

Agile BI

Three Steps to Analytic Heaven

April 2011

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Executive Summary

Despite the wealth of experience among Aberdeen's end-user community in delivering Business Intelligence (BI), prior Aberdeen research has found that 57% of business intelligence projects are delivered late. Many companies still struggle to deliver the right information to the right business managers at the right time. This research is focused on how organizations can make their BI implementations more agile so that managers can easily find the information they need as business needs change. The report is based on data collected from 170 organizations using BI in February and March 2011.

Research Benchmark

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

Best-in-Class Performance

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

- Managers at 36% of Best-in-Class firms can access the information they need, in the time dictated by decisions, 100% of the time
- 4.3 hours required to add a column to a report
- 3.8 days to create a new dashboard

Competitive Maturity Assessment

Survey results show that the firms enjoying Best-in-Class performance shared several common characteristics, including:

- The use of BI reports and charts that are run directly against operational data stores
- A formal post-project review process to determine project success and consolidate key learnings
- De-centralized IT and analytics skills

Required Actions

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

- Empower decisions makers to engage with and manipulated management information directly if they are to be more responsive to changing business needs.
- Ensure that corporate IT increases its understanding of BI needs, rather than reduces it. IT can become more hands-off as business managers become more self-sufficient, but it is still responsible for much of the critical preparation that can make self-service BI successful.
- Ensure that business managers are fully supported in their use of self-service BI. It is not just about the right technology tools - success is also dependent on culture, education and attitude.

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Chapter One: Benchmarking the Best-in-Class

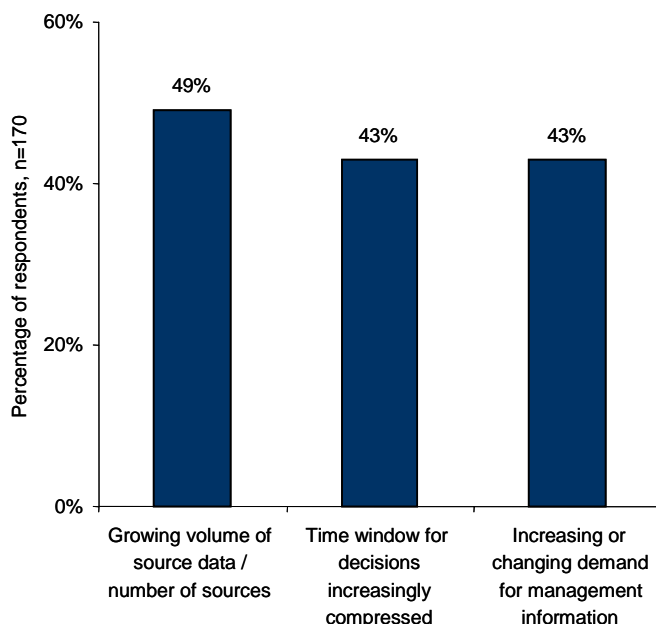
Business Context

Business Intelligence (BI) technologies are well established in many organizations. For example, in Aberdeen's research into the total cost of ownership of BI in April 2010 (*The TCO View of Business Intelligence*) 49% of the organizations actively using BI had been doing so for five years or more. However, despite this wealth of experience only 43% of business intelligence projects were delivered on-time or early. Clearly, many companies still struggle to deliver the information that managers need to run the business.

Building on Aberdeen's prior research, this report examines the strategies, tactics and technologies used to deliver business intelligence that is more agile. Agile BI is defined by Aberdeen as BI that can rapidly and cost effectively adapt to meet changing business needs. As emerging business events require managers to have access to new or different information an agile BI implementation can quickly deliver that information - through data manipulation by the business users themselves or by IT professionals.

Overall, this research found that organizations face three significant pressures in effectively delivering BI that is truly valuable for the business (Figure 1).

Figure 1: Pressures Demand a More Efficient Approach to BI



Source: Aberdeen Group, March 2011

* Survey respondents were asked to choose two top pressures

Fast Facts

Top barriers to BI adoption include:

- ✓ **49%** Lack understanding of the benefits
- ✓ **47%** Lack of IT resources
- ✓ **43%** End-user needs not clearly defined

"Making things more visual and interactive for managers means then that when they have that "a-ha" moment they can actually do something about it instead of just setting up a meeting with IT. There's been a noticeable change in meetings because the data isn't static and it's something that people can interact with and get answers in close to real-time while the key decision makers and thought leaders are in the room."

~ IT Manager,
Large Consumer Packaged
Good Manufacturer

Aberdeen's December 2010 research report [*Data Management for BI: Fueling the Analytical Engine with High Octane Information*](#) found that the average growth in data volumes used for analytics in an organization grew by 40% in the last year. As this new research on agile business intelligence shows, that high (and accelerating) growth in the information available is the most common pressure being experienced by organizations as they struggle to deliver BI effectively. In short, the volume of data exceeds the ability of the IT group to manage it, process it and turn it into information that is actionable.

Coupled to this, the decision making environment faced by executives and managers is also changing. Forty-three percent (43%) of enterprises report that making timely decisions is becoming more difficult. Managers increasingly find they have less time to make decisions after business events occur. Alternatively, managers are likely to need more - or different - information in order to support their decisions effectively. Jammed between a rock and a hard place, organizations of all types are fairly united in the approach they plan to take to manage the flood of data on one hand and the expectations of business managers on the other. Enterprises are working to streamline their IT organization and simultaneously make executives and managers more self-sufficient in their use of BI.

The Maturity Class Framework

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

- **Availability of timely management information.** Clearly, if IT systems provide the wrong information to business managers that is not helpful. Likewise, providing the right information too late to influence a business decision is equally - if not more - frustrating for a business manager. This performance metric captures the frequency with which business users receive the information they need in the timeframe they need it to make business decisions.
- **Average time required to add a column to an existing report.** One component of BI agility includes the ability for business users to get access to new or different information that is not provided to them as part of any kind of standard BI delivery from corporate IT. When additional information is required, the time needed to gain access to that information can have a significant impact on business decision making. If that information can not be obtained within the time required to support the decision at hand, the information has no material value. Consequently, this metric measures the total elapsed time required to modify an existing report by adding a column. This includes the full cycle time to submit and close a change request to corporate IT services if necessary.
- **Average time required to create a new dashboard.** Similar to the second metric above, this metric is also concerned with the

time required to access different or new information - albeit on a larger scale. This third metric measures the total elapsed time required to create an entirely new dashboard, including the full cycle time to submit and close a work request with corporate IT if required.

Taken together, these three criteria gauge the effectiveness of the organization to deliver the right information to business managers at the right time. That information may simply be delivered directly in the form required by corporate IT, or discovered by the business users themselves using the appropriate tools. Ultimately, it doesn't really matter if a business manager needs information within one month of business events occurring, or within one hour of business events occurring. Similarly, it doesn't necessarily matter by what means they get the information they need. What really counts is that they get the information they need within the timeframe that matches their own particular decision making cycle.

