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Big Data Executive Survey 2017

Executive Summary of Findings

Big Data Business Impact:

Achieving Business Results through Innovation and Disruption

With a Foreword by Thomas H. Davenport and Randy Bean

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Foreword

The new year is often a time to celebrate, and indeed there is something to celebrate in the results of this Big Data Executive Survey for 2017. The survey participants report that they have achieved considerable value from their Big Data initiatives. More than 80% of them say their Big Data investments have been successful, and almost half say their organizations can measure the benefits from their projects. Such optimism is by no means found for all business investments; one recent study by an analyst firm, for example, found that 6 out of 10 customers of one ERP vendor wouldn't buy from the same company again, and didn't feel they had achieved return on their investment.

Why are these executives so positive about Big Data? They report a variety of positive outcomes, including cost reduction, establishment of a data-driven culture, and various benefits related to innovation, new products and services, and industry disruption. Only 1.6% of respondents deemed their Big Data initiatives failures, which is an impressively low number.

The participants in this survey are senior business and technology executives representing many of the world's largest and most sophisticated companies. Many come from financial services, which is one of the most aggressive sectors for business investment and technology adoption. Their sophistication and bellwether status suggests that we will soon see a growing number of firms across the private and public sectors — as well as mid-size and smaller companies — also deriving substantive value from Big Data work.

If there is any sobering trend in these results, it lies in the apparent difficulty of organizational and cultural change around Big Data. More than 85% of respondents report that their firms have started programs to create data-driven cultures, but only 37% report success thus far. Big Data technology is not the problem; management understanding, organizational alignment, and general organizational resistance are the culprits. If only people were as malleable as data.

Perhaps related to this resistance, these organizations may be moving toward a future in which they get by with fewer people. 44% of respondents (a plurality) named cognitive technologies the disruptive technology they most expect to impact their firms over the next decade, and 89% felt these technologies would have some impact on their companies. 69% said their companies had already begun to use cognitive technologies. These tools are perhaps the logical result of increasing amounts of data; it is difficult to analyze it all with traditional human-centric methods. We expect that these technologies will have a major impact — perhaps the greatest of any industry — on financial services firms.

If the survey respondents were celebrating the success of Big Data programs, they have no plans to rest on their laurels. Almost half — 47% — felt that their firms were at risk of major disruption in the next decade. We're not surprised—in fact we wonder why the number isn't higher — and we look forward to learning how Big Data, new technologies, and organizational change will drive these successful firms to overcome potential disruptions.

Thomas H. Davenport and Randy Bean

January 2017

Introduction

In 2012, NewVantage Partners initiated the first Big Data Executive Survey targeting senior Fortune 1000 business and technology decision-makers. 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. Would Big Data be a disruptive force or a passing gimmick?

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 5th survey of senior corporate executives on the topic of Big Data.

But, times change, and potentially disruptive forces must deliver on the promise of innovation and transformational results, or step aside for truly disruptive forces. Big Data is not going away however. The volume and sources of new data only continue to proliferate. Data is now more prevalent than ever. So the focus must shift to results, business value, and benefits.

For these reasons, we have created a revamped and updated survey for 2017 – one which focused on the business impact of Big Data, asking these questions:

- Has your firm shown measurable results from Big Data investments?
- What is your overall assessment of the business results of your Big Data investments?
- What are the impediments to Big Data success at your firm?
- What should be the primary role of the Chief Data Officer?
- What disruptive capabilities will impact your firm over the next decade?
- Do you fear that your firm may be at risk of major disruption in the coming decade?

We are pleased to report that 50 Fortune 1000 or industry leading firms are represented in our 2017 survey, and that C-Executive participation has never been higher. The following table summarizes executive level participation in the 2017 survey:

Organizational Role	
Enterprise Data Leader | Chief Data Officer (CDO)	**32.3%**
Analytics Leader | Chief Analytics Officer	**22.6%**
Technology Leader | Chief Information Officer (CIO)	**12.9%**
Big Data Leader | Head of Big Data	**11.3%**
Business Leader | CEO | President	**8.1%**
Marketing Leader | Chief Marketing Officer (CMO)	**4.8%**
Other	**8.0%**

This survey has over the past 5 years reflected the evolution of executive perspectives as they have come to terms with Big Data. We have come to consider this an anecdotal survey rather than a scientific survey in that we have tried to capture the voice of Fortune 1000 executives facing a disruptive challenge.

We hope you find the results insightful.

