

Data Management for BI

Strategies for Leveraging the Complexity and Growth of Business Data

December 2009

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Executive Summary

Aberdeen's research validates the assertion that organizational data is growing rapidly in volume and complexity. The ability to make better informed decisions through Business Intelligence (BI) systems is directly related to the cleanliness, relevance, and timeliness of that data. Best-in-Class companies are taking strides to reduce time-to-information, generate a common view of their data, and arm their business decision makers with a high degree of data quality in order to support enhanced business performance. This report is based on feedback from 216 global organizations.

Research Benchmark

Aberdeen's Research Benchmarks provide an in-depth and comprehensive look into process, procedure, methodologies, and technologies with best practice identification and actionable recommendations

Best-in-Class Performance

Aberdeen used three key performance criteria to distinguish Best-in-Class companies. That performance relative to their peers is as follows:

- **39 days average time to integrate new data sources**, versus 4.1 months for the Industry Average and 8.9 months for Laggards
- **60% saw a decrease in time-to-information**, compared with 26% of the Industry Average and 10% of Laggards
- **81% of analytical employees have access to BI capability**, compared with 56% at Industry Average companies and 23% of Laggard organizations
- **18% average year-over-year increase in profit margin**, compared with a 12% increase for the Industry Average and a 12% decline for Laggards

Competitive Maturity Assessment

Survey results show that the firms enjoying Best-in-Class performance are:

- **1.8-times** more likely than Laggards to have data cleansing capability
- **2.2-times** more likely than the Industry Average to have the ability to optimize queries
- **Twice as likely** as all other companies to use Master Data Management (MDM) software

“When it comes to data management, having a strategy roadmap and data-driven culture are paramount. However, short term tactical wins are necessary to keep stakeholders engaged in the time and financial investment required.”

~ Marketing Director

Large U.S. Hardware Retailer

Required Actions

In addition to the specific recommendations in Chapter Three of this report, to achieve Best-in-Class performance, companies must:

- Automate the capture and indexing of growing data volumes
- Assess organizational data needs across functional silos
- Invest in data cleansing technology

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Chapter One: Benchmarking the Best-in-Class

Business Context

As the sheer amount of information available for reporting and analytical applications has grown, the traditional methods for data storage and retrieval are struggling to keep pace. Rising data volumes and increasing complexity have resulted in data access decisions being based on cost rather than fulfilling a business need, and this has led to compromises that affect business performance.

The promise of advanced analytical capabilities that address huge volumes of internal and external data is a tall order that Business Intelligence (BI) solutions are trying to live up to. As computing power and data storage technologies have advanced, the expectation among business users is that critical information, down to a detail level, is and should be available at the point-of-decision. In response, the IT organization has been pressured to maximize the existing infrastructure in order to handle the rapidly increasing volumes and complexity of corporate data.

The challenge of data management is just as much political and cultural as it is technical. Aberdeen examined this topic in the March 2008 benchmark report, *Data Management for Business Intelligence*, and discovered a wide range of inhibitors that prevented or slowed efforts to develop a data management strategy. At that point in time the greatest challenge was related to insufficient IT resources to manage data growth and complexity. Almost two years later, the research shows the same challenges are quite prevalent, but in light of the economic situation many companies are citing software and service cost as the top impediment to their data management programs (Figure 1).

Fast Facts

Best-in-Class **spend less money** annually per data source.

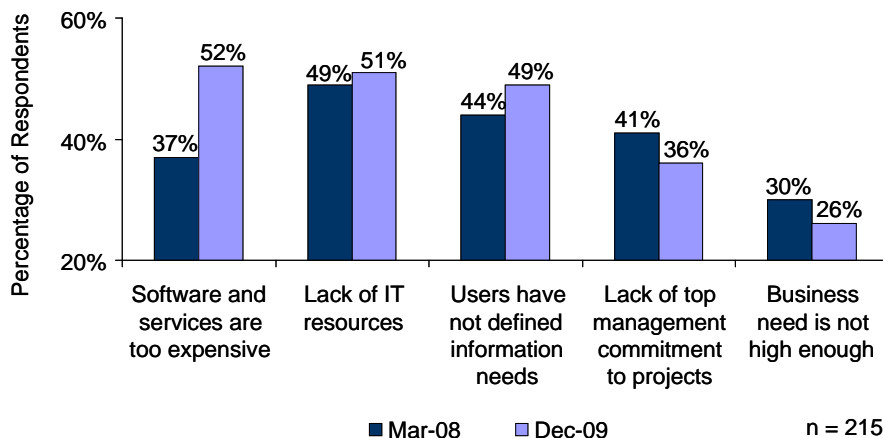
The following list depicts the average number of unique data sources under management for BI purposes:

- ✓ Best-in-Class: 14 unique data sources
- ✓ Industry Average: 17 unique data sources
- ✓ Laggard: 9 unique data sources

The following list depicts the average annual BI hardware and software spend per unique data source:

- ✓ Best-in-Class: **\$39k**
- ✓ Industry Average: **\$43k**
- ✓ Laggard: **\$106k**

Figure 1: Top Inhibitors to Data Management



Source: Aberdeen Group, March 2008, December 2009

Companies today have many options when it comes to the design and implementation of a data management strategy to support business intelligence initiatives. Leveraging a combination of people, process, and technology, companies now have the opportunity to:

- Provide access to relevant information for all types of users
- Accelerate the “time-to-information”
- Decrease the cost and resource requirements associated with supporting data access for BI users
- Improve self-service delivery of BI capabilities