The respective performance levels of Best-in-Class, Industry Average and Laggards organizations is shown in Table I.

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

Definition of Maturity Class	Mean Class Performance
<p>Best-in-Class: Top 20% of aggregate performance scorers</p>	<ul style="list-style-type: none"> ▪ 36% of organizations can always access management information in the timeframe that business managers require ▪ Able to add a column to a report in 4.3 hours ▪ Able to create a new dashboard in 3.8 days
<p>Industry Average: Middle 50% of aggregate performance scorers</p>	<ul style="list-style-type: none"> ▪ 30% of organizations can always access management information in the timeframe that business managers require ▪ Able to add a column to a report in 5.8 days ▪ Able to create a new dashboard in 26 days
<p>Laggard: Bottom 30% of aggregate performance scorers</p>	<ul style="list-style-type: none"> ▪ 14% of organizations can always access management information in the timeframe that business managers require ▪ Able to add a column to a report in 6.9 hours ▪ Able to create a new dashboard in 51 days

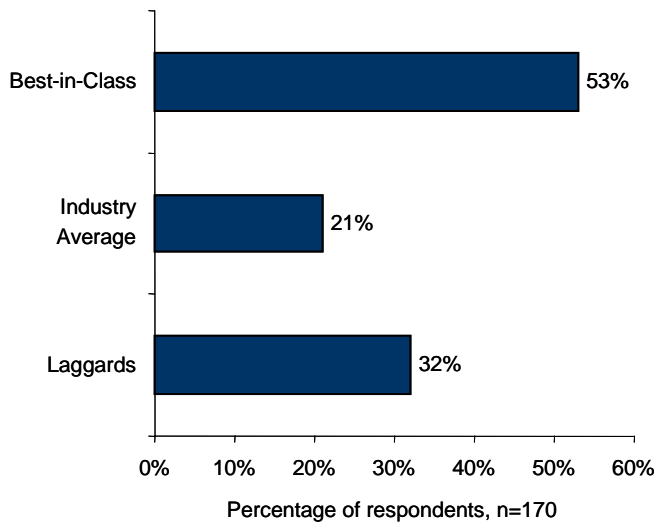
Source: Aberdeen Group, March 2011

* Best-in-Class performance is normalized for company size

As Table I indicates, only 36% of Best-in-Class organizations are consistently able to access the information they need within the time required for decision making 100% of the time. On the face of it, this is a surprisingly low number. Balanced against this fact are two factors though. First of all, managers at Best-in-Class companies are able to access the information they need in the time required on average 85% of the time. Secondly, this is partly explained by the demands that managers are making

on their information infrastructure (Figure 2). Over half (53%) of managers in Best-in-Class companies require information within one hour of business events occurring. Neither Industry Average or Laggard organizations (collectively referred to as "all others") place such exacting demands on the flow of information through their organization. That demand for such frequent updates to management information is reflected in the capabilities and technologies deployed by those top performing firms.

Figure 2: Information Needed Within One Hour



Source: Aberdeen Group, March 2011

"When IT has to provide customized reports they can be very time intensive to develop. By providing drillable dashboards we are able to give people the tools they need to answer their own questions and get the insight they are looking for. As a result, we've seen a fair amount of that custom reporting workload fall off."

~ Charlie Schloff,
VP, Global IT & Process
Excellence,
Eclipse, Inc.

The Best-in-Class PACE Model

Using business intelligence effectively to achieve corporate goals requires a combination of strategic actions, organizational capabilities, and enabling technologies that can be summarized as follows:

- Provide streamlined, efficient corporate IT processes to ensure that routine reports and management information can be provided automatically. This allows resources to be devoted to changing BI needs so that they can be met promptly when the IT organization needs to be involved.
- Directly provide business managers with the tools, skills and education they need in order to discover new insights and relationships for themselves without the need for corporate IT to continuously provide new information, or different perspectives on existing information.

Table 2: The Best-in-Class PACE Framework

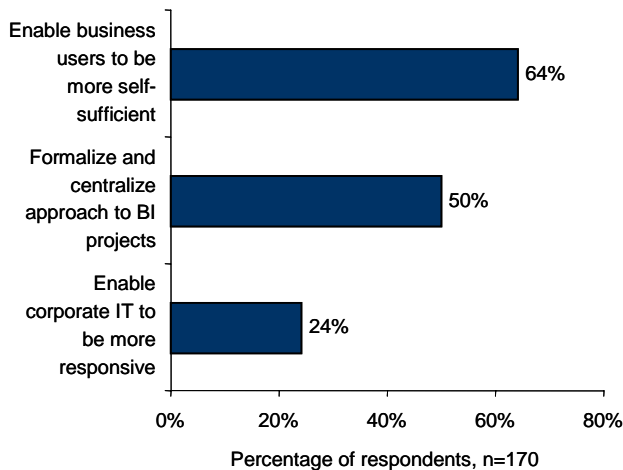
Pressures	Actions	Capabilities	Enablers
<ul style="list-style-type: none"> ▪ Growing volumes of source data / growing number of data sources ▪ More demanding environment for decision making 	<ul style="list-style-type: none"> ▪ Enable business users to be more self-sufficient with BI capabilities 	<ul style="list-style-type: none"> ▪ Process to collect and formulate end-user needs ▪ Post-project review process in place ▪ IT and analytics skills decentralized ▪ Measurement of internal BI customer satisfaction ▪ BI executes directly against operational data ▪ Fully interactive reports and charts 	<ul style="list-style-type: none"> ▪ Dashboards ▪ Analytic applications ▪ End-user query tools ▪ Data integration tools

Source: Aberdeen Group, March 2011

Best-in-Class Strategies

Altogether, survey respondents were asked to choose from eight possible strategies to deal with the pressures they are currently facing to deliver meaningful information to the business. The parallel strategies of enabling end-users to be more self-sufficient, and also formalizing the approach to BI are common priorities across all three maturity classes - the Best-in-Class, the Industry Average and the Laggards (Figure 3).

Figure 3: Top Strategies for Delivering Agile BI



"Managers are constantly pressed to have key information at their fingertips so that they can make quick decisions all the time. The problem is, we don't have all the key information available at their fingertips. We still don't have all of the relevant information in an integrated data set where they can get at it easily and quickly."

~ Tim Heth,
Planning Analyst,
Methodist Medical Center of
Illinois - Peoria

Source: Aberdeen Group, March 2011

* Survey respondents were asked to choose two top strategies

Aberdeen Insights — Strategy

The twin strategies of enabling end-user self-service and simultaneously formalizing the approach to business intelligence might seem to be at odds. In practice however, these are perfectly complementary strategies.

