From deluge to decisions

Positioning data as a strategic federal asset

December 2023

Contacts:

Ann Ebberts, CEO, AGA
aebberts@agacgfm.org
www.agacgfm.org

Sherien Youssef, MBA, CGFM, PMP, CSM
Vice President, Business Consulting, CGI
sherien.youssef@cgifederal.com
www.cgi.com/federal

Federal agencies continuously collect large volumes of data — financial data, scientific data, personnel records, taxpayer information, surveillance imagery, demographic material, and much more. All this data represents tremendous opportunity for gaining insights, projecting trends, managing agency resources, and fulfilling mission expectations. However, awash with data, agency leaders recognize the challenge of harnessing its power, both within the agency and across agency lines.

With the maturity of technologies such as cloud-based data lakes and artificial intelligence (AI) techniques such as large language models, technologies are available to enable data mining and analysis. Technology alone, though, cannot transform a deluge of data into decision-making dynamo.

Federal C-suite executives must combine their wisdom and leverage their authority to unleash the power of data for the benefit of federal missions. AGA and CGI invited federal executives to share insights on how their agencies are making the most of their data and what they believe the future holds. This report summarizes their comments captured at a December 2023 roundtable meeting.

Executive Summary

AGA and CGI convened a roundtable of federal executives for a dynamic discussion about the federal data landscape's challenges and opportunities. Attendees reflected on ways their organizations have successfully harnessed the power of data to achieve mission results; constraints that impede their ability to leverage data effectively, especially across organizational lines; and where their organizations are focusing their attention for the immediate future. These perspectives represent the collective wisdom of federal Chief Financial Officers, Chief Information Officers, Chief Data Officers, and Chief Risk Officers.

The group of executives universally agreed that by elevating the view of data as a strategic asset, federal agencies can reap a wealth of benefits:

- enhanced decision-making
- improved risk management
- optimized resource allocation
- strengthened transparency
- increased collaboration

However, to unlock that potential, federal leaders must address data silos, prioritize data governance, invest in technology and training, and foster a data-driven culture that embraces advanced technology.

During the discussions, four key themes emerged:

Turning data into a strategic asset is a journey

Improving the maturity of foundational elements of an agency's data strategy — including data quality, relevance, and accessibility — helps improve processes that unlock value. While modern architectures support data sharing across organizations and systems, policies, processes, and culture must also be aligned. Consistent application of data governance principles reduces the risk of inconsistent policies and practices, further bolstering public trust.

A focus on mission results supports a data-sharing culture

Executives recognize the continued challenge associated with a culture wherein an organization is reluctant to share its data with others. While top-down efforts to encourage data sharing are important, organizations that demonstrate mission value achieved through data sharing can more readily drive cultural change.

Agency investments fuel data breakthroughs

To unlock data's full potential, federal agencies must make strategic investments in three key areas: building a reliable data foundation, cultivating a data-savvy workforce, and acquiring robust tools, all while fostering a data-driven culture that aligns strategy with agency goals. Through talent recruitment, upskilling, and applying data meaningfully, agencies can obtain more valuable insights for smarter decisions and better outcomes.

Strong leadership and collaboration yield tangible benefits

The federal C-suite must work collaboratively across organizational lines to affect changes in the ways we use data to address our nation's more complex mission problems. Through a collective exchange of experiences, insights, and best practices, federal leaders can make better decisions and elevate data to a true strategic asset.

Ignite your curiosity and fuel your next steps — we invite you to read the full report starting on the next page.

It's a journey, not a destination

Federal leaders in attendance agree on a central point: Turning data into a strategic asset is indeed a journey. As challenges are addressed, new ones appear. As the agency implements new tools, more advanced tools become available. Discovering new uses for data and new processes for parsing it is a continuous exercise. Leaders must embrace the concept that the data journey is an ongoing and endless trail, and not a finish line to be crossed.

Along the way, leaders must regularly assess foundational elements of their data strategies including data quality, relevance, and accessibility.

