



• IIA Business Intelligence and Analytics  
Capabilities Report • **2016**



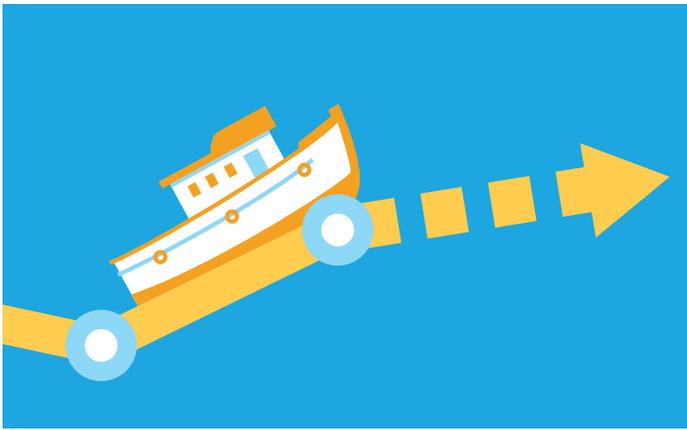
## EXECUTIVE SUMMARY

**A**s organizations elevate their analytics capabilities, one challenge of analytics maturity often overlooked is the balance between striving for more advanced capabilities and strengthening core business intelligence competencies. For example, the decision to invest in real-time supply chain optimization might come at the expense of a supplier-facing website for performance tracking. The central question of how organizations are approaching, managing, and supporting the range of capabilities that span Business Intelligence (BI) and Advanced Analytics (AA) is the basis for this report.





While the path from basic reporting to more advanced analytics work is often considered as a *shift* from BI to AA, the reality is that advanced capabilities should *augment*, not replace, less advanced functionality. This study looks at the interaction between BI and AA by probing current-state attitudes and adoption of each, the many common and distinct barriers to success in each, and the need to improve both. Our hypothesis is that viewing the two sets of capabilities through a single lens will bring common pain points and clear recommendations into better focus.



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The silver lining in this report rests in the challenges common to both BI and AA, such as data, leadership, and talent: a rising tide driven by the right investments and strategy should lift all boats across the analytics spectrum.

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Indeed, our hypothesis is strongly supported in this report. Using a survey of mid-market and enterprise-scale companies, we've identified insights that, when coupled with IIA's experience in advising companies in all matters of analytics, lead to specific recommendations for companies at different stages of maturity. The four insights and recommendations are as follows:

- As expected, BI adoption is more prevalent than AA across both mid-market and enterprise companies. This is somewhat expected, and the implication is that **AA requires dedicated attention & focused investment**. AA won't happen organically without its own initiatives.
- For both BI and AA, the biggest measured gaps between importance and performance are in data-related capabilities. The implication is that **orgs must invest deeply in data, data platforms, and data-focused roles to unlock broader capabilities across the full analytics continuum**, not just to support AA.
- For both BI and AA Weak Adopters, predictive analytics & leadership are the top identified gaps. Predictive analytics tells us that companies recognize the ultimate goal and "North Star" of analytics, regardless of where they are currently. Our advice is for companies to **define strategic roadmaps with predictive insight, even if it's in the distance**. The gap in leadership indicates *companies need to take a hard look at who's in place* to shepherd the organization along the analytics path.
- The primary barriers to increasing analytics effectiveness include taking action, finding and retaining talent, improving analytics communication, and proving the value of analytics. This disjointed list of challenges resonates loudly with us at IIA, where we support companies that face an equally broad list of barriers. Ultimately, **companies must develop a truly multifaceted strategy to drive sustained success and value with analytics**. It's not enough to invest just in data or solve recruiting challenges; all ingredients are important.

Of course, these insights and words of advice come with a hefty price tag: competing on analytics requires that organizations take aim at, and invest in, the full analytics spectrum in order to establish differentiating capabilities.



## ABOUT THE RESEARCH

**T**his research, commissioned by SAS® and executed by the International Institute for Analytics™ (IIA), sought to study the relationship between Business Intelligence (BI) and Advanced Analytics (AA) in large organizations, and how end users can forge effective paths to increasing maturity and adoption.





Specifically, the research seeks to identify and understand **current BI and AA adoption**, the current BI environment, capabilities and skillsets, and the presence of self-service capabilities, all while exploring **gaps and barriers** to increasing organizational effectiveness of analytics capabilities.

*The following is a breakdown of survey respondents across company size and revenue:*



COMPANY SIZE		NUMBER OF RESPONDENTS
Mid-market	500 to 4999 employees; with \$50 million to less than \$1 billion in revenue	105
Enterprise	5000+ employees; with \$1 billion or more in revenue	203
<b>Total</b>		<b>308</b>

Results were drawn from 308 survey respondents, who were:

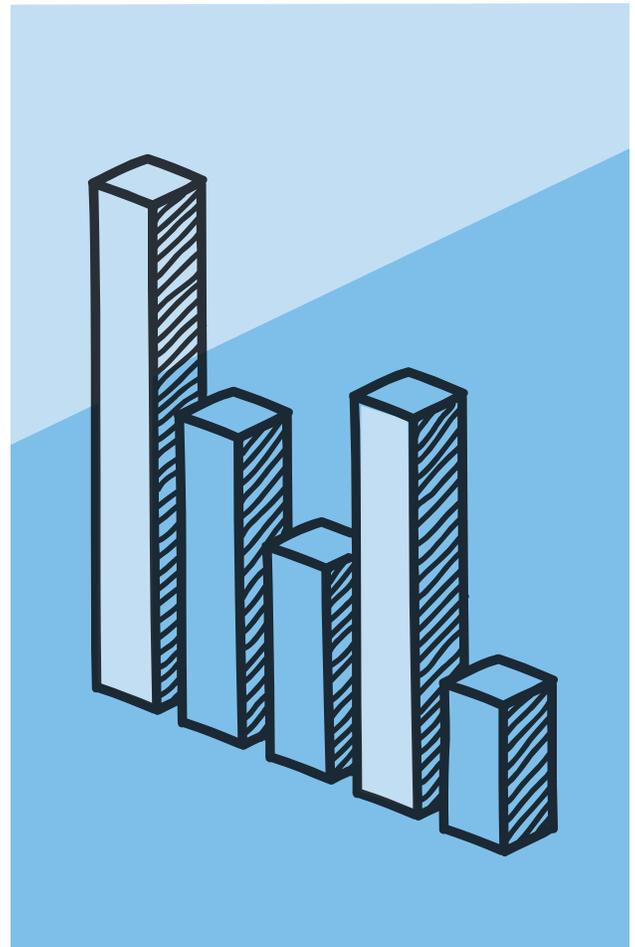
- Employed full-time by a U.S. mid-market (\$50M to \$1B revenue; n=105) or enterprise (>\$1B revenue; n=203) company, across a range of industries,
- Influencers in a BI/AA tool selection and adoption, or users of the BI/AA tool, and
- End-users of the top 10 BI/AA tools like Excel, Oracle, IBM (Cognos, SPSS), BusinessObjects, SAS, Microsoft BI, Tableau, Qlik, Statistica, Tibco/Spotfire, MicroStrategy

Respondents represent a range of industries and functions, including (but not limited to) financial services, banking, insurance, manufacturing, IT/technology, retail, and health care.



