

Advanced Analytics & Big Data Adoption Report

Authored by:



INTERNATIONAL
INSTITUTE FOR
ANALYTICS.

Executive Summary

The last decade has ushered in tremendous changes and challenges for businesses.

CEOs juggle business models, strategies and technologies constantly, trying to keep their firms ahead. The penalty for poor decisions is enormous. In response, resourceful firms are building capabilities to control large amounts of data and apply advanced analytics to make sound decisions and set the right course forward.

Research conducted by the International Institute for Analytics (IIA) and sponsored by Dell, shows that advanced analytics, defined as predictive and prescriptive analytics rather than simple reporting, is increasingly being adopted by both mid-market organizations and large¹ enterprises in an effort to gain a competitive advantage in their markets. Across all firms contacted for this research study, 71% indicated their company is actively using, or has near-term plans to use, even the simplest forms of analytics in everyday decision-making (which compares favorably against observations in prior years). When it comes to Big Data², however, only 1 in 5 companies utilizing advanced analytics report actually utilizing high volume or high velocity data commonly associated with Big Data. Instead, the majority of firms seem to have their hands full with their own internal, “small” data.

71%
OF FIRMS

ACTIVELY use analytics in **everyday decision-making**, or have plans to do so in the near future.

Only
1-in-5

Companies utilizing advanced analytics report actually utilizing high volume or high velocity data commonly associated with Big Data.

1 Defined as firms with 5,000 or more employees

2 Techniques used to manage “volumes of data that are unusually large, or types of data that are unstructured.” Thomas H. Davenport and Jinho Kim, *Keeping Up with the Quants* (Harvard Business School Publishing Corporation, 2013)

EVIDENCE OF RISING ADOPTION OF ANALYTICS INSIDE FIRMS IS BASED ON THESE RESEARCH FINDINGS:

- Interest is being shown from a variety of key internal business leaders in the assessment and development of an organization's analytical capabilities, including executive management, line of business leaders, and analytics/IT personnel. Specifically among large enterprises, respondents reported that 72% of CIOs and 32% of CEOs showed interest, rising to 41% of CEO's at mid-market firms,
- A positive outlook on how analytics can be used to gain a competitive advantage, or as a critical driver of operational improvement. Nearly all respondents believe advanced analytics is of strategic importance to their organization, and 23% went as far as to cite advanced analytics as the "essence of our strategic vision,"
- A significant level of spending dedicated to building analytics programs with two-thirds of large enterprises investing \$500,000 or more.



WITH THIS OPTIMISM, HOWEVER, COMES A BELIEF AMONG RESPONDENTS THAT THERE IS STILL CONSIDERABLE ROOM TO ADVANCE MATURITY.



- Only 5% of adopters believe they have achieved the highest level of analytical maturity. 57% rate their maturity as medium, or low.
- Among industries surveyed, financial services firms are the most confident in their abilities, with 46% rating their maturity high or highest
- Additionally, while close to half all respondents report utilizing basic analytical tools (spreadsheets), far fewer are utilizing sophisticated, advanced analytics tools (data mining, predictive modeling software) in their environments.



DESPITE THE MEDIA ATTENTION BEING GIVEN TO BIG DATA, WHOLESALE ADOPTION SEEMS TO BE LIMITED TO A MINORITY OF FIRMS.

As observed with the types of BI/analytics tools being used today, a review of both the tools currently used to manage Big Data and the types of data being captured with Big Data solutions reveal some disparity between how an average end-user organization understands/classifies their needs, compared with what the technology industry can provide and what more mature businesses are achieving in this space.

