

# Analytics and the Bottom Line

KEY LEARNING SUMMARY

## How Organizations Build Success

*featuring* **Tom Davenport and Jeanne Harris**

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in collaboration with



# Analytics and the Bottom Line: How Organizations Build Success

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## OVERVIEW

Companies are becoming more analytically mature and are developing greater analytical capabilities. Many companies are also creating a context for analytics, with analytical cultures and processes. When companies compete based on analytics, analytics is having a positive bottom-line impact.

However, for all its potential, analytics is not yet having a major impact on the quality of corporate decision making. This is the untapped potential: using analytical capabilities, culture, and processes to make better decisions.

## CONTEXT

Tom Davenport and Jeanne Harris, co-authors of *Competing on Analytics* and the follow-up *Analytics at Work*, discuss how companies can deploy targeted analytics to improve their decision-making capabilities. Their article, "Make Better Decisions," will appear in the November 2010 *Harvard Business Review*.

## KEY LEARNINGS

**Analytics in business is about far more than just reporting.**

Thanks to bestsellers such as *Moneyball* and *Super Crunchers*, statistical analysis has broken through to public awareness. At the same time, the Internet and connected devices have brought a flood of valuable new data to analyze.

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**"If *The Graduate's* Dustin Hoffman were asking what he should focus on today, the answer would be 'analytics.'"**

—Tom Davenport

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Those who view analytics as just reporting on past performance don't understand the full scope and value of analytics.

Analytics can be thought of as:

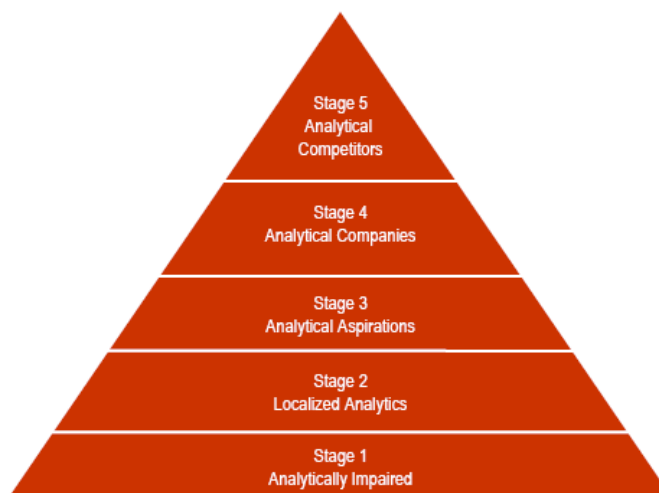
*Descriptive analytics.* This is "the what." It describes what happened in the past through reports, queries, drill downs, and alerts.

*Predictive and prescriptive analytics.* This uses data to understand the "so what." Predictive analytics—which include forecasting, predictive modeling, and optimization—are focused on the future. The use of predictive analytics takes an organization to a higher degree of intelligence and can yield competitive advantage.

Analytics' potential contribution is great, especially in light of exciting advances in behavioral economics, neurobiology, artificial intelligence, and even "the wisdom of crowds."

**To become an analytical competitor, a company must evolve through stages of capability.**

There are five stages of analytical maturity. Unless data analysis is embedded in the corporate DNA, such as at Google, companies move through levels of progressive competence.



*Stage 1 – Analytically Impaired.* Executives aren't asking analytics questions.

*Stage 2 – Localized Analytics.* Pockets of analysis exist in localized silos, but the focus is on the past rather than the future.

*Stage 3 – Analytical Aspirations.* These firms see the value of analytics and prepare a detailed road map to move from descriptive to predictive and prescriptive analytics.

*Stage 4 – Analytical Companies.* These companies are highly data-oriented and make use of analytics, but lack a top-level, passionate commitment to competing on analytics.

*Stage 5 – Analytical Competitors.* These “Zen Masters” use analytics as a competitive differentiator. These analytical competitors have proven that the use of analytics is linked with positive bottom-line results.

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**“Companies that invest heavily in advanced analytical capabilities outperform the S&P 500 on average by 64%.”**

—Tom Davenport

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Analytical competitors include:

*Old hands* who have used analytical methods for years, such as Marriott (revenue management) and Progressive Insurance (risk and pricing models).

*Turnarounds* that used analytics as a/the key strategy in restoring a company to health, such as Harrah's (customer loyalty) and Tesco (Internet groceries).

*Born analytics* like Capital One (data-based credit offers) and Netflix (recommendation engine) who have used analytics since their birth.

