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Leveraging the Federal Data Strategy

ACCELERATING DATA INNOVATIONS WITHIN THE FEDERAL GOVERNMENT

DLT
A TECH DATA COMPANY

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About the Author

Dr. Sherry Bennett serves as chief data scientist for DLT Solutions, a Tech Data company. As the chief data scientist for DLT, she is responsible for the vision and oversight of DLT's Big Data & Analytics technology domain, which accelerates the capabilities and development of analytical and artificial intelligence enabled organizations within the U.S. public sector.

Prior to her tenure at DLT, Dr. Bennett spent more than 15 years in higher education, where, in her roles as chief data officer and data scientist, she was responsible for establishing global data science teams and decision support services for universities. One of her most notable roles before joining DLT, was serving as divisional vice president at Laureate International Universities where Dr. Bennett led the creation and management of a global business intelligence and data science team, serving the information needs for a portfolio of universities across North and South America, Europe and Asia. Prior to joining DLT, she was serving as the chief data officer at University of Maryland Global Campus, the largest online public university in the United States. Dr. Bennett has a Ph.D. and B.A. in Political Science from Michigan State University.

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Introduction

The fourth Industrial Revolution is here and with it a technological landscape, which is fundamentally altering the way we live, work and relate to one another.[1] With new technologies merging the interrelationship between the physical, digital and biological worlds, and "thinking machines" replacing human tasks and jobs, the skills that organizations need in the workforce for the future are changing. These transformations are occurring rapidly and creating huge challenges for organizations and talent management. Nowhere is this more apparent than in the U.S. public sector, and more specifically, the federal government.

The publication of the President's Management Agenda (PMA) acknowledges these challenges and sets forth an ambitious digital modernization plan for the federal government.[2] Accompanying the plan, are a number of legislative acts and executive mandates, which taken together,

1 Schwab, Klaus (2018). The Global Competitiveness Report. World Economic Forum. The 4th Industrial Revolution, also referenced as (4IR), is also characterized by the accelerated growth in the utilization of new technologies such as artificial intelligence, cloud computing, robotics, 3D printing, the Internet of Things, advanced wireless technologies, etc.

2 The President's Management Agenda (2018). The President's Management Council and the Executive Office of the President: https://www.whitehouse.gov/wp-content/uploads/2018/03/Presidents-Management-Agenda.pdf.

afford data technology companies opportunities to add value and help shape how federal agencies leverage and mature data. Central among them all is the Federal Data Strategy (FDS). The FDS, presented in final form in the Office of Management and Budget (OMB) Memorandum M-19-18, *Federal Data Strategy – A Framework for Consistency*, a ten-year vision for how the federal government will accelerate the use of data to deliver on mission, serve the public and steward resources.[3]

This eBook provides a detailed review of the relevant legislation, strategies, action plans and frameworks, while highlighting technology vendor and partner opportunities to promote data solutions and expand market share within the public sector. DLT Solutions works closely with data leaders across the public sector to understand the maturity of their data organizations and to collaborate on how best to accelerate their respective journeys. We have built a Big Data & Analytics framework (see Figure 1) and utilize the Federal Data Maturity Model (FDMM) to educate and advise leaders how best to evolve their capacity to build modern information architectures, where to start and what key success factors are necessary to drive a data driven culture. The Big Data & Analytics framework includes all components necessary to create enterprise data solutions that fulfills the requirements that our public sector customers have articulated and seek to build. There are many opportunities to add value working collaboratively with public sector data leaders. Leveraging our solutions framework and maturity assessments, DLT is ready to help our technology vendors and partners accelerate their reach within the public sector.

DLT Solutions works closely with data leaders across the public sector to understand the maturity of their data organizations and to collaborate on how best to accelerate their respective journeys.

