BIG DATA
SURVEY EUROPE

Usage, technology and budgets in European best-practice companies

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BARC

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This independent study was written by BARC, an independent market analyst.

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Preface: Big data – From hype to everyday business

Big data isn't just a hot topic for IT and business journalists around the world, it's beginning to transform companies as well. New big data technologies can analyze sensor, geolocation, behavioral and social media data, furnishing organizations with innovative tools to better understand customers and markets, manage risk more effectively, and inform decision making.

In the course of the big data revolution, data will become a key factor of production – perhaps even more important than land, labor or capital. In turn, this information will drive and transform business processes and models, achieving higher levels of quality, efficiency and effectiveness.

This study answers several fundamental questions including: What do companies feel are the key drivers of big data? How is big data dealt with from an organizational standpoint? How is big data used, and what problems are encountered? Which technologies are used, and what investments are organizations making or planning? Which data is relevant for organizations, and how is it currently stored?

Additionally, this study takes a closer look at organizations that, by their own account, do an exceptionally good job of handling data.

This study was independently devised and conducted by BARC Institute. It can be distributed free of charge thanks to sponsorship by Ab Initio, IBM, Informatica, Microsoft, pmOne, Tableau and Teradata.
The information in this paper is based on empirical research providing further input on the topic of big data from a European perspective. To effectively assess current trends and plans for future big data development within organizations, survey participants from business and IT backgrounds were invited to take part in the survey.

BARC would like to thank, in advance, participants of future BARC surveys. Only with your help can we gather the empirical data we need to add valuable input to the discussion.

Wuerzburg, Germany. 25 January 2013

Dr. Carsten Bange, Timm Grosser, Nikolai Janoschek

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Key findings of the survey

Drivers of big data

Big data poses many new and complex challenges for companies. In those surveyed, the main drivers for big data were new or better possibilities for data analysis (75 percent), large volumes of data (72 percent), poly-structured data sources (66 percent) as well as faster data integration (43 percent). With regards to larger volumes of data, 49 percent of respondents anticipated growth rates exceeding 25 percent in 2013.

Organization of big data

In most companies, the topic of big data fell under the responsibility of a BI team or competency center (47 percent), compared to the IT department (23 percent) or individual business departments (16 percent). Best-in-class companies and those located in the UK often assigned the topic of big data to a BI team or competency center. In contrast, individual departments in France, the DACH region (i.e. Germany, Austria and Switzerland) and laggard companies were more frequently in charge of big data.

Big data strategies

14 percent of companies surveyed have already developed a specific strategy for big data. While 63 percent did not have a set big data strategy at the time of this survey, 23 percent of respondents intended to implement one. Merely having a big data strategy, however, was no guarantee that companies handled their data successfully.

Big data spending

Although the topic is still relatively new, companies are already investing in big data and planning further budget increases (approximately 8 percent on average). Nevertheless, spending alone is not a crucial factor in determining whether a company can effectively deal with its data. Best-in-class companies, for example, did not spend the most on big data. They did, however, intend to focus future investment on software. Although midsize companies with 250 to 2,499 employees planned to invest in big data tools, they only allocated slight budget increases.

Usage of big data

Our findings show that big data usage is widespread across organizations. In particular, companies use big data technologies in finance and controlling (24 percent), marketing (19 percent), sales (18 percent), IT (18 percent) and production (17 percent). Participants in our survey saw a broad range of benefits, the top two being better strategic decision-making and improved operational processes.

Problems using big data

The main problems in using big data were attributed to inadequate knowledge of both technical (46 percent) and business (44 percent) issues. No clear business case (36 percent), technical problems (34 percent) and costs (33 percent) were also commonly cited problems.

Using different types of data

Our findings show that organizations widely utilize different types of data, particularly log (55 percent), sensor (44 percent) and unstructured data (40 percent). Social media data has the largest potential. Although only 14 percent of the surveyed companies worked with this data, over 50 percent of them planned to use it in the future.

Real-time data

There is a clear trend towards making data available for analysis in (near) real time. At the time of this survey, companies updated 4 percent of their business data in real time (i.e. under 5 seconds) or near real time (less than one minute). Companies, however, intended to increase these numbers to 10 and 7 percent of their data respectively – the equivalent of a 170 percent and 103 percent increase.

Potential of big data tools

The demand for big data tools will grow in the future. Over a third (36 percent) of companies planned to deploy specialized big data tools, especially analytic databases, big data appliances, Hadoop file systems and streaming databases. In addition to large corporations, small (38 percent) and midsize companies (41 percent) also planned to invest in big data tools.

Characteristics of best-in-class companies

This study also takes a closer look at companies which, by their own account, utilize their data better than their biggest competitors. Our findings show several factors differentiate these "best-in-class" companies:

- Big data ownership in a BI competency center
- Widespread usage of big data (especially in marketing, sales and IT)
- Heavier usage of unstructured and social media data
- More current data
- Specialized big data tools

It is interesting to note that best-in-class companies did not spend more on big data than other respondents. Research revealed they simply spent their money in different, more efficient, ways.

Methodology and demographics

The following study is based on an empirical survey exploring the usage of big data in European companies, conducted by BARC. 274 business and IT decision-makers in Germany, Austria, Switzerland, France and the UK completed the online survey in the second half of 2012. BARC promoted participation in the survey through its own channels, Web sites dealing with big data as well as various newsletters and conferences.

Participants in this study represented a wide range of industries with the most responses coming from services (21 percent), IT (19 percent) and banking and finance (17 percent). The production and process industries (14 percent), public sector (7 percent), telecommunications (6 percent) and retail / wholesale (6 percent) were also well represented in the survey. The remaining participants were from transportation and logistics (4 percent), utilities (2 percent) and other industries (3 percent). More than 50 percent of respondents came from small and midsize companies with fewer than 2,500 employees. The remaining 48 percent were from large companies with more than 2,500 employees.

The respondents held IT (56 percent) as well as business (44 percent) roles. Finance and controlling had the strongest representation (12 percent) among business departments.

About two-thirds (64 percent) of all participants were from the DACH region. 26 percent came from France and 11 percent from the UK. We also used this geographical breakdown to examine individual questions from the perspective of different countries.

In questions where multiple answers were permitted, the results refer to the number of participants and not the number of responses. Accordingly, the sums do not add up to 100 percent.
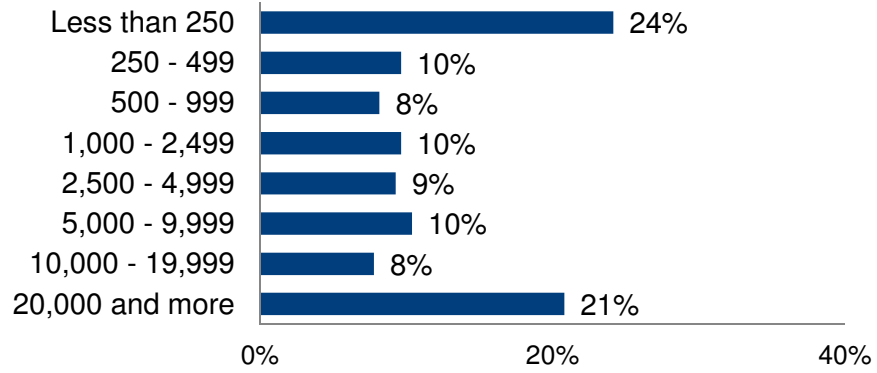
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Less than 250	24%
250 - 499	10%
500 - 999	8%
1,000 - 2,499	10%
2,500 - 4,999	9%
5,000 - 9,999	10%
10,000 - 19,999	8%
20,000 and more	21%

Figure 1: How many people does your company employ worldwide? (n=269)

Services	21%
IT	19%
Banking and finance	17%
Production and process industries	14%
Public sector	7%
Telecommunications	6%
Retail & wholesale	6%
Transportation and logistics	4%
Utilities	2%
Other	3%
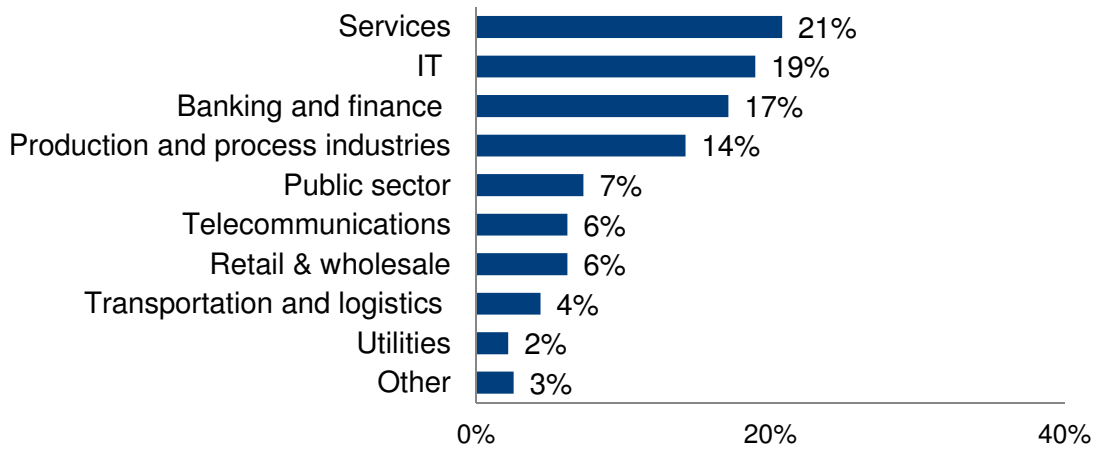
Figure 2: In which industry does your company operate? (n=274)

DACH	64%
France	26%
UK	11%
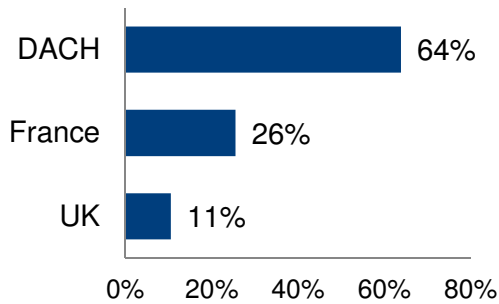
Figure 3: Countries (n=273)

IT	56%
Business	37%
Other	7%
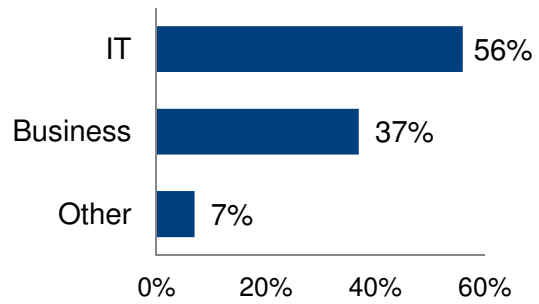
Figure 4: In which department do you work? (n=250)

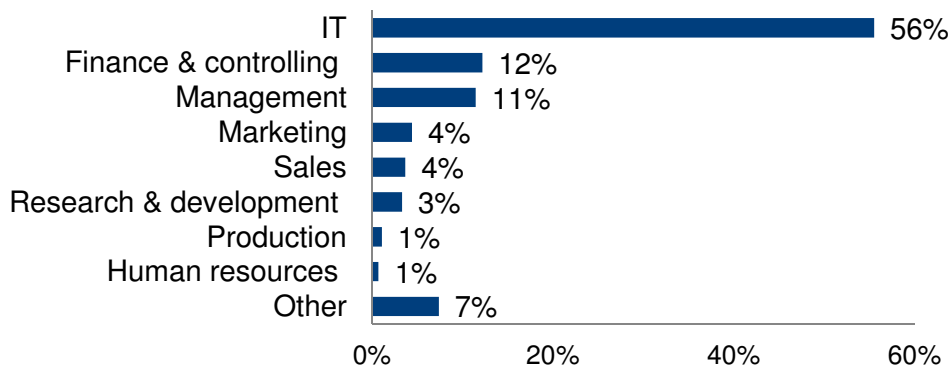|	
IT	56%
Finance & controlling	12%
Management	11%
Marketing	4%
Sales	4%
Research & development	3%
Production	1%
Human resources	1%
Other	7%

Figure 5: Departments (n=270)

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What differentiates companies that use data better than their competitors?

The discussion surrounding big data has only recently gained prominence in the IT and business world. Consequently, there is a distinct lack of information regarding the challenges companies face in order to successfully master big data. There are also further questions that still need answering such as - how does an organization drive profitability through big data? Which organizational aspects need to be taken into account? What advantages can be gained from big data? Does successful big data management automatically entail higher costs for hardware, software and consulting?

Some organizations have responded particularly well to these challenges – but what makes them stand out from the rest? To answer this question, we asked respondents how they used data for analysis and performance management compared to their biggest competitors. Approximately half (49 percent) responded that they utilized business data just as well as their competitors (we will refer to this group as "**average**" companies) and 30 percent stated that they used their data better than their competitors (we will refer to this group as "**best-in-class**" companies). This study will examine what makes best-in-class companies different to their competitors. 21 percent of respondents also believed that their company did not utilize data as well as their competitors (we will refer to this group as the "**laggards**").