- Similar to the findings related to analytics adoption, half of respondents reported capturing basic data types like customer satisfaction and purchase/transaction data, with just 20% reporting capturing high-volume, unstructured data like sensor and click stream data.
- General agreement that Big Data can be leveraged to gain a competitive advantage in the future, only half of the survey respondents (users of advanced analytics) either have implemented, or are in the process of implementing, Big Data solutions today. The rest either do not see a need for Big Data, or recognize a need, but have not yet made an investment.
- Tools currently used to manage Big Data and the types of data being captured reveal some disparity in how the average end user understands/classifies their needs compared with more mature businesses

While there is general agreement that Big Data can be leveraged to gain a competitive advantage in the future, only half of the survey respondents (users of advanced analytics) either have implemented, or are in the process of implementing, Big Data solutions today. The rest either do not see a need for Big Data, or recognize a need, but have not yet made an investment.

Across analytics and data management, the research findings point to an inflection point of action among firms from all industries who see the value of data and analytics, are investing in capabilities, but still have work ahead to operationalize a standalone capability.

In addition, the findings highlight an opportunity for solution providers to fine-tune their messaging to illustrate the upper bounds of what advanced analytics can do for today's aspiring businesses, and how and when Big Data can be harnessed to help firms create sustainable advantages in their markets.



Detailed Analysis





1

Advanced analytics is of Strategic Importance, But there is Room to Mature Capabilities

[IT/Analytics decision makers are more likely to rate analytics as universally important within the organization than business decision makers.]

Ninety-eight percent of companies that have invested in developing an analytics program to assist with decision-making believe advanced analytics is of strategic importance to their organization. In fact, nearly a quarter (23%) describe their organization's attitude towards advanced analytics to be "the essence of our strategic vision."

IT/Analytics decision makers are more likely to rate analytics as universally important within the organization than business decision makers. However, more than two-thirds of department heads also rate advanced analytics as either the essence of their organization’s strategic vision, or as an important part of strategy along with other factors.

IMPORTANCE OF ADVANCED ANALYTICS

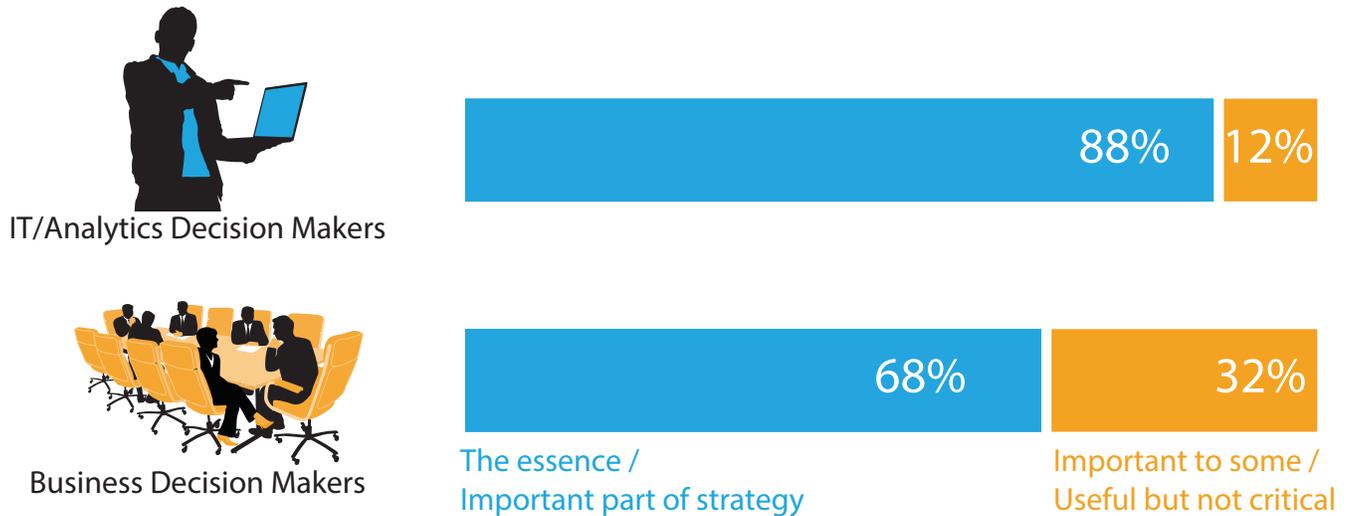


Figure 1

ADVANCED ANALYTICS PROGRAM ADDITIONAL UNDERLYING INDICATORS

1

Involvement of C-level stakeholders within the needs assessment and development of an organization’s analytics capabilities

2

Level of spending dedicated to analytics

3

Positive outlook on analytics for future competitive advantage and as a critical component in operations



We now examine each of these indicators one-by-one.