In order to be as self-sufficient as possible, business decision makers need to be able to find the information they need to meet changing business conditions with little or no assistance from the IT organization. There are many factors that are critical for this, including:

- **The right software tools.** To gain new insights, or explore detailed information, managers require tools that allow them to drill-down from summarized data, re-arrange or re-configure their view of information, or discover what other information and relationships might be worth exploring.
- **The right culture.** Business managers need to be immersed in a corporate culture that encourages and values decisions that are based on facts and information and not solely based on gut-feel or intuition.
- **The right attitude.** As one survey respondents noted, "For some users, it's easy to make them more self-sufficient. But, for others, I'm not sure that you can get them to make that leap because they simply don't want to."
- **The right training.** The hands-on analysis and manipulation of data is a new experience for most business managers. Providing training in the concepts of data analysis and the specific usage of the tools provided is required.

So, where does the formalized approach to business intelligence weigh in? It might be tempting to think that the IT organization can take more of a back seat if business managers adopt a self-service approach to BI. If self-service BI is ultimately going to be successful, it requires the right body of data. If business users are going to be able to explore data themselves to discover new insights and relationships a rich collection of data is needed. It is the responsibility of the IT organization to provide this data. "The biggest question in my mind is how does an IT organization enable self-sufficiency so that the business can exploit it?" notes Jim Keene, IT manager at Harley Davidson. "Like a lot of large corporations, there's still a lot of data back-end work that needs to happen to enable self-sufficiency, so part of our strategic review is to figure how we can do that better and faster without cutting corners."

It may be counter-intuitive, even ironic. But, for business users to be more self-sufficient in their use of business intelligence, the IT function needs to understand more about the needs of the business user, not less.

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

Chapter Two: Benchmarking Requirements for Success

The selection of BI technologies and its integration with business processes plays a crucial role in the ability to turn these strategies into profit.

Case Study — Dartmouth College

Established in 1769 and located in Hanover New Hampshire, Dartmouth College enrolls approximately 4,100 undergraduates in the liberal arts in addition to 1,700 graduate students. It is also home to the USA's fourth oldest medical school: the Dartmouth Medical School, founded in 1797; the nation's first professional school of engineering: the Thayer School of Engineering, founded in 1867; and the first graduate school of management in the world: the Tuck School of Business, established in 1900.

Dartmouth first started using business intelligence tools about 4½ years ago to perform segmentation of the alumni database. As a private college, Dartmouth is keenly reliant on donations from alumni. With a database of well over 100,000 alumni the college needed a way to build a deeper understanding of alums who were interested in re-engaging – for committee's, with their class and naturally for fund raising. Without BI, Dartmouth was restricted to looking at individuals or performing some limited (and very time consuming) manipulation in spreadsheets. "The data that we looked at in spreadsheets was all extracted from our alumni database of record," explains Michael Foote, Director of Research & Prospect Management at Dartmouth College. "The problem was, once we started looking at the spreadsheets we would inevitably find that there were some additional fields that we needed. That meant an additional request to the central IT group and sometimes that could take two to three weeks each time." It could sometimes take many weeks to get the full set of data that was required for analysis and segmentation.

With BI, the team at Dartmouth is able to look at alumni in aggregate, find trends and similarities, and discover networks between the alums that can be leveraged for fund-raising. Data is still extracted from the alumni database. But now all of the elements required can easily be pulled and loaded, visualized and manipulated. In the words of Michael Foote, "The BI tool just puts all of that querying at the fingertips of business managers. The software is really intuitive - as soon as you open it up it just makes sense."

In practice, BI has enabled the research and prospect management team to improve the targeting of their fund raising efforts. For example, starting from a pool of 3,000 individuals that are interested in a particular area (such as the arts), a field officer is now able to hone the list down to just 15 to 20 individuals that are the very best prospects to solicit for donations. Advanced visualizations, such as mapping, have also proved to be beneficial. For instance, when a field officer was visiting New Orleans recently, they were able to see who the best donor prospects were, not just in the city, but also in nearby towns and cities.

Fast Facts

Most important criteria when selecting a BI solution include:

- √ **55%** Ease of integration with enterprise applications
- √ **35%** Total cost of ownership
- √ **30%** Ease of use

Competitive Assessment

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

Table 3: The Competitive Framework

	Best-in-Class	Average	Laggards
Process	Process for collecting and formulating end-user needs for		
	72%	44%	40%
Process	Formal post-project review process		
	57%	35%	21%
Organization	Development of BI skills among business users		
	53%	28%	16%
	BI project plans incorporate culture change		
	51%	35%	26%
Organization	IT and business analytics skills are de-centralized		
	58%	31%	24%
Knowledge	BI accesses data directly from operational data stores		
	67%	49%	27%
	Potential BI data sources understood and documented		
Knowledge	65%	35%	30%
	All parts of a report or chart are interactive		
	56%	26%	20%
Technology	BI environment delivers BI to many end-users		
	66%	56%	51%
Performance	Ability to measure satisfaction of internal customers		
	54%	35%	30%
	Ability to track total BI projects costs vs. budgets		
Performance	63%	49%	31%

Source: Aberdeen Group, March 2011

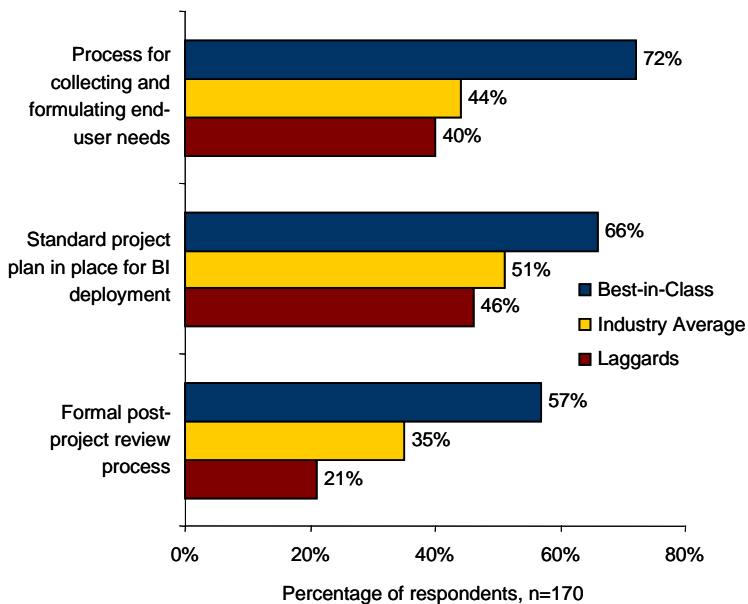
Capabilities and Enablers

Based on the findings of the Competitive Framework and interviews with end users, Aberdeen’s analysis of the Best-in-Class reveals that there are a number of capabilities and competencies that help to deliver a more agile approach to business intelligence.

Process

The process capabilities that foster Best-in-Class performance in BI agility clearly demonstrate the need for the IT organization to be - and remain - deeply involved in BI projects. The delivery of useful business intelligence capabilities to the business community must be underpinned by the IT organization. As Figure 4 shows, Best-in-Class enterprises are far more likely than others to have a clearly defined process to collect and capture the business requirements for BI. From this starting point, with subsequent analysis, the IT department is able to define a strategy and roadmap for the delivery of the various technology components, internal processes and information flows required to meet the needs of business managers.