The best-in-class companies in our survey were more prevalent in smaller organizations with up to 250 employees (40 percent) and in Germany, Austria and Switzerland (33 percent). The laggards were predominantly large corporations with more than 2,500 employees (25 percent) and based in the UK (27 percent). The average companies were often midsized organizations with 250 to 2,499 employees (58 percent) and were located in France (70 percent). There were no large differences in the assessments of IT or business professionals. Approximately 30 percent of both groups felt that their companies used their data better than their competitors did.
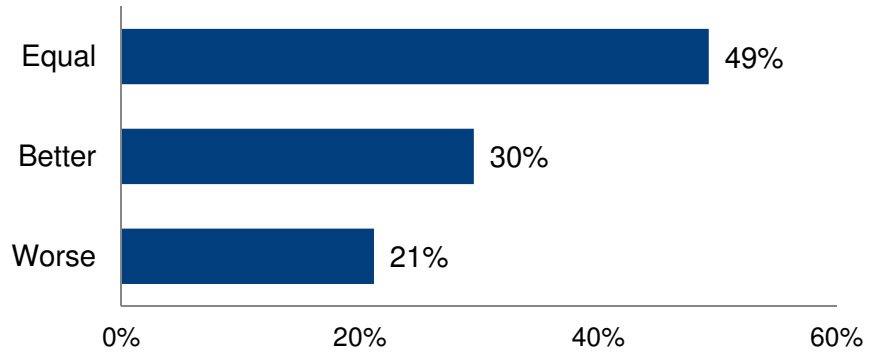
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Figure 6: How would you assess the use of data for analysis and decision support in your organization compared to your biggest competitors? (n=203)
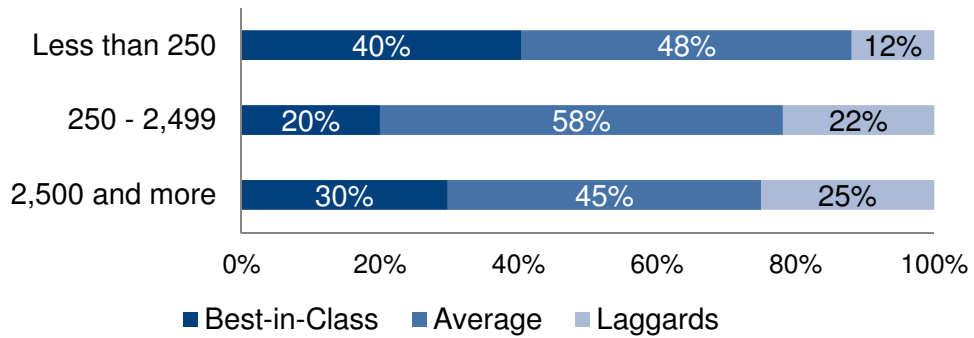

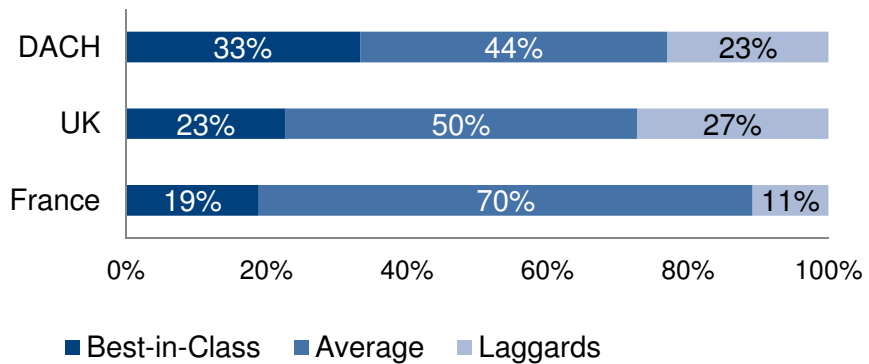**Figure 7: Best-in-class companies analyzed by size (n=201)**

Figure 8: Best-in-class companies analyzed by countries (n=203)
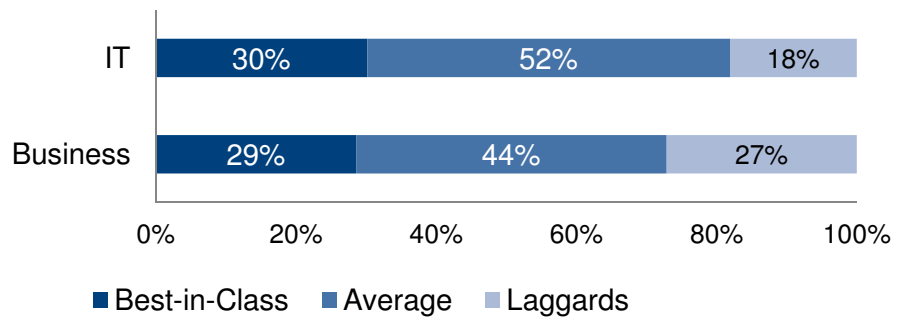

Figure 9: Best-in-class assessment analyzed by business unit (n=186)

Survey results

This empirical study focuses on the challenges companies must address in order to utilize big data. Our understanding of big data is outlined in the following definition, which we shared with survey participants to ensure a common understanding.

> ***Big data***
>
> *describes methods and technologies for the highly scalable loading, storage and analysis of unstructured data. Big data technology can help companies to manage large data volumes, complex analysis and real-time integration of data from a variety of data structures and sources.*

Figure 10: BARC's definition of "big data"

This survey covers fundamental topics such as the organization of big data as well as general usage, associated costs, and related problems. It will also examine technologies used in big data scenarios, the vendors associated with big data as well as the types of data used and how current the data is.

Drivers of big data

To gain a better understanding of the drivers of big data, we asked respondents which problems they wanted to address with big data technologies (Figure 11).

The results were clear. As expected, large volumes of data (72 percent) was listed as one of the top three problems that big data technologies should address. Three-quarters of respondents, however, felt that better or new data analysis possibilities were even more important, thereby highlighting the benefits of using big data. Using information from poly-structured data sources was also an important problem cited by 66 percent of respondents, while 43 percent stated that they wanted faster data integration and 30 percent wanted a better cost ratio.
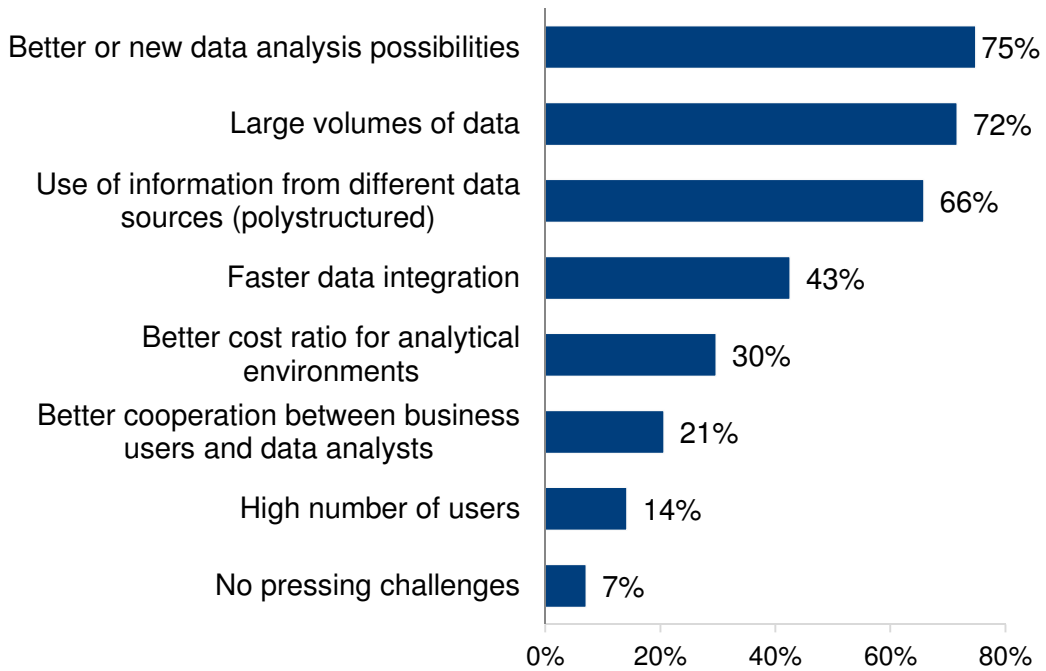
Figure 11: Which problems would you like to address with big data technologies? (n=154, multiple choice)

The responses show that BARC's definition of big data, for the most part, covers the problems that companies would like to address. Scalability for a large number of users (14 percent), however, does not seem to be an issue for the majority of companies.

The responses also show that big data is definitely more than just media hype. Only a relatively small group (7 percent) of respondents felt that big data did not pose any pressing challenges.
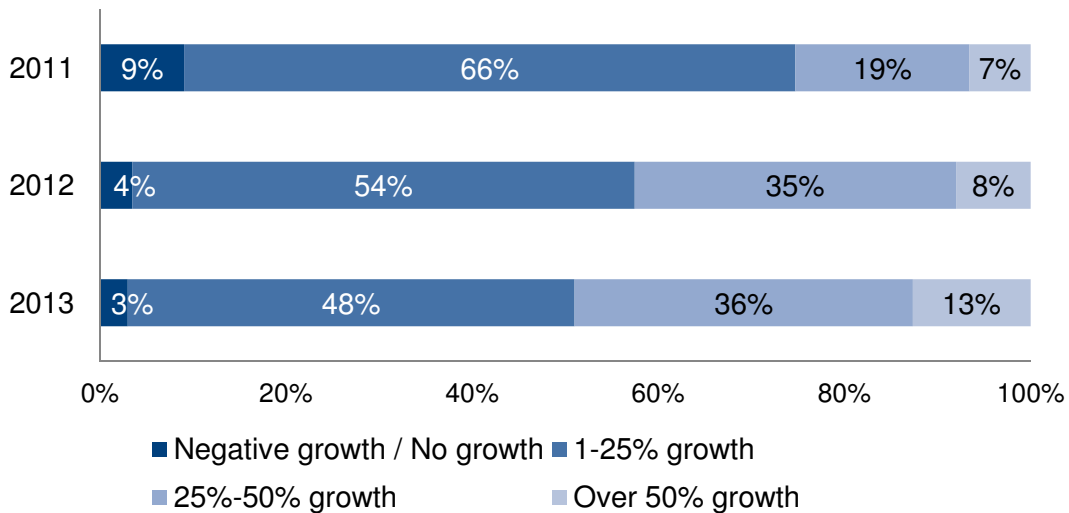

Figure 12: Please estimate the yearly growth of data for reporting and analysis. (n=202)

To make the problem of data growth more tangible, we asked participants to estimate the data growth rates in 2012, the year in which this survey was conducted, compared to the previous year (Figure 12). While almost all respondents reported data growth in 2011 (91 percent), over a quarter observed strong (19 percent) or very strong (7 percent) growth rates during that year. In 2012, that number increased to 43 percent, with 35 percent reporting strong and 8 percent reporting very strong growth rates.

For 2013, 49 percent of respondents estimated growth rates exceeding 25 percent. These responses support our findings from previous studies on data warehousing and data management. Even before the "big data" term was coined, companies had already integrated larger quantities of more detailed data in order to steer their business performance.

With 56 percent of survey respondents stating big data was important or very important for their company, the future of big data will see organizations assigning a higher priority to this growing area, focusing more closely on the challenges and business opportunities it presents.

