ROADBLOCKS CRUMBLING:
Midmarket Companies
See Early Success
WITH Big Data
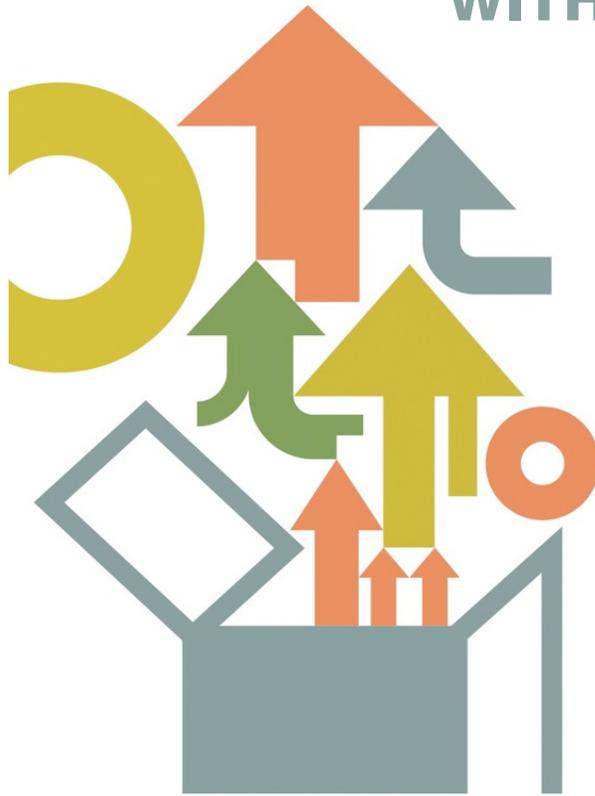
Big data initiatives, enabled by new analytics tools and strengthening ties between business and IT leaders, are helping midsize organizations achieve the improved product quality and decision-making once reserved for large enterprises.

APRIL 2014

Sponsored by:

DELL Software

Contents

Executive Summary

▶ **80 percent of survey respondents agree** that they need to better analyze their rapidly expanding data collections. Among their top goals: Improve product quality, seize business opportunities and speed decision-making.

▶ **41 percent have one or more** big data projects already in place; another 55 percent are starting one.

▶ **Budgets will rise to an average of $6 million** over the next two years as companies invest more in hardware, software and training.

▶ **The biggest drivers** of big data project success are IT/business collaboration, proper skills and performance management to gauge the effects of big data initiatives.

▶ **The biggest causes of failure** in big data initiatives are lack of IT/business cooperation and lack of tools and skills.

▶ **The most influential departments** in big data projects are IT and sales/marketing.

▶ **The most effective tools** in big data initiatives are real-time processing, predictive analytics, data cleansing, data dashboards and visualization.

Methodology

To understand what drives midmarket adoption of big data projects, and the success of those efforts, Dell Software sponsored a global survey of midmarket executives. In the questionnaire, midmarket companies are defined as organizations with between 2,000 and 5,000 employees. The survey findings highlight the technological and organizational factors most critical to success and where big data initiatives can provide the greatest business benefits now and in the future.

Competitive Edge Research Reports posted a 15-question survey on a Web site accessible to executives familiar with big data. The survey, conducted over four days in November 2013, resulted in 300 responses with a 5.5 percent margin of error. In presenting the results, we only highlight data of clear statistical significance, i.e., results differing by more than six percentage points.

The objectives of the program were to:

▶ Understand the drivers for midmarket adoption of big data projects, the critical success factors in project implementations and where big data is helping users realize value from their investments.

▶ Document the technical and business challenges the midmarket faces with big data initiatives.

▶ Explore the tools and technologies midmarket firms need to implement big data projects and the lessons they have learned.

▶ Complement the quantitative and qualitative insights from the survey with interviews featuring consultants, analysts and other big data implementers.

▶ Cite examples of big data and analytics users in midmarket organizations that add insight to the survey findings.

This research program included both quantitative and qualitative components:

▶ An online survey directed at approximately 200 U.S.-based companies, with the other 100 respondents coming from Europe/Middle East/Africa (EMEA) and Asia/Pacific countries. All industries are represented, including non-profit organizations. For more information about the respondents' demographics, refer to the "Methodology" charts at right.