2017 Survey Participating Firms

Financial Services | Insurance	
AIG	The Hartford
Ally Financial	IDB Bank
American Express	JPMorgan Chase
American Fidelity	Lincoln Financial
Bank of America	MetLife
Bank of China	MFS Investment Management
Blackrock	Moody's
Capital One	Morgan Stanley
Capital Group	Regions Bank
Charles Schwab	State Street
Canadian Imperial Bank of Commerce	SunTrust Bank
Cigna	TIAA
Citi	Travelers
Citizens Bank	UBS
Eaton Vance	USAA
Fidelity Investments	VISA
Freddie Mac	Wells Fargo

Health | Life Sciences	Media | Entertainment	Additional Industries
Astellas Pharma	Bloomberg	Estee Lauder
Bayer AG	Disney	Ford Motors
Biogen	LinkedIn	General Electric (GE)
Geisinger Health	Nielsen	United Parcel Service (UPS)
Quest Diagnostics	Turner Broadcasting	
United Healthcare	Legendary	

Industry Representation	
Financial Services	**75.8%**
Healthcare | Life Sciences	**9.7%**
Media | Entertainment	**9.7%**
Additional Industries	**4.8%**

Participant Summary

C-Executive decision makers constitute the majority of survey respondents.

Respondent Role

Role	Percentage
Chief Data Officer (CDO)	32.3%
Chief Analytics Officer	22.6%
Chief Information Officer (CIO)	12.9%
Head of Big Data	11.3%
CEO	President	8.1%
Chief Marketing Officer (CMO)	4.8%
Other	8.0%

Respondent Role

- CEO | President | C-Level Respondent: 92%
- Non-Executive Respondent: 8%
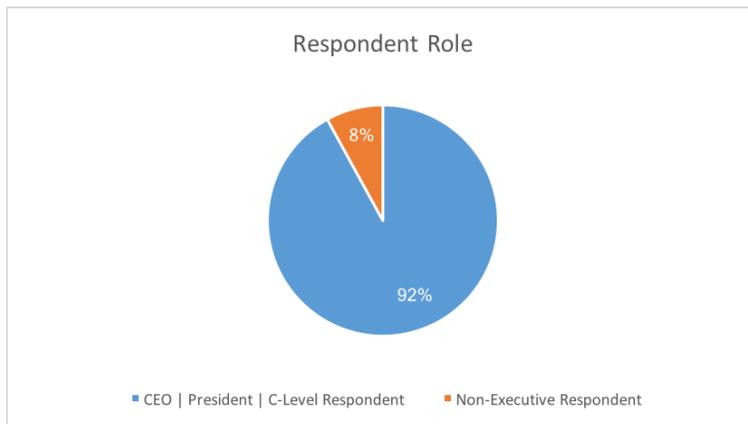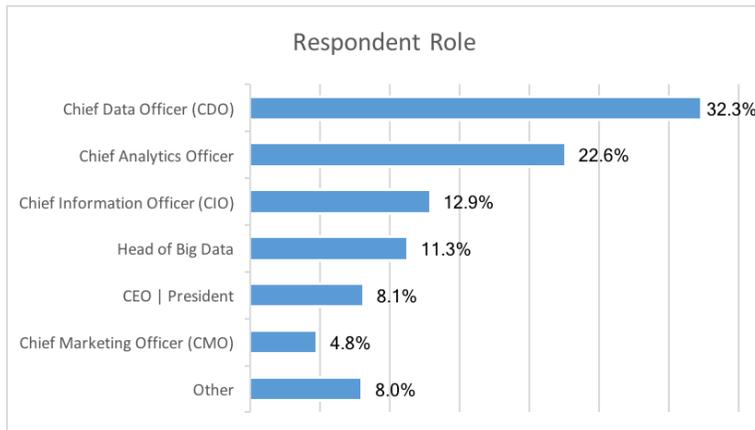
Industries such as financial services have invested heavily in data initiatives and are a bellwether for Big Data investment, and results.
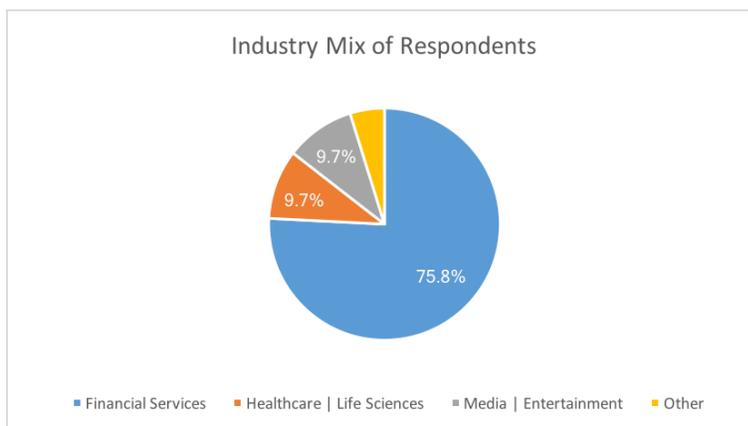
Industry Mix of Respondents

- Financial Services: 75.8%
- Healthcare | Life Sciences: 9.7%
- Media | Entertainment: 9.7%
- Other

Executive Summary

Big Data is prevalent, but is it generating tangible, measurable business value?