For the purposes of this survey, **Advanced Analytics (AA)** is defined as “the analysis of all kinds of data using sophisticated quantitative methods (for example, statistics, descriptive and predictive data mining, simulation and optimization of prescriptive solutions) to produce insights that traditional Business Intelligence – such as query and reporting – are unlikely to discover. Organizations commonly apply Advanced Analytics to data to find opportunities, mitigate risks, product or service innovation, acquire customers, and improve operational effectiveness.”<sup>1</sup>

The term **Business Intelligence (BI)** includes “the reporting of historical and current business data to, for example, produce static reports, respond to *ad hoc* requests, provide for all online analytical processing, supply dashboards of **key enterprise statistics**, and serve other reporting needs.”<sup>2</sup>



## THIS STUDY SEEKS TO PROVIDE ANSWERS TO THE FOLLOWING QUESTIONS:

- 1** Where are organizations at in their **adoption** of **BI** and **AA**, and how do they **execute** the two disciplines?
- 2** How do organizations view their current **BI** and **AA capabilities**, and where are the largest **gaps** between importance and performance?
- 3** What are the key **themes** and **barriers** that hamper adoption of **BI** and **AA**?
- 4** How do organizations plan to **invest** in **BI** and **AA** over the next few years, and which **emerging capabilities** might be implemented?

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<sup>1</sup> Throughout the report, Advanced Analytics will henceforth be referred to as AA.  
<sup>2</sup> Throughout the report, Business Intelligence will henceforth be referred to as BI.



# 1

## ADOPTION AND EXECUTION

**A**s expected, Advanced Analytics lags behind Business Intelligence in terms of usage across an entire organization. This lag is reflected in the differences between several aspects of BI vs. AA adoption, such as criticality to business, recognition of benefits, and utilization in strategy. In addition, organizations strong in their adoption of BI and AA are more likely to have a central IT-led data and analytics environment.





Overall, enterprise organizations appear to be ahead of mid-market firms with respect to BI adoption (Figure 1). Over half of enterprise organizations (52%) stated that BI is used across the entire organization, compared to 34% of mid-market organizations that said the same. However, mid-market firms are more likely to report that BI is used by many areas or is in the process of expanding to all areas of their organization (51% mid-market vs. 38% enterprise).

Advanced Analytics, however, tells a different story. There is not a significant gap in AA adoption between mid-market and enterprise organizations today (Figure 1). Overall, 25% of enterprises use AA across the entire organization in comparison to 23% of mid-market firms.

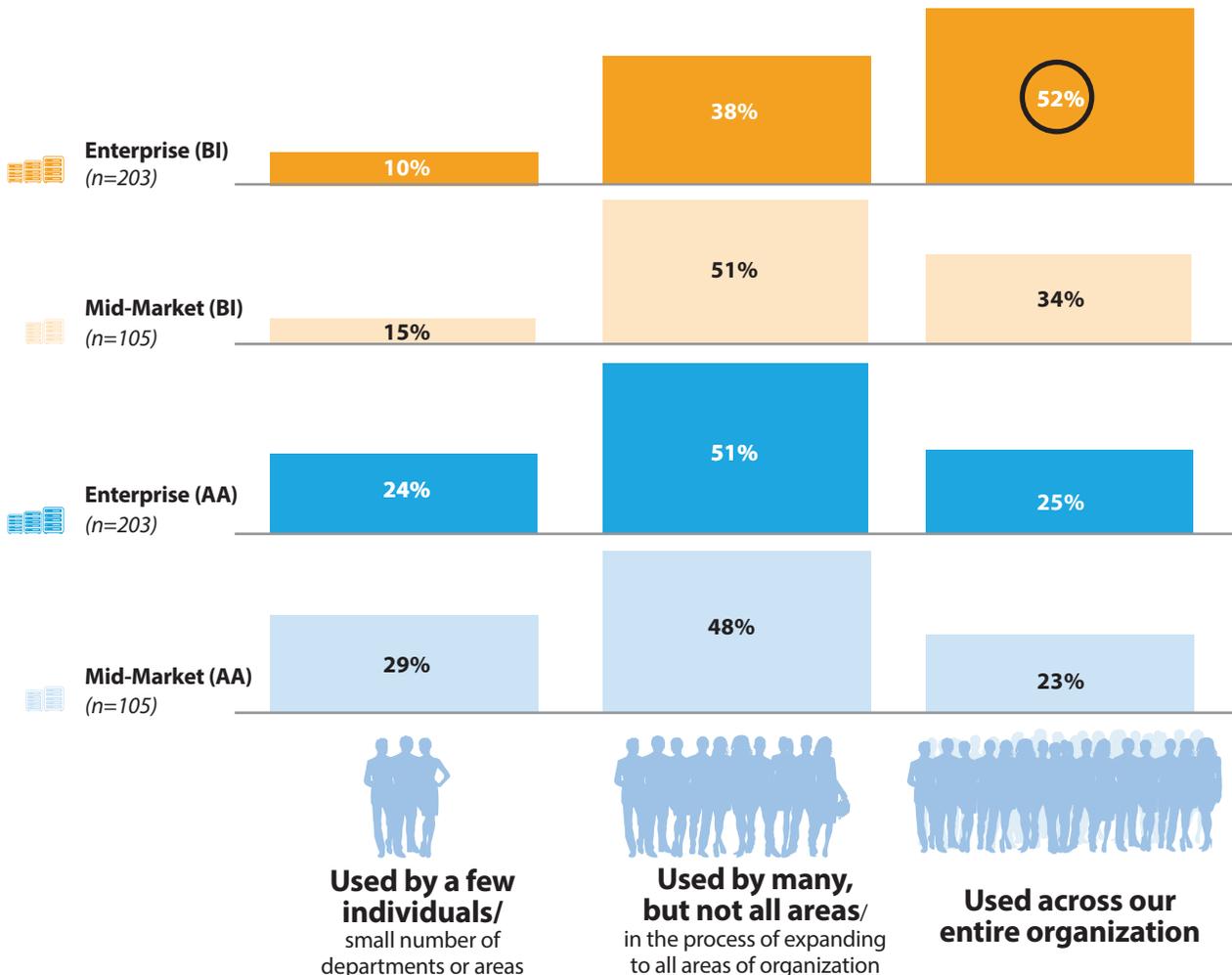


The similarity in AA compared to BI reflects the challenges large enterprises have faced in building broad-based analytics usage, despite the established base of BI capabilities in the organization.



