

Big Data Executive Survey 2013:

The State of Big Data in the Large Corporate World

Executive Summary

With a Foreword by Thomas H. Davenport

NewVantage Partners LLC

www.newvantage.com

Boston | San Francisco | New York

Copyright 2013

Foreword | Thomas H. Davenport

It's great to see another survey of Big Data usage among large organizations by NewVantage Partners. This sampling of Big Data is one of the few that focuses on large organizations and offers responses from C-level executives. I found that the results are consistent with my own research on "Big Data in Big Companies", but there are some surprises too. Here are some reflections on both the expected and the unexpected.

Big Data is becoming a mature discipline. It's amazing that over 90% of the organizations surveyed are either doing something already with Big Data, and about a third of the respondents have a production application in place. This suggests to me that Big Data activities need to be melded in with other data management and analytics activities within these large organizations, and I suspect that is already happening.

Moving from TTA to TTD. I am pleased to read that the majority of respondents are pursuing Big Data initiatives in order to accelerate analytical processes and improve "time-to-answer," or TTA. Given the pace of business today, this is a smart move. The next steps will be translating TTA to time-to-decision and time-to-action.

Justification on faith. The results suggest that the great majority of Big Data projects are not being justified with rigorous ROI analyses. All the same, the wise manager will try to assess the benefits and save them in a file for later circulation. If there is a widespread belief that Big Data projects pay off, more will be funded later on.

The sandbox is being filled. It's good news that many companies are setting up Big Data sandboxes or data discovery environments. This should accelerate the development of Big Data and analytical applications. I am guessing that such sandboxes will be owned by IT, but arguably—at least in companies that are developing data-based products and services—it should be an R&D effort.

Early days for health care, but progress already. The survey suggests that health care is well behind financial services in the application of Big Data. This is not terribly surprising, as many health care organizations are still wrestling with basic transaction systems such as electronic medical records. I think it's encouraging that almost a quarter of the health care organizations surveyed have completed a Big Data project, with a majority projecting greater investment going forward.

The business/technology responsibility continuum. It was not surprising to me that survey respondents identified "executive sponsorship" as the factor most critical to business adoption of Big Data. Respondents also indicated that CIOs and CTOs, as well as Chief Data and Analytics officers, comprised half of the primary sponsorship, and that big data is primarily a technical responsibility than a business responsibility. However, Big Data projects deal with key operational and decision processes within organizations, we're going to need committed business-side sponsorship to be successful.

Where are the CMO sponsors? More than three quarters of the survey respondents (highest of any category) say that sales and marketing functions are driving the investment in Big Data, and an even higher percentage say that customer transaction data is a data domain of interest. Yet only 5% identify the Chief Marketing Officer as the primary executive sponsor.

These are fascinating findings. I don't know about the longevity of the "Big Data" term, but I am now convinced that the phenomenon itself is here to stay.

Thomas H. Davenport is the President's Professor at Babson College and was most recently Visiting Professor at Harvard Business School. He is author of Competing on Analytics: The New Science of Winning, cited by CIO Magazine as one of the "Top 15 Most Groundbreaking Management Books."

Introduction

NewVantage Partners Big Data executive survey was first conducted in 2012 at the encouragement of a group of Fortune 1000 senior business and technology executives who had participated in NewVantage Partners thought leadership roundtable discussions. These executives wanted to understand the state of Big Data initiatives among peer institutions in the large corporate world:

- Are Fortune 1000 corporations investing in Big Data initiatives? If so, what kind of Big Data initiatives are they investing in?
- What are the primary business benefits and where is the organizational value resulting from Big Data investments?
- Which factors are critical to successful business adoption of Big Data initiatives? Where is Big Data executive sponsorship coming from?
- What Big Data initiatives and solutions are organizations investing in during the coming year, and what is the forecast three years out?

The 2012 survey was the first Big Data survey targeted at Fortune 1000 senior business and technology executives responsible for overseeing enterprise Big Data initiatives – chief information and technology officers, chief analytics and risk officers, chief marketing officers, line-of-business heads, and function leaders.

