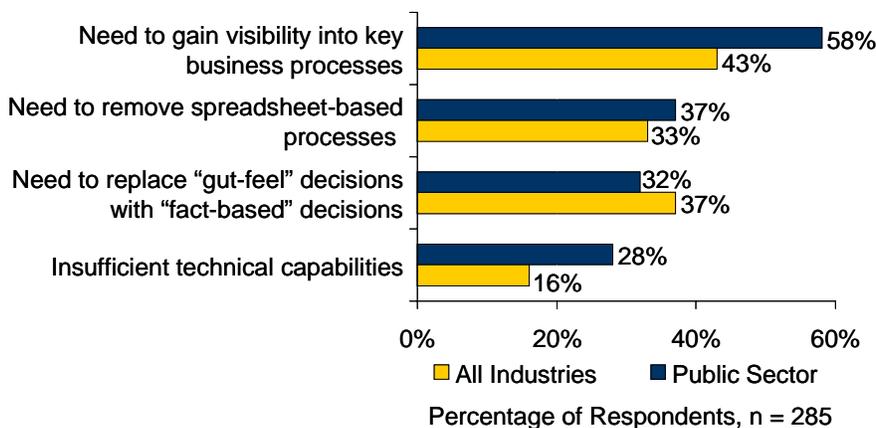


Business Intelligence in the Public Sector: The Value of Efficient Resource Utilization

The financial meltdown of 2008 sent devastating waves through the business world. As the most influential financial institutions struggled to stay afloat, market instability wreaked havoc on the public sector. Government attempts to mitigate this turmoil, such as the American Recovery and Reinvestment Act (ARRA) in the USA and the Economic Stimulus Plan of the People's Republic of China (扩大内需事项措施), had a polarizing effect on the public sector as a whole. Organizations not receiving stimulus funding were left to make do with shrinking budgets and strained human capital resources, while the organizations lucky enough to receive government subsidies as part of an economic recovery program have been challenged to justify every dime received. As similar stories play out worldwide, public sector organizations must make more careful use of financial and human resources than ever before. As these organizations confront disappearing discretionary budgets, particularly related to technology, many are looking for ways to optimize their resource utilization when it comes to information management.

This Aberdeen Sector Insight draws from several discrete data sets to understand the impact of business intelligence (BI) and information management strategies in the public sector. The research shows that top performing public sector institutions are maximizing their resource utilization to generate efficient data capture, information assembly, and insight delivery.

Figure 1: Top Pressures Driving BI Investment in Public Sector



Source: Aberdeen Group, May 2009

Sector Insight

Aberdeen's Sector Insights provide strategic perspective and analysis of primary research results by industry, market segment, or geography

Sector Definition

This Aberdeen Sector Insight collected data, in large part, from a dedicated survey of 82 public sector organizations. The mission(s) of these organizations were as follows*:

- √ Health & Human Svc - 40%
- √ Public Education - 40%
- √ Financial Reporting - 23%
- √ Public Safety - 19%
- √ Legislation/Justice - 17%
- √ Public Utilities - 16%
- √ Transportation Svc - 15%
- √ Emergency Response - 15%

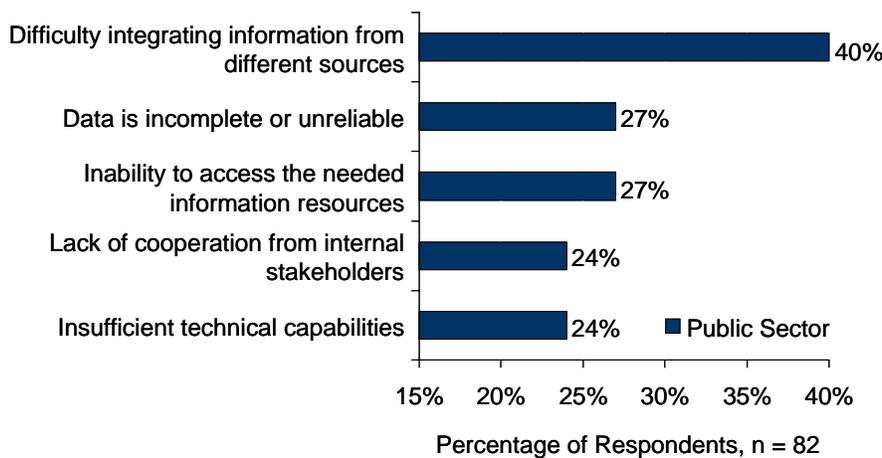
* Respondents were allowed to select more than one mission.