3 The Federal Data Strategy. Details can be found at: **https://strategy.data.gov**.

DLT Big Data & Analytics Framework

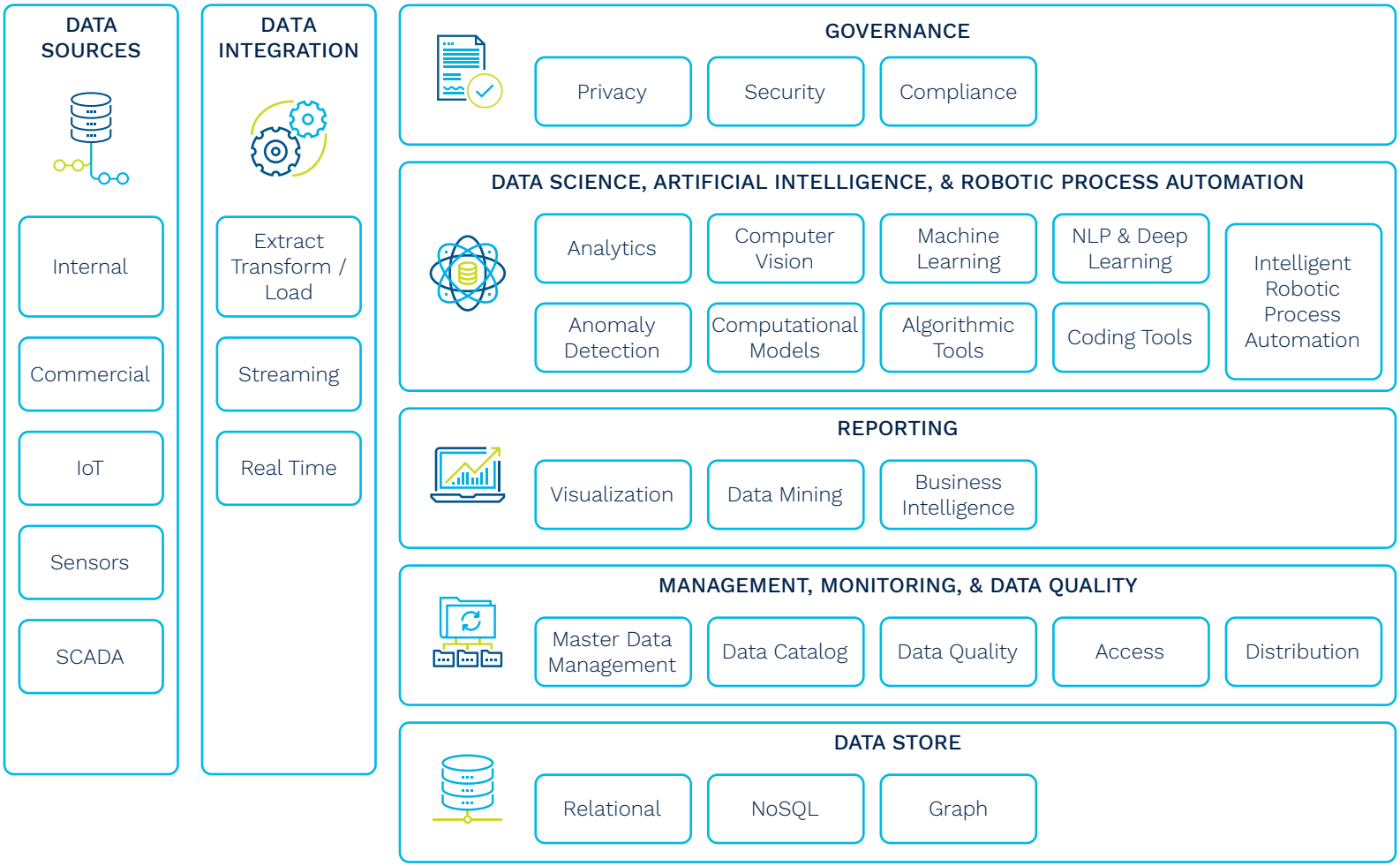

Figure 1. DLT Big Data & Analytics Framework.

1.

Framework Background

The President's Management Agenda

The PMA sets the stage for leveraging data as a strategic asset and ultimately the creation of a federal data strategy. The PMA is a long-term vision for modernizing the federal government designed to transform the delivery of mission operations, service and stewardship of taxpayers' dollars. Facilitating the transformation and confronting the critical government-wide challenges, the administration has stipulated three primary cross-agency priority (CAP) goals.[4] As Figure 2 illustrates, information technology (IT) modernization, a workforce of the future, and data accountability and transparency are the key goals to fuel transformation. Each is defined in more detail below.

- **Modern IT** must function as the backbone of how government serves the public in the digital age. Meeting customer expectations, keeping sensitive data and systems secure, and ensuring responsive/multi-channel access to services are critical parts of the vision for modern government.

4 See a full description of the CAP goals at: https://www.performance.gov/CAP/getting-payments-right/.

- **The workforce for the 21st century** must enable senior leaders and front-line managers to align staff skills with evolving mission needs. This will require more nimble and agile management of the workforce, including reskilling and redeploying existing workers to keep pace with the current pace of change.

- **Data, accountability and transparency initiatives** must provide the tools to deliver better results to the public, while improving accountability to taxpayers for sound fiscal stewardship and mission results. Investments in policy, people and processes are key elements of this transformation and require cross-agency cooperation to ensure an integrated data strategy that encompasses all relevant governance, standards, infrastructure and commercialization challenges of operating in a data-driven world.

Of importance to DLT's technology vendors and partners in the Big Data & Analytics technology domain, is the Data Accountability and Transparency goal. To enable agencies to leverage data as a strategic asset requires agencies to fundamentally understand:

1. What data they generate and what sources they could/should use for decision-making and program evaluation.

2. How to best manage information at an enterprise level utilizing modern information architecture (e.g., integration, processing, storing, securely and according to regulation).

3. Data governance and how to create a structure to enable transparency and quality (e.g., defining roles, responsibilities, ownership, sharing).

4. How to use data to innovate and reinvent how mission, service and stewardship are delivered to modern standards and with efficiency and improved performance outcomes.

Figure 2. PMA CAP Goals. Graphic Courtesy of General Services Administration and the Office of Management and Budget.

Goal Statement

- Leverage data as a strategic asset to grow the economy, increase the effectiveness of the Federal Government, facilitate oversight, and promote transparency.

Challenge

- The use of data is transforming society, business, and the economy. Data provided by the Federal Government have a unique place in society and maintaining trust in Federal data is pivotal to a democratic process. The Federal Government needs a robust, integrated approach to using data to deliver on mission, serve customers, and steward resources while respecting privacy and confidentiality.

Opportunity

- Develop a long-term, enterprise-wide Federal Data Strategy to better govern and leverage the Federal Government's data.
- Enable government data to be accessible and useful for the American public, businesses, and researchers.
- Improve the use of data for decision-making and accountability for the Federal Government, including for policy-making, innovation, oversight, and learning.

Figure 3. Data, Accountability and Transparency. Graphic Courtesy of General Services Administration and the Office of Management and Budget.

The PMA created an explicit focus on data and its capability to fuel innovation in the federal government. The cultivation of data as an asset, its use in government, and the urgency to set up organizations to leverage it, would subsequently be codified into several important acts and mandates described below.

The Foundations for Evidenced-Based Policymaking Act of 2018

Recognizing that many federal agencies often lack requisite data and evidence to evaluate and make decisions regarding, among other items, program operations, the allocation of resources, assessments of regulations and the impact of recommended policies, the Foundations for Evidenced-Based Policymaking Act of 2018 (also known as the Evidence Act) was signed into law. The implementation of this act set forth the mandate for agencies to derive learning agendas, identify personnel and provide guidance on the collaboration and coordination required to advance data and evidence building functions in the federal government.[5] The Evidence Act mandates a systematic rethinking of government data management to better facilitate access for evidence-building activities and public consumption and meeting the requirements under a phased approached. This is detailed in Figure 4.[6]

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5 Evidence in this context refers to foundational fact finding, performance measurement, policy analysis and program evaluation. See 44 U.S.C.§ 3561(6). Details on the bill can be found at: https://www.congress.gov/bill/115th-congress/house-bill/4174/text.

