Public Sector Analytics

Optimizing Resource Usage with Data-Driven Decisions

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# Public Sector Analytics: Optimizing Resource Usage with Data-Driven Decisions

Organizations in the public sector - many of which either primarily or exclusively beholden to a pre-determined annual budget - will always have a pressing need for operational visibility and a framework to support smarter allocation of precious resources. Aberdeen's May 2010 examination of this topic, *Business Intelligence in the Public Sector: The Value of Efficient Resource Utilization*, revealed that the top pressure driving analytical investment in the public sector was the need for better visibility into key operational processes. This improved visibility, however, is not the only piece of the puzzle when it comes to achieving performance in the public sector. The research demonstrates that superior decision support using business analytics is predicated on data management efficiency, the application of the right business knowledge to that data, and the timely delivery of relevant insight-based analysis.

This Aberdeen Sector Insight draws from three discrete data sets to examine the impact of business analytics within the public sector. The research shows that while these organizations typically have a mature and largely effective strategy for back-end data management, many are not exploiting the operational visibility and analytical potential of front-end user facing Business Intelligence (BI) tools and strategies.

Business Context

While the economy continues its slow but steady ascent from the doldrums of early 2009, with many companies shifting back to a growth strategy, the public sector has maintained its laser-focus on cost. Data from the Aberdeen Quarterly Business Review survey shows that cost reduction is, by far, the top business goal for public sector organizations (Figure 1).

Figure 1: Top Business Goals for 2011

Percentage of Respondents, n = 1,663
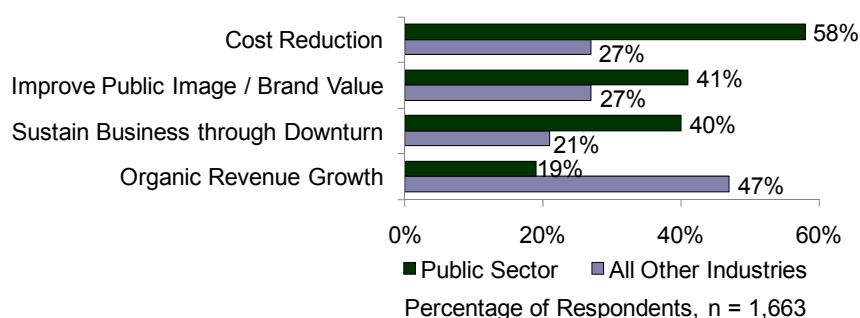
Source: Aberdeen Group, January 2011

Sector Insight

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

For the purpose of clarification, this document defines the public sector as encompassing the following three subcategories:

√ Government (Federal, State, Local) Organizations

√ Educational Institutions

√ Public Utilities

Recommended Actions

Strategic recommendations for public sector organizations looking to develop a deeper and more effective strategy for business analytics:

√ Collect and incorporate end-user analytical needs

√ Develop programs to coach / train / develop analytical talent in-house

√ Implement automated alert reporting capabilities for real-time visibility into crucial changes

√ Evaluate in-memory technology for operational decision support

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In order to address the need for better cost controls, public sector organizations largely rely on their own internal processes, but increasingly these organizations are turning to technology to help identify and act upon cost-cutting opportunities. Survey respondents were asked to prioritize which of the major software technology platforms had the most positive impact on business performance. The data shows that BI / analytical technology is at the top of that list for public sector organizations (Figure 2).

Figure 2: Software Platforms with Most Impact on Performance

Percentage of Respondents, n = 120
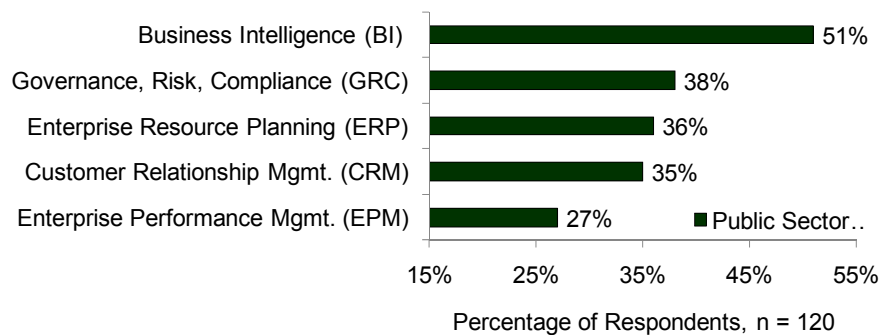
Source: Aberdeen Group, January 2011

Aberdeen defines the spectrum of BI, or business analytics, to include three main buckets of activity: data collection; information assembly; and insight delivery. In order to extract the most value from an analytical strategy, companies must judiciously apply resources to gather the most relevant data for their organization, ensure that the data is clean and usable, apply the right business framework to that information in order to create tangible insight, and then distribute that insight to key decision makers in a timely way. The fact that public sector organizations rate BI as having the most positive impact on business performance certainly implies that they understand and believe in the value of analytical visibility and how it can affect their organization.

