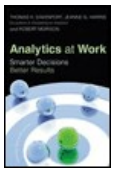

Analytics at Work: Smarter Decisions, Better Results

by Thomas H. Davenport, Jeanne G. Harris and Robert Morison
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Chapter 11: Toward More Analytical Decisions and Better Results

Life would be a lot simpler if everything we've suggested up till now could be accomplished by executive fiat. But like anything worthwhile, putting analytics to work takes effort and thought. In this book, we've described the elements an organization needs to establish a sustainable, robust, enterprisewide analytical capability.

We want to share a final piece of advice: begin with the end in mind. We hear the devoted users of analytics say, "All the analytics in the world won't help unless we *use them* to make and execute better decisions," and we expect other firms will realize this as they become more proficient in the use of analytics.

Toward Fact-Based Decisions

Analytics at Work, then, is all about making (and acting on) better decisions based on facts and analysis. This may not seem like a new idea; after all, better information systems and data were always intended to facilitate better decisions, but for the first fifty years of the information age, they mostly facilitated information transactions and the capture of data. Now that organizations are beginning to master analytics, they can better address how decisions are made and executed, how they can be improved, and how information is used to support them. And they must look at all types of decisions: from strategic planning decisions made by senior management to everyday operational decisions, whether made by employees on the front line or automated by back-end systems. Over the long term, companies should attend to decisions directly—and not assume that better information and analytical tools will automatically lead to better decisions.

What are *fact-based decisions*? We propose the following definition:

Fact-based decisions employ objective data and analysis as the primary guides to decision making. The goal of these guides is to get at the most objective answer through a rational and fair-minded process, one that is not colored by conventional wisdom or personal biases. Whenever feasible, fact-based decision makers rely on the scientific method—with hypotheses and testing—and rigorous quantitative analysis. They eschew deliberations that are primarily based on intuition, gut feeling, hearsay, or faith, although each of these may be helpful in framing or assessing a fact-based decision.

Note that our definition specifies that data and analysis are supposed to be used to discover the *most objective answers*. Yes, we know that statistics and figures can be manipulated to support dishonestly whatever point someone wants to demonstrate; despite the old adage, the numbers do lie, just like the people who manufacture them.[1] But assuming your intentions are honorable, you will probably find the most objective answer more readily with data and rigorous analysis than with any other method. The definition also acknowledges that facts aren't the only way to discover the best possible answer. While the attribute "fact-based" seems synonymous with "virtuous," at least in contemporary business, there is some leeway for intuition and experience in decision making.

[1]See, for example, Darrell Huff, *How to Lie with Statistics*, revised ed. (New York: Norton, 1993).

Managing Decisions as a Process

Decision making is a complex subject—and it's getting more complex all the time. Most organizations haven't focused on improving decisions because they have long been considered the prerogative of individuals—usually senior executives—and such decisions have been something of a "black box." Information goes in, decisions come out, and it's hard to know what happens in between. Fortunately, focusing on decisions doesn't rely solely on insight into the mental processes of managers, but also on the outward manifestations of decisions—what decisions need to be made, what information is supplied, the key roles in the decision process, how accurate or effective the decisions turn out to be, and so forth.

If you are going to manage decisions, you should design and manage them as seriously as you do your business processes. As with any other process, streamlining a decision process will save time, cut cost, improve quality, and yield better results. And because many critical decisions with far-reaching implications (like pricing strategies) cross functional boundaries, it is important to make sure that they work well across the entire organization.

For example, an organization that focuses heavily on decisions and how data and analysis can be applied to them would make a list of key decisions—"key" being whatever criteria the organization cares about. It could be the "top ten decisions required to execute our strategy" or "the top twenty decisions that have to go well for us to meet our financial goals." Without some inventory and prioritization, all decisions will be treated as equals, and most likely won't be addressed at all. In a sense, these are the decision "targets" to which analytics and other improvement approaches can be applied, and they should be consistent with the business targets for analytics as discussed in chapter 5.

