Sponsored by **SAS**

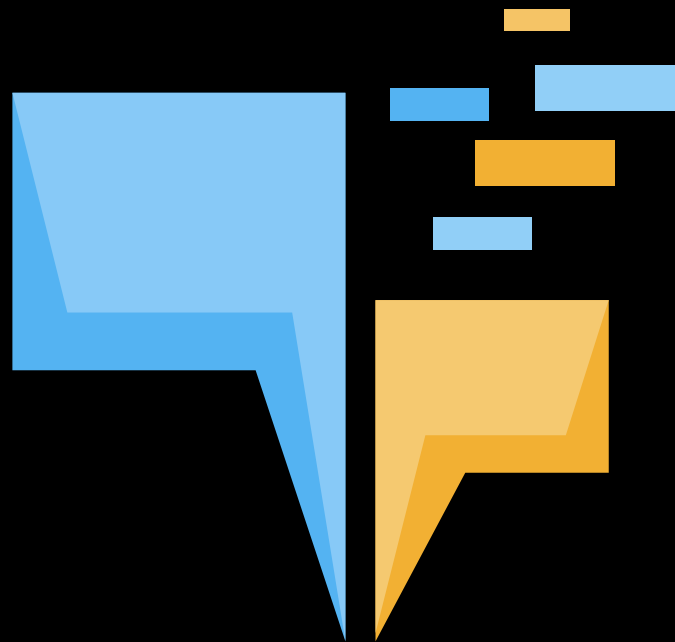# Ask HBR

Data Science and the Art of Persuasion

Featuring Scott Berinato

WEBINAR SUMMARY

Data Science and the Art of Persuasion

Featuring Scott Berinato

In a live session moderated by Julie Devoll, editor of special projects and webinars at *Harvard Business Review*, Scott Berinato described what data science teams must do to achieve greater success and discussed the skills that data science teams need.

Berinato is a senior editor at HBR and author of *Good Charts: The HBR Guide to Making Smarter, More Persuasive Data Visualizations*.

Communicating insights over the "last mile" is a major challenge for data science teams.

Companies build data science teams that develop algorithms, analyze large volumes of data, and find great insights. That journey can represent a significant investment. Unfortunately, the last mile—communicating those insights effectively to the executive team—often doesn't go well.

Everyone is to blame for the last mile problem. Some executives expect that the data science team will be able to do it all: find, wrangle, clean, and analyze the data, plus design and present the information in ways that leaders can act on it. These are unrealistic expectations. On the other hand, many data scientists don't want to get involved in the effective communication aspect of the last mile.

Although both sides are at fault for the last mile problem, both sides can also act.

MANAGEMENT TEAMS CAN:	DATA SCIENCE TEAMS CAN:
1. **Build teams.** Don't expect data scientists to do it all.	1. **Define jobs to be done.** Stop thinking about who can do what jobs and start thinking about what jobs need to be done.
2. **Create a real team.** This is an ongoing, cross-functional team, not an ad hoc team.	2. **Be agile.** Learn to iterate your information design and information communication.
3. **Co-locate the team.** This can be done physically or virtually to ensure that members communicate continuously.	3. **Encourage team members to learn from each other.** Communication experts should learn about statistics while data scientists should learn about information design and communication.
4. **Give the team autonomy.** Identify a single stakeholder who is responsible.	4. **Reuse templates.** Teams that have solved the last mile problem often reuse effective communication templates.

"As Willard Brinton wrote in 1912, 'As the cathedral is to its foundation so is an effective presentation of facts to the data.' The data is your foundation, but you want to build cathedrals with effective presentations. The cathedral is the last mile and we have to figure out how to do that better."

—SCOTT BERINATO

To address the last mile problem, data science teams must map team member strengths against the talents required for effective communication.