Business Context

Aside from direct government pressure and macroeconomic forces, public sector organizations face several key internal pressures that compel them to investigate tools like business intelligence (BI). Aberdeen's May 2009 benchmark report, *Executive Dashboards: The Key to Unlocking Double Digit Profit Growth*, demonstrated that the public sector is largely challenged by a lack of visibility into their key operating processes (Figure 1, above). Also at the top of mind for public sector organizations is the need to move away from spreadsheets as a primary analytical solution. Spreadsheets have undeniable value as a general business tool, but organizations are increasingly looking for ways to discard static tools and methodologies in favor of customizable solutions that will grant tactical and strategic business visibility to users across the organization, regardless of technical ability.

Aberdeen's most recent research on electronic data management (EDM) in the public sector revealed that the public sector faces a slew of challenges when it comes to managing the flow of information in their organizations. By far the top challenge to data management in the public sector is the difficulty organizations face when integrating information from disparate sources (Figure 2).

Figure 2: Top Data Management Challenges in Public Sector



Source: Aberdeen Group, March 2010

As the number of data sources increases over time, so does the need to integrate data from these various produce. At its worst, a poorly integrated data management system resembles the old Indian parable about the five blind men who, upon encountering an elephant for the first time, attempt to describe the animal to one another. One, feeling the trunk, concludes that an elephant is long and flexible like a snake. Another, feeling the leg, concludes that an elephant is thick and sturdy like a tree. Another, feeling

the tusk, says that elephants are smooth as river rock. These various pieces of data are not integrated, and none of the blind men understand the elephant. Certainly, they could not give reliable data about it in any time frame - thus contributing to the marked disconnect Aberdeen's data shows between required information access speed, and actual information access speed (Figure 4, below).

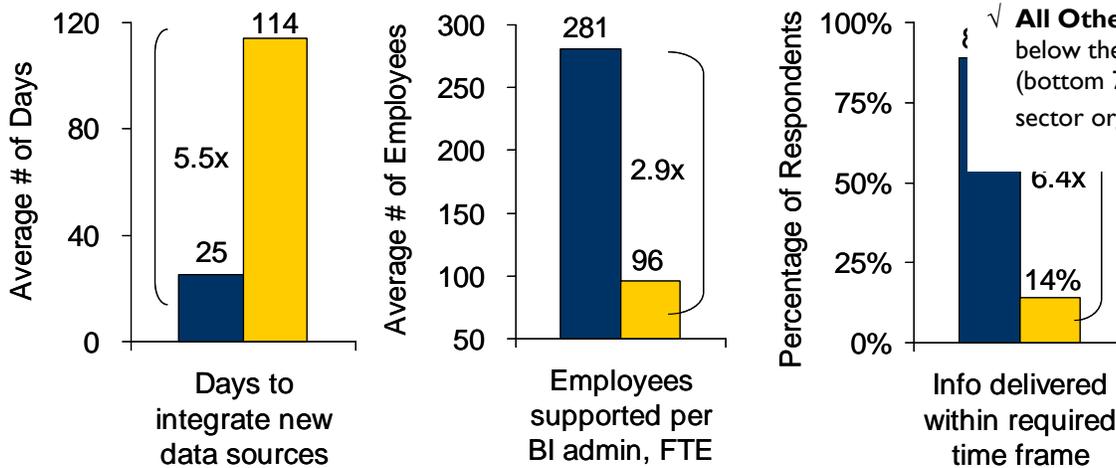
Benchmarking Top Performers in the Public Sector