In addition to creating an inventory of decisions, these organizations would classify major decisions by their attributes. Who plays what role in the decision, or what is its governance? How frequently does it recur? How structured is it? What information is available to support it? By classifying, an organization can begin to determine which interventions might make the decision more effective and to establish a common language for discussing a decision within the organization.[2]

A decision-focused organization would also have approaches to review and continuously improve its decision-making processes, such as a Six Sigma–style function or a Tiger team whose members come from the business processes that are affected by the decision. Moreover, a decision-focused organization would have a group of decision "engineers," coaches, or consultants for improving decisions. At GE Capital, for example, a group of about four hundred analysts reside within a "decision management" organization. Instead of just supplying analytics and correct answers, the goal of the analysts is to work with executives to improve decision processes.

Organizations that care about decisions would assess their managers and employees based on the decisions they've made. Assessing

results can get political quickly, but assessing the process and information used for key decisions can be very constructive. A few organizations, including Swiss engineering giant ABB, already do this for some managers. They make this assessment an established part of the performance review process.

Another key attribute to improving decisions is "metadecision analysis." This simply means that before making a decision, a person or organization should ask, "How should we make this decision?" While the question may seem obvious, it is rarely asked in an explicit and methodical way.

At Air Products, a five-step process is recommended for making important decisions. Step 1 is to define the decision to be made. Steps 2 and 3 might be considered metadecision analysis; they are to "determine method" and "establish governance." The method to be adopted involves the level of participation—whether a decision is determined unilaterally, consultatively, by a majority, or by consensus. Governance follows the well-established RACI approach in project management: who is expected to be responsible, accountable, consulted, or informed? [3] Step 4 is to make the decision; step 5 is to communicate and implement it. All five steps are perhaps not necessary for deciding what to have for lunch, but you'd probably end up with a satisfying meal.

Why is such a metadecision approach important? It's because there are many different ways to make decisions today, but they all require stepping back and thinking about the decision process and the best ways to accomplish it. Air Products' approach is far better than what most organizations do, but there are many more possibilities and options to choose from.

These approaches are just beginning to be addressed by analytically focused organizations. Some have concluded that organizing for analytics is less valuable than organizing for "decision management." In financial services firms, in particular, decision management groups have been created to centralize decision-oriented assistance across product lines. In addition to GE Capital, Royal Bank of Scotland and Citi have also formed such organizations. They have not been involved in all recent decisions (including, fortunately, the subprime mortgage investments at each bank), but they are beginning to lend "decision support"—sometimes based on analytics, sometimes based on other approaches—to key decisions across the organization.

Even in the tough times for financial services firms that we've been going through, GE Capital has made a lot of money for GE ($9 billion in 2008 profits). Analytically focused executives in the GE Money consumer finance unit of GE Capital concluded that just having analysts come up with the right answer wasn't enough for the company. They decided to move from an analytics group to a decision management group because the ultimate end is for people or systems to make the right decision. It has to be made at the right time and in the right context, and any analyses either have to be embedded in sound business processes, or have to be well understood by human decision makers to ensure that the decision is made the right way. GE Money's group has worked on analytics-heavy decisions involving marketing, risk management, loan underwriting, and even human resources. The decision management group has worked out well enough that GE Capital has decided to adopt it across the entire organization.

Today only a few other companies have groups like GE's, but we expect that decision management will grow in importance over time, and that more organizations will establish such groups. Even if you're not ready to go that far, you can begin to focus on fact-based decision making in your own group or department. Take a single decision that's important to your organization and do a bit of meta-analysis on it. What actions will arise from the decision? How does the decision contribute to business performance? Who is playing the various decision roles? What information will be used to make the decision, and what's the desired linkage to the decision process? What are some ways in which the decision process might be improved? If you are really adventurous, you might even try to determine how the quality of the decision might be assessed and tracked over time. None of these approaches is terribly difficult. We think that adopting them—and then executing those decisions consistently, efficiently, and at scale—is the next frontier for analytically oriented organizations, which is why we've concluded with the topic.

