

IT Analytics

Benchmarking the Analysis of Data To Gain Business Insight



Benchmark Research White Paper



V E N T A N A
R E S E A R C H

Aligning Business and IT To Improve Performance

Ventana Research

2603 Camino Ramon, Suite 200
San Ramon, CA 94583-9137, USA
info@ventanaresearch.com
(925) 242-2412
www.ventanaresearch.com



San Ramon, California

December 2011

Ventana Research performed this research for a fee to determine attitudes toward and utilization of information technology analytics and metrics. This document is based on our research and analysis of information provided by organizations that we deemed qualified to participate in this benchmark research.

This research was designed to investigate the analytics and metrics practices and needs of individuals and organizations involved in IT management and the potential benefits from improving their existing processes, information and systems. This research is not intended for use outside of this context and does not imply that organizations are guaranteed success by relying on these results to improve planning. Moreover, gaining the most benefit from improving the use of IT analytics and metrics requires an assessment of your organization's unique needs to identify gaps and priorities for improvement.

We certify that Ventana Research wrote and edited this report independently, that the analysis contained herein is a faithful representation of our evaluation based on our experience with and knowledge of analytics and IT management, and that the analysis and conclusions are entirely our own.

A stylized, handwritten signature of 'Ventana Research' in a dark brown or black ink.

Table of Contents

| | |
|---|-----------|
| Executive Summary | 5 |
| About This Benchmark Research | 8 |
| Methodology | 8 |
| Qualification | 8 |
| Demographics | 9 |
| Company Size by Number of Employees | 10 |
| Company Size by Annual Revenue | 11 |
| Geographic Distribution | 12 |
| Industry | 13 |
| Job Title | 14 |
| Role by Functional Area | 15 |
| Key Insights | 16 |
| IT analytics can improve performance, but most organizations aren't moving quickly to apply them..... | 16 |
| Application performance is the top focus for IT analytics..... | 16 |
| Depending on their positions, people differ regarding the importance of some metrics..... | 17 |
| Organizations may need to involve more people in defining analytics. | 17 |
| Spreadsheets are ubiquitous in IT analytics. | 17 |
| The ability to access and analyze detailed information is paramount. | 18 |
| Challenges in collecting and preparing data plague the analytic process. | 18 |
| Metrics often are not delivered promptly..... | 18 |
| Bottlenecks remain in performance and scalability. | 19 |
| Usability trumps other considerations in deploying applications. | 19 |
| IT-specific analytics are needed to improve asset, resource and project or portfolio management. | 19 |
| What To Do Next | 20 |
| Assess the maturity of your organization's deployment and use of IT analytics. | 20 |
| Enlist support for improvement in how analytics are used. | 20 |
| Build a case for ROI based on cost avoidance. | 21 |
| Look into alternatives to on-premises deployment. | 21 |
| Get the right people across the organization involved..... | 21 |
| Implement metrics that can further the organization's business objectives. | 21 |
| Streamline data collection and preparation to allow more time for analysis. | 22 |
| To increase value, deliver and review metrics in timely fashion. | 22 |
| Explore ways to remove performance bottlenecks..... | 22 |
| Consider alternatives to spreadsheets to minimize errors and data inconsistency. | 23 |
| Identify sources of funding for improvement in IT analytics. | 23 |
| Learn what matters most in your industry. | 23 |
| Look for processes and products appropriate for the size of your organization. | 24 |
| How Ventana Research Can Help | 26 |
| About Ventana Research | 27 |

List of Figures

| | |
|--|----|
| 1. Participants by Company Size (Number of Employees)..... | 10 |
| 2. Participants by Company Size (Annual Revenue) | 11 |
| 3. Participants by Region | 12 |
| 4. Participants by Type of Industry | 13 |
| 5. Participants by Job Category..... | 14 |
| 6. Participants by Functional Area | 15 |

Executive Summary

Charged with enabling business units to use information systems as effectively as possible, the IT department typically stands last in line for resources to manage its own performance. In trying to understand and tune the collection of networking and operating systems, middleware and applications an enterprise needs to operate, IT professionals usually have to make do with small sets of historical data stored in spreadsheets and data warehouses and marts that are not as well managed as the systems they maintain to support the business. In most cases IT cannot apply the same level of analytics to its own operations that it provides to business units. To the extent that the result is subpar performance of its core information systems, the business will suffer.

To break out of this frustrating cycle, IT needs a recognition of the role it actually performs, of course, but it also needs metrics and measurements, which means it needs analytics to standardize and routinely generate them. IT needs to be able to analyze both historical and real-time events involving data and processes so managers can determine the right level of automation and efficiency to demand from the technology. And it needs the capability now delivered by predictive analytics to anticipate situations and outcomes so it can prepare properly for them. In short, the CIO and IT staff need to manage their portfolio as a business asset, not merely a collection of technologies.

Metrics about its own operations and systems also enable IT to determine priorities for improvement. To fully understand the state of their existing investments and processes, IT organizations should not just measure them but analyze them to develop insights on future outcomes of their systems. This more sophisticated approach to analytics can help IT determine where to focus resources and what to do with legacy systems. Knowing this, it is possible to prioritize precious budget dollars and justify IT investments more convincingly.

The CIO and IT staff need to manage their portfolio as a business asset, not merely a collection of technologies.

Ventana Research undertook this benchmark research to acquire real-world information about levels of maturity, trends and best practices in how IT organizations use analytics. It explores how they do this now, how people at various levels feel about the current processes and tools, plans they have to change or improve them, and benefits they hope to gain by doing so.

The research found organizations using a variety of IT analytics, but the data the research amassed on which are the dominant ones indicates that IT's concerns currently center on cost and operational efficiency. The most important financial metrics are return on investment (cited by 64% of organizations), cost per project (56%), budget utilization (53%) and adherence to budget (49%). The most important process metrics address timeliness in IT's core function of service to the business: delivery of projects on time (69%), speed of technology implementation (45%) and help desk response time (43%).

In research participants' perceptions of which metrics are most important for executives and managers, two loomed large: business user satisfaction (cited by

62% overall) and compliance with service level agreements (SLAs, tied with project schedule adherence at 51%). However, the executives themselves rated the two metrics nearly equal in importance, and their management reports (vice presidents) by a slight margin most often named adherence to governance and risk management requirements rather than either of those. These responses suggest that people may work somewhat at cross-purposes in pursuing IT analytics.