Benchmarking Top Performers in the Public Sector

Efficient business analytics can substantially improve operational visibility for public sector organizations and help them execute on their mission of cost reduction,. In that sense, the need for an unimpeded flow of timely and usable information is just as strong in the public sector as it is in other industries. Measuring performance based largely on efficiency of information management, Aberdeen used three performance metrics (Between October and November of 2010, Aberdeen conducted a survey of 1,185 organizations to gain an understanding of the business impact of data management and information quality) to distinguish top-performing public sector organizations from all others:

- **Self-service data access** is measured as a weighted average percentage of the time that users can access critical data in a self-service way, without relying on support from the IT group.

Definition of "Top Performers"

Between October and November of 2010, Aberdeen conducted a survey of 1,185 organizations to gain an understanding of the business impact of data management and information quality. Within that survey, 75 organizations identified themselves as public sector organizations (government, education, public utility).

In order to generate an understanding of performance differentiation, Aberdeen measured all public sector respondents across three key performance indicators:

√ Frequency of self-service access to critical data

√ Frequency of on-time availability of information
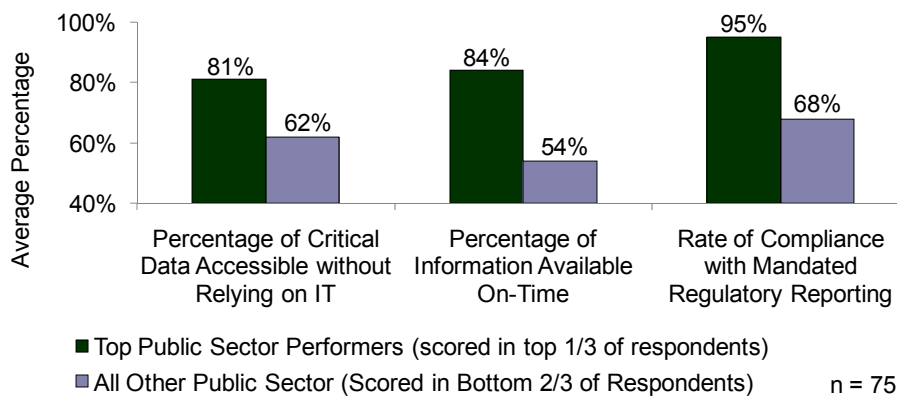
√ Rate of compliance with mandated regulatory reporting

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 67th percentile (top 1/3 of all public sector organizations)

√ **All others** scored at or below the 67th percentile (bottom 2/3 of all public sector organizations)

- **On -time information delivery** is measured as a weighted
  average percentage of the time that key decision-supporting
  information is available on-time or within the pre-defined "decision
  window."

- **Efficiency of compliance** is measured as a weighted average rate
  of compliance to internally or externally mandated regulatory
  reporting.

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 in top 1/3 of respondents)
■ All Other Public Sector (Scored in Bottom 2/3 of Respondents)   n = 75

Source: Aberdeen Group, October 2010

These three metrics help us form an understanding of how top performers
in the public sector create a strong foundation of information to support
quicker and more informed decisions. First, relying less on IT to access
critical data not only helps ensure that the user is interacting with data
more relevant to his or her job role, but also frees up valuable IT resources
to focus on more mission-critical data infrastructure issues. Second, the
ability to find that data within an advantageous time frame helps promote
faster generation of business insight. And third, facilitating cleaner data that
complies with internal policies or external regulations helps build trust in
the data and reduces wasted time and effort on the back-end when it comes
to restating or recreating reports. Top performers in the public sector
recognize the value of building a more robust and reliable flow of
information in their organizations.

Characteristics of a Top Performer

The ability to achieve the information efficiency of a top performer is
predicated on two main things. First, organizations must have a high degree
of organizational maturity when it comes to their internal capabilities. Top
performers are more likely to have the right processes in place, leverage the
appropriate skill sets, share data and knowledge efficiently, and continuously
measure the things that truly drive their businesses. The research shows

"We have a very rigid reporting
structure and are measured
against 15 different areas of
management. Our data and our
numbers are constantly
challenged by those who
dispense budget to us, so
cleanliness and accuracy is of
the utmost importance."

