Calling the Plays:
The Evolving Role of the CDO and Federal Big Data

Date: December 12, 2016

Underwritten by: ViON
Agencies are inundated with structured and unstructured data – calling for a new **Federal Big Data playbook**. By 2020, the digital universe is projected to reach 44 zettabytes* – so how can agencies make sense of it all?

New roles, including the **Chief Data Officer** (CDO) and Chief Data Scientist, have been created to help agencies manage and leverage their data. Are CDOs taking ownership over data management and governance issues? What effect have CDOs had on data management efficiency? And, how are CDOs and CIOs working together to ensure agencies are keeping pace with technological realities?

To find out, MeriTalk surveyed 150 Federal IT managers familiar with big data. The resulting “**Calling the Plays**” report examines how CDOs are changing agencies’ big data game – from data protection to data management.

*"The Digital Universe of Opportunities: Rich Data and the Increasing Value of the Internet of Things” EMC/IDC, 2014*
Executive Summary

• **Feds Need a New Big Data Playbook:**
  • While 92% of Federal IT managers say their agency uses big data in some form, the majority (58%) would grade their data management strategy a C or below
  • Top strategic challenges include: Converting data into actionable intelligence, governing data, and centralizing data storage

• **CDOs are Changing the Game:**
  • Agencies with a CDO are significantly more likely to be successfully managing big data than those without – 69% to 40%
  • Agencies with a CDO are significantly more likely than those without to use big data for cyber security (65% to 48%), decision making (57% to 41%), and mission intelligence (49% to 35%)

• **But We’re Not in the End Zone Yet:**
  • Those without a CDO think the role’s main responsibility should be leveraging agency data to make better-informed decisions, but just 35% of those with a CDO said this is one of their primary responsibilities
  • Going forward, Feds want to see CDOs maximize data quality (42%) and make data management strategies more actionable (40%)
While 92% of Federal IT managers say their agencies are using big data in some form today*, the majority (58%) would grade their master data management strategy a **C or below**

Top strategic challenges include:

1. Converting data into actionable intelligence
2. Governing data
2. Centralizing data storage

Additionally, Fed IT managers estimate just 50% of their agency’s data (structured and unstructured) is currently integrated under their master data management strategy


**Take Away:** Feds Need a New Playbook
Analyzing Our Weaknesses

- Around half of Feds report struggling to manage big data and leverage it for decision making

47% are not successfully managing big data

Civilian agencies 40%; DoD 55%

59% are not successfully leveraging big data for decision making

Civilian agencies 56%; DoD 61%

Which of the following data challenges is your agency currently struggling with?*

1. Protecting data (43%)
2. Analyzing data (39%)
3. Consolidating and integrating data (38%)
4. Keeping down the cost of data management (31%)

*Respondents asked to select all that apply

Take Away: Holes in the Offense
• 67% of Feds who do not have a CDO say their agency is in desperate need of leadership around big data and analytics efforts

The good news

33% of Federal agencies have recently appointed a CDO and another 36% have plans to add one within the next two years

Why do we care?

Agencies with a CDO are significantly more likely to successfully manage big data

- 69% with CDO
- 40% without CDO

And significantly more likely to successfully leverage big data for decision making

- 61% with CDO
- 28% without CDO

Take Away: Leadership is Crucial
• In agencies with a CDO, 76% say they have taken ownership over data management and governance issues

What are your CDO’s primary responsibilities?*

| 55%   | Centralizing organizational data |
| 51%   | Protecting organizational data   |
| 49%   | Improving data quality           |
| 43%   | Managing open government data efforts |
| 43%   | Bridging the gap between IT and operations |
| 41%   | Leveraging data to help set and achieve realistic goals |

*Respondents with a CDO asked to select all that apply

Take Away: CDOs Organize and Protect
Take Away: Benefits for the Whole Team

Leaving a Legacy

• …and 88% of agencies with a CDO say they are making a positive impact

Where has your CDO made the greatest impact so far?*

#1
Improving overall data management efficiency
(59% rate an A or B)

#2
Maximizing data quality by reducing data that is redundant, obsolete, and/or trivial
(55% rate an A or B)

#3
Building trust and relationships throughout the agency and standardizing data
(53% rate an A or B)

*Respondents with a CDO asked to grade their CDO’s impact in each area on a scale of A-F
Moving Big Data Down the Field

- Agencies with a CDO are significantly more likely to have implemented big data for cyber security, decision making, and mission intelligence.

Percentage who use big data for the following:

- Cyber security analytics: 65% with CDO vs. 48% without CDO
- Strategic decision making: 57% with CDO vs. 41% without CDO
- Mission intelligence: 49% with CDO vs. 35% without CDO

Agencies with a CDO are also significantly more likely than those without to see big data as an asset to move government initiatives forward vs. a byproduct to fulfill requirements/reporting – 65% to 51%.