The organization of big data in companies

The survey asked participants who controlled big data within their organization and whether they had a big data strategy in place.
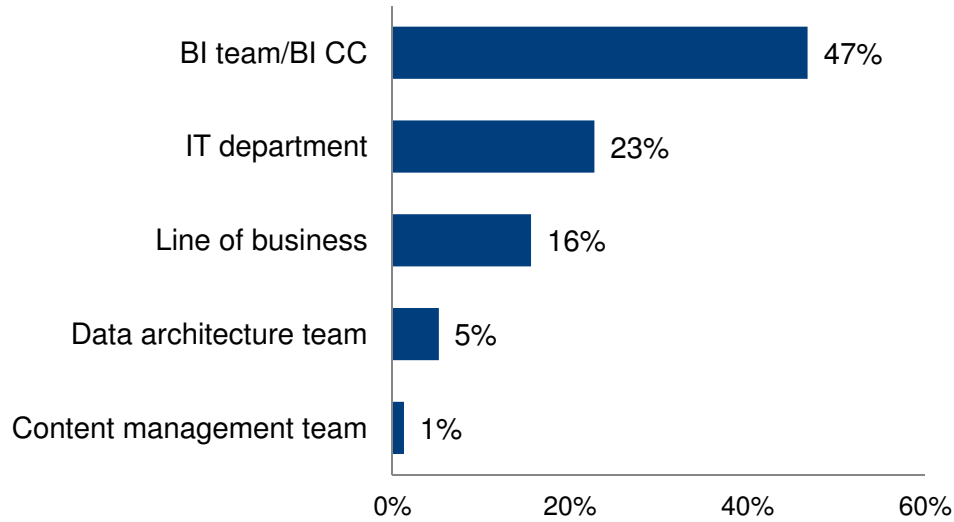

Figure 13: Who controls big data in your company? (n=154)

Figure 13 shows almost half (47 percent) of companies assigned the ownership for big data to a data warehouse team, BI team or BI competency center. While IT departments held the reins over big data in 23 percent of companies surveyed, only 16 percent of individual business departments were in control.
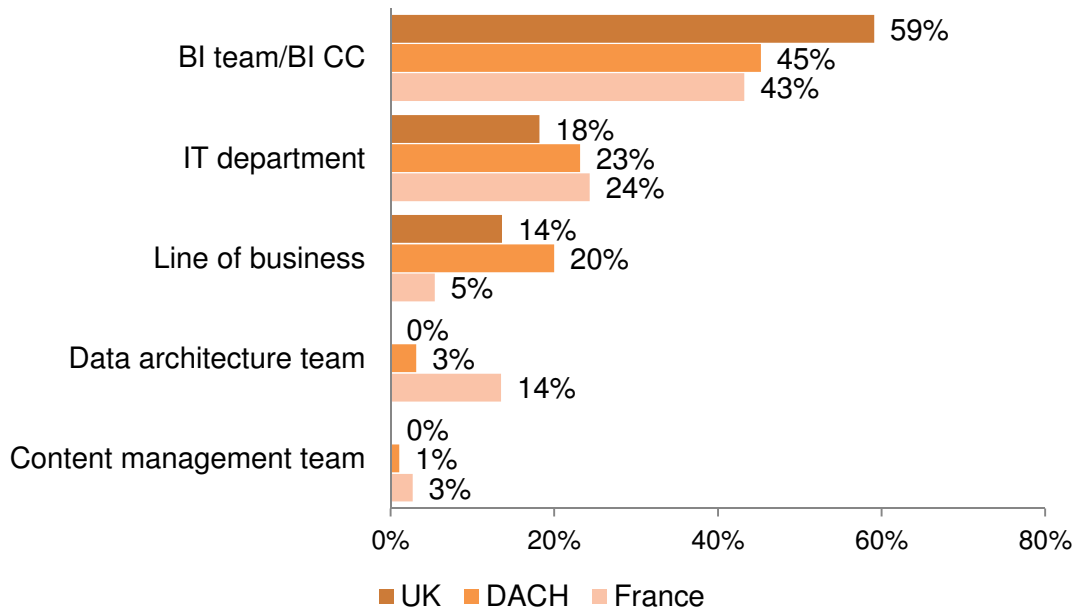
Figure 14: Big data ownership analyzed by country (n= 154)

The survey reveals fascinating differences among countries as well as best-in-class companies. Results showed the UK (59 percent) to be the country most likely to place big data ownership within a BI competency center compared to 45 percent and 43 percent respectively in the DACH region and France. While individual departments were more likely to be responsible for big data in the DACH region (20 percent), a data architecture team often had ownership in France (14 percent).

The results were clear for best-in-class companies; a data warehouse/BI team or BI competency center had ownership of big data in over two-thirds (68 percent) of best-in-class companies in contrast to 40 percent in other companies. In addition, an individual department was responsible for big data more often than average in the laggards group (28 percent).

Companies that have placed big data under the responsibility of a BI competency center were particularly successful in handling data unlike those companies where an individual department controlled big data. These findings correspond with the observation that companies can benefit from using big data when they are able to combine data from various sources. Connecting different data sources is much easier for a cross-functional team, such as a BI competency center, than it is for individual departments.
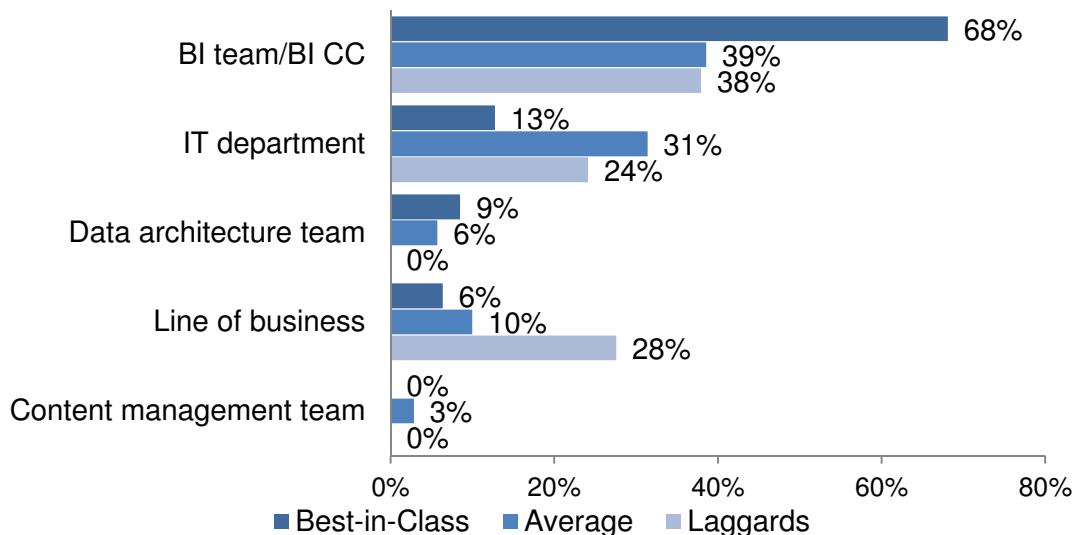

Figure 15: Big data ownership analyzed by best-in-class companies (n= 146)

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While only 14 percent of companies surveyed had a specific big data strategy (Figure 16), although almost half had a BI competency center or similar organizational function and 23 percent were planning to develop one in the future.
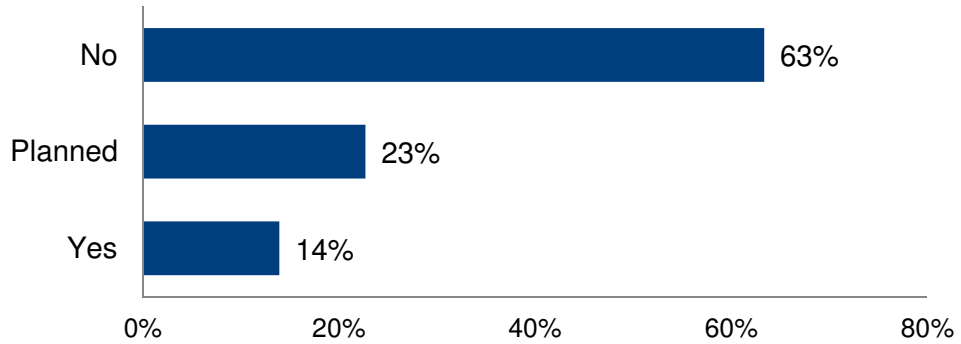

Figure 16: Is there a comprehensive strategy for big data in your company? (n=273)

A closer look at the breakdown by countries and regions showed no major differences in frequency (Figure 17). The only notable finding was that companies from English-speaking countries were least likely to have a specific big data strategy (10 percent) although ownership for big data was often placed in a BI competency center.
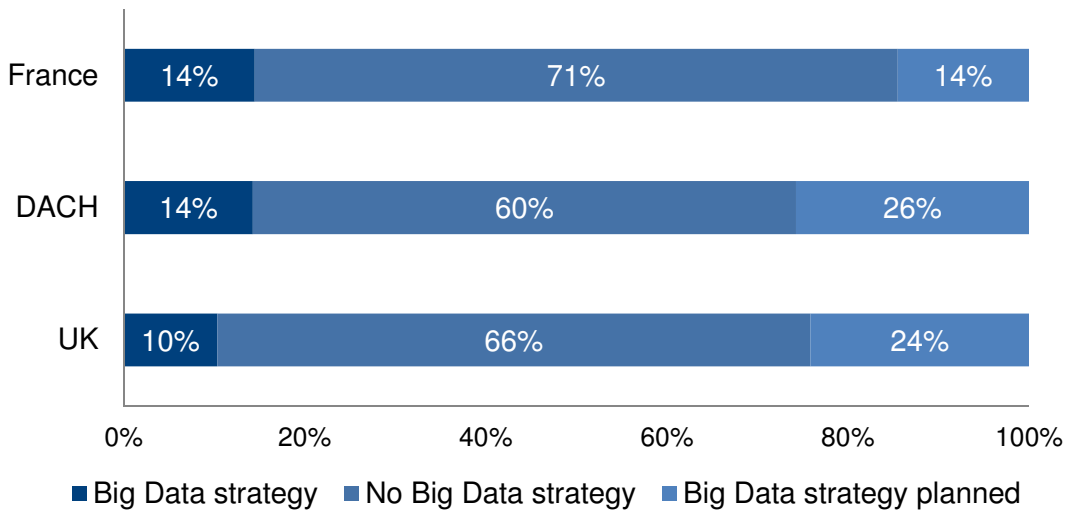
Figure 17: Big data strategy analyzed by country (n=273)

A clearer picture emerges when observing the best-in-class companies (Figure 18). In this group, 28 percent of companies had a big data strategy and an additional 30 percent reported they were planning to create one. Interestingly 19 percent of respondents that classified their companies as laggards also had a big data strategy.

This shows that simply having a big data strategy is no guarantee that big data success can be achieved.

Figure 18: Big data strategy analyzed by best-in-class companies (n=203)

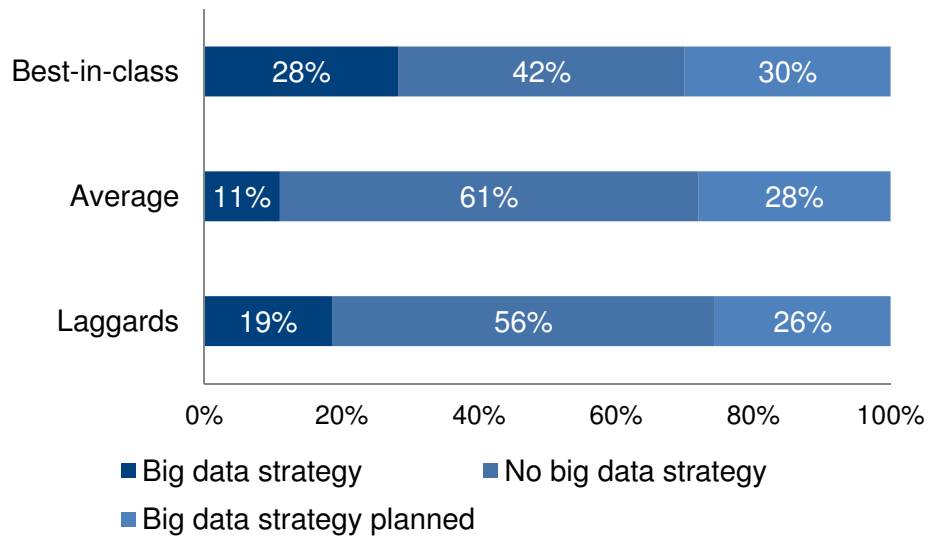## Business spending for big data

The previous results show that, for the most part, companies have embraced the topic of big data. Those responsible have recognized its relevance, identified the problems they wish to address and have started to take action. But are these facts reflected in actual spending? To find out, we asked participants how much they had spent on big data to date and how they expected their big data budget to develop in the future.

Before we present our findings, it is important to note that this study is not based on a representative sample. Since the sample has a higher concentration of large enterprises, we cannot make general statements with regards to spending.
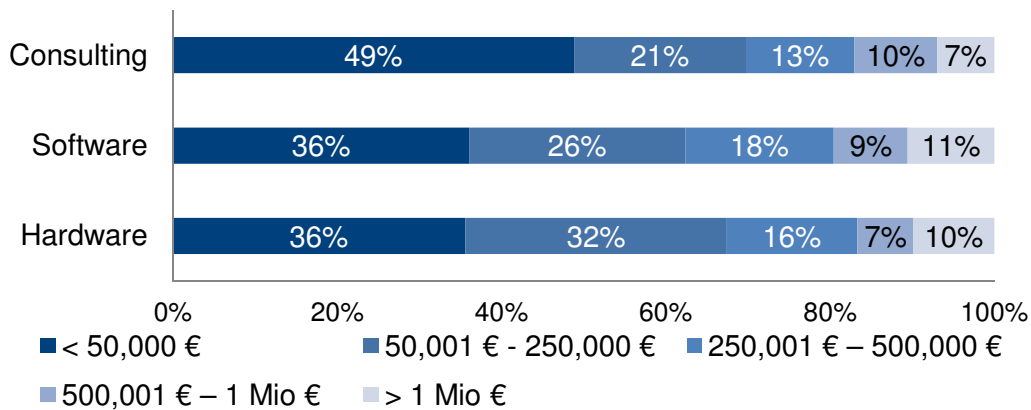
Figure 19: How much has your company spent on hardware, software and consulting for big data? (n=133)

Overall, corporate spending on big data has been significant (Figure 19 and Table 1). Participants in our sample stated that they had spent an average of € 290,530 on hardware (median: € 144,382), € 315,414 on software (median: € 157,627) and € 255,814 on consulting related to big data (median: € 116,667). Budget increases were also planned with an average of 6.7 percent more for hardware, 8.4 percent for software and 7.2 percent for consulting. Approximately half of all companies surveyed had planned budget increases, and more than a fifth of all respondents stated that their spending increase for big data would exceed 20 percent.

