

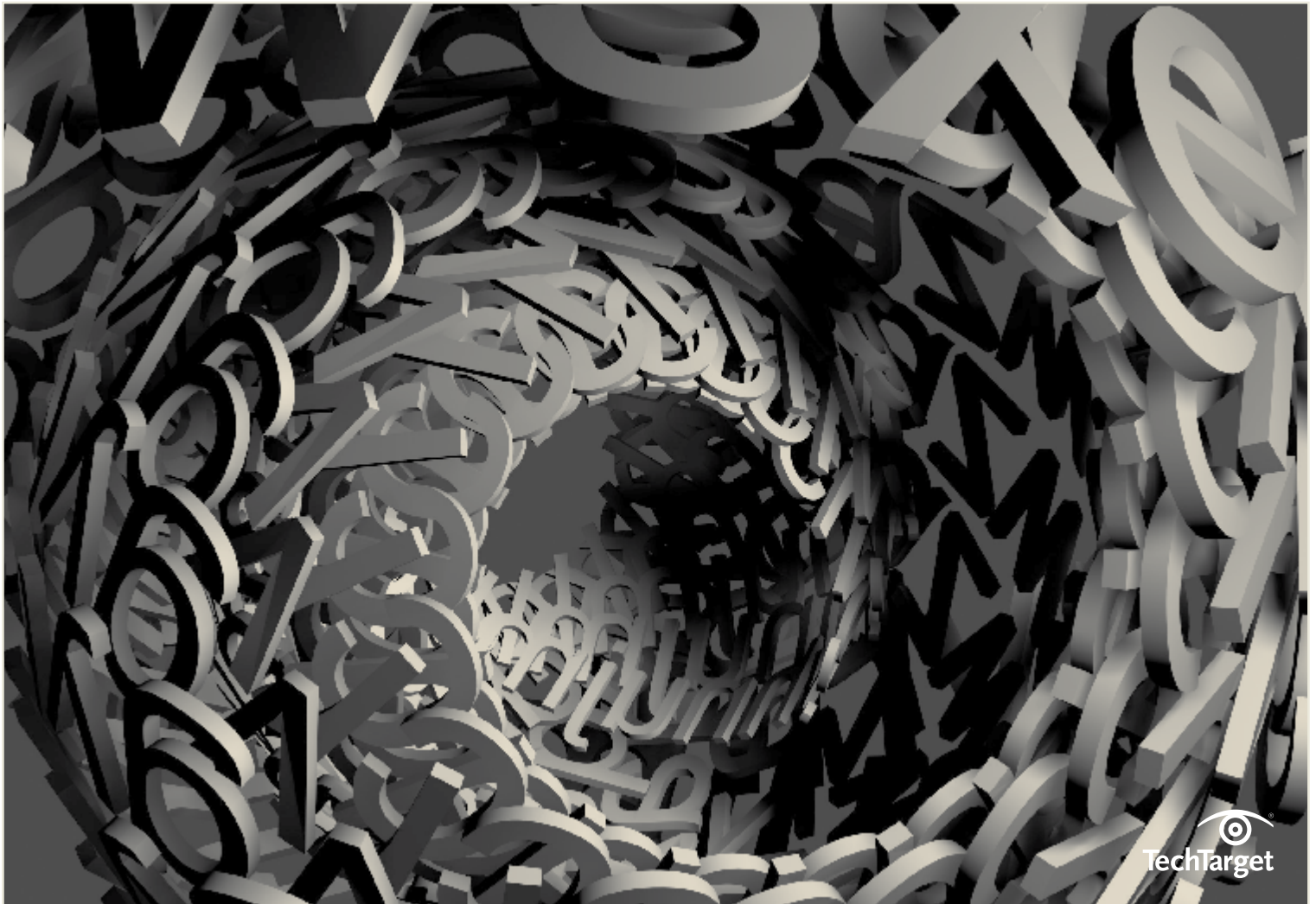
BI

*Trends +
Strategies*

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DON'T GET STUCK IN BIG DATA STOVEPIPES

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ONE OF Gartner Inc.'s recommendations for dealing with "big data" is that organizations able to integrate Web activity logs, social networking data and other forms of unstructured information into a coherent data management infrastructure will do better than competitors saddled with stovepiped Hadoop systems. As predictions go, that isn't going out on a limb: Data silos are a known enemy of effective business intelligence (BI) and analytics programs, and non-aligned big data systems can result in some mighty big silos.