The research also finds strong suggestions that organizations ought to involve more people in the process of establishing requirements for defining analytics. Research participants asserted overwhelmingly that they (81%) and the head of their business unit (83%) are involved or very involved in establishing requirements important to their jobs, but percentages drop for heads of other business units (66%) and business analysts in other business units (57%). This disparity takes on more weight when we recall that business user satisfaction and SLA compliance are important metrics for leaders.

For analytics to deliver value, they must be available to those who need them; the research shows that this is an issue for many organizations. No more than half have analytics generally available to address any of seven major IT management tasks, and only for budget analysis are analytics completely available in even one-fourth of organizations. In a related finding, more than half (54%) said it is very important to

No more than half of organizations have analytics generally available for any of seven major IT management tasks.

make it simpler to provide analytics and metrics; less than 10 percent said that is only somewhat important or not important. As well, 37 percent said they can significantly improve their use of analytics and performance indicators, and 35 percent are not satisfied with the process currently used to create analytics.

The process of applying analytics also impacts their effectiveness. The research found that users in nearly two-thirds of all organizations spend most of their time in unproductive chores that precede analyzing their data: preparing it for analysis (29%), reviewing it for quality and

consistency (23%) and waiting for it (13%). And before that, issues in collecting the data raise another roadblock. In more than half (52%) of organizations, doing that is very difficult or a challenge that impedes creating metrics and performance indicators.

These functional barriers also can get in the way of analysts performing important tasks. Among capabilities they need in order to work effectively with analytics and metrics, 42 percent said access to source data is the most important, and at least one-third identified as most important the abilities to search for existing data and analytics, to take action based on analytics and to design and maintain both business models and metrics for analytics. Applying predictive analytics to project future outcomes, a hallmark of advanced maturity in the use of IT analytics, was cited by 31 percent.

IT professionals need appropriate tools to facilitate these and other analytics-related activities. In more than half (56%) of these organizations, business intelligence technologies for query, reporting, analysis are the most important of these tools. Yet even in this technologically astute environment, desktop spreadsheets are used

second-most often (by 42%) to generate analytics and are an important information source for building IT analytics in nearly as many (41%). But spreadsheets require manual effort to populate the data and are prone to error, and thus are not appropriate for collaborative and enterprise-wide activities. We think their widespread use is a factor in half of organizations (51%) being only somewhat satisfied or not satisfied with their organization's current technology for creating and applying analytics.

Evaluating organizations in their use of and plans for IT analytics, our Maturity Index analysis found only 15 percent whose responses place them at the highest Innovative level of maturity. One important finding reflecting on organizations' maturity is that two-thirds said the data used in preparing metrics and performance indicators is only somewhat accurate or somewhat inaccurate. As well, it takes 35 percent of organizations more than one week to provide updated metrics and performance indicators to people and nearly as many up to a week to provide them.

It is a positive sign that improvements, if made, will be done most often to improve business processes (by 69% of organizations) or decision-making (64%) rather than for operational efficiency and cost savings (56%). The first two motivations are more likely to produce better business results. Similarly, maximizing IT effectiveness (60%) and improving the value of IT to business managers (55%) are more important than issues involving resources, costs and budget.

Improvements, if made, will be done most often to improve business processes or decision-making rather than for operational efficiency and cost savings.

However, these opinions come from organizations that plan to change the way they generate and apply analytics in the next 12 to 18 months, and they comprise only 28 percent of the total; another 36 percent said changes are needed but are not currently a priority. The primary barriers to such an initiative are both fiscal (lack of resources and budget) and perceptual (lack of awareness and a sense that the business case is not strong enough). Recognizing a problem but not being willing or able to remedy it is another sign of immaturity.

To maximize its value, IT should use analytics and metrics to help set its own goals and objectives and to ensure they serve the business strategies of the organization. This innovative path is embracing IT performance management. Few organizations have taken the necessary steps to actually manage performance and align, optimize and understand the range of their IT processes and resources. We believe, and this benchmark research suggests, it is time for them to take those steps, supported by executive management in providing resources.

About This Benchmark Research

Methodology

Ventana Research conducted this benchmark research over the Web from March through October 2010. We solicited survey participation via e-mail blasts, our website and social media invitations. E-mail invitations were also sent by our media partners and by vendor sponsors.

We presented this explanation of the topic to participants prior to their entry into the survey:

There isn't an aspect of business today in which people don't claim they use analytics to generate information, typically in the form of metrics and key indicators. But there is much confusion about their usefulness and value to the business and about how best to select and implement historical, root-cause, real-time and predictive analytics. The uncertainty this causes poses a challenge for organizations.

Management and managers need advice on how to select the measures most useful for them and guidance about best practices and common mistakes in choosing business and operational measures, metrics and key indicators. They also need more reliable information than is currently available about integrating historical and predictive analytics into systems and processes so they can make better use of existing investments and plan new ones that provide deeper insight from multiple systems using more sophisticated analytical methods. This benchmark research is designed to generate that advice and guidance by examining the use of metrics across the entire business. It also will determine the maturity distribution of organizations in their use of analytics.

We included the following definitions:

Analytics – Programs or algorithms that derive meaning from data

Metric – A measure of business performance

Performance indicator – A specific metric chosen to measure the performance of an organization or some component of it.

The following promotion incited participants to complete the survey:

All qualified participants will receive a report on our research findings that you can apply to your organization's efforts and a quarterly membership to the Ventana Research Community valued at US\$125 or €92. In addition, all qualified participants will be entered into a drawing to win a benchmark research report of your choice valued at US\$995 or €732. Thank you for your participation!

Qualification

We designed the research to assess the use of and plans for deployment of IT analytics across organizations and industries. Qualification to participate was presented to participants as follows:

The survey for this benchmark research is designed for business and IT managers who develop, deploy or use analytics or are involved with

the purchasing of analytics technology. Others such as consultants and systems integrators may participate in the survey but are not eligible for incentives and will be used in the analysis only if they meet the qualifications. Incentives are provided to qualified participants in the research and also are conditional on provision of accurate contact information including company name and company e-mail address that can be used for fulfillment of incentives.

Further qualification evaluation of respondents was conducted as part of the research methodology and quality assurance processes. It entailed screening out responses from companies that are too small, questionnaires that were not materially complete, or those where the submission is from an inappropriate submitter or appears to be spurious.