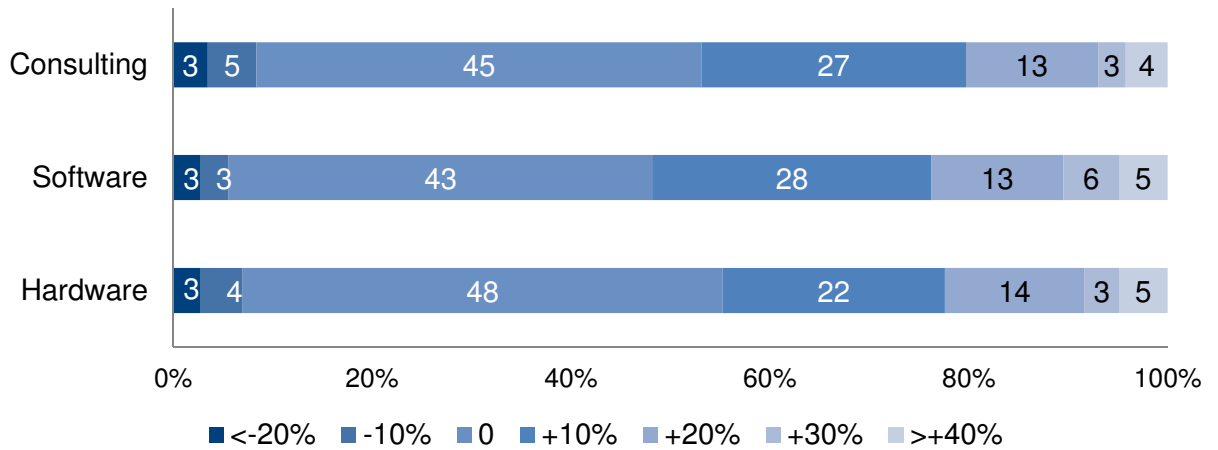|	<-20%	-10%	0	+10%	+20%	+30%	>+40%
Consulting	3	5	45	27	13	3	4
Software	3	3	43	28	13	6	5
Hardware	3	4	48	22	14	3	5

Figure 20: Is your investment budget for big data decreasing or increasing? (n=143)

		Median	Average	development: budget
Total	Hardware	144,382	290,530	6.7%
	Software	157,627	315,414	8.4%
	Consulting	116,667	255,814	7.2%
Best-in-class	Hardware	133,871	286,310	7.1%
	Software	131,481	325,595	8.7%
	Consulting	106,897	230,128	6.3%
Average	Hardware	140,854	270,902	6.6%
	Software	195,000	318,033	7.6%
	Consulting	112,209	232,500	5.5%
Laggards	Hardware	168,750	317,708	7.7%
	Software	135,294	292,000	9.3%
	Consulting	133,333	330,000	8.6%
Less than 250	Hardware	72,414	78,333	7.7%
	Software	89,815	122,581	9.5%
	Consulting	71,296	94,355	7.2%
250 – 2,499	Hardware	116,667	210,526	4.6%
	Software	126,852	228,289	4.3%
	Consulting	98,276	208,784	4.8%
2,500 and more	Hardware	295,588	437,500	8.6%
	Software	310,714	460,547	10.4%
	Consulting	201,136	366,393	7.7%

Table 1: Average spending and budget development for big data. Figures in euros (n= different base)

Unsurprisingly, the data shows a causal relationship between a company's size and its big data spending. The larger the company is, the higher its big data expenditure

(8.1 percent overall). One interesting finding is that planned budget increases in small companies (8.1 percent overall) and large corporations (8.9 percent overall) are almost twice as high as those in midsize companies (4.6 percent overall).

No less interesting is the budget distribution for best-in-class companies. Although there are slightly more small companies in the best-of-class category, slightly more midsize companies among the laggards, and more large companies in the "average" category, all three spent relatively similar amounts on big data. The only factors that stand out are the higher investment in consulting and the higher planned budget increases among the laggards. This implies that companies in this group have already realized the need to take further action.

Usage of big data

Since big data is still a relatively new topic, companies are often uncertain as to the most profitable way to use the associated new technologies and software solutions. Most organizations lack experience in the area so success is not easy to measure. We asked survey participants which departments used big data analysis and what advantages they currently gained or anticipated from using big data.
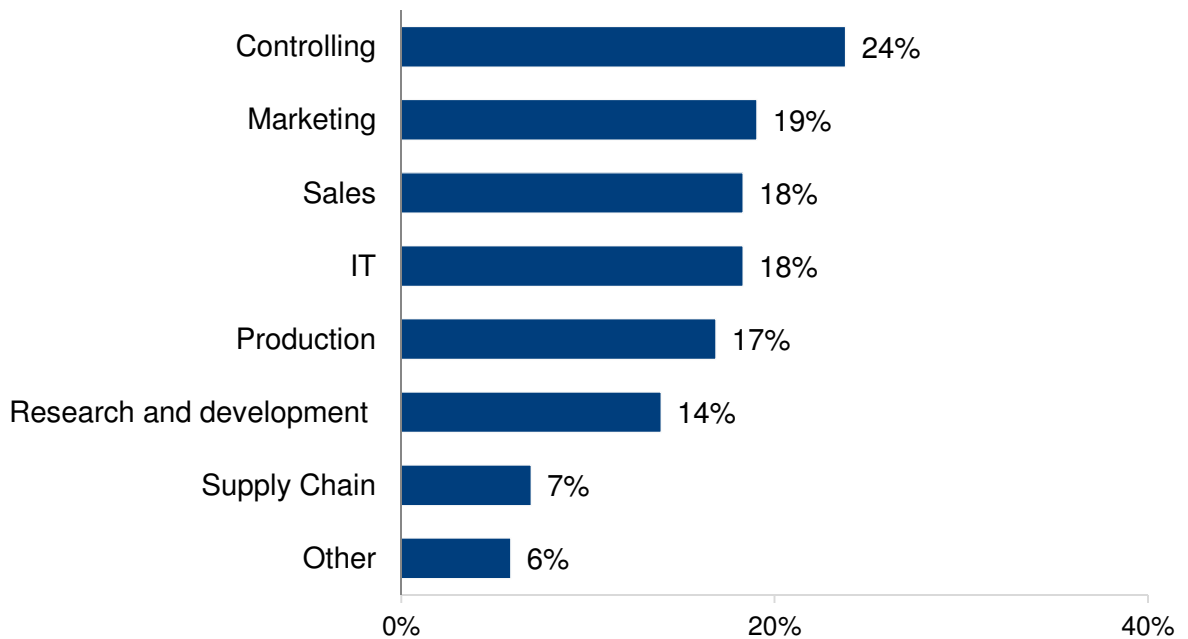

Figure 21: In which areas does your company use big data analysis? (n=273, multiple choice)

Figure 21 shows big data is clearly a cross-functional topic used in all areas of the business. In particular, big data is used to support finance and controlling (24 percent), marketing (19 percent), sales (18 percent), IT (18 percent) and production (17 percent).

We assume that the main focus for financial controlling departments is simply handling the increasing complexity and growing quantities of structured data through advanced analytics. Integrating social media data or log files from e-commerce systems as new data sources (see Figure 27) is especially important for marketing and sales to gain a better understanding of customer behavior and generate customized offers. IT departments are progressively increasing service levels and reducing support tasks within a big data framework by using log data to identify and understand errors across multiple systems in a faster, more efficient way. Also, more companies are using sensor data, for example, in production or the supply chain to

monitor operating conditions or geographic information for improved performance management, proactive maintenance, quality assurance, etc.

Closer analysis of the data shows that best-in-class companies had a higher-than-average usage of big data in IT (37 percent), marketing (32 percent) and sales (30 percent).
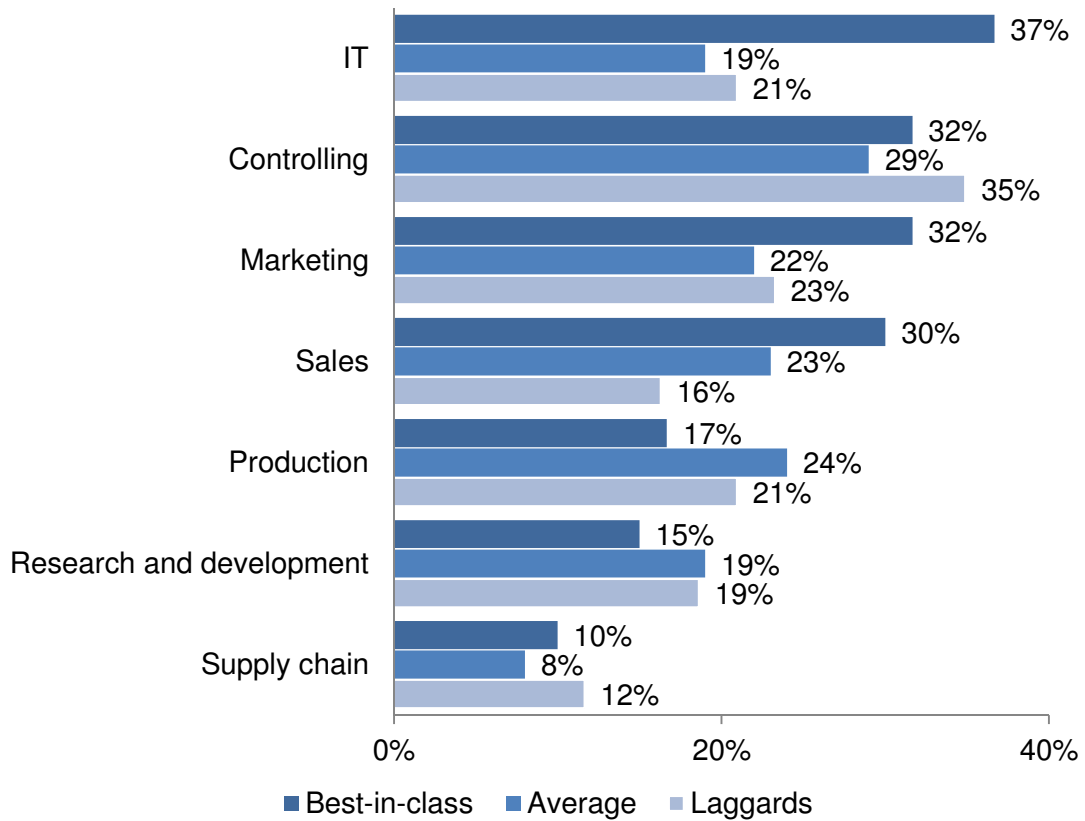

Figure 22: Big data in business units analyzed by best-in-class companies (n= 203, multiple choice)

