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Data Management for BI

Fueling the Analytical Engine with High-Octane Information

December 2010

Michael Lock

~ Underwritten, in Part, by ~

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Executive Summary

Perhaps the most important aspect of efficient Business Intelligence (BI) is the underlying data that feeds into the analytical systems. Cleanliness, relevance, and timeliness are all crucial aspects of data that dictate the quality of the business insight that can be generated from its analysis. As business data continues to grow in both volume and complexity, the need for efficient data management becomes an even greater imperative. Best-in-Class companies recognize the importance of these factors and have aligned resources internally to provide access to more key business data, metabolize new disparate data sources quicker, and deliver valuable insights within the window of opportunity to effect positive change.

This report is based on feedback from 370 end-user organizations across the globe.

Best-in-Class Performance

Aberdeen used the following three key performance criteria to distinguish Best-in-Class companies:

- **12 days to integrate new data sources**, compared to 60 days for the Industry Average, and 143 days for Laggards
- **93% of information delivered in "right-time,"** compared with 80% for the Industry Average and 34% for Laggards
- **82% of respondents "satisfied" or "very satisfied"** with their information environment, compared with 37% of Industry Average companies and 8% of Laggards

Competitive Maturity Assessment

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

- **2.7-times more likely** to have a decision-making culture that values the use of supporting data
- **3.9-times more likely** to develop analytical skill sets in-house
- **72% more likely** to use data cleansing / hygiene technology

Required Actions

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

- Start measuring "time-to-information"
- Establish a cross-functional team to develop data management strategy
- Consider deploying a Master Data Management (MDM) platform

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

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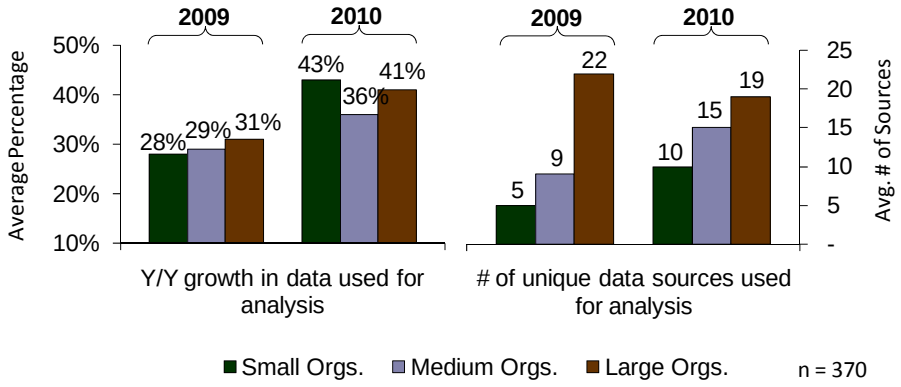
Chapter One: Benchmarking the Best-in-Class

Business Context

If information is the fuel that powers today's most intelligent organizations, data is the crude oil that provides the raw material. The ability to refine that crude data into high-octane business insight is differentiating top-performing organizations from those who rely solely on "gut feel" decisions. The timely insight that Business Intelligence (BI) solutions provide is predicated on a steady stream of clean and usable data feeding into those decision support systems. However, the challenge of efficient data refining is twofold for most organizations. First, the amount of raw data entering the organization is increasing both in size and complexity. Different types of data (audio, video, free text), different types of data sources (enterprise applications, data marts, spreadsheets), and increasing data update/refresh frequency, are all proving unwieldy for many organizations. Secondly, the business users consuming the downstream insight are demanding access to more data. Best-in-Class organizations, rather than trying to drink from the proverbial "fire hose" of data, have strategies in place to understand where their most valuable data is, capture it, and transform that data into the business insight on which their end-users rely.

Aberdeen's previous examination of this same topic in December of 2009, *Data Management for Business Intelligence*, revealed that data complexity and growth is not just an issue at large companies. Between small companies (under 100 employees), mid-size organizations (100 to 1,000 employees), and large enterprises (over 1,000 employees), each segment is challenged with significant year over year growth in data as well as a variety of unique disparate data sources. A year later, these trends are still quite prevalent, with small companies seeing the biggest year over year change in both metrics (Figure 1).

Figure 1: Data Growth and Complexity by Company Size



Source: Aberdeen Group, December 2010

Fast Facts

Best-in-Class companies achieved:

√ **16%** year over year increase in organic revenue

Compared with:

√ **11%** increase for the Industry Average

√ **7%** increase for Laggards

Additionally, while the activities surrounding data management have typically fallen under the realm of the IT department, more business users are not only gaining an appreciation for the value of clean and relevant business data, but are increasingly aware of the often draconian penalties associated with incorrect, incomplete, or late information.