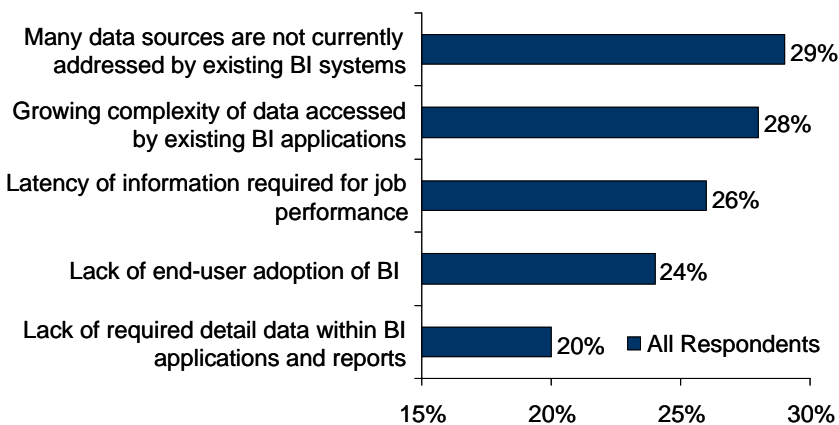
“The biggest challenge [of data management] involves combining disparate legacy systems into our BI framework. Many business users don't really know how and what is used to calculate / report on data today”

~ CEO

U.S. Insurance Company

Perhaps the most noticeable difference between the current sentiment and that collected in March of 2008 is the notion of business needs versus IT needs. Two years ago, data management was viewed almost exclusively as an IT problem. Companies were struggling to keep a handle on the growing volume and complexity of their data. Nowadays, while data growth certainly remains a central challenge, companies are looking to not only cope with data growth, but exploit it to power key business functions. Data management has transformed into a strong consideration for both the IT and business sides of the house. The research demonstrates that the top business pressure driving data management is the need to address more data sources with BI capabilities (Figure 2).

Figure 2: Top Pressures Driving the Need for Data Management



Percentage of Respondents, n = 215

Source: Aberdeen Group, December 2009

As data grows and becomes more diverse - for example, through the addition of documents, images, audio, video, and unstructured 'textual' data to the mix - companies are looking to data management to help them normalize and better contextualize their data in order that their BI system can provide improved decision support. This growing complexity is another top pressure driving a focus on data management. An additional theme that emerges when looking at the top pressures is 'time-to-information.'

Companies are looking for new and different ways to improve the timely delivery of clean and relevant information to their decision makers. Many are looking to generate a comprehensive data management strategy to help improve the quality and timeliness of their information delivery.

The Maturity Class Framework

Aberdeen used four key performance criteria to distinguish the Best-in-Class from Industry Average and Laggard organizations.

- **Efficiency of data integration:** measured as a weighted average number of days required to integrate a new data source into the BI system
- **Speed of information access:** measured as a reduction in the time required to find, capture, and analyze relevant business information
- **Pervasiveness of BI capability:** measured as a weighted average percentage of analytically inclined employees that have access to BI capability
- **Profit margin:** measured as the weighted average year over year change in overall profit margin

Fast Facts

On average, the *maximum addressable data volume* for a single instance of analysis is as follows:

√ Best-in-Class: **354 GB**

√ All other companies: **154 GB**

Table I: Top Performers Earn Best-in-Class Status

Definition of Maturity Class	Mean Class Performance
Best-in-Class: Top 20% of aggregate performance scorers	<ul style="list-style-type: none"> ▪ 39 days, on average, required to integrate new data sources into the BI system ▪ 60% achieved a decrease in “time-to-information” ▪ 81% of analytically inclined employees, on average, have access to BI capability ▪ 18% average year over year increase in profit margin
Industry Average: Middle 50% of aggregate performance scorers	<ul style="list-style-type: none"> ▪ 4.1 months, on average, required to integrate new data sources into the BI system ▪ 26% achieved a decrease in “time-to-information” ▪ 56% of analytically inclined employees, on average, have access to BI capability ▪ 9% average year over year increase in profit margin
Laggard: Bottom 30% of aggregate performance scorers	<ul style="list-style-type: none"> ▪ 8.9 months, on average, required to integrate new data sources into the BI system ▪ 10% achieved a decrease in “time-to-information” ▪ 23% of analytically inclined employees, on average, have access to BI capability ▪ 12% average year over year decrease in profit margin

Source: Aberdeen Group, December 2009

The Best-in-Class PACE Model

Using BI and data management solutions to achieve corporate goals requires a combination of strategic actions, organizational capabilities, and enabling technologies that can be summarized as shown in Table 2.

Table 2: The Best-in-Class PACE Framework

Pressures	Actions	Capabilities	Enablers
<ul style="list-style-type: none"> ▪ Growing complexity of data accessed by existing BI applications 	<ul style="list-style-type: none"> ▪ Develop a data-driven company culture ▪ Create data management strategy roadmap 	<ul style="list-style-type: none"> ▪ Method for prioritizing high-demand data for end-user access ▪ Established training assets for deploying BI to end-users ▪ Automated capture and indexing of incremental data ▪ Ability to assess data needs across organizational silos 	<ul style="list-style-type: none"> ▪ BI query and reporting tools ▪ Data integration tools ▪ End-to-end BI Software solution (ETL, Cube/model, interface for reporting, dashboards, etc) ▪ IT/Systems Integrator consulting services ▪ Predictive analytics ▪ Data visualization software ▪ Master Data Management software/platform

Source: Aberdeen Group, December 2009

Best-in-Class Strategies

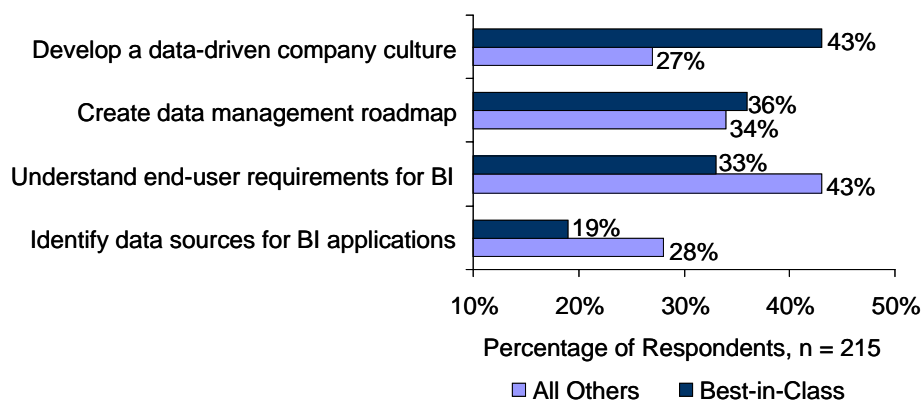
Many companies never scratch the surface of gleaming the maximum business insight from their data. Through the full information lifecycle from creation to storage and archival, many gems of information pass through the hands of decision makers without ever making their mark on the organization. Technology can alleviate these challenges and increase the yield of usable organizational data, but in order to really harness the power of the data, Best-in-Class companies are looking to create a culture that values the collection, assembly, and delivery of information (Figure 3).

