Harvard Business Review

THE RISING CLOUD
OF BUSINESS ANALYTICS

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How do you turn data into insights? Does your organization provide you with data visualization tools? Are they easy to use and available in the cloud? If not, do you have a plan for evolving how you analyze performance and make decisions?

While the amount of data available to us continues to grow exponentially, we have less and less time to sift through it—and that forces us to look for faster, easier ways to analyze information. The ability to have fast, interactive, visual insights into business performance can often mean the difference between success and failure. A modern cloud-based analytics solution empowers us to quickly get new insights, answer new questions, and uncover previously hidden patterns— without having to wait for our friends in IT.

To understand the benefits and challenges of using visual analytics, as well as the trends driving the adoption of cloud-based analytics, Oracle sponsored the study "The Rising Cloud of Business Analytics" conducted by Harvard Business Review Analytic Services. The survey, polling 375 business executives in a wide array of industries, sheds light on key trends driving the growing need for analytics. For example:

- Respondents concur that visual analysis is a key capability for making tools more useful to business managers.

- Organizations are quickly adopting cloud-based analytics, starting today.

- Existing BI tools lack several key capabilities, which prevents them from fully supporting business decision-making.

This study is designed to help you assess your organization's analytics capabilities and your success compared with others. Most importantly, it will help stimulate conversations and ideas through real-world experiences, aimed at helping you plan for your analytics journey.

At Oracle, we have a cloud-first strategy that is core to everything we do. We continue to innovate and make it easier and faster for people to visualize, analyze, and share data insights. Whether it is internal, external, personal, or big data, Oracle Analytics delivers proven self-service technology and the economics of the cloud.

So go ahead and sign up for a free trial and experience the power of visual analytics for yourself, risk-free.

Jose Villacis
Director, Oracle Business Analytics Product Group

THE RISING CLOUD
OF BUSINESS ANALYTICS

Can something as simple as cloud computing transform something as human as making a decision?

If you're like a lot of business and technology managers, you'll answer that question with a resounding yes.

New research from Harvard Business Review Analytic Services finds that nearly 7 in 10 managers expect their organizations to use cloud-based business intelligence (BI) and analytics tools in the next two years. figure 1

The survey, conducted earlier this year, reached nearly 375 North American business leaders and executives. They represent 15 industries, including healthcare, manufacturing, and financial services. And they work in job functions that include administration, finance, HR, information technology, marketing, operations, and sales.

Data and visual analytics tools are a type of software application that helps managers assess patterns in business data to answer questions and provide insights about performance. These tools have proved useful for making important decisions. In fact, the survey finds that 85 percent of organizations have already implemented at least one BI and analytics tool, including dashboards. And as these managers strive to bring new, predictive capabilities to their decision-making, they expect to rely on these tools even more—often in the cloud.

"Organizations are becoming increasingly comfortable with cloud-based alternatives to on-premises applications," says Jeffrey Kaplan, managing director at THINKstrategies, a consulting firm that helps clients transform IT systems into cloud-based services. "The basic business benefits of those alternatives are now finding their way into the BI and analytics world." Such benefits include improved decision-making and planning, and acquiring a consistent view of companywide data.

