2015

Big Data and Analytics Survey

Exclusive Research from

IDG Enterprise
An IDG Communications Company

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Insights into Initiatives and Strategies Driving Data Investments

Companies are still scrambling to manage ongoing data growth even as they pursue projects designed to generate more value from the data they already have. For many, even keeping pace remains a challenge.

According to a survey of 1,139 IT decision-makers (ITDMs), interest in big data continues its steady rise. More than half (53%) of respondents are currently implementing or plan to implement data-driven projects within their organizations in the next year — an increase of 6 percentage points from 2014 — and a further 8% are considering doing so.

Organizations' approach to data-driven projects varies, sometimes significantly, depending on size and industry. Managing and analyzing new types of data and finding skilled workers to do so remains challenging. However, nearly one in three respondents report that their organization's data-driven initiatives have improved their decision-making and/or their planning and forecasting.

The Importance of Data

Financial services and health care lead the way in implementing, planning, or considering data-driven projects. Indeed, health care outpaces all other industries in its plans to deploy these projects in the next 12 months. Across industries, though, the larger the company, the more likely it is to have a data-driven project in the planning or implementation stage, and the more it intends to spend. Thirty-six percent of respondents say their IT budget for data-driven initiatives will increase over the next 12-18 months; the 41% who say it will stay the same tend to be SMBs.

Exponential data growth underlies the reason companies are so avidly pursuing data-driven projects. SMBs currently tend to manage 1-9 terabyte (TB) of data, while many enterprises are managing 100 TB or more. Seven percent of respondents already manage more than 1 petabyte (PB) of data. Unsurprisingly, 56% of respondents say their users frequently or occasionally report feeling overwhelmed by incoming data and information, while 53% say the influx of large quantities of data has delayed important decisions.

Moreover, the amount of data respondents expect to be managing in 12-18 months is heading steadily upward compared to their current position, with companies handling 1-9 TB of data dropping by 7 percentage points and those breaking the PB barrier increasing by 4 percentage points. Nonetheless, one in three respondents say they have no need for additional information and analytics from existing data.

Measurable Benefits

For most companies, projects that generate greater value from existing data are no longer merely optional. Well over half of survey respondents cite the need to improve the quality of decision-making (61%) or improve planning and forecasting (57%) as the primary business driver for investing in data-driven projects.

Gratifyingly, companies are finding that their investments are paying off. The positive impact on business goals align almost exactly with the desired outcomes, with nearly one in three respondents reporting improved quality of decision-making (29%) and better planning and forecasting (28%).

Virtually all industries showed progress toward business objectives. Notably, technology is seeing greatest impact in increasing speed of decision-making, developing new products/services and revenue streams, and customer acquisition and retention, while health care, government, financial services, and education all report significant impact on their ability to comply with regulatory requirements.

Data Sources

Most companies are still getting most of their data from traditional sources: databases (63%), email (61%), transactional data (53%), and worksheets (51%). However, SMBs get significantly more data than enterprises from email, while enterprises rely on data from transactional data, online portals, and machine-generated data. The answers change across industries as well: health care gets more data than other industries do from online portals, images, and machine-generated data; education is most likely to get data from video; and government is significantly more likely than any other industry to use geolocation data.

Companies are still trying to figure out how to manage unstructured information. While 83% of respondents call structured data critical or high priority, only 43% say the same about unstructured data. Enterprises consider the challenge of managing unstructured information far more important than SMBs do, possibly because they have more unstructured data to work with. Enterprises also place a significantly higher priority on managing cold and inactive (infrequently accessed) data, as do high tech and education organizations.

Talent Wanted

Budgetary limitations, the primary challenge facing respondents for the last two years, has slid to second place (47%). The growing "skills gap" has claimed the top slot, with 48% citing the shortage of employees with data analysis and data management skills.

Despite budgets that are holding steady or even rising, 15% of respondents aren't planning to hire for big data skill sets in the next 12-18 months, and another 17% don't know if they will or not. Where companies do plan to hire, those plans are still focused on the non-managerial level, with data architects and business analysts the most common positions to be filled.

Big data skill sets become progressively scarcer at each level of the organization chart. Only 31% of respondents overall have a director or manager of analytics; only 23% have a BI director, and only about 1 in ten can boast a chief data officer or chief digital officer. Enterprise are significantly more likely than SMBs to have skilled employees at almost all levels. They are also more than twice as likely as SMBs to hire data scientists, almost twice as likely to hire a director or manager of analytics, and twice as likely to hire a chief data officer to help them derive more value from their data.

Ownership and Leadership

The buck for IT investment stops at the top of the IT department: IT heads are significantly more likely than non-IT heads to be in charge of determining requirements and the business need for a solution, recommending and selecting vendors, approving and authorizing purchase, and selling the solution outside the IT team. When looking at the evaluation stage, non-IT heads are not far behind in involvement; 76% of non-IT heads are involved in this stage compared to 78% of IT heads.