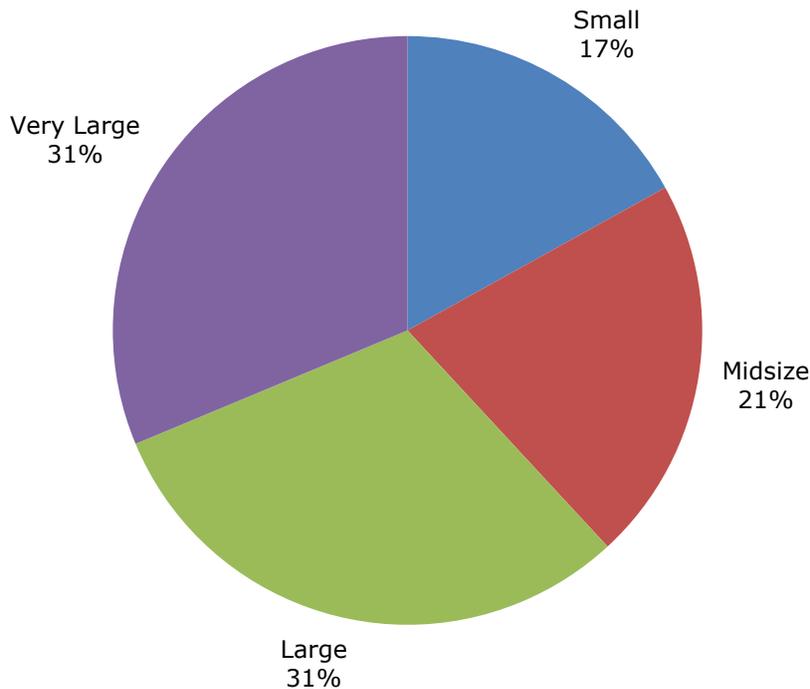
Demographics

We designed the survey used for this research to be answered by executives and managers across a range of roles and titles working in IT organizations. We deemed 425 of those who clicked through to this survey to be qualified to have their answers analyzed in this research. In this report, the term “participants” refers to that group, and the charts in this section characterize various aspects of their demographics and qualifications.

Company Size by Number of Employees

We require participants to indicate the size of their entire company. Our research repeatedly shows that size of organization, measured by number of employees, is a useful means of segmenting companies because it correlates with the complexity of processes, communications and organizational structure as well as the complexity of the IT infrastructure. In this research, more than 60 percent of participants come from larger organizations, with the same number working in very large companies (having 10,000 or more employees) or large companies (with 1,000 to 9,999 employees). About one-fifth work in midsize companies (with 100 to 999 employees), and almost one-sixth work in small companies (with fewer than 100 employees). Although this distribution skews a bit more to larger companies than much of our benchmark research, it remains consistent with our research objectives and provides a suitably large sample from each size category.

Figure 1
Participants by Company Size (Number of Employees)

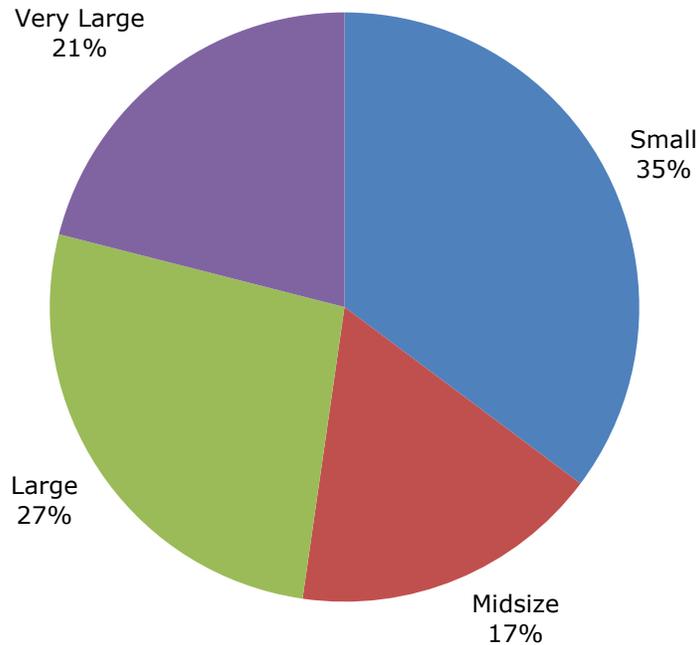


Source: Ventana Research

Company Size by Annual Revenue

When we measured size by annual revenue, the distribution of categories shifted sharply downward. By this measure, 10 percent fewer are very large companies (having revenue of more than US\$10 billion), 4 percent fewer are large companies (having revenue from US\$500 million to US\$10 billion), 4 percent fewer also are midsize companies (having revenue from US\$100 to US\$500 million), and more than twice as many are small companies (with revenue of less than US\$100 million).

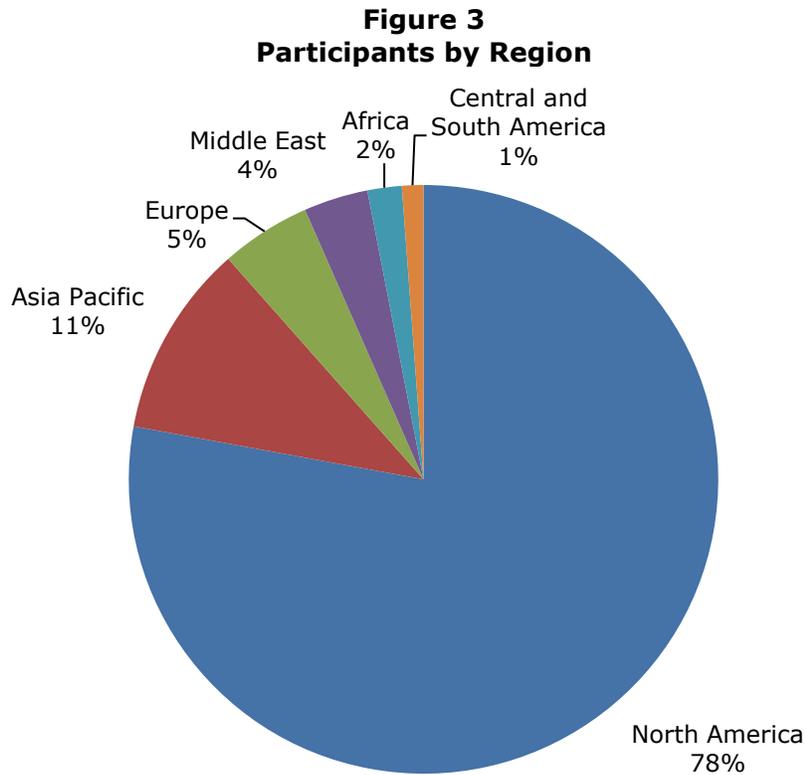
Figure 2
Participants by Company Size (Annual Revenue)



Source: Ventana Research

Geographic Distribution

More than three-fourths of the participants were from companies located or headquartered in North America. Those based in Asia Pacific made up the second-largest group at 11 percent; those in Europe accounted for 5 percent, in the Middle East for 4 percent, in Africa for 2 percent and in Central and South America for 1 percent. This result was in keeping with our expectations at the start of this investigation, since organizations participating in our research most often are headquartered in North America. However, many of these are global organizations operating worldwide.