“The biggest challenge we face is trying to get the right information relevant to the particular business need, while sifting through the tons of data collected.”

~ IT Manager

U.S. Based Public Utility

Figure 3: Top Strategic Actions for Data Management



Source: Aberdeen Group, December 2009

From a strategic level, this data-driven culture is at the top of the list for Best-in-Class companies. As more business functions clamor for BI capability to be delivered without intense IT involvement, this type of data culture helps to expand the use of BI and develop more analytically inclined employees. Additionally, top performing companies are making efforts to create a roadmap to help better understand the growth and evolution of their data and develop guidelines for how to manage the variety and disparity of corporate information as it grows. On the flip side of that coin, Industry Average and Laggard companies are behind the Best-in-Class on the data management maturity curve. As their top prioritized strategic actions, Industry Average and Laggard companies are taking stock of their data sources and seeking end-user feedback to understand organizational needs for data management. These two strategies, while certainly important in a data management strategy, have already been adequately addressed by the Best-in-Class and therefore have not been prioritized as highly.

“As we are restricting the resource working on providing BI reports in order to control costs, keeping up with user demands for information is very difficult and would be the top reason why we need a data management strategy.”

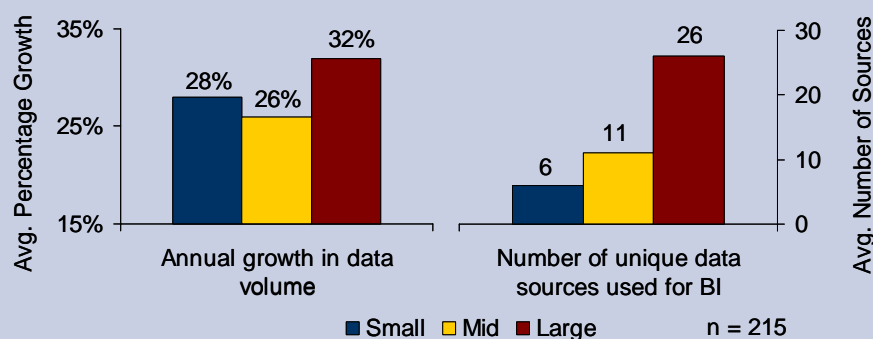
~ Manager

European Chemical Company

Aberdeen Insights — Strategy

The explosion of enterprise data is not an issue exclusive to larger companies. Organizations of all shapes and sizes are facing their own challenges around data management. Aberdeen's research shows that company data is growing at an average clip of 30% per annum on a weighted average basis. Broken down by small (under \$50m in annual revenue), mid-sized (\$50m to \$1b), and large companies (over \$1b), the research shows very little disparity in the growth rate between these three segments. However, from the perspective of data complexity, larger companies are not surprisingly managing a more diverse set of data sources. Enterprise level companies, on average, are managing more than four times the number of unique data sources for the purposes of BI and analytics (Figure 4.)

Figure 4: Data Growth and Complexity by Company Size



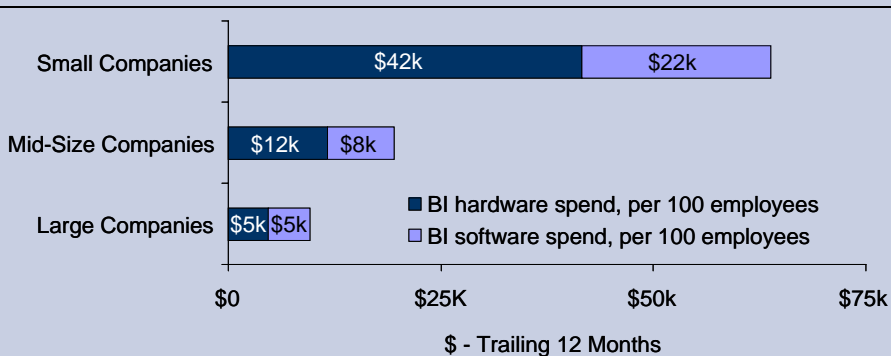
Source: Aberdeen Group, December 2009

continued

Aberdeen Insights — Strategy

Neither of these data points on their own should come as a shock. In fact, many would consider the data growth rates to be quite conservative, as some companies are seeing more than two-times year-over-year growth of organizational data. Common sense also dictates that larger companies should be able to achieve economies of scale when it comes to managing data, and in fact this is proven out by the great disparity between small and large companies when it comes to normalized BI expenditure. Survey respondents were asked to report their annual BI spend for both hardware (including data servers, storage components, and network servers) and software (including data warehouse and data storage). When looking at the average spend, normalized on a per 100 employees basis, the research shows that small companies are spending almost \$65k annually on BI, versus less than \$10k for large companies (Figure 5).

Figure 5: Economies of Data Scale



Source: Aberdeen Group, December 2009

This data should serve as a bright spot for companies looking for a more salient analytical strategy but are finding themselves buried under a mountain of organizational data. Ostensibly, as companies grow in size and their data follows suit, the marginal cost of applying business intelligence to that data goes down significantly. Since organizational data is very unlikely to decline any time soon, it would seem that BI tools and strategies will be a valid way of delivering business insight for some time to come.

In the next chapter, we will see what the top performers are doing to achieve these gains.

Chapter Two: Benchmarking Requirements for Success

The selection of a data management solution and its integration with business process management systems plays a crucial role in the ability to turn these strategies into profit. The following case study illustrates how one company has leveraged open source data management tools and its development community of shared knowledge in order to create an customized and cost effective data integration solution.