Figure 1

### Use of BI Within Organization



○ Indicates significance at the 95% level

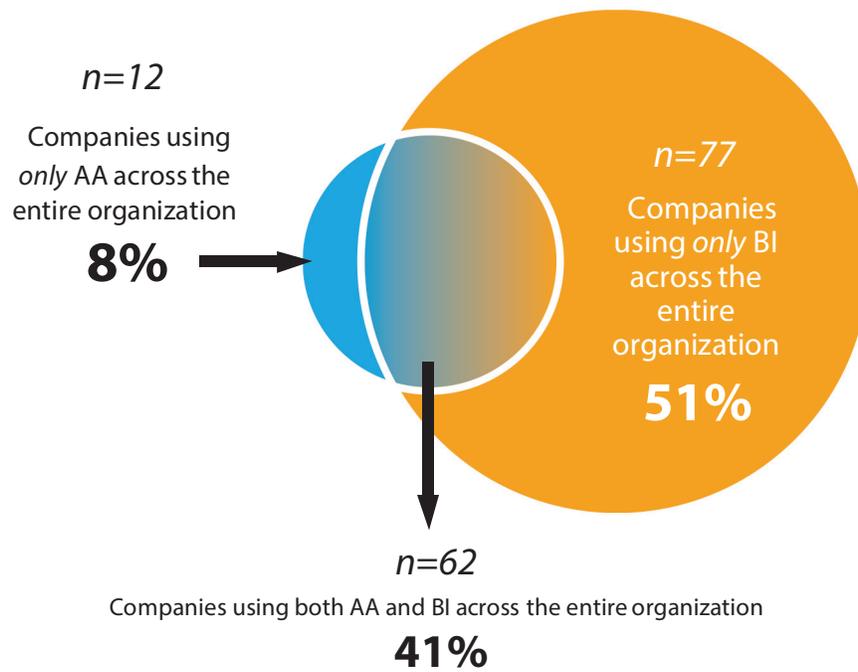
Pearson's Correlation (r) Between BI and AA use across entire organization = 0.432, indicating strong positive correlation



Analyzing BI and AA adoption in conjunction with each other, we see that 41% of all companies that use BI across their entire organization *also* use AA across their entire organization (Figure 2). Consequently, companies that use BI across the entire organization are more likely to implement AA across the entire organization in comparison to other organizations, **indicating the likelihood of common factors such as leadership, IT, and data investments driving the adoption of both.**

Figure 2

### BI/AA Use Across Entire Organization



Throughout this report, we will explore the factors that drive BI and AA adoption, and the barriers to their adoption. We analyzed numerous survey questions by investigating the results in combination with BI and AA adoption, which were each defined as follows:

#### LEVEL OF ADOPTION

##### Strong Adoption

BI (AA) is used across our entire organization

##### Intermediate Adoption

BI (AA) is used by many, but not all areas, or is in the process of expanding to all areas of the organization

##### Weak Adoption

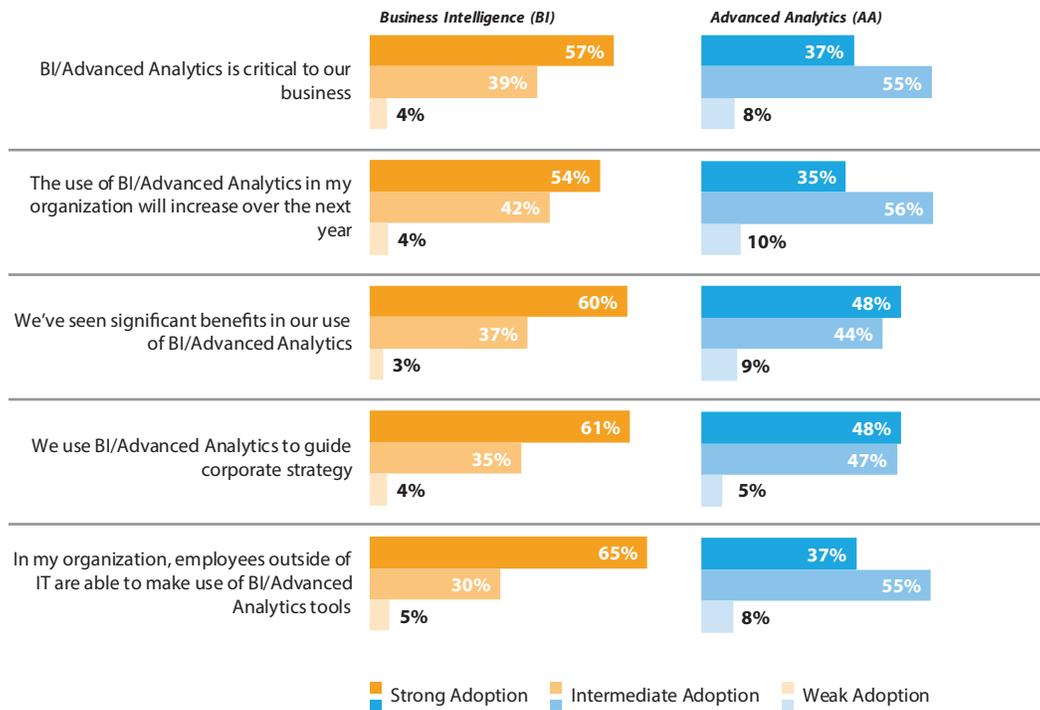
BI (AA) is used by a few individuals or in a small number of areas



First exploring the connection between adoption and criticality, firms strong in their adoption of BI are more likely to indicate strong agreement with all statements related to BI use, growth and role in corporate strategy. In comparison, firms with intermediate levels of BI adoption show a relatively lower level of agreement. Interestingly, companies with intermediate AA adoption are more likely to agree that AA is critical to their business, that its use in their organization will increase over the next year, and that employees outside of IT are able to make use of AA tools, as opposed to firms strong in their adoption of AA. As expected, firms weak in BI and AA adoption showed extremely low levels of agreement with respect to all statements relating to BI/AA use (Figure 3).

Figure 3

### BI/AA Usage and Implementation (% Strongly Agree)



Business Intelligence: Strong Adoption, (n=139); Intermediate Adoption, (n=130); Weak Adoption, (n=34)  
 Advanced Analytics: Strong Adoption, (n=74); Intermediate Adoption, (n=152); Weak Adoption, (n=77)  
 Responses were on a 5 point scale, where 5 = Strongly Agree, 4 = Somewhat Agree, 3 = Neither Agree nor Disagree, 2 = Somewhat Disagree and 1 = Strongly Disagree



For both BI and AA, strong adopters are much more likely to indicate that their centralized IT function led the implementation of data platforms and analytics tools, as opposed to a more decentralized approach where business users introduced them into the organization and IT played more of a supporting role.

**This appears to indicate that the CIO or CTO of an organization must have sufficient influence and/or a mandate to drive enterprise utilization, in order for many business functions within the company to make it a priority.**

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In fact, in firms where Advanced Analytics has strong adoption, more than three-quarters of the BI and AA development is led by IT, reflecting the enabling role that a strong IT organization can have on adoption.

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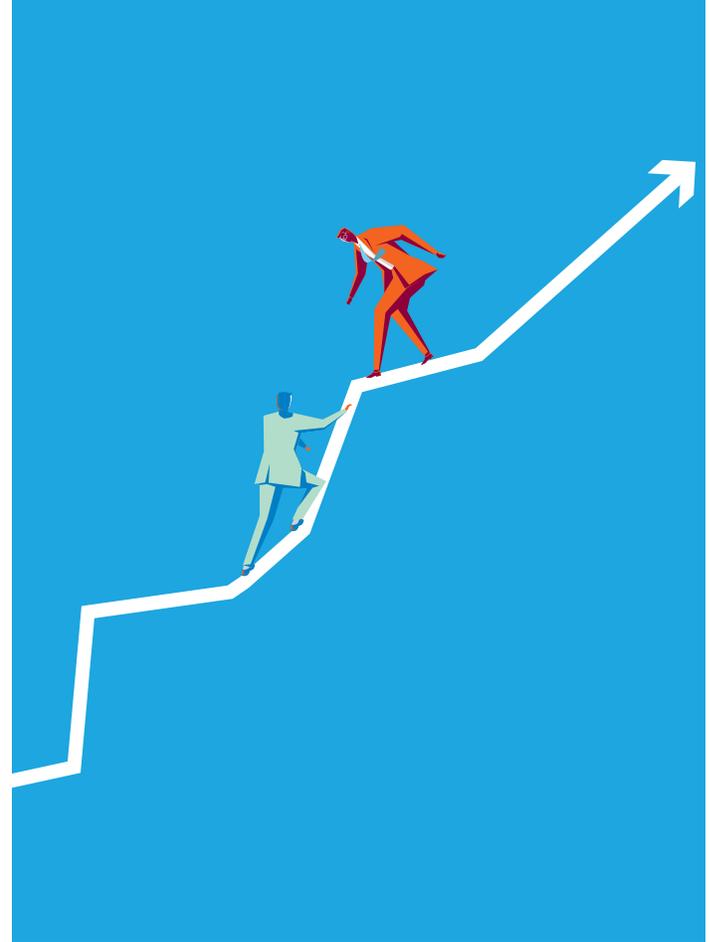