6 Office of Management and Budget, Executive Office of the President, OMB M-19-23 and Phase 1 Implementation of the Foundations for Evidence-Based Policymaking Act of 2018 (2019) at: https://www.whitehouse.gov/wp-content/uploads/2019/07/M-19-23.pdf.

Evidence Act Phases and Timeline

Phase 1:

Learning Agendas, Personnel, & Planning

- Learning Agendas
- Chief Data Officers
- Evaluation Officers
- Statistical Officials
- Agency Data Governance Boards
- Chief Data Officer Council
- Evaluation Officer Council
- Interagency Council on Statistical Policy
- Agency Evaluation Plans
- Capacity Assessments
- Open Data Plans

Phase 2.

Open Data Access & Management

- Make Data Open by Default
- Comprehensive Data Inventory
- Federal Data
- Catalogue
- Repository of Tools and Best Practices

Phase 3.

Data Access for Statistical Purposes

- Make Agency Data Assets Available to Statistical Units
- Expand Users' Secure Access to Data Assets through Statistical Units
- Allow Recognition of New Statistical Units
- Standardize Application Process for Accessing Data Assets
- Codify Statistical Unit
- Responsibilities

Phase 4.

Program Evaluation

- Standards and Best Practices
- Program Evaluation Skills and Competencies (with OPM)

Ongoing Implementation & Reporting

- Budget Cycles
- Information Resource
- Management Plans
- Performance Plans
- Strategic Plans
- Federal Data Strategy Annual
- Action Pans
- Biennial! Report
- Statistical Programs Annual Report
- Regulatory Planning
- Information Collection Review

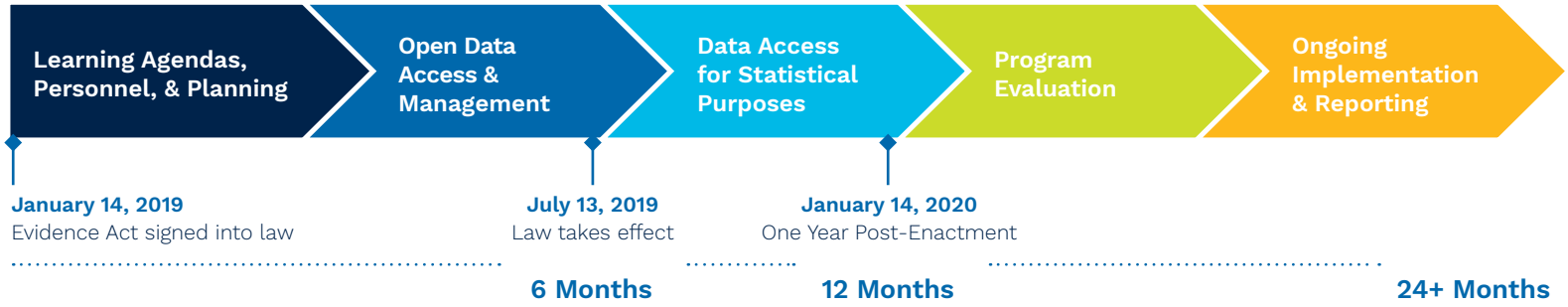


Figure 4. Evidence Act Guidance. Graphic Courtesy of the Federal Data Strategy Team.

Within each phase of the Evidence Act, opportunities exist for partners and technology vendors to deliver education, offerings and services to federal agencies across the U.S. government.

Many of the activities stipulated in each phase (beginning in January of 2019) have been accomplished or are well underway. Though not comprehensive, many of the activities stemming from the Evidence Act involve setting up the initial infrastructure to build a data driven organization, such as hiring key leadership roles, creating guidelines around accessibility and openness to data assets. Within each phase of the Evidence Act, opportunities exist for partners and technology vendors to deliver education, offerings and services to federal agencies across the U.S. government. To build momentum and collaboration across the U.S. government, as well as a sense of urgency around data priorities, within months, both the FDS and the Open, Public, Electronic and Necessary (OPEN) Government Data Act were finalized and passed into law, respectively. A detailed description of both, along with information about how technology vendors and partners can leverage these institutional mechanisms as a call-to-action to engage customers, is detailed in the next sections.

The OPEN Government Data Act of 2019

As part of the Evidence Act, the OPEN Government Data Act became law on January 14, 2019. The OPEN Government Data Act, by law, requires three key actions to be accomplished:

1. All non-sensitive government data be made available in machine-readable formats

2. Federal agencies will be held accountable to help maintain a comprehensive federal data catalog

3. Create a non-political chief data officer (CDO) to lead strategy and management of information

Every agency will have a CDO to help set strategy around data, not only in terms of infrastructure and management to scale within complex IT environments but creating a path to turn information into assets to achieve mission objectives. Many federal civilian agencies as well as the branches across the Department of Defense (DoD) have hired CDOs, or at the very least, have job postings seeking to hire these data leaders.[7] CDOs are the key decision-makers setting the strategy, in partnership, with their CIOs, on technology and the infrastructure required to support and deliver information for data solutions and innovations (e.g., reporting, analytics, artificial intelligence (AI) workloads) across their respective organizations. Once hired, many CDOs create data strategies for their respective organizations. The creation of these strategies represents a great opportunity for technology vendors and partners to collaborate with these data leaders, especially to convey guidance and advice regarding best practices and use cases in existence in the private sector.

In addition, many technologies are required to convert data into machine-readable formats as well as catalog existing information assets within federal agencies. Many of the leaders within these organizations, however, may not know where or how best to begin these activities. In this sense, though technology is an enabler and necessary, it is not sufficient to overcome some of the process and cultural issues, which can pose roadblocks to progress. Herein lies further opportunities for technology vendors and partners to bring practical advice, education and solutions to federal agencies who are struggling to get started.

The FDS development team, seeking collaboration across the federal government and the private sector, and after numerous public meetings, comment periods, revisions and drafts has released a final version of the FDS. The next section provides a high-level overview of the strategy and a review of the action items/steps stemming from the strategy. In particular, the 2020 action steps are discussed, along with a status on milestones accomplished and opportunities that remain for our technology vendors and partners as the federal fiscal year-end 19-20 comes to a close and the federal budget for 2020-21 gets underway.

