

WHITE PAPER

Big Data Culture Clash

Unlock The Promise of Data – Before It's Too Late



Big Data Culture Clash: Unlock The Promise of Data – Before It’s Too Late!

Challenge

Overcome legacy decision-making culture in a data-driven world.

At Stake

A recent gathering of CIOs voted “build data-driven culture” their number one priority, for a good reason: big data has become the big differentiator in business. But without a corporate culture that embraces data-driven decision making, the best big data systems in the world go for naught.

Solution

Organize for success, pairing business and technology systems and talent.

The importance of data-driven culture is crystalized by the stark contrast between two companies’ stories told below. There’s the established retailer that thought itself so wise in the art of apparel merchandising that no amount of data-driven insight could influence its chosen course — resulting in dis-alignment with consumer demand and sluggish sales. Then there’s the digital-age entertainment and media company, whose real-time analysis of customer data propelled decision-making ahead of its competitors, reduced time-to-market and cost, increased revenue and share price — and won an Emmy with an industry-changing blockbuster.

The ability to analyze massive structured and unstructured data sets in search of insight may be the most powerful technology trend to impact business performance in decades. It is no longer a leap of faith to say that big data analytics provides the “of the moment” ability to understand and leverage customer behaviors that change with extreme and increasing speed.

All that said, there’s a HIPPO in the room that can no longer be ignored.

Big data faces a BIG hurdle — but it’s one CIOs can and should take the lead in leapfrogging: overcoming legacy decision-making culture.

While there have always been companies at which big data is integral to driving strategy and decision-making, their number is still relatively small. For the rest, less scientific methods prevail. These vary from “tastemakers” once renowned for divining consumer preferences to the “highest-paid person’s opinion” (the above HIPPO in the room).

But today, markets and customer behaviors are changing far too fast for solely intuition-based decision-making methodologies to suffice. Consequently, an organization’s ability to gain business insight from big data is a key factor that will separate winners from losers. It’s why CIOs voted “Build Data-Driven Culture” their number one priority at The Wall Street Journal’s CIO Network conference in February 2014.¹

Companies that successfully build data-driven cultures will get smarter and smarter, becoming more closely attuned to changing customer behavior. Competitors who do not will fall behind, increasingly out-of-sync with fast-changing customer behavior and marketplace dynamics.

Notably, despite well-known infrastructure, security, compliance, development, and data management and handling challenges, CIOs are far less concerned about enabling technology for big data than they are about instilling data-driven cultures throughout their enterprises. Emerging managed services in the cloud put production-ready big data infrastructure solutions at the ready, helping CIOs focus instead on application-level business analytics

— and the far thornier challenge of championing progress toward true data-driven cultures.

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Overcoming Legacy Bias

One of data's greatest contributions to business decision-making is serving as the voice of the customer. Many companies that have developed data-driven cultures say the voice of the customer takes prime position over every other point of view in the organization — right up to the CEO.

Yet even in marketing, where automation and programmatic ad buying use advanced data analysis — and where the voice of the customer should be paramount — recent research showed a lack of data analysis driving outcomes. In a survey of 160 global retailers by Direct Marketing News, nearly 60 percent said they don't even integrate insights from site search or related audience data to boost marketing campaigns. Nearly one in three said they aren't sure how to use such data, reflecting clear gaps in talent and culture.²

Michael Hickins, Editor of The Wall Street Journal's CIO Journal, provides a further example. Quoted in a blog, Hickins describes a retailer whose merchandisers insist on displaying outfits instead of separates, despite the fact that the retailer's director of business intelligence told him, "We know people don't buy outfits. We're trying to make the data more obvious to them, so that they can see people don't buy outfits and will stop wasting so much time and money trying to put outfits in front of customers."³

"That retailer has a difficult cultural issue," Hickins notes in the post. "Creating fashion is an art form, there is no doubt, but selling clothing doesn't have to be. But for their merchandisers, it is about art. It's about my feelings, my experience, my conversations with customers in the stores. But the data is the reality, and they're ignoring it. Until they transform that culture, they're not going to accelerate that business's growth."

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Michael Hickins Editor, CIO Journal

Contrast these examples with Netflix, which won an Emmy and resounding success with the House of Cards series after being the only media company willing to purchase the show without requiring a pilot to forecast audience engagement. Netflix's source of confidence: data about customers' viewing habits.⁴ A second Netflix example drives home the value of customer data. An amazing 75 percent of what Netflix subscribers watch begins with a Netflix recommendation based on other customers' activities.⁵ Stated in big data terms: targeted, data-driven offers increase customer engagement, satisfaction and revenue.

These examples show the mechanism by which big data will sort winners from losers in so many markets. The retailer is falling further and further out-of-sync with its customers, while Netflix not only stays in sync with continuous insight from customer interaction data — it also leverages that data in real-time to drive business growth.

There are several approaches CIOs can take to foster a culture of data-driven decision-making, ranging from issues of technology agility to psychology.