That is the question we set out to answer in our 5th survey of leading corporate executives. Firms have been investing in Big Data initiatives, but have they been benefiting? In this report, we summarize the principal findings of the 2017 Big Data Executive Survey.

Executives report measurable results from Big Data investments.

Corporations are achieving measurable results and business benefits from their Big Data investments. That is the principal finding of the 2017 executive survey. A strong plurality of executives, 48.4%, report that their firms have realized measurable benefits as a result of Big Data initiatives. A remarkable 80.7% of executives characterize their Big Data investments as successful, with 21% of executives declaring Big Data to have been disruptive or transformational for their firm.

Cultural challenges remain an impediment to successful business adoption.

In spite of the successes, executives still see lingering cultural impediments as a barrier to realizing the full value and full business adoption of Big Data in the corporate world. 52.5% of executives report that organizational impediments prevent realization of broad business adoption of Big Data initiatives. Impediments include lack or organizational alignment, business and/or technology resistance, and lack of middle management adoption as the most common factors. 18% cite lack of a coherent data strategy.

Firms are focusing on opportunities to innovate -- while reducing expense levels.

Firms are striving to establish data-driven cultures (69.4%), create new avenues for innovation and disruption (64.5%), accelerate the speed with which new capabilities and services are deployed (64.5%), launch new product and service offerings (62.9%), "monetize" Big Data through increased revenues and new revenue sources (54.8%), and transform and reposition their business for the future (51.6%). And, of course, 72.6% are seeking to decrease expenses through operational cost efficiencies -- with 49.2% reporting successful results from their cost reduction efforts as a result of Big Data investments.

Chief Data Officer's will be expected to step up to lead the data innovation charge.

A majority of firms report having appointed a Chief Data Officer (55.9%). While 56% see the role as largely defensive and reactive in scope today -- driven by regulatory and compliance requirements-- 48.3% believe that the primary role of the Chief Data Officer should be to drive innovation and establish a data culture, and 41.4% indicate that the role of the CDO should be to manage and leverage data as an enterprise business asset. Only 6.9% suggest that regulatory compliance should be the focus of the CDO.

Big firms are bracing for a decade of disruptive change.

Executives fear that disruption is looming on the immediate horizon. A robust 46.6% of executives express the view that their firm may be at risk of major disruption in the coming decade. They envision a future where "change is coming fast" and it may be "transform or die". In addition to Big Data, these firms see disruption coming from a range of emerging capabilities, including Artificial Intelligence and machine learning (88.5%), digital technologies (75.4%), cloud computing (65.6%), Block chain (62.3%), and Fin Tech solutions (57.4%). Prepare for the decade of disruption.
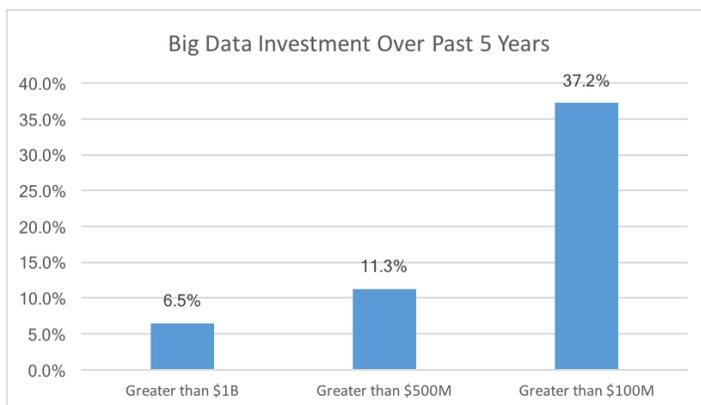
Big Data Investment