Efficient BI and information management can substantially improve operational visibility for public sector organizations and help them execute on their mission. Aberdeen used three performance metrics to distinguish top performing public sector organizations from all others:

- **Time to integrate new data sources:** measured as a weighted average number of days required to integrate a new data source into the BI system
- **Ratio of employees supported to dedicated BI administrators:** measured as a weighted average number of employees supported with BI tools, per one full time equivalent (FTE) BI-dedicated administrator
- **Delivery of information within required time frame:** measured as a percentage of companies that deliver relevant information to their workforce within their pre-defined required time-frame

Figure 3 shows the extent to which top performing public sector organizations have outstripped their peers across the metrics listed above.

Figure 3: Top Performance in the Public Sector Defined



■ Top Public Sector Performers (scored above 75th Percentile)

■ All Other Public Sector (scored at or below 75th percentile)

n = 82

Definition of "Top Performers"

Aberdeen measured all public sector respondents across three key performance indicators:

- ✓ Average time required to integrate new data sources
- ✓ Average number of employees supported per BI administrator FTE (Full Time Equivalent)
- ✓ Percentage of respondents that are able to deliver key information to the workforce within the time frame they require (real-time, within the hour, daily, etc...)

Respondents were then given a score based on their self-reported performance above. The following categories were created based on those scores:

✓ **Top Performers** - Scored above the 75th percentile (top 25% of all public sector organizations)

✓ **All Others** - Scored at or below the 75th percentile (bottom 75% of all public sector organizations)

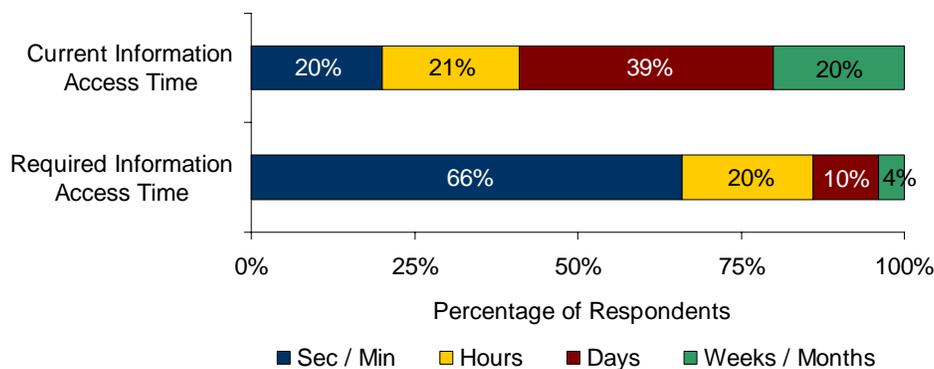
Source: Aberdeen Group, March 2010

Between the wide array of applications, dedicated data warehouses, and local desktop spreadsheets in use, companies are dealing with more data complexity than ever. Aberdeen's December 2009 benchmark report, [Data Management for BI: Strategies for Leveraging the Complexity and Growth of Business Data](#), revealed that organizations manage an average of 14 unique data sources, and must respond to data growth rates in excess of 30% per annum. The ability to capture and integrate a new data source is crucial to making this data available to end users; top performing public sector organizations are able to integrate new data sources 4.6-times faster than all others.

Furthermore, top-performing public sector organizations are keenly aware of the need to use human capital judiciously in the management of key systems. IT intellectual firepower is often hard to come by and expensive, so institutions that can cover and support more employees reap substantial benefits. Top performers support almost three-times as many employees per FTE as all other public sector organizations.