1 Involvement of C-Level Stakeholders

Respondents indicate a variety of key stakeholders are involved in the assessment and development of their organization’s analytical capabilities and needs. CIOs are the most commonly involved, followed by different departmental business decision makers.

% STAKEHOLDERS INVOLVED IN ASSESSING/ DEVELOPING ANALYTICAL CAPABILITIES

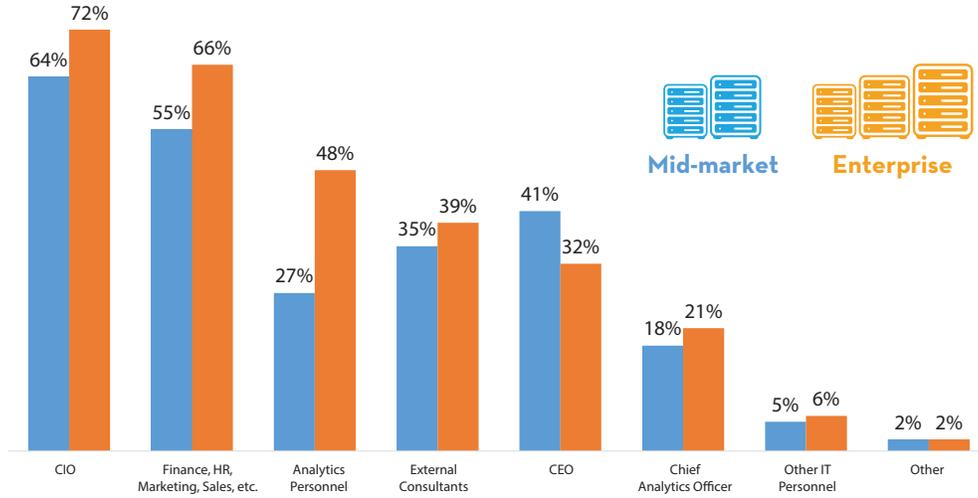


Figure 2

In fact, the presence of multiple C-suite executives and department heads — versus lower-level analytics personnel and external consultants — further underscores the importance organizations place on the creation of a successful analytics program.

2 Level of spending dedicated to analytics

Relative to company size, organizations who have/are currently implementing an analytics program are willing to invest a significant amount into their analytics program. Two-thirds of mid-market organizations are investing over \$100,000 this year, while nearly the same proportion of enterprise organizations are investing \$500,000 or more.

ANALYTICAL SPENDING BY ORGANIZATION TYPE



Figure 3



Approximately one-third of respondents strongly agree that advanced analytics plays a critical role in their operations, or that they expect to gain a competitive advantage in the future due to successful data mining. Nearly two-thirds strongly disagree that analytics is just a fad, highlighting the increasing adoption and tangible business benefits that have been realized through analytics.