7 Contact **Dr. Sherry Bennett** for a complete list of federal CDOs.

2.

The Federal Data Strategy

Federal Data Strategy

Leveraging Data as a Strategic Asset

The FDS is comprised of ten guiding principles and forty practices. The guiding principles are values which are intended to underlie each of the practices and actions as federal agencies begin to execute the FDS. The practices are akin to best practices around data management that exist in the private sector. Recognizing that many of these practices cannot be achieved over a one, three, or five-year time horizon, the FDS development team has specified action steps/items, which prioritize initiatives for federal agencies to manage over a calendar year.

Logo courtesy of the Federal Data Strategy Team.

Federal Data Strategy Mission and Framework

Mission

The mission of the Federal Data Strategy is to leverage the full value of federal data for mission, service, and the public good by guiding the Federal Government In practicing ethical governance, conscious design, and a learning curve.

Figure 5. Federal Data Strategy Framework. Graphic Courtesy of the Federal Data Strategy Team.

The FDS Principles

The FDS principles are organized around three rubrics: (1) ethical governance, (2) conscious design and (3) fostering a learning culture.[8]

- Ethical Governance

  1. Uphold Ethics
  2. Exercise Responsibility
  3. Promote Transparency

- Conscious Design

  4. Ensure Relevance
  5. Harness Existing Data
  6. Anticipate Future Uses
  7. Demonstrate Responsiveness

- Fostering a Learning Culture

  8. Invest in Learning
  9. Develop Data Leaders
  10. Practice Accountability

The FDS Practices

The FDS practices are also organized around three rubrics: (1) building a culture that values data and promotes public use, (2) governing, managing and protecting data, and (3) promoting efficient and appropriate data use.[9]

Building a Culture that Values Data and Promotes Public Use

1. Identify Data Needs to Answer Key Agency Questions
2. Assess and Balance the Needs of Stakeholders
3. Champion Data Use
4. Use Data to Guide Decision Making
5. Prepare to Share
6. Convey Insights from Data
7. Use Data to Increase Accountability
8. Monitor and Address Public Perceptions
9. Connect Data Functions Across Agencies
10. Provide Resources Explicitly to Leverage Data Assets

8 For a complete description see the Federal Data Strategy available at: https://strategy.data.gov.

9 For a complete description see the Federal Data Strategy available at: https://strategy.data.gov.

Governing, Managing and Protecting Data

11. Prioritize Data Governance
12. Govern Data to Protect Confidentiality and Privacy
13. Protect data Integrity
14. Convey Data Authenticity
15. Assess Maturity
16. Inventory Data Assets
17. Recognize the Value of Data Assets
18. Manage with a Long View
19. Maintain Data Documentation
20. Leverage Data Standards
21. Align Agreements with Data Management Requirements
22. Identify Opportunities to Overcome Resource Obstacles
23. Allow Amendment
24. Enhance Data Preservation
25. Coordinate Federal Data Assets
26. Share Data Between State, Local, Tribal and Federal Agencies

Promoting Efficient and Appropriate Data Use

27. Increase Capacity for Data Management and Analysis
28. Align Quality with Intended Use
29. Design Data for Use and Re-Use
30. Communicate Planned and Potential Uses of Data
31. Explicitly Communicate Allowable Use
32. Harness Safe Data Linkage
33. Promote Wide Access
34. Diversify Data Access Methods
35. Review Data Releases for Disclosure Risk
36. Leverage Partnerships
37. Leverage Buying Power
38. Leverage Collaborative Computing Platforms
39. Support Federal Stakeholders
40. Non-Federal Stakeholders

In the next section, a detailed description of the 2020 action steps are provided.

Federal Data Strategy Action Plan

The action plan has been organized under three rubrics: (1) agency, (2) community and (3) shared. They are described in detail below.

Agency Actions

The following six agency actions represent the key activities each agency, unilaterally, will execute to create the foundation upon which to build solid plans and processes for managing and leveraging data to accomplish mission objectives. It is important to note that federal civilian and DoD agencies across the government are at different stages in terms of their maturity levels when it comes to managing and leveraging data within their organizations. This fact alone creates a great opportunity for technology companies and partners. Helping agencies understand what best practices to implement are critical to advance the use of data to drive decision making, affords DLT's technology vendors and partners with the opportunity to assess how and when their offerings can be leveraged to accelerate the maturity of the organization. DLT has already worked with partners to promote a maturity assessment program that provides value for our public sector customers. We invite technology vendors to participate in this program.

Many of the agency action items below represent opportunities for technology vendors and partners who have offerings and services that fall within the management, monitoring and data quality and governance areas of DLT's Big Data & Analytics framework.

1. **Identify Data Needs to Answer Priority Agency Questions**
   This activity can be enabled through the development of a data catalog. Many agencies will use their mission priorities to drive the priority agency questions or look to programs in need of data-driven evaluations seeking budget increases (or those facing budget decreases). Catalogs can lend credibility to what sources are authoritative and appropriate to use due to quality, accessibility, etc. and provide visibility to stakeholders inside and outside of an organization.

2. **Constitute a Diverse Data Governance Body**
   This activity can be facilitated using data governance tools designed to codify roles and responsibilities within an agency's governing council and provide the requisite security and administration around who, what, when and how regarding accessibility to data. This is an area where the particulars of whether and how data is shared across organizations can be managed using enabling technology.

3. **Assess Data and Related Infrastructure Maturity**
   One of the most insightful activities to provide to federal government customers is a data maturity model assessment for their respective organization. The assessment, in addition to the process for identifying low hanging fruit, provides opportunities that render great organizational value in a short period of time and are very beneficial to customers who oftentimes do not know where or how to start maturing their use of data. Typically, pilots or proof-of-concepts utilizing analytics, data science or AI techniques can render great value (use cases pertaining to fraud, threat detection, etc.). More details on FDMM are provided in a subsequent section.