The response to the 2012 survey exceeded expectations, resulting in several dozen corporate executive benchmark briefings for participating institutions, and extensive national press coverage from leading national and industry business press, including The Wall Street Journal, Harvard Business Review, MIT Sloan Management Review, and CIO Magazine, among notable publications.

Themes and Trends

The 2013 Big Data summary report identified a set of core themes and trends, which are highlighted in this report:

- Big Data is becoming a major reality in corporate America, as evidenced by significant investment.
- Big Data initiatives are being driven from the corporate suite and C-executive sponsorship is seen as key to successful business adoption.
- Big Data investments are being tied to critical business initiatives within large corporations.
- Organizations are still focusing on the “3 V’s” of Big Data, but with a twist!
Volume – How do we integrate larger volumes of data?
Variety – How do we integrate more sources of data, including additional sources of structured data, and new sources of unstructured data?
Analytical Velocity -- How do we accelerate the speed at which we can answer critical business questions and decrease Time-to-Answer (TTA)?
- Organizations are looking at new roles (e.g. Chief Data Officer) and processes to ensure the successful adoption of Big Data initiatives.
- Health Care and Life Science firms are in a nascent stage of investing in Big Data initiatives -- in sharp contrast to Financial Services firms.

The report summarizes the responses of the survey participants organized by these major themes and findings.

NewVantage Partners is once again pleased to have conducted this survey to learn from and to educate peer institutions in the large corporate world and beyond.

Methodology

The 2013 executive survey posed a streamlined set of 23 questions designed to elicit and provide a useful benchmark for large corporations seeking to understand the state of Big Data initiatives among peer institutions.

The survey questions were organized around four principal themes:

I. Investment in Big Data

- a. Are you investing?
- b. How much are you investing – 2013, 2016?
- c. What initiatives are you investing in?

II. Business Adoption and Sponsorship of Big Data

- a. What are the keys to business adoption?
- b. Who is providing sponsorship?

III. Business Value of Big Data

- a. What are the primary benefits?
- b. Where is the business value?

IV. Big Data Domains and Solutions

- a. What data domains are of interest?
- b. Which solutions are you investing in?

This survey focused on industries that have traditionally been intensive users of data and analytics capabilities. Our 2012 survey was heavily represented by financial services firms. In addition to heavy financial services representation, our 2013 survey adds significant representation from emerging Big Data industries such as healthcare and the life sciences.

Close to 90 executives representing over 50 corporations or government agencies participated in the survey.

Definition of Big Data

To ensure a common definition was employed by all executive survey participants, the following definition was provided as a baseline description for Big Data:

Big Data is a term used to describe collections of data so large, complex, or requiring such rapid processing (sometimes called the volume/variety/velocity problem), that they become difficult or impossible to work with using standard database management or analytical solutions.

For the purpose of this survey, Big Data refers to new database management and analytical approaches developed for analyzing, storing, and manipulating large or complex data.

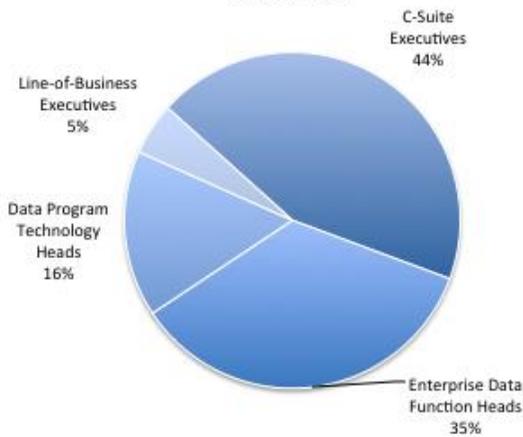
Investments in Big Data include those in human resources (e.g., data scientists), and in business and technology solutions, including database management platforms (e.g., Hadoop, EMC/Greenplum, Teradata/Aster, IBM/Netezza), analytics and visualization capabilities (e.g., Revolution R, Palintir, Tableau), or text-processing and real-time streaming solutions.

