Business Analytics in Retail

Benchmarking the Analysis of Data
To Gain Insight

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Benchmark Research
White Paper

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

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Ventana Research performed this research to determine attitudes toward and utilization of business analytics and metrics in retail. 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 business analytics and metrics practices and needs of individuals and organizations 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 retail organizations are guaranteed success by relying on these results to improve planning. Moreover, gaining the most benefit from improving the use of business 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 the retail sector, and that the analysis and conclusions are entirely our own.

Ventana Research

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Executive Summary

Today where business and technology intersect it seems as if everything is about analytics. Why? The key is information. Businesses, especially those in the retail sector, have more of it than ever before, stored in more systems and locations, being produced in increasingly varied forms and being used in strikingly varied ways. Advances in information technology, many of them newly developed and involving the Internet, have fueled this explosive growth, creating both opportunity – in new ways for retail companies to reach new markets and customers – and complexity – in trying to collect, manage and interpret all kinds of data and turn it into information that can help guide them to success. Technology, a two-sided coin, also can provide tools to handle the complexity, and that is where analytics come in.

Retail businesses now collect and track information from a wider, deeper array of sources: multiple enterprise systems, real-time external feeds from consumers, their own websites and those of others, as well as voice recordings, chat, videos and even social media. But this is only the first step. Under increasing pressure to operate more efficiently and make better decisions, retail business people need capabilities to analyze information, foresee future outcomes and plan how to take advantage of them. In the past they have relied on their organization's IT department to manage business intelligence (BI) systems that provide insight on processes and perform-ance. Such efforts have made strides in standardizing querying, reporting and the delivery of information, but they cannot pro-vide the complex or forward-looking analytic capabilities that line-of-business analysts and management require today.

> **Retail organizations must recognize that they cannot take only a general approach to improving business analytics; they must focus on each line of business and its needs.**

The upshot is that analysts and managers in retail must take more active roles, in colla-boration with business management, in de-fining the analytics they need and the infor-mation sources that go into them. To ad-vance efforts in analytics, business people in this sector must take responsibility for improvement and not assume that IT will know how to deliver what they need. Greater collaboration and cooperation between business and IT departments is necessary, as is greater clarity from the business side on what the right analytics are.

Retail organizations also must recognize that they cannot take only a general approach to improving business analytics; they must focus on each line of business (LOB) and its needs, which vary from finance and human resources to retail operations and the supply chain to marketing and sales, and to customer service and contact centers. Just as important is supplying analytics so the internal IT group can improve its own operations and better support the enterprise systems and infrastructure that enable the rest of the organization. In all of these cases a strong foundation of analytics for retail can support improvement in the key areas of people, processes, information and technology.

In many cases, however, retail-focused companies and individuals must understand first what analytics can do and ascertain what analytics they need. The buzz about analytics in retail has created confusion in several ways. Not only is the meaning of the term itself misunderstood, so are the definitions of the business tools analytics are used to produce: measures, metrics and key performance indicators (KPIs). Nor is there only one kind of retail analytics; confusion also surrounds the differences among historical, root-cause, real-time and predictive analytics. And managers, executives and their reports need to understand clearly the practical business value of applying analytics to their own activities.

Ventana Research undertook this benchmark research to acquire real-world information about levels of maturity in this sector, trends and best practices in how organizations use business analytics. It explores how they do this now, how their personnel feel about the current processes and tools, plans they have to change or improve them, and benefits they hope to gain by doing so. We conducted comprehensive benchmark research into the nature, use and value of analytics in business. As well as extensive research across all industries and lines of business worldwide, an undertaking that analyzed input from more than 2,600 participants, we did focused analyses of seven key lines of business and IT. We also examined in depth analytics use in small and midsize businesses and in 11 vertical industries. This report summarizes the state of business analytics in the retail sector.

> **Many more retail organizations are not satisfied with the process currently used to create analytics (52%) than are satisfied with it (34%).**

This research in retail found that the most important categories of metrics (which we define as measures of business performance) are central to business: financial (identified by 69% of participants), sales (66%) and cost (65%). These priorities understandably varied by line of business: Financial metrics rank first for those in finance and business departments but sales is the first priority for the marketing, sales and product areas. By role, executives were much more likely than the average to mention financial, cost, profitability, sales and pricing metrics; that is, they value higher-level business metrics used for measuring performance of the whole retail organization.

Issues also arise in providing current metrics and KPIs to people. Although 60 percent of retail organizations do so within one week after the end of the month, quarter or year, the rest take longer than that. The timeliness of the source data for metrics and KPIs is a related challenge: For nearly half of these organizations (45%), some or most of the data is stale or outdated. Similarly, more than half (53%) said the data they use for business analytics is only somewhat accurate. Having outdated or inaccurate data is likely to undermine confidence in the metrics it is used to produce, and the research also shows that 35 percent are only somewhat confident or not confident in the quality of the information being generated by their analytics.

In broader terms, half (52%) of retail companies are not satisfied with the process currently used to create analytics compared to one-third (34%) that are satisfied with it; that's 10 percent more in retail that are dissatisfied than is the case for all industries combined. Regarding the current technology for creating and applying analytics, dissatisfaction is rampant in retail organizations: Nearly half (46%) are

only somewhat satisfied with it, and those who are not satisfied outnumber the satisfied (by 22% to 19%). Here again the retail sector's dissatisfaction outpaces that of all organizations.