In this issue of *BI Trends + Strategies*, Linda Tucci of TechTarget's SearchCIO.com reports on the [challenges of avoiding big data silos](#) and what IT, BI and data warehousing teams can do to cope with them. As Gartner analyst Ted Friedman points out, the data universe is expanding at a rapid clip, much like the real one. It's ratcheting up the degree of difficulty for organizations trying to gain insights from their data; Friedman's recipe for success includes focusing

on data that can provide business value and paying attention to data governance blocking and tackling.

Also in this issue, Nicole Laskowski of SearchBusinessAnalytics.com examines the [increasing adoption of mobile BI software](#) through the prism of some early adopters' experiences. Thanks largely to Apple's iPad, mobile BI has gone from curiosity to here-and-now reality in a growing number of organizations. One key piece of advice from Nicole's reporting: Mobile BI data needs to be actionable, not merely, er, curious.

Performance management sounds like a no-brainer: You manage performance. But BeyeNETWORK expert Craig Schiff writes that several common [missteps can render performance management systems ineffective](#). He offers advice on avoiding the pitfalls. ■

CRAIG STEDMAN

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BANE OF BI, INFORMATION SILOS GROW BIGGER WITH BIG DATA

Data silos can compromise the validity of business intelligence data—and the rise of big data is further complicating efforts to break them down. By Linda Tucci

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DAVID GALLAHER knows about information silos on a grand scale. As IT services manager for the National Snow and Ice Data Center (NSIDC) at the University of Colorado in Boulder, his job is to help process and manage petabytes of scientific data on the world's frozen realms and provide researchers with universal but controlled access to the data. Figuring out the mechanics of how best to do that is proving as much of an intellectual puzzle as unraveling the impact of global warming on Earth's polar regions, a core question behind the massive data collection.

"It drives us nuts," said Gallaher, a geologist by training. For starters, there is the question of where to put the data, an issue complicated by the fact that systems at multiple orga-

nizations are involved. For example, much of the high-resolution image data downloaded from a constellation of NASA satellites is destined for a central repository and processing system managed by the space agency. That database is designed to be asked "very precise things, precisely," Gallaher said.

But what happens with information that doesn't fit the NASA system's model? "That has huge implications," he said. "NASA has asked us to maintain a database here for all the weird stuff, and they maintain a database for all the central stuff. And there is a constant battle over where do we draw the line." NASA's tendency is to leave out information that is even a little outside the norm, "so you end up with what we call orphan data" in the NSIDC's system.

Also, as Gallaher points out, data

of any size is often “ugly,” with elements overlooked, deliberately left out, accidentally put in the wrong place or just flat-out wrong. Technology enables good, bad and ugly data to be dumped in a single system and queried to answer analytical questions. “But,” Gallaher said, “is it the right answer and how do you validate it?” NASA and the NSIDC are now considering the idea of building two data structures for the information maintained by the center, one to store all the data so it won’t be lost and another to support data analysis. “There may be a sweet spot there,” he said. “But now you’re taking enormous data and making it twice as enormous.”

Information silos have been the bane of business intelligence (BI) efforts for as long as organizations have been trying to extract meaningful intelligence from business data. Silos usually mean that the vaunted single version of the truth forming the bedrock of meaningful BI reports and analytics is really only a partial version of reality, and that efforts to make sense of data are, worst case, all for nothing.