Demographics

Survey participants included Chief Information Officers, Chief Analytics and Risk Officers, Chief Technology Officers, Chief Marketing Officers, Senior Line-of-Business Executives (EVP/SVP), Chief Architects, and Heads of Big Data and Analytics.

The breakdown of the 2013 survey respondents was as follows:

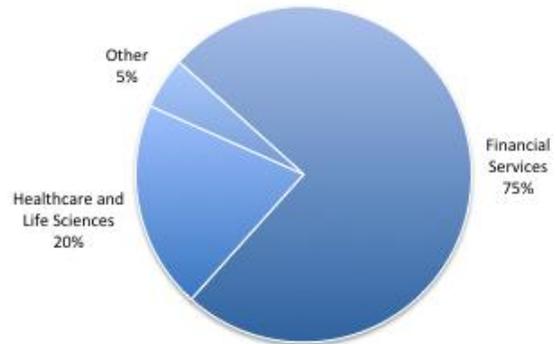
Figure 1
What is your role within the organization? (check one)



- **C-Suite Executives – 44%**
CIO | CDO | CTO | CMO
- **Enterprise Data Function Heads – 35%**
EVP | SVP | Head of Big Data | Head of Analytics | Head of Enterprise Information
- **Data Program Technology Heads – 16%**
Chief Architect | Senior Technologist
- **Line-of-Business Executives – 5%**
EVP | SVP | Enterprise Business Function Heads | Head of Innovation

The survey focused on organizations that traditionally make the largest investments in data initiatives, particularly financial services firms, as well as emerging new sectors such as healthcare and life sciences firms, which are making major new investments in data initiatives. Industry representation is summarized as follows:

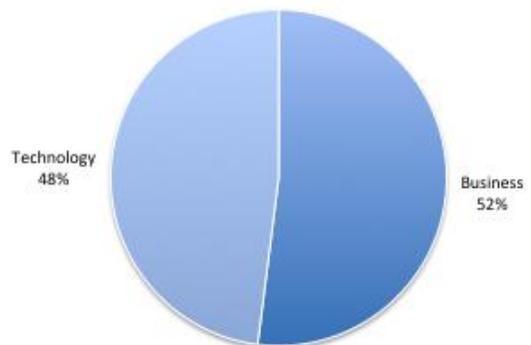
Figure 2
In which industry would you characterize your organization? (check one)



- **Financial Services – 75%**
- **Healthcare and Life Sciences – 20%**
- **Other Industries and Sectors – 5%**

The breakdown of executives representing business and technology functions was nearly evenly distributed:

Figure 3
What best describes where you sit within your organization? (check one)



- **Business – 52%**
- **Technology – 48%**

Participating Companies

Financial Services

AllState
American Express
Arbella Insurance
AXA | Equitable
Bank of America
Bank of New York Mellon
BB&T Bank
Blackrock
Capital Group
Charles Schwab
CitiGroup
Eaton Vance
Fidelity Investments
Freddie Mac
GE Capital
The Hartford
ING
JP Morgan
Liberty Mutual
MasterCard
MetLife
Morgan Stanley
Northwestern Mutual
Putnam Investments
RBS Citizens Financial
Regions Bank
State Street Bank
SunLife Financial
TD Ameritrade

Thomson Reuters
TIAA-CREF
Travelers
UBS
Wellington Financial
Wells Fargo

Health Care | Life Sciences

Aetna
AstraZeneca
Blue Cross of Rhode Island
Boston Children's Hospital
CRICO
Diagnostic Imaging Centers
CVS | Caremark
Harvard Pilgrim Health Plan
Healthways
Johnson & Johnson
Kaiser Permanente
Partners HealthCare
Sensitech

Other Industries and Sectors

EMC
SAP
Time-Warner
United States Navy
Veterans Administration

Executive Summary

Big Data has achieved rapid adoption in the large corporate world. This is the principal finding of NewVantage Partners 2013 Big Data Executive Survey, conducted during July 2013.

The 2013 survey highlights that a robust 91% of executives responded that their organization has a Big Data initiative planned or in progress. Of these, 60% of executives report that at least one Big Data initiative has been implemented, with 32% of executives reporting that Big Data initiatives are fully operational, in production or have been operationalized across the corporation. Clearly, Big Data is becoming a major reality within corporations.

