

How companies are using big data and analytics

April 2016

Just how do major organizations use data and analytics to inform strategic and operational decisions? Senior leaders provide insight into the challenges and opportunities.

Few dispute that organizations have more data than ever at their disposal. But actually deriving meaningful insights from that data—and converting knowledge into action—is easier said than done. We spoke with six senior leaders from major organizations and asked them about the challenges and opportunities involved in adopting advanced analytics: Murli Buluswar, chief science officer at AIG; Vince Campisi, chief information officer at GE Software; Ash Gupta, chief risk officer at American Express; Zoher Karu, vice president of global customer optimization and data at eBay; Victor Nilson, senior vice president of big data at AT&T; and Ruben Sigala, chief analytics officer at Caesars Entertainment. An edited transcript of their comments follows.

Interview transcript

Challenges organizations face in adopting analytics

Murli Buluswar, chief science officer, AIG: The biggest challenge of making the evolution from a knowing culture to a learning culture—from a culture that largely depends on heuristics in decision making to a culture that is much more objective and data driven and embraces the power of data and technology—is really not the cost. Initially, it largely ends up being imagination and inertia.

What I have learned in my last few years is that the power of fear is quite tremendous in evolving oneself to think and act differently today, and to ask questions today that we weren't asking about our roles before. And it's that mind-set change—from an expert-based mind-set to one that is much more dynamic and much more learning oriented, as opposed to a fixed mind-set—that I think is fundamental to the sustainable health of any company, large, small, or medium.

Ruben Sigala, chief analytics officer, Caesars Entertainment: What we found challenging, and what I find in my discussions with a lot of my counterparts that is still a

challenge, is finding the set of tools that enable organizations to efficiently generate value through the process. I hear about individual wins in certain applications, but having a more sort of cohesive ecosystem in which this is fully integrated is something that I think we are all struggling with, in part because it's still very early days. Although we've been talking about it seemingly quite a bit over the past few years, the technology is still changing; the sources are still evolving.

Zoher Karu, vice president, global customer optimization and data, eBay: One of the biggest challenges is around data privacy and what is shared versus what is not shared. And my perspective on that is consumers are willing to share if there's value returned. One-way sharing is not going to fly anymore. So how do we protect and how do we harness that information and become a partner with our consumers rather than kind of just a vendor for them?

Capturing impact from analytics

Ruben Sigala: You have to start with the charter of the organization. You have to be very specific about the aim of the function within the organization and how it's intended to interact with the broader business. There are some organizations that start with a fairly focused view around support on traditional functions like marketing, pricing, and other specific areas. And then there are other organizations that take a much broader view of the business. I think you have to define that element first.

That helps best inform the appropriate structure, the forums, and then ultimately it sets the more granular levels of operation such as training, recruitment, and so forth. But alignment around how you're going to drive the business and the way you're going to interact with the broader organization is absolutely critical. From there, everything else should fall in line. That's how we started with our path.

Vince Campisi, chief information officer, GE Software: One of the things we've learned is when we start and focus on an outcome, it's a great way to deliver value quickly and get people excited about the opportunity. And it's taken us to places we haven't expected to go before. So we may go after a particular outcome and try and organize a data set to accomplish that outcome. Once you do that, people start to bring other sources of data and other things that they want to connect. And it really takes you in a place where you go after a next outcome that you didn't anticipate going after before. You have to be willing to be a little agile and fluid in how you think about things. But if you start with one outcome and deliver it, you'll be surprised as to where it takes you next.

Ash Gupta, chief risk officer, American Express: The first change we had to make was just to make our data of higher quality. We have a lot of data, and sometimes we just weren't using that data and we weren't paying as much attention to its quality as we now need to.

That was, one, to make sure that the data has the right lineage, that the data has the right permissible purpose to serve the customers. This, in my mind, is a journey. We made good progress and we expect to continue to make this progress across our system.

The second area is working with our people and making certain that we are centralizing some aspects of our business. We are centralizing our capabilities and we are democratizing its use. I think the other aspect is that we recognize as a team and as a company that we ourselves do not have sufficient skills, and we require collaboration across all sorts of entities outside of American Express. This collaboration comes from technology innovators, it comes from data providers, it comes from analytical companies. We need to put a full package together for our business colleagues and partners so that it's a convincing argument that we are developing things together, that we are co-learning, and that we are building on top of each other.

Examples of impact

Victor Nilson, senior vice president, big data, AT&T: We always start with the customer experience. That's what matters most. In our customer care centers now, we have a large number of very complex products. Even the simple products sometimes have very complex potential problems or solutions, so the workflow is very complex. So how do we simplify the process for both the customer-care agent and the customer at the same time, whenever there's an interaction?