## 2 CAPABILITIES AND GAPS

A

Both enterprises and mid-market firms place a high importance on data-related activities, such as preparing and cleaning data, but believe they are currently ineffective at it. As might be expected, mid-market companies are more likely to have these activities performed by IT rather than self-service.





For every BI and AA attribute tested, there exists an aggregate gap between stated importance and performance, implying that the self-reported effectiveness of each capability was much lower than the stated importance among both mid-market and enterprise firms (Figure 4).

Some of the largest gaps persisted among enterprises: in data-related activities such as filtering and transforming data, preparing and cleaning data, and exploring data to identify causes. Among mid-market firms, visualizing data and building or updating predictive models using machine learning techniques had the greatest gaps.

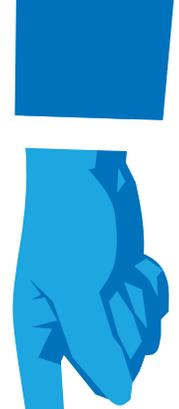
Figure 4

### BI/AA Attributes – Importance vs. Performance

Attributes		IMPORTANCE (Top Box: % Very Important)		PERFORMANCE (Top Box: % Very Effective)		GAP SCORE (= Performance – Importance)	
		Mid-market (n=105)	Enterprise (n=203)	Mid-market (n=105)	Enterprise (n=203)	Mid-market (n=105)	Enterprise (n=203)
BI ATTRIBUTES	Filtering and transforming data	53%	49%	40%	28%	-13%	-21%
	Preparing reports & dashboards	50%	54%	50%	41%	0%	-13%
	Visualizing data in an ad-hoc manner	45%	37%	32%	28%	-13%	-9%
	Preparing and cleaning data	41%	47%	38%	20%	-3%	-27%
	<b>Average Score of BI Attributes</b>	47%	47%	40%	29%	-7%	-18%
AA ATTRIBUTES	Generating large number of forecasts to improve planning	43%	40%	34%	22%	-9%	-18%
	Exploring data to identify root causes or trends	51%	56%	42%	32%	-9%	-24%
	Building and updating predictive models using machine learning techniques	38%	28%	26%	20%	-12%	-8%
	Analyzing unstructured data using text analytics	36%	29%	30%	22%	-6%	-7%
	<b>Average Score of AA Attributes</b>	42%	38%	33%	24%	-9%	-14%

Items highlighted in   indicate gaps where Top Box Importance scores were greater than Top Box Performance Scores by at least 20%

Items highlighted in   indicate gaps where Top Box Importance scores were greater than Top Box Performance Scores by at least 10% but no more than 20%



A deeper look at the data provides more insight into what is critical from a performance perspective. For example, when looking exclusively at the proportion of those who rated a capability as ineffective while also simultaneously rating it to be very important, we see that nearly one-quarter of large enterprises that place a high importance on preparing and cleaning data believed their organizations were ineffective at it. In fact, filtering and transforming data was not as much of a pain point – those that rated it as important appear to have it figured out (Figure 5).

Furthermore, analyzing unstructured data using text analytics emerged as another opportunity. While it scores lower in importance when compared to other attributes, many of those organizations that placed a high value on it also believed they were currently ineffective at it (Figure 5).



Other opportunities include exploring data to identify root causes or trends (among mid-market firms) and generating large numbers of forecasts to improve planning (among enterprise firms). In line with the results observed earlier, this further accentuates the fact that AA is behind BI in adoption as well as performance.

Figure 5

### Opportunity Matrix – % of Those Reporting Ineffectiveness Among Those Who Rated Capability as Very Important

	Attributes	IMPORTANCE (Top Box: % Very Important)		INEFFECTIVENESS AMONG "VERY IMPORTANT" (% Not at all Effective/Somewhat Ineffective/Neither Effective nor Ineffective among those who mentioned "Very Important" for that item)	
		Mid-market	Enterprise	Mid-market	Enterprise
BI ATTRIBUTES	Filtering and transforming data	53%	49%	4% (n=56)	8% (n=98)
	Preparing reports & dashboards	50%	54%	4% (n=52)	6% (n=107)
	Visualizing data in an ad-hoc manner	45%	37%	4% (n=47)	15% (n=74)
	Preparing and cleaning data	41%	47%	5% (n=43)	23% (n=94)
AA ATTRIBUTES	Generating large number of forecasts to improve planning	43%	40%	13% (n=45)	16% (n=79)
	Exploring data to identify root causes or trends	51%	56%	17% (n=54)	13% (n=111)
	Building and updating predictive models using machine learning techniques	38%	28%	13% (n=40)	13% (n=55)
	Analyzing unstructured data using text analytics	36%	29%	16% (n=38)	16% (n=58)

Items circled with ○ indicate % where ineffectiveness was greater than 15% among everyone who rated that capability as "Very Important"



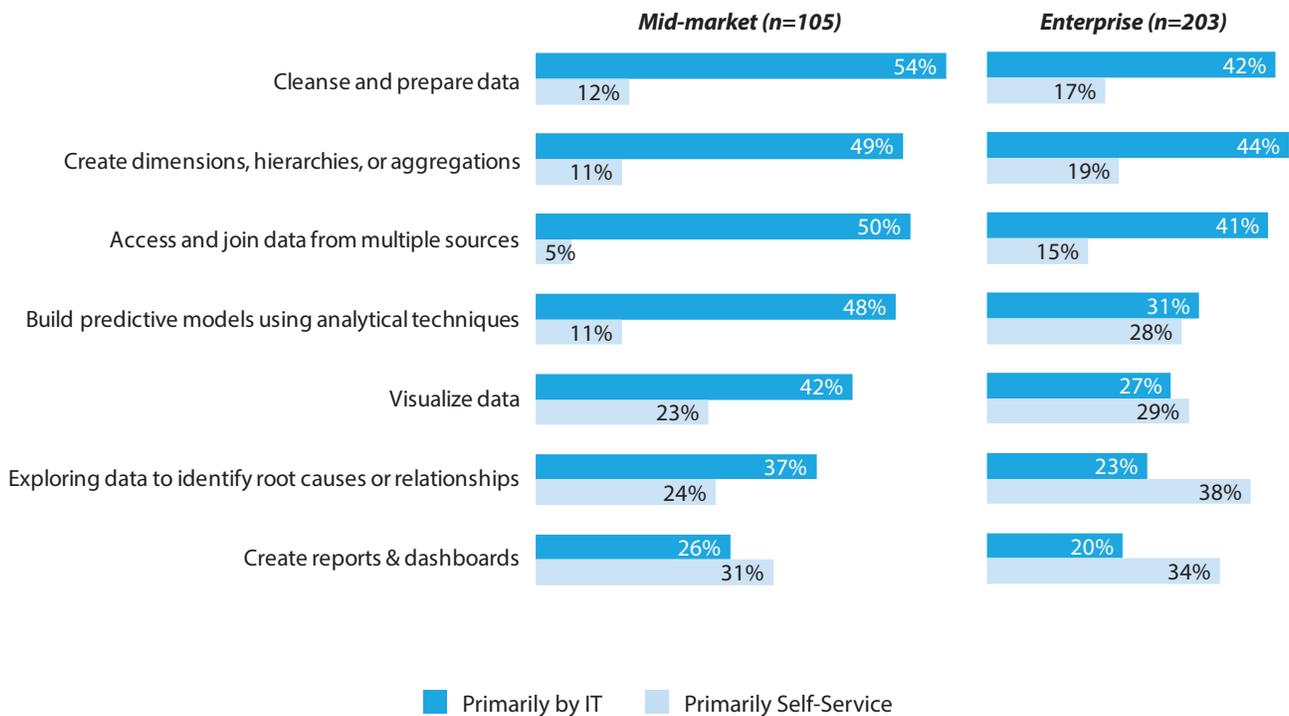
The following data-related activities are more likely to be primarily performed by IT in mid-market companies, compared to enterprises (Figure 6):