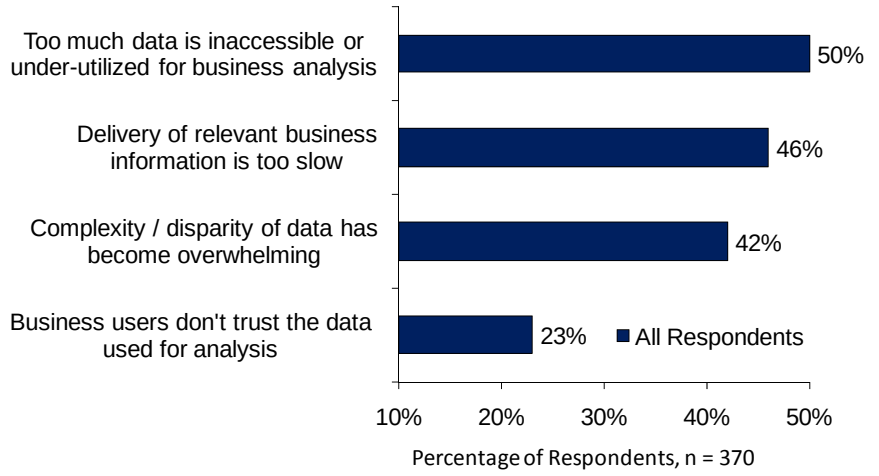
In the face of growing data volumes and growing urgency on the part of business users for faster and more relevant information, many organizations are developing a data management strategy that efficiently marries the technical prowess of the IT team with the clearly understood analytical and reporting needs of the business user, in order to generate an environment that transforms raw data into usable business insight. In fact, these very concepts - the need for broader access to more business data, and faster access to that data - are what compel organizations to pursue a more formalized strategy for data management in the first place (Figure 2).

"Analysis, or lack thereof, is one of the key factors affecting business user satisfaction. Data managers in BI have a contract with their organizations to 'transform data to useful business information.' Agile development or not, test-driven methodology or not, analytical requirements should be part of the data life cycle process."

~ IT Team Leader

Large U.S. Automotive Organization

Figure 2: Top Pressures Driving Data Management Initiatives



Source: Aberdeen Group, December 2010

As Figure 1 demonstrates, large organizations don't have a monopoly on the challenge of data complexity. With an average of 10 unique data sources that feed into their analytical systems, small companies also now have to put more thought into how to prioritize and streamline the information supply chain.

The Maturity Class Framework

A sound data management strategy is directly impacted by an organization's ability to drive business value from growing volumes of data. Research consistently shows that organizations taking a Best-in-Class approach to data management are experiencing improvement in key business metrics such as revenue and profitability. Therefore, the ability to provide access to more data sources, deliver information within the given "decision window" and equip business users with cleaner and more relevant information to support their own self-service analysis, are all factors that lead to elevated

performance when it comes to data management. With these concepts in mind, Aberdeen used three key performance criteria to distinguish the Best-in-Class from Industry Average and Laggard organizations:

- **Agility of data management:** Measured as an average number of days required to integrate new data sources into the analytical systems
- **On-time information delivery:** Measured as an average percentage of actionable business information delivered on-time, or within the required "decision window"
- **User satisfaction:** Composite performance metric examining the average percentage of respondents that report being "satisfied" or "very satisfied" with the following aspects of the information environment:
    - Response time to information requests
    - Information system ease-of-use
    - Quality / relevance of accessible information
    - Ability to create custom views or reports
    - Anywhere, anytime access to information

Fast Facts

Top inhibitors to efficient data management*:

√ Lack of IT resources - 52%

√ Software and services are too expensive - 45%

√ End-users have not provided well-defined information needs - 42%

√ Lack of top management commitment to projects - 38%

√ Business need is not high enough - 24%

**all survey respondents*

Table 1: Top Performers Earn Best-in-Class Status

Definition of Maturity Class	Mean Class Performance
Best-in-Class: Top 20% of aggregate performance scorers	▪ **12** days required to integrate new data sources ▪ **93%** of key information delivered on-time ▪ **82%** of respondents "satisfied" or "very satisfied" with information environment
Industry Average: Middle 50% of aggregate performance scorers	▪ **60** days required to integrate new data sources ▪ **80%** of key information delivered on-time ▪ **37%** of respondents "satisfied" or "very satisfied" with information environment
Laggard: Bottom 30% of aggregate performance scorers	▪ **143** days required to integrate new data sources ▪ **34%** of key information delivered on-time ▪ **8%** of respondents "satisfied" or "very satisfied" with information environment

Source: Aberdeen Group, December 2010

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
▪ Too much data is inaccessible or under-utilized for business analysis	▪ Work to build a data-driven decision culture ▪ Expand data access into more business functions	▪ Established process for cleansing & enriching data ▪ Decision-making culture that values the use of supporting data ▪ Formal in-house development of analytical knowledge and skill sets ▪ Adoption / usage of BI tools is tracked	▪ BI query and reporting tools ▪ Data integration tools ▪ Data modeling software ▪ Data cleansing / hygiene tools ▪ Data enrichment / append / matching tools ▪ Data mining algorithms developed in-house

Source: Aberdeen Group, December 2010

Best-in-Class Strategies

The data in Figure 2 showed that the top pressure driving data management initiatives is the need to increase the accessibility and also the utilization of data. Many organizations feel that the potential for timely business insight slips through their fingers each day as users cannot gain access to what they need, or the data simply isn't captured. Best-in-Class companies are addressing this from both a technical and from a cultural perspective. The ability to make good use of business data is largely predicated on the mindset of the organization. Top performers work to build a culture that espouses evidence-based or data-driven decisions. From a technical perspective, the Best-in-Class are also inclined to grant wider access into the data residing in a variety of business functional areas (Figure 3).