Firms have undertaken significant investments in Big Data initiatives during the past 5 years.
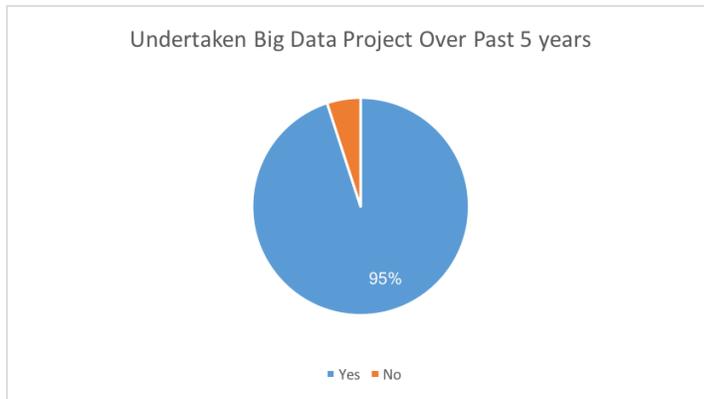
37.2% of executives report their organizations have invested more than $100MM on Big Data initiative within the past 5 years, with 6.5% investing over $1B.

Total estimated investment in Big Data during the past 5 years	
Greater than $1B	**6.5%**
$500M - $999M	**4.8%**
$100M - $499M	**25.9%**
$50M - $99M	**6.5%**
Under $50M	**45.2%**
Not Available	**11.1%**

Big Data Results and Initiatives

Firms are achieving measurable results from their Big Data investments.
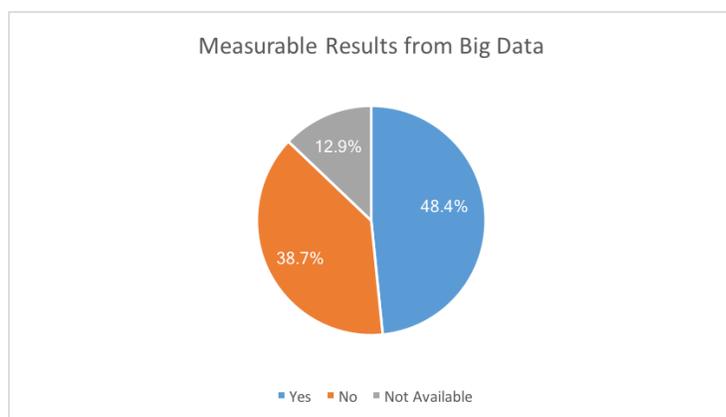

Firms have a range of Big Data initiatives underway. Focus areas such as efforts to decrease expenses through operational cost efficiencies have proven to be successful (49.2%) for many firms. Efforts to establish a data-driven culture remain more aspirational at this stage, with only 27.9% reporting success. Executives report that efforts to create new avenues for innovation and disruption have had the highest success rate – 64.5% started, 44.3% reporting results, 68.7% success rate.
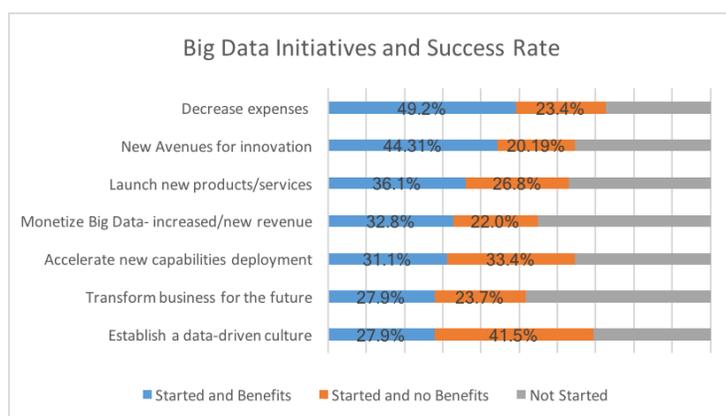
Big Data business initiatives underway; with successful results.	Started	Success
Decrease expenses through operational cost efficiencies	72.6%	49.2%
Establish a data-driven culture	69.4%	27.9%
Create new avenues for innovation and disruption	64.5%	44.3%
Accelerate the speed with which new capabilities and services are deployed	64.5%	31.1%
Launch new product and service offerings	62.9%	36.1%
Monetize Big Data through increased revenues and new revenue sources	54.8%	32.8%
Transform and reposition your business for the future	51.6%	27.9%

A vast majority of executives – 80.7% -- view their Big Data investments as having successfully generated business benefits. 48.4% of executives classified their Big Data efforts as highly successful or transformative. Only 1.6% characterized these efforts as a failure.