4. **Identify Opportunities to Increase Staff Data Skills**
   Many of the new data science and AI methods and data techniques that can add great value to an organization, require technical skills that are in high demand in both the public and private sectors. As a result, many federal agencies are beginning to invest in training programs within their respective agencies to create analysts who can leverage data. Tapping into these programs is an opportunity for technology vendors and partners across the entire DLT Big Data & Analytics framework to educate and showcase offerings and services.

5. **Identify Priority Data Assets for Agency Open Data Plans**
   Like item one, this action could be facilitated using a cataloging tool.

6. **Publish and Update Data Inventories**
   Like item one and five, this action could be facilitated using a cataloging tool.

Community of Practice

The community of practice actions are intended for groups of agencies, coordinated through some form of an interagency council, to integrate ongoing efforts related to existing laws, regulations and executive orders, which have direct relevance to the FDS. Specifically, the items below represent the most productive activities to build upon and improve collaboration on data initiatives across federal agencies. Technology companies again have an opportunity to add value to the communities which are created through this process. Many data leaders across the public sector seek advice and counsel from practitioners. These cross-collaboration opportunities are a great way to inform standards and practices across the public sector. DLT has created, hosted and participated in a number of workshops, seminars and webinars with our technology vendors and partners to help educate and advise public sector CDO and their

staff on the requirements and practices necessary to build a solid data infrastructure to create next generation data solutions. We add value for our technology vendors and partners when we create opportunities to participate in these public sector events with key government decision makers.

7. **Launch a Federal Chief Data Officer Council**
   Officially this council was formed and launched in January 2020 and is currently led by Ted Kaouk, CDO for the Department of Agriculture.

8. **Improve Data and Model Resources for AI Research and Development**
   This action items stems from the implementation of the executive order on Maintaining American Leadership in AI and is designed to improve the data and computing resources for AI research and development by February 2020. The executive order, issued February 2019, includes an objective to "Enhance access to high-quality and fully traceable federal data, models, and computing resources to increase the value of such resources for AI research and development, while maintaining safety, security, privacy, and confidentiality protections consistent with applicable laws and policies."[10]
   This action item is an opportunity for technology vendors and partners in the DLT Big Data & Analytics framework, particularly those in the analytics, data science and AI areas who focus on sourcing and utilization of data and software for machine learning, natural language processing, computer vision, and other AI techniques and methodologies.

9. **Improve Financial Management Data Standards**
   This action item is an opportunity for technology vendors and partners in the DLT Big Data & Analytics framework, particularly those in the data source and analytics, data science and AI areas who focus on sourcing and utilization of financial data.

10. **Integrate Geospatial Data Practices Into the Federal Data Enterprise**
    This action item is an opportunity for vendors and partners in the DLT Big Data & Analytics framework, particularly those in the data source and analytics, data science and AI areas who focus on sourcing and utilization of geospatial data.

A quick note about action item opportunities related to AI for technology vendors and partners in the Data Management, Monitoring and Quality area of DLT's Big

10 See Executive Order on Maintaining American Leadership in Artificial Intelligence (2019) available at: www.whitehouse.gov/presidential-actions/executive-order-maintaining-american-leadership-artificial-intelligence/.

Data & Analytics framework. Many federal agencies still lack a modern information architecture and attendant processes to store and ensure the quality of data necessary for models and data workloads as they move into an enterprise production environment. For example, any agency attempting to deploy an AI workload into a production environment will need to ensure that their data integrations, management (e.g., storage, updating, performance, algorithms), quality and security are able to handle or enable the workload in production according to whatever the service-level agreement (SLA) are for the particular service. Although not explicitly called out, AI enablement is a critical requirement, and technology vendors in this area and others listed above have opportunities to support federal agencies with these FDS action items.

Shared Solution Actions

The shared solutions activities are designed to create a set of data services that can be utilized by all federal agencies. By design, they are individual projects that have been assigned to one federal agency (typically OMB and General Services Administration (GSA)) or by a group designated by the existing council. Many of the action items listed below have been funded as part of the CAP goal regarding leveraging data as a strategic asset and are intended to provide directions, tools and services for implementing the strategy.[11]

11. **Develop a Repository of Federal Enterprise Data Resources**
    Office of Government Information Services (OGIS), GSA and OMB will develop the website resources. data.gov, a government-wide repository of polices, standards, tools, etc.

12. **Create an OMB Federal Data Policy Committee**
    OMB to create a committee to help agencies deliver on mission by assisting OMB with federal data policy, governance and resource considerations.

13. **Develop a Curated Data Skills Catalog**
    GSA to complete a curated data skills catalog of learning opportunities to help agencies.

14. **Develop a Data Ethics Framework.**
    GSA to create a framework to help agency staff systematically identify and assess the potential benefits and risks associated with the data they own and use.

15. **Develop a Data Protection Toolkit**
    A tool kit to advance strengthening of privacy

11 For additional detail see the Federal Data Strategy Action Plan 2020 (2019) at: https://strategy.data.gov/action-plan/.

and confidentiality matters governing the use of federal data impacting the public, businesses and democratic society at large. To be developed by the Interagency Committee on Standards Policy (ICSP) at the National Institute of Standards and Technology (NIST) and Federal Committee on Statistical Methodology (FCSM) at the National Center for Education Statistics (NCES).

16. **Pilot a One-Stop Standard Research Application**
The Census Bureau and ICSP to build a one-stop seamless and secure portal for researchers to request access to restricted Census Bureau data assets.

17. **Pilot an Automated Tool for Information Collection Reviews that Supports Data Inventory Creation and Updates**
NCES to develop a pilot for an automated tool to build agency data inventories and update metadata in agency data inventories to support an agency information collection request (ICR) process.

18. **Pilot Enhanced Data Management Tool for Federal Agencies**
GSA to pilot a metadata management tool, data hosting and application programming interface (API) capabilities in support of Evidence Act requirements (e.g., cloud hosting, leveraging data.gov's existing open source codebase).

19. **Develop Data Quality Measuring and Reporting Guidance**
FCSM and ICSP to develop best practices for measuring and reporting on the quality of data and shall create tools to help agencies support effective secondary uses of data.