~ Director, Office of
Performance Management

Department of Justice

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that top performers in the public sector are more likely to rely on these capabilities as the foundation of their information strategy (Figure 4).

**Figure 4: Capabilities Supporting Information Efficiency**

n = 75
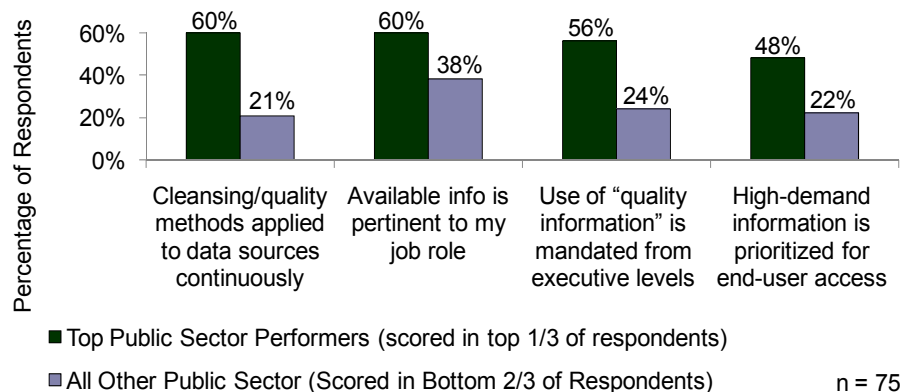
Source: Aberdeen Group, October 2010

The research shows that top performers are making data quality a strategic priority. Between the application of data cleansing and quality assurance processes on a continuous basis, and the executive-level support / mandates for the use of higher quality information, public sector organizations are actively making efforts to increase the usability and overall value of their enterprise data. Additionally, from the end-users' perspective top performers are taking strides not only to make information more consumable and relevant to a particular job role, but they are also more likely to put policies in place to prioritize how and when the end-user community can access information that is in high demand.

The second piece of the puzzle involves the appropriate usage of technology to enable better information management. Top performers in the public sector are leveraging a variety of tools at a greater rate than their underperforming counterparts (Figure 5).

Figure 5: Enhancing Data with the Right Technologies
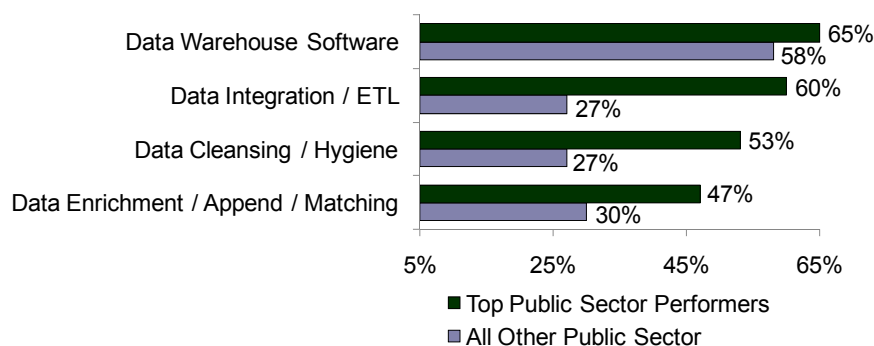
Source: Aberdeen Group, October 2010

Fast Facts

√ 41% of public sector organizations saw a net **decline in headcount** over the course of 2010

√ 42% of public sector organizations saw a net **decline in overall budget** over the course of 2010

"While we were concerned with the regulatory fines associated with violating privacy rules, it was the impact to the organization's reputation that was our primary concern around data quality and regulatory reporting."

~CIO

U.S. Public Educational Institution

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The breadth of technology infrastructure is readily apparent when
comparing top-performing public sector organizations to all others. The first
step is to gather, organize, and store enterprise information - most
organizations in the public sector, regardless of performance level, are
relying on data warehouse software to accomplish this. Given the increase
in both the volume and complexity of enterprise data in today's business
environment, the ability to pull data from a variety of disparate data sources
comes at a premium. Top performers leverage data integration / Extract,
Transform, and Load (ETL) technology help bring in more data from these
disparate sources. Lastly, once the data has been captured and integrated,
the next step is to increase the value of that data through cleansing and
enrichment techniques. Through the judicious use of technology, top
performers are more likely to capture, integrate, and improve the overall
usability and value of their critical enterprise information.