Case Study — AOL

"In web businesses," says Eric Schvimmer, Vice President of Commerce and Marketplace Systems at AOL, "the difference between success and failure is really in the margins." Founded in 1983 as Control Video Corporation, AOL has grown to become a \$20 billion international company largely on the strength of the content it provides and the communities it creates.

AOL helps its users by collecting data that is used to refine its service offerings. Much of this data is in a semi-unstructured format: "At the end of the day there must be a pattern to this data or you can't do anything with it at all," says Schvimmer. "The difficulty lies in figuring out what those patterns are [and] getting data ... into a form that's actually usable. And that is what data integration technology is all about."

For AOL, however, every dollar spent licensing seats for integration tools, such as Extract-Transform-Load (ETL) software is a dollar that could not be spent creating content or providing it to the company's user base. This led the company to search for an alternative to high-ticket ETL products that nevertheless could be scaled to match AOL's extensive global network. "We moved towards an ETL implementation that allows us to scale appropriately at a very horizontal cost structure."

The horizontal cost structure provided by open-source ETL vendors allowed AOL to standardize their ETL system across the entire enterprise, easing the integration of data from a range of previously disparate publishing groups into one unified data integration platform feeding into their data warehouses.

"When we started looking at this problem, every one of the different global publishing divisions had a different technology for the same task. We ended up with 'islands of knowledge,' where we had isolated communities of functionality," Schvimmer said. "Now we have centers of excellence as opposed to islands of excellence."

continued

Fast Facts

Top five biggest challenges of data management:

1. Slow response time for access to critical business information - 40%
 2. Lack of trust in data among BI/reporting users - 32%
 3. Lack of detail in current BI/reporting - 28%
 4. Low adoption of BI assets - 26%
 5. Current data management costs are too high - 23%
- (% of all respondents)

Case Study — AOL

While cost savings initially drew AOL to invest in open-source ETL, the massive open source developer community has proven a substantial side benefit. The open-source nature of AOL's ETL implementation allowed the company to personalize their ETL solution without having to code their own solution from scratch or to rely upon a "black box" product that may not provide the full range of functionality that AOL desired.

"You can look at this in one of two ways: you develop the tools you need yourself, and maintain them and keep them best of breed, or you find a developer community that has already done 80% of the work for you." Schwimmer further elaborated on the power of users to customize open-source products. "The beauty of an open source community is if you have something particular that you want to contribute you can just add it into the project."

Competitive Assessment

Aberdeen Group analyzed the aggregated metrics of surveyed companies to determine whether their performance ranked as Best-in-Class, Industry Average, or Laggard. In addition to having common performance levels, each class also shared characteristics in five key categories: (1) **process** (the approaches they take to execute daily operations); (2) **organization** (corporate focus and collaboration among stakeholders); (3) **knowledge management** (contextualizing data and exposing it to key stakeholders); (4) **technology** (the selection of the appropriate tools and the effective deployment of those tools); and (5) **performance management** (the ability of the organization to measure its results to improve its business). These characteristics (identified in Table 3) serve as a guideline for best practices, and correlate directly with Best-in-Class performance across the key metrics.

Table 3: The Competitive Framework

	Best-in-Class	Average	Laggards
Process	Method for prioritizing high-demand data for user access		
	57%	31%	22%
Process	Data cleansing capability		
	59%	49%	33%
Organization	Established training assets for deploying BI to end-users		
	32%	30%	16%
Knowledge	Ability to optimize queries		
	56%	37%	13%
	Automated capture and indexing of incremental data		
	52%	35%	25%

	Best-in-Class	Average	Laggards
Technology	BI query and reporting tools		
	83%	69%	40%
	Data integration tools		
	64%	59%	35%
	End-to-end BI Software solution		
	61%	42%	25%
Performance	Master Data Management software/platform		
	40%	23%	20%
	Ability to assess data needs across organizational silos		
	50%	30%	14%
	Ability to measure 'time-to-information' for end users		
	49%	16%	12%

Source: Aberdeen Group, December 2009

Capabilities and Enablers

Based on the findings of the Competitive Framework and interviews with end-users, Aberdeen’s analysis of the Best-in-Class demonstrates that the successful deployment and use of a data management strategy depends on a combination of specific capabilities and technology enablers. Aberdeen's research has identified several capabilities that Best-in-Class companies leverage in order to achieve elevated performance.

Process

The key to efficient BI is not just timely information, but clean information as well. Under the umbrella of what would be dubbed "data hygiene" lies activities such as de-duplication, data enrichment and appending, data profiling/matching, data refreshing, and data cleansing. In much the same way as dental hygiene involves brushing, flossing, dentist visits, x-rays, etc., data hygiene encompasses everything related to increasing the value and relevance of existing data. Best-in-Class companies are 78% more likely than Laggards to have a process in place for data cleansing. Hand in hand with data cleanliness and relevance is the notion of efficient access to data. At month, quarter, or year end, invariably there will be a pool of data that sees very high traffic. While certain employees need access to the data for purely information and anecdotal purposes, others need it to complete their jobs. Best-in-Class companies are more than twice as likely as all others to have a process in place to prioritize high-demand data for user access (Figure 6).

Organization

Part of the challenge of data growth has to do with cross-silo applicability of most company information. Most enterprise information can touch multiple business functions. Having centralized responsibility for data management residing with a single individual or group can help relieve the burden of data

“The end user of BI data many times is not the one producing the reports. I call them data brokers. For instance, sales people hardly ever produce the reports, they are generated by finance and operations. That makes collecting requirements very challenging.”