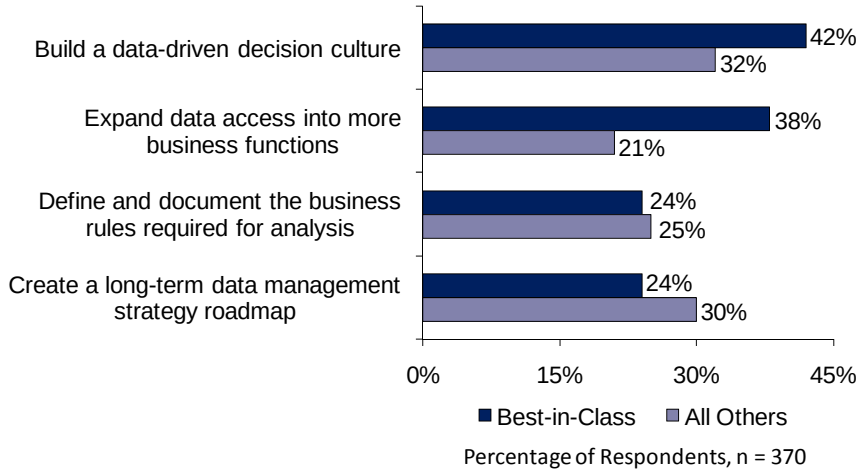
"We have a number of ERPs and a very diverse business operations environment. In 2008 we were still asking suppliers how much we spent with them across our entire enterprise. After making a serious effort to centrally manage and normalize the data, our BI tools are 'wowing' the business with new decision making capability. No more spreadsheets (almost)!"

~ Project Manager

Procure-to-Pay Program

Large U.S. Oil & Gas Company

Figure 3: Key Strategic Actions to Support Data Management



Source: Aberdeen Group, December 2010

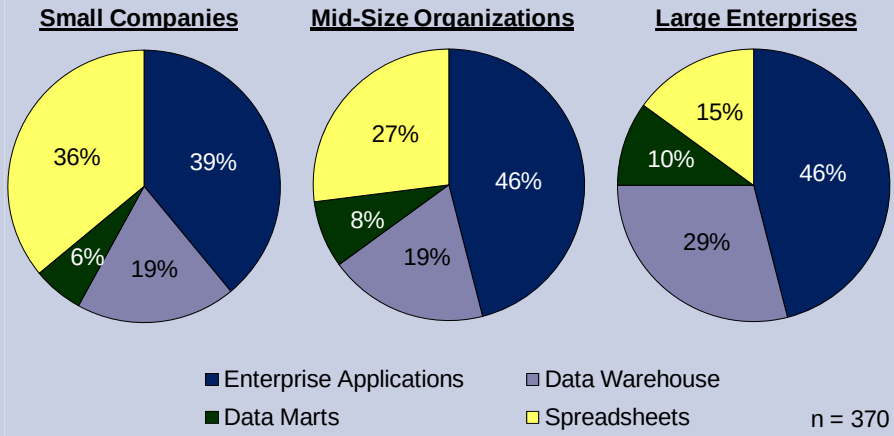
On the flip-side of the maturity curve, Industry Average and Laggard organizations are more likely to prioritize strategic actions already undertaken by the Best-in-Class. For instance, the creation of a long-term roadmap for managing the influx of data is an important aspect of handling

the challenges of data management, but the top performers place this as a comparatively lower priority because in most cases they have already made the effort.

Aberdeen Insights — Strategy

As discussed previously, a major part of the challenge of data management is the complexity of enterprise data, not just the sheer volume. The complexity of different types of *data* (text, image, video, audio), is further punctuated by the complexity and disparity of different types of *data source*. The number of unique data sources by company size reported in Figure 1 might seem artificially high for small companies (10 unique data sources, on average) until considering how those different sources breakdown. Survey respondents were asked to approximate the percentage of BI-ready data that comes from a variety of different sources. Not surprisingly, we see a strong inverse correlation between the size of the company and the amount of data that is analyzed coming out of the ubiquitous spreadsheet (Figure 4).

Figure 4: Breakdown of Data Sources Feeding into BI



Source: Aberdeen Group, December 2010

The data shown in Figure 1 is hinting at an interesting evolution that many companies experience as they grow. As the number of employees increases, the unique data sources don't grow proportionally because many of the spreadsheets are being consolidated or integrated into a more formal type of data organization tool like an enterprise data warehouse or a data mart. Additionally, as companies grow, the more likely they are to invest in more formal software tools to help automate the business. As such, more of the data that feeds into BI will naturally originate in an enterprise application, just as Figure 4 depicts.

"Managers require more detailed analysis using multiple sources, not just data within the ERP system. One version of the truth, viewed in multiple ways and delivered in multiple formats is best achieved through the introduction of a BI tool. This will un-lock data from the ERP system and support the business executives in their decision making process."

~ IT Manager

European Food & Beverage Company

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

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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 hospital was able to leverage a data management platform to aggregate highly disparate data systems to deliver faster and cleaner insight.

