Guide to Leading Data-Driven Organizations

By Elana Varon

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Every executive and manager turns to data, at some point, to learn about how business operations are performing. But in data-driven, or evidence-based, organizations, leaders and front-line employees alike use data and analytics not just to track performance, but to influence it systematically.

"Organizations that can make decisions [based on] concrete information and facts have a leg up on their competition, because they can act with greater precision and timeliness," says Randy Bean, managing partner of consultancy New Vantage Partners and a former chief marketing officer.

But a data-driven business doesn't come from ordering a bunch of new reports, or buying the latest technology tools. You have to change your decision-making culture, rethink your org chart and teach employees how to use data more effectively.

Deciding Where to Start

Business complexity often drives the need for evidence-based decision making, says Barbara Wixom, associate professor with the University of Virginia's McIntire School of Commerce. Your customer base may be so diverse, or your supply chain so vast, that "your intuition doesn't work anymore," to understand what is happening on the ground, she says.

But it takes time to develop the capability–both analytically and technologically, that you need to exploit your data. "The most successful initiatives come out of C-level executives identifying the four or five most critical business questions they need to answer," says Bean. From there, business leaders can home in on the data they have, the data they need and the tools they want to deploy in order to use it.

"One of my core responsibilities is to understand how my organization is trying to improve itself in the short term, medium term and the long term, so I can

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term, medium term and the long term, so I can understand how to organize our analytics capabilities," says Joe Kimura the medical director for analytics and reporting systems at Atrius Health, a collection of six medical groups serving 1 million patients in Massachusetts.

Creating a Data-Focused Culture

In a data-driven organization, people use data in their everyday work because doing so is aligned with achieving individual and business performance goals. But business leaders have to define the goals and the metrics that will be used to measure them.

For example, teachers who have data not only about their own students' grades but also about the factors affecting performance among thousands of students can do a better job choosing how to teach individual kids, observes Dan Domagala, CIO with the Colorado Department of Education. Teachers are held accountable for how their students improve based on state-level standards.

At Norfolk Southern Railway, corporate leaders decided to give yard managers bonuses for aligning the schedules of trains in their yards to overall targets the company had for on-time deliveries, says Wixom, who studied the company. Data helped them understand how their decisions would affect deliveries across the country.

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As with any initiative designed to change how work is done, top leaders need to promote examples of when using data contributes to the results they want and offer ways for other teams within the organization to adopt successful practices. "They can spread like wildfire," says Domagala. "A school principal might say a teacher is doing something innovative, and that a couple of other teachers have tried it in the social studies class, and that can lead to a revolution from the ground up," spreading across the school district or even to multiple districts.

Changing How Data Is Managed and Delivered

Traditionally, IT has controlled data analysis and maintained the corporate databases. Meanwhile, the process for making data available has often been labor intensive and the tools used to analyze it hard to learn. As a result, many companies–even those with business-savvy analysts–have a gap to close between the data consumers who know what

they want to ask and the technical experts who know where the data is and how to access it.

To bring the two sides together, some companies, including Atrius, have created integrated analytics teams–sometimes called centers of excellence–where business experts, data analysts and technologists from across the organization can collaborate more easily. Integrated teams can establish corporate data standards, enforce rules for data governance and develop tools that are appropriate for different levels of end users to share across the enterprise.

Because new technologies for managing and analyzing "big data" don't require all data to be structured the same way, you can spend less time preparing it and more time querying it, says Bean. "The most forward looking companies are creating data discovery environments where they can take whatever data is at hand and conduct test-and-learn types of activities, rather than having to do up-front data definition and engineering."

Evaluating the Need for an In-House Data Scientist
An analytics group or business unit, especially within a large company, may have a researcher with extensive business knowledge, technology expertise and deep experience with statistical modeling. It's becoming popular to call such researchers data scientists–and lament how few people today have the right combination of skills.

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But not every organization needs a data scientist. "Most major companies had Ph.D. statisticians and others who were facile at manipulating data," says Bean. "But they had their jobs eliminated in 2008-2009 because they weren't integrated into mainstream business processes."

Whether you need to hire, or cultivate data scientists on your team depends on how deep your research needs to be, observes Wixom. For instance, you do if you sell analytics-based products or services like ComScore, she adds. Or if you need to develop innovative research methods in order to understand your data.

But unless you have extensive requirements for advanced analytics, it might make the most sense to outsource the capability. "We work with industry partners to help us at very strategic spots," says Kimura. "I'm not sure at what point it will make sense for an organization like

ours to build that core competency in house."

Teaching Data Consumers How to Use Information
Front-line employees probably won't be crunching the data as the data scientists, business analysts or statisticians do. For them, "the data has to be easy to use," says Colorado's Domagala. "It has to be intuitive."

"The tools we build in-house are trying to build in business logic so it doesn't trip up our users as much as some of the more raw information," says Kimura.

However, those front-line managers and employees, whether they're teachers, physicians or train dispatchers, still need to learn how use new tools as well as how to think about data so they ask the right questions, and can figure out what the answers mean.

UPS, for example, has committed to training its managers and front-line workers to use the findings of analytics to make better business decisions. Employees get training tailored to their roles, so that a driver, for example, can test her knowledge of the most efficient route against what the company's optimized navigation system suggests. The company combines its lessons on data interpretation with insights on how decisions influence business results.

Opportunities for analytics training, meanwhile, are growing at the university level. A recent survey of more than 300 professors by Wixom, Thilini Ariyachandra, associate professor of MIS at Xavier University, and John Mooney, associate professor of IS and Technology Management at Pepperdine University found that 41 percent of universities were offering more business intelligence and analytics courses in 2012 than they had two years earlier.

More than half of the respondents (55 percent), said their BI and business analytics classes, were designed to prepare students to be "data-savvy business people." (For more on these kinds of programs, see Data Informed's University Map.)

In addition to formal training in technology or statistical methods, workers need "ongoing coaching," says Wixom, "because processes will change and the context might change. This is where managerial experience comes in."

Data should inform people's decisions, not crush their instincts. "You use data to make sure you're going in the right direction," notes Kimura. "Instinct also tells you at times that the data is not always right."

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