



THE RESOURCE FOR INFORMATION EXECUTIVES

Tom Davenport

COMPETITIVE ADVANTAGE

Analyze This

More and more companies are using analytics to drive their decision-making processes. But there's a right and a wrong way to do it.



The world is becoming more analytical. Even Lawrence Summers, the president of Harvard, who got into such big trouble recently for making sweeping statements about women in science, got this one right. At a Harvard School of Public Health conference, Summers said, “I suspect that when the history is written 200 years from now, it will emerge that something very important happened in human thinking during the time when we were alive, and that is that we are becoming rational, analytical and data-driven in a far wider range of activity than we ever have been before.”

Ah yes, you say. You may not have thought about it this way, but, in fact, you know something of this territory. Business intelligence. Statistics, decision support and all that. It may strike you as a little nerdy, but you'd undoubtedly grant business analytics a place in the pantheon of IT applications.

But in some organizations, analytics are in first place. They're actually becoming the primary driver of strategy and competitive advantage. Analytics and quantitative decisions are being used to optimize business processes—to identify the best customers, select the ideal price, calculate the best supply chain routing or pick the best person to hire. Some companies, organizations and sports teams are clearly competing on analytics.

In his conference speech, Summers mentioned baseball and in particular the Oakland A's as examples of creeping analytical orientation. In Boston, we're more excited about the Red Sox and the Patriots, both of which have done pretty well of late. The Red Sox, in case you need reminding, won the World Series last year for the first time in 86 years. They

ILLUSTRATION BY OTTO STEININGER

borrowed some ideas from the A's about analytical player selection and on-field decision making, and combined them with a good deal of money.

The Patriots have managed to win the Super Bowl three times in the past four years—also with an analytical approach. The team uses data and analytical models extensively, both on and off the field. In-depth analytics help the team select players and stay below the NFL salary cap. Patriots coaches and players are renowned for their extensive study of game film and statistics, and Head Coach Bill Belichick reads articles by academic economists on statistical probabilities of football outcomes. Off the field, the team uses detailed analytics to assess and improve the “total fan experience.” At every home game, for example, 20 to 25 people have specific assignments to make quantitative measurements of the stadium food, parking, personnel, bathroom cleanliness and other factors.

Success Through Analytics

More important, there are many companies competing on the basis of data, models and prediction, and many have been fantastically successful with this strategy. Wal-Mart, of course, uses vast amounts of data and category analysis to dominate retail. Harrah's has changed the basis of competition in the gaming industry from building megacasinos to analytics around customer loyalty and service. Amazon and Yahoo aren't just e-commerce sites; they are extremely analytical and follow a “test and learn” approach to business changes. Capital One runs more than 30,000 experiments a year to identify desirable customers and price credit card offers.

In a recent study sponsored by SAS and Intel, a couple of colleagues (Don Cohen and Al Jacobson) and I contacted 32 organizations that were pursuing some analytical activity. Some were using analytics in the time-honored fashion—that is, spottily and in pockets. They had an actuary here, a supply chain simulator there. As one manager of an analytics group put it, “In the past we were like the Aleutian Islands—our analytical activities covered a lot of territory, but they didn't attract much notice.”

A third of them, however, were competing on analytics at the highest level. They captured and managed lots of transaction data and had a culture of fact-based decision making. They were using analytics in multiple functional areas; they were using sophisticated statistical analysis and predictive modeling, and managing business intelligence at the enterprise level. But there was one more attribute of analytical competition that truly set these organizations apart.

Buy-In from the Boss

The key factor in successfully competing on analytics in our study was a strong pull from senior executives. Analytical resources such as business intelligence software won't change anything within an organization unless executives insist that

analytics drive business strategy. Decision making based on data, facts and complex statistics doesn't just evolve. It requires substantial changes in culture and behavior that must be driven from the top.

In the companies we found that were competing on analytics, the CEO was not only a supporter, he was a cheerleader. Jeff Bezos at Amazon, for example, states publicly that he and his executives frequently pursue analysis and fact-based decisions. Amazon does detailed empirical analysis on such ques-

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tions as whether it should advertise on TV (no), or whether it can sell commodities at closeout prices at the bottom of its webpage (yes). Gary Loveman at Harrah's has written articles about the virtues of evidence over intuition. As Malcolm Gladwell points out in *Blink*, intuition can be valuable—but not when deciding the ideal price to offer on a hotel room to a frequent gambler on New Year's Eve in Las Vegas.

In addition to setting the analytical tone, the CEO also establishes the focus. Several executives told us that it's important to maintain a strategic focus for analytical activity. Capital One flirted briefly with the idea of selling flowers and cell phones, but using analytics, the bank decided to restrict itself to consumer financial services such as car loans and CDs. Perhaps not coincidentally, it has become the sixth-largest credit card provider in terms of loans, and has grown earnings per share by over 20 percent in each of its 10 years as a public company.

How to Build Demand and Supply

If you believe in the power of analytics but your CEO and executive team just don't get it, there are some ways you can begin to build demand. One is to simply familiarize the organization with the data available. Shaygan Kheradpir, CIO of Verizon, is attempting to increase executive demand in this fashion. He created a scorecard in which hundreds of performance metrics of various types are broadcast to PCs around the company, each occupying the screen for 15 seconds. The idea is to get everyone—not just senior executives—focused on information and what it means to Verizon's performance, and to encourage employees at all levels to address any issues that appear in the data.