▶ Respondents are from organizations using analytics, using big data in combination with analytics or considering a big data initiative.

▶ In-depth telephone interviews with consultants, analysts and other big data implementers.

Competitive Edge Research Reports provided support in the development of the survey questionnaire, in addition to performing the in-depth telephone interviews and the writing, editing and production of this report. Competitive Edge Research Reports and the author of this report, Robert L. Scheier, are grateful to everyone who provided their time and insights for this project.

Respondents by title

C-level or vice president
50%

Director or manager
50%
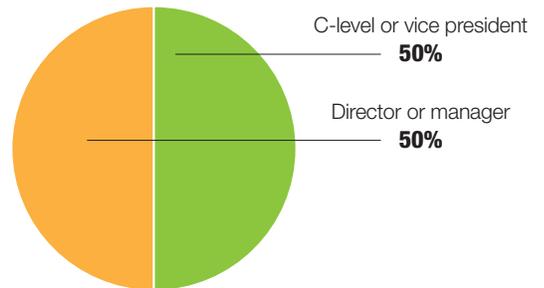
Respondents by functional area

IT involvement
67%

Business
33%
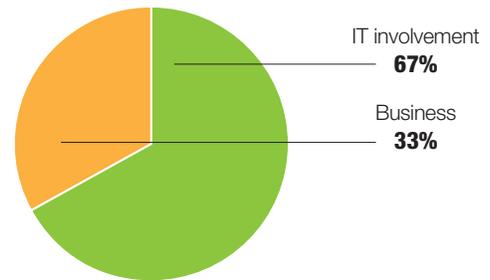
Respondent responsibilities*

Application performance management, including cloud-based apps

55%

IT governance and policies, including budgeting

47%

IT security systems

42%
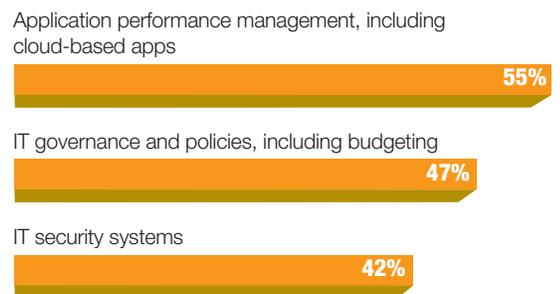
*For responsibilities, respondents were asked to indicate primary and secondary areas of responsibility.

Base: Survey of 300 executives at midsize organizations worldwide
Source: Competitive Edge Research Reports, November 2013 Big Data Survey

INTRODUCTION

It is now clear that big data has taken a big leap from its enterprise roots into the boardrooms and datacenters of midmarket companies everywhere. According to the findings of an executive survey conducted in November 2013, midmarket organizations today overwhelmingly believe in the potential of big data projects to help them solve tangible business problems. What is more, they are backing up that belief with action.

Consider the evidence. Eight out of 10 of the 300 survey respondents agree that they need better data analysis to meet their business goals. Even more impressively, virtually all of them (96 percent) either have one or more big data projects in place or are in the process of starting one (see Figure 1, "Growing Adoption of Big Data," below).

Growing Adoption of Big Data
96 percent of respondents say they either already have one or more big data initiatives in place or are just getting started with one.
(% responding)
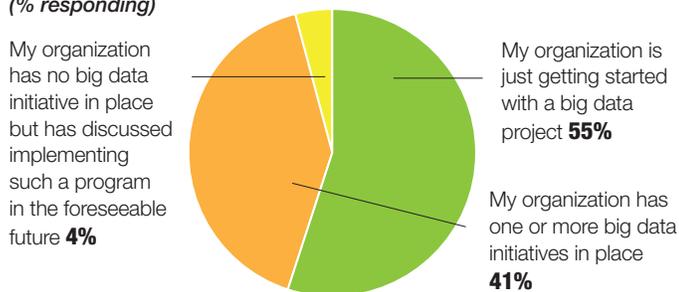
My organization has no big data initiative in place but has discussed implementing such a program in the foreseeable future **4%**

My organization is just getting started with a big data project **55%**

My organization has one or more big data initiatives in place **41%**

Base: Survey of 300 executives at midsize organizations worldwide
Source: Competitive Edge Research Reports, November 2013 Big Data Survey

As the global economy moves from downturn to cautious growth, more midmarket firms are looking to use big data analysis to grow their businesses rather than just find ways to cut costs. "In the age of data, companies of any size can gain a market advantage with better data," says Wayne Eckerson, director of research and founder of advisory firm Eckerson Group. "SMBs (small and midsize businesses) have the opportunity to leapfrog their bigger competitors, but more than likely they fear falling behind the big guys even further."