~ VP of IT

Large U.S. Pharmaceutical Company

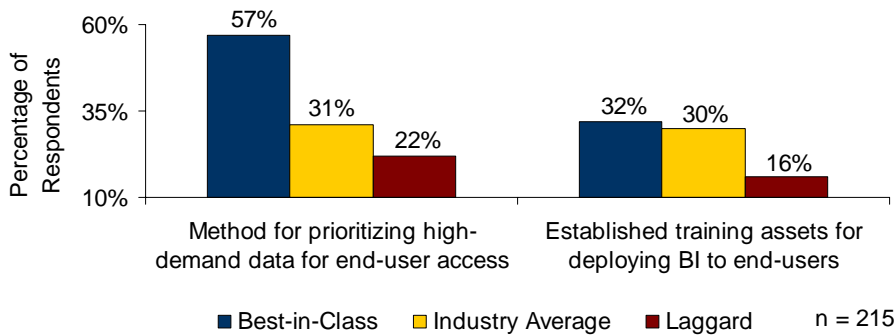
management that often resides in widely dispersed individuals across the company. The Best-in-Class are 53% more likely to have this single individual or group responsible for data management. Additionally, in order to help employees drive more value from their data and support better decisions, the Best-in-Class are using training programs to help assist this process. Research shows that the Best-in-Class are twice as likely as Laggards to have training assets in place to help deliver BI to the workforce (Figure 6).

Fast Facts

Top Best-in-Class data management vendor selection criteria:

1. Ease of use for end users
2. Implementation consulting costs
3. Scalability to growth of users, data volumes and complexity

Figure 6: Process and Organizational Capabilities



Source: Aberdeen Group, December 2009

Knowledge Management

One of the biggest challenges in applying BI capability to a growing base of data is the performance hit that the BI system can take when overwhelming volumes of data are in use. Query tools are a crucial part of the data discovery process but in the absence of in house knowledge of query optimization, BI performance can be severely hindered. Companies that have the ability to generate an efficient performing query are at an advantage to those that can't. Best-in-Class companies are more than four times more likely than Laggards to have a query optimization capability. Also, as data grows in the organization, many companies struggle with the ability to properly capture, catalog, and store that data. The Best-in-Class are 50% more likely than the Industry Average to automate the process of capturing and indexing key data as it grows within the organization (Figure 7).

Performance Management

Companies often struggle to deliver the right data to the right people. In other words, different business functions have widely disparate needs when it comes to data and its not always obvious what those needs are. The marketing team may need to store and index audio, video, and unstructured data, whereas the finance group may only need raw structured accounting data for capital budgeting purposes. Whatever the departmental needs are, it has proven invaluable to have the ability to reach across silos and understand what the informational needs are across the organization. Best-in-Class companies are more than twice as likely as all other companies to

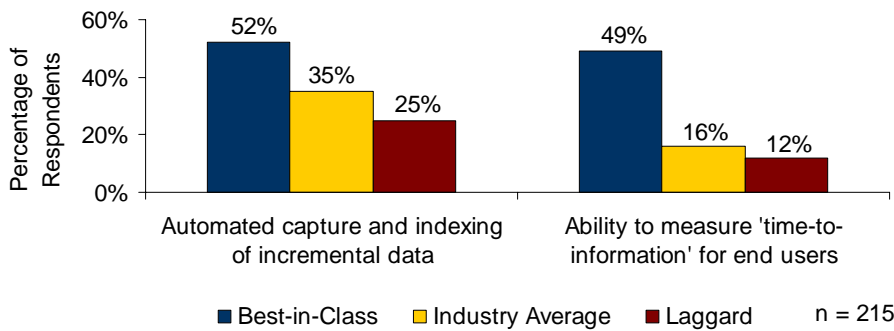
have the ability to measure and assess data needs across organizational silos. Additionally, a key benefit that data management tools and strategies promise is the ability to reduce the time spent searching for information. However, improving upon this important metric is difficult to do if it is not measured in the first place. The Best-in-Class are more than four times more likely than all other companies to have the ability to measure time-to-information (Figure 7).

“The end goal for us in the short term is to provide consolidated ‘flat file’ reporting capabilities which address 90% of the ‘ad-hoc’ needs while at the same time further developing and implementing automated tools for pulling analytics.”

~ HR Manager

U.S. Pharmaceutical Company

Figure 7: Knowledge and Performance Management Capabilities

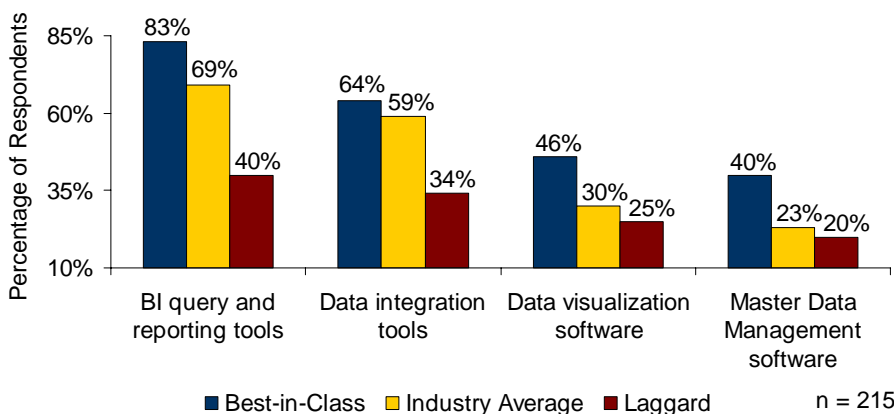


Source: Aberdeen Group, December 2009

Technology Enablers

Enabling technology is a crucial element of data management that cannot be ignored. With the ultimate goal of delivering clean, relevant, and timely information to the BI decision support systems in place, Best-in-Class companies are leveraging a wide variety of technology to help them better manage their data. In order to more efficiently sift through their mountains of data, the Best-in-Class are using traditional BI query and reporting tools. As discussed earlier, when these technologies are married with strong internal query optimization experience, the result can be a powerful means of extracting value from growing data (Figure 8).