Figure 4: Process Capabilities Support Efficient Corporate IT



"We try to make sure that we follow up on everything, especially with the end-user – did we meet your need, what worked, what didn't work, what might we improve – as well as more quantifiable things like did we meet the timeline and stay within the budget."

~ Tim Heth,
Planning Analyst,
Methodist Medical Center of
Illinois - Peoria

Source: Aberdeen Group, March 2011

In addition to the information that is required, and the way business managers need to access and manipulate it, a critical consideration is the update (or refresh) rate required for the management information. The update rate will naturally vary, depending on the type of information and the management need. For example, data on stock levels in a warehouse is likely to need far more frequent updates than data that is used for profit and loss analysis. The refresh rate of management information has a critical bearing

on the technologies and processes used to deliver business intelligence as discussed elsewhere in this document.

Best-in-Class companies are also more likely than both Industry Average and Laggards to have a standard project plan established. A standard - though not necessarily rigid - plan for BI projects helps to ensure smooth, predictable completion of projects. Resources can be brought to bear efficiently and optimally. It is no coincidence that Best-in-Class organizations boast an on-time BI project completion rate of 70%, 37% higher than all other survey respondents. This formal project plan also provides scope for a comprehensive post-project review to be conducted. Best-in-Class enterprises are almost 3-times more likely than Laggards to include this step (57% vs. 21%). At a basic level, this review can ensure that the project has addressed the needs of the business community, and direct further steps to be taken if necessary. It should also ensure actual project costs are compared to budgeted project costs so that the overall impact on the annual BI budget can be updated.

Ultimately however, the post-project review can drive longer term changes that can benefit all business intelligence projects in the organization. By working with business managers to understand what could have been done differently or more effectively in the project, a catalog of suggestions and recommendations can be compiled over time. With careful analysis and distillation, these ideas for improvement can be incorporated into a revised project plan. In this way, business processes, key roles, workflows - for example - can all be honed for the benefit of all subsequent BI projects.

Organization

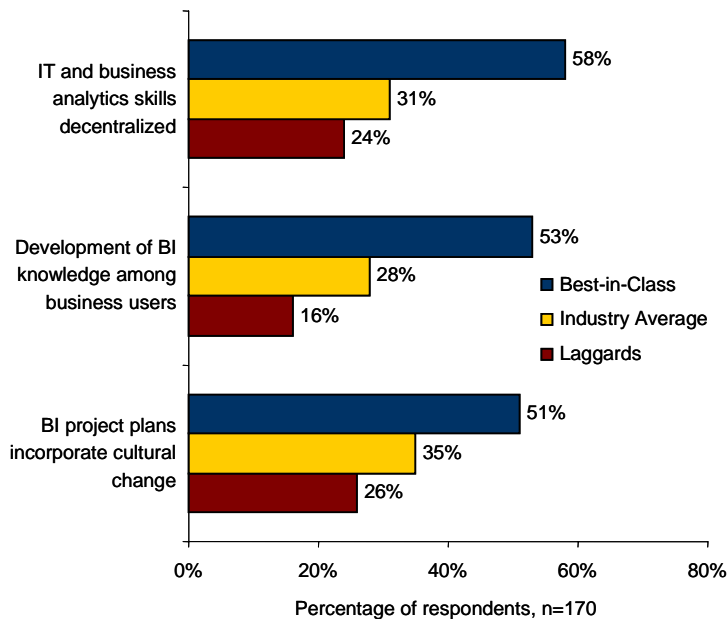
The best practices for the process capabilities above are centered on the work that the IT organization needs to accomplish. In contrast, the organizational best practices are focused more on the business management community (Figure 5).

Best-in-Class firms are roughly twice as likely as other companies to have an organization structure where IT and analytics skills are decentralized and embedded within operational business units. This approach can encourage and develop self-service BI skills among business managers. It can also aid in agility when changes are required in business intelligence delivery. In effect, BI and analytics skills are moved closer to the business users. This can allow help to be provided sooner and a shorter turn-around on any support issues that are raised. This all aids agility - enabling business managers to get rapid access to different data whenever changing business conditions dictate.

Note though, that moving BI skills to the business units doesn't mean the demise of the BI center of excellence or BI competency center (BICE or BICC). Far from it. A BICC ensures that scarce skills can be leveraged productively across the entire organization, best practices can be distilled and implemented, and projects that encompass the entire enterprise (or multiple business units) can be pursued effectively. Forty-nine percent (49%) of top performing organizations - the Best-in-Class - have a business

intelligence competency center, compared to just 24% of Industry Average and 20% of Laggards.

Figure 5: Organization Capabilities Enable Business Managers



Source: Aberdeen Group, March 2011

Planting BI skills in the business units can aid in the development of the second organizational best practice - the formal development of BI skills and knowledge amongst the business users themselves. Best-in-Class organizations are 90% more likely than Industry Average organizations to follow this approach, and over 3times more likely to pursue it than Laggards. Many circumstances and factors are important in driving self-service business intelligence. The more confident, tech-savvy managers may be willing to figure out the value of agile business intelligence for themselves. Similarly, younger managers who have grown up immersed in technology are also likely to be self-starters. But, providing a well-thought out and thorough introduction to data interpretation, analytics, and the specific capabilities of the BI tools available is necessary to engage a broad business population in many circumstances. Further, training on the specific use of BI with the actual data used by the business unit can really drive home the value and solidify the key lessons from the training program. This is an area where BI specialists associated with each business unit or division can excel. With their local knowledge and expertise, these staff can deliver specific, detailed training in a way that a central body (such as a BICC) might struggle to.

Finally, Best-in-Class enterprises are more apt than others to ensure that major BI projects incorporate the necessary elements to drive culture change. These elements naturally will include training and skills transfer and potentially the dispersal of skilled BI staff into operational departments and divisions.

Fast Facts

Percentage of all employees using business intelligence:

- ✓ **Best-in-Class: 38%**
- ✓ **Industry Average: 32%**
- ✓ **Laggards: 23%**

Fast Facts

Executive level champion exists for BI projects at

- ✓ **74%** of Best-in-Class organizations
- ✓ **53%** of Industry Average organizations
- ✓ **47%** of Laggards organizations

Case Study — City of Charlotte

The City of Charlotte in North Carolina employs more than 6,000 people and provides services to more than 731,000 citizens. Charlotte ranks as the 18th largest city in the US by population and is also the second largest banking center in the nation.

Over the last four years, the Business Support Services/Information Technology (BSS/IT) department has been offering opportunities to embed Business Intelligence (BI) deeper into the various departments in the city, and also promote the value of data visualization and analytics. Since adopting the BI toolbox, use of BI has spread to six out of 14 departments. In addition to IT, others include planning, neighborhood development, finance and procurement. Altogether, there are about 80 users who have the ability to create and manipulate dashboards and reports and there are countless other managers who view the BI assets created by those users.