For example, CIOs must assure business analysts that data is sound, instilling confidence in the resulting insights that lead to business decisions. And when seeking executive buy-in to a

data-driven strategy, it's best to develop recommendations using customer examples and terminology. Don't overwhelm with facts and figures destined to confuse; instead, use concrete, credible scenarios focused on the customer. Also important: demonstrating the IT agility necessary to support increasing demand for data-driven systems with production-ready big-data infrastructure.

Companies with data in their DNA also guard against "confirmation bias" — the practice of determining a strategy, then setting out to support it with data. Data-driven companies are "more question-driven than justifying answers," says Heidi Messer, co-founder and chairman of Collective[i], whose analytics software leverages internal and external data for business users. Messer is the big data subject expert for The Wall Street Journal's CIO Network. This shows how willingness to test ideas is a key trait of a data-driven company. They test, measure, then move forward or kill ideas based on data.

Finally, "Data-driven cultures are prepared to run datasets through a battery of algorithms to understand a variety of potential outcomes," says John Martin, Chief Architect, Big Data Strategy at CenturyLink Business, which offers a managed Hadoop "big data foundation" service. Adds Martin: "Big data is too valuable to have it constrained to preconceived outcomes."

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Use All Your Data

An element that is critical for successful data-driven cultures is using all the relevant data you can muster, including internal and external data sources.

Noted technology investor and board director Esther Dyson, whose investments range from data-driven social networks Facebook and LinkedIn to human genome startup 23andMe, notes that, "Being data driven is good, but to the extent you're data driven and you look only at some data, you may miss long-term trends."

She offers a hypothetical example of a soft drink company focused only on the data that shows how much customers love the taste of its soda. "So they're not looking at the data about the obesity crisis. Sometimes if you look at short-term data, you get a very precise view but it's like looking through a telescope — you see clearly but you have no field of vision," Dyson says.

“Even data-driven companies typically analyze only about 15 percent of all their data, thus leaving potentially valuable insights unseen. CIOs could become big data heroes by making the other 85 percent of data available for analysis.”

William Peterson Director, Big Data Marketing & Strategy, CenturyLink Business

William Peterson, Director, Big Data Marketing and Strategy at CenturyLink, agrees — emphatically. “Even data-driven companies typically analyze only about 15 percent of all their data, thus leaving potentially valuable insights unseen,” says Peterson, adding: “CIOs could become big data heroes by making the other 85 percent of data available for analysis.”

Peterson notes the example of a transportation company he once worked with that made a concerted effort to pull decades worth of archival data into an analysis of its operational efficiency over time. The result was surprising insights that led to important cost savings and operational improvements.

Organize for Success with a Chief Data Officer and Multi-Skilled Staff

It’s a popular source of humor that great math and great communications skills don’t usually come packaged together — just watch an episode of *The Big Bang Theory*. But that’s exactly the kind of duality of skills data-driven cultures require — and why it’s so challenging to find the talent you need. Besides math and communications, data-driven cultures demand team players equally comfortable with technology and business drivers.

“You need people who truly understand data,” says Andrew Markowitz, Director, Global Digital Strategy for General Electric. “I don’t mean interpreting a Nielsen dashboard; you need people who understand where the areas of opportunity are, what the meaningful insights are, and are able to take those and put them to use in the most effective way.” What it takes, Markowitz believes, is flipping the paradigm from, “What can I accomplish with all this data” to “I’m in the middle of a bid for a specific program; how can data analysis help me?”

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At Carnegie Mellon University’s CIO Institute, Director Ari Lightman has set about to produce graduates with just such multiple skillsets. “Data-driven cultures are part of what’s propelling the need for a new skillset that is more business oriented,” says Lightman. “It represents a bridge, basically, between IT capabilities and different departments across the organization. They need to speak IT, and they also must speak the business language associated with that department. They ‘get’ the organization’s strategic drivers, but also understand, for example, robust information security.”

CenturyLink’s Peterson says companies wishing to stay in sync with customers and markets are increasingly carving out Chief Data Officer roles. “The Chief Data Officer is someone who is always asking whether we’re accelerating business insight with every piece of data in the organization, regardless of business units and siloes,” says Peterson. “It’s someone who looks at that other 85 percent of the company’s data, and figures out how to use it effectively, and makes certain the architecture and design is right for solving the business’s real-world challenges,” notes Peterson. Most companies place the Chief Data Officer within the CIO’s organization.

As companies develop the ranks of data analysts, they often must decide between specialists in a particular industry, analytics method or tool, and generalists who can nimbly navigate diverse business conditions. Multi-skilled generalists are better suited to fast-moving business environments.

Noted data analytics author Avinash Kaushik goes so far as to recommend a model he refers to as “70/30 people,” where 70 percent of the data analyst’s expertise is analytics and 30

percent in “immediately adjacent areas” such as marketing and customer service.⁶

“Embedding” analysts with the lines of business they support, or at least structuring the Chief Digital Officer’s team in alignment with them, helps to maximize this approach. Being embedded, as opposed to residing in a centralized analytics or data organization, helps team members master the nuances of each supported business/department.

Technology: Leveraging IT’s Expertise, Innovation Potential

Data-driven culture imposes many new requirements on IT infrastructure — requirements that represent a huge opportunity for IT to play a stepped-up role in corporate strategy. This doesn’t minimize the size of the infrastructure challenge, but it does raise the stakes for the CIO.

