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Big Data Executive Survey 2018

Executive Summary of Findings

Data and Innovation

How Big Data and AI are Driving Business Innovation

With a Foreword by Thomas H. Davenport and Randy Bean

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Foreword

It's a new year, and with it comes a new set of responses to the NewVantage Partners annual survey. This year the results are both more encouraging and more worrisome than in the past. Artificial Intelligence is now a well-established focus at these large, sophisticated firms. There is both a stronger feeling that Big Data and AI projects deliver value, and a greater concern that established firms will be disrupted by startups, than in past surveys.

This year the survey's focus is both Big Data and artificial intelligence. Terminology comes and goes, but the constant is a data explosion and the need to make sense of it. Big Data and AI projects have become virtually indistinguishable, particularly given that machine learning is one of the most popular techniques for dealing with large volumes of fast-moving data. It's also the case that statistical approaches to AI—deep learning, for example—are increasingly popular. Therefore, we view traditional data analytics, Big Data, and AI as being on a continuum. Virtually all of the respondents (97%) say they are investing in these types of projects.

Perhaps the best news in this survey is that companies continue to derive value from their Big Data and AI projects. 73% of respondents said they have already received measurable value from these initiatives. That number is half again higher than in the 2017 survey, which suggests that more value is being achieved as companies grow familiar with the technologies.

The types of value received are perhaps consistent with other previous types of technology. Consistent with our view that Big Data and AI are extensions of analytical capabilities, the most common objectives—and those most likely to achieve success—are "advanced analytics/better decisions." Better customer service and expense reduction are also common objectives.

The theme of this year's survey is "How Big Data and AI are driving business innovation." If the maxim holds true that innovation happens at the edges and few firms lead and many follow, this year's survey results would seem to bear this out. While a subset of firms, just over a quarter (27%), are prioritizing innovation initiatives – innovation/disruption, speed-to-market, and monetization – innovation remains an aspiration for most large enterprises. To date, just over half of respondents (53.6%) confirm that they are undertaking innovation initiatives in at least one of these areas. Notably, data monetization, which has been a stated objective of many firms, remains a relatively low priority (7.2%) with a low success rate (8.7%) as of this time.

Consequently, one of the greatest issues for concern in the survey for large enterprises is the risk of disruption from new entrants. Almost four in five respondents said they feared disruption or displacement from firms like those in the "fintech" sector or firms specializing in big data. The technology judged most disruptive is AI—by far. 72% chose it as the disruptive technology with the most impact—far more than cloud computing (13%) or blockchain (7%).

Another important and continuing issue is the slow speed with which these established firms make the shift to a data-driven culture. Virtually all respondents say their firms are trying to make the shift, but only about a third have already succeeded at this objective. This issue is emphasized every year in the surveys, and doesn't improve much.

Clearly firms need more concerted programs to achieve data-related cultural change. Many startups have established data-driven cultures from their beginning, which is a key reason why firms fear disruption from them.

One of the approaches that firms have established to deal with data-driven disruption and change is to establish new management roles. Every year, for example, the percentage of firms with Chief Data Officers rises. However, there is still a lack of clarity about how different data-oriented roles relate to each other and even what types of backgrounds are appropriate for CDO jobs. Role clarity is critical for both leading AI/Big Data projects and accomplishing cultural change. And while all respondents believed it important, the majority of firms still lack an enterprise data strategy.

This continuing rise in the importance and challenges of Big Data is one of the most important features of the contemporary economy and society. The survey results over time provide interesting and useful documentation of this revolution. The key to success is to determine how your firm should respond and then to move ahead to execute the needed changes in a systematic and effective fashion.

Thomas H. Davenport and Randy Bean

January 2018

Introduction

In 2012, NewVantage Partners initiated the first Executive Survey aimed at senior Fortune 1000 business and technology decision-makers on the topic of Big Data.

The survey was conducted at the behest of a group of senior Fortune 1000 executives who sought to understand this new thing called Big Data, and understand its emerging impact on the corporate mainstream, in contrast to the emerging Tech Giants for whom data was their lifeblood and reason for being. For the corporate mainstream, would Big Data be a disruptive force or a passing phase? The survey was especially targeted to financial services firms, which are information businesses and have a long history of managing data as an asset.