ATTITUDES TOWARDS ADVANCED ANALYTICS

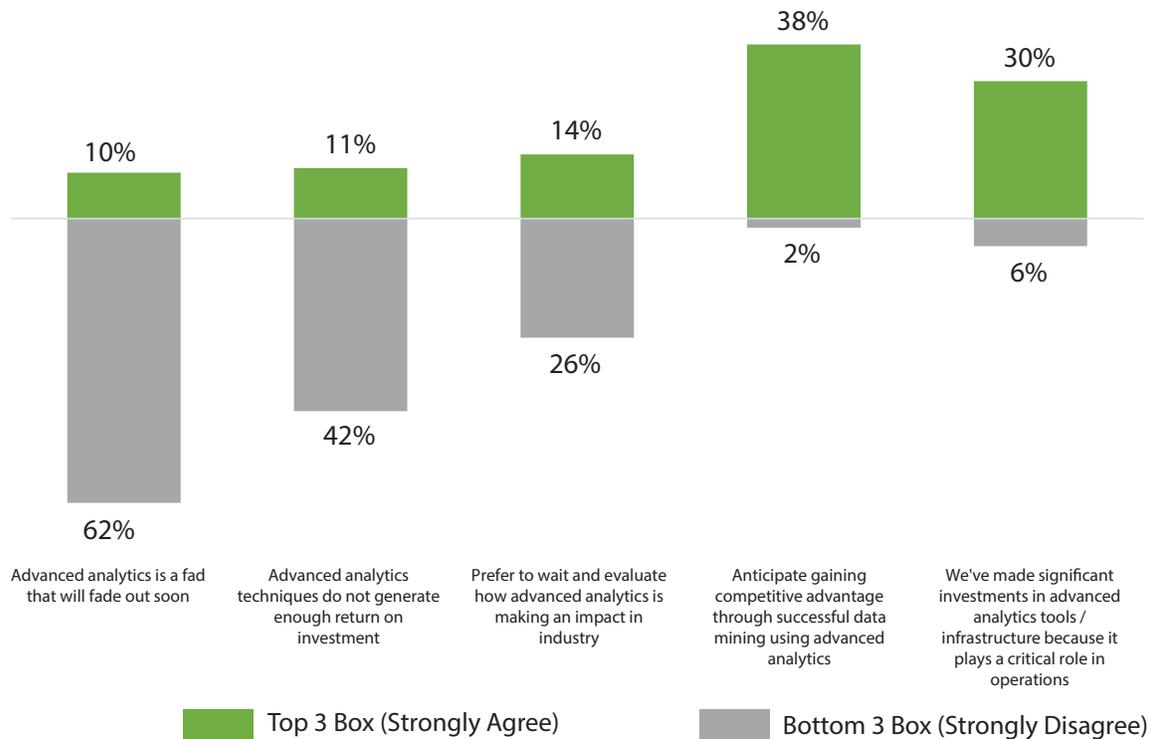


Figure 4

Mid-market organizations are a bit more likely than enterprises to agree that they prefer to “wait and see” how analytics makes an impact on their industry (20% strongly agree, as opposed to 10% of enterprise decision-makers).



Most indicate there is still room for them to advance their firm's maturity level.



While a well-developed analytics program is perceived to be strategically important, most indicate there is still room for them to advance their firm's maturity level. On a self-rating scale from 0 to 5, where 5 represents the "Highest" level of maturity, most (>80%) rate themselves a 3 or 4 (medium/high). Just 5% believe to have already achieved the highest level of maturity.

Not surprisingly, enterprise organizations perceive their maturity level to be a bit higher than mid-market firms do.