The survey highlighted differences in the breakdown by companies, with UK organizations employing big data in the operational areas of marketing (31 percent) and sales (31 percent) whereas organizations in the DACH region focused more on financial controlling (27 percent). Companies in France, however, primarily used big data in research and development (26 percent).
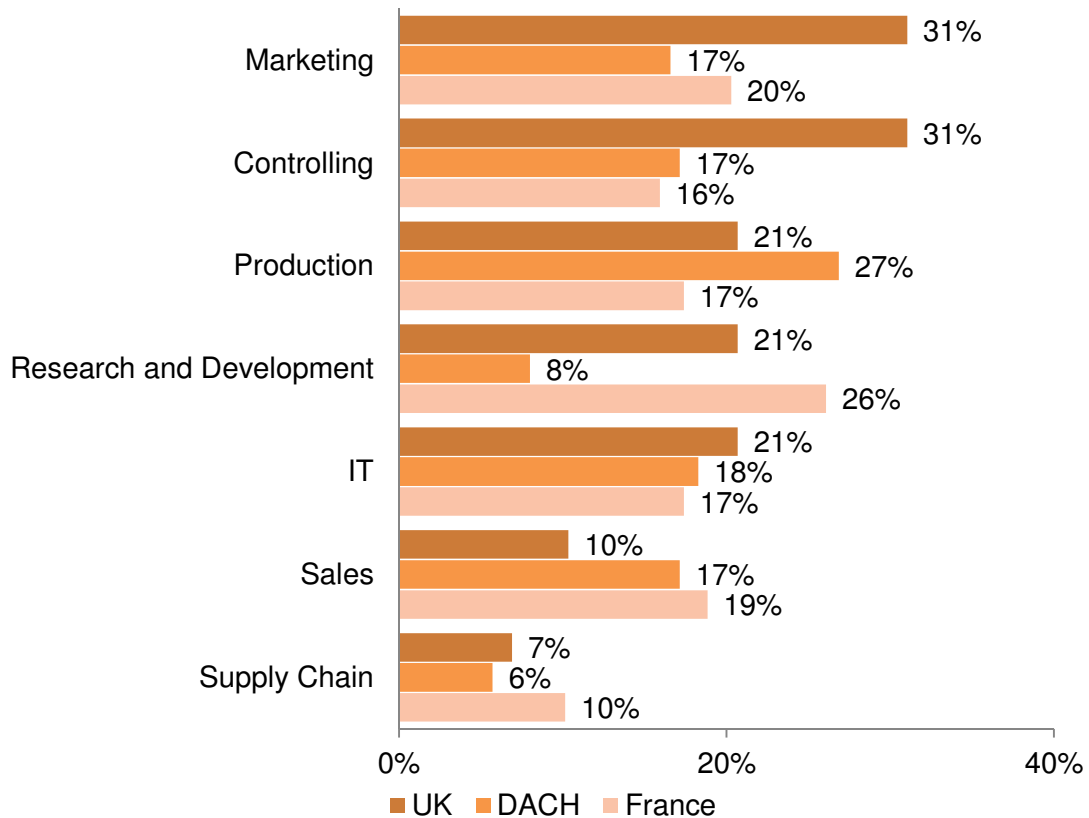
Figure 23: Big data in business units analyzed by country (n= 273, multiple choice)

When asked about the advantages of using big data technologies (Figure 24), 59 percent of respondents listed better strategic decisions, closely followed by better steering of operational processes (51 percent) as well as faster (50 percent) and more detailed (43 percent) analysis. Only 28 percent of respondents listed lower costs as an advantage of big data technologies. In other words, organizations initially want to achieve strategic and operational benefits – a rather unusual finding. Many big data usage scenarios exploit large quantities of detailed data to support operational processes. Companies, however, are seeing the benefits of supporting their strategic decision-making with better and more detailed analysis of the data available to them.

Benefit	Percentage
Better ability to make strategic decisions	59%
Better steering of operational processes	51%
Faster analysis	50%
Detailed analysis	43%
Improved customer service	32%
Better targeted marketing	31%
Better insight into the market / competition	28%
Lower cost	28%
Better product- / service-quality	25%
Better customer retention	16%

Figure 24: Where do you see the most important benefits when using big data technologies? (n= 167, multiple choice)

Problems

In addition to the usage scenarios and advantages of big data, an important aspect for big data vendors to consider is that organizations expect to encounter problems when using big data technologies and analytics. These fears need to be recognized and effectively managed by vendors so that organizations implementing big data projects do so with appropriate support and guidance. As part of this study, we asked participants about the problems they expected to encounter while using big data (Figure 25).
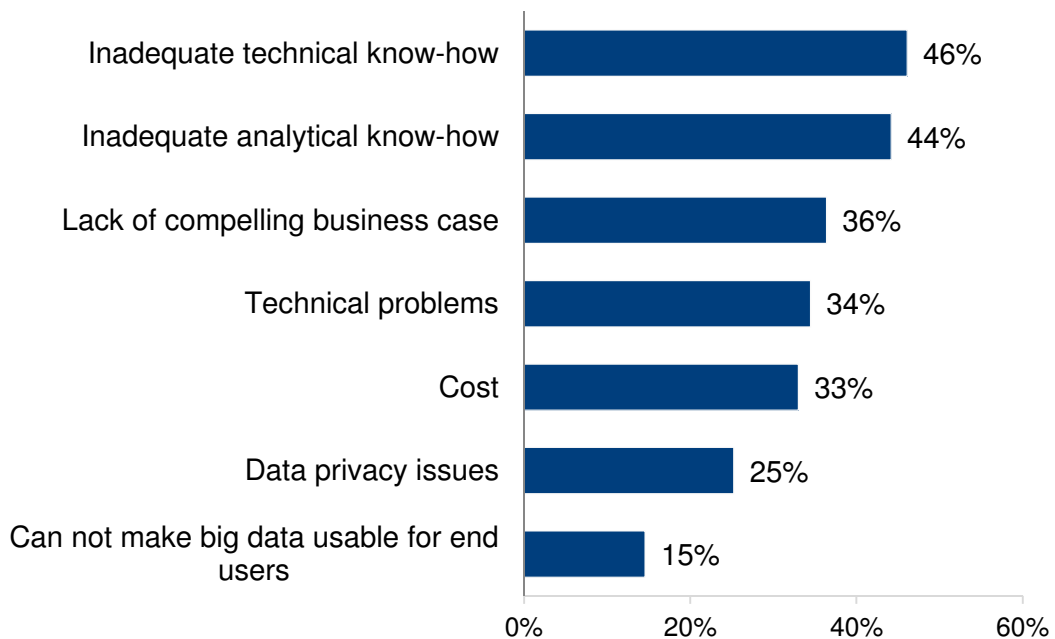

Figure 25: What problems have you encountered when using Big data? (n=206, multiple choice)

Respondents cited inadequate technical (46 percent) and business know-how (44 percent) as the most common problems. No compelling business case (36 percent), technical problems (34 percent) and costs (33 percent) were also frequent responses. Overall, insufficient knowledge in the field of big data was a larger cause for concern than technical problems or cost issues. Although the "data scientist" job title is known in Europe, the position itself is still rare. It is still quite difficult to recruit people with the relevant qualifications and experience, and indeed to promote and train them internally.

A noteworthy finding was that only 25 percent of participants listed data privacy as a problem, revealing that the topic may be viewed more objectively than one might assume based on public discussion in the media. In addition, many big data sources

do not contain personal data – and if they do, companies are aware of both the problems and potential solutions for handling sensitive data.
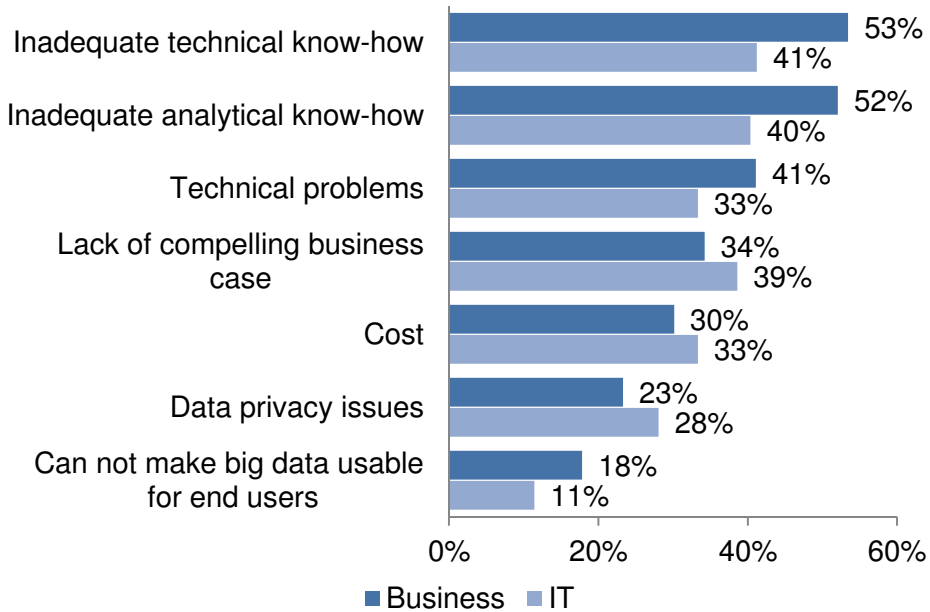

Figure 26: Encountered Problems analyzed by IT and Business (n=187, multiple choice)

Inadequate know-how proved a larger problem for business users than it was for their IT colleagues (Figure 26), who were more likely to worry about the lack of a compelling business case or data privacy issues.

This issue is one of the few differences the survey found between business and IT users. Findings from past studies have found that business and IT professionals rarely hold such similar views on a trend topic as they did in this case.

Data usage

Since the usage of poly-structured data sources poses both one of the largest challenges and benefits of big data, we asked participants which types of data their companies used for analytics (Figure 27).
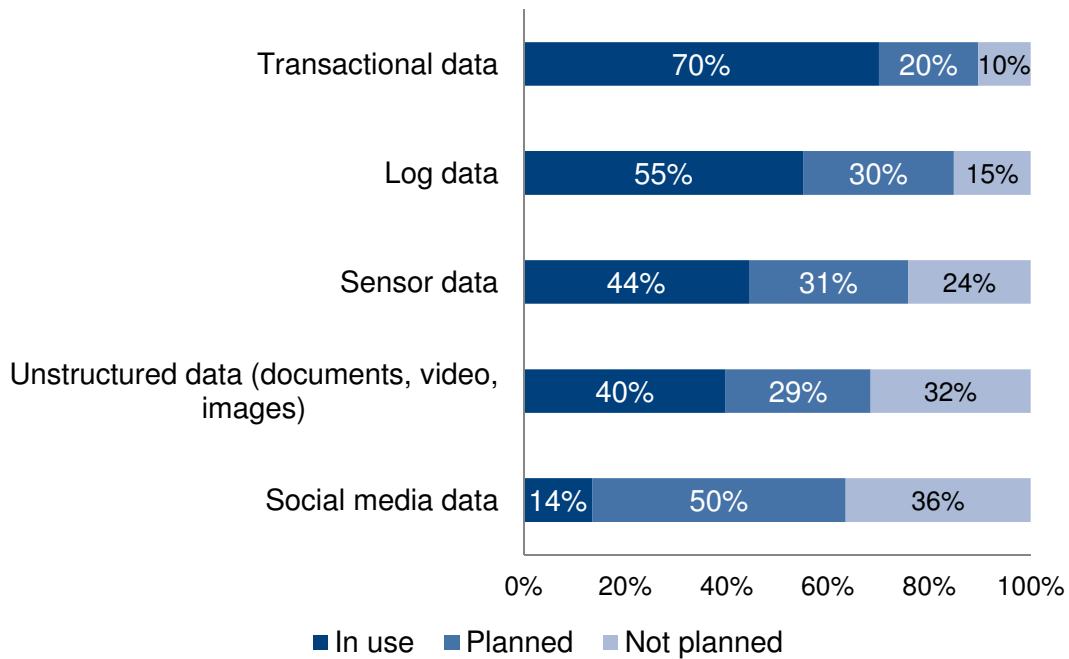

Figure 27: What kind of data do you analyze (at the moment and planned)? (n=200, multiple choice)

Transactional data was most widely used with 70 percent. Many companies also used log data (55 percent), sensor data (44 percent) and unstructured data (40 percent) for analysis.

Although most companies did not include social media data (14 percent), two-thirds of them stated that it should play a future role. In the future, companies as a whole planned to incorporate all types of data in their analyses in order to fully utilize the information available to them showing that the value of data has been recognized by the business world.
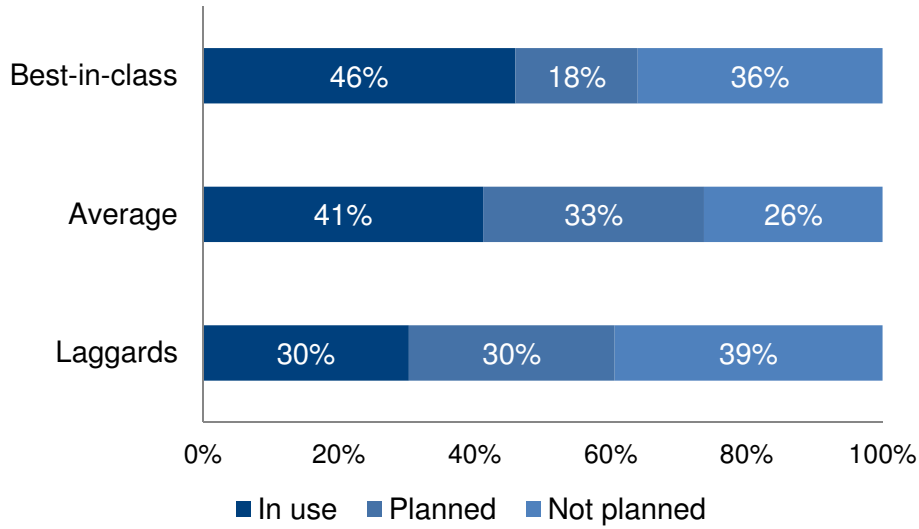
Figure 28: Use of unstructured data analyzed by best-in-class companies (n=163)
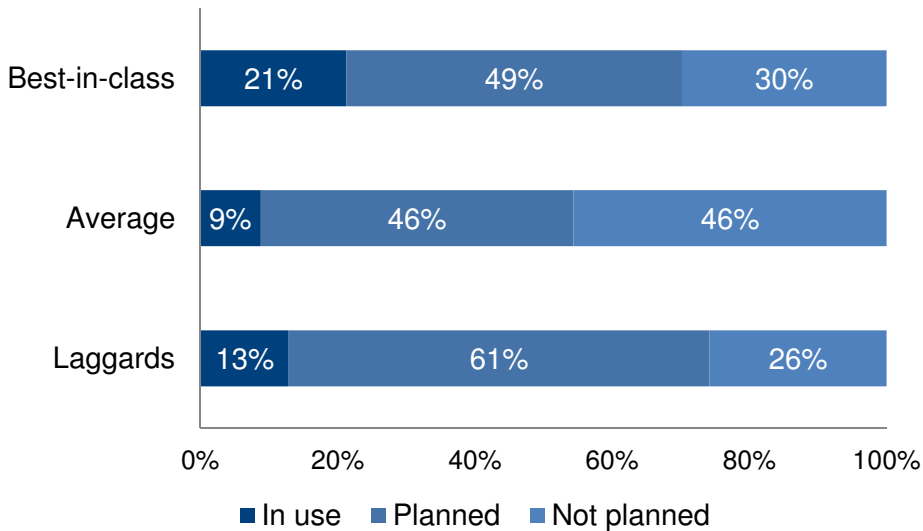

Figure 29: Use of social media data analyzed by best-in-class companies (n=146)

Best-in-class companies made greater use of their information, in particular social media data (21 percent) and unstructured data (46 percent) (Figure 28 and Figure 29). Based on the promising statistics for planned usage, we can assume that organizations falling into the average and laggards categories have already recognized their shortcomings with 61 percent of laggards planning to integrate social media data into future analyses.