Data quality

Data quality can be assessed along several dimensions, including accuracy, completeness, consistency, timeliness, and relevance. If data is riddled with errors, missing information, or inconsistent, it can provide misleading or inaccurate insights. Executives noted that, often, trade-offs must be made between data completeness and data timeliness.

High-quality data, though, can fuel organizational growth and innovation when refined from its raw form to a processed state.

Data accessibility

When data is locked within a single organization's repository, walled off from other uses, its potential impact (and also its value) shrinks dramatically. Leaders universally asserted that, yes, data should be easily accessible and integrated across agencies, departments, bureaus, and programs to allow for comprehensive analysis and decision-making.

Modern architectures are making it easier from a technology perspective for data to be shared across systems. However, cultural change is frequently cited as the more significant barrier to overcome to make data accessible to other organizations.

Roundtable executives offered the following best practices to improve data quality, relevance, and accessibility.

Establish governance

Leaders can ensure consistent data collection and maintenance by establishing well-defined and documented data governance processes. Standardizing data simplifies analysis and conducting regular quality checks help maintain high standards for incoming data.

Protect and secure

Public trust in government necessitates the most careful consideration of data privacy and security. A robust and well documented and communicated data governance framework, built on current regulations, incorporates responsibility and accountability in handling sensitive data and mitigating risk.

Create shared data repositories

Start with an assessment of existing data storage and management systems. It's vital that leaders know what data the organization has, where it is housed, how it is structured and how it can be used, and if it can be shared. When considering technologies, evaluate cloud-based solutions and modern platforms with capabilities toward scalability, security, and efficient data retrieval.

Democratizing data purposefully

With each unique mission comes unique data needs, which can engender a sense of ownership over data. Inevitably, if the organization that owns a data set feels possessive of it, persuading its leaders to make it available to share can be difficult. Often, there are real security or privacy concerns underlying the reluctance, but sometimes it's simply resistance to change. One federal leader who took part in the roundtable stated that leaders are often more hesitant to share data than the analysts.

Agencies are implementing various approaches to breaking down these barriers and evolving the culture surrounding the sharing of data.

Centralize data control

One Deputy CFO explained that, historically, data for each of the department's 10+ bureaus have existed in their own silos. Currently, the department is moving to a new financial system that will migrate data to the cloud and bring it under the control of the department itself. The agency is investing in the necessary change management to achieve the vision of standardized data residing in an umbrella data warehouse.

Embrace the shift from cost center to value center

Another federal leader explained how its Office of the Chief Information Officer identified use cases where its staff analyzes data and provides results to field employees. This represented a change from the former process where field staff would pull data and analyze it themselves. Centralizing analysis and pushing those results to the right personnel shifted effort, increased efficiencies, and delivered value.

Demonstrate financial returns

Showing how data sharing impacts spending carries considerable influence. One agency CFO described the necessity of data sharing in fraud prevention. By taking a cross-functional approach to analysis of cost and program data, the agency was better positioned to detect attempted fraud at the eligibility phase of the program. Recognizing the value of avoiding ineligible payments, various data owners involved in the process changed their minds about the need to modernize systems to improve data-sharing efficiency.

Granular tagging delivers better insights

Agencies that fund long-term projects and those that have received funding increases because of new legislation benefit from an evaluation of how they currently tag data. One agency leader described how tagging funding and spending data at a more granular level enables better tracking of where the funds are going by locality. This provides better insight for evidence-based decision-making.

Investing for impact

Leaders agreed that elevating data to a strategic asset requires investment — and not just in technology. Maximizing the use of data to deliver mission value requires a more holistic approach. By strengthening the agency's data governance, building analytical skills, and aligning data strategy with agency goals, federal leaders can unlock valuable insights and drive better outcomes. This means recruiting and/or upskilling talent, applying its data in meaningful ways, acquiring robust data tools, and fostering a data-driven culture.

Recruiting talent, expanding skills

Having people with the right talent and skills to analyze, interpret, and translate data into actionable insights is critical. Today, data-experienced talent is in short supply but fierce demand. While hiring data analysts and data scientists is essential, agencies must also focus on training and upskilling their existing staff.