In an era of “big data”—huge, frequently changing data sets from a variety of sources, often both structured and unstructured—BI’s partial-reality problem grows exponentially. Now the data silos to be reckoned with don’t just reside within company walls but are everywhere, from Web-based data sources and social

networking streams to data stored on mobile devices.

DATA CHALLENGES INCREASING WITH DATA VOLUMES

“The universe of data that people care about is not only already widely distributed and highly complex, but it also is expanding. The whole velocity around data is pretty extreme as well,” said Ted Friedman, an information management analyst at Gartner Inc. in Stamford, Conn. “All those things create a higher level of challenge in breaking down the silos and getting to some meaningful analytics across all that.”

So how can chief information officers (CIOs) and IT, BI and data warehouse managers eliminate silos of big data? According to Gartner, the task begins with what it calls “information valuation.” “Not all that data out there in the big ocean of data has the same degree of value,” Friedman said. “The challenge is in carving down the whole problem space to what is meaningful. I see clients setting the scope much too broadly.”

Identifying what is meaningful requires creating a vision about the value of data to the enterprise, Friedman said: “What can I truly get out of it? Where does it connect with the parts of our business and how can I generate some positive return? Those are the questions that can help organizations narrow the focus.”

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But as in traditional BI efforts, where companies need to keep the business in business intelligence, neither the mission statement nor the decision-making criteria for choosing which data to focus on can be the sole purview of IT, he added. Gartner is increasingly seeing companies create a data governance board or council of business-side

representatives to address strategic as well as tactical questions related to data, including data quality, retention, integration, security and privacy issues.

Critical to deriving value from large data sets is opening them up for exploration by lots of users, not just a handful of IT experts and analysts with specialized skills. But Friedman

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LARGE DATA SETS TOO BIG, AND VALUABLE, TO IGNORE

BREAKING DOWN information silos in “big data” business intelligence efforts—or deciding which silos to let be—is a challenge that CIOs and their IT teams are finding it harder and harder to ignore. Some of that pressure is self-generated: Rightly or wrongly, many companies became convinced during the recent recession that the ability to manage and mine large data sets was critical to their future success.

“A lot of business leaders felt that if they just had a little more access to information, they might have averted a problem with the supply chain or sales, or realized sooner that the just-in-time orders they were busy filling were about to dry up,” said Yvonne Genovese, a research analyst at Gartner Inc. in Stamford, Conn.

Gartner does think organizations that can successfully manage big data will outperform those that can't, and it isn't the only consultancy highlighting the connection between analyzing large data sets and business success. For example, in a May 2011 report titled *Big data: The next frontier for innovation, competition and productivity*, the McKinsey Global Institute made the case for the potential value lurking in big data, from operating margin increases of more than 60% at individual U.S. retailers to an 8% reduction in national health care spending.

But fewer than 30% of the world's companies are ready to manage big data, according to Gartner. Analysts say many organizations also lack the information architects and data scientists who often are critical to efforts to get business value from big data. ■

said that in the rush to harness big data, many organizations will lose sight of governance and “get hurt,” paying the price in privacy breaches, data fraud and other problems associated with amalgamating and opening up access to large data sets.

Gallagher said that is a huge concern at NASA and the NSIDC, where “we want to let people look at the data, but we have to make damn sure they can’t change it.” And yet, the form that the data takes is modified every time an algorithm is tweaked. As a result, he said, governance rules and processes are needed to ensure that the “right people are doing the changing.” The NSIDC partners with the National Science Foundation on the NSF’s efforts to address data governance; it also participates in NASA’s Federation of Earth Science Information Partners program, a network of scientists and IT professionals who work collaboratively on data governance and interoperability.

KEEPING AN IT TEAM RELEVANT—AND EFFECTIVE

For Christopher Perretta, CIO of State Street Corp. in Boston, the single biggest challenge that big data poses for IT leaders as a whole is figuring out how the IT department can help enterprises capitalize on it.