The findings about which technologies retail organizations currently use shed some light on these numbers. The only tool used by more than half of these organizations (71%) to generate analytics is spreadsheets. More than half of all organizations (59%) use spreadsheets regularly for business intelligence and analytics, and 36 percent more use them universally for those purposes – all but 5 percent of participants use them at least regularly. We have found repeatedly that spreadsheets are not well suited for complex analytics and re-curring analytical and reporting tasks. We often find excessive spreadsheet use associated with negative impacts on accuracy and timeliness, which this research confirmed. Overall, we find that companies that use spreadsheets universally or regularly take about two days longer to pro-vide metrics and KPIs than those that use spreadsheets occasionally or rarely. Those that seldom use them are more likely to describe the data they use in metrics and KPIs as accurate.

> **Companies that use spreadsheets universally or regularly take about two days longer to provide metrics and KPIs than those that use spreadsheets occasionally or rarely.**

For these and other reasons, our Maturity Index analysis concludes that only 9 percent of all retail corporations attain the highest Innovative level of maturity in their use of analytics. Maturity re-quires a balanced focus on people, process, infor-mation and technology; the research found is-sues in each category and also concerns about progress in addressing them. Although a large majority of these participants (63%) said that it is very important to their business goals to simplify making analytics and metrics available, only 40 percent plan to take the Innovative step of changing the way they generate and apply analytics in the next 12 to 18 months. The dominant reasons for making changes are to improve decision-making (for 73%) and business processes (69%).

When we analyzed the maturity of companies' individual lines of business by four aggregated industry sectors, Services (which includes Retail) had the largest percentage of companies at the two highest maturity levels in the product and supply chain LOB and was tied for the most in two others, IT and the contact center. Thus, retail companies are in one of the most mature industry sectors for business analytics, but as a slice of that demographic Retail is less mature than others in it.

Fundamental barriers block the road to improvement for many retail organizations. The absence of awareness of the need to change, of resources, of a budget or of executive support all were identified as issues by more than one-third of participants. To overcome these barriers will require first understanding the business benefits of investing in an initiative and then choosing the right tools to help deliver them. Among our standard seven technology and vendor considerations, two-thirds (67%) of retail organizations said that the most important is usability – being able to apply the tool readily to business needs; the next-most important are the reliability of the analytics (cited by 46%) and the functional capabilities (42%). We note also that in today's environment in which nontechnical users must be able to benefit from a tool

as much as analysts, both ease of use and a gamut of capabilities from the simple to the sophisticated are necessary.

Thus, retail companies are maturing only slowly in their use of analytics despite the fact that they view them as valuable and important. This benchmark research indicates that usability and reliability are important criteria in their search for the right analytics, that failing to examine timely availability, broad access and efficient handling can obstruct analytics use, and that in technology terms spreadsheets should be replaced with more appropriate tools. When business users of analytics are clear about their needs, analytics can be developed and tuned more efficiently and they can explore new approaches such as predictive analytics and the availability of analytics on mobile devices. But investments in analytics must still be sold, using arguments about improving decision-making and business processes.

About This Benchmark Research

Methodology

Ventana Research conducted this benchmark research over the Web from March through December 2010. We solicited survey participation via e-mail blasts, our Web site 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 prior to 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 incented 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 business analytics across organizations and industries. We described qualification to participate 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 participants 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 broad range of roles and titles working in retail businesses. We evaluated the qualifications of those who clicked through to the survey and included the answers of all qualified respondents. 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 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, when measured by number of employees the largest group of participating retail organizations (40%) is very large companies (having 10,000 or more employees). About one in seven are large companies (with 1,000 to 9,999 employees). Somewhat less than one-third are midsize companies (with 100 to 999 employees), and the smallest group is small companies (with fewer than 100 employees). While somewhat heavier on very large companies than usual, this distribution is consistent with our research objectives and provides a suitable sample from each size category.

Figure 1
Participants by Company Size (Number of Employees)
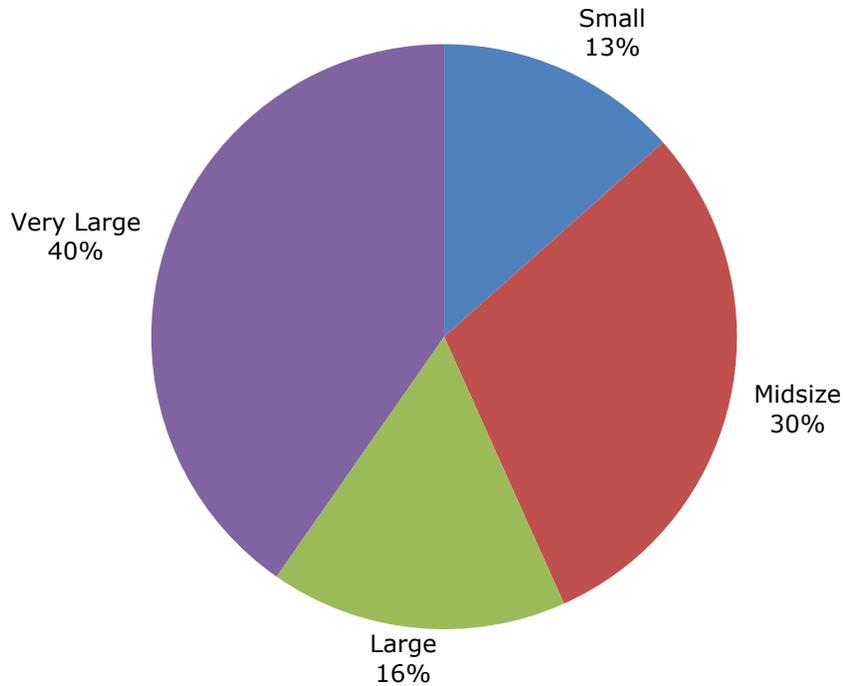
Source: Ventana Research