Kaplan says he's now seeing greater interest in, acceptance of, and adoption of cloud-based BI and analytics solutions. In part, he says, that's because the volume and variety of data continue to expand exponentially. "Every organization," he adds, "needs to do a better job of capturing information about customers and competitors and about the environment they work in."
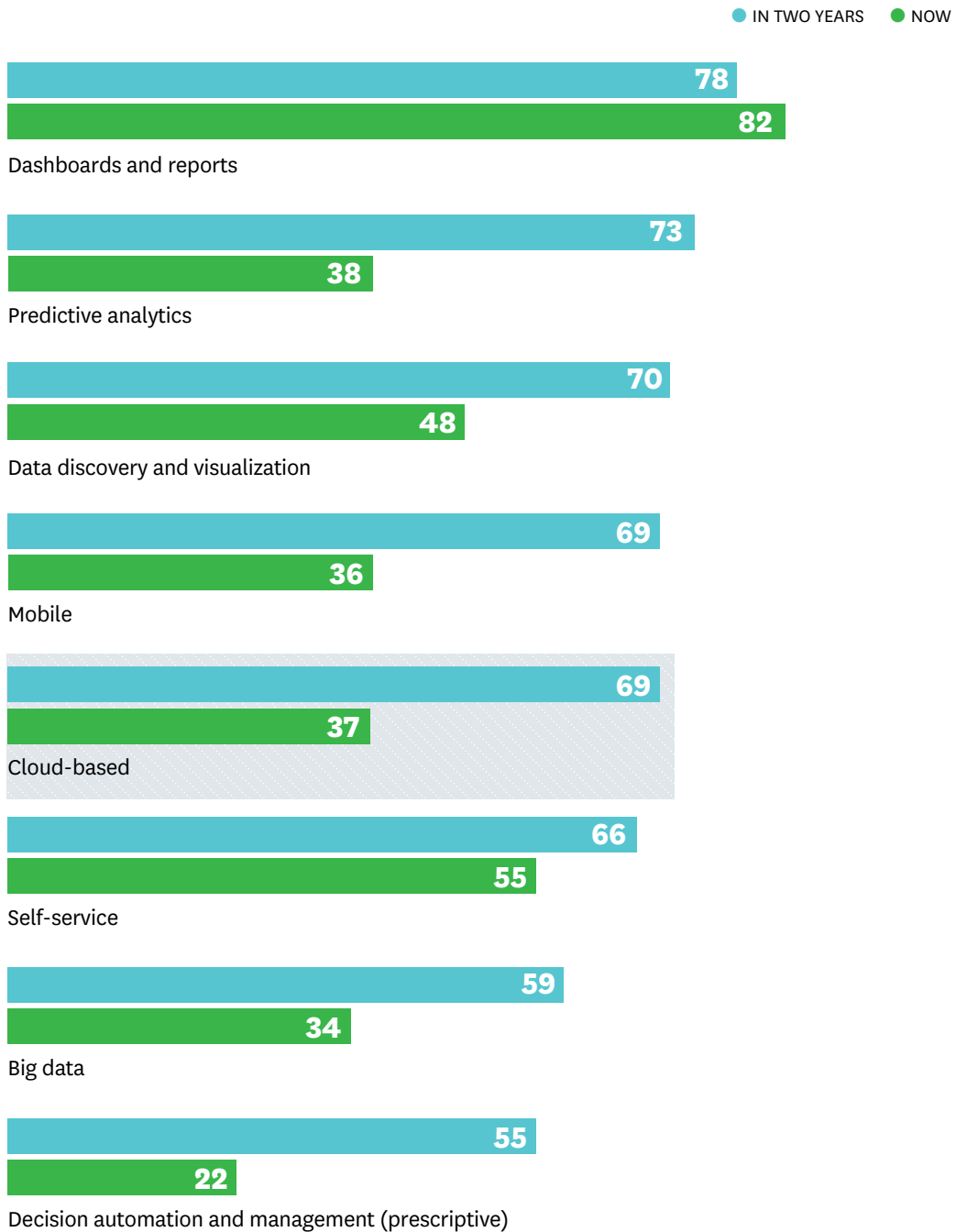
Doing a better job of capturing and analyzing information is what drove one company, a provider of services to credit, debit, and prepaid card issuers, to adopt cloud-based analytics. The company recently began moving to a cloud-based system after what its ERP applications manager described as "years of frustration" for both business and IT executives. "We want to look at our entire business," he says. "But historically, we haven't been able to achieve that."

FIGURE 1

POPULAR REPORTS

Percentage of respondents indicating which analytics tools are currently used in their organizations—and which they expect their organizations to use in two years.

MULTIPLE RESPONSES PERMITTED

● IN TWO YEARS   ● NOW

78 / **82**
Dashboards and reports

73 / **38**
Predictive analytics

70 / **48**
Data discovery and visualization

69 / **36**
Mobile

69 / **37**
Cloud-based

66 / **55**
Self-service

59 / **34**
Big data

55 / **22**
Decision automation and management (prescriptive)

SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, JULY 2015

Perhaps the most important benefit thus far is the welcome feeling that the IT team is no longer a bottleneck. Instead, business users now have direct access to the cloud-based analytics platform.