Assessment of Results from Big Data
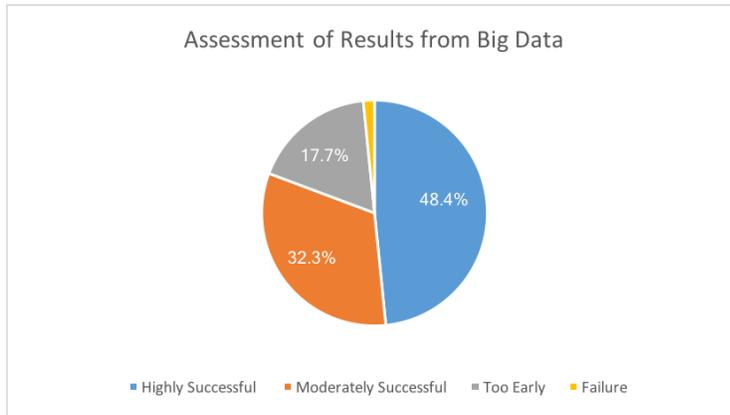
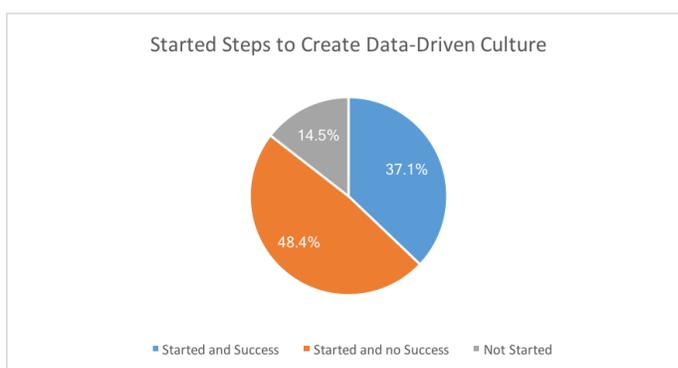| Overall assessment of the business results of Big Data investments.	
Highest Success | Disruptive | Innovative | Transformative	**21.0%**
Highly Successful | Evolutionary	**27.4%**
Good | Moderately Successful	**32.3%**
Too Early to Tell | To be Determined	**17.7%**
A Failure	**1.6%**

Big Data Adoption

In spite of the measurable successes of Big Data initiatives, corporations continue to face challenges to Big Data adoption. Executives cite a range of cultural impediments to successful business adoption. Establishing a data-driven culture remains a challenge as well.

Big Data Success Impediments

- 18.0% Lack of a coherent data strategy
- 52.5% Organizational issues | resistance
- 29.5% Other
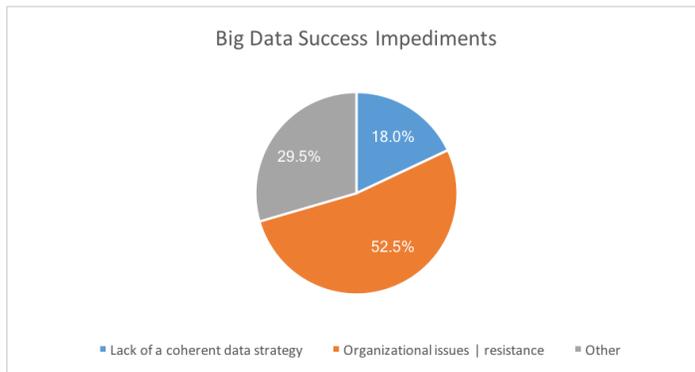
Cultural impediments to Big Data business adoption.	
Insufficient organizational alignment	42.6%
Lack of middle management adoption and understanding	41.0%
Business resistance or lack of understanding	41.0%
Lack of a coherent data strategy	29.5%
Technology resistance or lack of understanding	27.9%
Inability to create a shared vision	26.2%
Lack of data governance policies and practices	21.3%

While a vast majority of firms aspire to being data-driven (85.5%), a much smaller percentage (37.1%) report that success has been achieved.

Started Steps to Create Data-Driven Culture

- 37.1% Started and Success
- 48.4% Started and no Success
- 14.5% Not Started

| Creating a data-driven culture; with successful results.	Started	Success
Yes	85.5%	37.1%
No | Don't Know	14.5%	

Most firms (60.7%) cite existence of an enterprise Big Data strategy, but a significant percentage of firms (29.5%) also cite lack of a coherent data strategy as an impediment of business adoption.

Have a Big Data Strategy

| Existence of an enterprise Big Data strategy.	
Yes	**60.7%**
No	Don't Know	**39.3%**

Likewise, while an overwhelming majority of executives highlight data governance as being important to Big Data business adoption, a notable percent (21.3%) cite a lack of data governance policies and practices as an impediment to adoption.