20. **Develop a Data Standards Repository**
GSA, OMB and NIST to create a data standards repository to accelerate the creation and adoption of data standards across agencies.

Figure 6 summarizes each of the action items and when they are to be completed. As of September 2020, some of the action items have been pushed back due to shifting priorities arising from the COVID19 pandemic. Also, it is useful to note that GSA is in the process of creating centers of excellence (COE) around the use of analytics, AI and other Big Data & Analytics solutions. The figure shows what items have been accomplished to date.

Federal Data Strategy Year One Actions

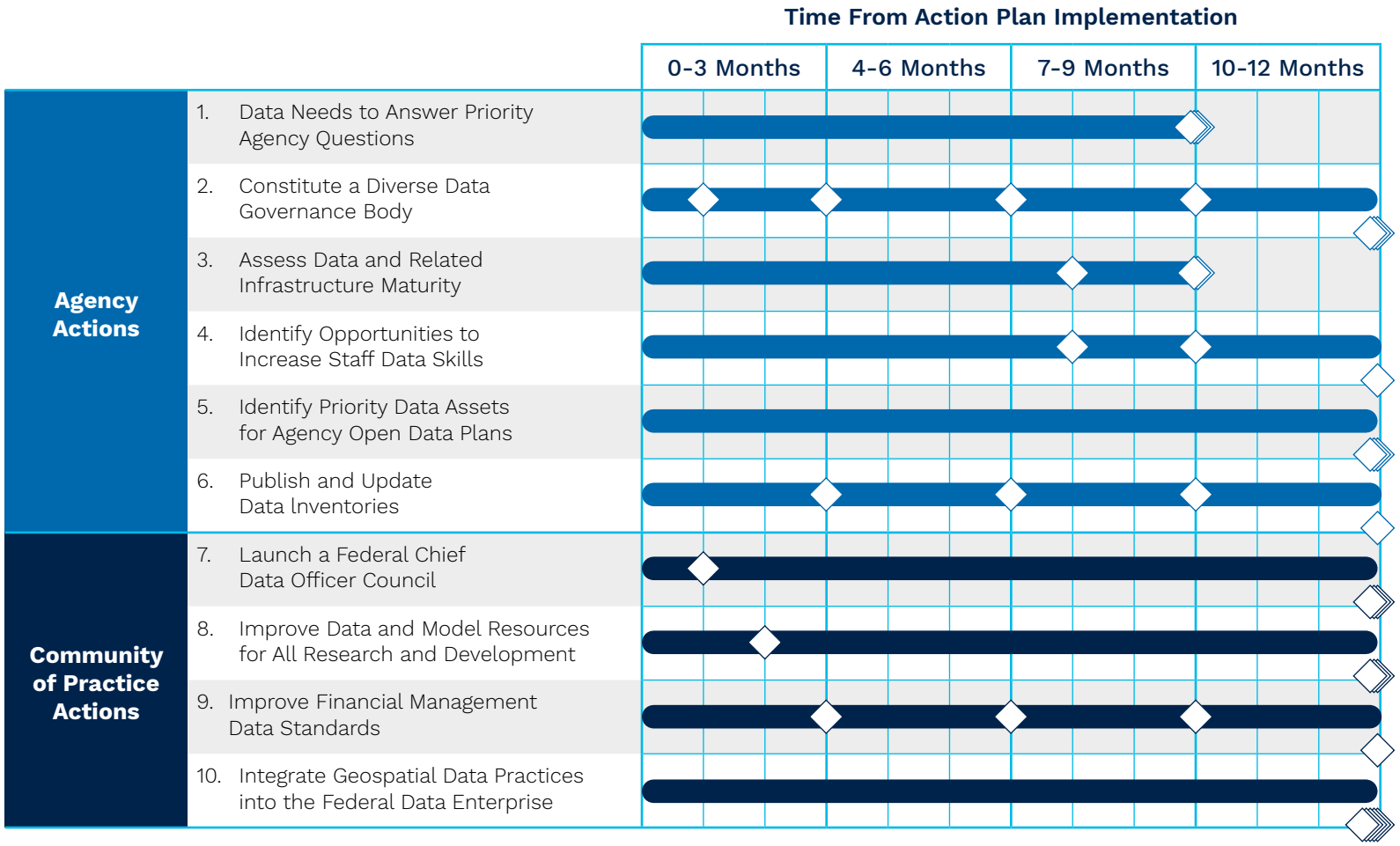


Figure 6. 2020 FDS Actions. Graphic Courtesy of the Federal Data Strategy Team.

Federal Data Strategy Year One Actions (Cont'd)