First, the vast quantities of data being managed demand that IT raise certain traditional capabilities to new levels, such as data center resiliency, system scalability, security, and compliance. Because some big data applications — especially proof-of-concepts — have been launched in a rogue or shadow mode, most IT organizations have some catching up to do on this score.

Most important is the agility of big data foundational solutions, so that business units can rapidly spin up explorations/proof-of-concepts. Scalability is also critical, to meet the coming surge in demand as more big data projects come online — and all those proof-of-concepts begin to move into production.

A big opportunity — for line-of-business leaders and IT — is to break new ground by moving to Internet-scale practices that have been used to capitalize on big data by social media and web companies such as Facebook and Netflix, which place data at the center of their business. With Internet-scale big data, the world doesn’t stop at the corporate perimeter. Instead, it opens up to almost any other data source imaginable. Those data sources could be appliances, machine-to-machine data as in the emerging Internet of Things, or weather or geospatial data for companies whose business is impacted by those factors.

At GE, for example, Markowitz explains, “Our appliances business has looked at social data and used it as a customer service opportunity. They can pinpoint where there are product discussions taking place, where there are selling opportunities and where a problem needs to be solved. So the appliance team has done a good job of using social data to solve a business problem, which is improving customer service.”

Conclusion: Data-Driven Culture Will Separate Winners and Losers

CIOs already know that data-driven culture is poised to separate the winners from the losers in just about every industry — that’s why they voted building data culture their number one priority.

While startups get to build data-driven culture from scratch, most established enterprises must manage a sometimes-painful transition from legacy decision-making cultures. The good news is, CIOs can acquire production-ready big data infrastructure in a relative eye blink, thus enabling them to focus on the task of managing the cultural change.

In the words of CIO Journal’s Hickins, quoted again from the previously mentioned blog post, “CIOs have the big data

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analytics tools they need to keep up with the crazy pace of communications between the customer and the business. It’s not easy, and it’s constantly changing, and it’s going faster than ever, but they have the tools. The issue is the willingness of the business units to be driven by data. That’s the bottleneck.”⁷

Big Data Culture Clash: 10 Key Issues & Actions

1. Markets and customer behaviors change too fast for legacy decision-making to keep pace.
2. Insights from big data will separate business winners from losers.
3. "Build Data-Driven Culture" was voted the number one priority of The Wall Street Journal's CIO Network.
4. Collect data for all aspects of your business and build analytics to answer critical business questions.
5. Hire a Chief Data Officer to drive big data infrastructure agility and culture.
6. Hire (or train) multi-skilled generalists — people who "get" the tech and the business unit mission.
7. Embed or align technology analysts with the business units they support.
8. Analyze all your data — most companies look at only up to 15%.
9. Look for long-term trends; avoid tunnel vision.
10. CIOs can champion the value of data-driven decisions by:
 - Creating plain-English, customer-centric examples
 - Instilling confidence that data is sound
 - Guarding against "confirmation bias"
 - Exploring all potential outcomes of an analysis

About Big Data Services from CenturyLink Business

CenturyLink Big Data Foundation Services combine CenturyLink's enterprise-grade global infrastructure and network connectivity with proven big data software in a fully hosted and managed service. Our big data solutions allow your organization to realize game-changing insights, operate with unprecedented speed and agility, and gain a true competitive edge. A longtime leader in managed hosting, CenturyLink stores and manages critical data for a wide range of enterprise clients, including five of the top 14 securities firms.

About CenturyLink Business

CenturyLink, Inc. is the third largest telecommunications company in the United States. Headquartered in Monroe, LA, CenturyLink is an S&P 500 company and is included among the Fortune 500 list of America's largest corporations. CenturyLink Business delivers innovative private and public networking and managed services for global businesses on virtual, dedicated and colocation platforms. It is a global leader in data and voice networks, cloud infrastructure and hosted IT solutions for enterprise business customers.

For more information visit www.centurylink.com/enterprise.

¹ "The CIOs' Top Priorities," The Wall Street Journal, February 10, 2014 ©2014 Dow Jones & Company, Inc.

² "Revenue Opportunities Marketers Can't Afford to Miss," Direct Marketing News, March 14, 2014 ©2014 Haymarket Media, Inc.

³ "Legacy Culture Is The Biggest Hurdle For Data-Driven Success," CMO.com, March 27, 2014 ©2014 Adobe Systems Inc.

⁴ "Kevin Spacey lands new keynote talk and 'House of Cards' threatens TV pilots," Examiner.com, February 16, 2014 © 2014 AXS Digital Group LLC

⁵ "Netflix Recommendations: Beyond the 5 stars (Part 1)," The Netflix Tech Blog, April 6, 2012 ©2014 Netflix, Inc.

⁶ "Empowering Analysis Ninjas? 12 Signs To Identify A Data Driven Culture," Occam's Razor ©2014 Avinash Kaushik

⁷ "Legacy Culture Is The Biggest Hurdle For Data-Driven Success," CMO.com, March 27, 2014 ©2014 Adobe Systems Inc.

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