Finally, the statistic that most directly indicates successful use of BI and information management tools is the percent of information delivered in real-time or "right-time." While some organizations define real time on a sub-second or millisecond basis, others are content to receive vital information within the hour or day. Regardless of an organization's specific needs, a successful BI implementation must meet those needs, delivering clean, relevant information in a timely manner. Respondents to Aberdeen's public sector survey were asked to report the lag time between the occurrence of an event and that event's being registered by their BI system. For purposes of comparison, they were also asked to report the time within which such information would be needed. The data shows a stark contrast between the actual availability of information and the required availability of information (Figure 4).

Figure 4: Speed of Information Access in the Public Sector



Source: Aberdeen Group, March 2010

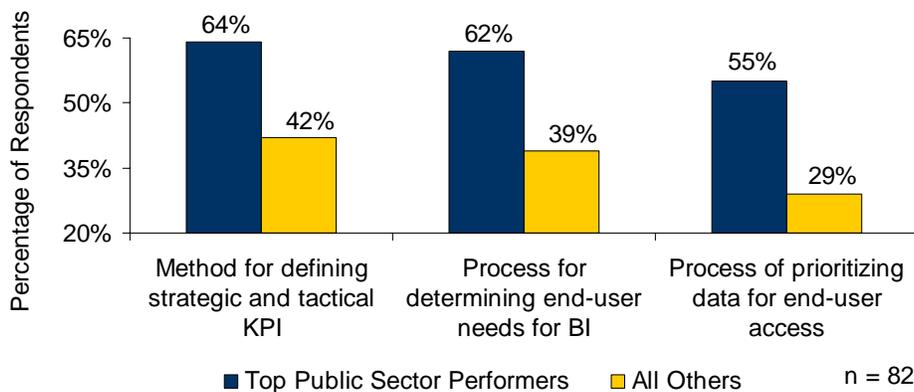
By comparing Figure 4 with Figure 3, we can see that not all organizations experience this marked discrepancy. Most public sector organizations lose valuable time while their employees wait for the information they sorely need, but top performers are more than six-times more likely to provide that critical data to the workforce within the required time frame. Top performers put relevant information in the hands of their key decision makers, granting them visibility into operations and thereby addressing the key pressures listed in Figure 1.

Characteristics of a Top Performer

Aberdeen’s analysis of the top performers demonstrates that the successful deployment and use of a BI strategy in the public sector requires a strong portfolio of organizational capability, judicious use of appropriate technologies, and the ability to leverage the investment with a large portion of the workforce.

An organization seeking to succeed at delivering insight must begin by identifying and implementing the right data delivery processes for them. These processes must take into account not only how data is to be collected and displayed, but how this data is to be used (Figure 5).

Figure 5: Top Processes for Data Delivery



Source: Aberdeen Group, March 2010

Prioritizing data for user access is a critical part of this preliminary planning stage: if necessary information is not automatically available to users, it must be provided for them via ad-hoc processes. Time-to-information then expands, and the usefulness of the business intelligence system contracts. As such, data prioritization is all the more important for public sector organizations, which often are more hard-pressed to demonstrate results even from pilot programs than for their private sector counterparts. A business intelligence program that fails to be useful in the short term stands a significant risk of being cut before it can demonstrate its long-term value.

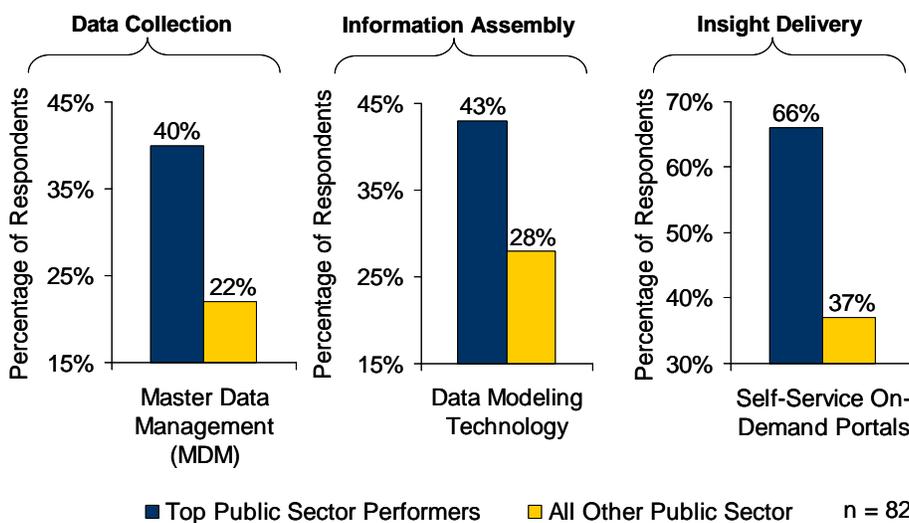
In addition to having a strong foundation of organizational capability in place, top performing public sector organizations have taken strides to build a