When it comes to making strategic decisions around data-driven initiatives, IT clearly leads the way: 30% of CIOs or top IT executives have responsibility for these projects, compared to just 14% of CEOs. However, the business side has its share of input: CEOs are involved at 43% of surveyed companies, the CFO is involved at 36%, and 34% mention line-of-business management. Interestingly, technology companies are much more likely than other industries to give CMOs responsibility for big data initiatives, although CMO-driven projects are still uncommon.

Security Concerns

Although two-thirds of respondents say existing security solutions and products at their organization provide adequate data security, a disturbing 18% say they do not, and another 16% say they're unsure. IT employees at all levels are significantly more likely than business managers to call existing solutions inadequate.

Yet companies are not necessarily doing all they can to protect sensitive data. Although 76% restrict access to sensitive data to limited individuals, only 53% encrypt it. Four in ten store all sensitive data on-premise rather than in the cloud, and 23% store sensitive data across multiple silos rather than centralize it. And, surprisingly, 9% of respondents say their data security strategy is the same for both sensitive and non-sensitive data — though it's impossible to know whether that indicates a failure to secure sensitive data

or an insistence that all data be secured as if it were sensitive. Far more enterprises than SMBs use encryption, store data across multiple silos, and ensure a different data strategy for particularly sensitive data. Intriguingly, non-heads of IT are also more likely than IT heads to cite encryption, though it's unclear why.

Future Investments

Slightly more than half (54%) of respondents expect data driven initiatives to have a significant or moderate impact on their data center in the next 12-18 months. However, those responses skewed heavily toward larger companies, with SMBs prone to saying that data-driven initiatives would affect their data center only a little or not at all. Enterprises are also significantly more likely than SMBs to invest further in technologies to gain business value from data.

Overall, 58% of survey respondents plan to invest in data analytics in the next year, while 42% plan to invest in visual dashboards to help make sense of that analysis and 38% cite data mining. Non-IT heads prioritize visual dashboards and data warehousing. Health care outstrips all other industries in its plans to invest in visual dashboards, data mining, data quality, data warehousing, and master data management.

When it comes to evaluating data and analytics offerings currently on the market, respondents' top priorities overall are integration into existing infrastructure (48%) and ease of use (43%). However, enterprises are significantly more likely to cite integration and scalability, while SMBs place a higher value on ease of use and easy-to-understand pricing models. Industry verticals also have their own criteria: education and manufacturing prioritize support and service; education also emphasizes ease of use; high tech prioritizes innovative solutions and scalability; and health care is especially interested in vendors with industry-specific experience.

Unfortunately, current offerings do not seem to meet the survey respondents' expectations. Forty percent judged existing innovative solutions as excellent or good, but another 44% called them adequate or poor. Other areas also drew lukewarm reviews: 54% said current pricing models were adequate or poor, 51% said vendors' industry-specific experience was adequate at best, and 51% gave low marks to current solutions' ease of use. However, the ability to meet security requirements increased 9 percentage points from 34% to 43%.

Tellingly, a significant minority of respondents, particularly SMBs, said they weren't sure how to rate current solutions on any criteria. It may be that they have a limited basis for comparison, or that they aren't sure whether their expectations are realistic. One thing is clear, however: as data volumes continue to swell and companies have no choice but to pursue data-driven projects, there is clearly ample room for improvement.

Methodology & Respondent Profile

IDG Enterprise conducted its 2015 Big Data & Analytics survey to gain a better understanding of organizations' big data initiatives, investments and strategies. Results in this report are based off of 1,139 respondents who reported their organizations are currently implementing, planning or considering big data projects. Audience members of six IDG Enterprise brands (CIO, Computerworld, CSO, InfoWorld, ITworld and Network World), three United Kingdom brands (CIO UK, Computerworld UK and Techworld UK), and four Australia/New Zealand brands (CIO Australia, CMO Australia, CIO New Zealand and Computerworld New Zealand) were asked to take the survey via LinkedIn groups and email invitations. IDG Enterprise respondents were offered a chance to win a 32GB iPad Mini (up to $500 value) as an incentive for completing the survey. IDG UK respondents were offered a chance to win an iPhone 6 for completing the survey. IDG Australia/NZ respondents were offered a chance to win one of two $250 JB HiFi vouchers as an incentive for completing the survey.

A broad range of industries are represented including high tech (16%), government (12%), financial services (11%), manufacturing (9%), education (9%), professional services (9%), healthcare (8%), telecommunications & utilities (6%), and retail, wholesale and distribution (5%). Forty-six percent of respondents work in organizations with 1,000 or more employees while 51% work in companies with fewer than 1,000 employees (two percent did not provide an answer).

Forty one percent of respondents indicated they are a top IT or security executive at their company or business unit/location. Fifty-three percent of respondents hold IT management titles, 21% hold business management titles, 19% hold IT professional titles, and 7% hold other titles.

The margin of error for a sample size of 1,139 is +/- 2.9 percentage points. For the purposes of this report, "enterprise" refers to organizations with 1,000 or more employees while small and medium organizations are defined as those with fewer than 1,000 employees. For questions requiring respondents to select a single answer, percentages may not sum to 100 percent due to rounding.