Company Size by Annual Revenue

When we measured size by annual revenue, the distribution of categories shifted downward, with small companies gaining the most. By this measure, one-fourth each are very large companies (having revenue of more than US$10 billion) and large companies (having revenue from US$500 million to US$10 billion). The number of midsize companies (having revenue from US$100 to US$500 million) fell by two-thirds, and more than three times as many by this measure are small companies (with revenue of less than US$100 million).

Figure 2
Participants by Company Size (Annual Revenue)
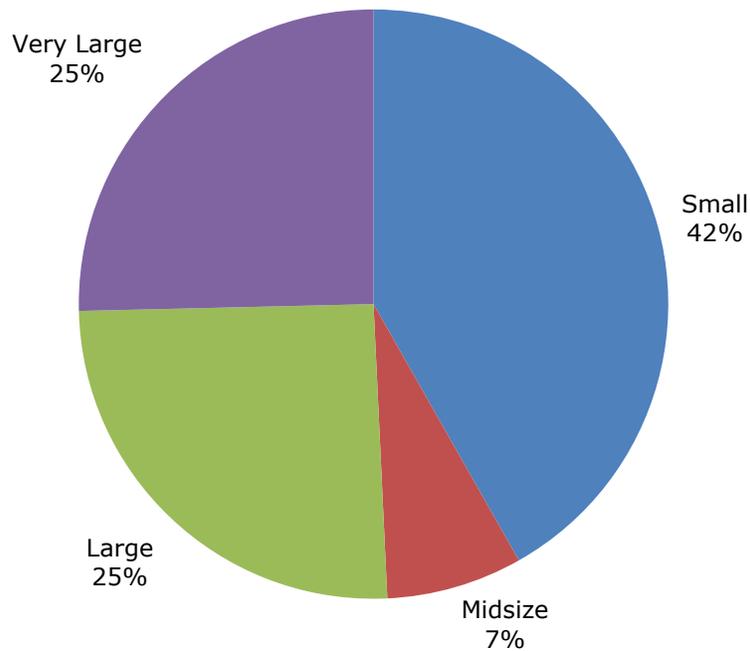
Source: Ventana Research

Geographic Distribution

Three-fourths of participating companies are located or headquartered predominantly in North America. Those based in the Middle East formed the second-largest area at 12 percent, followed by those in Asia Pacific (9%) and Europe (4%). 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. The percentages of retailers from these continents are almost the same as was the case across the board in our overall analytics research.

Figure 3
Participants by Region
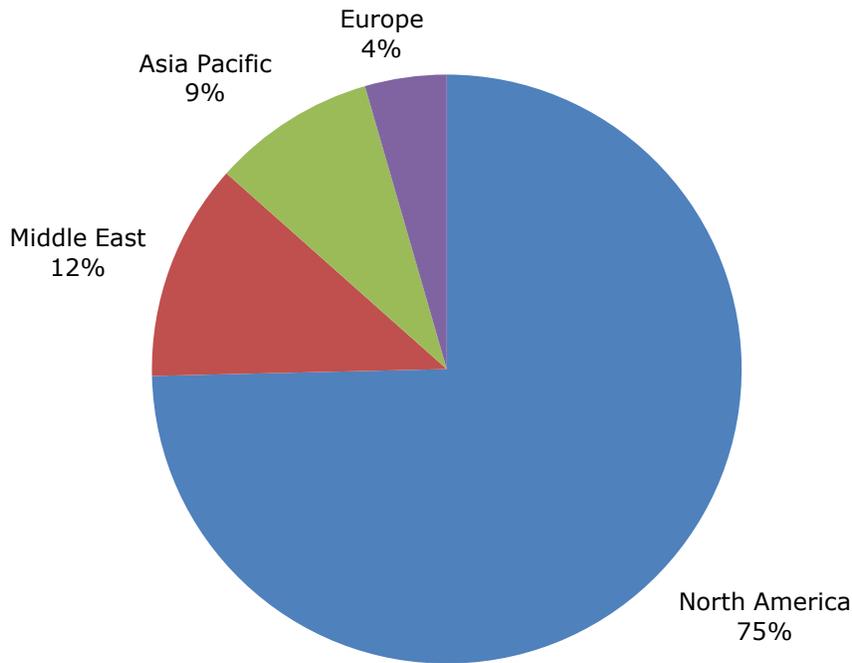
Source: Ventana Research

Job Title

We asked participants to name the job title that best describes theirs. We sorted these responses into four categories: executives, management, users and others. Nearly three-fourths identified themselves as having titles that we categorize as users, a grouping that includes senior manager or manager (30%), director (9%), analyst (19%) and staff (4%). Those with vice president titles constitute the management category, which amounts to 6 percent of the total, and 18 percent are executives. In the retail sector, 5 percent more are executives than was the case in our overall analytics research. A variety of other titles, each with small numbers of participants, added up to 3 percent.