comprehensive, yet selective strategy for technology usage. Aberdeen views BI as a process with three distinct parts:

- **Data Collection:** The back-end of the BI value chain, data collection encompasses all tools and methods used to collate and gather relevant business information from various disparate sources and make it usable and digestible for analysis. Technologies useful at this stage include data integration technology, master data management (MDM), data cleansing, and other forms of data enrichment.
- **Information Assembly:** Having gathered the relevant data and stored it in a common homogeneous format, information assembly then involves the application of business rules, formulas and models to data for the purpose of generating usable insight. Technologies used at this stage include data modeling, predictive analytics, event processing, and business process management (BPM) among other tools.
- **Insight Delivery:** Having assembled the information into decision-supporting insight, the delivery portion of the BI stack involves any tools and methods designed to get that insight into the hands of the business decision makers. Insight delivery can include dashboard and scorecard tools, automated alert reporting, and on demand portals

Aberdeen's research shows that the top performers in the public sector are more likely to leverage an array of technologies that help the end to end transformation of data into usable business insight (Figure 6).

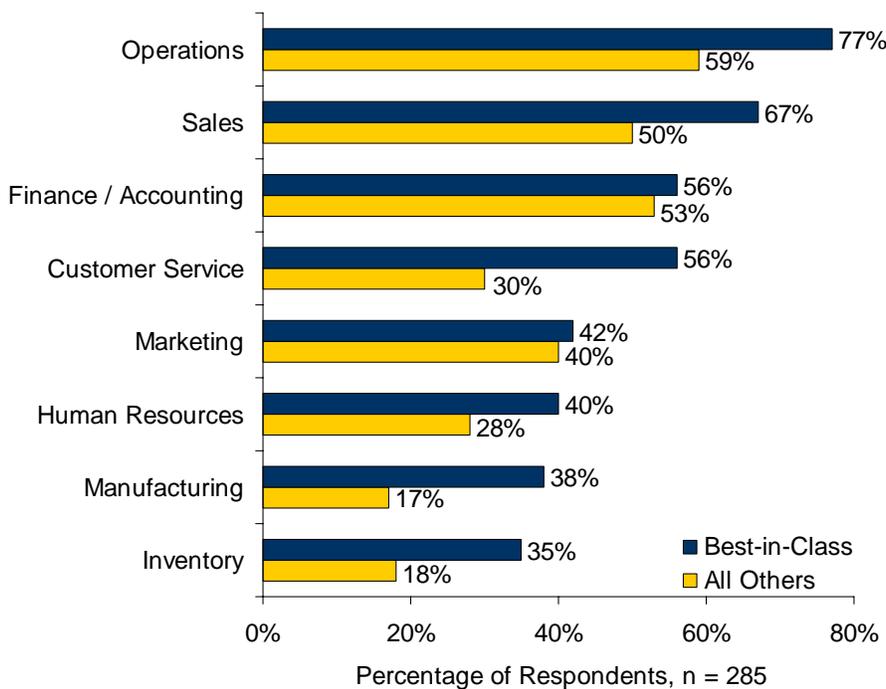
Figure 6: A Holistic Strategy for BI Technology Usage