Upon publication of the 2012 survey, author Thomas H. Davenport called the survey "one of the few I have seen that focuses on large organizations and offers responses from C-level executives". And, so it has remained. This is our 6th survey of senior corporate executives on the topic of data.

But, events evolve and businesses move forward. As Big Data has entered the corporate mainstream, it has served to fuel and empower advances in the adoption of Artificial Intelligence (AI) and other forms of cognitive learning --- machine learning, deep learning, et al. In addition, firms have begun to more actively consider how data can be used to innovate, as mainstream firms fight to withstand the challenges of their data-driven upstart rivals.

Big Data is not going away. The volume and sources of new data only continue to proliferate. Data is now more prevalent than ever. So the focus will continue to shift to ways in which data can be used for competitive advantage – better decision making, business agility, and innovation.

The 2018 survey, entitled "**Data and Innovation: How Big Data and AI are Driving Business Innovation**" focuses on some of the most critical issues that mainstream companies are facing today:

- *How can we leverage our own data assets to compete against data-driven rivals?*
- *How can we combine our data with new AI solutions to become nimble and smarter?*
- *What obstacles prevent us from transforming into data-driven businesses?*
- *How do we build a data-culture within our organizations?*
- *What is the appropriate role and mandate for the Chief Data Officer?*

We are pleased to report that nearly 60 Fortune 1000 or industry leading firms are represented in our 2018 survey, and that C-Executive participation has never been higher.

This survey has over the past 6 years reflected the evolution of executive perspectives as they have come to terms with the impact of Big Data, and its implications.

We hope that you find the results insightful.

2018 Survey Participating Firms

Nearly 60 leading firms participated in this year's executive survey.

These firms represent a blue chip list of the leading banks, insurance, credit, and asset management firms, which represent among the leading users of data in the mainstream economy. In addition, emerging users of data, including pharmaceutical and medical organizations, and as well as firms representing a range of industries have participated.

Among the first time participants in 2018 are Farmers Insurance, Goldman Sachs, GlaxoSmithKline, IBM, Motorola, and Verizon.

A full list of the 2018 executive survey participants follows.

Financial Services	Insurance		
Aetna	Fannie Mae	Putnam Investments
AIG	Farmers Insurance	Regions Bank
Ally Financial	Fidelity Investments	Standard & Poors
American Express	First Republic Bank	State Street
Bank of America	Freddie Mac	Sun Life Financial
Bank of China	Goldman Sachs	Swiss Re Group
Bank of Montreal	The Hartford	TD Bank
Bloomberg	JP Morgan	TIAA
Capital One	Lincoln Financial	Travelers
Charles Schwab	M&T Bank	UBS
Cigna	Met Life	USAA
CitiGroup	MFS Investments	VISA
Citizens Bank	Moody's	Wells Fargo
Crawford	Morgan Stanley	Zions Bank
Credit Suisse	Nasdaq	

Pharma	Medical	Other Industries	
Astellas	Estee Lauder	Linked In
GlaxoSmithKline	Ford Motors	Motorola
H3 Biomedicine	Global Energy	Verizon
OptumLabs	IBM	
Partners Health Care	Li & Fung	

2018 Participant Summary

As in past years, C-Executive decision makers represent the vast majority of 2018 survey respondents. This year, 93.1% of survey respondents identified themselves as being in C-Executive or equivalent roles.

The largest percentage of C-Executive respondents comes from those executives who bear the most direct responsibility for corporate data initiatives. Although data responsibilities may be organized differently among organizations, the roles most commonly responsible for data initiatives within the corporation include Chief Data Officers, Chief Analytics Officers/Chief Data Scientists, and Chief Information Officers. These roles account for 84.8% of the 2018 executive survey respondents.

Of particular note in the 2018 survey is the continued emergence of the Chief Data Officer as the primary executive responsible for data initiatives within their organization. The percentage of Chief Data Officers of total survey respondents has increased from 32.3% in the 2017 survey to a significant 55.6% in this year's survey.