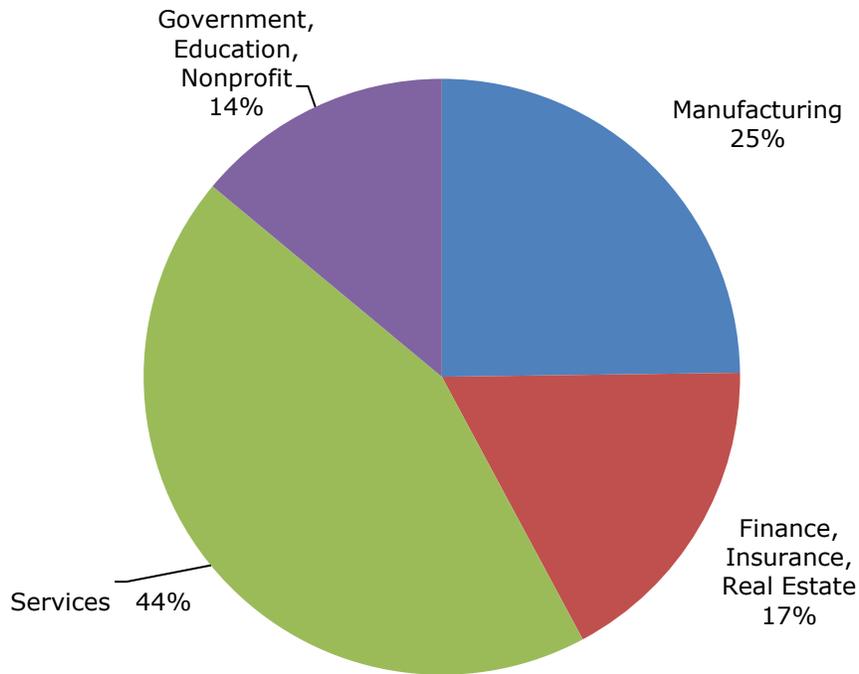


Source: Ventana Research

Industry

The companies of the participants in this benchmark research represented a broad range of industries, which we have grouped into four general categories, as shown below. Classified in this way, companies that provide services (44%) accounted for the largest share of participants, and those in manufacturing accounted for one-fourth; finance, insurance and real estate and government and nonprofit accounted for the balance.

Figure 4
Participants by Type of Industry

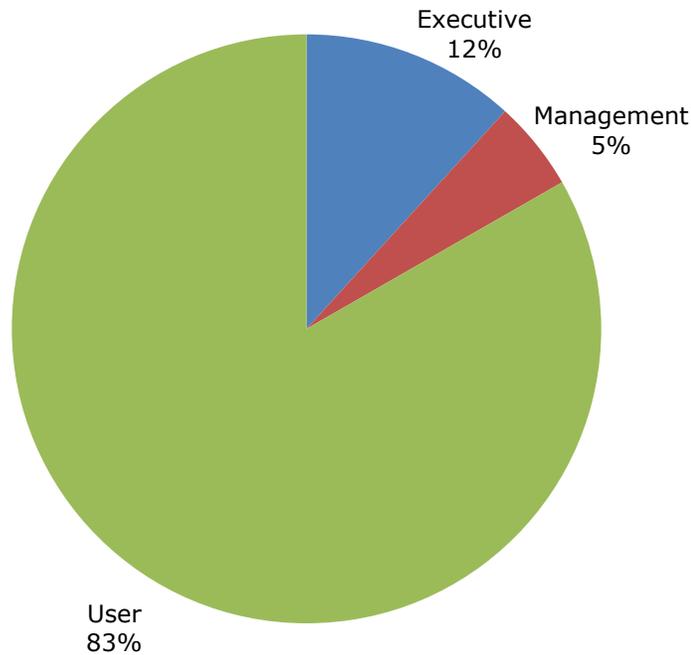


Source: Ventana Research

Job Title

We asked participants to choose from among 13 titles the one that best describes theirs. We sorted these responses into three categories: executives, management and users. More than eight in 10 identified themselves as having titles that we categorize as users, a grouping that includes senior manager or manager (29%), director (11%), analyst (15%) and staff (7%). One in eight are executives, and only 5 percent are in management, by which we mean vice presidents of some level.

Figure 5
Participants by Job Category



Source: Ventana Research

This is how we aggregated the 13 title response options:

Executive

- CEO, President
- COO or Head of Operations
- CIO or Head of Information Technology
- CFO or Head of Finance
- Other CxO

Management

- EVP or SVP
- VP

User

- Senior Manager or Manager
- Director
- Analyst (Business, Financial, etc.)

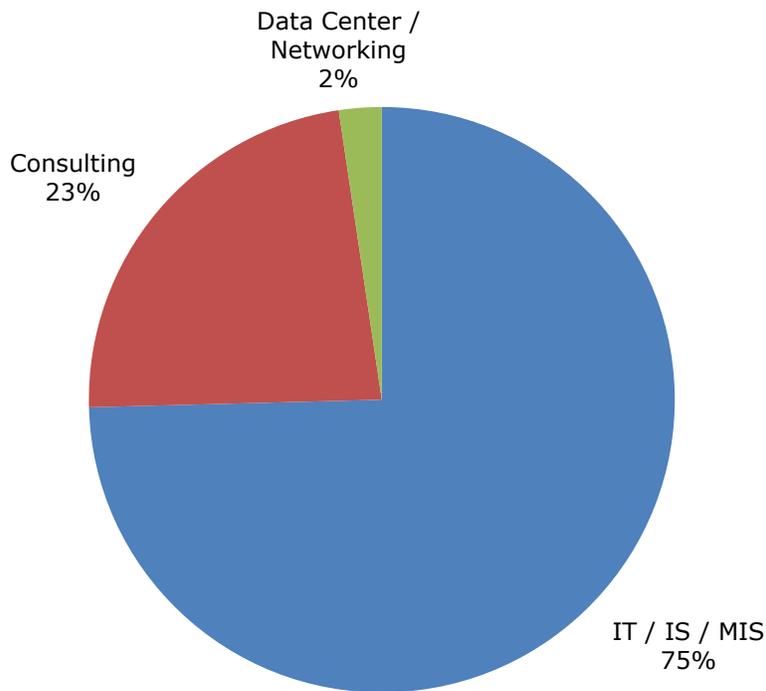
Staff
Consultant
Other Title

We concluded after analysis that this response set provided a meaningfully broad distribution of job titles.

