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Making data analytics work: Three key challenges

Across industries, “big data” and analytics are helping businesses to become smarter, more productive, and better at making predictions. Tapping this potential for your organization begins with shaping a plan.

By now, most companies recognize that they have opportunities to use data and analytics to raise productivity, improve decision making, and gain competitive advantage. “Analytics will define the difference between the losers and winners going forward,” says Tim McGuire, a McKinsey director.

But actually mapping out an analytics plan is complicated. You have to set a strategy; draw a detailed road map for investing in assets such as technology, tools, and data sets; and tackle the intrinsic challenges of securing commitment, reinventing processes, and changing organizational behavior. Our collection of content, which synthesizes key insights drawn from many analytics projects, sets out the key issues, whether you are launching a pilot project or a large-scale transformation.

“Big data: What’s your plan?,” available on mckinsey.com, sets out the imperative task: to develop a plan that brings together data, analytics, frontline tools, and people to create business value. Only by spending the time to craft a plan can executives establish a common language to focus on goals and on ways of getting started.

In the first of three videos, Tim McGuire sets out the triple challenge that companies face: deciding which data to use (and where outside your organization to look), handling analytics (and securing the right capabilities to do so), and using the insights you’ve gained to transform your operations. Misconceptions around these tasks trip up many companies.

In another video, Matt Ariker, of McKinsey’s Consumer Marketing Analytics Center, focuses on the human element: the skills needed; how to organize and integrate new capabilities, people, and roles; and the mind-set and behavioral changes organizations must make to become data driven. Finally, McKinsey expert Matthias Roggendorf outlines the essentials of a business case for implementing a data transformation.

What follows are edited transcripts of the three video interviews.

Data analytics: Three key challenges

An interview with Tim McGuire

Big data and advanced analytics has become a top-of-mind issue for business leaders around the world for very simple reasons. It is going to define the difference between winners and losers in most of our industries going forward. The ability to get incremental results out of the marketing dollars, the ability to get incremental margin out of pricing and promotions decisions, the ability to get incremental sales out of better supply-chain and management decisions—all of those things are starting to define the gap between the winners and the losers.

So the interest is very high. The challenge is figuring out how to start and how to really get after these ideas and to turn them from something more than great dinner-party conversation or great industry-conference conversation, and instead turn them into things companies are acting on every single day.

From data to analytics to results

Well, we really see three big challenges that players face when they try to get into this in the first place. The first one is figuring out what data they actually want to use. There is a tremendous amount of data that is generated internally, customer-transaction data, internal-supply-chain data, lots of performance data across the company.

Just handling that alone is a big challenge for most companies. But that's not where all the value can be created. We see real value in understanding what other data sources are available and bringing external data into play—whether that is weather and climate data, whether that is traffic-pattern data, whether that is competitive data—to understand what other prices are being offered in the market.

Really determining which data to use, how to source it, and how to get it together into an integrated form that can be used across the company is the first challenge. The second challenge then is the analytics themselves. This is a highly math-intensive, analytic-modeling exercise. Getting that right, getting the right skills and capabilities, getting people who really know how to use the latest mathematical techniques and the latest statistical methodology to get inside that data and find the real nuggets of gold is the second major challenge.

The third one, and probably the hardest of all, is to take those insights and use them to transform the way the business operates. It does no good whatsoever to actually draw insights out of the data if you're not going to change the business decisions you make, if you're not going to change the way managers operate on a day-to-day basis.

We've seen many examples of companies that accumulate a big pile of data and don't do more. And that means all they have is a big pile of data. If you're not willing to commit to getting all three steps right—the right data, the right modeling capability, and the right transformational methods to have your people act differently and make decisions differently—then don't start the journey.

Start with a hypothesis

You certainly do need to start with a sense as to what problem you're trying to solve. Otherwise, you can go on a mindless exploration of a big mountain of data and hope that eventually you find something in there. And we've worked with a number of clients where we've come in after they've spent 6 months, 12 months, 18 months burrowing away in the data, hoping that it would magically spit something out that they could use.

And in most cases, it doesn't. In most cases, you do need to have a sense of what you're trying to achieve and then find the data that will help you get there, find the analytics that will pull those insights out of the data, identify the people you want, the behaviors you want, and the transactions you want, in order to make things work.

Changing the organization

The toughest part of all is the transformation capabilities—the ability to take a bunch of people who have been operating in the same way for many, many years in the industry and have them understand that they now need to do things differently. That's a real change-management challenge. In many cases, you'll be able to take the existing people and train them in new methods and new processes and new skills.