Here is a complete recap of the 2018 executive survey participants by role/responsibility.

Respondent Role	
Chief Data Officer	55.6%
Chief Analytics Officer | Chief Data Scientist	15.3%
Chief Information Officer	13.9%
CEO | President	5.6%
Chief Marketing Officer	2.8%
Other	6.9%

The 2018 executive survey, as in previous years, draws upon participating firms from industries which have been at the forefront of data management and analytics practices for several decades, and within industries such as financial services which have historically invested heavily in maintaining high value customer relationships at a large scale. Other industry segments are starting to catch up as their data management practices mature.

Here is a summary of 2018 survey participants by industry segment.

Industry Participation	
Financial Services | Insurance	77.2%
Pharmaceuticals | Medical	8.8%
Other Industries	14.0%

2018 Executive Summary

For many organizations, and certainly within the industry press, 2018 could be characterized as the year that Artificial Intelligence (AI) gained meaningful traction within leading corporations.

As interesting and important as the embrace of AI and various forms of cognitive learning (machine learning, deep learning) by corporations, is the role that Big Data has played in empowering AI.

Perhaps for the very first time, organizations now have ready access to meaningful volumes and sources of data which are providing AI solutions with sufficient meaningful data to detect patterns and understand behaviors.

In spite of these advances on the technology front, issues and challenges remain, as firms seek to organize to compete on data, with agility, against data-driven competitors.

The 2018 survey sought to understand how Big Data and AI are driving business innovation.

Here is a summary of the key findings that resulted from the 2018 survey.

Mainstream firms fear disruption from highly agile data-driven upstarts.

One of the biggest surprises of the 2017 executive survey was the percentage of respondents acknowledging the threat of disruption and displacement, with nearly half of executives (46.6%) sharing this concern. The big surprise in the 2018 survey is the sharp jump in this number to 79.4%, representing nearly 4/5 of executive respondents. Why this escalating concern? Executives perceive growing threats from data-driven, highly agile competitors, including the big Tech Giants – Amazon, Google, Apple, and Facebook – as well as those competitors within their own industry who are demonstrating the ability to compete on data and analytics, especially those who have forged data cultures which give them agility and speed.

Big Data is empowering AI and cognitive learning investment and initiatives.

Executives seem to concur that AI has emerged as a powerful business force. A full 97.2% of executives indicate their firms are investing in building or launching Big Data and AI initiatives, and 76.5% agree that the proliferation and availability of data is empowering AI and cognitive learning initiatives within their firms. The percentage of executives that believe that AI is the technology that will have the greatest disruptive impact leaps from 44.3% in the 2017 survey to 71.8% in 2018. In the same way that the development of the Internet had an impact in ways beyond those initially conceived, Big Data is empowering a set of capabilities that had previously failed to deliver on their perceived potential.

People challenges loom greatest as firms strive to create a data-culture.

Increasingly, executives are coming to the realization that the greatest barriers to creating data-driven organizations and building a data culture within their firms are coming not from technology, but from issues relating to people and change. Nearly half of executives – 48.5% -- identify people challenges as the greatest barrier to becoming data-driven, contrasted with only 19.1% that cite technology as the issue. Further, 57.5% of executives cite insufficient organizational alignment or cultural resistance as the biggest barrier to business adoption. And, while 98.6% of executives report embarking on creating of a data-driven culture, only 32.4% claim success at this stage. People challenges loom large.

The Chief Data Officer has arrived, but confusion on mandate and future persists.

The Chief Data Officer (CDO) has clearly arrived, but to what outcome? A full 63.4% of participants confirm that their organization has appointed a Chief Data Officer, a convincing increase from the 12% level of 2012. However, challenges remain. The CDO is a new corporate role, and as such, there is evident confusion and disagreement on the mandate and importance. While 39.4% of participants identify the CDO as the executive with primary responsibility for data strategy and results, 60.6% identify other C-Executives or claim no single point of accountability. And, while 34% believe the ideal CDO should be an outsider and change agent, 32.1% believe the ideal CDO should be an insider and company veteran. And finally, while half (50%) believe the CDO should sit on the executive committee, half (50%) disagree, with 12.9% percent believing the role should ultimately be phased out or is unnecessary.

