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Analytics Automation Empowers Critical Business Functions Within the DoD

Within the U.S. Department of Defense (DoD), multiple agencies track and confront the challenges and threats related to the protection of the United States and our allies. To stay ahead of a multitude of threats — ranging from weapons of mass destructions (WMD), terrorism, criminal networks, and rogue nation states — means that agencies within the DoD require innovative capabilities to deploy agile, world-class analytics.

To be truly effective, the insights created from analytical solutions must be sourced from many diverse systems and resources and must be readily shared and consumed across a wide ecosystem of agencies, partners, and operational teams. The following is a summary of how the Alteryx Analytic Process Automation (APA) Platform™ is enabling a DoD agency, analysts, line of business leaders, and data science teams with the capability to research, find answers, and empower operational decisions with actionable insights.
From threat detection to decision support, employee health, physical security, and human resources, the APA Platform is enabling this agency to tackle current challenges and is better preparing them to address evolving and newly emerging ones.

Working together with our partner **Northstrat**, innovative analytics are being deployed across the DoD to ensure these organizations have the insights needed to manage their financial health, protect their workforce, improve readiness, increase diversity, elevate physical security, and detect and deter threats.

Stronger Financial Health

To combat weapons of mass destruction and emerging threats, programs require financial resources to be authorized, appropriated, and executed in accordance with the

Office of Secretary of Defense (OSD) guidance. While missions and programs are unique, Northstrat found that many of the challenges financial managers were facing are similar in nature.

Supporting a research and development directorate, Northstrat discovered that the financial planning and management of resources was being executed in spreadsheets. Not only did this hinder data transparency, it also was often inconsistent, incorrect, or incomplete. To address the challenges faced by the customer, Northstrat developed analytical workflows to prepare and blend multiple data sources and extract a single output which is visualized through a multitude of dashboards.

This workflow not only provides a single source of truth, but it is also available in real-time, visible through the dashboards. Increasing the data transparency and utilization of the data, the accuracy of the data also increased. The automation of the analysis, specifically the prepping and joining of underlying data,significantly reduced the manual efforts of financial managers comparing multiple spreadsheets and reports.

Tackling Mission Challenges

Military service members, civilians, and contractor personnel are critical to mission success. Therefore, tracking employee data, training, education, health, and equal opportunity is critical to having a robust workforce. In one use case, the Alteryx platform is used to ingest extractsacross Manpower systems on a weekly and monthly schedule. Alteryx is used to verify the information is dated correctly and validate the parent-child hierarchy before the data is exported to a SQL data warehouse. This ensures that the data used for decision support is valid and errors are reduced.

Workforce Training and Education

Upskilling and continuing education for employees helps organizations build the talent they need to support their missions. Getting a handle on what educational offerings are being consumed and how individual employees are progressing was necessary to inform recruiting decisions and employee training offerings.

Within this organization, using data from employee directories, SQL Server tables, and multiple spreadsheets, Alteryx is then used to compile existing employee data and transfer it to an external training system. As employees progress across their course of studies, this information is ingested back into existing personnel systems through Alteryx by being outputted through several SQL Server tables,

Excel files, and managed through automated emails in Outlook. The insight provided through this process enable management and human resources to better collaborate on training needs for the organization and the individual skills of each employee.

Protecting Employee Health

The Covid-19 pandemic disrupted workforces across both the public and private sector. As organizations look to return to the "new normal", keeping employees safe has become a critical priority. As agencies within the DoD make decisions on return to office timelines, tracking the distribution of vaccines across the workforce is a critical piece of insight decision makers require to ensure they are protecting their workforce. Using Alteryx, Northstrat developed a workflow to blend disparate data sources such as SharePoint lists, employee directories, Excel files, and SQL Server tables. Several Alteryx tools were used in the workflow to output to a single data source that is visualized in a dashboard by senior leadership. During the pandemic, it was even more critical to maintain a secure physical work environment to protect employee health while still supporting the mission. Building access control became a priority for many supervisors. In this case, Alteryx is used to load and join building access requests and security badging data across multiple locations and access points. Alteryx joins data from SharePoint, CSV Files, and HR systems to create discrete views of entry requests by directorate,department, and building which are automatically emailed to supervisors. Supervisors can use the data to inform mission resourcing divisions and protect the health and safety of the workforce.

Strength in Diversity and Opportunity

Ensuring that a workforce is as strong as it can be requires specific insight into how diverse it is. But insights are not enough —the federal government is required annually to comply, report, and track progress against diversity and Equal Opportunity (EO) goals. In the past, this information was tracked manually across 20 different EO spreadsheets. To process this information to meet the compliance deadlines took several months of manual work.

With the Alteryx platform, Northstrat was able to streamline the regulatory reporting process, automating the parsing, grouping, filtering, and summarization of EEO reporting requirements.In addition, the organization was able to automate the process while creating deeper insights across a multitude of factors including:

  Race, ethnicity, and sex
  Occupation categories to include mission critical occupations

General schedule (GS) grades
Salary levels
New hires and separations (Retirement, Resignation, Removal)
Disability by occupational categories, grades, and salary

Empowering Employee Engagement

Managing an employee appraisal process can be complicated and adding to the challenge is ensuring that the process is transparent, free of errors, and delivered in a timely fashion. Within a DoD agency, Alteryx is used to processes the submission and approval of the 2021 performance appraisals and awards.