To overcome the last mile communication problem, teams need six talents:

- Project management

- Data wrangling

- Data analysis

- Subject expertise

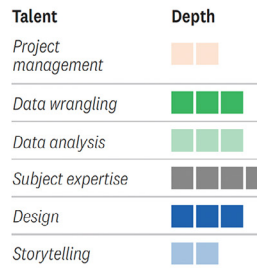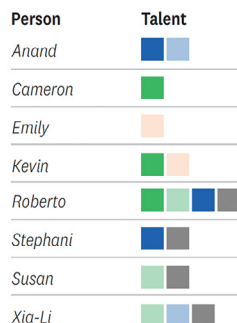- Design

- Storytelling skills

Managers must avoid assigning a person to each talent. In reality, one person may have multiple talents and those talents may cross domains. For example, a data analyst may also be good at storytelling or a subject expert may also understand how to wrangle data.

A best practice is to map your team against the six talents. Teams usually work on multiple projects and communicate more than one dataset at a time to stakeholders. As a result, managers must understand what skills are available and are needed at any given time on a project.

The six talents also come into play when analyzing structured and unstructured data.

STRUCTURED DATA	UNSTRUCTURED DATA
Focuses on creating a hypothesis and driving to the insights needed based on that data.	More about exploration. It represents a programming and data challenge.
Key skills include project management, data analysis, and design.	Since unstructured data can be volatile, data wranglers and power data users must be in command.

Talents Mapped to People, Bench

Person	Talent
Anand	■ ■
Cameron	■
Emily	■
Kevin	■ ■
Roberto	■ ■ ■ ■
Stephani	■ ■
Susan	■ ■
Xia-Li	■ ■ ■

Talent	Depth
Project management	■ ■
Data wrangling	■ ■ ■
Data analysis	■ ■
Subject expertise	■ ■ ■ ■
Design	■ ■ ■
Storytelling	■ ■

Talents Mapped to Projects

Upcoming project plan

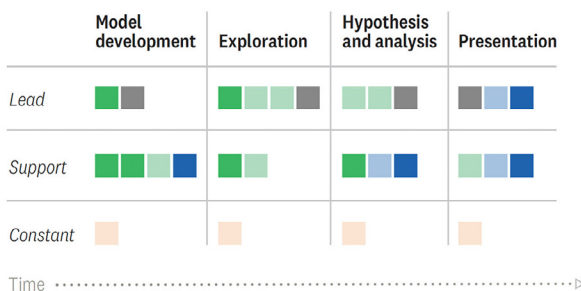|	Model development	Exploration	Hypothesis and analysis	Presentation
Lead	■ ■	■ ■ ■	■ ■ ■	■ ■ ■
Support	■ ■ ■ ■	■ ■	■ ■ ■	■ ■ ■
Constant	■	■	■	■
Time	....▷			

FIGURE 1: MAPPING TALENTS TO PEOPLE AND PROJECTS

Well-defined business processes enable companies to identify and communicate valuable insights from data.

Long before teams begin visualizing data insights, they must engage in conversations with stakeholders to identify what they want to know and what questions they want answered. This alignment is a business process challenge, rather than a data visualization challenge.

Project management skills are important for developing workflows. Creating hypotheses for the analysis, for example, is the first step in a repeatable process for finding insights. Start with small hypotheses that are focused and clear, then grow from there.

Both data science teams and leadership teams must build skills to support effective data-driven decision making.

Unfortunately, the tools that are good at analyzing data often aren't good at effective presentation of insights. This is where data science teams must bridge that gap. It is essential to pair design and storytelling skills with data skills.

For a century, data visualization was created by data analysts who worked directly with drafts people and business stakeholders to create visual insights. Focus on bringing design skills into the data team and leverage those skills.

On the leadership side, many business stakeholders expect data analysis to produce silver bullet solutions. In reality, data science deals with probabilities and ranges of potential outcomes. Data can inform decision making, but it won't always provide a clear path forward. Business leaders must understand data science concepts like probability, multiple outcomes, and that correlation doesn't mean causation.

Data literacy is essential for leaders at all levels.

Critical thinking and data literacy on the business side are critically important. There are no objective charts. Every chart is a manipulation. People are constantly making decisions about what data to show and not show. Sometimes those decisions are conscious and sometimes they are subconscious. Two people can analyze a dataset and product two charts with completely different outcomes. The important thing is the intention; the goal must be to create an insight that is useful, addresses a need, and isn't manipulative in a negative way.