Figure 8: Best-in-Class Technology Enablers



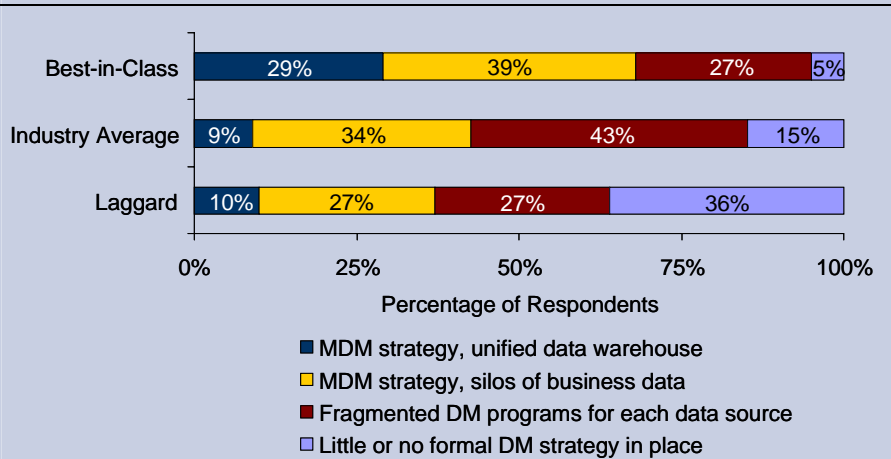
Source: Aberdeen Group, December 2009

As we saw at the end of Chapter One, even smaller companies are managing an average of six unique data sources that feed the BI system, and most companies are in double digits. Managing that type of data disparity can be a daunting challenge without the aid of data integration technology to help combine and unite the data into a common platform and taxonomy. The Best-in-Class are almost twice as likely as Laggards to be using data integration tools. Having integrated the disparate data sources, the Best-in-Class are also using technology to help visualize the data. Tools like dashboards, scorecards, and other real-time or low latency reporting tools can vastly improve an organizations visibility into their operations, thus maximizing the value of their underlying data. Finally, in light of the data complexity inherent in most organizations, and the stove-piped form it can take, companies struggle to create an environment that promotes "one version of the truth." Best-in-Class companies are managing this challenge, in part, by using MDM software to help centralize company information and move toward a more common view of the data.

Aberdeen Insights — Technology

As previously discussed, the value of a centralized data management strategy can be instrumental in generating one common view of the data or one version of the truth. Moving beyond just the software tools, MDM programs that involve people, processes, and technology are a powerful way of delivering consistent data to the workforce. There are several steps on the MDM maturity curve that dictate an organization's experience with centralizing data management.

Figure 9: Maturity of Data Management Programs



Source: Aberdeen Group, December 2009

continued

Aberdeen Insights — Technology

Aberdeen's research shows that, in general, Best-in-Class companies are further along this maturity curve and most are moving towards a formalized MDM strategy that involves integration of data from disparate organizational silos into a unified data warehouse (Figure 9).

At the other end of the spectrum, Laggard organizations are far less likely to have a formal MDM strategy in place. In fact, the majority of Laggard organizations report having little or no formal data management program in place. The key to performance in data management is not necessarily related to always doing the right things or avoiding the wrong things. In many cases, companies that have taken efforts to move their data management strategy forward, even in small steps, are seeing significant business benefits. Typically a poor decision is still more valuable than indecision, and Laggard companies have an opportunity to advance their data management strategy to gain more business value and insight from their information.

Chapter Three: Required Actions

Whether a company is trying to move its performance in data management from Laggard to Industry Average, or Industry Average to Best-in-Class, the following actions will help spur the necessary performance improvements:

Laggard Steps to Success

- **Make the effort to assess data needs across organizational silos.** Most organizations have a wide disparity of information needs as you look across the company. These requirements vary by data type - structured, unstructured, raw text, image, video - as well as by access speed. It is important to distribute data management technology and organizational capability appropriate to the needs of each department. Whatever investment is made in people and technology should be judiciously delivered based on need and without a strong understanding of those needs, companies can burn through money quickly and never achieve the level of ROI they seek. Best-in-Class companies are four times more likely than Laggard companies to assess data requirements across different departments within the company.
- **Seek methods to automate the capture and indexing of growing data.** As data flows through an organization, the ability to distinguish between business critical information and - for lack of a better term - white noise, can be an extremely challenging endeavor. Faced with this fire hose of data some companies simply use brute force to capture and catalog all the information in such a way that it can be searchable in the future. This type of approach is admirable but extremely taxing when done manually. Organizations that have taken steps to automate this process are freeing up valuable resources to tackle more strategic issues. The research shows that only 13% of Laggards have the ability to automate their data capture and indexing. With this automation in place, Laggards will be able to spend less time cataloging data and more time analyzing it to improve their businesses.
- **Investigate MDM tools and strategies.** It is hard to quantify how much time is wasted in the business world when separate departments at the same company base decisions on two separate versions of the same information. The sales department needs historical figures to project sales growth, while the finance group needs the same information to forecast cash flow. Without looking at the same data, conflicting decisions are made, costing the organization countless time and resources. MDM tools substantially alleviate these disparity issues and offer companies a consistent, common view of organizational data. The research shows that less than 20% of Laggards are using MDM technology. By formalizing a

Fast Facts

The Best-in-Class are more likely to use a **formalized data modeling method** beyond simple spreadsheet-based modeling.

The following depicts the top two data modeling methods for each maturity class group:

Best-in-Class:

1. Multidimensional database
2. OLAP cube

Industry Average:

1. Spreadsheets
2. OLAP cube

Laggard:

1. Spreadsheets
2. Multidimensional database

master data management strategy, Laggards will become more efficient in coping with cross-departmental information and save wasted time and effort.

“End users appear to not know what they need in order to address the strategic issues around their individual areas of responsibility. We have too much of that silo effect within our company.”