Role by Functional Area

We asked participants to identify their functional area of responsibility as well. In this research, that meant one of three general categories. Three-fourths said they work in the mainstream IT group, almost one-fourth have consulting roles, and a few work in the data center or networking.

Figure 6
Participants by Functional Area



Source: Ventana Research

Key Insights

IT analytics can improve performance, but most organizations aren't moving quickly to apply them.

This benchmark research found that organizations see improving their use of IT analytics as a way to drive better performance of individuals and business units; 85 percent told us that they can improve their use of analytics and performance indicators somewhat or significantly. Executives feel more strongly than the average of all research participants that significant improvement can be made. Yet while more than half (54%) of organizations recognize that change is needed, only 28 percent are planning to change the way they generate and apply analytics in the next 12 to 18 months.

Those planning to change how they generate and use analytics will do so to improve their business and decision-making processes and their operational efficiency. The most significant barriers to making changes in analytics are a business case that is not strong enough, lack of awareness, lack of resources, no budget for the change and too low a priority. In our experience these barriers are interrelated: Failure to provide a compelling business case results in a project having a low priority and therefore not being allocated the resources or budget to implement the changes.

There is a commonsense correlation between satisfaction with existing technology and desire for change. Organizations that are satisfied or very satisfied with their current analytics technology were far more likely not to be contemplating making changes in the way they generate and apply analytics than those that are less satisfied. In analyzing the results by industry, we found that government organizations have the highest levels of satisfaction with their existing efforts and are least likely to make changes. Yet even where improvement is an acknowledged need, inertia can be an issue. Manufacturers and the finance, insurance and real estate (FIRE) sector most often said they can improve significantly, but one-third of FIRE companies and only one-fourth of those in manufacturing intend to act on the need.

Application performance is the top focus for IT analytics.

The IT organization most often applies analytics to application performance management, and almost as often to project or portfolio management, incident management, systems management and network management. These areas were the focus of analytics at least 50 percent more often than regulatory compliance, software usage and data warehouse performance. In concert with other research results showing the importance of business user satisfaction, these findings reinforce the relationship between application performance and user satisfaction.

On the process side, the most important IT process metric (cited by 69%) is on-time project delivery, which was identified twice as often as the next-most important options, speed of implementation and help-desk response time. By industry, FIRE companies were most interested in speed of implementation, and those in government were as interested in help-desk response times as on-time project delivery.

Depending on their positions, people differ regarding the importance of some metrics.

Return on investment (ROI) is the most important financial metric for nearly two-thirds of organizations, followed by cost- and budget-related metrics. Not surprisingly, though, managers find budget-related metrics as important as or more important than ROI, likely because budget management is an important measure of their performance.

Overall, IT personnel most often identified business user satisfaction (62%) as the most important metric for executives and managers. However, it appears that they underappreciate the importance to executives of complying with service level agreements (SLAs). Executives cited compliance with SLAs nearly as often as, and in some groups more often than, business user satisfaction. Managers, on the other hand, cited metrics for adherence to governance and risk management requirements most often, suggesting an ongoing struggle with these issues that is not recognized by others in the IT organization.

Organizations may need to involve more people in defining analytics.

The research data suggests that the IT organization is too insular. The two roles identified most often as important or very important in establishing requirements for defining analytics were the research participant him- or herself and the participant's business-unit head. Fewer than one in five said that other business units are very involved in defining the analytics of their organization. In more than one-third of organizations, other business units are uninvolved or only marginally involved in the process. Even more government organizations (41%) indicated that other business units are not significantly involved. Given the importance of business user satisfaction revealed by this research, we conclude that it would benefit the organization to have a cross-section of employees involved in defining its IT analytics.

Spreadsheets are ubiquitous in IT analytics.

The research reveals that the technology most often relied on for generating analytics in IT organizations is business intelligence (BI); it was the only type of tool cited by more than half of organizations. However, spreadsheets are ubiquitous and are the second-most prevalent technology (42%), followed by analytic databases, data warehouses and marts and custom-built systems. In nearly half (49%) of organizations spreadsheets are used regularly and in another 30 percent used universally. Typically when spreadsheets are used the analytic databases and warehouses provide the basic data that people copy into a spreadsheet for further analysis and the creation of final reports. Often, spreadsheets provide digested information drawn originally from a mix of enterprise systems and other spreadsheets.

This finding leads us to repeat one of our most persistent admonitions: While spreadsheets are appropriate for ad-hoc analysis and for information used by a limited number of people, organizations must limit their use as data stores and for repetitive analyses, particularly in cases where the results are reported to and used by more than a few people. Using relational or multidimensional databases as data stores and enterprise systems to perform analyses and provide reports ultimately saves time, reduces errors and therefore costs less and performs better in the long run than does relying on spreadsheets.

The ability to access and analyze detailed information is paramount.

With respect to analytics and metrics, the most important capability for IT analysts is access to source data; 88 percent of organizations said this is important or very important. IT analysts also need to be able to search for existing data and analytics, take action based on analytics, and design and maintain both business models and metrics for analytics. We found the need for both access to detailed data and search capabilities to be most important for nearly all sizes of organizations. Forward-looking capabilities – predictive analytics (by 31%) and what-if and planning-based analytics (20%) – were seldom cited as very important. However, as these capabilities become better understood and better integrated in analytic product offerings, we expect to see their importance rise. The industry group that values access to source data most highly is Finance, Insurance and Real Estate, with 56 percent rating it very important as compared to 41 percent of all industries.

Challenges in collecting and preparing data plague the analytic process.