ANALYTICAL MATURITY BY ORGANIZATION TYPE

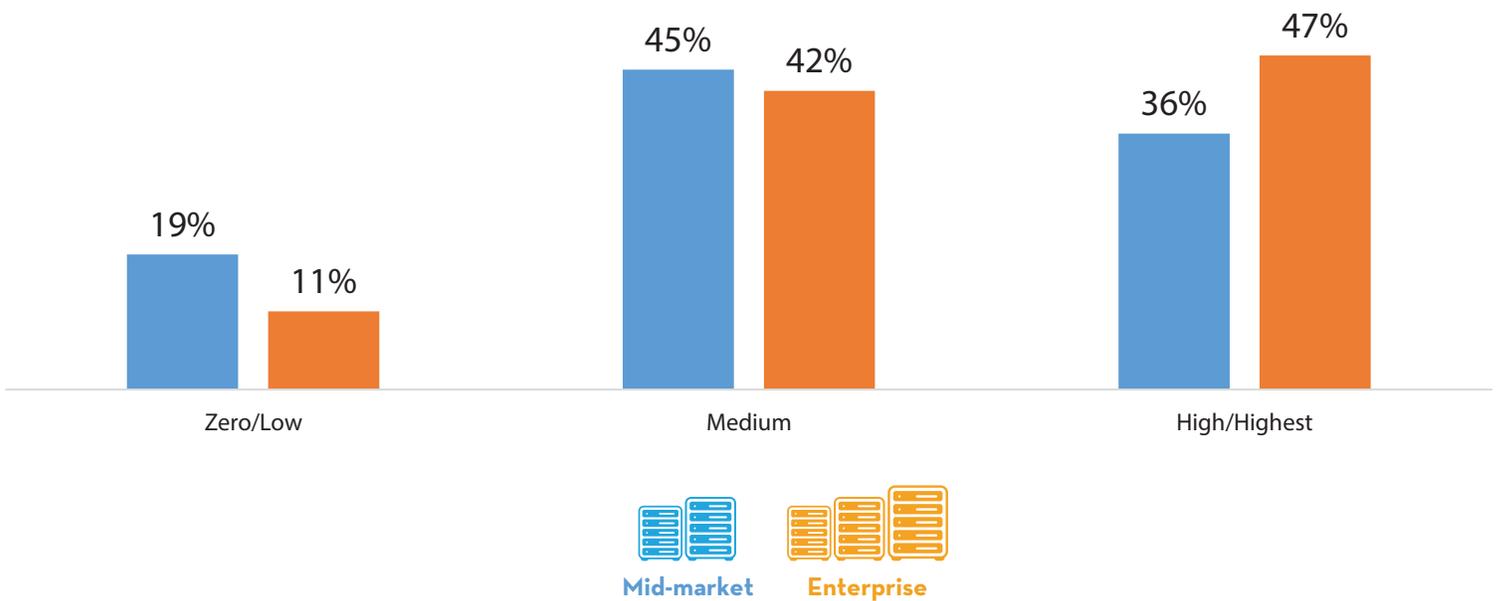


Figure 5



The degree of maturity is correlated with having more senior-level executives involved in developing their analytics program. Organizations with a high degree of perceived analytical maturity are more likely to have a Chief Analytics Officer involved (29%), and nearly ½ indicate their CEO is involved in the funding/development decision. On the flip side, those with a low degree of maturity are less likely to have C-suite executives involved in the development of their analytics capability and they are also less likely to have analytics personnel involved. The decision is driven more by business decision makers and external consultants.