Importance of Data Governance to Big Data
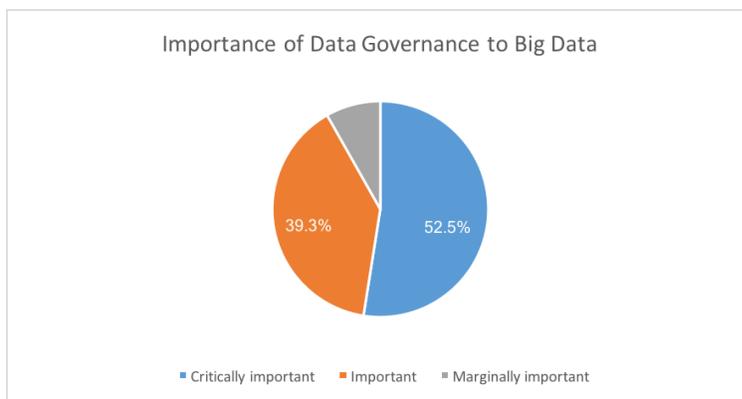
| Importance of data governance to Big Data business adoption.	
Critically important	**52.5%**
Important	**39.3%**
Marginally important	**8.2%**

The Chief Data Officer

While the Chief Data Officer position has clearly arrived (55.9% reporting having a CDO in place), the role of the CDO continues to evolve, with differing views on the mandate, and on organizational reporting.
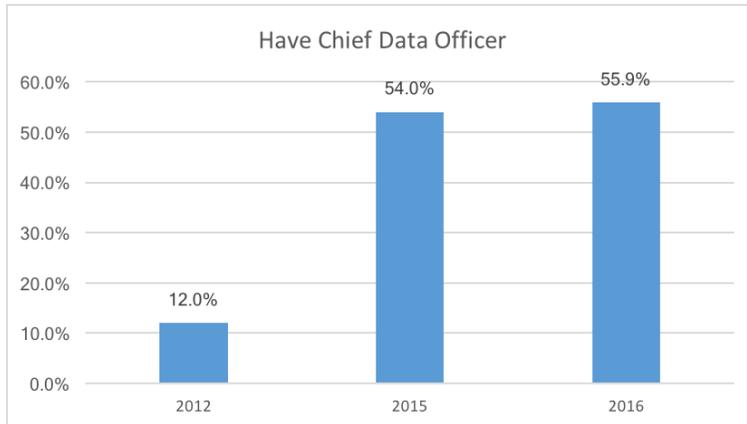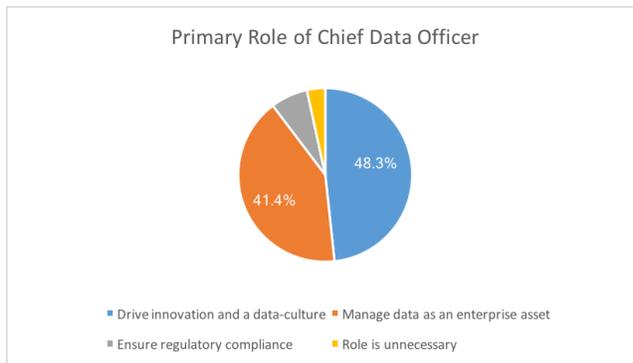

Appointment of a Chief Data Officer.	2017	2016	2012
Yes	55.9%	54.0%	12.0%
No	Don't Know	44.1%	46.0%	88.0%

Most executives see the Chief Data Officer as a largely defensive role today, focused on reacting to regulatory and compliance demands.
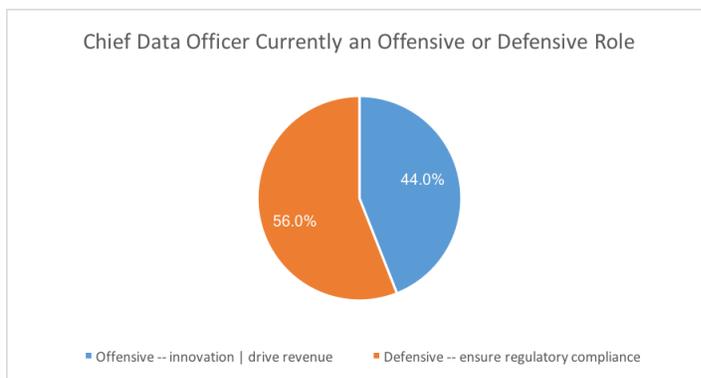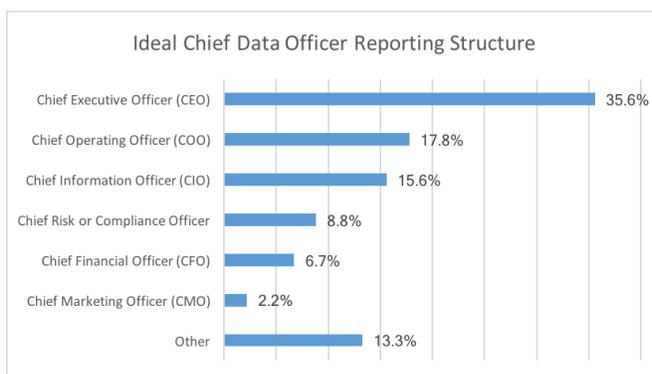