"91% of executives report a Big Data initiative planned or in progress; 60% report an initiative has been implemented"

This report summarizes the principal findings of the 2013 survey, captured as a series of trends and themes that are borne out by the survey respondents:

Investment in Big Data is Accelerating. Organizations are getting behind Big Data, as evidenced by significant investment commitments. The 2013 survey indicates that 68% of executives expect that their organizations will invest greater than \$1MM in Big Data in 2013, with this number rising steadily to 88% by 2016. Investments in Big Data of greater than \$10MM are projected to rise sharply from 19% in 2013 to 50% by 2016, with investments in Big Data of greater than \$50MM more than doubling from 6% in 2013 to 14% by 2016.

Executive sponsorship seen as critical to business adoption. Executive sponsorship is perceived as the single most important factor that will be critical to ensuring successful business adoption within large corporations, with 83% of executives citing this as a critical factor. When questioned about where executive sponsorship is coming from, executives cited Chief Information Officers, Chief

Technology Officers, and Chief Analytics and Risk Officers as the primary drivers within large corporations.

"Investments in Big Data of greater than \$10MM are projected to rise from 19% in 2013 to 50% by 2016"

It's now about Variety, Volume, and Analytical Velocity.

One year ago, most executives cited the need to integrate a greater variety of data sources as their primary requirement. The 2013 survey indicates a near equal distribution among integrating more data sources, analyzing larger volumes of data, and *analytical velocity* – the speed by which organizations can obtain answers to critical business questions.

Accelerating Time-to-Answer (TTA) is Key to Business Success.

The biggest factor in ensuring business success, cited repeatedly by executive respondents, is the ability to make better, fact-based decisions, and to realize this ability by accelerating the speed with which organizations can gain insight and answer critical business questions. The ability to Accelerate Time-to-Answer (TTA) is a metric for business success.

Organizations are looking at New Roles and Processes to ensure Successful Adoption.

Large corporations are defining or considering new roles, such as establishing a Chief Data Officer, with 48% established or considering, and implementing new processes and organizational structures to ensure successful business adoption.

New technologies are fast becoming essential to Big Data execution and utilization.

Big Data database management technologies like Hadoop, Aster, and Netezza, and Analytics solutions like SAS, Tableau, and Revolution R are gaining adoption as corporations invest in a technology foundation to support their Big Data efforts.

About NewVantage Partners

Decades before the advent of “Big Data,” a body of business leaders, technologists, and academic thinkers were engaged by the prospect of helping companies leverage their information assets to gain insights that would lead to more data-informed business decisions.

Founded in 2001, NewVantage Partners provides expertise and guidance to Fortune 1000 business and technology executives who are seeking to leverage Data and Analytics to gain business insights, derive business value, transform critical business processes, and ensure successful business adoption and results.

NewVantage Partners is based in Boston with operations in New York and San Francisco.

Reference

Harvard Business Review. February 2013.

Get the Maximum Value out of your Big Data Initiative.

<http://newvantage.com/wp-content/uploads/2013/03/HBR-Blog-Network-020113.pdf>

MIT Sloan Management Review. January 2013.

Organizational Alignment is Key to Big Data Success.

<http://sloanreview.mit.edu/feature/organizational-alignment-is-key-to-big-data-success/>

CIO Magazine. January 2013.

How to Use Big Data to Make Better Business Decisions.

<http://newvantage.com/wp-content/uploads/2013/05/CIO-How-to-Use-Big-Data-to-Make-Faster-and-Better-Business-Decisions-012013.pdf>

MIT Sloan Management Review. September 2012.

How Big Data is Different. w. Tom Davenport.

http://newvantage.com/wp-content/uploads/2012/10/MIT_Sloan_Review_How-Big-Data-Is-Different_Fall2012.pdf

For more information, contact:

Randy Bean

Managing Partner

NewVantage Partners LLC

www.newvantage.com

rbean@newvantage.com

857.991.1404