~ IT Manager

U.S. Paper Manufacturer

Industry Average Steps to Success

- **Improve ability to measure time-to-information.** Regardless of the required timeframe of information delivery - real-time, daily, weekly, etc. - companies that have a sound understanding of how long their employees are waiting for critical information is an important way of improving that very metric. Faster time-to-information leads to quicker decisions and enables companies to be more nimble in general. Aberdeen's data shows that only 16% of Industry Average companies have the vital ability to measure time-to-information. By bolstering their ability to measure time-to-information, the Industry Average will be in a better position to improve it, and become a more efficient organization.
- **Develop the ability to optimize queries.** Companies need to be mindful that as data increases in volume and complexity, the ability to query that data needs to be refined and improved proportionately. Generating efficient well-performing queries can save a company hours if not days in their quest to find the right information. Aberdeen's research shows that only one third of Average organizations report having the ability to optimize queries. Developing this capability will enable these companies to find the business insight they need in a shortened time frame and extract more value from their growing data volumes.
- **Invest in data cleansing technologies.** Typically business decisions are only as good as the quality of data they are based upon. Gone unchecked, dirty or corrupted data can skew business analyses to the point of leading a company down the wrong path. Data integration and cleansing technologies are instrumental in alleviating the problems associated with poor data quality. The research shows that only one-third of Industry Average companies are using data cleansing technology. When married with the right processes and organizational capabilities, data cleansing tools will increase the overall value of the organizational data and pave the way for better informed business decisions.

Best-in-Class Steps to Success

- **Establish a formal data steward role.** While Best-in-Class companies are ahead of the curve when it comes to assigning short term data management ownership to an individual or group, for the most part they have yet to establish a long-term strategic role to take responsibility for managing the growth, complexity, and security of data. The research shows that only 22% of Best-in-Class companies have established a formal "data steward" role at the

management levels of their organization. Corporate data has become too large, complex, and valuable to maintain the status quo when it comes to its management. Best-in-Class companies should lead the way and start putting formal organizational hierarchies in place to ensure clean, relevant, and timely information can reach its employees.

- **Create a consistent method to measure ROI from BI / data management programs.** Companies drive tangible business value from their data in a multitude of different ways. It is certainly not a trivial exercise to try and assign a dollar value or specific return on investment made on BI and data management tools. However, the companies that take the time to define a consistent method for measuring ROI will find themselves much better positioned to bring about tangible business results like revenue growth and profitability. Only 33% of Best-in-Class companies are measuring ROI today. By leading the way with a company-wide methodology for measuring ROI, the Best-in-Class will be able to maintain and improve upon their already elevated business performance.
- **Consider leveraging vendor provided training services for data management.** The challenge of managing the flow of information from its source to actionable format is only gaining in difficulty. ETL, data integration technology, middleware, reporting, analytics, and visualization all constitute an incredibly complex network of technology, requiring a broad range of expertise. Many of these tools, while they ultimately serve the business needs, require niche-based IT expertise that is sometimes hard to come by. Currently less than one-third of Best-in-Class companies are leveraging vendor provided training services. By educating the IT workforce on the data management tools in use, they will be better suited to translate that IT knowledge into business value by delivering higher quality organizational data.

Fast Facts

√ **75%** of Best-in-Class companies have had a data management strategy in place for *more than two years*.

Compared with:

√ **55%** of the Industry average

√ **52%** of Laggards

Aberdeen Insights — Bottom Line: Time-to-Information Matters

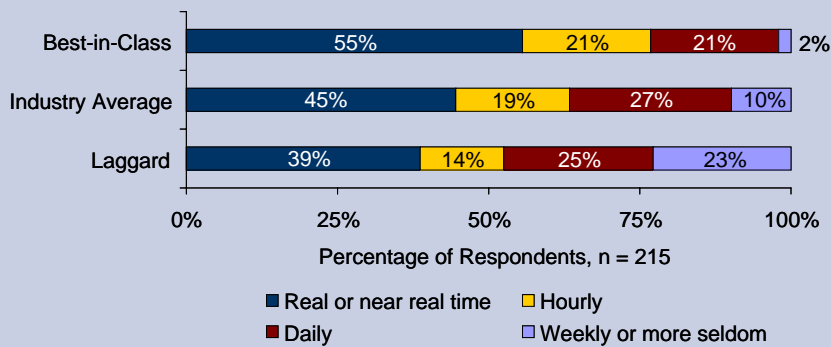
When it comes to managing data to feed into a BI or analytical system, the common thread that ties everything together is the need for efficient and timely data delivery. Any analytically inclined employee will seek ways to reduce the amount of time they spend searching for information and will expect business-critical information to be available in a clean and digestible format, when they need it. Perhaps the most valuable benefit that a data management strategy can deliver is to minimize the time between when a business event occurs, and when information about that event is available for consumption. The requirements on that particular time period may vary drastically between companies and between industries.

continued

Aberdeen Insights — Summary

Some functions and/or employees may need extremely low latency information delivered on a real-time or near real-time basis. Others may simply require regular visibility into the operational workflow and daily access is adequate. The research shows that Best-in-Class companies generally require their information to be available in a shorter time period than Industry Average and Laggard companies (Figure 10).

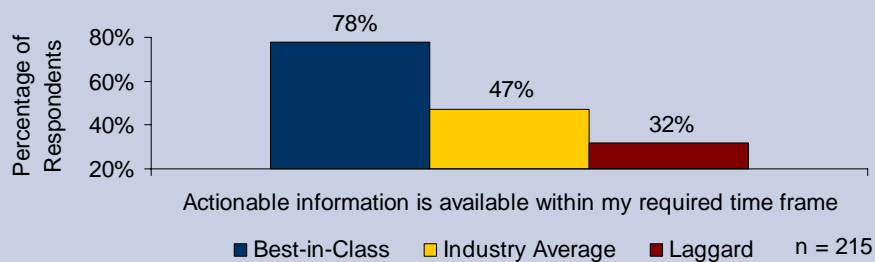
Figure 10: Required Availability of Actionable Information



Source: Aberdeen Group, December 2009

The fact that Best-in-Class companies generally require their information to be available quicker than all other companies provides a partial explanation as to why they perform at a higher level. Best-in-Class companies typically push themselves to provide actionable information faster and make quicker decisions as a result. The rest of the explanation lies in the fact that the vast majority of Best-in-Class companies actually get their information when they need it (Figure 11).