“How,” Perretta said, “do you structure an IT organization which has traditionally been structured by application and by function, as opposed to data?” In most traditional IT shops, no one is in charge of making sure data is accessible throughout the company. But effective information management—that can turn data into information and information into knowledge and then disseminate that knowledge enterprise-wide—is crucial to today’s data-driven businesses, he said.

Perretta said the push to break down silos and unlock information at State Street is driving the construction of “a whole new set of tools to handle very large data,” including private clouds for data processing and analytics. And you won’t get any argument from him on whose job it is to make data accessible throughout the financial services firm—or as he puts it, to act as “the linguist” to the digital enterprise.

“Occasionally, I look at my business card,” Perretta said. “It says ‘chief information officer,’ so I when I was looking around for someone to do this, I figured it must be me.” ■

Linda Tucci is senior news writer for SearchCIO.com. Her recent coverage has explored how technologies such as mobility, social networking and big data are recasting CIO roles and enterprise computing. She can be reached at ltucci@techtargt.com.

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MOBILE BI TOOLS ON MOVE AT LEADING-EDGE ORGANIZATIONS

The iPad has helped drive increased interest in mobile business intelligence, which is opening up BI data to new business users without tying them—or existing users—to their offices. By Nicole Laskowski

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O **N MARCH 7**, Apple unveiled the third model of the iPad. While the updated tablet PC was touted for its high-resolution screen and increased computing power, it's also expected to add more momentum to a mobile business intelligence (BI) movement that's just coming into its own.

Since the late 1990s, hopeful vendors have seen great potential for mobile BI tools. But the concept really didn't crystallize until the advent of smartphones and especially tablets, most prominently the iPad. Such products are capable of delivering visually compelling, interactive, easy-to-use dashboards and reports to business executives and workers wherever they are.

Mobile BI applications are also

capable of mesmerizing prospective users. For example, when representatives from Whole Foods Market attended software vendor MicroStrategy Inc.'s annual user conference early last year, they were "blown away" by a mobile BI presentation by the U.K.-based Tesco retail chain, according to Dave Zodikoff, global IT director at Whole Foods.

Tesco's iPad application "was beyond anything we had seen before," Zodikoff said as part of a webcast organized by MicroStrategy in late February. "Right there and then, we looked at each other and we knew we needed to do something for Whole Foods."

Soon after the user conference, Whole Foods, with help from MicroStrategy, embarked on creating a mobile application for its store managers. Zodikoff and his team

envisioned managers circulating through different departments in the Austin, Texas-based company's grocery stores while tapping on iPads to access sales and operational data. "We even went to the degree of thinking how we might change the apron the store managers were wearing to have a separate pocket just for the iPad," he said.

But they also wanted the end users to weigh in on how the new application should look and function. As it turns out, many store manag-

ers already had smartphones and weren't interested in carrying another device, Zodikoff said. Instead of the iPad, Whole Foods decided to initially roll out its mobile BI application on the iPhone and iPod Touch.

MOBILE BI BRINGS NEW USERS, NEW CHALLENGES

Mobile BI implementations could be the first time that some end users get access to business intelligence tools, said Howard Dresner, presi-

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QUESTION TIME: MOBILE BI ISSUES TO WEIGH BEFORE GETTING STARTED

TO BORIS EVELSON, an analyst at Forrester Research Inc. in Cambridge, Mass., some of the most pertinent questions to consider before deciding to deploy a mobile business intelligence (BI) application are similar to the ones journalists are trained to ask. "Who is going to use it," Evelson said, "and where and how?"

Another key issue to evaluate up front is mobile BI's potential effect on the design of end-user dashboards, according to David Stodder, director of BI research at The Data Warehousing Institute in Renton, Wash.

"If you're sitting in front of your PC or workstation, dashboards are just huge in an organization," Stodder said. "The issue is whether those dashboards can be transferred to the mobile device or if organizations need to develop whole new dashboards for those devices."

