Implementing Artificial Intelligence in Public Sector

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1 MONDRIAN OVERVIEW

Founded in 2009, Mondrian Consulting is a District of Columbia technology services company. Mondrian Consulting is a Certified Business Enterprise (CBE) in the categories of LBE, SBE, and DZE. The CBE certification number is LSZ98265062023. Mondrian was awarded contract number CW94656 on the DC Supply Schedule for MOBIS Services. Mondrian Consulting has demonstrated experience in complex technology integration projects and data analytics services at local, state, and private sector.

Mondrian's business mission is to support public sector digital transformation. Mondrian's expertise is in data analytics, systems integration and accelerating public sector services through operational efficiency. This includes developing artificial intelligence and data analytics systems, business process automation to reduce manual process steps, and data reporting efficiency from an integrated system of databases.

Mondrian has partnerships with Amazon Web Services (AWS) and SAS Data Analytics and can bring these extensive resources to support local government agencies. Mondrian has designed and implemented AWS databases and dashboards. Mondrian has designed projects implementing SAS analytics. Through these partnerships, Mondrian can support public sector agencies as a trusted advisor in selecting and implementing technologies.

Mondrian has supported the District Government's Department of General Services, Albemarle County, Virginia, City of Petersburg, Virginia, and YMCA Purchasing Group. Dileep Rajan, President, and Principal Consultant has over 20 years of technology project experience in Fortune 500 (Hilton Hotels, Lowe's, Cigna Health), federal government (United States Postal Service), with the primary focus on state and local government.

2 ENABLING TECHNOLOGIES FOR PUBLIC SECTOR

The focus areas described below represent Mondrian's technology expertise and solution development for public sector agencies. The three areas below represent core offerings.

2.1 Building a Sustainable Data Technology Program

Mondrian has successfully deployed sustainable data technology programs based on an inclusive, agency first, and subject matter expert led team. Mondrian's approach is to establish a clearly defined technology foundation. The first year, and especially the first six months, is focused on building a dedicated team – the agency AI Program Team – with subject matter experts selected by agency executives. This team will meet in a daily Scrum that takes place first thing in the morning. The Scrum should last 15 minutes maximum and brings to everyone's attention the critical action items facing the team that day and that week. Establishing this team is the first focus of the new agency AI Program.

In the first year, the work of the team is focused on setting up the new data technology systems and integrating with any legacy systems. This occurs in two ways: either the team leads the selection of the new data technology systems, or if the systems have already been selected, developing the enterprise architecture defining how the data technology systems interact.

There are three critical path components to building a sustainable AI Program in three years:

1. **Executive Empowerment:** agency executives involved, informed, and included weekly
2. **Dedicated Budget:** agency budget available in each year of the program
3. **Agency Prioritization:** agency elevates and prioritizes the AI program every year

Continuous Program and Process Improvement

A key component of the agency AI Program is a systematic approach to continuous improvement. This applies to both the overall program, in terms of specific performance metrics, as well as measuring process improvements. There are cost savings in each step of the technology transformation. For example, the transition to cloud-based providers such as AWS will immediately result in cost savings for an agency. Here are specific guiding principles for a continuous improvement program.

1.Manage What You Measure: first develop specific performance metrics for the program. These can include: number of clients served, frequency of service encounters, costs of services, cost of technology, cost of delivering technology. Once you have a measurement system in place, then you can manage the performance data through daily or weekly reviews.

2.Define Performance Targets: depending on agency preference, program performance reviews should take place quarterly, with no later than semi-annually, to support modifications and improvements within a fiscal year.

3.Baseline Process Completion Times: every business process has a start and end point, and the completion from start to finish can be measured. Whether the process completion time is hours, days, or weeks, each process should be measured at the beginning of the AI Program and recorded. This will be the baseline to measure process improvements.

Mondrian is committed to project sustainability across disciplines including client assessments, procuring equipment, training users on the equipment, and developing a steady state infrastructure to deliver the AI technology as a core service offering for the agency.