- Cleaning and preparing data,
- Visualizing data,
- Exploring data to identify root causes or relationships,
- Building predictive models using analytical techniques, and
- Access and join data from multiple sources.

In contrast, activities such as exploring data to identify root causes or relationships, and building predictive models were more likely to be self-service in enterprise firms than in mid-market firms.

Figure 6

### Performance of BI and AA Activities





**B**

**Companies with weak AA adoption show the biggest gaps in execution of identified important capabilities; in contrast to BI, where lingering gaps persist across all levels of adoption. This highlights the intrinsic challenges of strong BI execution.**

Further examination of perceived importance versus performance by level of adoption yields additional insights for both BI and AA. In the figure below, we see different types of gaps by activity according to the degree of BI adoption (Figure 7).

Those with a strong level of BI adoption feel they are weakest when it comes to preparing and cleaning data, along with generating forecasts to improve planning; intermediate BI adopters are struggling more with filtering and transforming data and exploring data to identify root causes/trends. Weak BI adopters are low performers across the board, with their biggest challenge lying within the gap between importance and performance of preparing reports and dashboards.

Figure 7

**BI/AA Attributes – Importance vs. Performance by BI Adoption**

Business Intelligence (BI)		IMPORTANCE (Top Box: % Very Important)			PERFORMANCE (Top Box: % Very Effective)			GAP SCORE (= Performance – Importance)		
Attributes		Strong BI Adoption	Intermediate BI Adoption	Weak BI Adoption	Strong BI Adoption	Intermediate BI Adoption	Weak BI Adoption	Strong BI Adoption	Intermediate BI Adoption	Weak BI Adoption
		(n=139)	(n=130)	(n=34)	(n=139)	(n=130)	(n=34)	(n=139)	(n=130)	(n=34)
BI ATTRIBUTES	Filtering and transforming data	55%	53%	26%	38%	31%	15%	-17%	-22%	-11%
	Preparing reports & dashboards	55%	52%	44%	52%	43%	15%	-3%	-9%	-29%
	Visualizing data in an ad-hoc manner	43%	42%	21%	37%	26%	12%	-6%	-16%	-9%
	Preparing and cleaning data	56%	40%	21%	32%	25%	6%	-24%	-15%	-15%
	<b>Average Score of BI Attributes</b>	52%	47%	28%	40%	31%	12%	-12%	-16%	-16%
AA ATTRIBUTES	Generating large number of forecasts to improve planning	50%	39%	12%	31%	26%	9%	-19%	-13%	-3%
	Exploring data to identify root causes or trends	60%	55%	29%	45%	32%	12%	-15%	-23%	-17%
	Building and updating predictive models using machine learning techniques	39%	31%	3%	27%	22%	3%	-12%	-9%	0%
	Analyzing unstructured data using text analytics	42%	25%	15%	34%	22%	0%	-8%	-3%	-15%
<b>Average Score of AA Attributes</b>		48%	37%	15%	34%	26%	6%	-14%	-11%	-9%

Items highlighted in   indicate gaps where Top Box Importance scores were greater than Top Box Performance Scores by at least 20%

Items highlighted in   indicate gaps where Top Box Importance scores were greater than Top Box Performance Scores by at least 10% but no more than 20%



Firms strong in AA adoption reported high levels of performance generally, with their greatest challenge being related to filtering and transforming data. In contrast, firms with intermediate and low levels of AA adoption reported lower performance scores across the board leading to higher gap scores on average (Figure 8). **The reduced gap scores for firms with strong AA adoption is impressive and indicates that targeted focus and investments in AA capabilities are succeeding.**

Firms weak in AA adoption provided lower importance and performance ratings overall.

These firms would do well to focus first on improving their capabilities in BI as a whole, along with data exploration, before focusing their efforts on AA.



Figure 8

### BI/AA Attributes – Importance vs. Performance by AA Adoption

Advanced Analytics (AA)		IMPORTANCE (Top Box: % Very Important)			PERFORMANCE (Top Box: % Very Effective)			GAP SCORE (= Performance – Importance)		
Attributes	Strong AA Adoption	Intermediate AA Adoption	Weak AA Adoption	Strong AA Adoption	Intermediate AA Adoption	Weak AA Adoption	Strong AA Adoption	Intermediate AA Adoption	Weak AA Adoption	
	(n=74)	(n=152)	(n=77)	(n=74)	(n=152)	(n=77)	(n=74)	(n=152)	(n=77)	
BI ATTRIBUTES	Filtering and transforming data	69%	47%	40%	58%	26%	21%	-11%	-21%	-19%
	Preparing reports & dashboards	65%	47%	52%	59%	43%	30%	-6%	-4%	-22%
	Visualizing data in an ad-hoc manner	54%	36%	34%	57%	26%	12%	3%	-10%	-22%
	Preparing and cleaning data	57%	45%	34%	50%	20%	14%	-7%	-25%	-20%
	<b>Average Score of BI Attributes</b>	<b>61%</b>	<b>44%</b>	<b>40%</b>	<b>56%</b>	<b>29%</b>	<b>19%</b>	<b>-5%</b>	<b>-15%</b>	<b>-21%</b>
AA ATTRIBUTES	Generating large number of forecasts to improve planning	58%	45%	17%	51%	22%	12%	-7%	-23%	-5%
	Exploring data to identify root causes or trends	62%	53%	49%	58%	36%	14%	-4%	-17%	-35%
	Building and updating predictive models using machine learning techniques	50%	30%	17%	43%	20%	6%	-7%	-10%	-11%
	Analyzing unstructured data using text analytics	54%	30%	14%	59%	20%	3%	5%	-10%	-11%
	<b>Average Score of AA Attributes</b>	<b>56%</b>	<b>39%</b>	<b>24%</b>	<b>53%</b>	<b>24%</b>	<b>9%</b>	<b>-3%</b>	<b>-15%</b>	<b>-15%</b>

Items highlighted in orange indicate gaps where Top Box Importance scores were greater than Top Box Performance Scores by at least 20%

Items highlighted in light orange indicate gaps where Top Box Importance scores were greater than Top Box Performance Scores by at least 10% but no more than 20%



### Top perceived organizational weaknesses are the ability to incorporate predictive analytics, model building, and leadership.