Case Study — Children's Hospital & Medical Center of Omaha

Children's Hospital & Medical Center of Omaha—a 144-bed non-profit organization, and the only full-service pediatric specialty health care center in Nebraska—has cared for children since 1948. The hospital IT department is responsible for the integrity of data extracted from multiple sources including: registration, patient billing, financials, and Electronic Medical Record (EMR) elements. "We need to aggregate data across a variety of applications and platforms some of which include: SQL Server, Cache, text files, and spreadsheets in addition to specific EMR applications," explains the hospital's Manager of Data. "Our diverse applications and databases necessitated the selection of a tool with the flexibility and robust support features to allow us to manage data across the organization more efficiently and accurately."

After considering a variety of different solutions, they chose a data management tool to help aggregate data from a number of disparate sources and gain visibility into their processes. Under the previous ETL solution, the hospital had a very difficult time keeping track of which jobs completed and which failed. Today, the IT staff gets error notifications immediately and can discern exactly where processes have failed. Additionally, the hospital handles close to 300,000 outpatients and sees 7,000 to 8,000 inpatients a year. The need to understand exactly what the orders were for each patient, and what the charges were, exponentially raises the number of transactions to process.

With a dedicated solution in place, the hospital can now perform incremental updates every night to extract the new transactions that were posted the previous day. This enables them to manage and improve key metrics, such as: immunization tracking – ensuring the children have had all of their boosters and immunizations; and charge reconciliation – the ability to produce timely and accurate bills. At the end of the day, their data management platform is delivering clean and timely information to their analytical systems, enabling faster and more efficient processing of information while dramatically reducing errors.

Fast Facts

Best-in-Class companies are currently experiencing:

√ **88%** customer satisfaction rate

Compared with:

√ **80%** for the Industry Average

√ **78%** for Laggards

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.

"For every company it is a struggle to get the master data right, controlled and governed. For a distributor it is an even greater challenge as we provide services to vendors where we perform vendor representation and have a scatter of customers worldwide. We're now rolling out a new ERP system across our business which provides a platform for harmonization. Add to it that we are an organic and inorganic growing distributor, master data will form the core of our day to day business."

~ Dennis van Bregt

Director, Master Data Management, EMEA

Univar

Table 3: The Competitive Framework

	Best-in-Class	Average	Laggards
Process	Established process for cleansing and enriching data		
	66%	47%	35%
	Formal end-user requirements gathering process		
	51%	43%	30%
Organization	Executive-level support / encouragement / mandate for better data oversight		
	86%	59%	46%
	Decision-making culture that values the use of supporting data		
	70%	58%	26%
Knowledge	Formal in-house development of analytical skill sets		
	66%	46%	25%
	Centralized repository of best-practices for data access and usage		
	47%	30%	17%
Performance	Adoption / usage of BI tools is tracked		
	66%	30%	17%
	Ability to assess data needs across organizational silos		
	63%	31%	15%
Technology	Data integration tools		
	75%	66%	46%
	Data modeling software		
	66%	41%	30%
	Data cleansing / hygiene tools		
	55%	45%	32%
	Data enrichment / append / matching tools		
	49%	37%	18%

Source: Aberdeen Group, December 2010

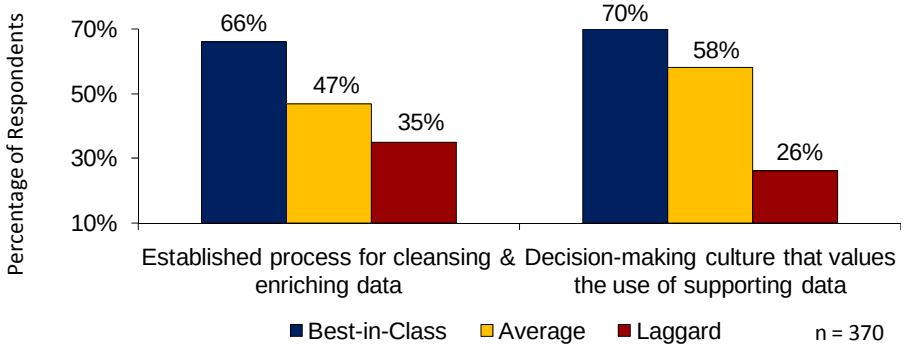
Capabilities and Enablers

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

Providing access to relevant business data to a variety of users can be a daunting challenge. Not only is there a wide range of business functions needing access, but there are also different levels of analytical skill sets in place. Essentially, there is no "one size fits all" approach to data management. To mitigate this challenge, Best-in-Class companies put a formal process in place to gather end-user requirements for data access. These top performers are 70% more likely than Laggards to have this type of process in place. Additionally, Best-in-Class companies understand the concept of supplying their BI systems with cleaner and higher value data. According to the research, top performers are almost twice as likely to have formal processes in place for cleansing and enrichment of their key data (Figure 5).