**The DELTA model describes the analytical capabilities model that companies need to get right.**

A mix of interlocking capabilities defines successful companies' analytical efforts. The symbol for change, DELTA, is the authors' acronym for:

**Data.** A prerequisite for analytics, data must be clean, integrated, shared, and accessible in a warehouse. Today's data incorporates more than numbers: Text and images have a role, too. For competitive advantage, data should measure

something new and important. Casinos, for instance, calculated that a staff member should smile at a customer every 10 minutes to optimize betting revenue.

**Enterprise.** To avoid multiple local versions of the facts, an enterprise perspective is critical. This enterprise perspective is necessary to determine the highest-impact performance factors, optimize investments across products/geographies/channels, and align decisions with company strategy.

**Leadership.** Senior management commitment to analytics is essential. If management is not committed (as is often the case), then secure support by running a pilot, measuring the benefit, and spreading the news.

**Targets.** While some analytical targets, such as pricing strategy and performance measurement, are common to most businesses, others are specific to particular industries or companies. Healthcare firms need to track drug interactions, for example, while financial services companies must focus on fraud detection, and online firms study website metrics.

**Analysts.** Most of a company's analysts (70-80%) are “Amateurs” who use spreadsheets and run queries. About 15-20% are “Semi-pros” who can use basic statistical tools and create simple models, while “Pros” (5-10%) can write their own algorithms. Significantly, the “Champions” (the 1% who lead analytical initiatives) are not necessarily “quants” themselves, but leaders who know how to pose the right analytical questions.

These capabilities form the foundation of an analytical organization.

**In addition to analytical capabilities, to compete on analytics, an organization needs the appropriate context.**

It is not enough just to have the necessary analytical capabilities; competing on analytics requires institutionalizing analytics through culture and processes.

**Culture.** Facts, evidence, and analysis are central to decision making in an analytical culture. When facts are thin, an analytical culture embraces a “test and learn” ethos, and it isn't shy about demanding, “Where's your data?” And, the focus of a culture that competes on analytics isn't just engaging in analysis; it is taking action after the analysis is done, then returning to the data to inform the next decision.

At its best, an analytical culture also can integrate hunches and intuition based on experience.

*Processes.* An analytical business process is one in which analysis plays a role from start to finish. At Best Buy, for example, marketing begins with strategic customer segmentation and basket analysis; continues with promotional optimization, advertising metrics, in-store assortment and placement analysis; and concludes with post-transaction customer experience and loyalty research—all of which is raw data for improving the next marketing campaign.

**Despite progress in analytical tools and data gathering, decisions are not improving.**

While the amount of data has increased exponentially and the use of analytics has grown, most corporate decision-making processes ignore or misuse this body of knowledge.

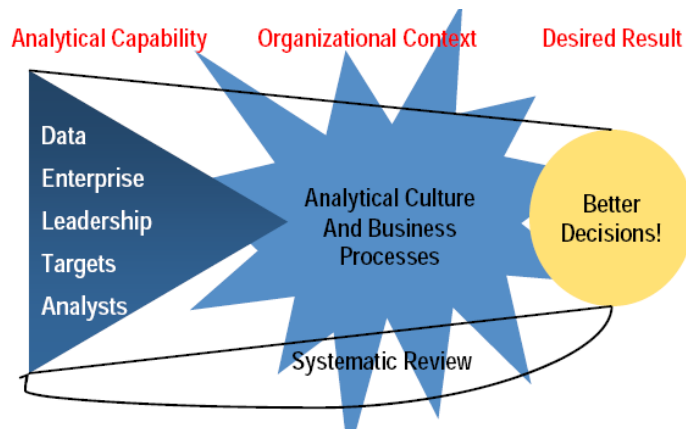
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“If we’re not getting better at decision making, much of IT’s work is called into question.”

—Tom Davenport

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Although it is easy to mistake reports and scorecards for the goal, better decisions are analytics’ real purpose. The slide below shows that the purpose of analytical capabilities and of an analytical organizational context is to produce better decisions.




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“By analytics, we mean more than data and quantitative methods; it’s also about better decision making.”

—Jeanne Harris

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Better decisions emerge when companies systematically:

*Identify* their critical decisions

*Inventory* those decisions that require analytical help

*Intervene* where needed

*Institutionalize* what was learned.

Beyond analytics (which is the most commonly used intervention to drive better decisions), interventions being used to improve decisions include cultural and organizational changes, adjustments to processes and methods, and new training and communications.