Source: Aberdeen Group, March 2010

Once the right processes in place and the appropriate tools and technologies leveraged, the efficiency of a BI implementation depends upon the degree to which that analytical capability is disseminated to more users within the organization. Achieving greater pervasiveness with BI is valuable on many fronts. First, from a simple dollars and cents standpoint, a greater utilization of BI assets will lead to a higher return on BI investment. All too often, enterprise software projects are abandoned or relegated into obscurity due to low utilization. Second, as the organization's BI footprint expands, analytical capability will drive visibility for more employees, ultimately leading to a smarter organization with more sensitivity to its key business drivers. Best-in-Class organizations from the private and public sectors in Aberdeen's May 2009 study, [Executive Dashboards: The Key to Unlocking Double Digit Profit Growth](#), have shown their ability to expand BI usage across silos and into more organizational functions and departments (Figure 7).

Figure 7: Best-in-Class Expand BI across Organizational Silos



Source: Aberdeen Group, May 2009

Top performing organizations regardless of their particular mission are more likely to adopt business intelligence for all employees. Public sector organizations seeking to use business intelligence and data management to improve their organizational performance should strongly consider how BI can improve not only their performance in finance and accounting (for which public sector organizations have a 20% higher BI adoption rate than the general population), but their performance in human resources, customer service, and operations as well. Gains in the proportion of

Definition of "Best-in-Class"

Aberdeen ranked respondents to its Dashboard study based on:

- ✓ Year-over-year increase in profitability, measured as a weighted average increase in operating profit / EBIT (Earnings Before Interest & Taxes).
- ✓ Composite metric of customer service, measured as a weighted average year-over-year increase.
- ✓ Composite metric of sales performance, measured as a weighted average year-over-year increase.

Respondents were then given a score based on their self-reported performance. The following categories were created based on those scores:

- ✓ **Best-in-Class** - Top 20% of survey respondents
- ✓ **All Others** - Bottom 80% of survey respondents

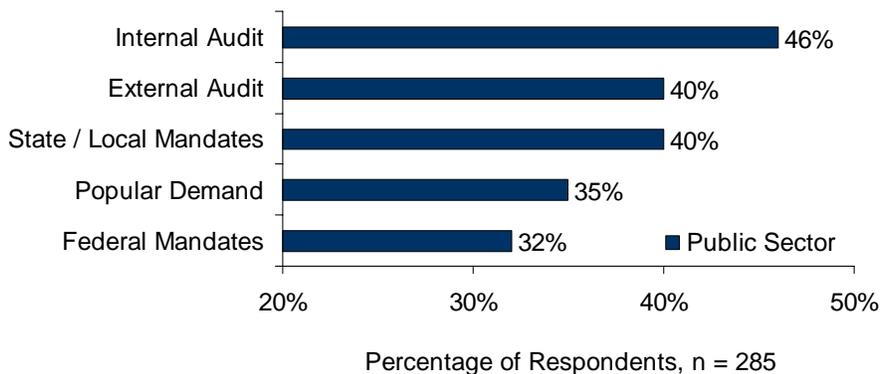
personnel with access to business intelligence translate directly to performance improvement in the business. In the Best-in-Class, 34% of all employees have access to BI, while only 24% of the employees of other organizations have BI access.

While technology is an undeniably crucial aspect of today's business world, Aberdeen's data consistently supports the claim that performance improvements depend on the development of processes, skill sets, and collaboration and information sharing; technology must be woven seamlessly into the day-to-day activities of business decision makers. Top performing public sector organizations recognize the need for this type of strategy and have achieved superior performance improvements as a result.