2.2 Mining the Data Lake for Business Intelligence

Within the first year, the AI Program should have a steady state cadence for generating performance reports automated from the data technology systems. The data reports should provide actionable information on how participants are interacting with the technology (e.g., frequency of technology usage), how participants are benefitting from the program, overall program performance, and how costs are being managed against results. This should occur within six months of the data technology implementation. Once the selected artificial technology systems are up and running, will want to begin mining, or extracting business intelligence from the growing data set. The AI Program Team is responsible for data integrity, report development, managing the life cycle of data analytics requests and program measurement.

2.3 Artificial Intelligence Technologies

Through Mondrian's partnership with both AWS and SAS, Mondrian can offer public sector agencies a comprehensive selection of the most advanced AI solutions in the marketplace. Given the high priority assigned to managing customer services, one technology can make a critical difference: Computer Vision for Artificial Intelligence. Mondrian considers the potential

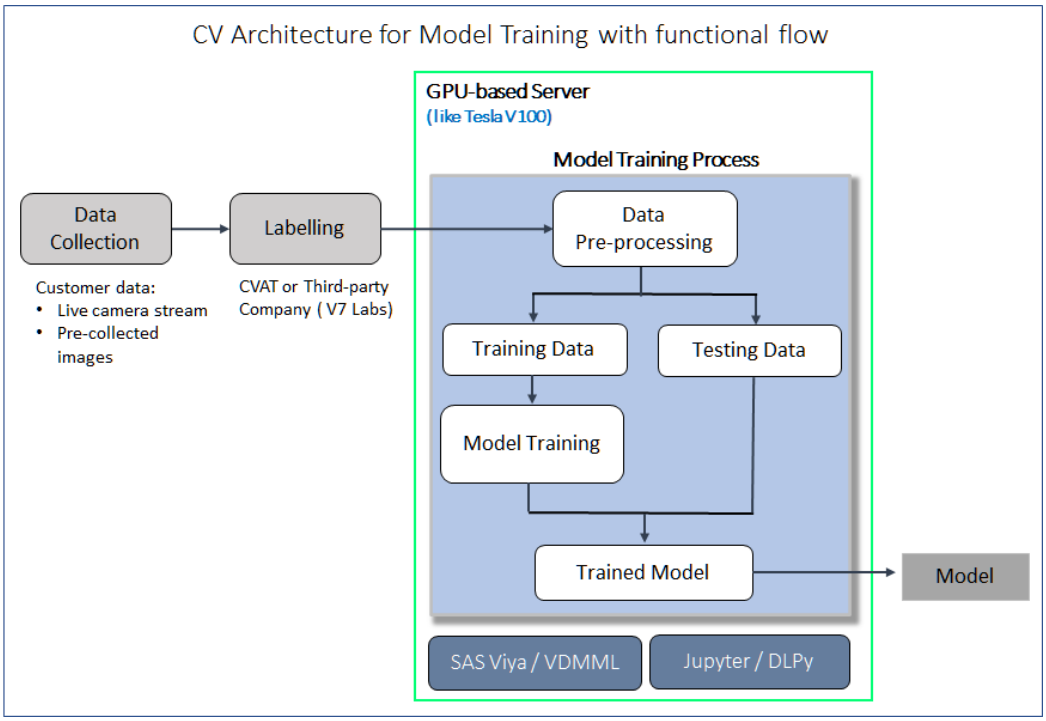
of a computer vision AI technology to be a significant enabling technology for public sector digital transformation. Computer Vision utilizes artificial intelligence to support persons with intellectual and developmental disabilities by monitoring specific physically visible characteristics. Examples of how Computer Vision AI can support an agency focused on disability services include:

1. **Remote Support:** Identify if a person is in distress and alerting staff
2. **Enabling Technology Assessment:** Learn the behavioral characteristics of a person during the assessment
3. **Resource Coordination:** Monitor a person's intellectual and development disabilities and send alert notifications to caregiving team
4. **Tool Assist:** increase the capability of agency staff to increase quality of care
5. **Tech First Initiative:** increase the capability for people to live more independently

The AWS computer vision AI technology is called Amazon Rekognition.[1] The AWS solution includes pre-built AI models already trained to identify basic objects and includes a confidence level (measured as a percentage), for each object. For example, the pre-built model can identify all objects in the camera view angle: book, wall, table, computer, person, and so on. It includes facial recognition that can also be trained to identify specific characteristics.