Data to Decision - The Value of Business Analytics

While efficiency of information management is a key underpinning of an
analytical strategy, the name of the game in the public sector is cost
reduction and better allocation of precious resources. Best-in-Class
companies, across a horizontal assortment of industries, have been
successful in leveraging information management in conjunction with the
right analytical methodologies and technologies in order to ask better
questions of the data, generate better business insight, and ultimately
achieve improved operational performance as a result. Aberdeen's August
2010 benchmark report on _Operational Intelligence_ demonstrates significant
opportunity for public sector organizations to leverage BI tools and
strategies to create Best-in-Class operational efficiency (Figure 6).

Figure 6: Cost and Cash - Key Operational Metrics for BI
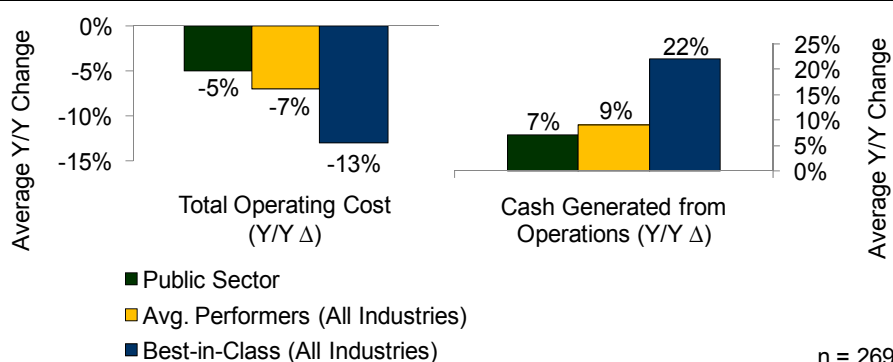
Source: Aberdeen Group, August 2010

Given the difference in business models between the typical public sector
organization and companies in the private domain, it is difficult to find a true
"apples-to-apples" performance comparison. However, several of the core
elements of any organization hold true across the public and private worlds.
First, as we saw in Figure 1, public sector organizations are, by far, most
concerned with cost management. The ability to drive operational efficiency

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is largely predicated on the identification and reduction, or elimination of superfluous cost. Using analytical methodologies, particularly on a day-to-day operational or transactional basis, can help pinpoint process inefficiencies, discover new metrics that better dictate performance, or perform modeling scenarios to understand the business impact of cost-cutting measures. Best-in-Class companies are leveraging BI to help identify and act on opportunities for double-digit cost reductions.

Drilling further into the concept of operational efficiency, public sector organizations have a particularly strong focus on resource allocation, a key underpinning of which would be cash management. The private sector continually advocates the notion that "cash is king". While the stakeholders may be different, the implications of efficient cash management are just as powerful in the public sector. Instead of concerning themselves with profit growth and the value of shareholders' equity, public sector organizations, instead, focus their efforts on resource allocation. Since the anatomy of a typical statement of cash flows includes operating, investing, and financing activities, an increase in operating cash flow opens the door for investment in other areas of the business. As a hypothetical example, a state government, through proactive analysis of historical and operational data on spending, supplier activity, traffic fluctuations, even weather patterns, could leverage BI to more effectively manage snow removal activity, bringing them under budget for the year. These types of advantageous changes in working capital, and therefore operating cash flow, offer the ability to reallocate that money to other areas of the organization such as investments in education, technology, and / or job creation.

As with the framework discussed above, Best-in-Class companies again rely on a variety of organizational capabilities and appropriate technologies in order to support the performance improvements depicted above. A small sample of these aspects of a Best-in-Class strategy for operational intelligence is listed in Figure 7.