In some cases, you won't. You'll need to supplement that group with new people who have grown up in a different environment or have a different way of thinking about the business. But again, unless you're willing to change the way you make decisions and the way you implement new plans in the business, all of the insight out of the data won't solve anything. □

Building a data-driven organization

An interview with Matthew Ariker

Defining capabilities

The capabilities needed include the traditional things that people run to, like technology, hardware and software, and types of applications. But the truth is, there are a lot of capabilities that have to be built around the organizational design, the people, and the processes. Because the truth is, when you finish building your infrastructure, and you have big data and big analytics, you have to figure out who's going to use it, how it's going to be used, and what kind of analysts you are going to have.

Do you need data scientists or just analysts? Do you need a business-solution architect or is it a simple database? In addition to that, how do you make sure that the data you get is good, clean data? You know, the old "garbage in, garbage out" still applies.

If garbage is brought into a great model, the model itself doesn't give great results. So data hygiene, data cleansing, and having data governance around who's responsible for keeping and securing clean, accurate data that gets fed into the big-data analytics becomes very, very important.

So it's more than just the hardware, infrastructure, software, and applications. It's the people and the governance around it. And we see companies and clients working towards centers of excellence, and distributed centers of excellence. But they focus on that kind of breadth.

Creating a service culture

A lot of our clients start there. "Should we centralize our analytics or should we decentralize them?" I don't think that's perhaps the first question. I think the first question is, "How do you make sure that the organization responsible for the analytics looks at their job as a service bureau and makes sure that they are providing useful and used analytics to internal customers?"

There are advantages to centralizing. As an example, for some of our more advanced data scientists, their definition of a funny joke is about SAS¹ and SQL.² Most of us don't get that. They want to be in a culture that makes them rewarded and protected, but they want to see their analytics used and useful.

¹ Statistical Analysis Software.

² Structured Query Language.

And so, yes, you can focus on centralizing and decentralizing, but first we would suggest that you focus on, “Are you creating the right service bureau culture? Are your analysts doing analytics for analytics’ sake or to help the business? If the latter, who in the business? And does that business user believe they were helped?” And so that’s a framework that we find is very helpful as companies sort through how much to centralize and how much to decentralize. And it’s always a mix between both.

Pivotal roles

There usually are four or five kingpin roles, where a tremendous amount of deep expertise can be shared in a way that helps a lot of internal constituents and customers. Those roles really fall into the data scientist category—business-solution architects, campaign experts, and advanced modelers.

Those roles are really critical. The business-solution architect is someone who’s going to really understand how to create the right big-data warehouse, so you can use the data and so that it’s accessible and useful.

The data scientists are folks that are going to really help create that advanced modeling, but also they’re going to be able to programmatically take those models and make sure they’re repeatable and use programming language to reduce some of the human interaction.

The campaign experts are the folks at the last mile. If you have a great model but you can’t turn the model into a campaign that touches a consumer or a customer, you have nothing. So campaign experts are that last mile. They make sure that the models get turned into results that turn into actions. And those are some of the key roles that are really, really important to make sure that a client can leverage big data effectively and quickly. □

Transforming data

An interview with Matthias Roggendorf

Defining the business value

It's essential to have a business case for your data transformation. Many organizations somehow slip into a transformation state where they have basically several IT projects being run. And that's, I think, not the best way. You need to be very clear on what kind of business value you want to create with your data transformation.

It's very important to think carefully about what the benefits are from better data, from highly integrated data, and from data in higher quality. And so what we usually do with our clients is start developing this business case, even if it's very high level and coarse at the beginning. You need to make sure that within six to nine months after you have started a large data transformation in your organization, you start showing benefits to the business.

There needs to be something which is given to the business, otherwise it loses momentum and it loses interest from the business side. So having the business case and continuously iterating this business case, and refining it as you learn, is an essential component. What we have done with some of our clients is actually engaging into pilots. Because people want to see, "Is this really value generating, is this really returning the benefits we are hoping from this?"

Managing the life cycle of data

There's definitely a lot of work to be done in terms of finding the right algorithm and finding the right way of leveraging your data assets, but at the same time you also need to work on the basics. What is the target picture, in terms of your governance structure, in terms of your data architecture, and in terms of the data-quality levels you want to achieve?

There is a lot of work around data-life-cycle management, who owns data, who manages the data, what are the processes behind who decides on certain design decisions and certain data-operations decisions. Data security is a big topic as well. Creating this holistic view across data sources, data repositories, and data capabilities from an architectural point of view, is something we haven't seen at many places. □