An example of how analytics can be used to make better decisions comes from Stanley (tools). Using analytics to make better pricing decisions helped Stanley increase its gross margin from 34% to over 40% in six years.

## OTHER IMPORTANT POINTS

**Globalized data.** In the course of their research, the authors studied 400 companies in 35 countries and 19 industry sectors.

**Better in a recession.** Companies that invest heavily in analytical skills and adopting an analytical mindset recover more quickly from economic downturns.

**Crimes against data.** Three ways to get fired at Harrah’s: steal, disrespect a woman, or fail to use a control group.

## ADDITIONAL RESOURCES

- *Competing on Analytics: The New Science of Winning* (Harvard Business Publishing, 2007)
- *Analytics at Work: Smarter Decisions, Better Results* (HBP 2010). [www.analyticsatworkbook.com](http://www.analyticsatworkbook.com)
- “What People Want (and How to Predict It)” and “The Prediction Lover’s Handbook,” *Sloan Management Review*, Jan 2009
- “Competing on Talent Analytics,” *Harvard Business Review*, October 2010
- International Institute for Analytics ([www.ianalytics.com](http://www.ianalytics.com))
- The SAS Knowledge Exchange <http://www.sas.com/knowledge-exchange/index.html>

## BIOGRAPHIES

### Tom Davenport

*President's Chair in Information Technology and Management, Babson College*

Thomas H. Davenport holds the President's Chair in Information Technology and Management at Babson College. He has published widely on the topics of analytics in business, process management, information and knowledge management, and enterprise systems. He pioneered the concept of "competing on analytics" with his best-selling 2006 *Harvard Business Review* article (and his 2007 book by the same name).

His most recent book is *Analytics at Work: Smarter Decisions, Better Results*, with Jeanne Harris and Bob Morison. He wrote or edited twelve other books, and has written over 100 articles for such publications as *Harvard Business Review*, *Sloan Management Review*, *the Financial Times*, and many other publications. Tom has also been a columnist for *CIO*, *InformationWeek*, and *Darwin* magazines. In 2003 he was named one of the world's "Top 25 Consultants" by *Consulting* magazine. In 2005 *Optimize* magazine's readers named him among the top 3 business and technology analysts in the world. In 2007 and 2008 he was named one of the most 100 influential people in the information technology industry by Ziff-Davis magazines.

Tom is also the co-founder and research director of the International Institute for Analytics, which brings together the world's leading analytics practitioners and researchers to provide unique insights to both business and IT leaders on the most current research findings and industry best practices.

### Jeanne Harris

*Executive Research Fellow and Senior Executive at the Accenture Institute for High Performance*

Ms. Harris is an Executive Research Fellow and a Senior Executive at the Accenture Institute for High Performance in Chicago. She leads the Institute's global research agenda in the areas of information, technology, analytics and talent.

Ms. Harris is the co-author of *Competing on Analytics: The New Science of Winning* (Harvard Business School Press, 2007), which explains how high-performance businesses are building competitive strategies around data-driven insights that are generating impressive business results. Her new book (with co-authors Tom Davenport and Bob Morison) *Analytics at Work: Smarter Decisions, Better Results* shows how organizations can create an analytical capability that enables them to routinely make better decisions in every aspect of their business.

During her thirty plus years at Accenture, Jeanne has consulted to a wide variety of organizations in many different industries worldwide. She has led Accenture's business intelligence, analytics, performance management, knowledge management, and data warehousing consulting practices. Jeanne has worked extensively with clients seeking to improve their managerial information, decision-making, analytical and knowledge management capabilities.

### Angelia Herrin

*Editor for Research and Special Projects, Harvard Business Review*

Angelia Herrin is Editor for Research and Special Projects at Harvard Business Review. At Harvard Business Review, Herrin oversaw the re-launch of the management newsletter line and established the conference and virtual seminar division for Harvard Business Review. More recently, she created a new series to deliver customized programs and products to organizations and associations.

Prior to coming to Harvard Business Review, Herrin was the vice president for content at womenConnect.com, a Web site focused on women business owners and executives.

Herrin's journalism experience spans twenty years, primarily with Knight-Ridder newspapers and *USA Today*. At Knight-Ridder, she covered Congress, as well as the 1988 presidential elections. At *USA Today*, she worked as Washington editor, heading the 1996 election coverage. She won the John S. Knight Fellowship in Professional Journalism at Stanford University in 1989–90.

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