Firms are investing in Big Data and AI with a goal of better analytics for decision making.

The affirmative news for data executives and proponents is that 97.2% of organizations are investing in Big Data and AI initiatives. However, investment levels continue to be modest. A relatively small (11.1%) percentage of survey participants report cumulative investment levels of greater than $500MM, with a majority (52.8%) reporting cumulative investments of under $50MM. Most of these investments appear to be targeted at deploying advanced analytics capabilities to enable business decision making, with 84.1% of participants having launched such efforts, and 58% achieving success, representing a 69% success rate. Efforts to decrease expenses follow, with 66.7% having launched efforts, 40.6% claiming success, for a 60.9% success rate. It can be expected that this investment trend is only like to continue as firms seek to compete on data and analytics against their agile, data-driven competitors.

Investment

Firms are actively investing in building or launching Big Data and AI initiatives.

The results show that 97.2 % of respondents indicated that their company is investing in Big Data and AI.

Investing in Big Data or AI initiatives	
Yes	**97.2%**
No	**2.8%**

A contributing factor to the growth of investment levels in Big Data and AI is the proliferation of data volumes and sources that are empowering AI and cognitive learning initiatives. More than 3/4 of respondents indicated that the availability of larger and more frequent sets of data was driving AI and cognitive learning investments.

Proliferation of data empowering AI/cognitive learning	
Yes	**76.5%**
No	**23.5%**

In spite of the widespread investment in Big Data and AI, overall investment levels remain relatively moderate, with the majority of organizations (60.3%) making less than $50MM in cumulative investments, and only 12.7% of firms exceeding total investments of greater than $500MM.

Total investment in Big Data and AI	
Greater than $500M	**12.7%**
$50M -- $500M	**27.0%**
Under $50M	**60.3%**

A finer breakout of investment spending indicates that at the highest levels of investment, 7.9% of respondents indicated their firms invested greater than $1B in Big Data and AI initiatives, while at the bottom end of the spectrum, 22.2% respondents indicated that their firms invested have invested less than $10MM.

This confirms that while investment in Big Data and AI initiatives appear to be widespread, investment levels continue to appear to be relatively modest for most organizations at this time.

Results

Nearly 3/4 of the executives surveyed (73.2%) claim that their firms have achieved measurable results from their Big Data and AI investments. This represents a significant increase over results from the 2017 executive survey, when a considerably lower 48.4% of executives reported achieving measurable results.

A further breakdown indicates that 23.9% of executives characterize their results as highly transformative and innovative. Overall, 40.8% of executives responding in 2018 believe that their Big Data and AI investments have helped their company more effectively position itself for the future. Those executives who responded "no" believe that it is too early to tell what impact these investments will have on their firm.

Measurable results from Big Data and AI investments	
Yes	**73.2%**
No	**26.8%**

While executives reported measurable results from their Big Data and AI investments, success varies based on the initiative. Executives were asked to rank their Big Data and AI investments by priority, investment commitment, and successful results.

The results indicate that developing advanced analytics to support improved business decision making was identified as the highest priority, and generated the highest success rate, with 36.2% of firms citing this as their top priority, 84.1% of firms investing in this objective, and 58% pointing to measurable results, for a 69% success rate.

Top objective of Big Data and AI investments	#1 Goal	Started	Success	Rate
Advanced analytics/better decisions	36.2%	84.1%	58.0%	69.0%
Improve customer service	23.2%	65.2%	34.8%	53.4%
Decrease expenses	13.0%	66.7%	40.6%	60.9%
Innovation/disruption	11.6%	46.4%	20.3%	43.8%
Speed to market	8.8%	53.6%	29.0%	54.1%
Monetization	7.2%	31.9%	8.7%	27.3%

Other areas of notable investment include improved customer service and expense reduction, both tallying respectable success rates of 53.4% and 60.9% respectively.