Figure 4
Participants by Job Category
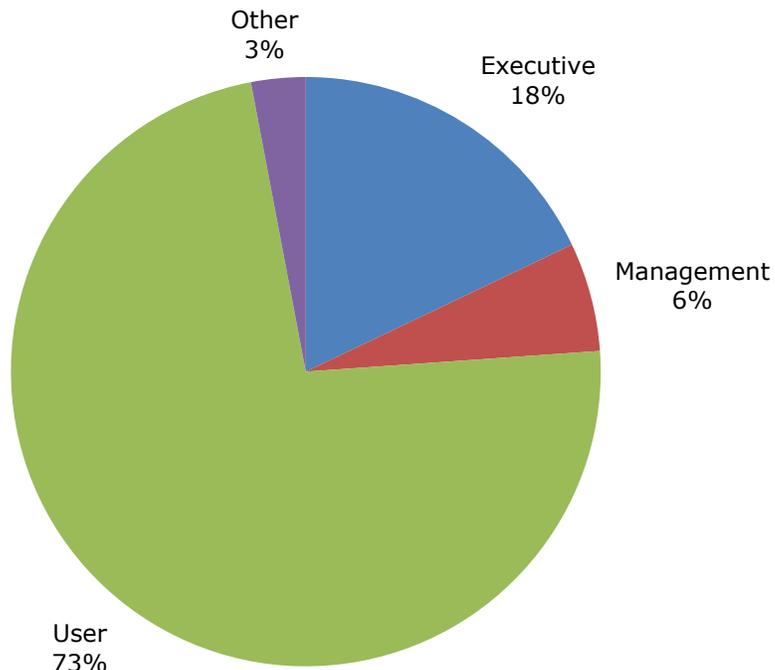
Source: Ventana Research

This is how we aggregated the core title response options:

Executive
CEO, President
Other CxO

Management
EVP or SVP
VP

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

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. More than one-third have finance jobs, the largest grouping. The contact center and IT were the other categories accounting for at least 10 percent of the total. Half a dozen areas with 3 to 5 percent each comprised 23 percent of the total, and six other areas each with only 1 to 2 percent comprised the Other category; combined they contribute to a diversity of functions among participants in retail business.

**Figure 5
Participants by Functional Area**
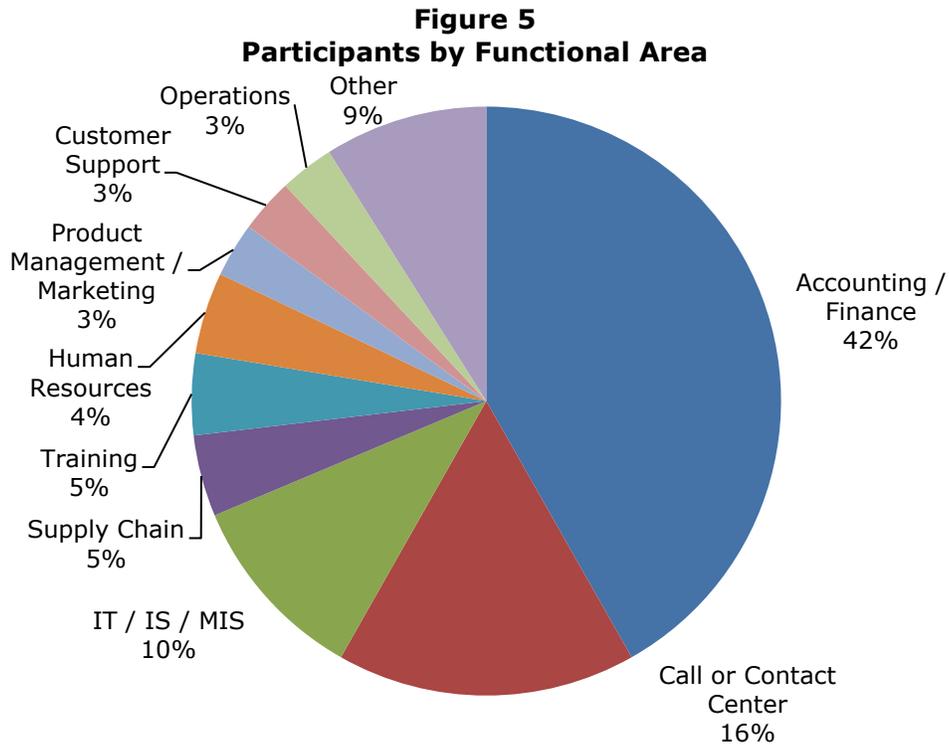
Source: Ventana Research

Key Insights: Retail Analytics

Our benchmark research yielded the following important general findings and key insights regarding the use of analytics in retail organizations. (We discuss maturity levels in the Maturity Index portion of the full research report; the actual questions asked in our survey are in the Appendix to the research report.)

Retail organizations are maturing slowly in their use of analytics.

This benchmark research found that retail companies are advancing in their ability to apply analytics, but most have substantial room for improvement. The Ventana Research Maturity Index places only 9 percent of them at the highest Innovative level in their use of analytics, and nearly two-thirds (63%) are in the bottom half of the maturity hierarchy.

Retail organizations are held back in the maturity of their business analytics by a variety of factors. In people-related issues our analysis identified lack of skilled resources and lack of executive support. Process-related issues include taking longer than a week to provide metrics from analytics, formally reviewing metrics no more often than quarterly or annually and low prioritization and lack of budget. In information-related issues negatively impacting business analytics use the research identified stale, outdated and inaccurate information as well as failing to prioritize basic informational needs. In the category of technology the research found immature technology that is not working, unsophisticated technology that is known to be ineffective and a failure to prioritize forward-looking and predictive analytics.