Data collection and preparation present significant challenges to effective analytic processes. More than half (52%) of organizations indicated that collecting data is very difficult or a challenge that gets in the way of creating useful metrics and performance indicators. One in 10 said that it is very difficult; among management that increased to one in five. This is most problematic in the FIRE industry segment, where only 27 percent said collecting all the data is easy or pretty easy vs. 40 percent overall.

Collecting the data is not the only challenge. More than half (52%) of organizations spend most of their time in the analytic process preparing data for analysis or reviewing it for quality and consistency issues. Adding the 13 percent that spend most of their time waiting for data, that's nearly two-thirds of all organizations mostly doing something other than analyzing their data. By industry, the data shows that government organizations are worse off than others: 77 percent spend most of their time preparing, reviewing or waiting for data.

Metrics often are not delivered promptly.

The research indicates that IT organizations need to be able to generate and act on information in a more timely manner. For example, in only 19 percent are metrics delivered immediately or within one day; in more than one-third (36%) delivering metrics takes more than one week. It is interesting that executives were more than twice as likely as users (35% vs. 16%) to report that metrics are delivered within one day. This suggests that the rest of the organization lags in its ability to react to data in a timely fashion, which could undermine decision-making at operational levels. Very large companies do better than average in delivering metrics immediately (14% vs. 7%).

Timeliness of metrics also varies by industry. Manufacturers showed the highest percentage (27% v. 19% overall) in which they're delivered immediately or within one day. Given the cost implications of errors in manufacturing operations, insisting on this make sense. For delivery within a week, services organizations (37%) perform the best, followed closely by FIRE (33%). The fewest government organizations deliver metrics within a week.

It's not clear which is the cause and which is the effect, but only 14 percent of IT organizations review metrics on a daily basis. Approximately one-quarter each review them weekly (23%), monthly (29%) or quarterly (22%).

Bottlenecks remain in performance and scalability.

The vast majority of all organizations face performance and scalability bottlenecks in their data-related systems that support analytics. Nearly nine out of 10 (88%) indicated that reducing these bottlenecks is important or very important. Those in management were universal (100%) in their concern with bottlenecks, which suggests it occupies time and effort they could spend more productively in higher-level activities. Smaller organizations, while still concerned (78%), were somewhat less so than the average, presumably because the data volumes they deal with are smaller and performance is not as much of an issue.

Usability trumps other considerations in deploying applications.

When asked which technology and vendor capabilities are most important in new applications, most organizations chose usability: 50 percent rated it very important, and another 41 percent rated it important. That was followed by functionality and reliability, each called very important by 41 percent. Validation of vendor characteristics (including references, viability and commitment) was considered least important, which suggests there is room for additional vendors to enter the market and reinforces the notion that practicality drives software purchases in this segment.

IT-specific analytics are needed to improve asset, resource and project or portfolio management.

The availability of IT analytics is a problem. Asked how available they are to assist in project or portfolio management, asset management and resource management, the fewest organizations said that they are readily available. Approximately 30 percent said in each of these cases the capabilities are generally or completely lacking. It is in the areas of budget analysis (74%) and project management (72%) that analytics most often are generally or completely available, and application performance (70%) – the area in which analytics are applied most often – ranked third. It is interesting to note that IT-specific analyses generally are less available than those that have applicability both within and outside of IT.

Executives said that analytics are completely available in each of the categories more often than other levels of employees. The cause could be preferential treatment of the executives or a lack of understanding on their part of what is available; it also is likely that most executives need analytics less often than some other roles. Midsize companies reported lower-than-average availability of analytics, and the very large reported the highest availability. By industry, manufacturers reported the highest availability of analytics, suggesting that the discipline of running a manufacturing operation spills over into running the IT organization.

What To Do Next

This benchmark research found that when it comes to analytics in support of their own business processes, IT organizations are somewhat like the cobbler's children who have to go without shoes. Organizations indicated there is plenty of room for improvement: 85 percent said they can improve somewhat or significantly their use of analytics and performance indicators. Our Maturity Index reveals that most IT organizations are maturing sporadically in their use of analytics. More than half rank at the two lowest maturity levels and only one in seven are at the highest Innovative level.

Yet despite recognizing both need and opportunity for improvement, only one-quarter of organizations are planning to change the way they generate and apply IT analytics in the next 12 to 18 months. This research shows that organizations are not motivated to make the necessary changes, have not built the business case or raised awareness of the issues; as a result there are no resources or budget to implement the changes. In order to enable progress in the development and use of IT analytics companies must focus on timely delivery of the metrics that will create the most value for the organization. To help determine and implement such changes in your own organization, we offer the following recommendations.

Assess the maturity of your organization's deployment and use of IT analytics.

The research found that organizations are still developing their abilities to apply analytics to the business of IT and that by their own assessment many need to improve their capabilities. The metrics they rely upon are generally traditional measures of historical IT performance. However it is a sign of maturity that more than half of organizations indicated that developing predictive models of IT usage is important or very important. Another sign of maturity is the recognition by more than half that it is very important to make it simpler to provide analytics and metrics to all who need them.

Applying the Ventana Research Maturity Index methodology, which evaluates maturity in four categories (People, Process, Information and Technology), we found that organizations are most mature in IT analytics in the Technology category and least mature in the People aspects. We advise you to evaluate your own capabilities in all four areas to determine how to apportion your efforts to heighten awareness of the benefits of advancing IT analytics and deploy resources to supply more timely, complete information.

Enlist support for improvement in how analytics are used.

Nearly nine out of 10 organizations said they can improve the way they use analytics to improve their individual or business unit performance. Executives feel even more strongly (49% vs. an average of 37%) that performance can be improved significantly. Find out whether this is the case in your organization, and if so use it to secure more resources and budget for improvement. The research also shows that the most important barrier to making changes in IT analytics (cited by half of organizations) is that the business case is not strong enough. Therefore, engage a cross-section of the organization to determine which analytics will benefit the business as a whole, not just the IT group, and in what ways. Build the business case for IT analytics on the bottom-line impact of the proposed changes and identify

the changes that need to be made not only from a technology perspective but also in terms of people, processes and information. One method for building the business case is noted below. You may also discover other revenue enhancement or cost avoidance opportunities within your organization if you follow our recommendation below to involve other business units in your metric-setting processes.

Build a case for ROI based on cost avoidance.