Those who have gone beyond planning to implementation of big data projects report satisfaction in a number of areas, led by:
▶ Faster decision-making and enhanced marketing.
▶ Improved product and service quality.
▶ A better understanding of customer needs.

Picking the Low Hanging Fruit
Respondents say big data is very important to meeting the following business goals in their organizations.
(% responding)

Improve quality of our products and services
51%

Identify and take advantage of business opportunities
51%

Improve quality and speed of decision-making
50%

Obtain better and deeper understanding of customer needs
45%

Quickly respond to competitive threats or other inputs
44%

Improve effectiveness of our marketing programs
44%

Base: Survey of 300 executives at midsize organizations worldwide
Source: Competitive Edge Research Reports, November 2013 Big Data Survey

Encouraged by their early success—and expecting 25 percent greater benefits in many areas over the next two years—survey respondents expect big data budgets to rise to an average of $6 million over the next two years.

BIG DATA DRIVERS

Midmarket organizations want their big data projects to result in better quality products and services, new business opportunities and improved decision-making. Those are the three top goals driving respondents to act, followed closely by a better understanding of customer needs, quickly responding to competitive threats, improved marketing and predicting future trends (see Figure 2, "Picking the Low Hanging Fruit," above). Only after these tactical near-term goals did respondents mention other business drivers, including reducing operating expenditures; analyzing profits per customer, product or line of business; and better understanding constituent sentiments.

"People always grab the low-hanging fruit. If you can improve the quality of a product by 5 percent, or cut your use of material by 5 percent, the bottom line is right there," says Steve King, a partner and analyst at Emergent Research, a research and consulting firm focused on small businesses.

Nearly two out of three respondents say big data analysis has indeed improved decision-making in their organizations. Among industry vertical markets, those respondents in energy and manufacturing are particularly satisfied with their project results. According to Eric Kavanagh, co-founder of analyst firm The Bloor Group, the high level of satisfaction in manufacturing "makes a lot of sense." That is because manufacturers, especially those in the higher ranks of the industry, outfit their production equipment with instruments to help them predict breakdowns and avoid expensive repairs and downtime. This tactic gives them a rich source of real-time production data for driving big data projects.

Although analysis of social media and customer sentiment has gained a lot of attention, it ranks relatively low among midmarket respondents who are considering their priorities over the next two years, meaning a potentially significant source of analytic insight still remains largely untapped. Social media, for example, ranks behind using external market research, logistics data and government data sources in terms of project importance. That is not surprising, Kavanagh says, because social media analysis "is not an easy thing to achieve, and it's not easy to figure out what to do with it." Also, he says, the technology required to do it right "is pretty expensive."

In keeping with the pragmatic customer-facing goals, customer service/CRM, sales, manufacturing, supply chain/logistics and corporate financials are the types of internal data respondents most often cite as "very important" to big data projects.

SUCCESS FACTORS

As in many other areas of IT, collaboration between IT and the business is a well-known best practice for big data projects. It is also one of the biggest prerequisites of project success documented in this survey. Having the proper skills, either in-house or from a service provider, is also cited as a key success factor. So, too, is performance management, which—again—speaks to the need to tie big data projects to measurable improvements.

The need for skilled staff—and for specialized tools in areas such as data cleansing—highlights the challenges organizations face in ensuring the quality of the disparate product, customer, sales and other databases they have gathered over the years. Although the IT organization often takes the lead in implementation, sales, customer service and marketing also take prominent roles in driving big data initiatives.