Figure 11: Best-in-Class Deliver Required Time-to-Information



Source: Aberdeen Group, December 2009

By leveraging a strong combination of organizational capability and appropriate technology, and through dogged pursuit of a reduction in time-to-information, Best-in-Class companies are able to manage their data more efficiently and provide better decision support as a result.

Appendix A: Research Methodology

Between November and December of 2009, Aberdeen examined the use, the experiences, and the intentions of 216 enterprises using data management in a diverse set of enterprises.

Aberdeen supplemented this online survey effort with interviews with select survey respondents, gathering additional information on data management strategies, experiences, and results.

Responding enterprises included the following:

- *Job title:* The research sample included respondents with the following job titles: CEO / President (18%); EVP / SVP / VP (10%); Director (16%); Manager (30%); Staff (12%); and other (14%).
- *Department / function:* The research sample included respondents from the following departments or functions: procurement, supply chain, or logistics manager (12%); operations manager (10%); IT manager or staff (34%); sales and marketing staff (16%); manufacturing or engineering (16%); and other (12%).
- *Industry:* The research sample included respondents from a variety of industries. High-tech/software was the largest segment with 21% of the sample, followed by manufacturing (14%); education and public sector (12%); and financial services (10%).
- *Geography:* The majority of respondents (62%) were from North and South America. Remaining respondents were from the Asia-Pacific region (12%) and EMEA (26%).
- *Company size:* Thirty-seven percent (37%) of respondents were from large enterprises (annual revenues above US \$1 billion); 25% were from midsize enterprises (annual revenues between \$50 million and \$1 billion); and 38% of respondents were from small businesses (annual revenues of \$50 million or less).
- *Headcount:* Forty-seven percent (47%) of respondents were from large enterprises (headcount greater than 1,000 employees); 24% were from midsize enterprises (headcount between 100 and 999 employees); and 29% of respondents were from small businesses (headcount between 1 and 99 employees).

Study Focus

Responding executives completed an online survey that included questions designed to determine the following:

- √ The degree to which data management tools and strategies are deployed in their operations and the financial implications of the technology
- √ The structure and effectiveness of existing data management implementations
- √ Current and planned use of data management to aid operational and promotional activities
- √ The benefits, if any, that have been derived from data management initiatives

The study aimed to identify emerging best practices for data management, and to provide a framework by which readers could assess their own capabilities.

Table 4: The PACE Framework Key

Overview
<p>Aberdeen applies a methodology to benchmark research that evaluates the business pressures, actions, capabilities, and enablers (PACE) that indicate corporate behavior in specific business processes. These terms are defined as follows:</p> <p>Pressures — external forces that impact an organization’s market position, competitiveness, or business operations (e.g., economic, political and regulatory, technology, changing customer preferences, competitive)</p> <p>Actions — the strategic approaches that an organization takes in response to industry pressures (e.g., align the corporate business model to leverage industry opportunities, such as product / service strategy, target markets, financial strategy, go-to-market, and sales strategy)</p> <p>Capabilities — the business process competencies required to execute corporate strategy (e.g., skilled people, brand, market positioning, viable products / services, ecosystem partners, financing)</p> <p>Enablers — the key functionality of technology solutions required to support the organization’s enabling business practices (e.g., development platform, applications, network connectivity, user interface, training and support, partner interfaces, data cleansing, and management)</p>

Source: Aberdeen Group, December 2009

Table 5: The Competitive Framework Key

Overview	
<p>The Aberdeen Competitive Framework defines enterprises as falling into one of the following three levels of practices and performance:</p> <p>Best-in-Class (20%) — Practices that are the best currently being employed and are significantly superior to the Industry Average, and result in the top industry performance.</p> <p>Industry Average (50%) — Practices that represent the average or norm, and result in average industry performance.</p> <p>Laggards (30%) — Practices that are significantly behind the average of the industry, and result in below average performance.</p>	<p>In the following categories:</p> <p>Process — What is the scope of process standardization? What is the efficiency and effectiveness of this process?</p> <p>Organization — How is your company currently organized to manage and optimize this particular process?</p> <p>Knowledge — What visibility do you have into key data and intelligence required to manage this process?</p> <p>Technology — What level of automation have you used to support this process? How is this automation integrated and aligned?</p> <p>Performance — What do you measure? How frequently? What’s your actual performance?</p>

Source: Aberdeen Group, December 2009

Table 6: Relationship Between PACE and the Competitive Framework

PACE and the Competitive Framework – How They Interact
<p>Aberdeen research indicates that companies that identify the most influential pressures and take the most transformational and effective actions are most likely to achieve superior performance. The level of competitive performance that a company achieves is strongly determined by the PACE choices that they make and how well they execute those decisions.</p>

Source: Aberdeen Group, December 2009

Appendix B: Related Aberdeen Research

Related Aberdeen research that forms a companion or reference to this report includes:

- [*Performance Management in the Midmarket*](#); November 2009
- [*BI for the C-Suite: Top Level Visibility Drives Top Notch Cash Flow*](#); October 2009
- [*BPM Accelerated: Slashing Cost and Time with Agile Business Processes*](#); October 2009
- [*Enterprise Search - Discover the Next Opportunity for Growth*](#); September 2009
- [*Intelligent Human Capital Management: Workforce Analytics Drive Profit and Performance*](#); September 2009
- [*BI or Bust: Best Practices for Using Business Intelligence During a Recession*](#); August 2009
- [*The ERP/BI Connection: Adding Value through Actionable Intelligence*](#); July 2009
- [*BI for the SMB 2009: How to Slash Cost and Empower the Business User*](#); July 2009
- [*Moving Past Spreadsheets: What You Need to Know about BI Deployment Strategies*](#); April 2009

Information on these and any other Aberdeen publications can be found at www.aberdeen.com.

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Since 1988, Aberdeen's research has been helping corporations worldwide become Best-in-Class. Having benchmarked the performance of more than 644,000 companies, Aberdeen is uniquely positioned to provide organizations with the facts that matter — the facts that enable companies to get ahead and drive results. That's why our research is relied on by more than 2.2 million readers in over 40 countries, 90% of the Fortune 1,000, and 93% of the Technology 500.

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