Why Your Company Needs Data Translators

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[ANALYTICS]

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BY CHRIS BRADY, MIKE FORDE, AND SIMON CHADWICK

Over the past two years, we've worked extensively with leaders in the world of professional sports, a field known for its use of analytics. An emergent theme of our work has been the persistent cultural divide between the decision makers on the field and the data analysts who crunch numbers off of it.

Our work has included a series of research workshops to discuss trans-Atlantic and cross-sector issues around performance management in professional sports. A key issue that emerged from these meetings was the recognition of this consistent disconnect within performance management practice between "big data" analysts and the decision makers they support. This is evidenced by the predominantly dismissive attitude of many executive decision makers (general managers, head coaches, CEOs, COOs, etc.) to both the data itself and those responsible for delivering it — an attitude often born largely out of ignorance or fear. The research group believed that bridging this cultural gap would provide considerable competitive advantage to any organization concerned with high performance.

What's more, this issue transcends the world of professional sports. Whatever your industry, it's likely that misunderstandings between quants and frontline decision makers are a challenge your business is confronting, too. As Jeanne G. Harris and Vijay Mehrotra noted in a 2014 article

in *MIT Sloan Management Review*, the problem is one of communication. "A common complaint is that data scientists are aloof and seem uninterested in the professional lives and business problems of less-technical coworkers," they wrote. "They don't see a need to explain or talk about the implications of their insights, which makes it difficult for them to partner effectively with professionals whose business expertise lies outside of the technical realm."

What is to be done? From our work with successful sports leaders, we accept that there is a significant gap between the quants and the decision makers, a gap that we call the "interpretation gap." We believe that those who are needed to fill that gap are what we call "data translators." While some have argued that data scientists can bridge the gap, we think that, in many cases, the

data translator role can best be filled by domain experts. To date, many businesses have been trying to bridge the gap by teaching the quants (often recent graduates) about the business in which they operate. But in some cases it may be easier for domain experts, with deep knowledge of the business in which they are engaged and the requisite interpersonal skills, to obtain sufficient knowledge about data analysis to act as the translator for data scientists than for data scientists to gain enough knowledge about the domain, especially the language of that domain. Domain expertise requires a high level of practical experience, which is difficult to acquire on a theoretical basis, and it also lends itself more readily to the storytelling ability that must be an essential skill of the data translators.

Here are some of the issues we think companies need data translators' help to address:

Data Hubris Translating analytics into a language decision makers understand is not as simple as it sounds. Among other things, the person doing the translating — whether it's a quant or a data translator serving as a liaison between the quant and an executive decision maker — needs to avoid what's referred to as data hubris. In a 2014 *Science* article about the potential pitfalls of relying on big data, David Lazer and his coauthors described data hubris as "the often implicit assumption that big data are a substitute for, rather than a supplement to, traditional data collection and analysis."

In the sports world, the mistake of data hubris is commonplace. A quant analyzes statistics and draws firm conclusions about individual players, to the point where the quant believes the numbers, in a vacuum, provide a clearer picture than what the coach observes every day with his own eyes — in practice, in games, and in the locker room.

At the heart of this conflict is a false dichotomy between numbers and intuition. In reality, decisions makers must seek

what R.C. Buford, general manager of the San Antonio Spurs basketball team, described, in an interview with us, as "alignment of the multivariables — the eyes, the ears, the numbers." In other words, organizations should use analytics and firsthand observations in a complementary way to form a holistic opinion, rather than lean too heavily on only data or only observations.

Decision-Making Biases Whether you're a quant or a decision maker who balances both observations and numbers, you must remain aware that any point of view, even one derived from extensive research and rock-solid facts, carries potential biases.

For example, one bias that dampens the utility of data-driven intelligence is commonly referred to as overconfidence bias — when an individual's confidence in his or her own judgment is at odds with reality. Of course, the individual may have perfectly good reasons to be confident, as opposed to overconfident. Perhaps he or she has a stellar track record or is taking a position based on thorough research. But that doesn't mean he or she can't be wrong, especially if the topic is one for which making predictions is an inherently tricky business.