To explore the drivers of the observed gaps between importance and performance, respondents selected up to five of their biggest problem areas in their organization, from a set of skills related to BI and AA. Stated challenges varied, with no more than about one-third of respondents selecting a given skillset as one of their top five hurdles. Interestingly, predictive

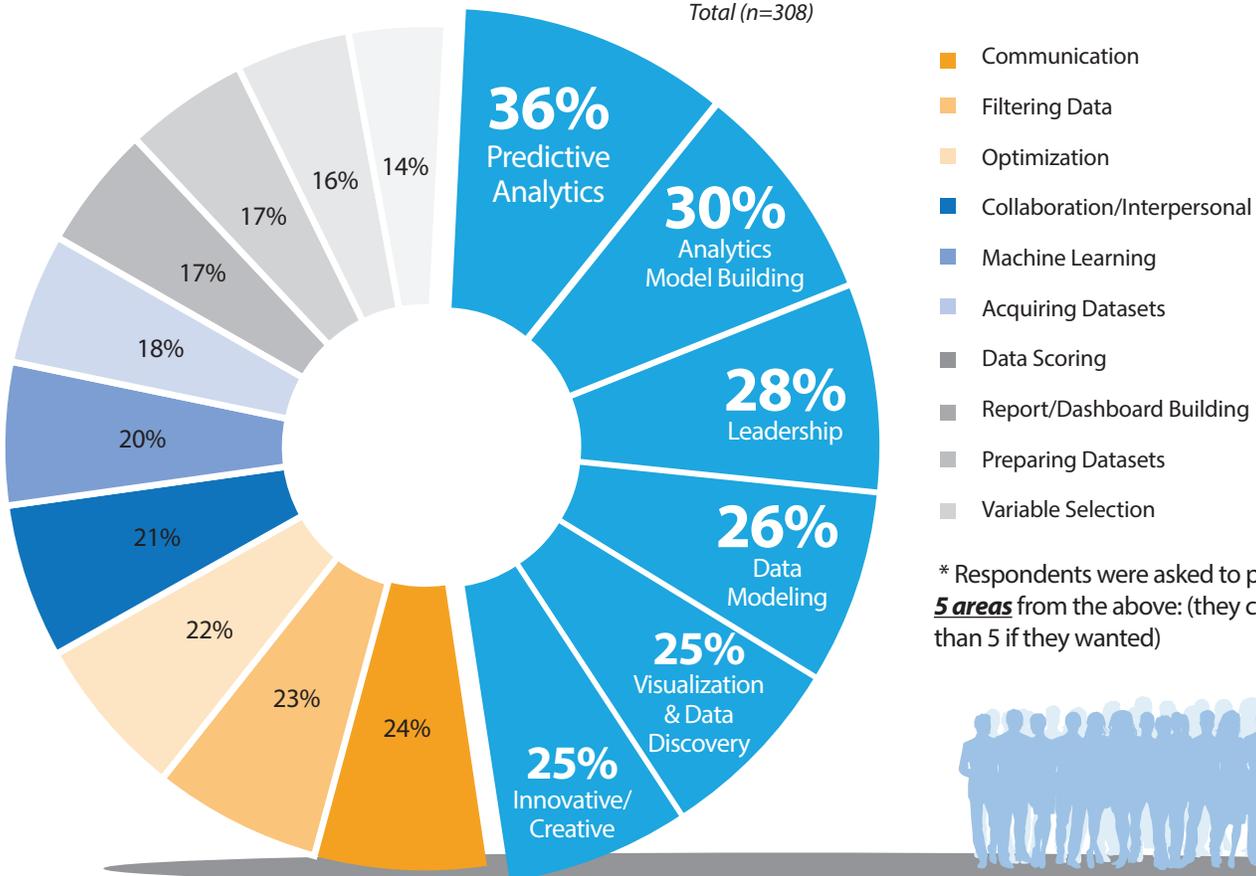


analytics represented a notable challenge across all types of organizations, regardless of their adoption of either BI or AA (Figure 9).

Figure 9

### Biggest Stated Challenges in BI/AA Skillsets (Across All Organizations)

Total (n=308)



\* Respondents were asked to pick **no more than 5 areas** from the above: (they could pick less than 5 if they wanted)