[2]Paul Rogers and Marcia Blenko, "Who Has the D? How Clear Decision Roles Enhance Organizational Performance," *Harvard Business Review*, January 2006.

[3]See, for example, the RACI Diagram entry in Wikipedia, http://en.wikipedia.org/wiki/RACI_diagram (accessed November 28, 2008).

What We Promise and What We Don't

We're confident you'll get a lot of value from the nostrums in this book; otherwise, we wouldn't have written it. But we also want to specify what we do promise to organizations that adopt these ideas, and what we don't—a sort of "truth in writing." Consistent with this chapter's focus, most of the statements below involve the extent to which analytics will actually improve decisions. First, let's get the cautionary messages out of the way:

Analytical Decisions Aren't the Only Ones That Will Lead to Success. Unlike some business book authors, we know there are multiple routes to success within any industry. As Harrah's CEO Gary Loveman noted in the foreword to *Competing on Analytics*, his competitor Steve Wynn isn't noted for his orientation to analytical methods. Yet his intuitive sense of luxury and style has led his company, Wynn Resorts, to prosper (at least up until the current financial crisis). In every industry, executives with experience, intuition, and luck may choose strategies that pay off without benefit of data and analysis. But it's clear that in almost every industry you'll have a successful analytical competitor, and unless you are awfully confident in your experience, intuition, and luck, you should be using facts to improve your decisions.

Your Analytical Decisions Won't Always Be Perfect. In most cases, gathering and analyzing data significantly increases the likelihood that your answer will be right, or at least better than a guess. One pharmaceutical CEO mused to us that if analytics could boost his company's drug-picking ability from, say, 10 percent to 40 percent, he'd see a huge improvement to the bottom line—even though he'd still be off most of the time. Sometimes, your analytical decision will be wrong or suboptimal. Analytics may lead you to charge a price that's less than the customer would pay. Analytics may predict that a patient shouldn't contract a disease, but he or she will get it anyway. Analytics may lead you to choose a player for your sports team who should be great, but who bombs. Indeed, one of the biggest hurdles organizations face is learning

(through review) not to keep making the same bet when the model was wrong the last time. But don't lose faith in data and analytics. You're better off overall making analytical decisions, even if sometimes you end up on the wrong side of a statistical distribution of outcomes.

You'll Need to Develop New Analytically Based Insights to Stay Ahead of the Competition. Analytical companies are like sharks, continually on the prowl for the next insight. Why? Eventually your competitors will catch on and duplicate your innovations. This happens faster in industries where there is more transparency and sharper competition. But sooner or later competitors will get on the analytics bandwagon and start to build their own analytical models. Resting on your laurels is simply not an option.

Sometimes the World Will Change, and Invalidate the Models That Guide Your Decisions. As we discussed in chapter 9, the world turns and makes your data and analyses no longer relevant. If you choose to live by analytics, you are also choosing to constantly evaluate and change them. Make your hypotheses and assumptions clear, and be attuned to when they might need changing. As a final example, take price optimization for retail stores. We're big fans of this analytical application because most of its adopters say that it has improved profit margins dramatically. But as we write, with the economy in free fall, retailers may want to update their historical models of price elasticity in deciding what to put on sale when. Part of benefiting from history is knowing when history doesn't apply.[4]

Analytics Are Not All You Need to Make Good Decisions. Use all the tools at your disposal to make better decisions. In addition to data and analytics, those tools include experience, intuition, group process, and even taking votes or structuring predictive opinion markets. Sometimes the results will conflict with each other, or perhaps analytical results will contradict your own wisdom. You don't want to ignore the contradictions; use them to justify a closer look at the data and the analysis and examine the implicit assumptions of your experience.

Okay, now we've done our fiduciary duty. On the positive side, we promise:

You'll Make Better Strategic Decisions. Strategic decisions are occasional, important decisions that can benefit from systematic analysis and data gathering. If you're trying to decide whether to buy or merge with another company, enter a new market, introduce a new product, or go after a different type of customer, you'll benefit from analytical decision making. Granted, you'll still need some good intuition, but analytics will certainly provide a clearer sense of what you're trying to accomplish since they will show you how intangibles impact things like growth and profitability.