The current role of the Chief Data Officer.	
Offensive -- innovation	drive revenue	44.0%
Defensive -- ensure regulatory compliance	56.0%

Executives believe that the Chief Data Officer role needs to be stronger going forward, and positioned as a leadership function in driving innovation and building a data culture. Only a very small percentage of executives believe that the role is unnecessary or redundant.

Primary Role of Chief Data Officer

48.3%
41.4%

■ Drive innovation and a data-culture ■ Manage data as an enterprise asset
■ Ensure regulatory compliance ■ Role is unnecessary

The future role of the Chief Data Officer.	
Drive innovation and a data-culture	48.3%
Manage data as an enterprise asset	41.4%
Ensure regulatory compliance	6.9%
Role is unnecessary	3.4%

Views on where the Chief Data Officer should report vary. Most executives (53.4%) now believe that the CDO should report to either the CEO or COO. Only 15.6% of executives believe the CDO should report to the Chief Information Officer -- even though the CIO role contains the word "information" in the job title.

Ideal Chief Data Officer Reporting Structure

Chief Executive Officer (CEO)	35.6%
Chief Operating Officer (COO)	17.8%
Chief Information Officer (CIO)	15.6%
Chief Risk or Compliance Officer	8.8%
Chief Financial Officer (CFO)	6.7%
Chief Marketing Officer (CMO)	2.2%
Other	13.3%

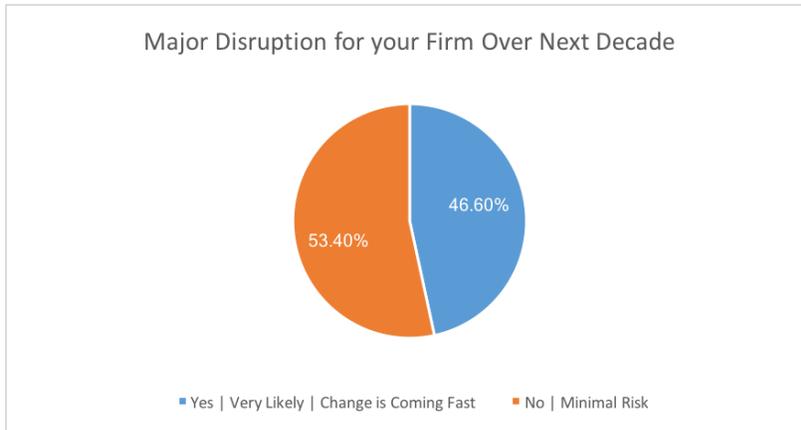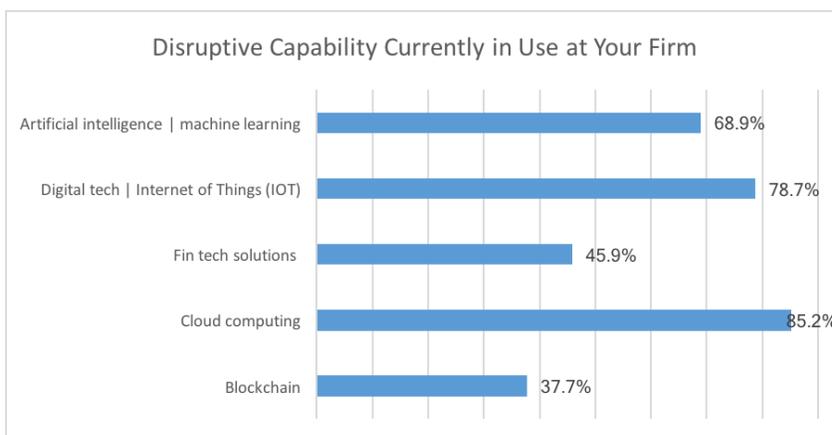| Where the Chief Data Officer should report.	
Chief Executive Officer (CEO)	35.6%
Chief Operating Officer (COO)	17.8%
Chief Information Officer (CIO)	15.6%
Chief Risk or Compliance Officer	8.8%
Chief Financial Officer (CFO)	6.7%
Chief Marketing Officer (CMO)	2.2%
Other	13.3%

Innovation and Disruption

Executives fear that disruption is on the doorstep. A strong plurality believe that their firms must adapt or face the risks of major disruption and potential displacement.