Perhaps more surprising was the lower success rate (43.8%) attributed to innovation and disruption initiatives, and low prioritization (7.2%) and success (27.3%) of initiatives focused on data monetization. While firms speak about a desire to "monetize" their data assets, the survey suggests that this goal seems to be more aspirational at the present time.

Challenges

Firms express a commitment to forging a data-driven culture in their quest to avoid disruption and displacement at the hands of more agile and data-driven competitors.

Among 2018 survey participants, a nearly unanimous 98.6% of executives indicate that their firm aspires to a data-driven culture, up from 85.5% in the 2017 survey. Among these executives, 32.4% indicate that their firm has achieved this outcome, while the majority of respondents (67.6%) state that it is too early to determine if they will be successful in achieving this goal.

Creating a data-driven culture	2018	Success	2017	Success
Yes | In Process	98.6%	32.4%	85.5%	37.1%
No | Not a Priority	1.4%		14.5%	

Executives report that the greatest challenge to overcome in achieving their goal of a data-driven culture is due to issues relating to people (48.5%) and not technology (19.1%).

Organizations are coming to the increasing realization that helping their employees and executives adapt to change represents the biggest challenge to becoming data-driven. When taken together with process challenges, 80.9% of executives agree that cultural challenges (people + process) represent the greatest barrier to overcome as they evolve and transform their businesses.

Biggest challenge to becoming data-driven	
People	48.5%
Process	32.4%
Technology	19.1%

Similarly, nearly 2/3 of executives (64.7%) indicated that business adoption of data initiatives remains a major challenge, while just over 1/3 executives claim that their organization has achieved success.

Business adoption of data initiatives remain a challenge	
Yes	64.7%
No	35.3%

The executives report, once again, that cultural issues relating to adaptability to change pose the greatest challenge, with nearly 1/3 citing (32.5%) cultural resistance to change as the primary factor in preventing success.

When this figure is, once again combined with challenges relating to organizational alignment (25%) and executive leadership (7.5%), it indicates again that nearly 2/3 (65%) of the issues preventing the successful adoption of data initiatives can be attributed to cultural factors.

Biggest challenge to successful business adoption	
Cultural resistance to change	32.5%
Understanding of data as an asset	30.0%
Insufficient organizational alignment & business agility	25.0%
Lack of business diretion and executive leadership	7.5%
Lack of technology leadership and solutions	5.0%

As a final point on this topic, it is worth noting the 30% of executives that point to a failure of understanding and appreciation of data as a business asset as an obstacle to successful business adoption.

There is a long history among many organizations of not thinking about data as a business asset. Data represents a different kind of business asset, and may require many organizations to think differently.

Data can, and perhaps should, be thought of for its strategic business value, as competitive knowledge, competitive insight, or as a competitive weapon. The firm that best understands its data assets, and how they can best be deployed to business advantage, is likely to be well positioned in the marketplace.

Data flows through an organization. To understand how it originates, how it is used, where it is used to derive new data, or to derive inferences, is to capitalize on this valuable commodity, to recognize its business value, and to treat it as a valuable business asset.

Leadership

One of the most promising and exciting developments in the recognition of data as a vital business asset has been the establishment and appointment of executives to fill the role of the Chief Data Officer (CDO).

Since 2012, the CDO role has progressively emerged as an industry standard, particularly within the financial services industry. While only 12% of executives reported having appointed a CDO in 2012, this number has grown to a highly respectable 63.4%.

Today, nearly 2/3 executives can state that their firm has a CDO in place.

Appointment of a Chief Data Officer	2018	2017	2012
Yes	63.4%	55.9%	12.0%
No	36.6%	44.1%	88.0%

However, it appears this is where the agreement ends. On a series of additional questions about the role and mandate of the CDO position, perspectives varied wildly, and in some instances in direct opposition and contradiction.

While a plurality of executives (39.4%) indicated that primary responsibility for data, data strategy, and data results was the purview of the CDO, the majority of executives (60.6%) believed that this responsibility currently resides elsewhere.

Significantly, 23.9% of executives responded that there was currently no one person within their firm that has responsibility for data strategy and results. Further, 36.7% of executives responded that data responsibility resides with another C-Executive within their organization, other than the CDO.