All these shortcomings impede a retail organization's effectiveness and performance. The research confirms our long-established hypothesis that maturation in business analytics requires a balanced focus on people, process, information and technology and a dedication to methodical improvement.

The most important categories of business metrics for retail are financial, cost and sales.

Among the categories of metrics, participants identified financial metrics most often (69%) as important or very important to their role in their business; sales metrics (66%) and cost metrics (65%) followed. This is understandable; of data categories, accounting data has been available for the longest time and in the greatest depth, and people's performance assessments typically involve financial targets and their ability to control costs. Sales and cost factors more directly impact organizational performance in retail than in many other industries. The least important metric categories is spend (8%); retail was the only industry to rate spend least important, which is likely because compared to other industries these inherently low-margin businesses already have stringent spending controls. All others placed sustainability least important; for retail it was second-least important (12%).

In our research on the importance of the types of data that underlie metrics, the financial category topped the list for retail (chosen by 78%), followed by sales (67%) and customer (61%) data. However, sales and customer data tied for first among those with IT titles. Users need important data to be integrated efficiently into their business analytics, but the research indicates that retail companies face impediments: More than two-thirds (70%) spend most of their time in unproductive tasks – waiting for data, preparing data and reviewing it for quality and consistency.

Complicating integration is the finding that more than just traditional data from databases is important: text, unstructured data, events and even voice recordings have become needed input for business analytics.

Business analytics users in retail require flexible, capable tools.

The research investigated from several perspectives the qualities retail organizations seek in business analytics. Of the seven categories of product and vendor considerations we use to evaluate analytics products, organizations ranked usability highest, with 67 percent rating it very important. More than one-third each rated reliability, functionality, adaptability, total cost of ownership and return on investment (TCO/ROI) and manageability very important. Even the lowest-ranked factor – vendor validation – was considered important or very important by two-thirds of the participants. That the least important category is validation of vendor references, viability and commitment suggests one of two possibilities: that users generally assume vendors are viable and stand by their software or that they have become wary of vendor references and do not consider them reliable. We note that retail participants ranked reliability and TCO/ROI higher and manageability lower than did all industries combined, perhaps further emphasizing the concern with cost in this sector.

Usability stands out as the most important of seven categories of consideration in selecting business analytics because companies deploy software to "do something." This is more or less the case regardless of company size, industry, individual role or functional area. To be usable and functional, analytics systems also must have the right presentation components; while charts, reports and tables are the presentation vehicles most often selected, visualizations such as gauges and sliders, documents, maps, Web pages and text were also identified as important by more than one-quarter to almost one-half of these companies.

Analytics tools must support a range of roles in a retail organization.

The benchmark research examined analytics needs in the lines of business as well as by analysts in this sector. Much of analytics use is to measure and monitor specific conditions; doing so can, for example, enable management by exception. Such periodic, repetitive analyses (in contrast to one-off data discovery efforts) are fundamental to deriving value from data. Not surprisingly, then, the research finds that the most important capability for an analytics system is to make it possible to search for specific existing answers; this was rated very important by one-third of participants and important by another half. Sharing the results of searches is a natural follow-up, and the ability to publish analytics and metrics was the second-most frequently chosen, deemed very important by 32 percent and important by 41 percent more. When an anomaly is discovered (a routine occurrence in business), individuals need to be able to drill down to find underlying causes, and the fourth-most frequently chosen capability is to explore data underlying analytics, deemed very important by 21 percent and important by 44 percent more. Setting alerts and thresholds ranked third in being very important to retail, deemed so by 24 percent but important by 35 percent, the second-lowest number in this designation. Rated of least importance was to access analytics and metrics via a mobile device, selected as very important by just 9 percent and important by 25 percent. We anticipate that this will grow in importance as more users come to rely on these devices to do their jobs, but the nature of retail business may make it less important in these industries than some others.

Analysts need more sophisticated analytics. Seven of the nine capabilities we suggested were rated important or very important by analysts in at least three-fourths of retail companies. The most important, with three-fourths rating it very important, is being able to source data for the analytics; without this capability it's difficult to put together meaningful analytics. The next-highest-rated was to be able to take action based on the outcome of the analytics (that is, to complete the cycle of measure, decide and act), identified as very important by 62 percent.

Business analytics should be more accessible in retail.

Analytics are not always at hand when people need them, the research shows. Among all our research participants, only one-third of senior executives and one-fourth of vice presidents, directors and managers have them always available. While it is true that a large majority of executives have most of what they need, this is insufficient for optimally effective performance. All organizations pursuing excellence need programs and processes to continuously evaluate the adequacy of the analytics and metrics available to executives and managers and to quickly and efficiently address gaps that they find.

Retail participants said making analytics more accessible is a priority: Nine in 10 regard making it simpler to provide analytics and metrics to those who need them as important or very important. The implication of this finding is clear: Retail organizations must focus on making it easier for employees to access useful and relevant analytics and metrics. Those who have management-level job titles most often said this is very important (75% vs. 63% overall). The research found that the tools that are used most often for analytics are Microsoft Office and spreadsheets, which often produce individual silos of data and analysis.

Issues of timeliness and readiness impede productive use of business analytics and metrics in retail.