Major Disruption for your Firm Over Next Decade

46.60%

53.40%

■ Yes | Very Likely | Change is Coming Fast   ■ No | Minimal Risk

Fear that your firm may be at risk of major disruption in the coming decade.	
Yes | Very Likely | Change is Coming Fast	**46.60%**
No | Minimal Risk	**53.40%**

In addition to the impact that Big Data has had their firms, executives see a range of disruptive capabilities impacting their business over the course of the next decade.

Most firms have begun deploying some of these capabilities – Cloud Computing (85.2%), Digital technologies (78.75%, and Artificial Intelligence and machine learning (68.9%).

Disruptive Capability Currently in Use at Your Firm

Artificial intelligence | machine learning	68.9%
Digital tech | Internet of Things (IOT)	78.7%
Fin tech solutions	45.9%
Cloud computing	85.2%
Blockchain	37.7%

Executives see the single greatest impact to their firms coming in the form of Artificial Intelligence (44.3%) and Digital technologies (26.2%).
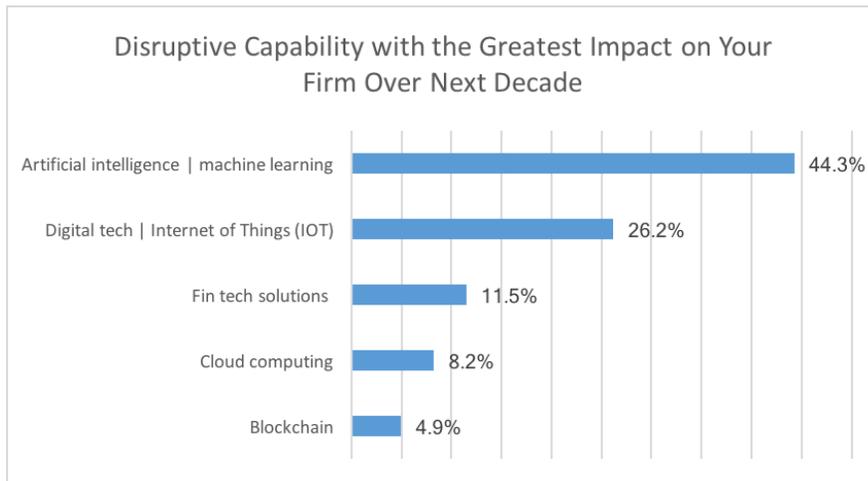
but the majority of executives believe their firms will be impacted by Cloud Computing, Blockchain, and Fin Tech solutions as well.
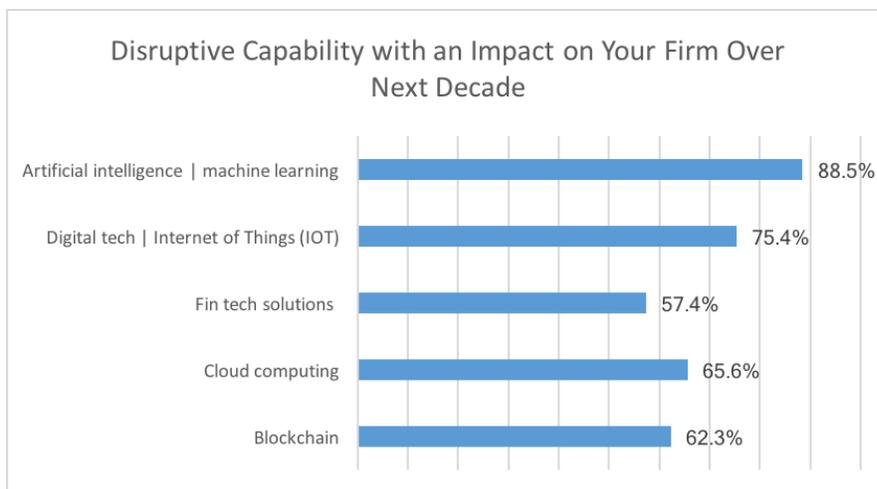
Disruptive capabilities which you believe will impact your firm.	#1	All	Started
Artificial intelligence | machine learning	44.3%	88.5%	68.9%
Digital technologies -- mobile | social media | Internet of Things (IOT)	26.2%	75.4%	78.7%
Cloud computing	8.2%	65.6%	85.2%
Blockchain	4.9%	62.3%	37.7%
Fin tech solutions	11.5%	57.4%	45.9%

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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