The financial metric found in this research to be most important is return on investment (ROI), cited by nearly two-thirds of organizations. Many of the metrics executives and managers are interested in can be related directly to cost avoidance; these include SLA compliance, project schedule adherence and governance and risk management. Quantify the costs of falling out of compliance with your various service levels, of project delays and of failure to manage governance and risk effectively. Identify IT analytics projects that can reduce these costs and compare them to the costs of implementing them. From available choices, propose to do first the projects that have the highest impact and establish success with them. Then build on that success with other projects on your list.

Look into alternatives to on-premises deployment.

Deploying IT analytics through software as a service (SaaS) or hosted by the supplier can be a way to reduce costs and demand for in-house resources, speed implementation and deliver projects on time. In this research, more than one-third of organizations said they prefer off-premises deployments, and a similar number of executives support such a move. Executives also show the least preference for on-premises deployments. However, professionals in the data center are most resistant to the idea so acquiring buy-in from IT specialists will be necessary as well. Our research shows a clear trend. Across benchmark research projects in multiple domains, Ventana Research consistently sees organizations increasing their adoption of off-premise solutions. If IT ignores this trend, it does so at its own peril.

Get the right people across the organization involved.

In our analysis of the four categories of the Ventana Research Maturity Model, the least mature on average is People, with more responses at the lowest maturity level than any other category. A first step here could be to broaden the numbers of people and groups from across the organization involved in setting the metrics for IT. Research participants identified themselves and the heads of their business units most often as very involved in establishing requirements for defining analytics. They ranked improving the value of IT to business managers (55%) as second-most important to the process of deciding whether to invest in analytics. Yet the heads of and business analysts in other business units are least involved in setting requirements. Educate these people on the types of information available for analytics and work to identify what information would be important to them.

Implement metrics that can further the organization's business objectives.

The research uncovered some conflict between IT-centric and business-related priorities. Participants said that business user satisfaction is the most important metric for executives and managers. Yet the most important IT administration-related technology for analytics is integrating security and user frameworks. Security

may be a major concern to IT, but it does not drive business user satisfaction. Similarly, on-time project delivery is the most important process metric, but rapid development of applications ranked only fifth among important or very important IT administration-related technologies for analytics. Reconcile these differences by examining the processes you use and, as noted above, the people you involve in setting metrics. Consider innovative metrics such as those involving predictive analytics rather than just historical analyses. Historical analyses can help you understand what happened in the past, but predictive analytics can identify actions that can help prevent future problems from occurring, thereby reducing the costs associated with those problems. Predictive performance models are considered very important by more than one-quarter of organizations, and even higher percentages of executives (40%) and managers (35%) rate them very important.

Streamline data collection and preparation to allow more time for analysis.

This research shows that the data collection and preparation process for IT analytics takes too long. A large component of that can be attributed to inefficiency: People spend nearly two-thirds of their time waiting for data, preparing data or reviewing it for consistency and quality. To improve matters, find the inefficiencies in your processes, your technology and your people that delay your organization from actually analyzing data. Automate processes wherever possible, preferably with a tool that has robust error-handling and workflow capabilities so users don't have to wait for data they expected to be available. If you are not already working with data quality and data profiling tools, explore these as a way to speed the process of reviewing data for consistency and quality. Consider service-oriented and event-processing technologies to speed delivery of information if that is an issue. And train your people in using these systems so they can identify opportunities and apply them correctly.

To increase value, deliver and review metrics in timely fashion.

Only one in five organizations delivers metrics immediately after or within one day of generation, and nearly as many require three weeks or more to do it; one-third take up to a week. If data collection and preparation are reduced, information can be delivered more quickly and will be more valuable to the organization. IT and business units should work together to determine how to provide metrics more promptly. The research also shows that only a bit more than one-third (37%) of organizations review metrics daily or weekly, and nearly as many (35%) review them only quarterly, annually or not at all. Establish processes to ensure that metrics are reviewed while the data still has the most currency and the opportunity exists to respond to opportunities presented by the data.

Explore ways to remove performance bottlenecks.

Almost nine in 10 organizations said it is important or very important to reduce performance bottlenecks in systems that support analytics. There are many techniques that can be used to do so. As databases are the most important source of data for IT analytics (in 61% of organizations), consider massively parallel processing, columnar databases and in-memory technologies as ways to accelerate processing. These same techniques can improve performance of business intelligence systems, which are the second-most-common source of data (59%). If the volume of data is causing even these advanced technologies to buckle, consider whether

Hadoop can be used to reduce some bottlenecks. Also, review your data integration processes and the versions of the products you are using for data integration to ensure that they are multithreaded and operate in a parallel fashion. Most of the major data integration vendors have parallel versions of their product offerings these days, but in some cases you must purchase the parallel version as a separate option. If your organization doesn't have access to the parallel version, explore whether it would be worth purchasing and deploying that option.

Consider alternatives to spreadsheets to minimize errors and data inconsistency.

Along with business intelligence technologies (for querying, reporting and performing analysis) and analytic warehouses and databases, spreadsheets are the instruments IT organizations most commonly use to generate analytics. Typically, the warehouses and databases provide the basic data that people copy into a spreadsheet for further analysis and the creation of final reports. IT professionals cited databases and BI systems as the primary information sources for building analytics; in this case spreadsheets finished seventh. However, spreadsheets provide digested information drawn originally from various areas of the business, with the sources being a mix of enterprise systems and other spreadsheets.

This finding leads us to repeat one of our most persistent admonitions: While spreadsheets are appropriate for ad-hoc analysis and for information used by a limited number of people, organizations must limit their use of them as data stores and for repetitive analyses, particularly in cases where the results are reported to and used by more than a few people. Using relational or multidimensional databases as data stores and enterprise systems to perform analyses and provide reports ultimately saves time, reduces errors and therefore costs less and performs better in the long run than does relying on spreadsheets. As we advised above, make a business case for replacing spreadsheets based on core business benefits like these.

Identify sources of funding for improvement in IT analytics.

This research shows that slightly more than one-third of organizations fund IT analytics from the business IT budget. This is the most common source, but two other common sources are the general IT budget (29%) and the general business budget (25%). However, the source of funding is significantly impacted by size of organization, with very large organizations (by annual revenue) most likely to fund IT analytics from the business IT budget and small and midsize organizations more likely than average to fund these efforts from the general business budget. Industry also plays a role as half of manufacturing organizations fund IT analytics from the business IT budget and services organizations are more likely to fund these projects from the general IT budget. It is important to understand the sources of funding because it will surely have a significant impact on the criteria for funding decisions. Ensure that the funding sources are involved in the metrics-setting process noted above to maximize the likelihood of approval and minimize the danger that the funding will be revoked if the organization faces a budget crunch.