This suggests that a consensus view of CDO responsibilities has yet to take hold across the industry.

Primary responsibility for data strategy and results	
Chief Data Officer	39.4%
No Single Point of Accountability	23.9%
Chief Information Officer	15.5%
Other C-Executive	12.7%
Chief Analytics Officer | Chief Data Scientist	8.5%

Another area where consensus is missing is with regard to the primary responsibility of the Chief Data Officer.

A plurality of executives (44.4%) indicated that the primary responsibility of a CDO is to develop the overall data and analytics strategy for the firm. Another 26.7% replied that the primary CDO responsibility is to *coordinate* data and analytics initiatives across the firm, while 20% replied that it is the responsibility of the CDO to *lead* all data and analytics initiatives across the firm.

Perhaps it is cause for optimism that only 6.7% of executives replied that they view the primary CDO responsibility as ensuring regulatory compliance. This may be a sign that the CDO is being perceived as moving to the "offense" within organizations, after initially being perceived as a "defense" role to manage regulatory compliance in its earlier incarnations.

Primary responsibility of the Chief Data Officer	
Develop the overall data and analytics strategy for the firm	44.4%
Coordinate data initiatives across the firm	26.7%
Lead all data initiatives across the firm	20.0%
Ensure regulatory compliance	6.7%
Build new sources of revenue	2.2%

Given that so many executives believe that data strategy is a mandate of the CDO, it should be encouraging that a unanimous 100% of executives indicated that having a data strategy is a top priority for their firm. Of these respondents, 47.8% stated that an enterprise data strategy was in place for their firm, while 42.2% replied that they were currently developing a data strategy. Only 10% indicated that their firm did not have a data strategy.

Data Strategy a Priority		In Place	Started	Not Yet
Yes	98.6%	47.8%	42.2%	10.0%

Notably, only 2.2% of executives expressed the viewpoint that building new sources of revenue or creating new products was within the purview of the CDO. Accordingly, only 13.5% of executives indicated that the Chief Data Officer had revenue responsibility within their firm.

This may suggest in the long run however that data responsibility remains separate from deployment of data as a revenue generating asset of the firm. This bears ongoing attention.

Chief Data Officer with revenue responsibility	
Yes	13.5%
No	86.5%

The areas of greatest divergence of opinion and perception pertain to the qualifications and mandate of the successful Chief Data Officer going forward.

When asked to select the top requirement for a successful Chief Data Officer, there was near equal and opposite divergence of opinion, with 34% of executives responding that a successful CDO must be an external change agent (outsider) who brings fresh perspectives, while an almost equivalent 32.1% responded that a successful CDO must be a company veteran (insider) who understands the culture and history of the firm.

Further, an additional 11.3% responded that a successful CDO must be a line-of-business executive who has been accountable for financial results. Clearly there is a sharp and highly divergent matter of opinion on this topic. It is notable that an additional 22.6% felt that the CDO must be either a data scientist or a technologist.

Clearly, we have not heard the last word on the background for a successful CDO.

Background for a successful Chief Data Officer	
External change agent | outsider	34.0%
Company veteran| insider	32.1%
Data scientist | analytics background	15.1%
Line executive who has been accountable for results	11.3%
Tech executive | technology background	7.5%

Equally intriguing was the divergence of opinion on the long-term role of the Chief Data Officer, with an even 50/50 split between those who believe the CDO should sit on the firm's executive committee and those who don't.

Long term role of the Chief Data Officer	
Sits on the executive committee	50.0%
Reports to the executive committee	37.1%
CDO role is interim role to be phased out | unnecessary	12.9%

Perhaps most troubling for incumbent Chief Data Officers are the 12.9% of executives who responded that either the CDO was an interim role which will likely be phased out over time, or that the CDO role is unnecessary and responsibility for data should reside elsewhere.

What is clear from the divergence of viewpoints on the nature of the Chief Data Officer position is that even as it emerges as a de facto industry standard, the role, responsibilities, and mandate of the CDO remain a work in progress, and like the role and perceived value of data itself, is in the process of evolution.