The SAS AI technology is called SAS Computer Vision.[2] A high level SAS data model for computer vision is included below. The starting point is data collection from live camera streams into the data lake. Then, the data is labelled based on a data dictionary used to initially baseline then train the model. The model is iteratively improved with each interaction., organized and labelled. A basic model includes a pre-built set of identifiable objects (person, table, wall) and is then trained to increase accuracy of those objects.

[1] Overview of AWS Rekognition: https://aws.amazon.com/rekognition/
[2] Overview of SAS Computer Vision: https://www.sas.com/en_us/insights/analytics/computer-vision.html



Source: SAS Computer Vision Team

Mondrian considers the implementation of a computer vision AI technology to be a significant enabling technology for managing customer service.

3 IMPLEMENTATION APPROACH

Mondrian understands the complexity of multi-year data technology projects. Critical to agency success is establishing clear project management and implementation activities in support of this effort, resulting in a sustainable system at the end of three years. This includes, but is not limited to, the matching, acquisition, and dissemination of enabling technologies and remote supports to people with intellectual and developmental disabilities, and the training of service coordinators, provider staff and providers agencies to assess, match, procure and support the use of enabling technologies and remote supports by people served by the District.

Year 1

In year one of the program, Mondrian shall support the agency to identify and provide technical support to customize a third-party artificial intelligence platform capable of determining

compatibility of enabling technology equipment to person through the assessment. In addition, and perhaps most importantly, Mondrian will support the development of the agency AI Program Team, including team charter, personnel requirements, meetings structures, and data governance.

In this capacity, Mondrian shall serve as a trusted technology advisor and program manager. This will include working closely with agency leaders to develop a structured program based on specific and realistic goals. Mondrian's focus will be clearly identifying agency AI priorities, identifying vendors who can achieve those priorities, and guiding the selection and implementation of practical AI solutions.

Year 2

In the second year of the program, the agency is in steady state implementation. The data technologies have a foundation established in Year 1. Agency partners, technology vendors and stakeholders meet regularly in a governance committee led by the AI Team.

From completion of the artificial intelligence customization and implementation through year two, Mondrian shall continue to provide assessments, logistical management for ordering, delivering, installation and training on enabling technology equipment resulting from assessments. Mondrian will be embedded with the AI Team to measure program performance, progress improvements over the Year 1 baseline and continue report analytics.

Year 3

In year three, Mondrian provides on-going technical assistance to close out the project so that the agency can sustainably lead the project. Project close out includes a sustainability plan that details how all people that received enabling technology will transition to long-term coverage through agency programs. Mondrian will facilitate the transfer of all responsibility for the artificial intelligence platform maintenance and licenses to the agency.

4 MONDRIAN DEMONSTRATED DELIVERY AI & DATA ANALYTICS

Mondrian has demonstrated its service delivery to support public sector digital transformation Government through 100+ deliverables since 2018. The following are example data analytics work products developed for local government agencies:

1. Develop business requirements for new data analytics system
2. Lead data technology selection based on requirements, costs, and relevance to agency
3. Build scalable AWS database and QuickSight business intelligence dashboards
4. Develop requirements for artificial intelligence pilot program using SAS analytics
5. Develop Project Management Office for new agency data team
6. Provide Project Management for weekly inter-agency data integration meetings
7. Support implementation of cross division data projects service tickets and costs
8. Develop continuous improvement process reviews for data notifications
9. Develop Dispatch Processes for various types of data notifications
10. Integrate different databases to provide comprehensive data reports
11. Develop methodologies for organizing and reporting data
12. Develop systems to manage work order data quality with multiple work teams
13. Develop analytics approach to calculating baseline work team productivity levels, and to calculate completion times by process
14. Deliver continuous project management support for Project Management Office
15. Develop data governance processes and methodologies, including data quality reviews
16. Develop requirements, design, and implement public dashboard on OCTO Tableau server
17. Develop agency data analytics reports and cost modeling
18. Develop analytics systems for agency divisions with data types and data governance
19. Design Building Automation System (BAS) alerts identification and issue resolution
20. Develop BAS Program with data reporting, monitoring and project management