% STAKEHOLDERS INVOLVED BY ANALYTICAL MATURITY

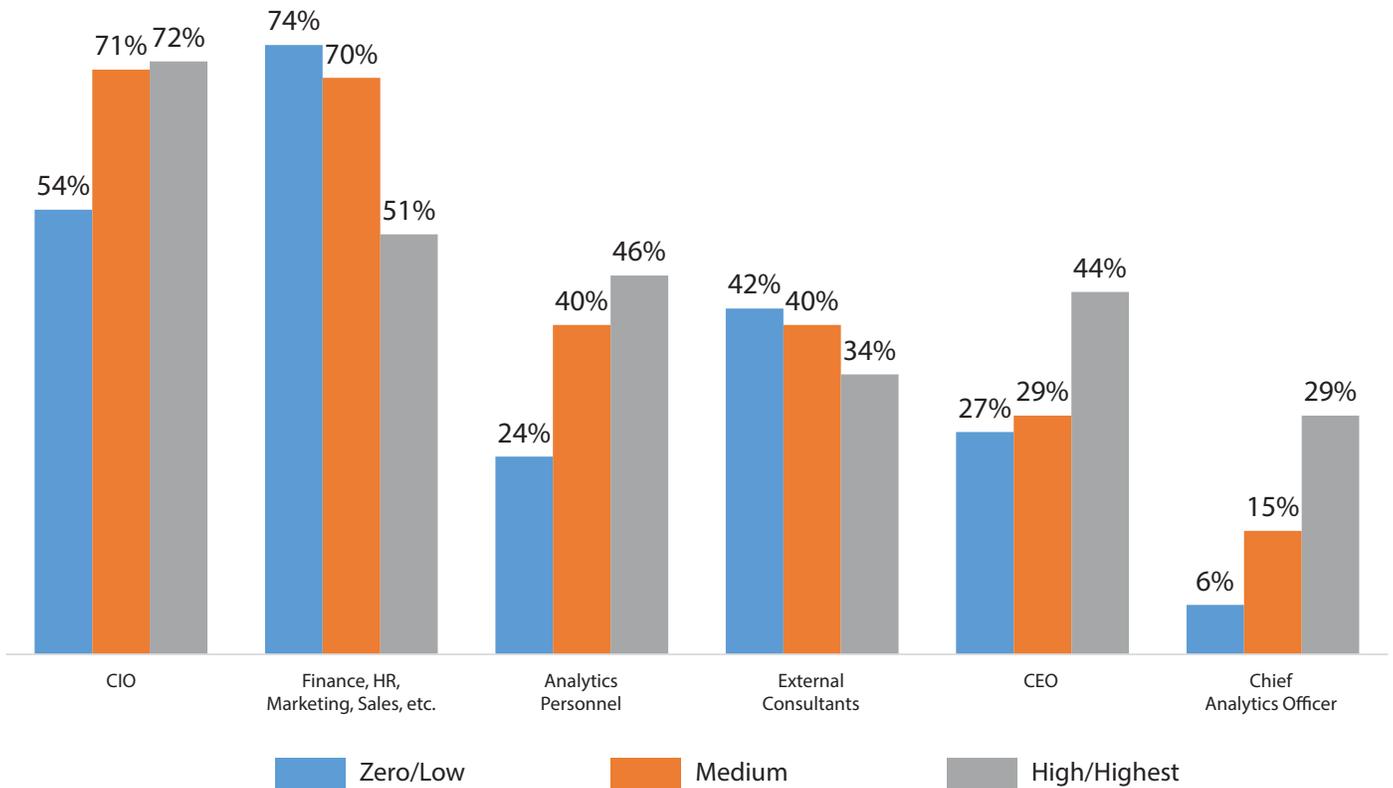
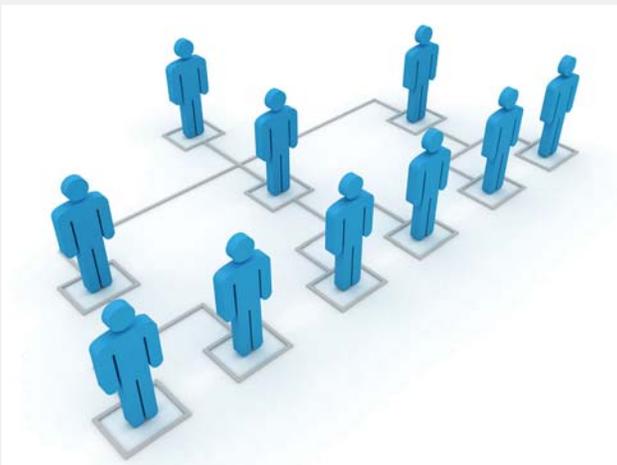


Figure 6



The degree of maturity is correlated with having more senior-level executives involved in developing their analytics program.

Respondents indicate using advanced analytics for a variety of types of tasks, with nearly half indicating they use advanced analytics to analyze their firm’s financial performance, and about four-in-ten mentioning differing tasks that involve customer recruitment/retention/loyalty programs and product usage habits.

Tasks that are not as likely to require advanced analytics include call center optimization, developing feature/service improvements, supply chain management (rather than optimization), or sales and advertising activities.