Figure 5: Process and Organizational Capabilities



Source: Aberdeen Group, December 2010

Organization

Typically, any formal policy handed down from the executive ranks is put into place, either out of enthusiasm, respect, or just fear of repercussions. As such, the leaders of a company are generally in a position to exert a significant degree of influence on the success of a given internal project. Data from this report and several other benchmark studies conducted all show a similar concept related to this assertion. Companies that have woken up to the value of their data, and put policies in place that originate at the highest levels of the executive ranks are experiencing success in their data management initiatives, producing more usable information, and affecting business performance in a positive way. Eighty-six percent (86%) of

Fast Facts

Top business functions addressed with data management strategy*:

√ Finance / Accounting - 69%

√ Corporate Mgmt. - 68%

√ Sales - 68%

√ Customer Service - 61%

√ Product Marketing - 44%

* *Best-in-Class respondents*

Best-in-Class companies report having executive level support, encouragement, or a formal mandate to improve the quality of data. Closely linked to this, is the concept of culture. As Best-in-Class companies generate better, more usable data, and do so in a more efficient time frame, they are also seeing growth in the number of data-driven or evidence-based decision makers in the organization. Best-in-Class organizations are 2.7-times more likely to report a decision making culture that values the use of timely supporting information (Figure 5).

"There is increasing demand for operational and behavioral data to support business processes and spend compliance. More recently, there has been a shift in priority towards gathering data to support risk identification and mitigation."

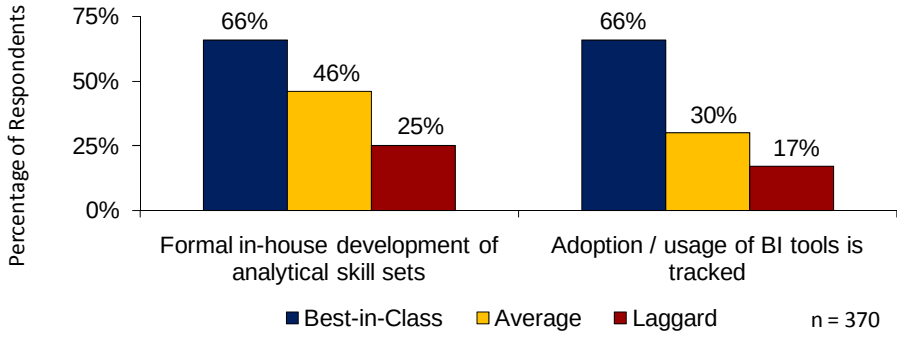
~ Procurement Manager

Large U.S. Financial Services Organization

Knowledge Management

Given the large and increasing complexity of data that resides in today's typical company, the difficulty and confusion surrounding access to that data is, perhaps not surprisingly, increasing in kind. In order to capitalize in the idiosyncratic tidbits of knowledge that exist in pockets around the organization, Best-in-Class companies often create an accessible repository of best-practices when it comes to accessing and using that data. Top performers are 2.8-times more likely to have this repository of data access knowledge in place. Additionally, building on the concept of analytical culture and skill sets, Best-in-Class companies are also more likely to create or nurture BI skills and talent within their own corporate walls. The Best-in-Class are more than twice as likely as Laggards to have a formal program in place to train, educate, and build analytical culture within the organization (Figure 6).

Figure 6: Knowledge and Performance Management Capabilities



Source: Aberdeen Group, December 2010

Performance Management

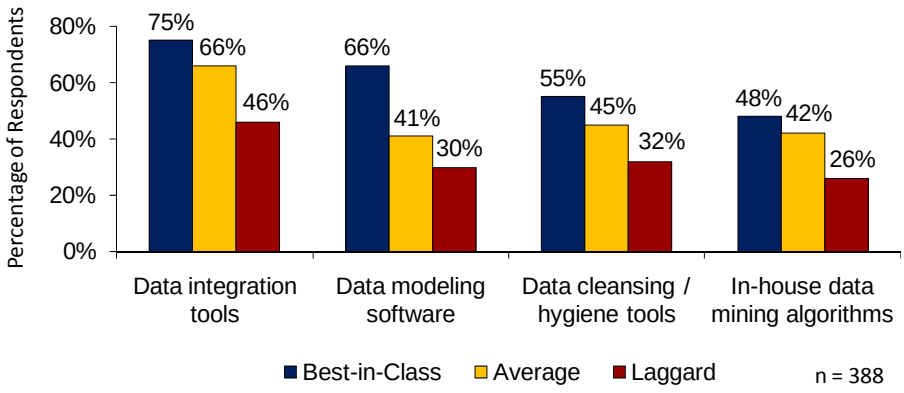
Different departments within a typical organization will have vastly different needs when it comes to what kind of data they need access to, how that data needs to be transformed, and how quickly the answer needs to be remitted to the business decision maker. Measuring and managing these different cross-functional needs is a characteristic of a Best-in-Class company as the research shows the top performers are 4.2-times more likely to have the ability to assess and manage data needs across organizational silos. Another major characteristic of a Best-in-Class

company is their ability to fully exploit not just their organizational data, but the tools used to analyze it as well. Industry Average and Laggard companies often times will have a utilization problem when it comes to BI because they simply don't know if anyone is leveraging the tools. Best-in-Class companies on the other hand are 3.8-times more likely to track the usage levels of their BI tools, paving the way for higher BI utilization.