FIGURE 3

Most Valuable Big Data Tools
Tools that provide insight into real-time data and help predict future events lead the list of what respondents regard as extremely valuable now and in two years. (% responding)
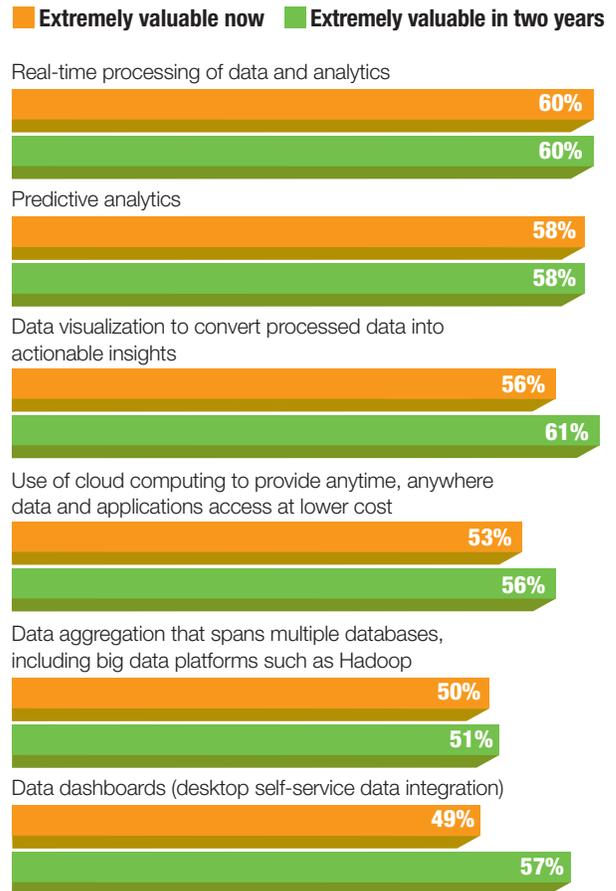
🟧 **Extremely valuable now** 🟩 **Extremely valuable in two years**

Real-time processing of data and analytics
- 60%
- 60%

Predictive analytics
- 58%
- 58%

Data visualization to convert processed data into actionable insights
- 56%
- 61%

Use of cloud computing to provide anytime, anywhere data and applications access at lower cost
- 53%
- 56%

Data aggregation that spans multiple databases, including big data platforms such as Hadoop
- 50%
- 51%

Data dashboards (desktop self-service data integration)
- 49%
- 57%

Base: Survey of 300 executives at midsize organizations worldwide
Source: Competitive Edge Research Reports, November 2013 Big Data Survey

Following the lack of cooperation between business and IT, respondents report a tight clustering of reasons for why big data projects fail. Some are technical, such as a lack of required skills within the organization or insufficiently capable datacenter tools. Others point back toward the need for better business/IT cooperation, including a lack of user adoption of data analysis tools, incomplete or inaccurate business requirements, and a disconnect between data analytics and performance management.

BIG DATA: Midmarket Companies See Early Success

A Big Boost for Decision-Making

Respondents with big data systems already deployed report significant improvements in decision-making. (% responding)

Big data initiative in development but not yet in production

Improved decision-making
49%

Not yet improved decision-making **42%**

Not sure **9%**

Big data system in production*

Improved decision-making
89%

Not yet improved decision-making **10%**

Not sure **2%**
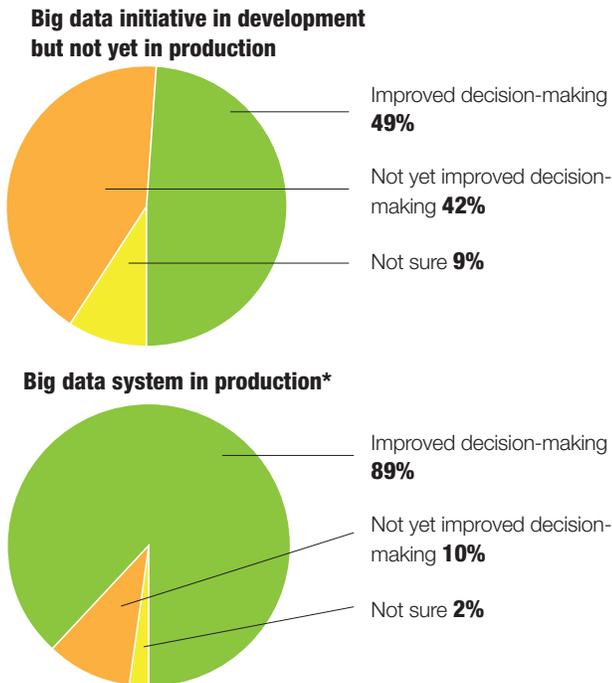
*Total exceeds 100% due to rounding
Base: Survey of 300 executives at midsize organizations worldwide
Source: Competitive Edge Research Reports, November 2013 Big Data Survey