You'll Make Better Tactical and Operational Decisions. These are the meat and potatoes of analytics because they're decisions that recur frequently and are based on operations that create lots of data. If you systematically collect and analyze the data, you can improve how you produce, price, market, and sell your product or service. Recurring decisions are worthy of your investment in better, more analytical decision processes. If you make a few more euros (or yen or dollars or bolivars) on each of these transactions because of analytics, the total benefit over time will be dramatic.

You'll Have a Better Ability to Solve Problems. Data and analytics often provide the key to why something is happening in your organization. If something is going wrong, gathering and analyzing data on the circumstances in which the problem occurs is one of the best ways to get to its source. Whether your problem involves customers (say, they're not turning out in the expected numbers), your supply chain (it has more inventory than you would expect for this time of year), or even employees (the new hiring criteria don't seem to be working out), analytics can help you solve it.

You'll Have Better Business Processes. If, as we advocated in chapter 7, you embed analytics into your core business processes, they will perform better. Processes are a structured way to think about how work gets done, and analytics are a structured way to think about the decisions made within those processes. They make for a great combination. We think that the future of analytics—at least for operational decisions—will be intimately connected with the future of business process thinking, and vice versa.

You'll Be Able to Make Faster Decisions and Get More Consistent Results. Analytics sometimes take a while to create in the first place, but once you have an algorithm or a scoring model, you can scale and run it thousands or even millions of times, in only a few seconds. By using the rules and models developed by your best experts, you can ensure that decisions are made correctly and consistently across the organization.

You'll Be Able to Anticipate Shifting Trends and Market Conditions. Monitoring and close analysis of external market factors can provide an early warning sign of economic and market shifts, help identify new opportunities, and anticipate changing customer tastes. If executed well, analytics can even improve your ability to change your mind about what's driving your business. If you practice good "model management," you'll be able to quickly determine whether your predictive models are still predicting well, and whether your optimizing models are still optimized. You'll be able to see the assumptions behind the models, and to figure out whether they still apply. When they no longer apply, or fail to predict effectively, that's very valuable information, too—what quants call "a canary in a coal mine."

You'll Get Better Business Results. In our previous book on analytics we found (in two separate studies) that firms that made more use of analytics tended to perform better financially. We continue to observe that analytical companies generally lead their industries in performance. Analytical conservatism forces us to point out that this may not be a causal relationship, but we believe it is. It's easy to see—and we've provided many examples in this book—how investments in analytics could yield both more revenue on the top line and more profit on the bottom line. Of course, some applications will yield more direct financial benefits than others. We have generally found, for example, that pricing applications provide the most direct link between analytics and more money. And if your organization's mission involves something other than making money, you can probably do it better with analytics too.

Our view—and we see confirmation of it almost everywhere we look—is that data and analytics are steadily becoming more important and influential in every organization. More data becomes available every day. More powerful software and hardware are constantly emerging to help analyze and interpret the data. More people are spilling out of universities with the ability to analyze data and make analytical decisions. As Larry Summers, former treasury secretary and president of Harvard University, and now chief economic adviser to the Obama administration, put it: "I suspect that when the history is written two hundred years from now, [a trend] will emerge as something very important that 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."[5] Summers isn't always right, but we're pretty confident he's right in this case.

Analytics and fact-based decisions are a trend for the ages. Other decision approaches will rise and fall, but the progress toward fact-based techniques will be inexorable. It's time for every organization to address both how to make better decisions today, and how to sustain high performance across business cycles and generations.

[4]However, a Nielsen report in 2009 suggests that for most categories of consumer goods sold at retail, historical pricing elasticities still apply. It's good to have and use data!

[5]"Remarks of President Lawrence H. Summers," Harvard School of Public Health Leadership Council, Cambridge, Massachusetts, October 21, 2003, http://www.president.harvard.edu/speeches/summers_2003/ hsph_deans_council.php.