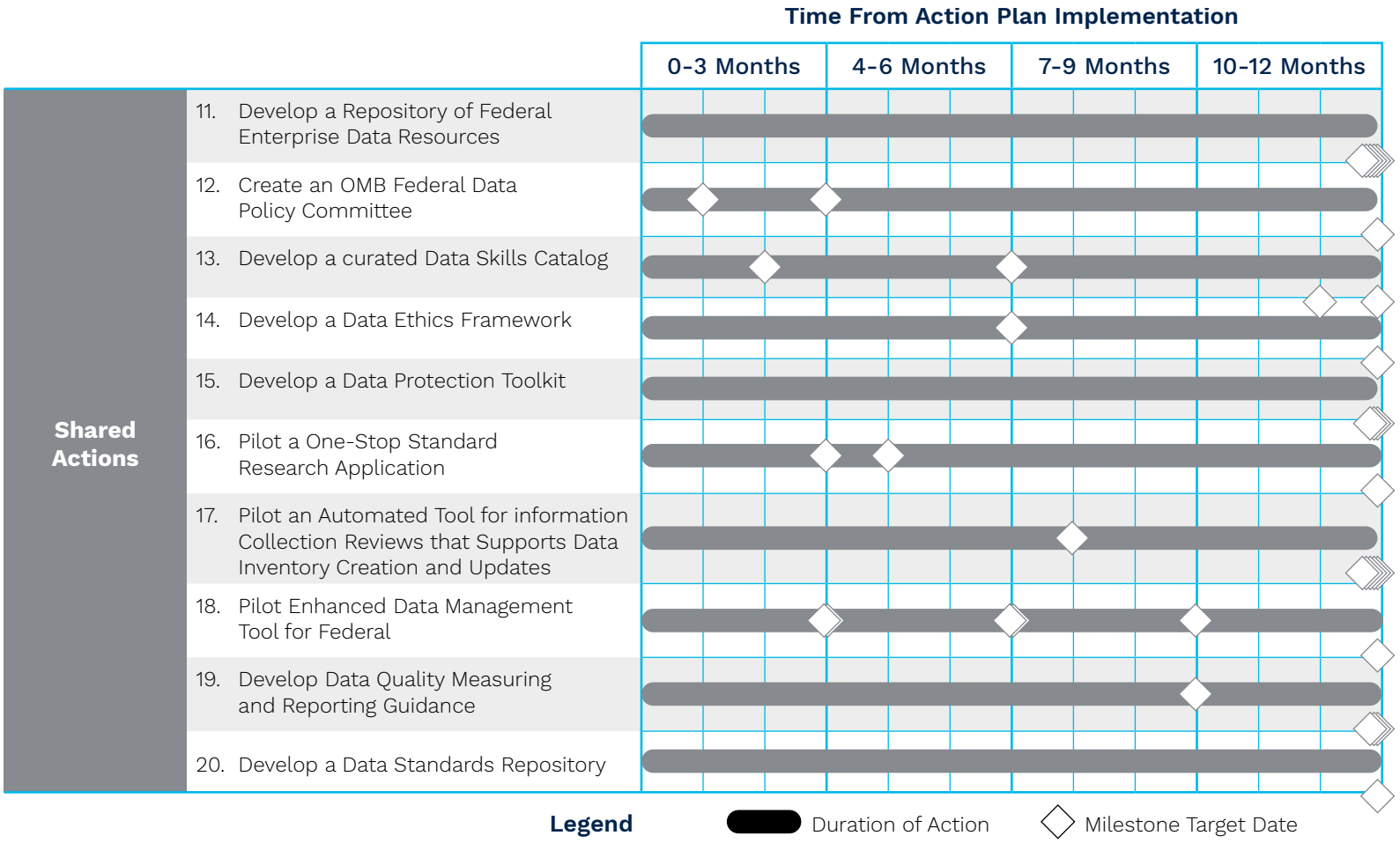


Figure 6. 2020 FDS Actions (Cont'd). Graphic Courtesy of the Federal Data Strategy Team.

Current Progress on the 2020 FDS Action Plan

As of June 2020, federal agencies have completed 12 of the FDS 2020 Action Plan milestones. Figure 7 summarizes the activities, milestones and due dates. The data is from the FDS website which updates activity on a recurring basis.

Highlights of recent accomplishments from the council include:

- **Action 13:** GSA hosted five stakeholder engagement activities to collect input on a curated data skills catalog and made more than two dozen revisions based on feedback.

- **Action 14:** GSA, along with the Chief Data Officer Council and the ICSP, completed an initial examination of ethical issues encountered across the data lifecycle in the process of drafting a data ethics framework.

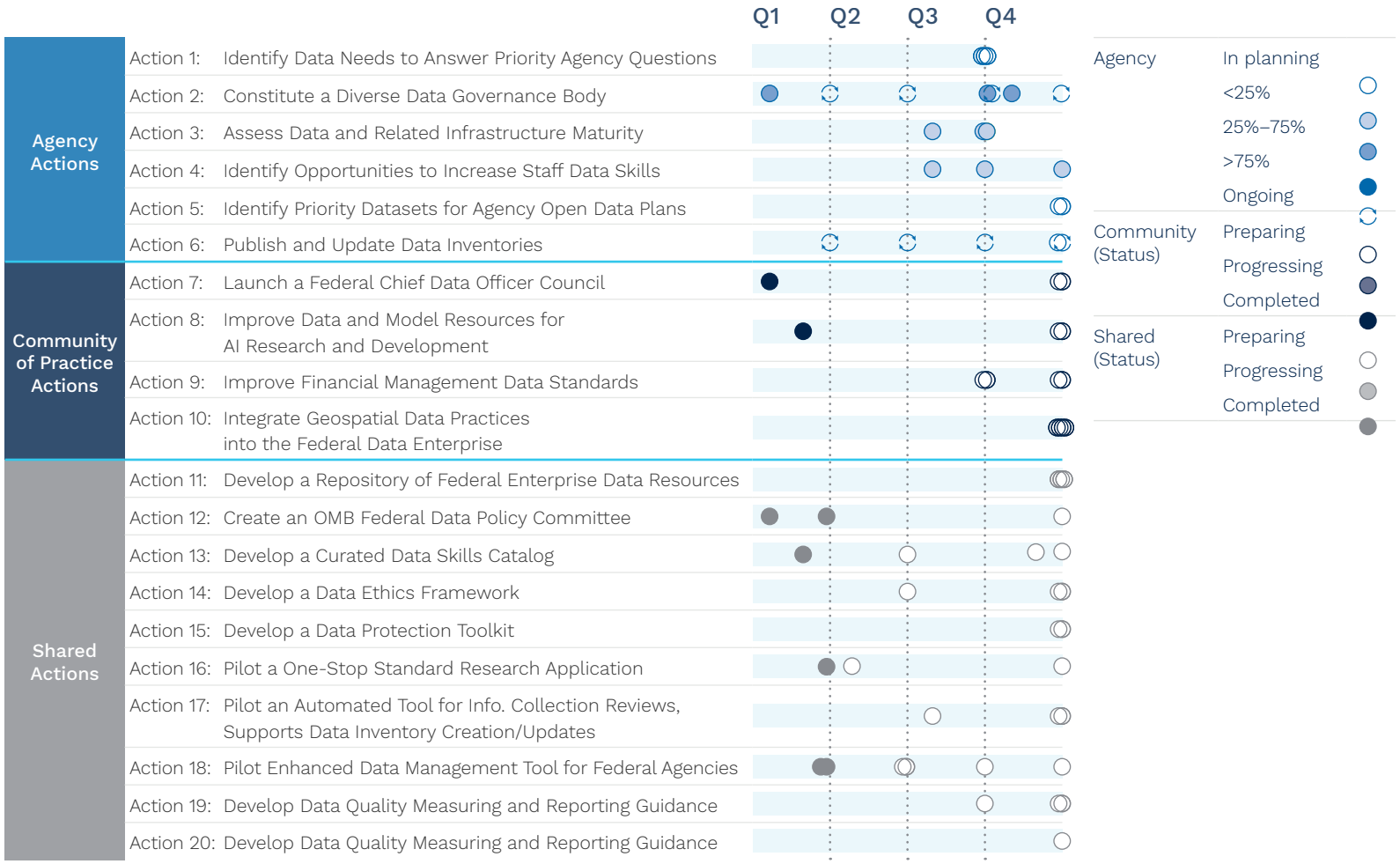
- **Action 16:** The Federal Statistical Research Data Center program, under the direction of the ICSP, piloted the **one-stop standard research application portal**.