Technology

Two key technology developments are likely to shape the direction of data management and data innovation over the course of the next few years.

In recent years, there has been a shift from traditional data center environments to cloud computing environments, such as represented by Amazon Web Services (AWS).

When asked where the enterprise data management environment was currently being managed, 44.8% of executives responded that data was still being managed locally on premise. However, a majority of 55.2% indicated that their data was being managed, at least in part, on the cloud. This would have been unheard of just a few years back, due to concerns of data risk and loss of control.

As firms seek to become more agile, and less dependent on the traditional data center environment, it will be very interesting to watch the direction and speed with which organizations move toward the cloud.

Data management environment	
Locally | on-premise	44.8%
On the cloud	7.5%
Combination of both	47.7%

A second area of interest will be the shift from the use and deployment of data for traditional reporting applications to near-real time dashboards and real-time interactive operations.

While 52.2% of executives reported that the primary application of Big Data was for traditional batch reporting and analytics on a daily, weekly, or monthly basis, a significant 47.8% replied that data was being used for near real-time, intra-day dashboards and operational reporting, or for real-time, interactive, or streaming customer-facing or mission-critical applications.

There is an evident movement in the direction of real-time reporting and applications.

Data applications	
Reporting & analytics (batch)	52.2%
Operational dashboards (near real-time)	26.9%
Interactive (real-time)	20.9%

Innovation and Disruption

Well-established companies and longstanding industries have come under the threat of disruption and displacement in recent years. Amazon has been notable for the speed and success with which it has entered and come to dominate traditional markets. Even bedrock financial services institutions must consider the threats posed from emerging Fin Tech payment providers or credit sources, as well as the powerful Tech Giants.

In this year's survey, an astonishing 79.4% of respondents acknowledged the potential threats of disruption and displacement, up from a significant 46.6% in 2017.

Among those acknowledging the threat of disruption, fully 26.4% sounded the greatest note of urgency and responded that it will be necessary to transform rapidly or risk extinction. Only 7.3% responded that they were very confident that they were well prepared for the future.

Fear of disruption/displacement	2018	2017
Yes	79.4%	46.6%
No	20.6%	53.4%

Among disruptive technologies, 71.8% of executives agreed that AI will have the greatest impact on their firms over the next decade, with 93% indicating that their firms were now investing in AI initiatives. Cloud Computing (83.1% investing) and Block Chain (54.9% investing) were also seen as disruptive technologies in which organizations are making investments today.

Disruptive technology with greatest impact	2018	2017	Investing
Artificial Intelligence/Machine Learning	71.8%	44.3%	93.0%
Cloud Computing	12.7%	8.2%	83.1%
Blockchain	7.0%	4.9%	54.9%

Finally, executives were asked to cite what they see as the greatest data threat to their organization. While executives viewed cyber security breaches as the single greatest threat to their firms (35.2%), the combination of insufficient agility and inability to be nimble (29.5%), an inability to compete on data (13.2%), and fear of data-driven competitors (11.7%) signified that an inability to leverage data as an effective weapon against competitors is what is keeping these executives awake most nights.

Greatest data threat	
Inability to compete on data	lack of agility	data-driven competitors	54.4%
Cyber security	data privacy	45.6%

About NewVantage Partners LLC

NewVantage Partners are strategic advisors in Big Data and business innovation to Fortune 1000 business and technology executives and industry leaders.

At the Forefront of Innovation

Since 2001, NewVantage Partners has helped a blue-chip roster of Fortune 1000 companies and industry leaders leverage data and analytics to drive innovation and business transformation.

Our approach is expert-based, individualized; high-touch. We are small, but nimble; expert practitioners, and C-executives who have led corporate transformations.

NewVantage Partners is at the forefront of innovation. Our perspectives appear in leading publications, including Forbes, The Wall Street Journal, Harvard Business Review, and MIT Sloan Management Review, and through our executive thought-leadership breakfasts, annual Big Data executive survey, and speaking engagements.

NewVantage Partners is based in Boston with offices in New York, San Francisco, Austin, and Charlotte.

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