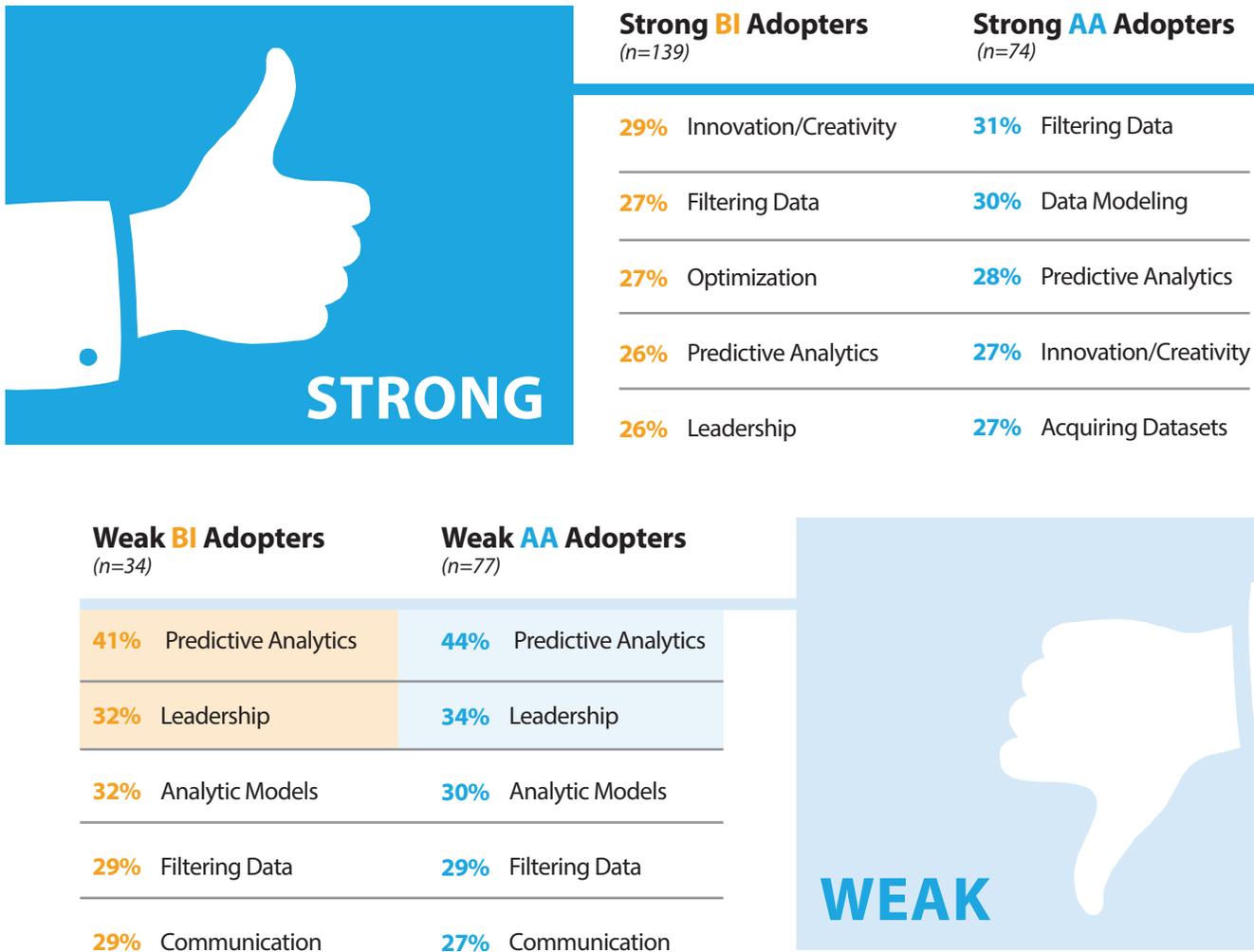


Differences in challenges by level of adoption might provide insight into common problem areas. Top challenges for Strong Adopters are generally spread evenly across both organizational aspects (such as innovation/creativity and leadership) and specific in-house skillsets (such as filtering data). On the other hand, Weak Adopters indicate much higher levels for pain in relation to predictive analytics and leadership. This observation is consistent for both BI and AA Weak Adopters (Figure 10).

The consistency in identified challenges between Weak BI Adopters and Weak AA Adopters tells two stories, both of which are heartening to us. **First, predictive analytics at the top of the list tells us that the “North Star” of analytics maturity is in sight for these firms, even if it is likely in the distance with other challenges to navigate. Second, the identification of leadership as a challenge common to both BI and AA Weak Adopters points to executive support as an opportunity that will benefit both sets of capabilities.**

Figure 10

### Top 5 Stated Challenges in BI/AA Skillsets





### 3 OBSTACLES TO BI/AA ADOPTION

The most significant barrier to increasing Advanced Analytics capabilities for both mid-market and large enterprises has been the difficulty of turning analytical insights into action.





This is closely followed by a corresponding lack of appropriate or skilled analytical talent (Figure 11).

Enterprise organizations indicated more pain points in general; in particular, data quality, preparation, and governance concerns were significantly bigger barriers among enterprises than among mid-market firms, followed by current IT infrastructure limitations.

Figure 11

### Barriers to Increasing Organization Effectiveness of AA Capabilities (% Rated as "Significant" Barrier\*)



○ Indicates significance at the 95% level

■ Mid-market  
(n=105)

■ Enterprise  
(n=203)

\*Barriers measured on a 5-point scale where 1 = not a barrier, and 5 = significant barrier. The % mentioned above combine those who rated a "4" and a "5". The above barriers represent all barriers that were tested in the survey.



There are significant differences in barriers between companies strong in BI adoption and those that are behind on the BI adoption curve. The latter are considerably more likely to cite organizational culture barriers (62% “significant barrier”) and lack of support from senior management (50%). This is in line with earlier observations regarding gaps in capabilities such as leadership. In contrast, the former are more likely to cite barriers related to data quality and governance (54%) (Figure 12).

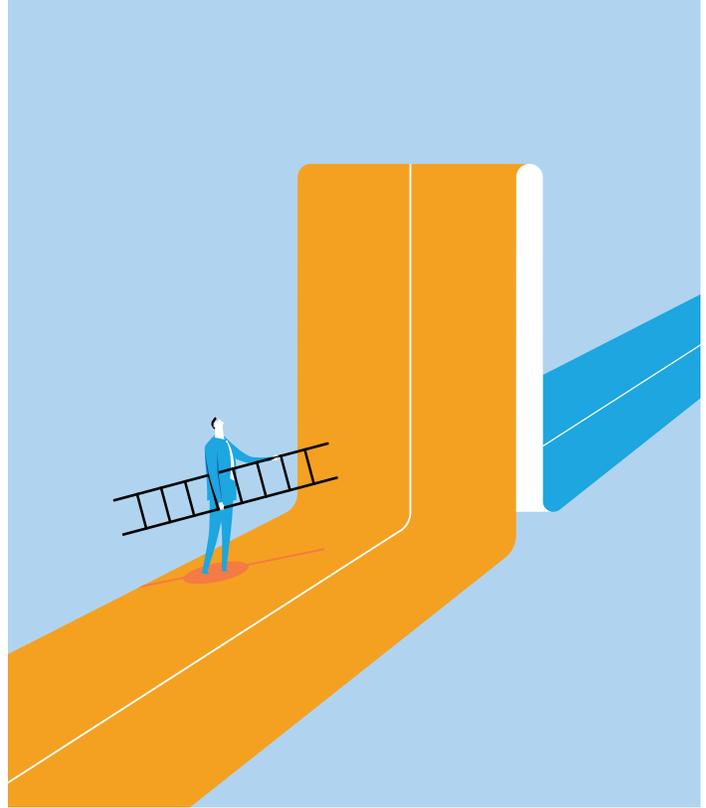
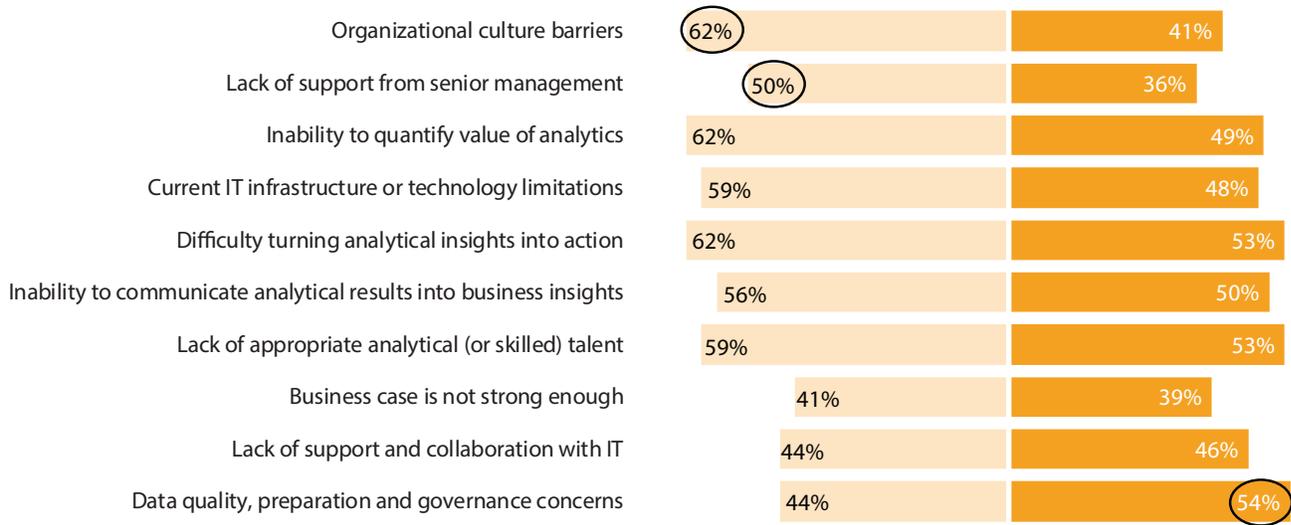


Figure 12

### Barriers to Increasing Organization Effectiveness of AA Capabilities – By BI Use (% Rated as “Significant” Barrier\*)



○ Indicates significance at the 95% level

■ BI Strong Adoption (n=139)

■ BI Weak Adoption (n=34)

\*Barriers measured on a 5-point scale where 1 = not a barrier, and 5 = significant barrier. The % mentioned above combine those who rated a “4” and a “5”



# 4

## INVESTMENTS AND PRIORITIES

There is significant enthusiasm among organizations to continue investing in AA over the next two years. But, while organizations are receptive to consider implementing AA capabilities that may be offered in the future, they foresee challenges.