Figure 7: Best-in-Class are Organizationally Mature

Source: Aberdeen Group, August 2010

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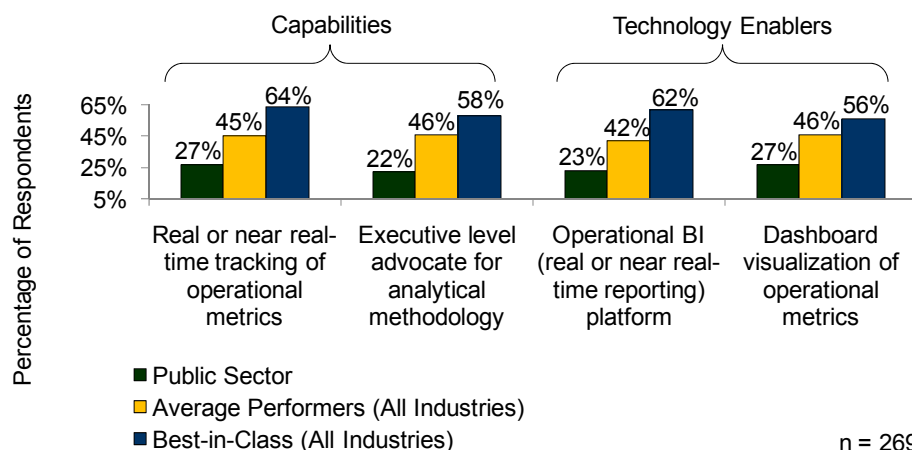
The previous section discussed how top performers in the public sector are more likely to have executive-level mandates for the use of quality information. Best-in-Class companies shown above are more likely to take it a step further and have an executive-level advocate or champion for the use of analytical methodology and data-driven decisions. The Best-in-Class are also more likely to measure their most crucial operational or transactional business metrics in real-time or near-real-time. From a technology perspective, the Best-in-Class are also more likely to deliver user-friendly front-end tools for better decision support. Operational BI tools enable the daily or real-time analysis of transactional data in order to support quicker decisions that have an immediate effect on the business. From a visual perspective, operational dashboards provide an intuitive representation of the key metrics that drive the business. Best-in-Class companies are more likely than public sector organizations to have these key aspects of organizational maturity and technology enablement.

Key Takeaways

Developing an efficient strategy for business analytics is just as heavily dependent upon the right people and processes as it is on the technology. Generally speaking, the back-end data management activities - data collection, integration, cleansing, enrichment, etc. - consume the most resources in terms of time and money. The good news for public sector organizations is that many of them (some by necessity, others by maturity) have already created an efficient flow of information from a variety of complex and disparate data sources into the hands of the people that need it most. In an effort to develop a more complete analytical strategy and generate better operational performance improvements, public sector organizations should investigate ways of providing deeper and more intuitive front-end analytical capability to key decision makers. Based on Aberdeen's research on _Operational Intelligence_, public sector organizations should consider the following recommended actions:

- **Collect and incorporate end-user analytical needs**. All too often analytical projects either fall flat, or fail to reach significant adoption because of a lack of collaboration between the users of the tool and the implementers of the tool. When the business users are told what they need rather than asked what they need, analytical deployments become problematic and sometimes languish in under-utilization. Best-in-Class companies are 3.1-times more likely than Laggards to have a process in place to incorporate end-user needs.

- **Develop programs to coach / train / develop analytical talent in-house.** Aberdeen research continually reveals that Best-in-Class companies focus on nurturing analytical talent within their own walls. According to the research, only 18% of Industry Average companies are taking steps to coach, train, or develop this talent in-house, a deficiency that is likely holding back their BI culture, and not allowing for their most curious and analytically-inclined employees to shine through. By developing programs to develop

these skills in-house, Industry Average companies will be able to awaken the operational intelligence, currently lying dormant in a number of employees, allowing for better and faster operational insight to pervade the organization.

- **Implement automated alert reporting capabilities**. An important technology feature of an analytical platform or other tactical decision-support system is the ability to automatically alert decision makers when a key state change occurs (i.e., a sudden drop in manufacturing output, a change in supplier lead time, or a marked change in measurable customer sentiment). Our research shows that only 21% of Industry Average companies have this capability. Leveraging automated alert technology will reduce risk for public sector organizations, enable better anticipation of operational fluctuations, and allow for faster reaction to unanticipated changes.

- **Evaluate in-memory technology for operational decision support.** The past few years of business informatics has been marked primarily by an increase in volume and complexity of enterprise information and an increasing urgency for faster access to that very information. Technologies like in-memory analytics that facilitate a linkage between "big data" and timely operational decisions, are growing in prevalence. Recent research shows that Best-in-Class companies are more than twice as likely as all other companies to leverage in-memory analytics.

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

Related Research	
The ABCs of Executive Analytics: A-List Performance Using BI in the C-Suite; February 2011	_Data Management for BI: Fueling the Analytical Engine with High-Octane Information_; December 2010
Business Intelligence in the Public Sector: The Value of Efficient Resource Utilization; May 2010	_Operational Intelligence: Boosting Performance with "Right-Time" Insight_; August 2010
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