In the past, when the card-services company business users requested business data to either create or update reports, they'd request it from the IT department. IT would then respond as quickly as it could, though that could sometimes take a while. Further delays were due to the company's seven locations across North America and the UK being permitted to use different BI-reporting tools. That meant that some locations gathered and organized their data sets differently from the others, which, in turn, could delay reporting. "We were spending a lot of time developing reports that were specific to a single location or business unit," the ERP manager says. "And they were not applicable to the rest of our sites globally."

In response, the card-services company organized a team of IT and business executives to adopt a cloud-based platform as a service (PaaS) analytics system. To keep things simple, they started with just one business function—finance. The business staff first created a team of 14 leading finance users by selecting the controllers and cost accountants from each office. They, in turn, had the job of evaluating potential analytics systems. This also helped get buy-in on what was ultimately a technical acquisition. Presumably, once the cloud-based analytics tool is rolled out this summer, leaders at each office will be among those with experience using the tools and an investment in the choice. "The tools had to fit in the realm of what we had to accomplish," the ERP manager says. "This way, our users have a stake in the choice from the beginning."

The card-services company's IT staff, meanwhile, standardized the way finance data is held in each of the company's seven offices. As part of that work, the team had to structure the data for use in the cloud. To do this, they made many corrections to the data and integrated several data sources for use in the cloud-based system. "We've seen in the past that when something isn't user-friendly, people won't use it," the ERP manager says.

The card-services company's cloud-based analytics platform is still relatively new, and the company is taking a gradual approach to adopting the new tools. But benefits are appearing. For example, data has been reorganized so that it appears uniformly to business users across the company's seven locations. That gives all executives a clearer view into their operations than they had before. Also, the cloud-based system enables the company to create standardized financial reports for all its divisions. "These new capabilities are driven by our executives and the KPIs (key performance indicators) they want to run the business by," the ERP manager says.

Perhaps the most important benefit thus far is the welcome feeling that the IT team is no longer a bottleneck. Instead, business users now have direct access to the cloud-based analytics platform. "There was always a ton of requests to modify a report, or have access to certain pieces of data, and because of the way our environment was, all of the requests had to come through our team," the ERP manager says. "We were a single point of contact, and we couldn't keep up. Now we can use self-service tools to allow users access to data on their own."

A QUEST FOR INSIGHTS

On the road to a cloud-based analytics platform, the card-services company's managers encountered several barriers that experts say many enterprises face. Although the company was dealing with just one function—finance—the seven sites handled data using different practices. So the ERP manager's team had to identify these data variances, correct them, and then establish a new, companywide data model for the future. This new model would ensure that everyone analyzed the same views of operations, expressed in the same standard way.

To understand why problems like this are so common, it's helpful to think of data and visual analytics as a supply chain for insights. Within this chain, each link has additional connections, such as collecting data sets and organizing them for analysis. "Historically," says Tom Davenport, a professor of IT and management at Babson College, "managers have not had an easy time determining what information they really need that they don't have."

Survey respondents mentioned all these challenges and more. When asked to identify the top challenge they face in leveraging data to make complex decisions, two-thirds of respondents said it was identifying and tracking the right metrics for analysis. Fully 60 percent also cited complex user interfaces, and nearly as many cited data-quality issues. Nearly half said a lack of data visualization presentations is holding back their analytics efforts. figure 2
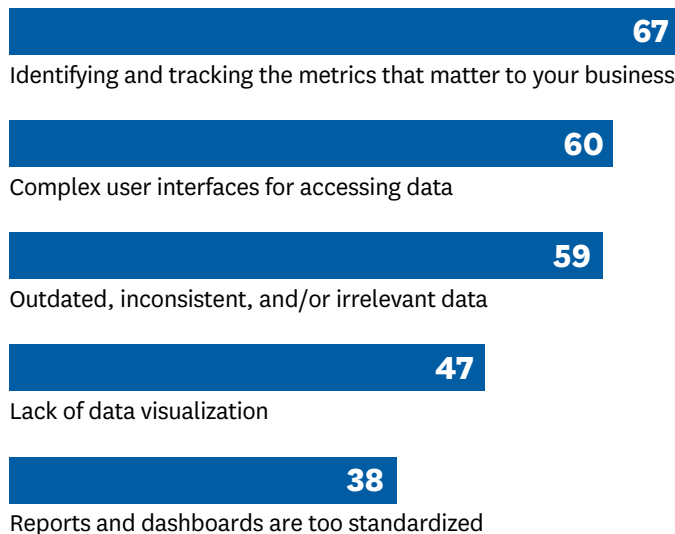
FIGURE 2

