The Challenge
At the time, the U.S. Postal Service delivered mail to 146 million delivery points, operated 37,000 postal facilities, and managed more than $33 billion in postal contracts. The USPS OIG initiated investigations based mainly on tips they received. To be more proactive, the agency sought to create a systematic process to provide investigative analysts with data-driven leads based on known fraud, waste, and abuse schemes. The USPS OIG needed a custom solution to prioritize questionable Postal contracts. Furthermore, the existing investigative process to validate leads was time-intensive, the availability of solicitation and financial data was scattered, and the data was inconsistent and incomplete.

The Solution
Elder Research partnered with the USPS OIG to customize a solution to help the agency generate leads based on risk indicators and anomaly detection. As with most fraud detection projects, the client could only provide a few known cases of fraud to guide the analytics process. Elder Research created predictive models...
using more than 30 custom fraud indicators to zero in on suspicious Postal contracts. The models each produced an output that scored and ranked the contracts based on weighted combinations of the risk indicators. The model’s results were delivered in an easy-to-use visualization tool called RADR (Risk Assessment Data Repository). The tool enabled analysts and investigators to access and visualize data on high-risk contracts. RADR was also employed to amplify the effectiveness of a healthcare model which was previously under-utilized.

Results

Contract Fraud Model
Forensic examiners evaluated each metric to determine its usefulness and contribution to the overall model. The browser-based RADR interface provided intuitive drill-down into the data allowing investigators to understand the drivers behind each risk score and build actionable cases. Leads generated by the contract fraud model proved to be 74% actionable; 23 out of 31 highest scored contracts showed evidence of fraud, waste, and abuse.

Healthcare Fraud Model
RADR strategically made the existing healthcare model results more visual and interactive, which led to the opening of 113 investigations and aided in over $11 million in recoveries, restitutions, and cost avoidance in the first year. The RADR tool amplified the productivity of USPS OIG investigators by reducing the number of hours spent on a case by 30% and increasing the dollars returned per case by 35%.

Customer Information
The USPS OIG maintains the integrity and accountability of the U.S. Postal Service. The agency’s core mission is to find fraud, waste, and abuse. The USPS OIG partnered with Elder Research to optimize the agency’s efforts using data mining and predictive analytics.

About Elder Research
Elder Research is a recognized leader in the science, practice, and technology of advanced analytics. We have helped government agencies and Fortune Global 500® companies solve real-world problems across diverse industries. Our areas of expertise include data science, text mining, data visualization, scientific software engineering, and technical teaching. With experience in diverse projects and algorithms, advanced validation techniques, and innovative model combination methods (ensembles), Elder Research can maximize project success to ensure a continued return on analytics investment.