IT's Data Administration Team dreamt up an innovative and fun way to promote analytics and start to collaborate on best practices. In 2008, the City of Charlotte launched a bi-annual contest where different business units compete to develop analytics and insight into a specific set of data. Competition judges were comprised of representatives from the University of North Carolina-Charlotte, BI Vendors and City of Charlotte senior management. Prizes were awarded to the first, second and third place and most improved teams. In addition to the interest of the participants, the tournament drew big appeal from senior executives and their immediate reports. As a result, it helped to nurture a business intelligence community within the city government itself. This competitive approach has been so successful that the judges, who returned for the 2010 event, noted that the lower ranking competitors in 2010 were actually better than the very best from 2008. Building on the momentum created by this event, the BI community has also conducted training on various aspects of BI and had senior executives discuss the type of insight that they would value from the data they have at their disposal.

Expansion of BI has been a little constrained as budgets remain tight. "It's easy to justify the cost of a new server because the existing one is just too slow. It's much harder to figure out the value of an opportunity missed," explains Jim Raper, Manager of Data Administration for the City of Charlotte. "Being a city government, it's a little harder to build an ROI case than it would be for a commercial business. But we have seen productivity increases of 10-times or more when an analyst has an easy to use BI visualization tool - and we've proven that metric many times." The city does take a very pragmatic approach to squeezing the most from its limited BI budget.

continued

Case Study — City of Charlotte

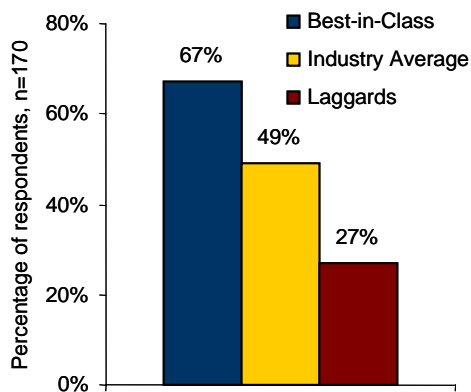
For example, they track the use of the BI software licenses that they have. If a license isn't being used, they will re-allocate it to someone else. They also leverage free introductory training provided by their software vendor twice a week. New BI users must run through this training twice before the IT group will provide them with mentoring assistance to build reports and dashboards.

The BSS/IT department has also standardized a couple of different BI technologies in order to pursue efficiencies and consistency. Until a couple of years ago, each city department could use any of the tools at their disposal. Now, BSS/IT supports just two BI tools. If a department wants to use something else, they are free to do so – but they will be entirely responsible for their own support and life cycle maintenance. Ultimately, many managers have become self-sufficient in BI, which was one of the original objectives of the project. As Raper notes, "The workload for report development in my group has almost dropped to zero. We only tackle the unique cases now, not the routine ones."

Knowledge Management

Knowledge management capabilities support agile business intelligence in two significant ways. First of all, business managers at Best-in-Class corporations are more likely than other survey respondents to have direct access to operational data (Figure 6).

Figure 6: Direct Access to Operational Data Stores



Source: Aberdeen Group, March 2011

This is particularly noteworthy because of the demanding update rate that managers at Best-in-Class organizations have. Fifty-three percent (53%) of managers at Best-in-Class organizations require information on business events within one hour of the events occurring. Access to such up-to-date information can be invaluable for tactical, day-to-day decision making. For

"Our BI projects are not unique, we treat them the same as any other IT project at Harley-Davidson. Each project must have a business case with hard or soft revenue growth, cost savings, or quality improvement opportunities defined. At some time after the implementation is complete we do a review to evaluate the new current state against the original milestones or objectives."

~ Jim Keene,
IT manager,
Harley Davidson

example, shipment and supply chain decisions can be optimized by insight into current sales patterns and stock levels in retail stores. The conventional repositories used for business intelligence - data warehouses and data marts - may not be suitable for this type of business decisions. This type of data store tends to have large amounts of historical data and is also often refreshed much less frequently than hourly. In this case, accessing the operational data store - or a mirror of it - directly may be the best solution. Not that data warehouses don't have their uses - 74% of all survey respondents have at least one. It is just that they are often not well suited to surfacing this type of current and time critical information to business users.

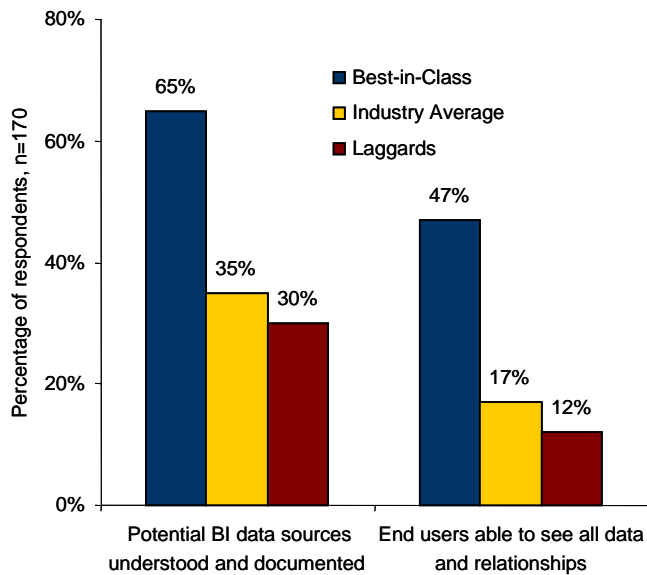
Agile BI also often includes some element of business users being able to discover new relationships and insights unaided by IT. This may require extending reports, charts or dashboards, or the use of specialist data discovery tools. Either way, for this to happen, managers need a rich environment of data to explore. Managers at Best-in-Class enterprises are twice as likely as their peers at all other organizations to enjoy the benefit of having all potential data sources documented. Furthermore, they are 3-times more likely to have software at their disposal that allows them to explore data freely so that they can understand and navigate related data items (Figure 7).

Fast Facts

Percentage of BI users that use BI in a self-service way with no assistance from IT:

- ✓ **Best-in-Class: 42%**
- ✓ **Industry Average: 30%**
- ✓ **Laggards: 30%**

Figure 7: End User Access to Explore Data



Source: Aberdeen Group, March 2011

"The right solution is going to require a minimal amount of training - half a day at most. Here's the tool, here's a couple of use cases, have at it."

~ IT Manager,
Large Consumer Packaged
Good Manufacturer

Understanding and documenting the data available for analysis is a vital step. Without knowledge and understanding of the origins and source of data, there can be no trust in the numbers. If business managers do not understand where data is coming from, or how metrics and Key Performance Indicators (KPIs) are derived, how can they be confident in the

decisions that they make based on the data? Similarly, if managers do not understand the relationships between the various data entities available to them, they are not likely to hang their hats on it. Understanding the relationships between data elements is vital to trust, and trust in the data is vital to promote a culture of fact-based decision making.