Real-time data

In addition to using poly-structured data, a major challenge associated with big data is fast data availability for analysis. The actual time interval in which data should be available depends on the usage scenario. Our findings show a clear, overall trend among companies towards faster data integration and availability.
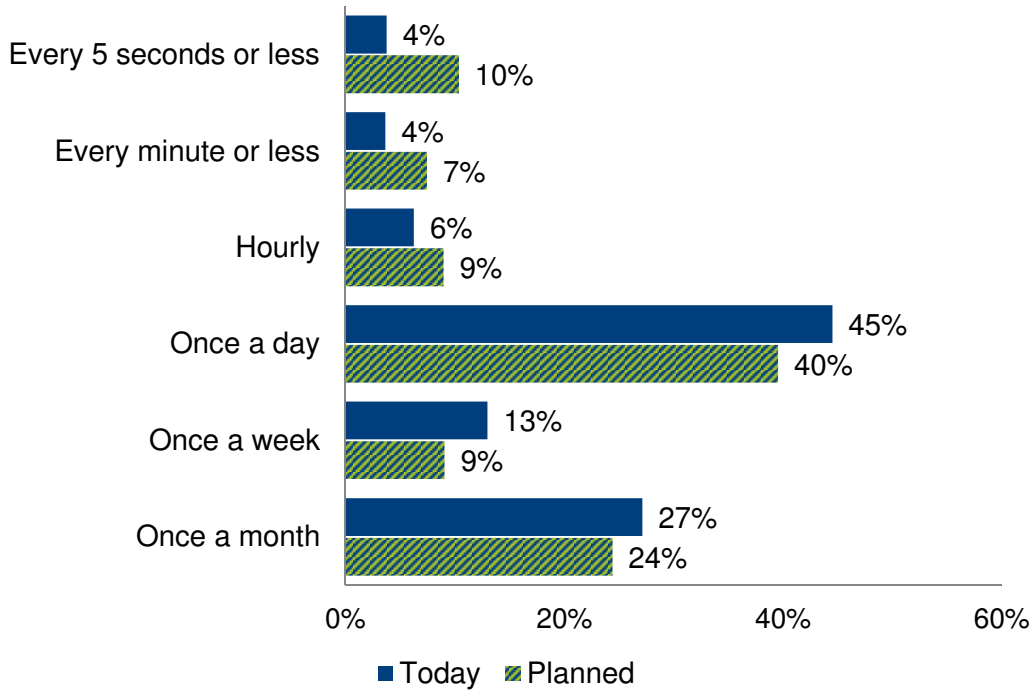

Figure 30: Please specify what percentage of your company's data is integrated for reporting, monitoring and analysis in which time intervals? (Today and planned) (n=160 and 53)

In order to support real-time analysis, companies reran 4 percent of their data in a time interval of less than 5 seconds and another 4 percent in under a minute. 45 percent of their data, in comparison, was updated once a day.

As was the case with poly-structured data, survey respondents also plan to make changes in this area. Future plans reveal that respondents intend to rerun 26 percent of business data in under an hour, up from 14 percent at the time the survey was taken. Respondents also plan to increase the availability of real-time data by 170 percent (from 3.8 percent to 10.3 percent).
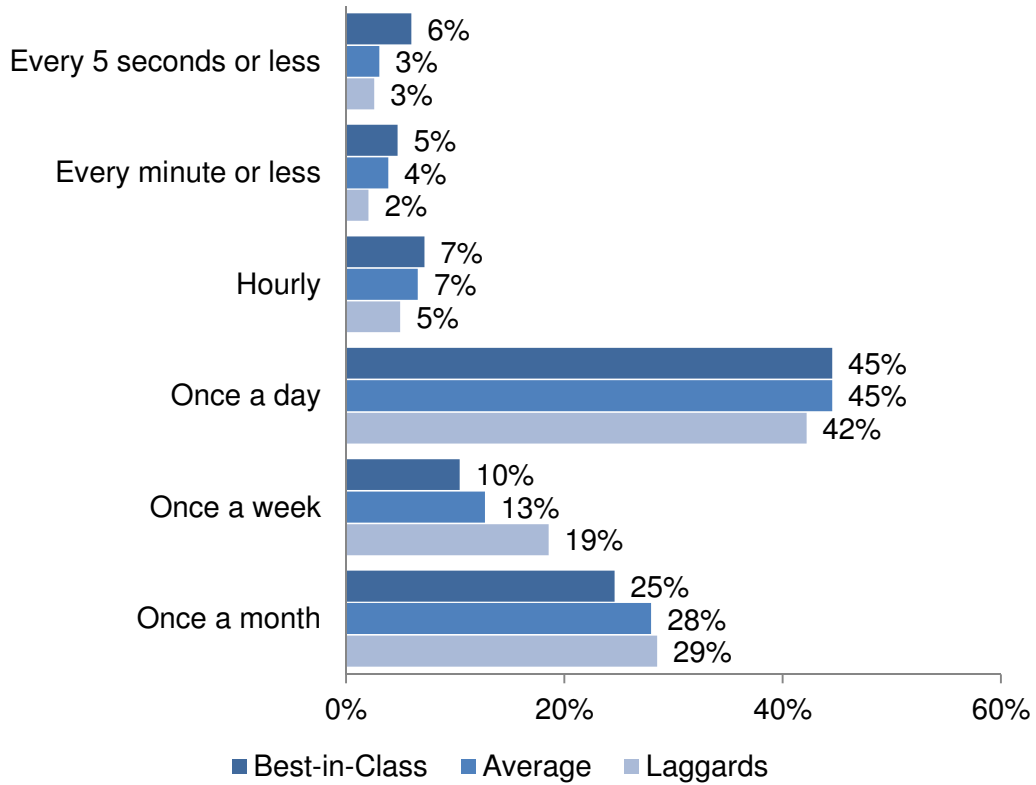
Big Data Survey Europe

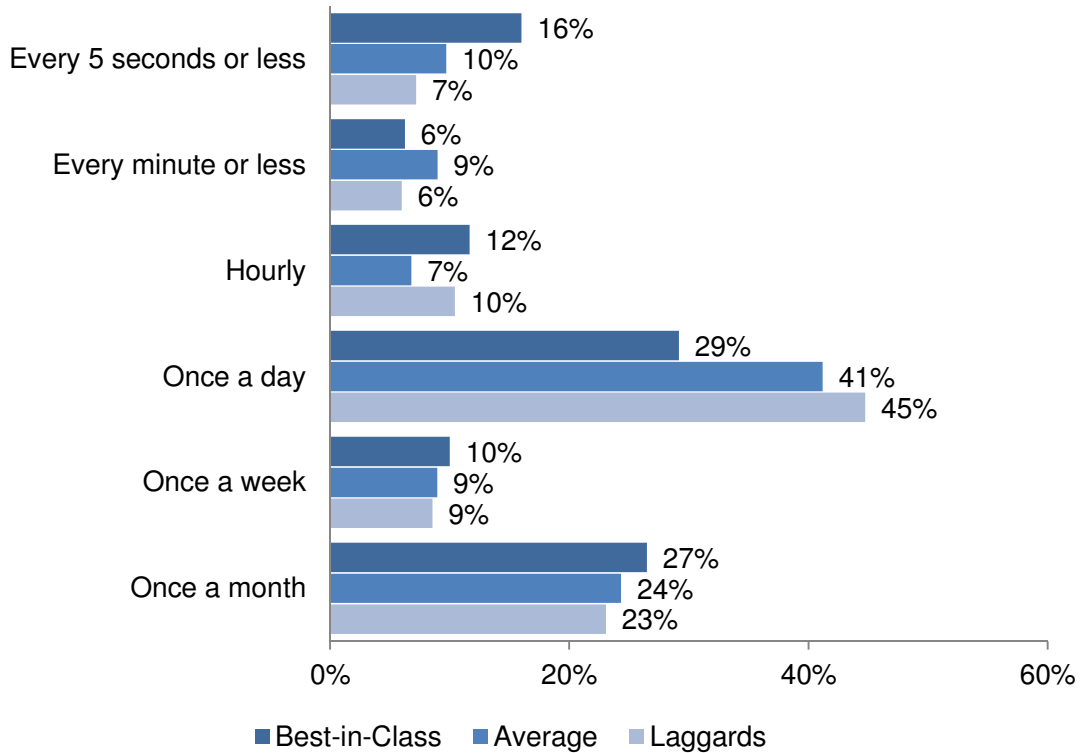**Figure 31: Data updates analyzed by best-in-class companies (today) (n=156)**

Figure 32: Data updates analyzed by best-in-class companies (planned) (n=53)

Up-to-date data is another factor that distinguished best-in-class companies. The survey revealed they reran twice as much data in real time than companies who reported not using their data as effectively as their competitors (6 percent to 3 percent). Best-in-class companies also planned to increase real-time availability to 16 percent of their data meaning that one-third of their data could be analyzed within an hour. In particular, best-in-class organizations sought to make daily updated data available more rapidly. However, survey results showed that average companies and laggards are also striving to make progress with faster data availability.

Technology usage

The market for big data is evolving quickly, making it difficult for companies to maintain a comprehensive view of the various software solutions available. To gain a better understanding of the current market situation, we asked participants which technologies they use now and which they plan to use in the future.
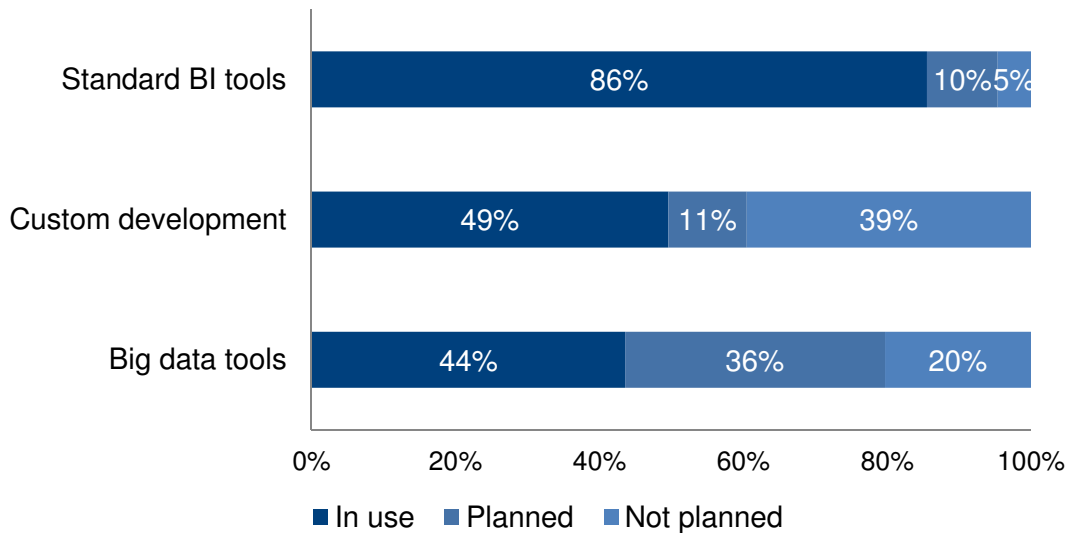

Figure 33: Which technologies do you use or plan to use in your company for big data analysis? (n=155, multiple choice, bundled)

The overwhelming majority (86 percent) stated that they currently addressed the challenges of big data with standard tools (Figure 33). 49 percent said they used custom developments, which are especially particularly common within a Hadoop framework or when creating models using analytic languages such as R, S, SAS or SPSS. Specialized big data tools for data management or analytics are also well established. 44 percent of companies already used these technologies and another 36 percent planned future implementation. These findings show a clear trend towards big data investments.