"Every person should have data literacy skills and understand the basics of visualization. The world runs on data. You need to know how to use, read, and critique charts, as well as how to think critically about the information in them."

—SCOTT BERINATO

Storytelling helps audiences understand the data and what is possible.

Storytelling with data is an important skill. When teams engage in data storytelling, they control the message and release it to the audience using a particular pace and order. Storytelling is different from showing a chart and saying, "Here's the insight."

All stories follow a simple three-part structure:

1. THE SETUP	2. THE CONFLICT	3. THE RESOLUTION
The current reality	Changes the reality	Presents a new reality, after the conflict has been resolved

Visual communication can be fit into this three-part framework: give the audience something to understand, change that thing, and then show them what happens after the change.

With presentations, focus on "time to comprehension per slide" rather than meeting a "slide quota."

When teams create presentations, they often try to limit their slides to a certain number. A more important metric, however, is time to comprehension per slide. That is, how long must you spend on a slide before the audience gets it and you can move on? The goal is to be simple and clear.

It is preferable to have a 100-slide presentation with three seconds to comprehension on each slide rather than a five-slide presentation where the audience spends 20 minutes on each slide.

"Effective communication isn't always beautiful, but it's clear. Clarity is different than beauty or simplicity. We aren't actually visualizing data; we're exposing ideas in the data. When you are clear, your charts become beautiful."

—SCOTT BERINATO

Scott Berinato, senior editor at *Harvard Business Review*, is an award-winning writer, editor, content architect, and self-described "dataviz geek" who relishes the challenge of finding visual solutions to communication problems. At HBR he has championed the use of visual communication and storytelling and has launched successful visual formats, including popular narrated infographics, on HBR.org.

Before joining HBR, Scott was an executive editor at CXO Media, where he pioneered the use of visual features in several of the company's publications.

In addition to his work on visualization, he also enjoys writing and thinking about technology, business, science, and the future of publishing. He has a master's degree in journalism from the Medill School at Northwestern University.

Digital transformation. The phrase has been used so freely that it can be hard to know what it really means—or its implications for your business. Simply put, it's using digital technology to change how businesses operate and interact with customers.

On one side of digital transformation are the forces acting on a business: lightning-fast data, emerging technologies, fierce competition, and greater customer demands. And on the other, all the things an organization must do to transform itself in an increasingly digital world.

This includes applying new and existing technology in novel ways. Rethinking organizational and cultural structures. Reshaping the customer experience. And of course, managing vast amounts of complex data. When it all comes together—people, processes, and technology—you can make split-second, intelligent decisions at scale.

The introduction of digital technologies has sparked new business models and revenue streams—where progress isn't measured in months or years, but in every single decision. Emerging technologies like cloud computing, IoT, and AI accelerate transformation. And foundational technologies like data management and analytics are needed to analyze massive amounts of data.

It's worth noting that despite today's technological renaissance, the role of analytics hasn't changed. Its focus has been, and will continue to be, uncovering data-driven insights. Whether your data is on-premises, in a cloud, or at the edge—analytics needs to be there. Think of analytics as a compass pointing in the right direction no matter how the technology landscape moves under your feet. Analytics has changed in one respect, however: It's more of a differentiator than ever. That's why it's essential to embed it into all your operations and decisions.

Of course, whether it's AI or analytics, organizations need the right processes in place to make the most of them. This includes robust data governance, cross-departmental and cross-functional collaboration, and a clear approach to moving forward with analytics. With the right processes in place, incremental changes can create big improvements to an organization's scalability and flexibility—not to mention bottom line.

Finally, having the right people—and fostering their skills—is perhaps the most important factor of all. You need to enable analytics skills at all tiers of your organization, especially in those that have the greatest domain knowledge. This is how you build a culture that is adaptable, forward-thinking, and dedicated to digital transformation.

It's never too late to create the right analytical framework and strategy. Success comes when people, processes, and technologies converge to create an environment where change occurs dynamically. This is what gives life to a digital business that delivers the products, services, and experiences that customers value.

SAS is proud to partner with HBR to provide you with these articles from respected global thought leaders. We hope you find the content useful in your organization's evolving digital transformation journey.

To learn more, visit sas.com/viya.