Strategies executives discussed include:

- Recruiting more data scientists by offering competitive employment offers including perks such as generous telework arrangements, especially where there is little room to raise compensation.

- Expanding partnerships with industry to access resources with specialized technology, data, and domain skills.

- Training non-data scientists through structured training programs, which might include job-specific training or more extensive "data universities" to further advance the development of analytics skills.

Making "visual data" the norm

Leaders emphasized the importance of data presentation and visualization. Data visualization tools transform complex data stories into easily digestible charts, graphics, and dashboards. To improve user

experience, system modernization and enhancement investments should include a focus on how users can best understand data — that may mean visual representation for one audience and access to "raw" data within advanced analytical tools for another.

Optimizing technology investments

Analytics and visualization tools, along with technologies such as business intelligence platforms, AI, and machine learning algorithms, empower agencies to extract deeper insights. These tools can help users process vast amounts of data to uncover stories, correlations, patterns, and trends, often in real-time, to support strategic decision-making.

The technology market is fast-moving, though, and it can be difficult to assess which investments will yield the greatest benefits. Formalized governance models that emphasize investment evaluation help control licensing costs while making tools (and data) accessible more broadly across the enterprise. One leader commended an in-house, cross-departmental think tank of technology enthusiasts ("skunkworks") for their role in evaluating how to best leverage technology to solve complex agency problems.

Preparing for the use of Artificial Intelligence

While the executives see great promise in AI, they recognize the need to be judicious in its application. Careful consideration for how and when to use AI must precede its implementation.

Leaders suggested:

- **Define the problem to be solved** before jumping into an AI solution. Start with mission need to avoid costly, resource-intensive initiatives that fail to deliver results.

- **Identify key processes** that can benefit from advanced automation. Unlike robotic process automation (RPA), AI can be leveraged in workflows that require some judgment and decision-making. Understand the capabilities and limitations of various automation techniques to match the desired outcome to the best solution.

- **Conduct a comprehensive assessment** of the current state of processes and workflows. Re-engineering processes could make them more amenable to the use of AI.

- **Evaluate available AI tools** that align with the agency's needs and security guidelines. Select those that provide the strongest matches and develop a roadmap for implementation. Consider factors like data availability, infrastructure requirements, and potential impact on the workforce. Bear in mind that AI still requires clean, cataloged data to produce good results.

Developing a data-driven culture

Agency executives have a shared responsibility in clearly articulating the value of data, their goals for data initiatives, and how insights from data will be used to empower the mission and improve mission delivery. As public calls expand for accountability and evidence-based decision-making, federal executives must take the lead in creating a culture that values data-driven decision-making and data-sharing. Executives shared that often, leaders have more concerns about sharing data than analysts do. Leaders must champion initiatives aimed at improving data quality and advancing data sharing, to affect cultural change as well by proselytizing results achieved through data-sharing and evidence-based decision-making.

Enhancing mission fulfillment with data

Elevating data to the status of "strategic federal asset" requires executive leadership and collaboration. Each member of the C-suite has the opportunity — and, arguably, the obligation — to lead by example. When leaders promote collaboration, communication, and engagement around the importance of harnessing the power of federal data, it encourages others to follow suit.

Vague goals make it difficult to measure success and track progress. Agencies should set clear metrics to track the impact of their data-driven decisions to validate the tangible value and connect success to mission priorities. Agency leaders should define clear and specific business objectives for how they want to use data to achieve their strategic goals, and then prioritize data initiatives that assist in achieving those goals. Data analysis and insights should directly tie to the agency's objectives and contribute to achieving strategic priorities.

Now, more than ever, the federal C-suite can create positive impact in harnessing the power of data — and not just for their organization. Working collaboratively, leaders can elevate the power of data to solve the complex challenges government agencies are facing today and will inevitably face in the future. The path forward includes transitioning the workforce to be more data-minded, utilizing and understanding the power of technology to turn data to insights, and creating the structure needed to ensure the security and integrity of the data we rely upon. By sharing collective journeys, lessons learned, and best practices, federal executives can enhance decision-making and position data as a truly strategic federal asset.