competitors have developed a back-room discovery function—an analytical competency center, if you will—which brings together the people, processes and technology for successful analytical competition.”

In Bell’s view, IT executives managing the competency center can act as evangelists, raising the analytical consciousness of managers in the business units. Says Bell, “The analysts in a competency center can discover business insights that help executives decide where to compete in an analytic fashion.”

Examples of analytic insights include the ability to match styles and sizes of clothes to customer prefer-

ences across different retail outlets; optimizing schedules for maintaining heavy machinery; learning which staffers to hire based on HR statistics; knowing when to remove a starting pitcher; and understanding which subscribers are likely to churn or respond to an offer. Nearly every internal and external business function can be enhanced through analytical insights.

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“Data mining, data visualization, forecasting, optimization and other analytic capabilities raise the business value of the kind of questions you can answer.”

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■ **T.K. GEORGE, WORLDWIDE  
BI PRODUCT MARKETING  
MANAGER, SAS**

Valuable as these may be, not every business executive is a born analytical competitor. Many prefer to stay in their comfort zones, making decisions by gut instinct. Savvy CIOs will work to find senior executives to sponsor analytics projects, and then aggressively communicate positive results. “Anyone who manages a BICC needs to market the results across the enterprise in a sustained way,” says George of SAS. “Business executives want to emulate success. If they hear of

successful projects, they will better understand the value that analytics can provide.”

Once analytics begins to take hold, IT needs to ensure that analytic capabilities can be deployed and delivered at scale, at speed and at the lowest cost. IT must also play the role of gatekeeper, ensuring that the right analytic capabilities are delivered where they will do the most good. Providers of analytics software offer products for both analytics specialists and more general business users. Predictive analytic tools are available to those whose jobs include performance-management tasks such as data mining, modeling, forecasting and optimization. Analytic capabilities are also embedded in job-function and industry-specific applications, such as fraud detection, campaign management, credit scoring, retail optimization and many more.

“This isn’t analytics for the masses,” says Bell. “IT has to be clear on who receives the analytical tools and has the ability to make analytical decisions, as opposed to situations where analytics are baked into the business processes and applications.” IT executives who get this right will find it’s good for their companies and their careers.

“Historically, CIOs who champion analytics have been in the minority,” says Harris. “But our research suggests that it is a smart career move. Executives who take ownership of analytics have done very well for themselves.” ▶