Despite Asia's strong showing in most big data areas, a lack of tools and insufficient funding are greater issues in this region than in other geographies. Having too few servers and not enough storage rank as bigger problems for government than for other verticals, perhaps due to particularly severe budget pressures.

Given the business needs for faster and better decision-making, it is not surprising that real-time processing and predictive analytics emerge as the most prized tools (see Figure 3, "Most Valuable Big Data Tools," on page 6). Financial services, where a missed trading opportunity or a delay in making a trade can cost millions, values real-time processing the highest of all industries.

Examining which tools show the biggest increase in value among those respondents with big data systems in production, rather than only in development, indicates which provide the most value in actual use. Among those are aggregation tools that span multiple databases, the ability to process unstructured data, data dashboards and the ability to search metadata.

Tools to enable data cleansing are expected to see a significant uptick in two years. This focus on data quality is, if anything, overdue, Kavanagh says. "There is a sense of reality dawning upon people [that most organizations] have some pretty dirty data. You need to have a very thorough approach to reconcile your different information systems."

Data dashboards, as well as visualization tools that enable decision-makers to see trends more easily, are also expected to see a significant uptick in two years.

EARLY RESULTS

Although many midmarket companies are just now getting started with big data projects, they are very optimistic about the results they expect to achieve over the next two years. In many areas, such as improving the quality and speed of decision-making or quickly sensing and responding to competitive threats, respondents expect improvements of about 25 percent. How realistic these targets are, especially in light of the more gradual improvements realized by their enterprise predecessors, remains to be seen.

Nevertheless, the early evidence for the value of big data to midmarket companies is encouraging. Of the respondents with one or more big data systems already in production, an overwhelming 89 percent say their decision-making has improved (see Figure 4, "A Big Boost for Decision-Making," at left). Only 10 percent feel their initiative has not yet improved decision-making.

Besides helping them make better decisions, respondents say big data systems are responsible for big gains in several other strategic areas as they move from development to production (see Figure 5, "Where Big Data Is Successful," on page 8). Key tasks where companies report significant improvements after big data systems rolled out include increases in product quality, being better able to identify and exploit business opportunities, and better understanding the requirements of customers.

In general, the larger the organization, the more satisfied it is with its big data implementation. There is, however, a consistent gap of 10 to 20 points between "improvement" and "considerable improvement" in all areas affected by big data, a sign that customers still have room for improvement.

Emergent Research Analyst Steve King believes chances are good that midsize firms will see such improvements as their in-house staffs gain experience. "This is a real learning curve industry," he says, and it is hard for midsize firms to attract experienced big data analysts. The lessons their employees learn in early big data projects will pay off in the next several years, King predicts.

One early example where user data is key is the Washington Post Co., which gathers users' click history on company Web sites to build personalized lists of topical interests for registered visitors. "Big data plays a particularly big role in collecting past data and then building an interest graph," says Vijay Ravindran, senior vice president and chief digital officer.[1]

Another example is *The Dallas Morning News*, which is building a data analytics team to begin better profiling customers. According to Publisher and A.H. Belo Corp. CEO Jim Moroney, his company is using all the data it can to improve its process—and lower the cost—of customer acquisition, both digitally and in print. But there, Moroney runs into a problem common among many midmarket companies: The data he needs is all over the place.

"We have all of the instruments that we need to create a symphony, but we don't have a conductor who has the tools to create blended music," Moroney says. "The question is how do we bring all of the data together in a way that we can analyze it against our customers and get a fuller profile."[2]

CHALLENGES

Despite early success stories, significant challenges remain. "Most companies are trying to collect more data than they have previously, primarily because they are still fleshing out their data warehouses and social media strategies and customer acquisition, churn, and retention strategies by accessing and analyzing all kinds of data," says analyst Eckerson.