- **Action 18:** GSA ensured that all necessary interoperability has been completed for its enhanced data management tool and that it is consistent with the current Federal Open Data plan. In addition, GSA developed a business plan and cost model, and uploaded them on **resources.data.gov**.

The status of these action items are excellent calls to action for technology vendors and partners initiating outreach to government customers about the state of their progress on adhering to these action items, milestones and due dates. Many of these agencies need the advice and council of practitioners who have experience delivering value by creating data organization and delivering data solutions that change how organizations operate.

Aside from the shared solution items, many of the mandated actions are not budgeted. Federal agencies are supposed to leverage existing IT and operation budgets to fulfil the obligations. There are many efforts underway to convince Congress and OMB to outlay specific budgets to help fund many of these initiatives.

Progress on the 2020 Federal Data Strategy Action Plan



FDS Progress as of September 2020. Graphic Courtesy of the Federal Data Strategy Team.

3.

Data Maturity and the Path to Innovation

There is increasing pressure across the public sector to leverage AI to create efficiencies and to establish the United States as a leader in this area. However, most agencies are not equipped to develop or handle these types of workloads. Most federal agencies at this time (September 2020), lack the requisite maturity to manage and leverage emerging technologies that incorporate machine learning, computer vision, natural language processing, etc.[12] DLT has created a Data Innovations Maturity Assessment framework, leveraging the FDMM (i.e., Figure 8), which evaluates agencies with respect to documented best practices and identifying gaps/opportunities to develop their capabilities across key components. Aligning an agency's mission, strategic operating plan and data strategy, DLT technology vendors and partners can utilize our Data Innovations Maturity Assessment framework to identify the quick wins that drive an agency's maturity, success and the expansion of a data-driven organizational culture.

12 This is not the case for most of the Intelligence Community, nor in some areas of DoD.

Federal Data Maturity Model

Figure 8 is the FDMM, which identifies six components, ranging from low capabilities to high capabilities, and outlines what is required to build a high performing data organization.

Most federal agencies, across all component on this model, have a great deal of work to do. This provides our technology vendors and partners with multiple opportunities to move public sector organizations capabilities from the lower capability scale across these components to higher levels.

Aligning an agency's mission, strategic operating plan and data strategy, DLT technology vendors and partners can utilize our Data Innovations Maturity Assessment framework to identify the quick wins that drive an agency's maturity, success and the expansion of a data-driven organizational culture.

Federal Data Maturity Model

	Disparate Systems and Groups, Reactive Data Management at the Individual System Level, Poor Data Quality, Little Decision Making Capability					Transparency and Mission ROI Through Executive Collaboration and Accountability for Data Quality, Government-wide Standards Automation and Decision Support
Analytics Capability		Summary reports	Descriptive analytics	Diagnostic analytics	Predictive analytics	Cross-functional prescriptive analytics
Data Culture		Data use is uncoordinated and ad-hoc. Quality issues limit usefulness	Data use is by request. Quality programs are nascent	Some data and analytics are routine and have quality programs supporting key assets	High demand for data across agency. Drives decision making	Inter-agency data communities of interest share analyses, best practices
Data Management		Data managed in silos, documentation sparse; standards not regularly applied	Data managed in silos; some documentation exists; standards not regularly applied	Data managed across the agency; documentation is uniform; some standards are applied	Data are managed cross-functional applications in mind; documentation is uniform; standards regularly applied	Data are managed agency wide needs; documentation is uniform; standards are uniformly applied
Data Personnel		No dedicated personnel performing data duties	Some siloed data teams; no clear career path for data personnel	Professional development path established for data personnel	Data professionals integrated with subject matter experts	Multidisciplinary teams solving agency mission and operational challenges
Systems/ Technology		Data is stored in siloed systems; data are frequently copied to facilitate use	Data are stored in siloed systems; some data can be programmatically accessed	Some common data systems; some data can be programmatically accessed	Some common data systems; key data can be programmatically accessed; some common tools exist	Core common data systems; key data can be programmatically accessed; common tools are in use across the agency
Data Governance		Loose affiliations of technical staff	Bureau-level collaboration, data ownership and stewardship	Agency-level collaboration, data ownership and stewardship	Agency-level organization accountable for data governance	Multi-agency advancement of data ownership and stewardship
		Low Capability				**High Capability**

Figure 8. Federal Data Maturity Model. Graphic Courtesy of the Federal Data Cabinet.

Conclusion

DLT's Data Innovations Maturity Assessment framework is one strategy to develop relationships and build opportunities for our technology vendors and partners across the federal government and throughout the public sector. Currently (September 2020), most federal agencies are in the process of drafting data strategies or socializing them across their respective organizations. Identifying how an agency starts their journey to mature and organize their data is a conversation that all public sector data leaders are eager to have. DLT is ready bring our customers, technology vendors and partners together to have this conversation.

To get started, please contact **Dr. Sherry Bennett** the chief data scientist at DLT Solutions.

Learn more about DLT's big data and analytics solutions for the public sector.

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