Learn what matters most in your industry.

The research uncovered characteristics in the use and deployment of IT analytics as well as attitudes and preferences that vary depending on the industry. Here are some of the most revealing.

- Finance, insurance and real estate (FIRE) companies are less satisfied than average with the processes used to create analytics, and collecting data gets in their way more often. They are more likely to access source data for analytics and are more willing to consider off-premises solutions. FIRE companies are less interested in on-time project delivery than other industries and have more applications in maintenance mode than other industries.
- Manufacturing organizations are most willing to consider dedicated technology to overcome performance bottlenecks, and they see the greatest opportunity to improve their use of analytics and performance indicators.
- Government organizations are more satisfied than average with their existing analytic processes yet are the most likely to change to improve business processes and decision-making. They spend the most time preparing data and are more likely to want on-premises solutions. And they rely more than average on spreadsheets.
- Services companies have the highest percentage of important metrics available with a week and are the most likely to give a BI or data warehouse team primary responsibility for designing and deploying analytics.

As well as surveying your own constituents, look for evidence of what competitors and those in parallel industries value most. Reputable vendors and journalistic sources can provide indications. Then compare those with your internal perceptions. Consistency among these sources can help solidify the case for your proposed projects and will provide additional confidence to those reviewing your proposals.

Look for processes and products appropriate for the size of your organization.

When it comes to IT analytics, size does matter. Larger organizations rely more heavily on analytic processes and need more structured communication of the results of these analyses to be able to synchronize plans and actions among departments, business units and locations. Larger companies also have more resources to devote to the task. Therefore they have needs that smaller organizations may not have and are also willing to consider solutions that may be beyond the reach of smaller organizations. Specifically, we found:

- Larger companies are more willing to consider dedicated technology to overcome bottlenecks.
- Access to source data is more important to larger organizations.
- The largest companies have the highest use of real-time data.
- The larger the company, the more likely funding is to originate from an IT budget (business IT or general IT) rather than a general business budget.
- Smaller companies are more reliant on spreadsheets.
- External consultants are twice as likely to have primary responsibility for analytics projects at the smallest organizations by number of employees.
- Smaller companies have fewer projects in maintenance mode.
- Small companies are more willing to consider off-premises solutions.

The availability of resources, the complexity of technology infrastructure and the formality of the controls all vary with the size of the organization. Understand how these and other size-related issues affect you. For example, if your large company is facing bottlenecks, consider dedicated technologies that may help overcome this critical problem. On the other hand if you are at a smaller organization, you may

need to turn to an external consultant to get the most out of your existing technology investments.

How Ventana Research Can Help

Ventana Research helps organizations develop, execute and sustain business and technology programs that align people, processes, information and technologies essential for success. As an objective and trusted advisor, we are your insurance that your business and IT initiatives deliver both immediate and long-term improvements to your business.

We offer a variety of customizable services to meet your specific needs including workshops, assessments and advisory services. Our [education](#) service, led by analysts with more than 20 years of experience, provides a great starting point to learn about important business and technology topics from compliance to business intelligence to building a strategy and driving adoption of best practices. We also offer tailored [assessment services](#) to help you connect the business and technology phases of your project by leveraging our research foundation and methodologies. And we can provide Ventana On-Demand access to our analysts on an as-needed basis to help you keep up with market trends, technologies and best practices.

Everything at Ventana Research begins with our focused [research](#), of which this examination is a part. We work with thousands of organizations worldwide, conducting research and analyzing market trends, best practices and technologies to help our clients improve the efficiency and effectiveness of their organizations.

Through the Ventana Research [community](#) we also provide opportunities for professionals to share challenges, best practices and methodologies. Sign up for Individual membership at www.ventanaresearch.com to gain access to our weekly insights and learn about upcoming educational and collaboration events – webinars, conferences and opportunities for social collaboration on the Internet. We offer the following membership levels:

Individual membership: For business and IT professionals* interested in full access to our Web site and analyst team for themselves. The membership includes access to our library of hundreds of white papers and research notes, briefings and telephone/e-mail consulting sessions to provide input and feedback.

Team membership: For business and IT professionals* interested in full access to our Web site and analysts for a five-member team. The membership includes access to our library of hundreds of white papers and research notes, briefings, telephone/e-mail consulting sessions to provide input and feedback and the use of Ventana Research materials for business purposes.

Business membership: For business and IT professionals* interested in full access to our Web site and analyst team for their larger team or small business unit. The membership includes access to our library of hundreds of white papers and research notes, briefings, telephone/e-mail consulting sessions to provide input and feedback, use of Ventana Research materials for business purposes and additional analyst availability.

Business Plus membership: For business and IT professionals* interested in full access to our Web site and analyst team for larger numbers of company employees. The membership includes access to our library of hundreds of white papers and research notes, briefings, telephone/e-mail consulting sessions to provide input and

feedback, quotes and validation for media, use of Ventana Research materials for business purposes, additional analyst availability and access to our team for scheduled strategy consulting sessions.

To learn more about Ventana Research services – including workshops, assessments and advice – please contact clientservices@ventanaresearch.com.

** [Additional services](#) are available for solution providers, software vendors, consultants and systems integrators.*

About Ventana Research

Ventana Research is the most authoritative and respected benchmark business technology research and advisory services firm. We provide insight and expert guidance on mainstream and disruptive technologies through a unique set of research-based offerings including benchmark research and technology evaluation assessments, education workshops and our research and advisory services, Ventana OnDemand. Our unparalleled understanding of the role of technology in optimizing business processes and performance and our best practices guidance are rooted in our rigorous research-based benchmarking of people, processes, information and technology across business and IT functions in every industry. This benchmark research plus our market coverage and in-depth knowledge of hundreds of technology providers means we can deliver education and expertise to our clients to increase the value they derive from technology investments while reducing time, cost and risk.

Ventana Research provides the most comprehensive analyst and research coverage in the industry; business and IT professionals worldwide are members of our community and benefit from Ventana Research's insights, as do highly regarded media and association partners around the globe. Our views and analyses are distributed daily through blogs and social media channels including [Twitter](#), [Facebook](#), [LinkedIn](#) and [Business Week's Business Exchange](#).

To learn how Ventana Research advances the maturity of organizations' use of information and technology through benchmark research, education and advisory services, visit www.ventanaresearch.com.