DATA CHALLENGES

Percentage of respondents indicating that the following are some of the key challenges they face in leveraging data to make complex strategic decisions.

MULTIPLE RESPONSES PERMITTED

67
Identifying and tracking the metrics that matter to your business

60
Complex user interfaces for accessing data

59
Outdated, inconsistent, and/or irrelevant data

47
Lack of data visualization

38
Reports and dashboards are too standardized

SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, JULY 2015

Getting the right information for a decision may sound like a simple task, but in fact it's not, due to several technological and organizational issues. For example, while data dashboards are popular and easy to use, it can be difficult for business users to dig deeply behind the dashboard, asking questions and finding answers, Davenport notes. That's because most users don't understand either how the data is organized, such as in a data warehouse, or what data is available. The issue has gotten even more complex as many organizations take advantage of external data, Davenport adds.

This, in turn, can lead to "shadow IT," frustrated business users taking action without IT's help. A marketing department, for example, might first assemble its own data to study customer trends, and then buy data and visual analytics tools to create specific reports—with both moves made easier with the cloud-based services now available online. Unfortunately, such moves can create big problems for any organization trying to understand its business. "If you create your own customer database, it may be your idea, but it doesn't coincide with the rest of the company," Davenport says. "The downside is that you get multiple versions of the truth."

This challenge is reflected in the survey, in which nearly 60 percent of respondents said they find the complex user interfaces for accessing data a key challenge. Similarly, when respondents were asked to rate current analytics tools available, they assigned only middling grades. Nearly half the respondents called the current tools only fair. And no more than 3 percent rated the tools very good. figure 3

Similarly, the survey reveals some of the thinking behind shadow IT. When survey respondents were asked to rate their dependence on IT for analytics tools, services, and support, 46 percent said they are now either dependent or extremely dependent on IT (on a 10-point scale). But when asked to look ahead two years, only 37 percent thought they would still be just as dependent on IT.

Some of that is due to the rise of cloud computing. It lessens the dependence of business units on IT by allowing them to easily purchase computing power and storage capacity that is comparatively inexpensive and quickly scalable. In the area of BI, the growth of cloud-based systems should be explosive. While only 37 percent of survey respondents said they use cloud-based BI and analytics now, nearly 70 percent expect to do so within two years.

FIGURE 3

NOT SO EASY TO USE

How do you rate currently available analytics tools when you need to make a meaningful business decision?

3% VERY GOOD

29% GOOD

48% FAIR

14% POOR

6% VERY POOR
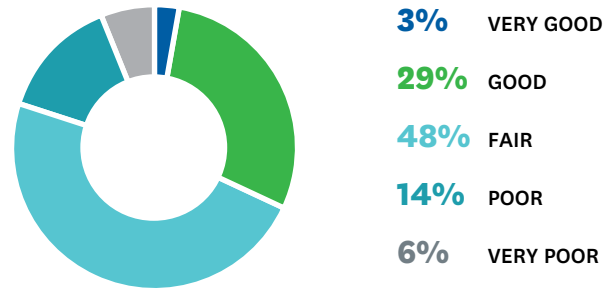
SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, JULY 2015

> The cloud can be viewed as a conduit for BI collaboration between IT and the business.

One big risk is that IT departments, worrying about the cloud's challenge to their authority, will dig in their heels and resist the technology. That could prevent their organizations from enjoying the cloud's many benefits, notes Howard Dresner, founder of BI research firm Dresner Advisory Services and the author of two books on the subject. With cloud-based technologies, he says, "IT typically cites privacy and security concerns and also talks about a loss of control. That is an issue that is understated. It's one of the big reasons IT resists cloud implementations. They have built up skills, processes, investments. And the cloud disrupts this 'world order' significantly."