Figure 34 provides a detailed breakdown of present and future tool usage. For standard tools, all architectural levels from relational databases to BI tools or data integration tools are well represented. In our opinion, data integration solutions play a decisive role in connecting and governing a big data landscape. It is therefore no surprise that among companies wishing to increase their investment in standard tools, 23 percent planned to purchase data integration products.

Of the specialized big data tools, analytic databases had both the most widespread usage (27 percent) and the highest rate for planned investment (34 percent). Few big data tools were widely used at the time of this survey. Nevertheless, 20-30 percent of all companies plan to deploy them in the future.
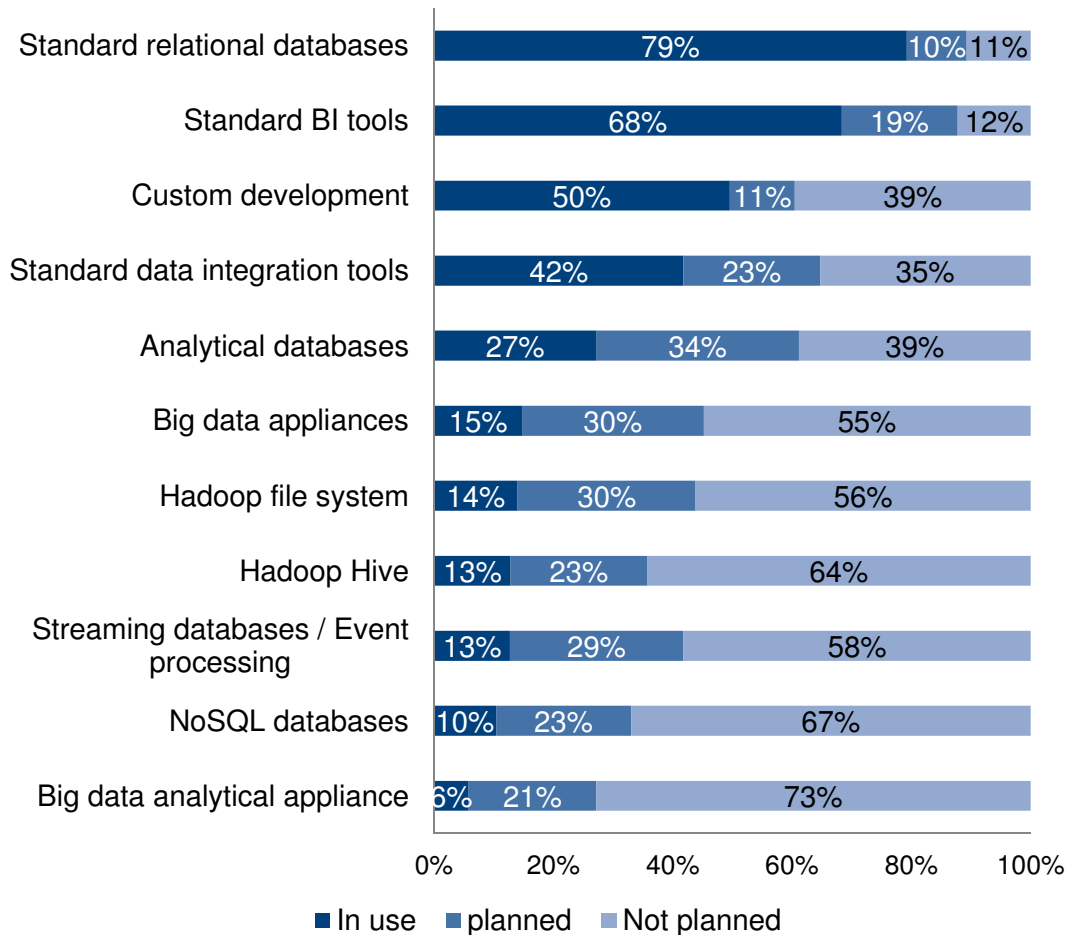

Standard relational databases — 79% | 10% | 11%
Standard BI tools — 68% | 19% | 12%
Custom development — 50% | 11% | 39%
Standard data integration tools — 42% | 23% | 35%
Analytical databases — 27% | 34% | 39%
Big data appliances — 15% | 30% | 55%
Hadoop file system — 14% | 30% | 56%
Hadoop Hive — 13% | 23% | 64%
Streaming databases / Event processing — 13% | 29% | 58%
NoSQL databases — 10% | 23% | 67%
Big data analytical appliance — 6% | 21% | 73%

■ In use ■ planned ■ Not planned

Figure 34: Which technologies do you use or plan to use in your company for big data analysis? (n=155, multiple choice)

We also broke down the usage of standard tools by company size (Figure 35). Larger companies (91 percent) were more likely to use standard software, but smaller companies with fewer than 250 employees also had a strong usage rate of 79 percent. More telling were the results for big data tools (Figure 36). Although big data tools had the highest usage rates in large companies with more than 2,500 employees (49 percent), small companies came in a close second with 45 percent. Midsize companies with 250 – 2,499 employees had the lowest rate of usage (32 percent) but the highest results for planned investments (41 percent).
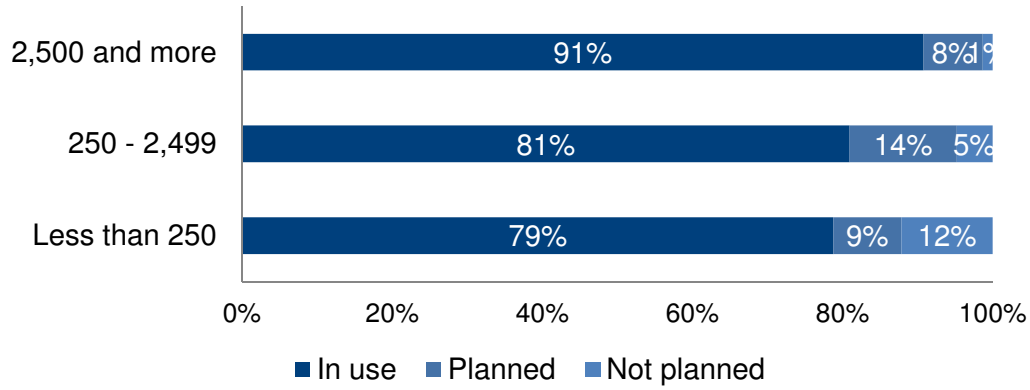
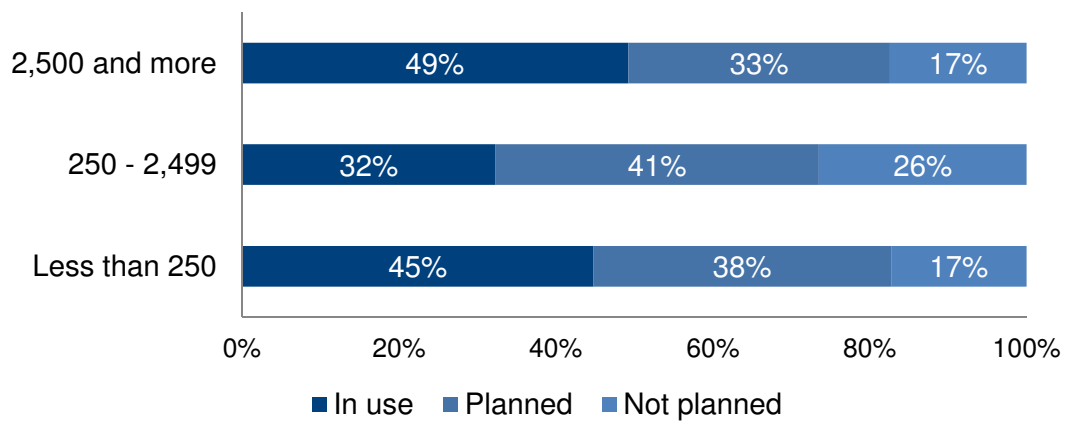**Figure 35: Use of standard BI tools by company size (n=151)**

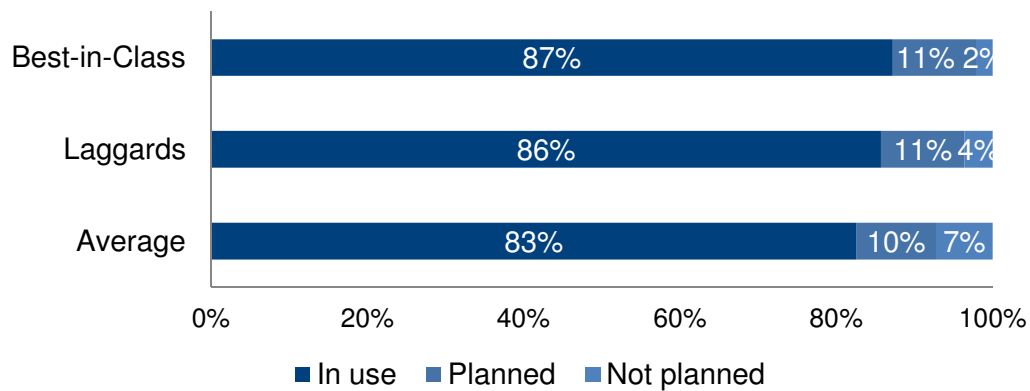**Figure 36: Use of standard big data tools by company size (n=132)**

Figure 37: Use of standard BI tools analyzed by best-in-class companies (n=144)
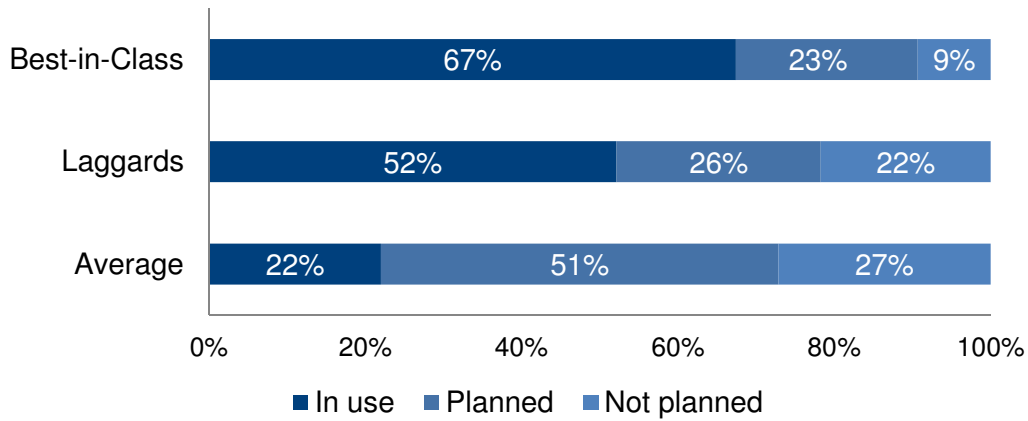
Figure 38: Use of standard big data tools analyzed by best-in-class companies (n=125)

Best-in-class companies stood out due to their higher-than-average usage of big data tools (Figure 38). Although there were no notable differences in the use of standard tools among best-in-class, average and laggard companies (Figure 37), the results for using big data tools were clear. Two-thirds of best-in-class companies used big data tools and an additional 23 percent planned on using them. In contrast, only 22 percent of average companies currently had big data tools in use. However, they were more likely to plan on using these tools in the future (51 percent). An unexpected result was the 52 percent of laggards who reported they already used big data tools.

Market awareness of big data vendors and service providers

The survey asked participants which vendors and service providers they associated with big data (Figure 39 and Figure 40).

Since this study is not based on a representative sample, these findings can neither be generalized nor used as a measure of market share. The findings can, however, illustrate to what degree vendors have been able to successfully associate themselves with the big data field.