But what gives big data so much promise—the ability to search massive amounts of widely varied information to find hidden trends and opportunities—is also its biggest challenge (see Figure 6, "Data Volumes, Budget Limitations Top Big Data Challenges," on page 9). Dealing with a "wide variety of new data types and structures" is the most often cited challenge, mentioned with unusual consistency across geographies, and C-level respondents are almost as aware of it (35 percent) as those at the director/manager level (40 percent). In an encouraging sign of business understanding of big data requirements, a significant number of business respondents (33 percent) also recognize this issue.

FIGURE 5

Where Big Data Is Successful

Respondents grade themselves "very well" on strategic tasks significantly more often after big data is deployed. (% responding)
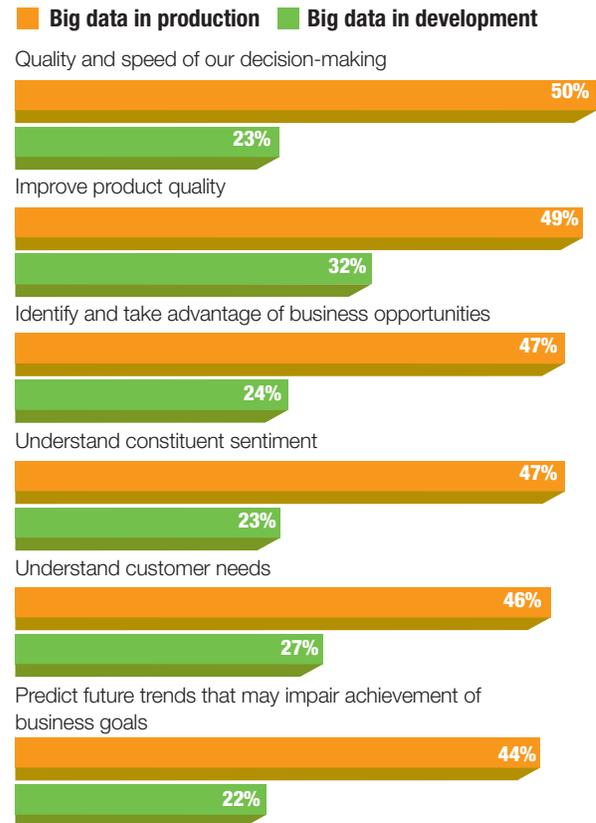
Base: Survey of 300 executives at midsize organizations worldwide
Source: Competitive Edge Research Reports, November 2013 Big Data Survey

The next most frequently mentioned hurdle is "sheer volume of data slows processing." This response reinforces the need for scalable hardware and software to accommodate truly massive data volumes.

Budget limits and determining what data to use in making various business decisions are also frequently cited challenges. These responses point to the need for close business/IT cooperation to first fund, and then to properly carry out, big data projects. The proper choice of data is especially important as big data expands beyond familiar structured data (such as databases) to the use of unstructured data (such as consumer comments on social media, remote sensor data and Web logs). Organizations must also choose among a variety of internal data types, ranging from sales to production and customer information, as well as external information, including point of sale data from retailers.

1, 2. Depp, Michael. "Local Media Pioneers Tackle Big Data." NetNewsCheck, Oct. 8, 2013. http://goo.gl/9xSFGV.

Data Volumes, Budget Limitations Top Big Data Challenges

When asked what are the biggest challenges facing their organizations in using big data and analytics tools to achieve their business goals, respondents mention the following issues. (% responding)

Wide variety of new data types and structures
40%

Sheer volume of data slows processing
34%

Budget limitations to improve our data analysis capabilities
32%

Determining what data (both structured/unstructured and internal/external) to use for different business decisions
29%

Getting business units to share information across organizational silos
27%

Inaccurate data
26%

Understanding where in the company big data investments should be focused
25%

Not enough trained staff to analyze the data
25%

Analytics tools are lacking and many potential users do not have access
25%

Lack of easy-to-use, cost-effective data cleansing tools
24%

Base: Survey of 300 executives at midsize organizations worldwide
Source: Competitive Edge Research Reports, November 2013 Big Data Survey

This response is followed closely by another familiar challenge, "getting business units to share information across organizational silos." Cited by a quarter of respondents, "inaccurate data" is typically a legacy of years of inconsistent data management techniques by diverse business units within many organizations. These survey findings resonate in the strong demand for data cleansing tools to ensure companies do not fall into the "garbage in, garbage out" syndrome of poor decisions caused by faulty data.