A better way forward, Dresner argues, involves taking a hybrid approach that is tailored to each organization's situation. Where it makes sense to analyze data in the cloud and then connect cloud-based analytics to enterprise systems, an organization should do so. Cloud-based BI is a good example; it serves information and insight to customers and suppliers. But IT needs to be placed in the position of managing and governing that data. IT's expertise is still needed to preserve data security and maintain data quality. "IT managers have to view software—and software as a service—in the context of a portfolio of capabilities," Dresner says. "That way, they can decide where they want the functionality."

COLLABORATIVE SPIRITS

The cloud can be viewed as a conduit for BI collaboration between IT and the business. That was the view taken by the provider of card services in its move to cloud-based analytics, which involved executives from both IT and the business. The company's IT group worked extensively to ensure data quality for the new cloud system; then IT joined finance leaders to evaluate potential applications.

The card-services company's approach—work diligently to ensure data quality, then engage selected business users to help adopt new tools—represents a best practice for adopting new technologies like data and visual analytics. Survey respondents display a strong preference within their organizations for business and IT working together to select business-analytics tools that include data discovery, simple reporting, and business dashboards. More than 60 percent of respondents said that in their organizations, both IT and the business lead the purchase of these tools. By comparison, only 25 percent of respondents said business managers alone lead these purchases, while fewer than 15 percent said only IT takes charge.

Modern analytics tools in the cloud could be the bridge that finally bonds IT and the business, says Peter Krensky, a research analyst at Aberdeen Group. As he sees it, IT can provide policies to govern how the business collects, uses, and analyzes data. IT can also ensure that data is made accessible in compliance with regulatory and security concerns. Business users, meanwhile, can provide guidance on what they need, and when and why they need it.

Further, cloud-based data and visual analytics tools can be a catalyst for giving self-service capabilities to business users and fostering a data-driven culture. For example, a marketing manager who needs a report on customers for a new campaign could use cloud-based self-service tools instead of waiting for IT help, Krensky suggests. "We've seen that top-performing firms in

DATA WITH BENEFITS

Percentage rating the benefits of BI and analytics to their organization at 8, 9, or 10 on a 10-point scale.

(1 = unimportant and 10 = extremely important)

82	

Improve the quality of decisions

76	

Improve planning and forecasting

73	

Consistent data across the enterprise ("single version of the truth")

68	

 Speed, simplicity, and ease of use

67	

Lower costs and drive operational efficiency

62	

Gain new customers, increase both revenue and market share

59	

Access to data anytime, anywhere

56	

Data discovery and visualization

49	

Big data analysis

47	

Faster time-to-market and harvesting innovation

SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, JULY 2015

our research—by using the cloud and investing in self-service tools—are directly impacting user satisfaction metrics," he says. "Their users are happier with data access and relevance, and they're also more active."

Still, improving the quality of decisions remains BI's most important job. More than 80 percent of survey respondents gave it their top vote, followed by improving planning and forecasting, cited by more than 75 percent. figure 4 Respondents also rated as important the ability to see consistent data across the enterprise (cited by nearly 75 percent); driving operational efficiency (over 65 percent); and speed, simplicity, and ease of use (nearly 70 percent).

Among those traits, usability and visualizations are essential for cloud adoption, asserts Wayne Eckerson, principal consultant at Eckerson Group, a BI research and consulting firm. Historically, he says, the BI field has suffered from a disconnect between what IT provides and what the business needs. IT frequently provided tools with too many capabilities and too much complexity—making them difficult to use—yet too little functionality.

Fortunately, that's changing, thanks to the "consumerization of IT"—the way smartphones, tablets, and other consumer technologies have influenced the design of corporate applications. "The consumerization trend is helping to make these tools a lot more intuitive, which is leading to better adoption," Eckerson says. "And consumers perceive that cloud-based tools are a lot easier to use."

They're right, of course. Combined, business analytics and the cloud deliver a competitive advantage with improved decision-making that can lead to lower costs and higher revenue.