We've used big data techniques to analyze all the different permutations to augment that experience to more quickly resolve or enhance a particular situation. We take the complexity out and turn it into something simple and actionable. Simultaneously, we can then analyze that data and then go back and say, "Are we optimizing the network proactively in this particular case?" So, we take the optimization not only for the customer care but also for the network, and then tie that together as well.

Vince Campisi: I'll give you one internal perspective and one external perspective. One is we are doing a lot in what we call enabling a digital thread—how you can connect innovation through engineering, manufacturing, and all the way out to servicing a product.¹ And, within that, we've got a focus around brilliant factory. So, take driving supply-chain optimization as an example. We've been able to take over 60 different silos of information related to direct-material purchasing, leverage analytics to look at new relationships, and use machine learning to identify tremendous amounts of efficiency in how we procure direct materials that go into our product.

¹ For more on the company's "digital thread" approach, see "GE's Jeff Immelt on digitizing in the industrial space," on McKinsey.com.

An external example is how we leverage analytics to really make assets perform better. We call it asset performance management. And we're starting to enable digital industries, like a digital wind farm, where you can leverage analytics to help the machines optimize themselves. So you can help a power-generating provider who uses the same wind that's come through and, by

having the turbines pitch themselves properly and understand how they can optimize that level of wind, we've demonstrated the ability to produce up to 10 percent more production of energy off the same amount of wind. It's an example of using analytics to help a customer generate more yield and more productivity out of their existing capital investment.

Winning the talent war

Ruben Sigala: Competition for analytical talent is extreme. And preserving and maintaining a base of talent within an organization is difficult, particularly if you view this as a core competency. What we've focused on mostly is developing a platform that speaks to what we think is a value proposition that is important to the individuals who are looking to begin a career or to sustain a career within this field.

When we talk about the value proposition, we use terms like having an opportunity to truly affect the outcomes of the business, to have a wide range of analytical exercises that you'll be challenged with on a regular basis. But, by and large, to be part of an organization that views this as a critical part of how it competes in the marketplace—and then to execute against that regularly. In part, and to do that well, you have to have good training programs, you have to have very specific forms of interaction with the senior team. And you also have to be a part of the organization that actually drives the strategy for the company.

Murli Buluswar: I have found that focusing on the fundamentals of why science was created, what our aspirations are, and how being part of this team will shape the professional evolution of the team members has been pretty profound in attracting the caliber of talent that we care about. And then, of course, comes the even harder part of living that promise on a day-in, day-out basis.

Yes, money is important. My philosophy on money is I want to be in the 75th percentile range; I don't want to be in the 99th percentile. Because no matter where you are, most people—especially people in the data-science function—have the ability to get a 20 to 30 percent increase in their compensation, should they choose to make a move. My intent is not to try and reduce that gap. My intent is to create an environment and a culture where they see that they're learning; they see that they're working on problems that have a broader impact on the company, on the industry, and, through that, on society; and they're part of a vibrant team that is inspired by why it exists and how it defines success. Focusing on that, to me, is an absolutely critical enabler to attracting the caliber of talent that I need and, for that matter, anyone else would need.

Developing the right expertise

Victor Nilson: Talent is everything, right? You have to have the data, and, clearly, AT&T has a rich wealth of data. But without talent, it's meaningless. Talent is the differentiator. The right talent will go find the right technologies; the right talent will go solve the problems out there.

We've helped contribute in part to the development of many of the new technologies that are emerging in the open-source community. We have the legacy advanced techniques from the labs, we have the emerging Silicon Valley. But we also have mainstream talent across the country, where we have very advanced engineers, we have managers of all levels, and we want to develop their talent even further.

So we've delivered over 50,000 big data related training courses just this year alone. And we're continuing to move forward on that. It's a whole continuum. It might be just a one-week boot camp, or it might be advanced, PhD-level data science. But we want to continue to develop that talent for those who have the aptitude and interest in it. We want to make sure that they can develop their skills and then tie that together with the tools to maximize their productivity.

Zoher Karu: Talent is critical along any data and analytics journey. And analytics talent by itself is no longer sufficient, in my opinion. We cannot have people with singular skills. And the way I build out my organization is I look for people with a major and a minor. You can major in analytics, but you can minor in marketing strategy. Because if you don't have a minor, how are you going to communicate with other parts of the organization? Otherwise, the pure data scientist will not be able to talk to the database administrator, who will not be able to talk to the market-research person, who which will not be able to talk to the email-channel owner, for example. You need to make sound business decisions, based on analytics, that can scale. ▣

Murli Buluswar is chief science officer at AIG, **Vince Campisi** is chief information officer at GE Software, **Ash Gupta** is chief risk officer at American Express, **Zoher Karu** is vice president of global customer optimization and data at eBay, **Victor Nilson** is senior vice president of big data at AT&T, and **Ruben Sigala** is chief analytics officer at Caesars Entertainment.