Organizations that anticipated increasing AA investment (50%) are considerably more likely to rate a scarcity of analytical talent and data governance concerns as bigger barriers than organizations that expect to maintain the same level of investment (Figure 13). These may be the areas where those additional investment dollars will eventually be spent.

Figure 13

### Barriers to Increasing Organization Effectiveness of AA Capabilities – By Potential Investment Over Next 24 Months (% Rated as “Significant” Barrier\*)



○ Indicates significance at the 95% level

\*Barriers measured on a 5-point scale where 1 = not a barrier, and 5 = significant barrier. The % mentioned above combine those who rated a “4” and a “5”

■ Increase investment in advanced analytics (n=151)

■ About the same level of investment in advanced analytics (n=142)

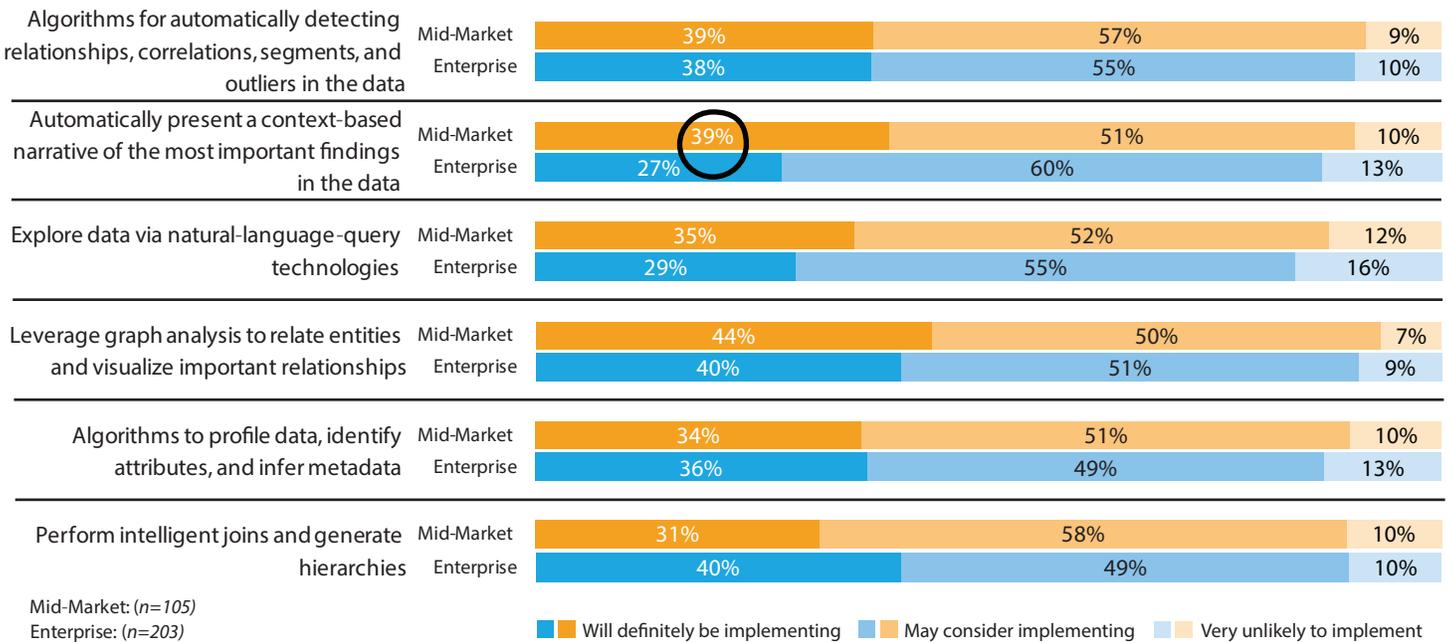


When considering AA capabilities that may be offered in the future, at least half of all organizations reported a willingness to consider implementing each capability in the next 2 to 3 years. About 40% of all enterprises mentioned that they would definitely be implementing the capabilities to perform intelligent joins and generate hierarchies, as well as leverage graph analysis to relate entities and visualize important relationships.

The latter capability also received definite support from 44% of mid-market companies. Otherwise, a higher proportion of mid-market firms (39%) than enterprises (27%) reported that they would definitely implement a capability to automatically present context-based narratives of the most important findings in the data (Figure 14).

Figure 14

### Implementation Possibilities of AA Capabilities Over Next 2 to 3 Years



○ Indicates significance at the 95% level



Overall, organizations that expected to increase their AA investment reported being more likely to “definitely implement” the following capabilities (Figure 15):

- Leveraging graph analysis to relate entities and visualize important relationships;
- Algorithms profiling data, identifying attributes, and inferring metadata; and
- Performing intelligent joins and generating hierarchies.

Figure 15

COLUMN %	We will definitely be implementing this capability in the next 2 to 3 years		
	TOTAL	About the same level of investment in AA	Increased investment in AA
	(n=303)	(n=142)	(n=151)
Algorithms for automatically detecting relationships, correlations, segments, and outliers in the data	35%	30%	42%
Automatically present a context-based narrative of the most important findings in the data	31%	25%	37%
Explore data via natural-language-query technologies	31%	28%	34%
Leverage graph analysis to relate entities and visualize important relationships	42%	33% ↓	51% ↑
Algorithms to profile data, identify attributes, and infer metadata	38%	24% ↓	52% ↑
Perform intelligent joins and generate hierarchies	37%	27% ↓	45% ↑

Cells with ▲ indicate that the % is significantly higher than the respective cells with a ▼ in the same row at the 95% level



## INSIGHTS AND RECOMMENDED ACTIONS

**T**he findings in this report lead us to specific recommendations, all with the goal of improving the adoption and performance of Business Intelligence and Advanced Analytics capabilities.





## OUR FIVE SPECIFIC RECOMMENDATIONS ARE SUMMARIZED BELOW:

1

**Advanced Analytics requires continued dedicated attention and investment for all organizations.** The increased prevalence of BI capabilities indicates that there are still maturity and adoption gaps between BI and AA that won't be closed without AA having its own dedicated strategy and investment.

2

**Invest in data, data platforms, and data-focused roles to unlock broader capabilities across the full analytics continuum.** The data-related challenges common to both BI and AA speak to both the need for focused attention, and the leveraged benefit of doing so.

3

**Organizations recognize the ultimate goal of analytics, so define the strategic roadmap with predictive analytics in sight.** For both BI and AA Weak Adopters, predictive analytics is the top identified gap, which tells us that companies see the "North Star" maturity goal of an analytics program, even if it's down the road.

4

**Nurture leadership support.** As another commonly expressed barrier, strong leadership and strong support are clearly essential to bolstering an analytics program. It cannot be overstated how key this is.



5

**Develop a multifaceted strategy to drive success with analytics.** The wide variety of barriers to analytics effectiveness expressed by respondents, including talent, taking action, communication, and measurement of value from analytics, reflects the complex world that analytics practitioners and leaders face. The path to strong capabilities also must reflect this complexity with a thoughtful, integrated strategy.





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