**Take Away:** CDOs More Likely to Score
So far, agencies report their CDOs and Chief Information Officers (CIOs) have productive working relationships.

92% say the CDO and CIO are working together to ensure their agency is keeping pace with the technological realities of big data and analytics*

71% say their CDO has taken at least a few of the CIO’s responsibilities*

*Of those with a CDO at their agency

Take Away: Leadership Divides and Conquers
Growing Pains

- But, some challenges remain

**#1 (Tie)**
A lack of established expectations (33%)

**#2**
A lack of leadership buy-in (31%)

**#1 (Tie)**
A lack of measurable improvements (33%)

**#3**
A lack of supporting staff buy-in (27%)

**Take Away:** Bring Out the Measurement Chains

*Respondents with a CDO asked to select all that apply*
93% of those who don’t have a CDO say having one would have a positive impact.

And 64% of those who do not currently have a CDO would like to see one appointed in the next year.

**Take Away:** The Countdown is On

**Agencies without a CDO: Who currently owns the responsibilities of a CDO?**

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<thead>
<tr>
<th>Percentage</th>
<th>Role</th>
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<tr>
<td>36%</td>
<td>CIO</td>
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<td>33%</td>
<td>IT Director</td>
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<td>20%</td>
<td>Data Analyst</td>
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<tr>
<td>16%</td>
<td>Data Scientist</td>
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<td>10%</td>
<td>Chief Technology Officer (CTO)</td>
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<tr>
<td>12%</td>
<td>Unsure</td>
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</tbody>
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*Respondents asked to select all that apply*
But, agencies dreaming of a CDO may not be getting what they bargained for.

Those without a CDO think the role’s main responsibility should be to leverage agency data to make better-informed decisions, but just 35% of those with a CDO say this is one of their primary responsibilities.

*Take Away:* Not Yet a Perfect System
While agencies understand the benefits of a CDO, few have the resources in place to support him or her.

Where does your organization stand with the following positions?

- Deputy Chief Data Officer: 25% have now, 24% plan to hire in the next two years.
- Chief Analytics Officer: 29% have now, 23% plan to hire in the next two years.
- Chief Data Scientist: 25% have now, 15% plan to hire in the next two years.

Take Away: Short-Sighted Staffing
Big Hopes for the Future

- **57%** of Federal IT managers believe that the CDO will be the hero of big data and analytics

Going forward, Feds would like to see CDOs implement the following changes:

- **#1** Maximize data quality by reducing redundant, obsolete, and/or trivial data (42%)
- **#2** Make organization data management strategy more actionable (40%)
- **#3** Develop regulations and standardized procedures around data storage and management (32%)
- **#4** Establish a plan for the storage and use of unstructured data (29%)
- **#5** Lead a big data training initiative for current IT pros (25%)

*Respondents asked to select all that apply*
What is the single most important piece of advice you would give to an agency incorporating a CDO for the first time?

Advice from those with a CDO:

- “Allow the CIO to be in on the tasking, job descriptions, interviewing, and hiring”
- “Define roles, expectations, and reporting structure”
- “Establish a data plan early and account for increased cost to manage”

Requests from those without:

- “[Integrate the CDO] into current IT data policies and procedures to simplify the transition”
- “Listen to the needs of the agency and build your plan around the agency’s mission”

Take Away: Preparation is Everything
**Expand Your Strategy:**
Agencies are not effectively integrating big data under the umbrella of their master data management strategy. Without this integration, agencies are not able to fully leverage the true potential of big data tools to gain valuable and actionable insights. It must become a top priority

**Bring In the CDO:**
Having a CDO helps agencies manage and leverage big data successfully. A CDO also increases agency odds of using big data for cyber security analytics, strategic decision making, and mission intelligence

**Promote Teamwork:**
To be as impactful as possible, CDOs need buy-in from both leadership and staff, as well as established expectations. CDOs need to not only work with CIOs, but the entire team to ensure success
Methodology and Demographics

- MeriTalk, on behalf of ViON, conducted an online survey of 150 Federal IT managers familiar with their agency’s big data use in September and October 2016. The report has a margin of error of ±7.97% at a 95% confidence level.

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<th>Job Title:</th>
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<td>9% CIO/CTO</td>
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<td>7% Deputy CIO/CTO</td>
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<td>32% IT Director/Supervisor</td>
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<td>14% IT Systems Engineer</td>
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<td>6% Data Center Manager or Administrator</td>
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<td>11% Network Manager or Administrator</td>
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<tr>
<td>21% Other IT or Data Manager</td>
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<tr>
<th>Agency Type:</th>
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<td>50% Civilian agency</td>
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<tr>
<td>50% DoD or Intel agency</td>
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100% of respondents say they are familiar with their agency’s use of or plans for big data.
Thank You

Robin Tiberio
rtiberio@meritalk.com
703-883-9000 ext. 108