Static dashboards that work well on PCs may translate poorly to the unique form factor of a tablet PC or smartphone, Stodder said. But he added that if new dashboards are created, overall dashboard management could become more complicated. Mobile BI project teams, he said, need "to make sure they don't exacerbate what I think is another problem in some organizations: They have too many dashboards." ■

dent and founder of Dresner Advisory Services. “Businesses will have to consider what they’re going to give them, what metrics this person in this role needs—and how they’re going to render that on a 9- or 4-inch display,” said Dresner, who has conducted three surveys on mobile BI since mid-2010.

For Whole Foods, Zodikoff said the answer to the latter question turned out to be pretty basic: “Red, yellow, green.”

The 25 store managers selected to be part of a pilot group of mobile BI users wanted simple alerts for their most important operational and sales key performance indicators (KPIs) so they could grasp the information at a glance, he said. The color-coded system is designed to signal immediately which departments are functioning well and which need attention.

Whole Foods has begun rolling out the mobile BI application and plans to add support for Android smartphones, according to Zodikoff. Other planned enhancements include the addition of near-real-time reporting capabilities, with data updated every 15 minutes, and functionality for scanning bar codes and drilling down into data about sales of individual products.

John Lucas, until recently the director of operations at the Cincinnati Zoo, agrees with Zodikoff that BI data pushed out to mobile devices must be actionable. “We had to

figure out the things we wanted to know [right away] and the things that are noise or that we could figure out later,” Lucas said. “That needs to be defined by the business and not by IT.”

Before he joined consulting and professional services provider BrightStar Partners Inc. in Chicago several months ago, Lucas helped roll out a mobile BI application at the zoo as part of a larger business analytics project. One of the goals of the mobile BI initiative was to free zoo managers to leave their offices while still being able to access key business data.

NO SITTING AROUND WITH MOBILE BI TOOLS

“We’re in the people business,” Lucas said. “The last thing we could afford to do on a busy day was sit around looking at our Cognos dashboards. But it’s a dichotomy because, at the same time, we’re getting information from Cognos that helps us make some of these decisions.”

In addition to data on retail and food sales, users with iPads have access to daily attendance numbers and information on where visitors—categorized into different groups—have traveled from. Lucas said the latter information can help managers predict how busy gift shops will likely be at the end of the day and adjust staffing levels as needed. “The farther someone drives to get to

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your attraction, the longer someone spends when they arrive, the more they'll spend on food, retail and other things," he said.

For Novation LLC, a health care supplies purchasing organization in Irving, Texas, answering questions about potential use cases for mobile BI tools wasn't difficult. "We felt that it definitely was a part of our strategy to be innovative," said Hari Subramanian, director of mobile technologies at Novation. "And we want to always be ahead of the competition. So it was kind of a no-brainer for us."

Novation negotiates purchasing contracts for a network of not-for-profit hospitals and an alliance of academic medical centers. Member organizations use a Web interface to access cost and price analysis data and drill into information on spending patterns. About a year ago, as part of a larger analytics project, Novation decided to build a mobile application to provide an additional channel to the BI data.

Still, Subramanian said he's continually being asked to defend mobile BI's return on investment, and his six-person development team, to Novation executives.

Showing them "a gradual but consistent increase" in mobile usage is

a key justification, he added. To that end, Subramanian and his team are implementing additional interactive elements that they hope will drive mobile users to Novation's website more frequently—for example, auto-

"WE FELT THAT [MOBILE BI] DEFINITELY WAS A PART OF OUR STRATEGY TO BE INNOVATIVE ... AND WE WANT TO ALWAYS BE AHEAD OF THE COMPETITION."