IBM — 59%
Oracle — 48%
SAP — 44%
Teradata — 38%
Microsoft — 38%
SAS Institute — 27%
QlikTech — 21%
Cloudera — 20%
The Apache Software Foundation — 19%
EMC Greenplum — 19%
Tableau — 14%
EXASOL — 13%
Informatica — 12%
Splunk — 10%
Talend — 8%
Pentaho — 8%
MicroStrategy — 8%
Jaspersoft — 6%
Vertica (HP) — 5%

0% 20% 40% 60% 80%
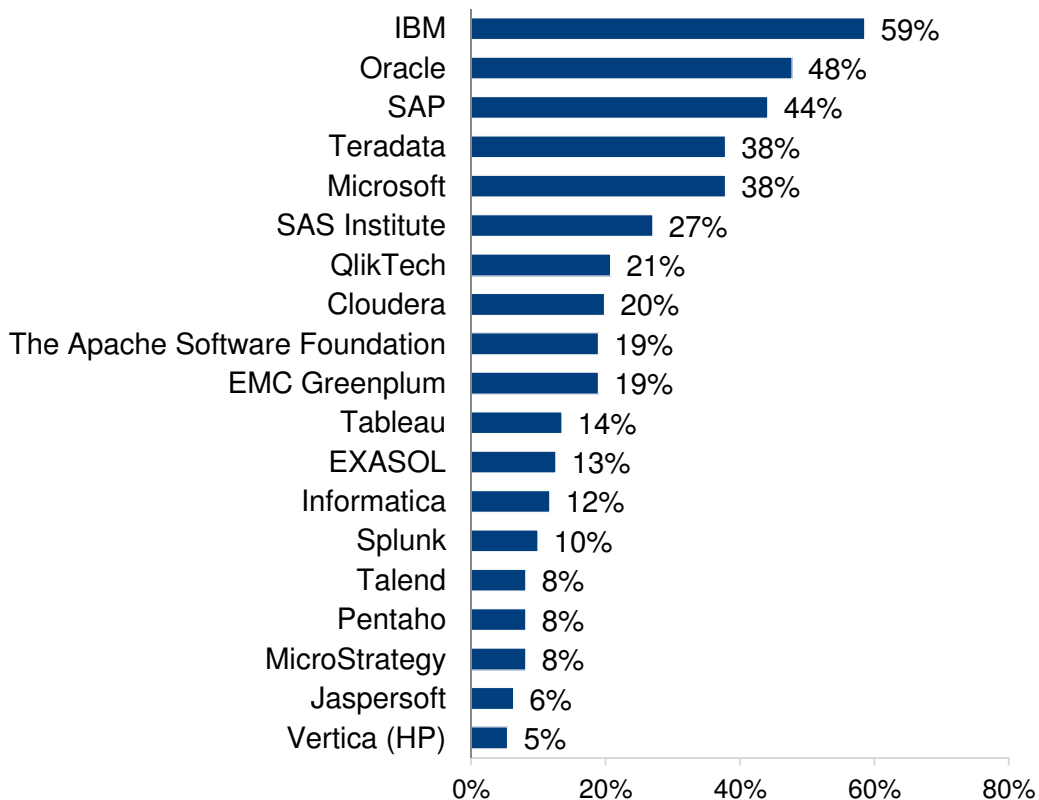
Figure 39: Which vendors do you most associate with big data? (n=111, multiple choice)

Predictably, the largest BI vendors were named most often. In particular, IBM was cited most frequently among vendors (59 percent) and service providers. This recognition is undoubtedly due to IBM's aggressive marketing of the big data topic, successfully linking the organization with the field. Smaller companies such as QlikTech and Cloudera received respectable ratings, being named by more than a fifth of all respondents.
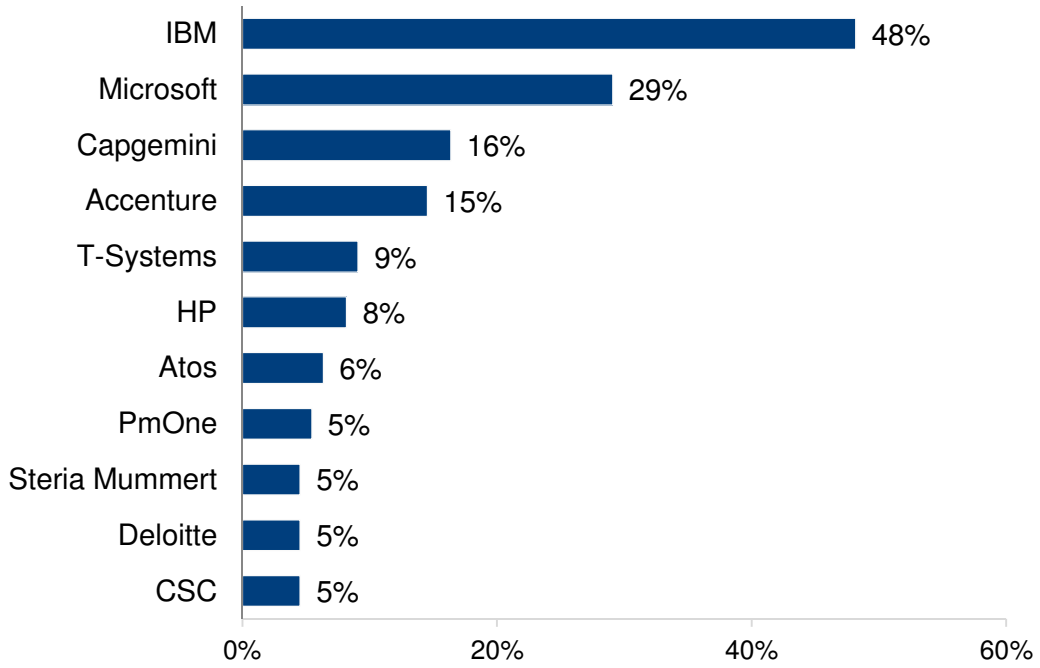
Figure 40: Which service providers do you most associate with big data? (n=110, multiple choice)

Service providers associated with big data achieved a relatively even spread of results (Figure 40).

Summary

Big data promises both challenges and boundless opportunities for organizations. The capacity to quickly and flexibly react to changing requirements is increasingly recognized as a crucial element of everyday business. In addition, the ability to establish scalable architectures that can rapidly collect data from a wide range of sources, making it available for analysis, will play a decisive role in the success of organizations.

The findings in this study show that organizations are taking a serious view of big data; recognizing the critical success factors and the challenges beyond handling enormous data volumes. Principally, it is the best-in-class companies that are initiating action, as reflected in their relatively high expenditure and planned budget increases for big data. These organizations also have ambitious plans with regard to big data tools, data currency and the use of poly-structured data, chiefly from social media platforms.

The challenges of big data, however, are readily recognized, with problems primarily stemming from a lack of in-house knowledge. Nevertheless, the majority of organizations are on track to effectively exploit the opportunities that big data presents.

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Company profiles of sponsors

Ab Initio Software

www.abinitio.com

Company profile

Ab Initio Software is a general purpose data processing platform for enterprise-scale, mission-critical applications such as data warehousing, batch processing, clickstream analysis, data transformation and analytics. Ab Initio solves the problems of scalability, development time, performance, metadata management, and integration at the world's largest companies in banking, e-commerce, telecommunications, insurance, retail, and healthcare.

Ab Initio is a pioneer in the processing and storage of extremely large data volumes across multiple platforms and operating systems. Ab Initio technology is used to:

- Store and analyze petabytes of data without the overhead of traditional databases
- Retrieve data from multi-petabyte data stores with sub-second response times
- Process millions of events per second in real-time applications
- Load multiple terabytes of data into data warehouses on a daily basis
- Federate data across databases, file-based data stores, web-based data sources and queues

IBM

www.ibm.com/de

Company profile

Established over 100 years ago, IBM has constantly redefined itself and has risen to become one of the strongest brands in the world. With sales of 106.9 billion U.S. dollars in 2011, the company is the market leader in the IT sector and for B2B solutions. To strengthen this leading position, every year IBM invests around six billion U.S. dollars in research and development.

The solution portfolio of IBM ranges from supercomputers, software and services, including consultancy services, to financing. Since the successful transformation of IBM to software and services, the software business is the main driver of business success.

Solution

There are multiple uses for big data in every industry – from analyzing larger volumes of data than was previously possible to drive more precise answers, to analyzing data in motion to capture opportunities that were previously lost. A big data platform will enable an organization to tackle complex problems that previously could not be solved. IBM's big data platform is helping enterprises across all industries.

IBM has the technology and the expertise to apply big data solutions in a way that addresses specific business problems and delivers rapid return on investment.

Informatica AG

INFORMATICA

www.informatica.com

Company profile

Informatica Corporation (Nasdaq:INFA) is the world's number one independent provider of data integrationsoftware. Organizations around the world rely on Informatica for maximizing return on data to drive their top business imperatives. Informatica provides data integration software and services that enable organizations to gain a competitive advantage in today's global information economy by empowering them with timely, relevant and trustworthy data for their top business imperativesWorldwide, over 5,000 enterprises depend on Informatica to fully leverage their information assets residing on-premise, in the Cloud and across social networks.

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Microsoft Corporation

www.microsoft.com

Company profile

At Microsoft, we're motivated and inspired every day by how our customers use our software to find creative solutions to business problems, develop breakthrough ideas, and stay connected to what's most important to them.

We run our business in much the same way, and believe our eight business divisions offer the greatest potential to serve our customers. They are:

• **Online Services Division:** Microsoft's search, portal, advertising and personal communications services, including online information offerings such as Bing and the MSN portals and channels.

• **Server and Tools Business**: Microsoft infrastructure software, developer tools and cloud platform, including products such as Windows Server, SQL Server, Visual Studio, System Center and the Windows Azure Platform.

• **Microsoft Business Solutions**: A portfolio of Microsoft Dynamics products and services, as well as Microsoft Health Solutions.

• **Microsoft Office Division**: Productivity products and services,

including Office, Exchange, SharePoint, Lync, Project, Visio, and Microsoft's speech technology investments.

• **Interactive Entertainment Business**: Key entertainment experiences that span gaming, music and video across multiple screens, including Xbox 360, Xbox LIVE, the controller-free Kinect for Xbox 360, Zune Music and Video, and Mediaroom, as well as PC and mobile interactive entertainment.

• **Windows Phone Division**: Microsoft software and services for Windows Phones worldwide.

• **Windows & Windows Live Division**: All Windows businesses, including Windows, Windows Live and Internet Explorer.

• **Skype**: A division of Microsoft, transforming communications for computers, mobile devices and the connected living room.

Just as we constantly update and improve our products, we want to continually evolve our company to be in the best position to accelerate new technologies as they emerge and to better serve our customers.

pmOne AG

www.pmone.com

Company profile

pmOne AG is a software vendor and consultancy with extensive know-how in Business Intelligence and Big Data. 165 employees, with over eight years of project experience on average, currently contribute to the company's success.

pmOne's solution portfolio consists of three pillars: data warehousing and analytical databases, performance management applications, and reporting based on modern information design standards. pmOne extends Microsoft technology with its own products and, as a Tagetik distributor, offers one of the world's leading performance management solutions. MindBusiness GmbH, a member of the pmOne Group, specializes in SharePoint solutions and services for Microsoft Office rollouts. Founded in 2007, pmOne is a management-owned company dedicated to fostering long-term customer relationships. The pmOne Group has offices in eight cities across Germany, Austria and Switzerland.

Customers and Customer Statements

pmOne AG has successfully implemented solutions at several companies and different industries, i.e.:

- Dr. August Oetker KG: Group Balance Sheet & Legal consolidation
  "The rich capabilities at a reasonable price were just as important to us as the advantages of a Web-based solution for our global users."
  Dr. Manfred Jutz, Director of Accounting at Dr. August Oetker KG
- Air Berlin: Enterprise Data Warehouse and Reporting
  "Today we have no collection of isolated Data Warehouse solutions, but actually a comprehensive Data Warehouse for the entire Air Berlin Group."
  Claus Glüsing, Director Controlling Air Berlin

Contact:

kontakt@pmone.com

www.pmone.com

Tableau Software Inc.

www.tableausoftware.com

Company profile

Tableau Software helps people see and understand data. Ranked by Gartner and IDC in 2011 as the world's fastest growing business intelligence company, Tableau helps anyone quickly analyze, visualize and share information. More than 10,000 companies get rapid results with Tableau in the office and on-the-go. And tens of thousands of people use Tableau Public to share data in their blogs and websites.

"Tableau is widely acknowledged as the fastest growing business intelligence company in the world and I look forward to contributing to that growth in EMEA," said James Eiloart, VP EMEA at Tableau Software. "Easy visual analytics are the unfulfilled promise of the previous generation of business intelligence tools, and businesses in the DACH region, France, UK and the Nordics have been quick to realise the benefits."

See how Tableau can help you by downloading the free trial at www.tableausoftware.com/trial.

Teradata Corporation

www.teradata.com

Company profile

Teradata is the world's largest company focused on integrated data warehousing, big data analytics and business applications. Our powerful solutions portfolio and database are the foundation on which we've built our leadership position in business intelligence and are designed to address any business or technology need for companies of all sizes.

Only Teradata gives you the ability to integrate your organization's data, optimize your business processes, and accelerate new insights like never before. The power unleashed from your data brings confidence to your organization and inspires leaders to think boldly and act decisively for the best decisions possible.

With integration of Aprimo and eCircle, Teradata revolutionizes the market for marketing management solutions – from marketing resource management to campaign management and digital marketing. Learn more at www.teradata.com.