Technology

There are a variety of ways that technology can assist in the preparation of data for usage in a BI system. One of those ways is to gather and integrate the data into a form and fit that is consumable by BI and other applications. Another way to improve the value of the data is to remove dirty, old, corrupted, and otherwise unusable data through the use of data cleansing / hygiene technology. Both of these activities and associated technologies have the effect of improving the quality, and essentially the "octane rating" of data that feeds into analytical software systems. Best-in-Class companies are using both of these tools at a higher rate than all other companies examined (Figure 7).

Figure 7: Key Technology Enablers in Use



Source: Aberdeen Group, December 2010

Once the data is gathered, integrated, and cleansed, technology also plays a major role in asking questions of that data. The application of business rules and analytical methodology to high quality data can be accomplished through tools like data modeling software or through data mining tools that have the ability to sift through mass quantities of data to find that proverbial needle lying in the haystack of data. Best-in-Class companies are also more likely to be using these tools to more efficiently ask questions of their data and generate more relevant insights.

Fast Facts

√ **28%** of Best-in-Class companies report using **Software as a Service (SaaS) BI** tools

Compared with:

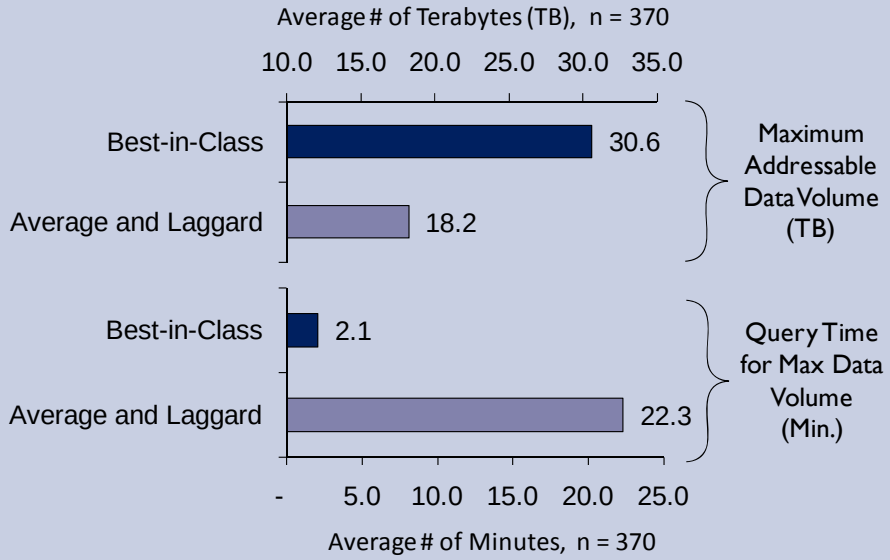
√ **15%** of Industry Average Companies

√ **13%** of Laggards

Aberdeen Insights — Technology

Research gathered from this study consistently and repeatedly supports the concept that organizations of all shapes and sizes are not immune to the challenges of data growth and complexity. While this is true on an average aggregated basis, the concept is even more germane to particular types of organizations, and certain industries that, by their very nature, are subject to larger than average volumes of data. The challenge for these companies is not just capturing that data and making it available, but running complex queries against enormous volumes of data - on the order of multiple terabytes - and returning a meaningful answer in a very short period of time. The research shows that Best-in-Class companies falling into this category are able to address almost twice the volume of data in a single BI instance or analysis session (Figure 8).

Figure 8: Addressing More Data in Less Time



Source: Aberdeen Group, December 2010

While having the ability to address big data is crucial for certain organizations, it is limited in value without the vital dimension of time. A large volume query could run for hours, or even days, without the proper tools and techniques in place, such as the ability to generate high performance queries and use the tools in the right way. The Best-in-Class have found the right formula for advanced analytics as the research shows the average query response time for the top performers is less than one tenth that of all other companies.

"I think we understand the data needs of our end-users, now the work of defining where data resides and the flow of that data into various analytical solutions is underway. There have been some preliminary discussions regarding a long-term data management strategy, with the ultimate goal to entrench a data-driven decision culture."

~ Marketing Manager

Large U.S. Chemical Manufacturer

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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

- **Start measuring "time-to-information."** When it comes to analysis of business data, the time factor is just as, if not more critical than any other element that plays into analysis. The most insightful piece of business information is largely useless if it's not delivered in time to align resources and exploit the opportunity. Delivering key insight within that decision window is a Best-in-Class underpinning and it all starts with measuring that information delivery time. According to the research, only 4% of Laggard organizations have the ability to measure "time-to-information" for end-users. By developing this capability, Laggard organizations will be in a position to deliver more insight within the required window and exploit more business opportunities as a result.
- **Develop analytical talent in-house.** Some companies have the time and resources to hire into specific analytical roles to ensure that top talent is addressing their data in the right ways. Some companies have developed a culture that espouses data-driven decisions and are lucky enough to see analytical prowess grow organically within the organization. Both of these pathways to in-house analytical talent are valid, and both are pursued by Best-in-Class companies. But in addition to both, the top performers take steps to build and nurture these skill sets from within through training programs, knowledge sharing, and a variety of other ways, but only 25% of Laggards report having this ability. Pursuing in-house growth of BI skills is the first step on the path to a smarter and more curious organization, one that exploits its data to make faster and more informed business decisions.
- **Evaluate ETL and data integration technology.** Technology is rarely the only remedy to the ills of data management and the challenges therein. However, when organizations find themselves in a disadvantageous position based on circumstances beyond their control, technology can alleviate many challenges. For instance when a company expands and experiences the growing pains of IT disparity and heterogeneity, technologies like Extract, Transform, Load (ETL) and other data integration tools can be instrumental in reducing the manual burden of bringing all these systems together. Best-in-Class companies are more than twice as likely as Laggards to leverage these types of technologies to manage the challenge of data disparity. Particularly as small companies grow into midsize