USE OF ADVANCED VS. BASIC ANALYTICS TO SUPPORT SPECIFIC TASKS

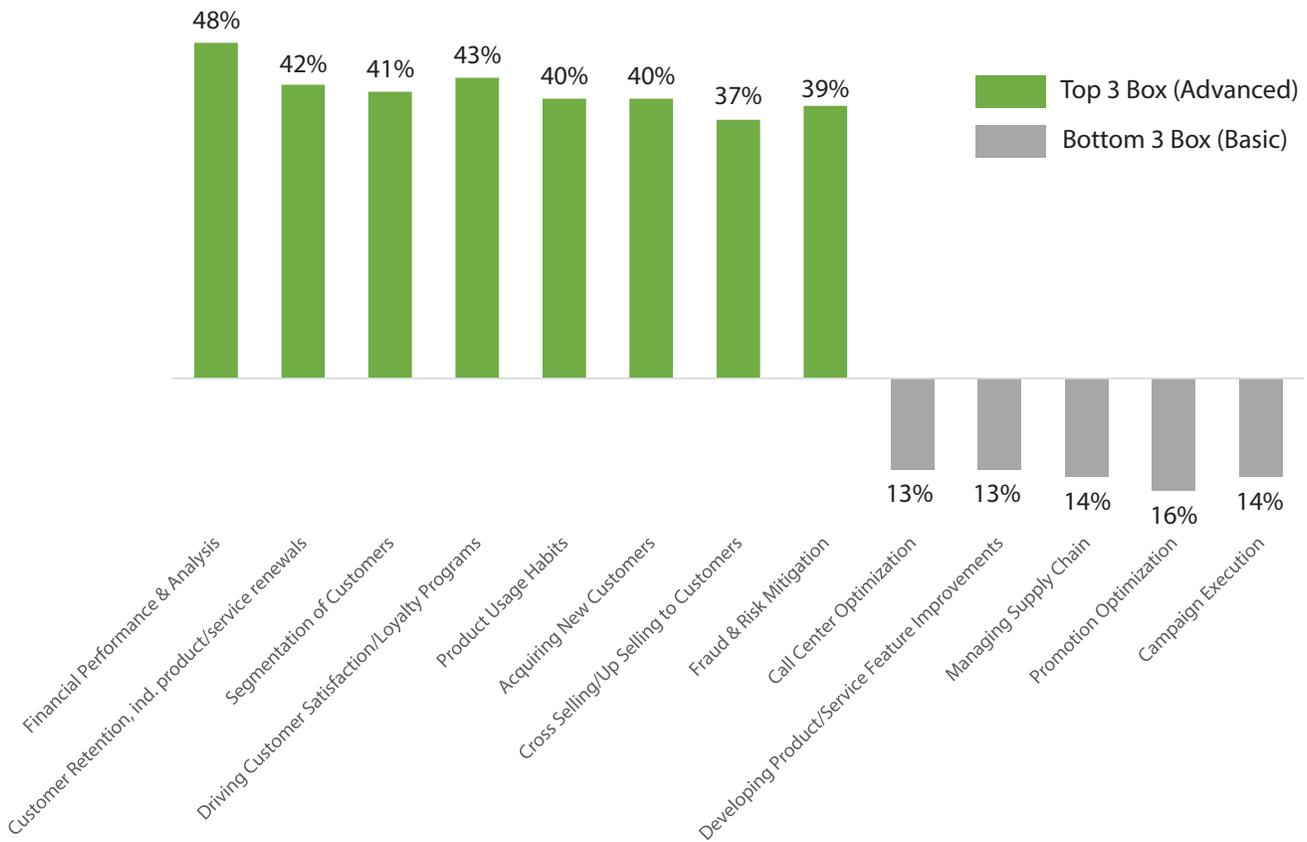


Figure 7





2

Big Data, on the other hand, is in a relative holding pattern compared with advanced analytics

Half of survey respondents either have implemented, or are in the process of implementing, Big Data solutions today. The remainder either do not have a need for Big Data, or recognize a need, but have not yet made an investment. Not surprisingly, enterprise organizations are more invested in Big Data than their mid-market counterparts.