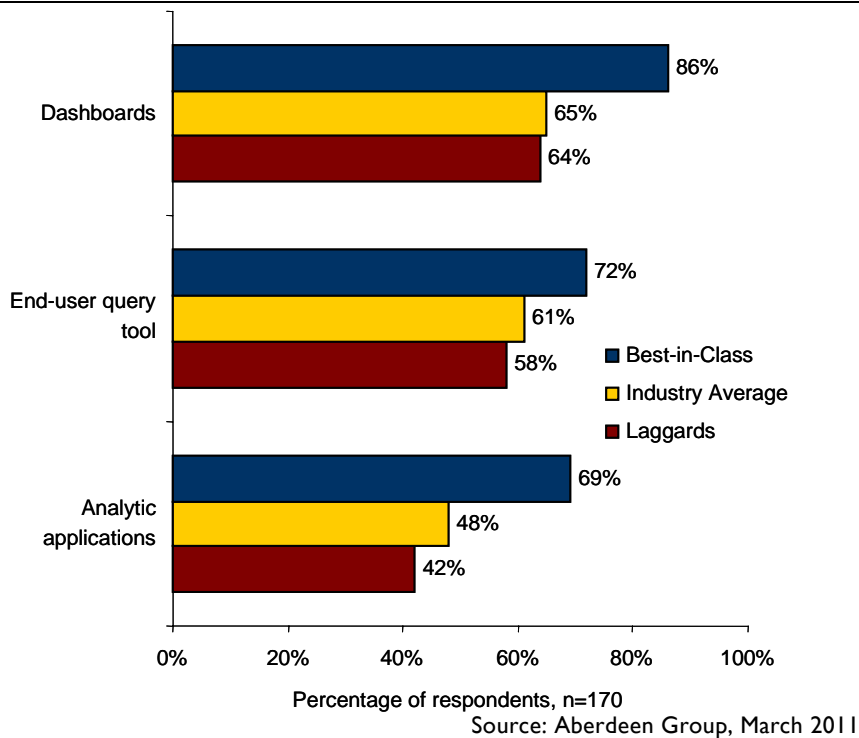
For any agile BI implementation though, understanding and documenting data sources is a must have. Agile business intelligence requires business managers to be able to explore data independently whenever new business challenges or opportunities present themselves. For example, suppose that the failure rate of a particular industrial machine sold by a company has risen beyond acceptable levels. When the product manager notices this issue, an agile BI implementation will allow the manager to explore further into the data to try and understand the cause of the heightened failure rate. Perhaps the failing machines all share a component manufactured by the same sub-contractor, or they have all been recently serviced by the same distributor, or most are being used for the same type of application, or they are being operated in similar environmental conditions - and so on. In this type of situation, tools that let managers explore data and discover new relationships autonomously can be very powerful. This type of discovery and exploration is aided by software that allows business managers to freely explore data in order to discover new insights.

Technology

In addition to specific technology capabilities, there are three broad classes of solutions that are used more widely by Best-in-Class enterprises (Figure 8). First of all, managers in Best-in-Class enterprises are about one-third more likely than other survey respondents to use dashboards. Dashboards - if implemented well - can provide a highly intuitive way for managers to instantly comprehend the current state of the metrics and KPIs that are relevant to them. While this is a strong proposition in itself, for the purposes of agile BI, the dashboard really operates as just the gateway (or portal) to more detailed information.

For example, whenever a key performance indicator is showing that something is amiss, an agile dashboard implementation will allow deeper inspection of the detailed data. It should also allow a business user to re-configure their own dashboard so that they can keep a closer eye on that situation if necessary. For example, let's revisit the product manager for industrial machines mentioned in the previous section. Potentially, once the underlying cause of the problem has been identified, the manager may be able to re-configure their own dashboard so that they are immediately alerted to any similar situations. For example, if the problems have arisen because of incorrect servicing by a distributor, the manager may set an alert to ensure that they are informed of any subsequent services carried out by that distributor.

Figure 8: Key Best-in-Class Technology Solutions



"We let managers get their hands on the data in a spreadsheet in a way that they can manipulate it easily. Then after a few days we ask, 'What are the pieces you're really going to use and monitor, and what pieces do you find yourself drilling into?' Then we build dashboards from there."

~ BI Manager,
Global Industrial Product
Manufacturer

An agile dashboard implementation can allow a manager to explore data at will to try and understand these relationships. Without this agility, the alternatives might be to raise a work request with the corporate IT department to have new reports developed - or to make countless phone calls to try and understand the root cause. In either case, an agile BI solution is likely to be a more productive use of resources. More crucially, the root cause can be identified faster and the solution to the underlying problem developed quicker than any of the alternatives. This rapid response to customer problems will have a positive impact on customer satisfaction which should ultimately flow through to increased revenues and higher profit margins.

Analytics applications are also significantly more popular with top performing organizations (the Best-in-Class) than with other organizations. Analytic applications can provide a comprehensive set of metrics and a strong dataset around a tightly-focused business functions - such as sales, human capital, supply chain operations, and so on. Simply put, an analytic application can provide many of the features that make a BI solution agile. They can provide a rich set of data - albeit bounded by the functional scope of the application - that can be explored or analyzed in detail. Reports, charts and dashboards that can be configured or customized directly by business managers can then be applied over this body of data to provide an agile solution.

Finally, end-user query tools are quite popular across all maturity classes, although they are used somewhat more extensively by Best-in-Class

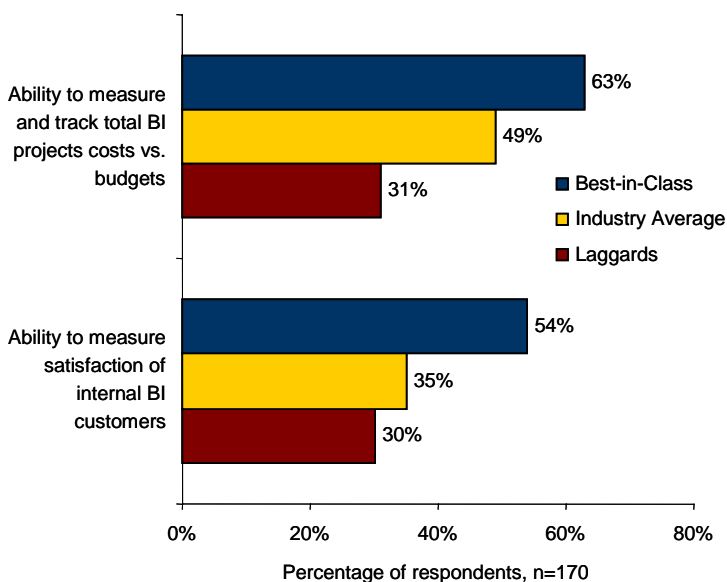
enterprises. Some end-user query tools can be limited in the scope of the reporting and charting that they provide. However, they can help to enable the exploration of a set of data in order to try and determine new relationships.