Fast Facts

Percentage of company data that is accessible by the BI systems:

√ **63%:** Best-in-Class

√ **50%:** Industry Average

√ **32%:** Laggard

organizations, the ability to consolidate spreadsheets move data around, and centralize the management of that information is an effective way to reduce the impact of these growing pains.

Industry Average Steps to Success

- **Create a consistent ROI methodology for data management.** Previous Aberdeen research alongside this particular benchmark study confirms that the data management aspects of BI generally require the most time, effort, and cost. While that makes the challenge even more daunting, it also illuminates a substantial ROI opportunity. By turning weakness into strength and generating cost effective data management methodologies, these activities become the "low-hanging fruit" of a return on BI investment. The problem for Industry Average organizations is that they're simply not measuring ROI. The research shows that only 16% of Laggards have an ROI methodology in place for data management. By developing a consistent and well understood ROI strategy, Industry Average companies will better understand the cost implications of their data management activities and put them in a better position to drive the most business value from their investments.
- **Actively track the utilization of BI tools.** Another key factor in a cost management or ROI philosophy involves measuring and understanding not just the total costs associated with BI and data management, but the degree to which these efforts are actually leveraged by the user community. The greatest, most efficient, and most cost effective data management strategy in the world is highly limited in value if the tools used to analyze its output just sit on the shelf. Best-in-Class companies are more than twice as likely as the Industry Average to measure and track the usage level of the BI systems in place. This combination - a well understood and executed data management strategy coupled with a high degree of BI utilization - is a major underpinning in delivering Best-in-Class business performance improvements.
- **Implement technologies to improve data quality.** There are a variety of factors that dictate the usability of data by a BI system. These include data timeliness, relevance, and ease of access, among others. But from a simple and practical standpoint, the data also needs to be clean, free of corruption, duplication, and missing elements. One of the most logical uses of technology comes in the form of data quality assurance. Best-in-Class companies are more likely to use tools like data cleansing and hygiene technology, as well as data enrichment / append / matching tools. The top performers are 20% more likely than Industry Average companies to use both of these types of technology. Having a higher degree of data quality reduces wasted time and effort, increases trust in the data, and allows for a more efficient analysis to be performed as a result.

"Standard Reports driven from the ERP systems are too generic, poorly formatted and only extract data from a single source. Business reporting needs to be pertinent to the user, portable, professional, and comprehensive such that the recipients are not required to consolidate reports from multiple sources."

~ IT Manager

Mid-Size European Food & Beverage Company

Best-in-Class Steps to Success

- **Establish a cross-functional team to develop data management strategy.** Organizationally speaking, one of the biggest challenges of data management involves assigning value and prioritizing data from different departments across the organization. Customer data, financial data, transactional data, supply chain data, just to name a few, all have a claim on resources for data management. One way this challenge is addressed is to establish a team or committee with cross-functional representation, to come together and develop a logical data management strategy and roadmap. Only 39% of Best-in-Class companies have this type of cross-functional team in place. Regardless of the name - Center of Excellence, Competency Center, SWAT team, etc. - having a central body representing multiple departments will go a long way toward alleviating the challenges of data silos and will promote a higher degree of cross-functional collaboration.
- **Define governance and compliance policies for end-user data access.** Increasingly, one of the most important use cases for data quality and data management initiatives is to manage Governance, Risk, and Compliance (GRC) issues. Complying with government, industry, and internal policies often involves managing who can access what data, and when that access is appropriate. Fewer than half of Best-in-Class companies have defined governance and compliance policies to help manage user access to sensitive corporate data. Creating and enforcing these policies constitutes up-front effort to save cost, time, and resources in the future as more regulatory sanctions are levied for non-compliance.
- **Consider deploying a Master Data Management (MDM) platform.** Technology that cuts across multiple slices of the company and can help house, organize, and manage data from multiple sources and business functions is often referred to as master data management. Prior iterations of this benchmark report show that Best-in-Class companies are typically more likely to have an MDM platform in place to help achieve the nirvana of "one version of the truth" across the organization. This time around, while the top performers are still more likely than all other companies to use it, only 34% of the Best-in-Class are using MDM. Organic growth, acquisitions, and other forms of organizational transformation can impede the process of creating a master data strategy, and companies of all shapes and sizes are subject to this challenge. However, once the dust settles, an MDM implementation can provide substantial help to the effort of gathering and integrating data from a variety of disparate sources, helping to create that master view of the data.