With Alteryx, the agency can confirm the accuracy of the appraisal process for thousands of personnel, while allocating millions of dollars of performance award funds. With Alteryx,the agencies' Performance Management Program (PMP) was able to track in real time by department what percentage of appraisals were complete or incomplete and where each department was in the process. With this information, the PMP was able to provide the quickest approval turnaround ever for the Agency and it guaranteed the correct recognition for all personnel in a timely fashion.

For management, Alteryx was able to provide/build/develop and feed several dashboards for its customer to share insights related to PMP, incentives, training objectives, and job classification. This enabled the customer to ensure timely feedback to personnel, and allocate pay increase and bonuses in a timely manner that was difficult to manage prior to the use of the Alteryx platform. The highlights of the metrics Alteryx were able to compile, measure, and deliver include:

Appraisals Plan Status dashboard displays counts and details of the Plan Status (Approved, Initiated, Modified, No Plan, Pending, or Reapproved) for Performance Appraisal Yearly Goals Overall dashboard displays Total, Completed (Count & Percentage), In Progress Counts, and Percentage Open Appraisals Summary of Metrics (Outstanding & Fully Successful Rating Counts, Average Cash Award Given & Per Capita, Total TOA Hours & Cash Value, Average TOA Hours Given and Per Capita, Average TOA Cash Value Given & Per Capita, Count & Cash Value of QSIs, and Total Award Value

Incentive Awards Percentage, Counts, and Total Dollars of Incentive Award by Category and Directorate Training Checkbook and Accountability (TCAT)

Percentages for Tuition & Travel amounts executed Total dollars for Tuition & Travel amounts remaining Employee training details by directorate for Training Type, Dates, and Approval Status

Classification Position Classification Status by Directorate and Type of Status for every Position Counts of Types of Submission (New PD, Pen & Ink, Re-Description, Statement of Difference) by Status (Pending, Complete) Classification Counts (Request, Completed, Pending, Average Days to Finalize) Classification Submission Average Number of Days

Yes, Alteryx can do a lot of things, but what this story shows is that Alteryx and Northstrat enable organizations within the DoD to tackle mission critical operations and business functions that allow these agencies to automate the insights needed to enable data-driven decision making to operate more efficiently and impact mission outcomes, keeping this county and our allies safe. In addition to cutting-edge software that helps keep our country safe from emerging threats, intelligence and analytical investments recoup the return on investment quickly when partnered with the right integration services.

Northstrat, Incorporated, is a dynamic small business founded in 2006 and was rated a Washington Post 2020-2021 "Top Workplace" in the National Capital Region. Northstrat specializes in software development, systems integration, systems engineering, DevSecOps, and Business Intelligence and Analytic solution development. As a services-oriented company, Northstrat prides itself on being a trusted, independent integrator of mission solutions to the Intelligence Community (IC), Department of Defense (DoD), and the Department of Justice (DoJ).

Over 90% of Northstrat staff hold Top Secret or higher clearances and co-locate with geographically dispersed customers at remote sites. Northstrat takes pride in the exceptional CPARS they have received from their customers. Northstrat engineers' unique experiences in collaborating with end-users to understand and better define their problem and provide the appropriate solutions through the Continuous Integration/ Continuous Delivery process. This has created a track record of success with delivering solution development services across the IC, DoD, and DoJ.

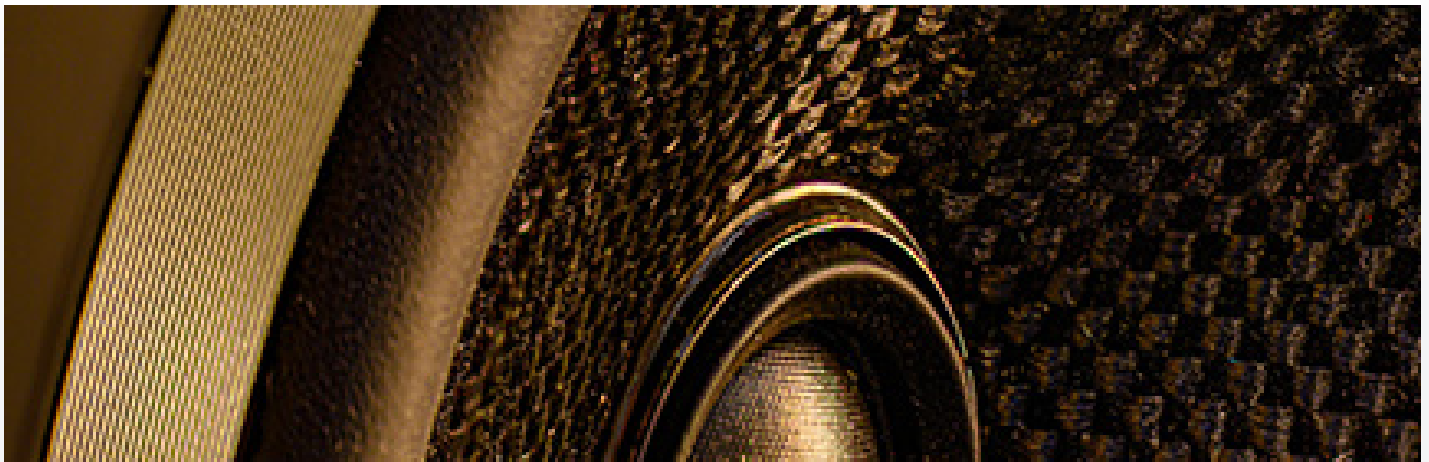## Want to learn more about Alteryx?

Watch this two-minute video.

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