Performance Management

Agile BI solutions can be very effective - but how do organizations quantify the value they deliver? There are two metrics that are used more commonly by Best-in-Class enterprises when compared to both Industry Average organizations and Laggards (Figure 9). Best-in-Class organizations are over 50% more likely than other survey respondents to measure how satisfied their internal customers (i.e. the business managers) are with their business intelligence solution. As noted earlier, Best-in-Class companies are also more likely to conduct a formal post-project review for their BI projects. While both are valid ways to gauge the success of BI implementations, the measurement of internal customer satisfaction can provide a more complete measure and also allow performance of the BI implementation to be compared in the longer-term. Notably, only 53% of the organizations that measure internal customer satisfaction also conduct post-project reviews.

Overall, only 47% of survey respondents are able to track their actual BI costs against budget. The cost of BI projects should include all incremental hardware expenses, in addition to the software licenses and maintenance fees required. The cost of the staff time needed to complete the BI project should also be factored in. If labor costs are not included, comparing the value of differing BI projects cannot be done with any degree of confidence.

Figure 9: Best-in-Class Performance Management Capabilities



"We also track the frequency of use for each report as a means to ensure value add. For example, if a report is only used once a quarter, is that because it is being used to support a quarterly review, or is it because the report itself just isn't of much use to anyone?"

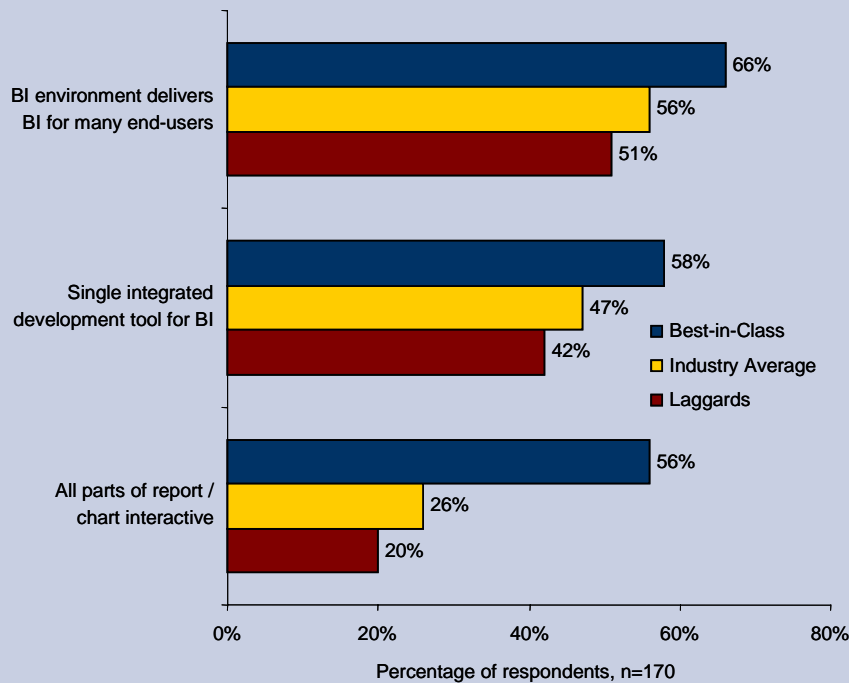
~ Charlie Schloff,
VP, Global IT & Process
Excellence,
Eclipse, Inc.

Source: Aberdeen Group, March 2011

Aberdeen Insights — Technology

Best-in-Class enterprises are employing technology in two significant ways to deliver BI that is as valuable for business managers as it is cost-effective to deliver (Figure 10).

Figure 10: Automate the Routine, Enable Discovery



Source: Aberdeen Group, March 2011

Best-in-Class organizations are more likely than other organizations to employ a standardized development environment that they use to deliver BI for many different end-user applications. As part of this, these top performing organizations are also more likely to use a single integrated tool to develop their business intelligence assets.

This type of setup can be highly effective at pumping out routine management information to many different lines of business in an automated way. This allows IT to take care of standard reporting needs with little management overhead incurred. That allows more resources to be used to address emerging or changing business needs.

continued

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The advantages of this approach include:

- Standardization of the development environment can bring many advantages. For example, consolidation of software licenses into a single tool or set of tools. The alternative is to spread scarce IT budgets thinly to support many different development environments - some of which may be used only sparingly.
- Concentration and replication of knowledge. A single consistent development environment enables scarce skills to be grown and replicated. If multiple, disparate tools are used to deliver BI it is likely that the outcome may be that there are many people who are experts in parts of the solution, and yet no-one who knows how all of the pieces work together. This fragmentation of skills can inhibit the efficient completion of BI projects.
- A single integrated environment can leverage much of the foundational work into multiple types of end-user BI assets, such as reports, charts and dashboards. A common tool can also help to maximize the reuse of existing BI assets, building on existing work to cut the time required to complete new projects.

With routine reporting taken care of, Best-in-Class companies are more than twice as likely as all others to provide BI to their end-users that is fully interactive. That is, all parts of the BI presentation can be used to manipulate the underlying information in some way. With a highly responsive, fully interactive tool at their disposal business managers can effectively explore data as fast as their creativity and imagination will let them.

Chapter Three: Required Actions

Whether a company is trying to move its performance in BI agility 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

- **Implement a plan for the formal development of BI knowledge and skills among the business user community.** Only 16% of Laggard organizations currently pursue this approach, compared to 28% of Industry Average and 53% of Best-in-Class enterprises. There are two core parts to an agile BI implementation. One of these is the empowerment of business users to become more self-sufficient. For this to become a reality, most organizations will have to provide some degree of education in the rudimentary concepts of business intelligence, with additional focus on the specific data and tools included in their particular implementation.
- **Improve the ability to access operational data.** Only 27% of Laggards possess this capability, even though managers in 32% of Laggard organizations require access to data within the hour of business events occurring. Sixty-seven percent (67%) of Best-in-Class enterprises can tap operational data stores - an essential capability when managers in 53% of those organizations need data an hour after it is created. When updates are required so soon after the business transactions have been created, data warehouses and data marts are probably not going to be able to provide the refresh time necessary.
- **Ensure that the actual costs of BI projects are tracked against budget.** Currently, only 31% of Laggard companies do this. Not only is this a critical step to ensure that budgets are adhered to, but such a monitoring process can serve as a point of focus. If cost isn't kept constantly in mind, how can the organization focus on delivering business intelligence effectively, when it has no concrete way to measure what is effective and what is not?

Industry Average Steps to Success

- **Introduce and maintain a process to collect and formulate end-user BI needs.** At present, only 44% of Industry Average enterprises do this, compared to 72% of the Best-in-Class. A formalized process, consistently applied can help to ensure that essential business intelligence needs across the organization are gathered and understood. Without such a process, it is likely that some needs in the company will go unmet and others will be poorly fulfilled - perhaps missing some of the data required, or simply not being updated frequently enough.
- **Initiate a post-project review for all BI projects.** Thirty-five percent (35%) of Industry Average firms do this, compared to 57%

Fast Facts

Estimated time required to clear the existing backlog of IT work requests for BI:

- ✓ **Best-in-Class: 85 days**
- ✓ **Industry Average: 157 days**
- ✓ **Laggards: 183 days**

of the Best-in-Class companies. A post-project review fulfills a number of purposes. First of all, it can ensure that the needs of the business community were actually addressed. Secondly, it can serve as the best point in time to compare actual project costs to budgeted costs. Finally, it is the collection point for key learnings about what could have been done differently to improve the value of the project or make its completion more efficient. Given time, these insights can be distilled down and turned into best practices.