Fast Facts

√ **67%** of Best-in-Class companies report using **on-premise web server based BI** tools

Compared with:

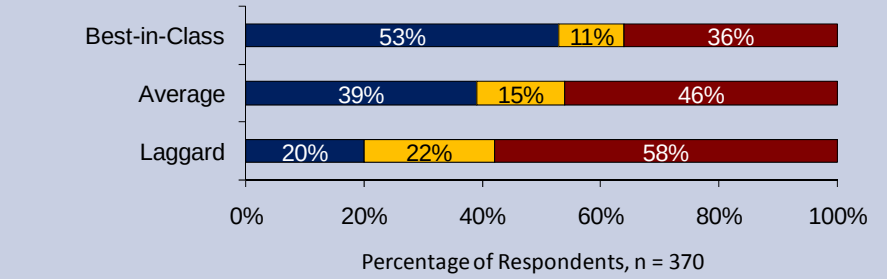
√ **54%** of Industry Average Companies

√ **44%** of Laggards

Aberdeen Insights — Summary

The establishment of a company-wide data management strategy and roadmap is not an easy undertaking, regardless of industry or company size. The goal that most companies have is to capture as much relevant data as possible, provide an environment that is simultaneously secure and accessible, thus enabling faster and more informed decisions. While certain data may require special treatment, and certain users may require non-standard access capabilities, the research shows a strong correlation between the ability to centralize management of company data and Best-in-Class performance (Figure 9).

Figure 9: Data Management Strategy - Central or Fragmented?



Source: Aberdeen Group, December 2010

At the very least, theoretical logic tells us that centralized data management allows a company to apply fewer human resources and capital expenditure toward more of the company data, allowing for economies of scale. An additional reason, and particularly germane to this report, is that centralized data management allows for a common funnel of data feeding into the analytical systems in the company. If a data source can be captured and aggregated into the central system, this reduces the need for customized connectors from BI to the underlying data, and allows for smoother transformation of raw data into usable business insight.

However, regardless of the macro-level approach to managing data, Best-in-Class companies recognize the fundamental need to deliver higher octane data into the BI engine. By making efforts to widen access to data, applying methodologies to make it more relevant and job role specific, and delivering that information within the appropriate "decision window," Best-in-Class companies position themselves to magnify the impact of business intelligence and drive improved performance as a result.

Appendix A: Research Methodology

Between November and December 2010, Aberdeen examined the use, the experiences, and the intentions of 370 enterprises using data management tools and strategies in a diverse set of industries and use cases.

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 (17%); EVP / SVP / VP (13%); Director (15%); Manager (28%); Consultant (14%); and other (13%).
- *Department / function:* The research sample included respondents from the following departments or functions: senior management (10%); sales and marketing (24%); IT manager or staff (25%); operations manager (10%); logistics and procurement (9%) and other (12%).
- *Industry:* The research sample included respondents from a variety of industries. The largest segments represented were: high tech/software (16%); financial services (11%); IT consulting/services (11%); and consumer products (7%).
- *Geography:* The majority of respondents (67%) were from North America. Remaining respondents were from the Asia-Pacific region (12%) and Europe (21%).
- *Company size:* Thirty-one percent (31%) of respondents were from large enterprises (annual revenues above US $1 billion); 31% 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-eight percent (48%) of respondents were from large enterprises (headcount greater than 1,000 employees); 22% were from midsize enterprises (headcount between 100 and 999 employees); and 30% 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.

Aberdeen Group
A Harte-Hanks Company

Table 4: The PACE Framework Key

Overview
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: **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) **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) **Capabilities —** the business process competencies required to execute corporate strategy (e.g., skilled people, brand, market positioning, viable products / services, ecosystem partners, financing) **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)

Source: Aberdeen Group, December 2010

Table 5: The Competitive Framework Key

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

Source: Aberdeen Group, December 2010

Table 6: Relationship Between PACE and the Competitive Framework

PACE and the Competitive Framework – How They Interact
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.

Source: Aberdeen Group, December 2010

Appendix B: Related Aberdeen Research

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

- *BI for the SMB 2010: Unlocking Hidden Business Insight to Drive Profit*; October 2010
- *Operational Intelligence: Boosting Performance with "Right-Time" Business Insight*; August 2010
- *Self-Service BI: Empowering the Line-of-Business Manager*; May 2010
- *The TCO View of Business Intelligence*; April 2010
- *Business Intelligence in Banking: Analytical Customer Focus Drives Performance;* April 2010
- *Data Management for BI: Strategies for Leveraging the Complexity and Growth of Business Data*; December 2009
- *Top Floor to Shop Floor: Business Insight for the Discrete Manufacturing Industry*; November 2009
- *Performance Management in the Midmarket*; November 2009
- *BI for the C-Suite: Top Level Visibility Drives Top Notch Cash Flow*; October 2009
- *Intelligent Human Capital Management: Workforce Analytics Drive Profit and Performance*; September 2009

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

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Talend is the recognized market leader in open source data management & application integration. Talend's data management solution portfolio now includes data integration (operational data integration and ETL for Business Intelligence), data quality, and master data management (MDM). Through the acquisition of Sopera in 2010, Talend became also a key player in application integration.

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