Key Takeaways / Recommended Actions

Public sector organizations need access to their data in part by external pressure to achieve greater transparency and accountability. The Open Government Initiative of the United States of America, launched by the White House in May of 2009, is but one example of increasing pressure on federal, state, and local governmental organizations to improve transparency not only to government but to the public as a whole. The Open Government Initiative website itself contains an "Open Government Dashboard" which tracks the degree to which federal agencies have fulfilled their transparency commitments by making data public. The European Union has also taken strides toward improving public access to government information, with the passage of a resolution on December 17, 2009, expanding the extant legal framework for public access to government data under the Lisbon Treaty. Aberdeen's research confirms the degree to which transparency and accountability are driving public sector organizations toward BI and information management (Figure 8).

Figure 8: What Forces Make Information Management A Priority?



Source: Aberdeen Group, March 2010

The data shows that public sector organizations are not adopting information management strategies "because it is the right thing to do." Rather, they are under a cascade of pressures, from internal audits to

external audits (generally by state and local authorities) to popular outcry. No one entity predominates: an organization that feels pressure from a higher level of the cascade (internal audit, say) will not feel as much pressure from citizen-focused demand or federal mandates, while an organization that does not feel a great deal of pressure from internal audit is more likely to feel pressure from an external source.

The end result is that public sector organizations desperately seek ways to squeeze every ounce of value out of their resources. Organizations that have developed a holistic strategy for BI and information management have been successful in reaching a level of efficiency in their data integration capabilities, their human resource management, and their information delivery capabilities.

Public sector organizations looking to use BI and data management strategies to improve organizational visibility and optimize resource utilization should consider the following recommendations:

- **Broaden the BI strategy to both strategic and tactical levels.** Regardless of industry, the challenge of management is and will always be juggling the here and now with the future. Decision makers need to focus on day to day activities that drive performance, while at the same time managing for the long term health of the company. While early generations of BI technology were far better suited for strategic performance management, and financial budgeting, the new generation has emerged to help companies serve the present tense with an equal emphasis as the future. Best-in-Class companies are more likely to be using BI both tactical for operational visibility, as well a strategically for long term performance management.
- **Make data available self-service and on-demand.** Human latency is death to a business intelligence deployment, because it both reduces time-to-insight and overburdens BI personnel. A well-managed BI deployment provides vital data swiftly and without the intervention of dedicated personnel, thus allowing a small staff to support a large organization. The research shows that Best-in-Class companies are more than three-times as likely as all other companies to have the ability to deliver BI and information management tools in a self-service, or minimally IT assisted capacity.
- **Get it right the first time.** Every modicum of effort spent determining the extent and nature of a business intelligence project up front translates into real performance gains after adoption. On the other hand, if you adopt a "measure once, cut twice" philosophy, you may not have time for the second cut. Pressure to perform on budget is especially tight in the public sector, and programs that do not perform will have difficulty surviving the pilot stage. Aberdeen research shows that Best-in-Class companies are more than twice as likely as all others to measure and track BI

project costs vs. budgets, leading to more efficient and timely deployments.

- **Use Structure to Your Advantage.** Structured data is a goldmine for any business intelligence, data management, or data profiling initiative. Structured data can be easily comprehended by software engine, and once integrated it can be rendered searchable, subjected to statistical analysis, or transformed into other formats. Libraries of structured data are an unnecessary drain on resources in the age of dedicated data management tools. The data shows that top performers are 73% more likely than all others to utilize data cleansing technology to make their information more usable and digestible for the BI systems in place.

For more information on this or other research topics, please visit www.aberdeen.com.

Related Research	
<i>Enterprise Data Management in the Public Sector</i> ; March 2010 <i>Executive Dashboards: The Key to Unlocking Double Digit Profit Growth</i> ; May 2009 <i>BI for the C-Suite: Top Level Visibility Drives Top Notch Cash Flow</i> ; October 2009	<i>Performance Management in the Midmarket</i> ; November 2009 <i>Data Management for BI: Strategies for Leveraging the Complexity and Growth of Business Data</i> ; December 2009
Authors: Michael Lock, Research Analyst, Business Intelligence (michael.lock@aberdeen.com) Max Gladstone, Research Associate, Technology Markets (max.gladstone@gmail.com)	

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