DATA ANALYTICS MARKETING APR 3, 2018

Take 5: A Guide to Getting Started and Succeeding with Data Analytics

Kellogg faculty offer advice for business leaders to improve their analytics strategies.

BASED ON INSIGHTS FROM

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Everyone wants to make solid, data-driven decisions. Yet collecting and using data optimally can often feel daunting.

Here some insights from Kellogg professors on how individuals, teams, and companies can feel comfortable with and get the most out of data analytics.

1. Leaders Need to Understand Analytics, Too

First, let's dispel the myth that you simply need to hire a crackerjack analytics team.

Florian Zettelmeyer, a professor of marketing, emphasizes the need for business leaders to be comfortable with analytics, too.

This does not require a degree in computer science. It takes what Zettelmeyer calls "a working knowledge" of data science. This means being able to separate good data from bad and knowing where precisely analytics can add value.

Zettelmeyer says most managers share a common behavioral bias: when results are presented as having been achieved through complicated data analytics, managers tend to defer to the experts. Yet it is the manager's job to choose which problems need to be solved and how the company should incorporate analytics into its operations. Executives are the ones who make decisions, so they should play a central role in determining what to measure and what the numbers mean to the company's overall strategy.

Managers also have valuable knowledge of the business, which they should use to account for strange results. Zettelmeyer recommends asking the question: "Knowing what you know about your business, is there a plausible explanation for that result?"

2. Tips for Building an Analytics Team

Of course, a crackerjack analytics team is an asset, too. So how do you hire one, especially given that top-quality data scientists are often in short supply?

Data-analytics experts offered advice during a session at the Kellogg on Growth Forum a few years ago, which was moderated by marketing professor Eric Anderson. Here are some of their tips.

Dan Wagner: CEO and founder of Civis Analytics, formerly chief analytics officer for the Obama 2012 campaign

"What I've learned from the thousands of people I've interviewed is I don't have the intellectual capability of having the conversation with a human being and assessing whether or not they're going to be good at this job. What you can do is simulate the job for them through an exam process. See how they do and rank them against everybody else. What you'll find is that the introverts tend to do much better, and that is the classic person that you're trying to hire."

Leslie Hampel: Then the director of global strategies for Starbucks and now vice president of store operations

"What I am looking for is someone who can bridge the gap. Can you do the math? That's important, but can you pull the story out of the math? Particularly for the next 10 years or so, as we work our way through this current generation of CEOs who don't understand algorithms for the most part."

3. Create a Culture of Intellectual Curiosity

The best companies create a culture that encourages using data to solve problems, which goes way beyond just the analytics team.

"It's about encouraging, expecting, and enabling people to say, 'Hmm, I wonder how we could use data to predict or improve or optimize that?'" says Tom O'Toole, a senior fellow and clinical professor of marketing at the Kellogg School, who was formerly CMO at United Airlines and CMO and CIO at Hyatt Hotels Corporation.

Questions should be welcome from all corners of an organization. For example, O'Toole describes a meeting with the senior leadership team of a financial services company. The general counsel wondered aloud how data and predictive analytics could be used to identify likely cases of a certain type of regulatory-compliance problem.

"People didn't expect the head lawyer to be the one to ask how to use predictive analytics to address an issue," O'Toole says, "but he did. And predicting and avoiding the compliance problems that he had in mind would have real business value in avoiding the costs related to lawsuits, customer settlements, and terminations."

Organizations should set an explicit expectation that employees use data in new ways to answer new questions. One way to do this is to define intellectual curiosity as a basic criterion for advancement.

"This isn't just 'How many interesting questions did you ask and answer in the last six months?'" O'Toole says. "This is more the evaluation of a mindset: How do you look at and advance the business in new ways using data?"

4. The Analytics Paradox

Now your analytics team is humming along, solving all sorts of business problems.

But don't get too comfortable, say Zettelmeyer and Anderson, who are academic directors of Kellogg's Executive Education program on Leading with Big Data and Analytics and are writing a book about data science for leaders.

They caution leaders to be aware of "the Analytics Paradox."

The better a firm gets at gleaning insights from analytics—and acting on those insights—the more streamlined its operations become. This in turn makes the data resulting from those operations more homogeneous. But over time, homogeneity becomes a problem: variable data—and, yes, mistakes—allow algorithms to continue to learn and optimize. As the variability in the new data shrinks, the algorithms don't have much to work with anymore.

The paradox leads to a rather startling recommendation: "occasionally you need to purposely mess stuff up," Zettelmeyer says.

In some sense, the value in big data lies in its messiness—in the often-unexpected variation in how events play out and the myriad ways these events help establish connections between variables that can help people make better decisions.

"In theory, the best manager for analytics is the one who walks into the office every morning and flips a coin to make all decisions," Anderson says. "Because if you make all your decisions by flipping a coin, you will generate the best possible data for your analytics engine."

Instead of a coin flip, top firms have adopted a strategy of injecting variability into their data strategically.

A company rolling out a national advertising campaign, for instance, might decide to tweak the campaign in important ways only in select markets or to stagger the rollout by region. While there may be short-term

costs in terms of efficiency and optimization, the resulting data have the potential to teach the company going forward.

5. Displaying Your Data

Armed with amazing data insights, how do you go on to convince people to take action based on them? Present your data visually, says Northwestern psychology professor Steven Franconeri, who is also a professor of leadership at Kellogg.

"People might think that visualizations are pretty and they're icing," he says. "That's not true. They are indispensable, absolutely indispensable."

Because our brains use the same systems to process speech and written language, putting up text on a presentation slide while talking "ensures that you won't get your point across, because no one can read and listen at the same time," he says.

But, he adds, "you can look at pictures and listen at the same time at full blast."

Yet too few people learn how to create good data visualizations. And it comes at a cost.

"If you do it wrong, it's a disaster," Franconeri says. "It can be complete spaghetti."

Here are a few tips for avoiding the spaghetti.

If you have a relatively simple data set, create three or four visualizations.

"Make them as different as possible," Franconeri says. "Show those to some colleagues. Ask them what story they see in each one. You'll be surprised at the differences in what people extract from the same data."

With a more complex data set, keep in mind that your viewers can quickly get overwhelmed even if you understand the visualization completely. Because the visual-processing centers in our brains are so strong, it is easy for us to feel completely comfortable with a complex visualization because we have been immersed in the data. New viewers, however, struggle without that background.

"Their brain is lit, but they don't know what to do with it all," Franconeri says.

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