- **Provide BI skills closer to the point of need.** Fifty-eight percent (58%) of Best-in-Class enterprises have BI expertise that is decentralized and deployed into business units. Only 31% of Industry Average organizations have this same capability. Placing BI skills close to - both logically and physically - business managers can encourage and nurture self-sufficiency with data. Local resources can often respond faster to requests for assistance and provide skills transfer on an ongoing basis.
- **Document possible business intelligence data sources.** This is an essential step to aid the exploration of data by business managers. While 65% of Best-in-Class organizations have this capability, it currently exists at only 35% of Industry Average enterprises. Understanding where data comes from and how metrics are calculated is a key step in building the trust of business managers in the data. Providing a comprehensive map of all available data and relationships encourages the exploration of data to discover new insights.

Best-in-Class Steps to Success

- **Ensure frequent collaboration between business users and developers during the development cycle.** While 69% of the Best-in-Class organizations already do this, the remaining 31% indicate that they plan to within the next 12 months. An incremental, iterative approach to BI projects can help to keep projects on track, ensure that business needs are met, and that budgets and timelines are adhered to.
- **Put training programs in place.** While the provision of BI education to business managers is a Best-in-Class capability, only 47% of Best-in-Class companies currently provide such training. However, a further 44% of the Best-in-Class plan to establish training program in the next 12 months. Making end-users at ease with both the general concepts of business intelligence and the intricacies of their particular tools and data can drive increased self-sufficiency among business managers.
- **Standardize the development environment to deliver BI to many users.** Sixty-six percent (66%) of the Best-in-Class have already standardized their toolset, with a further 31% planning to do so in the next year. Standardizing the development environment has a number of advantages. It allows skills and expertise to be

concentrated and honed, it promises economies of scale and can facilitate the delivery of reports and analytics to a large and diverse user population cost effectively.

- **Aim for reports and charts that are fully interactive.** When business users become comfortable with the concept of self-service BI it is possible to introduce software tools that are fully interactive. With this class of tool, all parts of a display are available for manipulation to facilitate further analysis of the data. This can include chart elements, filters, sliders, labels on charts - and so on. Fifty-six percent (56%) of Best-in-Class firms already provide such tools, with an additional 39% planning to do so within the next 12 months.

Aberdeen Insights — Summary

Growing data volumes and the challenging business environment are making it increasingly difficult for IT to provide decision makers with the information they need in the timeframe they need it. A more agile and flexible approach to business intelligence is required.

Many enterprises have already started the journey towards a more agile business intelligence solution. Success requires close collaboration between IT and BI professionals and the business users concerned. A BI center of excellence can provide a solid foundation for BI projects by providing appropriate data, software tools and training. For their part, business managers need to be willing to undergo a change in culture and working practices. They need to get "hands-on" to interact with and manipulate data if they are to meet the shrinking timeframe for business decisions that they face. It's a curious combination, but three steps are required to deliver a more agile business intelligence solution:

1. IT managers and business managers need to forge a close partnership in order to deepen the understanding that corporate IT has for the business needs. In the past, BI delivery typically consisted of a relatively stable feed of static reports. Today, managers need a more complete flow of information and the tools to work with it dynamically.
2. Business managers need to be more self-sufficient in their use of BI. Often, in order to achieve this, some degree of culture change is required to usher in an era where managers are empowered to make decisions based on the data at their fingertips.
3. For business managers to capitalize on the rich data set provided to them they will need the right tools, plus education on the concepts of business intelligence, the tools that are available to them and how to best use it with the data at their disposal.

If organizations can provide managers with the information they need to support key business decisions they will be better placed streamline their operations and take advantage of new business opportunities as they arise.

Appendix A: Research Methodology

Between February and March 2011, Aberdeen examined the use, the experiences, and the intentions of 170 enterprises using business intelligence in a diverse set of enterprises.

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

Responding enterprises included the following:

- *Job title:* The research sample included respondents with the following job titles: CEO / President (10%); EVP / SVP / VP (11%); CFO (2%); CIO (5%); Director (17%); Manager (32%); Consultant (12%); and other (11%).
- *Department / function:* The research sample included respondents from the following departments or functions: IT (41%); business development (10%); corporate management (10%); marketing (7%); finance (6%); logistics (6%); and other (20%).
- *Industry:* The research sample included respondents from the following industries: IT services (18%); software (16%); financial services (7%); automotive (4%); CPG (4%); computer equipment (4%); health / medical services (4%); transportation (4%); and other (39%).
- *Geography:* The majority of respondents (59%) were from North America. Remaining respondents were from Europe (19%), the Asia-Pacific region (13%); the Middle East and Africa (7%) and South and Central America (2%).
- *Company size:* Twenty-three percent (37%) of respondents were from large enterprises (annual revenues of US \$1 billion or more); 34% were from midsize enterprises (annual revenues between \$50 million and \$1 billion); and 29% of respondents were from small businesses (annual revenues of less than \$50 million).
- *Headcount:* Twenty-three percent (48%) of respondents were from large enterprises (headcount greater than 1,000 employees); 30% were from midsize enterprises (headcount between 101 and 1,000 employees); and 22% of respondents were from small businesses (headcount between 1 and 100 employees).

Study Focus

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

- √ The degree to which business intelligence is deployed in their organizations
- √ The structure and effectiveness of existing BI implementations
- √ Current and planned use of BI to aid strategic and operational activities
- √ The benefits, if any, that have been derived from using business intelligence

The study aimed to identify emerging best practices for the agile use of BI and to provide a framework by which readers could assess their own management capabilities.

Table 4: The PACE Framework Key

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

Source: Aberdeen Group, March 2011

Table 5: The Competitive Framework Key

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

Source: Aberdeen Group, March 2011

Table 6: The Relationship Between PACE and the Competitive Framework

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

Source: Aberdeen Group, March 2011

Appendix B: Related Aberdeen Research

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

- [*Embedding BI in Enterprise Applications: Magnifying the Analytical Impact*](#); March 2011
- [*The ABCs of Executive Analytics: A-List Performance Using BI in the C-Suite*](#); February 2011
- [*Mobile BI: Actionable Intelligence for the Agile Enterprise*](#); December 2010
- [*Operational Dashboards Drive Profits and Customer Retention*](#); November 2010
- [*BI for the SMB 2010: Unlocking Hidden Business Insight to Drive Profit*](#); October 2010
- [*Performance Management – Does a Large Enterprise approach work for the Mid-Market?*](#); September 2010
- [*Fast, Affordable, Agile - The Case for SaaS BI*](#); August 2010
- [*Operational Intelligence: Boosting Performance with "Right-Time" Insight*](#); August 2010

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

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