Yet another challenge that all companies face is the constant demand for more storage. As midmarket firms invest more in big data projects, they expect data volumes to rise roughly 60 percent, to an average of 24 petabytes in two years. Meanwhile, budgets are expected to rise from current rates of between $2 million and $5 million to $6 million in the same period.

Given that more than half of midmarket companies are just getting started on big data projects, success is still somewhat hit and miss. Only a quarter of respondents in EMEA report one or more big data projects, far behind Asia (55 percent) and North America (41 percent). Different data privacy laws among European countries and a culture of not sharing data are among the reasons likely making it harder to push big data initiatives in that region.

Asia's dominance is not surprising. "It's a major manufacturing center" that relies heavily on big data analytics for quality control and to prevent equipment failures and shutdowns, The Bloor Group's Kavanagh says.

LESSONS LEARNED/KEY OBSERVATIONS

The need to "align" IT with the business so that it delivers business value is one of the oldest clichés in the industry. When it comes to big data in the midmarket, the need for such close cooperation happens to be very, very true.

The top two reasons respondents mention for success and failure—strong cooperation or collaboration between business and IT, and a strong link between data analytics and performance management—are both organizational in focus and speak to the need for IT/business alignment. Recognizing the importance of a link between data analytics and performance management is especially strong for those respondents who have big data systems in production, rising from 17 percent for those with projects in development to 41 percent for those with real-world experience (see Figure 7, "Path to Success: Strong Ties Between Business and IT," on page 10).

Linking big data results to performance management "is a very tough nut to crack," Kavanagh says. The problem is not the tools, but the skills and amount of work required "to populate those systems with relevant data," he says. The lesson learned by survey respondents? Do not skimp on training or staff costs. A lack of required IT skills is the second-ranking reason for failure, just as having the right skills is respondents' third most important success factor.

FIGURE 7

Path to Success: Strong Ties Between Business and IT

Respondents say forging a strong bond between business and IT management is key for big data projects to succeed. (% responding)
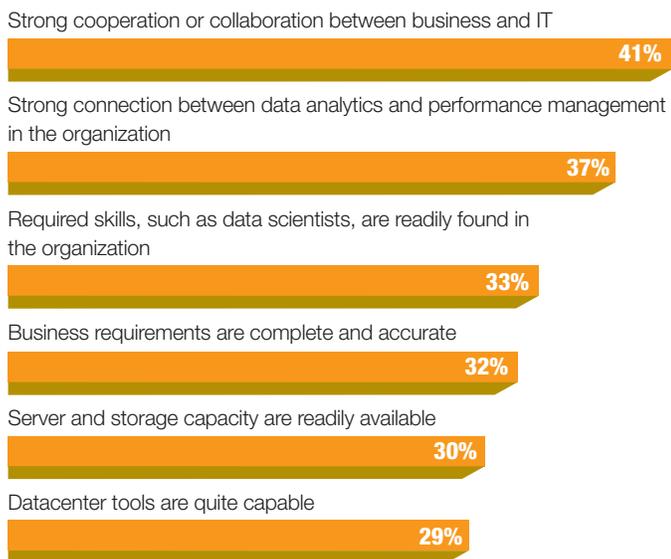
Strong cooperation or collaboration between business and IT

41%

Strong connection between data analytics and performance management in the organization

37%

Required skills, such as data scientists, are readily found in the organization

33%

Business requirements are complete and accurate

32%

Server and storage capacity are readily available

30%

Datacenter tools are quite capable

29%

Base: Survey of 300 executives at midsize organizations worldwide
Source: Competitive Edge Research Reports, November 2013 Big Data Survey

Recognizing the importance that "business requirements are complete and accurate" also shows a strong jump with experience, from 17 percent to 34 percent. Of course, successfully gathering, and validating, such business requirements also implies strong links between the business and IT sides of the organization.

