



## Cogent People Nails It Again – Implements Data Catalog Pilot for CCIIO

Senior leadership at the Center for Consumer Information and Insurance Oversight (CCIIO), one of the largest centers within the Centers for Medicare & Medicaid Services (CMS), sought to improve discoverability, accessibility and understanding of data assets within its highly fragmented data ecosystem.

As part of the largest agency for health care within the United States, CCIIO also realized that, without a holistic, broad-spectrum approach to data maturity, it risked falling behind its peers in the industry. CMS is fortunate to own petabytes of valuable raw material in its data, but it struggles to leverage data as an asset to increase employee and contractor productivity, reduce or eliminate redundant systems, or advance the agency's core mission of improving health care outcomes for 130+ million beneficiaries.

Like many organizations, CCIIO is challenged with issues of data quality, access, and reliability. Data flows through a byzantine structure of vendors and products, which naturally leads to various deficiencies. A classic example of this phenomenon, the Multidimensional Insurance Data Analytics System (MIDAS) ingests and transforms data from various upstream providers, relying on a mix of proprietary, commercial off the shelf (COTS) and open-source systems to hand off data as a product for business intelligence, evidence based policymaking or other end-user priorities. The business users in CCIIO sought enhancements to improve how data is documented and organized, how users discover and access data, and how users understand and consume data. CMS determined that a Data Catalog would address this business requirement and commissioned an evaluation to study and recommend suitable data catalog solution(s).

Led by Subject Matter Experts with decades of experience, the Cogent People team would perform probing, penetrating analysis of MIDAS data assets with the intent of capturing tribal knowledge that is frequently segregated from business owners and unavailable to meet the business's needs.

As the team validated the utility of a Data Catalog, the project expanded from initial analysis to implementation of a solution. Cogent People was tasked with implementing the recommended solution, Alation. In concert with CMS, fully objective Business Success Criteria were agreed upon, with final delivery met in late summer 2021.

Below is a summary of Cogent People team's contributions to the project.

### ***Project Planning***

1. Cogent People took the initiative in formulating a high-level strategic plan intended to frame the Data Catalog project in terms that would be compelling to senior leadership. Simply put, a Data Catalog solution squeezes the gaps in knowledge, letting Business make decisions more quickly and with more relevance; productivity rises, and costs decline.
2. From years of experience with CCIIO data and systems, Cogent People was able to identify the data domains most in need of rationalization and most likely to show improvement in productivity. Granted, Needs Analysis about data-centric processes is time consuming initially, but going through the sometimes-tedious exercise ensures that the proposed solution solves actual problems.
3. Cogent People formulated a highly tailored tactical plan designed to address the needs of senior executives at both the agency and component levels. In addition, Cogent People anticipated probable objections and tuned responses to preemptively address likely areas of conflict within the organization. Sensitivity to the objections of key audience members is essential for broad acceptance.

"It is rare to see a new IT project get completed at CMS, but you were able to not only deliver a finished product, but you did it in record time of less than one year. The product you delivered was exceptional because it was innovative and met all the business owner's success criteria. Your effective project management, technical savviness, diligence, and adherence to CMS guidelines was vital, which allowed you to deliver a meaningful product."

CCIIO/MITG IT Project Manager

4. Anticipating the need for well-grounded recommendations, Cogent People engaged with team members internally and externally to provide an ideal balance of technical visionaries, subject matter experts, creative story tellers, and persuasive writers to ensure we had a truly integrated team with all the ingredients necessary to generate top-quality deliverables.

### ***Review and Analysis of Data Catalog Products***

1. Following principles of Human Centered Design (HCD) and leveraging experience from building the Data Portfolio Inventory and Data Strategy for CCIO, Cogent People laid the groundwork for broad engagement with the stakeholders through dozens of one-on-one interviews with agency staff and contractors. Accustomed to working from only loose client direction, we were successful in framing the project in non-threatening, incremental terms, as an opportunity for the individual team members as well as the larger organization, and as a free look into the future of data at CMS.
2. As the Data Catalog is an emerging class of products and solutions, Cogent People performed exhaustive technical analysis of 22 commercial and open-source solutions, including Collibra, Apache Atlas, Amundsen and Alation, as well as various narrower and less known products. In late 2020, we submitted a comprehensive written report to CMS, fully explaining the tradeoffs between license cost, time to market, customization of features, etc. We believe this report will be relevant to organizations as they evaluate data catalog solutions for years to come.
3. After evaluation of the various products, Cogent People demonstrated the top few contenders. CMS selected Alation as the best choice from the competitors and purchased a license for a limited set of employees and contractors. Cogent People's architects and developers worked with the DevOps team on a roadmap for implementation through the various development, test, and staging environments in the Amazon cloud.

### ***Implementation of the Alation Data Catalog solution***

1. Encouraged by the information gathered in the previous phases, CMS requested that a Data Catalog be fast tracked to production status within a two-to-three-month period (March to June 2021). Plan Management (PM) data from the MIDAS system was selected as the initial data domain.

Highlights of the final deliverable include:

- Enrichment of over 21,000 data objects from 920 tables using a mix of automated metadata ingestion and business owner input
  - Connectivity established throughout the MIDAS data pipeline, including MarkLogic XML, Hive, AWS Elastic Map Reduce (EMR), AWS Redshift and IBM Cognos Business Intelligence systems
  - Proof of concept integration with IBM Cognos BI reports for end-to-end, cross-data source lineage
  - Integration with Databricks and Redash for seamless web-based collaboration around queries, including previewing query results in a personalized compute environment
2. Implementation of a first of its kind product takes the attitude of a pioneer. One needs to be willing to take a few arrows in exchange for the prize. In this case, we ran into various DevOps challenges, as well as issues with 508 compliance, red flags from penetration testing, etc. Pilot projects force one to stay focused and work cooperatively with the client. Cogent People diligently engaged with internal and external stakeholders to resolve all the challenges.

The Data Catalog is an excellent example of the Cogent People team using its expertise to guide the client in the direction of industry trends. This is a process that involves careful consultation before billable work begins, followed by relentless attention to detail as the project is driven to completion. For our unwavering commitment to listening at length and designing a solution that solves a genuine problem, we are valued as a trusted partner by our clients.