Business analytics should be about determining what is happening and will happen to an organization. Unfortunately the research shows that people spend more time fiddling with data than analyzing it in retail as well as generally. Dividing the process into data preparation (waiting for data, preparing data and reviewing it for quality and consistency), data analysis and working with metrics, we find that the first takes the most time for seven in 10 retail companies. Another 5 percent spend most of their time grappling with not-easily-accessible metrics. Only about one-fourth (26%) spend most of their time on the analysis portion of the cycle: assembling scenarios, trying to determine root causes and determining how changes will impact current business. There was only a small difference in this pattern between those who spend 75 percent or more of their time working with analytics and those who spend less. If these issues could be addressed, the amount of time people work with analytics could be reduced; currently 49 percent are spending more than 25 percent of their time with them.

The time required to prepare data for analytics is not the only challenge the research found. The timeliness of the data to which analytics are applied is critical if organizations are to be able to discover and act on metrics and key indicators to improve the performance of processes and people. Even though almost half (46%) of retail organizations work with data that they receive in real time or close to real time, about the same share (45%) said that some or most of the data is stale or

outdated. Time is the enemy of data and business effectiveness. If it takes too long to produce or present the data needed to do analyses and assessments, the results will have less relevance and credibility. Similarly critical is the accuracy of the data, which if it is dubious will require more time to review and ensure consistency and quality. The challenge here also is similar: 38 percent said the data they use for business analytics is accurate, while more than half (53%) characterized it as only somewhat accurate. In other words, it falls short of what it should be: utterly reliable. While it's hard to gauge the seriousness of the accuracy shortfall, persistent small errors in data detract from the perceived validity of assessments and leave room to argue that the data, not the performance it measures, is at fault.

Spreadsheets are not appropriate for business analytics in retail.

Spreadsheets are ubiquitous, and the research shows that along with business intelligence technologies (for querying, reporting and performing analysis) and analytic warehouses and databases, they are the tools most commonly used to generate analytics. The research found that Microsoft Office, with its spreadsheet, presentation and electronic mail components, is used for business analytics in 71 percent of retail organizations. In addition, spreadsheets are used universally in more than one-third (36%) of organizations and regularly in more than half of them.

However, our analysis shows that organizations that use spreadsheets least have more accurate, timely data and deliver periodic reports about 30 percent sooner. 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. Although many people are comfortable with spreadsheets, their failings, limitations and necessary work-arounds undermine the needs identified by this research to simplify analytics and metrics and ensure technology usability in for the process of producing business analytics within retail.

In retail, IT and the lines of business occasionally work together on analytics.

The research found that most people who have primary responsibility for designing and deploying analytics typically have experience with sophisticated tools. In half of retail companies (51%) analytics are designed and deployed by the business intelligence or data warehouse team or by general IT resources. Line-of-business (LOB) analysts are involved in more than one-third of companies; 23 percent use LOB analysts alone and another 20 percent have IT analysts and LOB analysts collaborate. Fewer than one-tenth go outside the company, using external LOB consultants (5%) or outsourced IT resources (2%). This pattern validates our conclusion that a deep understanding of a company's specific operations and requirements is critical to the analytics creation process.

The research also finds that in retail there is less cooperation of business analysts with IT on business analytics than in all industries combined. In 12 percent of retail organizations (compared to 30% overall) the two work together to design and deploy analytics, while business units do that for themselves in 40 percent (vs. 29% overall). In the process of making new analytics available, 28 percent will have the IT organization alone build them. Only 4 percent will work with consulting firms to make new analytics available. Purchasing prebuilt analytics could be a quick way to

deploy analytics when resources are scarce; while only 16 percent plan to do that, this is nevertheless greater than the 11 percent in all industries. In 31 percent of retail organizations the general business budget provides the funds for analytics technology investment; next-most prevalent is the business IT budget (19%), while for 15 percent it is a shared service funded by business and 12 percent use the general IT budget.

Predictive and forward-looking analytics should have higher priority in retail.

Technology has advanced to a stage where it is feasible to enable a variety of users to harness the potential that predictive analytics offer. Yet in our overall research predictive analytics are not high-priority analyst capabilities for the lines of business, nor are what-if and planning-based analytics. Exceptions were contact centers, in which predictive analytics ranked second-most important, and supply chains, where they are third-most important. Finance departments are the least likely to use predictive analytics, even though they could be widely applicable within this function.

In retail, predictive analytics and what-if and planning-based analytics ranked lowest among analyst capabilities even though they could help to advance maturity in business processes. We consider both of these types of forward-looking analytics to be hallmarks of maturity, and these findings contribute to the prevalence of immaturity our Maturity Index analysis found in retail organizations.

Although organizations in retail realize they need to improve business analytics, many are not ready to act.

Overall, less than one-third (29%) of retail companies are satisfied with their current analytics efforts. Moreover, 58 percent of executives said that their company can significantly improve its use of analytics and performance indicators, as did 50 percent of vice presidents. Companies that have issues with the timeliness and accuracy of their data are more likely to say that improvement is necessary, and that their efforts to do a better job must address these issues and their underlying causes. Yet while almost two-thirds of retail organizations recognize a need to make changes, just 40 percent are planning to make them in the next 12 to 18 months. Another one-fourth acknowledge the need to make changes but don't view this as a sufficiently high priority on which to take action. We note that although these numbers show significant inertia, more retail companies plan to act than do organizations overall (33%); 6 percent more in this sector than the average are satisfied with their current efforts.