The survey provides encouraging signs of shared responsibilities taking shape among the management ranks. For example, while 76 percent of respondents say IT is most responsible for implementing big data projects, sales management is not too far behind at 56 percent. The fact that sales only narrowly trails IT as a recipient of big data funding shows an emphasis on customer-facing issues that, out of necessity if nothing else, requires close collaboration on big data projects.

SUMMARY AND CONCLUSION

Aware of, but undaunted by the challenges, nearly all midsize businesses surveyed for this report are pushing forward with big data project implementations. Focused on critical business problems such as improving the quality of their products and services and their decision-making, respondents report significant near-term satisfaction and expect even greater improvements over the next two years. As a result, these organizations are looking to grow their budgets and the size of their data stores.

Not all verticals and geographies are, however, realizing the full value of big data projects or investing as much. Among vertical industries, manufacturing is furthest along. The EMEA geographies lag behind in many measures of progress and success. Some of the very attributes that make big data so useful—the amount and variety of data to be crunched—also pose some of the biggest challenges. Faced with such challenges, midmarket organizations report a need for, and an appreciation of, tools ranging from real-time processing to predictive analytics, data cleansing, and data visualization and dashboards.

The combination of new tools, new computing models and a track record of success is leading midsize organizations to invest more in big data solutions. Their leaders are finding that cooperation between business and IT, the use of performance management tools and the right skills are central to big data success. The upside to overcoming challenges such as a wide variety and a massive volume of data is continuing improvement in products, services and decision-making, as well as more agile responses to business challenges. ▲

Succeeding in the Data Economy:
An Opportunity for All

THE BUSINESS LANDSCAPE IS TRANSFORMING BEFORE OUR EYES. Spurred by the digitization of data and information, the rapid proliferation of new data types, and the always-advancing capabilities of modern business intelligence and data analytics technologies, a new Data Economy is rapidly taking shape. With it comes the opportunity for organizations to gain deep insight into their business processes and their customers' behaviors. Prosperous businesses will be those that harness and learn from data to facilitate better decision-making and maximize profitability.

Matt Wolken, Vice President and GM, Information Management, Dell Software

Perhaps the most compelling aspect of today's Data Economy for companies is its applicability to all. The potential benefits of a data-driven approach to business are not the singular domain of enterprise organizations, and they never have been. Despite what it implies, widespread use of the term "big data" has done nothing to change that. What it has done, however, is awaken organizations of all sizes to the longstanding and fundamental need to become more data driven in their decision-making. According to the latest Dell Software-sponsored survey from Competitive Edge Research Reports, this is especially true of those in the midmarket.

BEYOND THE ENTERPRISE

If there were any doubts that the challenges and opportunities big data affords are applicable beyond the enterprise, this new survey goes a long way toward eliminating them. The numbers outlined in the preceding report speak for themselves: 80 percent of midmarket organizations agree that they need to better analyze their data and information, and a staggering 96 percent either have started or plan to start a formalized big data initiative this year. Perhaps more importantly, companies across the board indicate that aggressive investments in additional data analysis initiatives are still forthcoming. As the Data Economy continues to take hold, the success of these future investments will be critical to the long-term prosperity and viability of the companies making them.

That is where Dell Software comes in. Dell Software has assembled a world-class collection of data and information management technologies that help companies of all sizes manage, integrate and analyze all of their data. Dell Software's portfolio features a robust set of software capabilities, including database management and optimization, application and data integration, master data management, business intelligence, advanced analytics, predictive analytics and big data analytics, all underpinned by the company's myriad storage, server and services offerings and partnerships.

FOR MORE INFORMATION

In keeping with Dell Software's heritage, all of the company's information management solutions are designed with the needs of the midmarket—affordability, ease of use and scalability—firmly in mind. So wherever you are going on your journey through the Data Economy, let Dell Software help guide you there.

To learn more, visit http://software.dell.com/solutions/information-management/.

Sponsored by:

DELL Software

COMPETITIVE EDGE
RESEARCH REPORTS

Competitive Edge Research Reports (CERR) is a division of Triangle Publishing Services Co. Inc. CERR provides objective, evidence-based quantitative and qualitative research about how information technologies are used in business and society, highlighting the benefits and challenges of these technologies.