**—HARI SUBRAMANIAN,
director of mobile
technologies, Novation LLC**

mated alerts to notify users about changes in KPI metrics. "Users carry their mobile devices all the time," he said, adding that the new features are aimed at encouraging them "to open up the dashboard application and play with their data." ■

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PERFORMANCE MANAGEMENT GAP: GOALS VERSUS REALITIES

Successful performance management initiatives involve more than purchasing and implementing software. And despite good intentions, there's a high probability that you're not getting everything you should from your system. By Craig Schiff

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A **S WITH MOST** corporate initiatives, the intended goal of performance management and what it actually ends up achieving are often quite different. Many companies aren't even aware of the real purpose of performance management. But it doesn't have to be that way.

To understand what kind of performance a performance management system is meant to manage and how to implement an effective performance management program, it's helpful to start with a definition: Business performance management is a set of integrated, closed-loop management and analytics processes that address financial as well as operational activities. Done properly, it enables businesses to define strategic goals and then measure and

manage performance against those goals.

Ultimately, what is being managed is a company's performance in achieving its goals. That's the intent, at least—but far too often not the reality. Let's look at why this is often the case:

REALITY NO. 1: JUST FIXING AN ISOLATED PROBLEM

The core performance management processes include financial and operational planning, consolidation and reporting, modeling, analysis and monitoring of key performance indicators (KPIs) linked to organizational strategy. Ideally, those pieces work together as a whole to help a company achieve its strategic objectives. But in practice, very few companies are addressing all of them.

Most are putting out fires—fixing a painful budgeting process, shortening a lengthy monthly close and reporting cycle or providing greater access to information through enhanced management reporting capabilities and dashboards. Such steps can provide tremendous business value, but on their own they do little to improve execution of a company's primary goals. The true value of performance management comes into play when all key elements are implemented and integrated.

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REALITY NO. 2: LIVING IN THE PAST

Let's suppose an organization is implementing a full suite of performance management software. Is there an increased likelihood that it will in fact improve its execution against strategic objectives? Yes, somewhat. But there is a major stumbling block: Many organizations are so focused on the technological aspects of this major undertaking that they overlook the business side of the equation.

More specifically, they simply automate (or upgrade) what they have been doing for years either

manually or in another system. They do not revisit what accounts and cost centers they are tracking. They do not change the content of reports, which may be based on the needs of an executive team that has long since left the company or a business climate that hasn't existed in decades. They do not even think in terms of KPIs but in terms of key ratios that are straight out of an accounting textbook from the 1950s.

The point is that the information going into a performance management system and how it is going to be packaged and presented must be based on an organization's current needs. The data all needs to be tied back to strategic objectives. If that is not done, companies will just end up with more efficient, but not more effective, systems.

REALITY NO. 3: GETTING CAUGHT IN A METRICS MINEFIELD

When you've addressed those two issues, it might seem like you're on the verge of success. If a company rolls out and integrates all of the key elements of performance management and revises its data and reports to align with current corporate objectives, executives should be able to better track and manage performance as it relates to those goals—right? Unfortunately, that is easier said than done.

Translating strategic objectives into a series of KPIs that will be the

Find more articles by **Craig Schiff** in his [BeyeNETWORK expert channel](#).

focus of a performance management system is arduous and highly charged. It is political, territorial and often driven by individual egos. Simply stated, people will want the system to measure what they do well, which is not necessarily what the company needs them to do well. The process of creating performance management KPIs linked to strategic objectives needs to be driven from the top down by a strong leader with little patience for gaming the system.

So are we there yet? Actually, we are. If the all-too-common realities described above are corrected or avoided, a performance management system will effectively measure the right metrics and KPIs and help executives and business managers achieve corporate objectives.

One more thing, though: No business operates in isolation, and neither should a performance management system. Companies should also measure their performance against that of their peers—that is, the competition. While a company may be doing well against internal goals, it may be falling short in terms of the performance of its industry as a whole. Benchmarking completes the performance management picture. ■

Craig Schiff is president and CEO of consultancy BPM Partners. Schiff has worked with performance management tools and related technologies for more than 20 years and writes frequently on performance management topics. He can be reached at cschiff@bpmpartners.com.



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