The research shows that the most significant barriers to making changes in analytics are fundamental: lack of awareness, no budget and lack of resources. Awareness of a need to change obviously is fundamental to any initiative. Resources must be adequate to enable investment in technology to make analytics easy to access and use. Driving change and addressing barriers require understanding the benefits of investments; the research found that the factors most often driving change in retail organizations are seeking to improve decision-making (in 73%) and business processes (69%). As well as these choices, improving visibility into business areas, increasing profitability, workforce productivity and operational efficiency, and gaining a competitive advantage each was cited by at least half of retail organizations.

Cloud computing is on the rise for business analytics in retail.

Installation on-premises remains the most popular option for deploying business analytics, with almost two-thirds of retailers preferring this method to purchase and maintain them. However, the research found that one in five prefer software as a service (SaaS), an on-demand approach commonly called cloud computing. A mere 2 percent prefer software hosted by the supplier. A significant number (15%) expressed no preference for any of these approaches and so may be open to new methods to acquire business analytics. We conclude that, while less popular in retail than overall (27% prefer it), SaaS is no longer a marginal preference and can provide affordable, rapid deployment to enable any size of retail organization to gain access to business analytics. Interestingly, participants with IT titles in this sector prefer on-premises less often than business people do (57% vs. 65%) and are more willing to consider SaaS (by 29% to 19%), although IT groups traditionally have wanted systems installed under their control. Analyzed by size, midsize and large retail organizations prefer on-premises most often, while those at the extremes – small and very large ones – are most inclined to consider on-demand deployment.

What To Do Next

Participants in this benchmark research expressed a number of common concerns regarding the need for and use of business analytics. The metrics they most often identified as important across their varying roles span the core categories of financial, cost and operations. The research makes clear that many are concerned about how well they handle them; only one-third (34%) of retail participants are satisfied with their current analytics efforts. For retail businesses wishing to improve their performance through business analytics, we offer the following recommendations.

Assess the maturity of your business analytics.

This benchmark research found that retail organizations are held back in the maturity of their business analytics by a variety of factors. The Ventana Research Maturity Index places only 9 percent of them at the highest Innovative level in their use of analytics, and almost two-thirds (63%) are in the bottom half of the maturity hierarchy. In people-related issues our analysis identified lack of skilled resources and lack of executive support. Process-related issues include taking longer than a week to provide metrics from analytics, formally reviewing metrics no more often than quarterly or annually and low prioritization and lack of budget. In information-related issues that negatively impact business analytics use, the research identified stale, outdated and inaccurate information as well as failing to prioritize basic informational needs. In the category of technology the research found immature technology that is not working, unsophisticated technology that is known to be ineffective and a failure to prioritize forward-looking and predictive analytics. These shortcomings all impede a retail organization's effectiveness and performance and all need to be addressed. We advise those seeking to mature in business analytics to take a thorough and balanced approach to their people, process, information and technology issues.

Look for business analytics tools that are easy to use and flexible.

The research investigated qualities retail organizations seek in business analytics. Of the seven product and vendor considerations we use to evaluate analytics products, SMB organizations ranked usability highest, with 67 percent rating it very important. More than one-third each rated reliability, functionality, total cost of ownership and return on investment (TCO/ROI) and manageability very important. Even the lowest-ranked factor – vendor validation – was considered important or very important by two-thirds of the participants.

Usability and functionality – that is, business capabilities – stand out as most organizations' most important considerations in selecting business analytics regardless of company size, industry, individual role or functional area. These should be central focuses in evaluating tools. To be usable and functional, analytics systems must provide a range of options for how to include the information in presentations, and these are increasing; retail participants indicated an interest most often in the standard charts, reports and tables, but visualizations such as gauges and sliders, documents, maps, Web pages and text were also identified as important by more than one-quarter to almost one-half of these organizations. Determine which of these are important to you today and may be tomorrow.

Look for tools that support a range of retail business roles.

The benchmark research examined analytics needs of people in the lines of business as well as analysts in retail businesses. The most important capability for an analytics system is to make it possible to search for specific existing answers; this was rated important or very important by three-fourths of participants, as was sharing the results of searches by being able to publish analytics and metrics. More than half of the participants rated the abilities to set alerts and thresholds and to explore data underlying analytics as important or very important. When you evaluate products, ask about these capabilities for business users and also about the more sophisticated analytics needed by your analysts. The most important capability for them, rated by three-fourths as very important, is being able to source data for the analytics; without this capability it's difficult to put together meaningful analytics. The next-highest rated was to be able to take action based on the outcome of the analytics (that is, to complete the cycle of measure, decide and act), rated very important by 62 percent.

Ensure that business analytics are widely accessible.

Analytics are not always at hand when people need them. In our overall research on business analytics, only one-third of senior executives and one-fourth of vice presidents, directors and managers reported they have them always available. While it is true that a large majority of executives have most of what they need, this is insufficient for optimally effective performance. Nine in 10 retail organizations regard making it simpler to provide analytics and metrics to those who need them as important or very important. Participants in management most often said this is very important (75% vs. 63% overall). We urge such companies to focus on making it easy for employees to access relevant analytics and metrics. In your efforts to improve accessibility of analytics and metrics, keep in mind that doing this from mobile devices such as smartphones and tablet computers will only increase in demand; already one-third of participants said this is important or very important.