As with advanced analytics, Big Data is not considered to be a passing fad, nor would most respondents prefer to stay on the sidelines. There is general agreement that Big Data can be leveraged to gain a competitive advantage in the future (one-third strongly agree), and the return on investment is not perceived to be a barrier to investment. Yet, just over one-quarter strongly agree that they've made significant investments in Big Data infrastructure, due to the critical role Big Data plays in their operations.

ATTITUDES TOWARD BIG DATA

54% Disagree that Big Data is a fad that will fade out soon

41% Do NOT prefer to stay on the sidelines of the Big Data revolution for now

40% Disagree that Big Data does not generate enough return on investment to make it worthwhile

28% We've made significant investments in Big Data tools / infrastructure

33% Anticipate gaining competitive advantage through successful mining of Big Data



THE PATH FORWARD

The quantitative findings presented here support the mounting anecdotal evidence that mid-market and enterprise firms increasingly view their data and analytics capabilities as a top strategic priority. The key success factors of high performers include executive leadership buy-in and support, investment in advanced analytics software and capabilities, and utilization of increasingly more complex and sophisticated data sources.

But, while interest and activity is high, self-reported maturity among the majority of firms is still relatively low as evidenced by general reliance on basic reporting tools, simple forms of quantitative analysis and rudimentary, internal data sources. Although the idea of analytics has been around for decades, the quantifiable return as measured by operating efficiencies and entry into new markets is only now coming into focus.

For end-user firms, a central ingredient of high performance going forward will be how well data assets are captured and managed, and then converted to high-quality insights and decisions through advanced analytics. The time to “wait and see” has now passed in virtually every industry; inaction means being left behind. High performers are making Big Data and advanced analytics a priority and seeing credible return against that investment.

For solution providers, the findings presented here underscore that interest is high among the majority of end-users, and a growing number of firms are investing in the foundational elements of dedicated analytics and data capabilities. But, with this growing demand comes a desire to align marketing claims with measurable outcomes from these investments.



ABOUT THE RESEARCH

This research, commissioned by Dell® and executed by the International Institute for Analytics™ (IIA), sought to study the current adoption of advanced analytics and Big Data landscape among firms in the United States. Specifically, the research assesses advanced analytical maturity at the firm level, trends and usage of advanced analytics and Big Data, and execution of advanced analytics projects among mid-market¹ and enterprise organizations².

Research findings are drawn from 317 survey respondents, who are:

- Employed full-time at the management level or above, for mid-market and enterprise organizations,
- Decision makers with an information systems, IT, or analytics role, or business decision makers with a marketing, sales, strategy, market research, finance, or operations role,
- Involved with, or have a key role in, making decisions related to analytical strategy,
- Employed by organizations that have a data-based product, service or information system or plan to implement one in the next year

The following is a breakdown of survey respondents across company size and job function:

COMPANY SIZE	JOB FUNCTIONS	RESPONSES
Mid-Market	Information Systems/IT and Analytics	69
	Marketing, Strategy, Sales, Market Research, Finance and Operations	44
Enterprise	Information Systems/IT and Analytics	133
	Marketing, Strategy, Sales, Market Research, Finance and Operations	71
Total		317

Respondents represent a range of industries and functions. These results are further enriched by insights from in-depth, phone interviews with mid-market and enterprise decision makers.

For the purposes of this survey, **advanced analytics**³ is defined as the “extensive use of data, statistical and quantitative analysis, explanatory and predictive models, and fact-based management to drive decisions and add value.”

¹ Mid-market organizations were defined as organizations with 500-5,000 employees.

² Enterprise organizations were defined as organizations with 5,000 or more employees.

³ Thomas H. Davenport and Jeanne G. Harris, *Competing on Analytics* (Harvard Business School Publishing Corporation, 2007)