Another IT organization in a pharmaceutical company we studied doesn't have much demand yet, but is trying to stimulate it by following up after any hint of interest from execu-

tives. For example, a marketing manager discovered software tools that showed how sales data could be displayed graphically in terms of geography on an interactive map. The company's IT executives seized upon his interest and offered him some related

viduals with not only heavy quantitative skills but also the ability to speak the language of the business and market their work to internal customers. This company believed that the relational aspect of the job made it difficult to outsource or

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geographically oriented analytical capabilities so that he could identify underserved territories and plan the geographical spread of new hires. These IT managers wisely refuse to wait until more analytically oriented senior executives happen to arrive at the company.

The Right Talent Makes a Difference

Supplying the right kind of hardware environment and analytical software is typically easier to address than creating demand, but just as important. While good data from transactional systems is increasingly available and analytical technology has become easier to use, companies that compete on analytics still require people with substantial quantitative skills—either in-house or contracted from outside. The statistical expert, in order to be useful, will also need to be familiar with the business problems in the function and industry; the quantitative skills of a good analyst are rarely equally applicable across diverse businesses. One pharmaceutical company, for example, attempted to use several bioinformatics experts to pursue analysis of commercial problems in marketing and operations, and found that they were neither motivated nor expert at the applications. Similarly, while statistical analysts from India and China are increasingly available from offshore outsourcing vendors, it's unlikely that they will know your business well.

Indeed, several companies we interviewed stressed the importance of a close and trusting relationship between quantitative analysts and decision-makers. The need is for statistical experts

who also understand the business in general, and the particular business need of a specific decision-maker. As one manager at Wachovia Bank put it, "We are trying to build our people as part of the business team; we want them sitting at the business table, participating in

a discussion of what the key issues are, determining what information needs the business people have and recommending actions to the business partners."

A consumer products company we interviewed hires what it calls "PhDs with personality" for its analytical group—indi-

viduals with not only heavy quantitative skills but also the ability to speak the language of the business and market their work to internal customers. This company believed that the relational aspect of the job made it difficult to outsource or

How Do You Know When You're There?

There are several indications that a company is competing on analytics:

- **THE CEO HAS AN ANALYTICAL BACKGROUND.** Harrah's Loveman was a business school professor and has an MIT PhD. Amazon's Bezos was an A-plus student in electrical engineering and computer science at Princeton. When the CEO or vice chair of a company is a rocket scientist, it's a good bet that there will be other scientists on the payroll.
- **NOBODY'S ASKING ABOUT THE ROI FOR EACH LITTLE INITIATIVE.** What's at stake in analytical competition is not an application, but a corporate strategy. If the analytical activities are succeeding, they will be manifested not in ROI calculations, but in revenue and profits.
- **THE COMPANY IS VERY SUCCESSFUL.** Certainly there are industries (for example, U.S. domestic airlines) where a lot of analytics don't seem to be the critical success factor. It isn't with Southwest. But the great majority of highly analytical companies that we studied are leaders in their industries and making lots of money.

As more analytically trained managers enter the workforce, it's likely that analytical competition will become more common and intense. However, this capability can't be developed overnight. Most of the companies we interviewed took at least five years to develop their analytical capabilities sufficiently to compete on that basis, and a couple of very successful companies (including Procter & Gamble and Mars) had been pursuing analytics for several decades. Assembling the right data, finding and using the right tools, and developing the right relationships between analysts and decision-makers all take time. Therefore, it makes sense to start pulling them together now. History seems to be on the side of the numbers. **CIO**

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Add a Comment

Restaurants, particularly the big chains, have also made analytics work to their advantage. To read about "The Brain Behind the Big, Bad Burger and Other Tales Of Business Intelligence," go to www.cio.com/031505.

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Thomas H. Davenport, professor and director of research at Babson College, is conducting an ongoing research study to explore the evolution of business intelligence in organizations. The study, titled “Competing on Analytics,” is based on discussions with senior executives from more than 30 industry — leading organizations that are successful — both in terms of their overall performance and in their use of business analytics.

The companies involved in the study come from a wide range of industries and include such organizations as Harrah’s Entertainment, Wal-Mart, Capital One, Procter & Gamble, MCI, Amazon.com, UPS, Marriott Hotels, and the New England Patriots. The research was undertaken to investigate how and why these companies use sophisticated analytics, and how they make them the basis of their competitive strategies.



This research study was carried out independently through the Babson Working Knowledge Research Center, but was sponsored by SAS and Intel. To learn more about or participate in the research, contact Tom Davenport at tdavenport@babson.edu.

Thomas Davenport is the President’s Distinguished Professor of Management and Information Technology at Babson College, director of research at Babson Executive Education, and an Accenture Fellow. He has written or co-authored ten best-selling business books and has been a creator and early author of several key business ideas, including: knowledge management, human approaches to information management, business process re-engineering, attention management, and realizing the value of enterprise systems. Davenport’s latest book, *Thinking for a Living: How to Get Better Performance and Results from Knowledge Workers*, was published by Harvard Business School Press in 2005.

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