In sports, one of these unpredictable topics is talent evaluation. How can teams assess which up-and-coming young athletes will perform best as pros? Teams invest heavily in scouting and player evaluation, but they still make mistakes, because predicting individual performance is far from an exact science.

And yet, precisely because teams invest so heavily in evaluation, they can often be overconfident. "Even the smartest guys in the world, the guys who spend hours with game film, can't predict [the subsequent performance of football draft choices] with much success," Cade Massey, a professor at the University of Pennsylvania's Wharton School who has studied the National Football League (NFL) draft pick, once told *The*

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New York Times. "There is no crime in that. The crime is thinking you can predict it."

Another issue to be careful about is emotional bias. In an interview with us, Billy Beane, executive vice president of baseball operations for the Oakland Athletics baseball team, described emotional bias as the consequence of being a decision maker in the public eye, constantly second-guessed by fans, customers, and social media followers. Emotional bias occurs when the decision maker lets the outside noise influence his decisions. "All decisions are now public decisions; everyone is an expert," Beane told us. "There is permanent media scrutiny, and it must have some sort of effect on decision making. The decision maker needs to eliminate the noise."

Need for Linguistic Common Ground

Another powerful theme that emerged from our research is the significance of the communication barrier. It is apparent to us that leaders in senior management do not speak the same language as the analysts.

We learned that decision makers are seeking clearer ways to receive complex insights. They want analysts to speak to them in plain language, abetted by visuals, so they can easily absorb the meaning of the data. Our findings are consistent with a recent IBM survey suggesting that executives intend to replace standard reporting techniques with approaches that bring otherwise dry information to life. These approaches include data visualization, process simulation, text and voice analytics, and social media analysis.

The Importance of Translation

Sig Mejdal, special assistant to the general manager, process improvement, for the Houston Astros baseball team, has pointed out that most decision makers are "not conversant with the scientific method. So we have to change our language." By "we,"

Mejdal means quants like himself. To bridge the gap that Mejdal describes, we suggest finding the people in your organization capable of conversing with both the quants and the decision makers. We call these talented communicators "translators," since in a manner of speaking, they are abetting understanding between two different cultures.

The key to effective translation is understanding each of the figurative languages, as well as each of the figurative cultures. For example, Del Harris, a well-known coach in the National Basketball Association (NBA), has been an effective translator during his career, helping the coaching staff make sense of the numbers and helping the quants make sense of the coaching staff. At the 2015 MIT Sloan Sports Analytics Conference, he explained how, at one team where he was an assistant coach, the analytics came directly to him, as opposed to the head coach, because without his ability to translate, the head coach "couldn't care less about that sort of thing."

There's more to effective translation than simply rendering scientific language in plain terms. The best translators also frame the information in a way those receiving the translation will find useful. In the plainest language, a translator must ask one blunt question: How does this data help the person I'm speaking to?

The Skills Translators Need

From our experiences, we have created a checklist of skills that we believe the best data translators will possess:

1. Sufficient knowledge of the business to pass the "street cred" test with executive decision makers;
2. Sufficient analytics knowledge — or a willingness and ability to acquire it — to communicate effectively with the organization's data scientists;
3. The confidence to speak the truth to executives, peers, and subordinates;
4. A willingness to search for deeper knowledge about everything;

5. The drive to create both questions and answers in a form others find accessible;
6. An extremely high sense of quality standards and attention to detail;
7. The ability to engage at team or organizational meetings without being asked for input.

And remember: It's also possible to teach translator skills to the talent you already have in-house. You can do this by reinforcing two important communication habits:

Connect with decision makers through questions, not assertions. Especially with skeptical decision makers, it's essential not to be overly assertive at the outset. Teach your quants to ask questions that enable the decision makers to come up with the answer, ostensibly by themselves.

Create analogies around anecdotes that resonate with the decision makers. These could be the stories of successful analytic interventions. In sports, these stories could carry themes such as, "This athlete wasn't expected to make it this far — but he has." Or: "This strategy was counterintuitive, but it worked. Here's why."

Bridging the cultural gap between domain specialists and analytics specialists within organizations with an interpretation function performed by a data translator can begin to address the disparity between the claims for big data and its reality. That process begins with recognizing the limitations of what numbers and intuition can do separately.

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