Don't let inferior data undermine use of business analytics and metrics.

Business analytics should be about determining what is happening and will happen to an organization. But the research shows that people spend more time preparing data than analyzing it. In seven in 10 retail organizations they spend the most time waiting for data, preparing data and reviewing it for quality and consistency. Conversely only about one-fourth (26%) spend most of their time on true analysis processes such as assembling scenarios, trying to determine root causes and determining how changes will impact current business. If these preparation obstacles could be addressed, the amount of time people work with analytics could be reduced; currently half are spending more than 25 percent of their time with them.

A related issue is the timeliness of the data to which analytics are applied. It is encouraging that almost half (46%) of retail organizations work with data that they receive in real time or close to real time, but about the same share (45%) said some or most of the data is stale or outdated. Analyses and assessments based on such data will have less relevance and credibility. Similarly critical is the accuracy of the data; if it is dubious more time will be required to review it and ensure consistency and quality. While 38 percent said the data they use for business analytics is accurate, more than half (53%) characterized it as only somewhat accurate. Take steps to ensure that your source data for analytics is both fresh and correct; if it

isn't, you risk undermining the use of metrics and KPIs as business improvement tools.

Replace spreadsheets as tools for business analytics.

Spreadsheets are well-established as a tool for analysis in organizations of all kinds and sizes, but they are ineffective for repetitive analyses shared by more than a few people. Yet the research shows that along with business intelligence technologies and analytic warehouses and databases, spreadsheets are the tools small and midsize businesses use most commonly to generate analytics. Indeed, spreadsheets are used universally in more than one-third (36%) and regularly in more than half of retail organizations. While they may be familiar, our research shows that organizations that use spreadsheets least have more accurate, timely data – and they deliver periodic reports about 30 percent sooner. This and similar findings lead us to urge all organizations to limit the use of spreadsheets as data stores and for repetitive analyses, particularly in cases where the results are reported to and used by more than a few people. Their failings, limitations and necessary work-arounds undermine the needs identified by this research to simplify analytics and metrics and ensure technology usability in the process of producing business analytics.

It helps when IT and the lines of business work together on analytics.

The research found that most people who have primary responsibility for designing and deploying analytics have experience with sophisticated tools. In more than half of retail companies (51%) analytics are designed and deployed by the business intelligence or data warehouse team or by general IT resources. Line-of-business (LOB) analysts are involved in more than one-third of companies; 23 percent use LOB analysts alone and another 20 percent have IT analysts and LOB analysts collaborate. But the research finds less cooperation of business analysts with IT in analytics for retail than in all industries combined. In 12 percent of organizations (compared to 30% overall) the two work together to design and deploy analytics, while business units do that for themselves in 40 percent (vs. 29% overall). Investigate working relationships between those on the business side and IT and explore how strengthening them can help make your analytics more useful.

Understand the value of predictive and forward-looking analytics.

Predictive analytics can give a business glimpses of what may happen, the consequences of actions and scenarios for how to respond to change. Technology has advanced to a stage where it is feasible to provide them to a variety of business users. Many retail businesses could be using predictive analytics to manage inventory more effectively by getting a read on sales trends sooner, limiting stock-outs and dealing with slow-moving items earlier in a season. Yet our overall research shows predictive analytics are not yet high-priority analyst capabilities for the lines of business (LOB), nor are what-if and planning-based analytics; each is deemed very important by less than 30 percent in the LOBs. Exceptions were contact centers, in which predictive analytics ranked second-most important, and supply chains, where they are third-most important. Finance departments are the least likely to use predictive analytics, even though they could be widely applicable within this function. In retail, predictive analytics and what-if and planning-based analytics ranked lowest among analyst capabilities. Both of these types of forward-looking analytics can help advance maturity in business processes; consider what they could do for your organization.

Address barriers standing in the way of improving business analytics and performance.

The research shows that the most significant barriers to making changes in analytics are fundamental: lack of resources, no budget, a business case that is not strong enough and too low a priority assigned to the effort. In our experience these barriers are interrelated: Failure to provide a compelling business case results in a project receiving a low priority and therefore not being allocated the resources or budget sufficient to implement the changes. Resources must be adequate to enable investment in technology to make analytics easy to access and use; lack of resources is the foremost process and technology barrier in half of the lines of business. Driving change and addressing barriers require understanding the benefits of investments; the research found that the factors most often driving change in retail organizations are seeking to improve decision-making (in 73%) and business processes (69%). Other drivers were identified as well: improving visibility into business areas, increasing profitability, workforce productivity and operational efficiency, and gaining a competitive advantage each were cited by at least half of retail organizations. Demand that vendors show how their products deliver clear benefits such as these and address issues such as total cost of ownership and return on investment that can help lower the barriers in your organization.

Consider cloud computing for deploying for business analytics.

Almost two-thirds of retail organizations still prefer on-premises deployment for business analytics, but the research found that one in five prefer software as a service (SaaS), an on-demand approach commonly called cloud computing. A mere 2 percent prefer software hosted by the supplier, but 15 percent expressed no preference for any of these approaches and so may be open to new methods to acquire business analytics. SaaS can provide affordable, rapid deployment to enable any size of organization to gain access to business analytics. We advise you to evaluate it if your organization is looking to avoid the effort and expense of having in-house technology resources manage your business analytics.

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 report 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.

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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.

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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.

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* *Additional services* are available for solution providers, software vendors, consultants and systems integrators.

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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.

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