Understanding PALT Timeframes with Big Data Analytics

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NDAA Mandate to Measure Contract Award Timeframes

- Section 878 of the National Defense Authorization Act (NDAA) for FY 2019 required the Administrator of the Office of Federal Procurement Policy (OFPP) to develop and establish a standard definition the term develop a plan for measuring and publicly reporting data on PALT for Federal Government contracts.

- As a result of Section 878 and associated regulations Procurement Administrative Lead Time (PALT) has been defined as ''the time between the date on which an initial solicitation … is issued … and the date of the award of the contract''.

- Contract PALT timeframes are now being collected in a standardized government-wide format due to the addition of solicitation date reporting to the Federal Procurement Data System (FPDS).
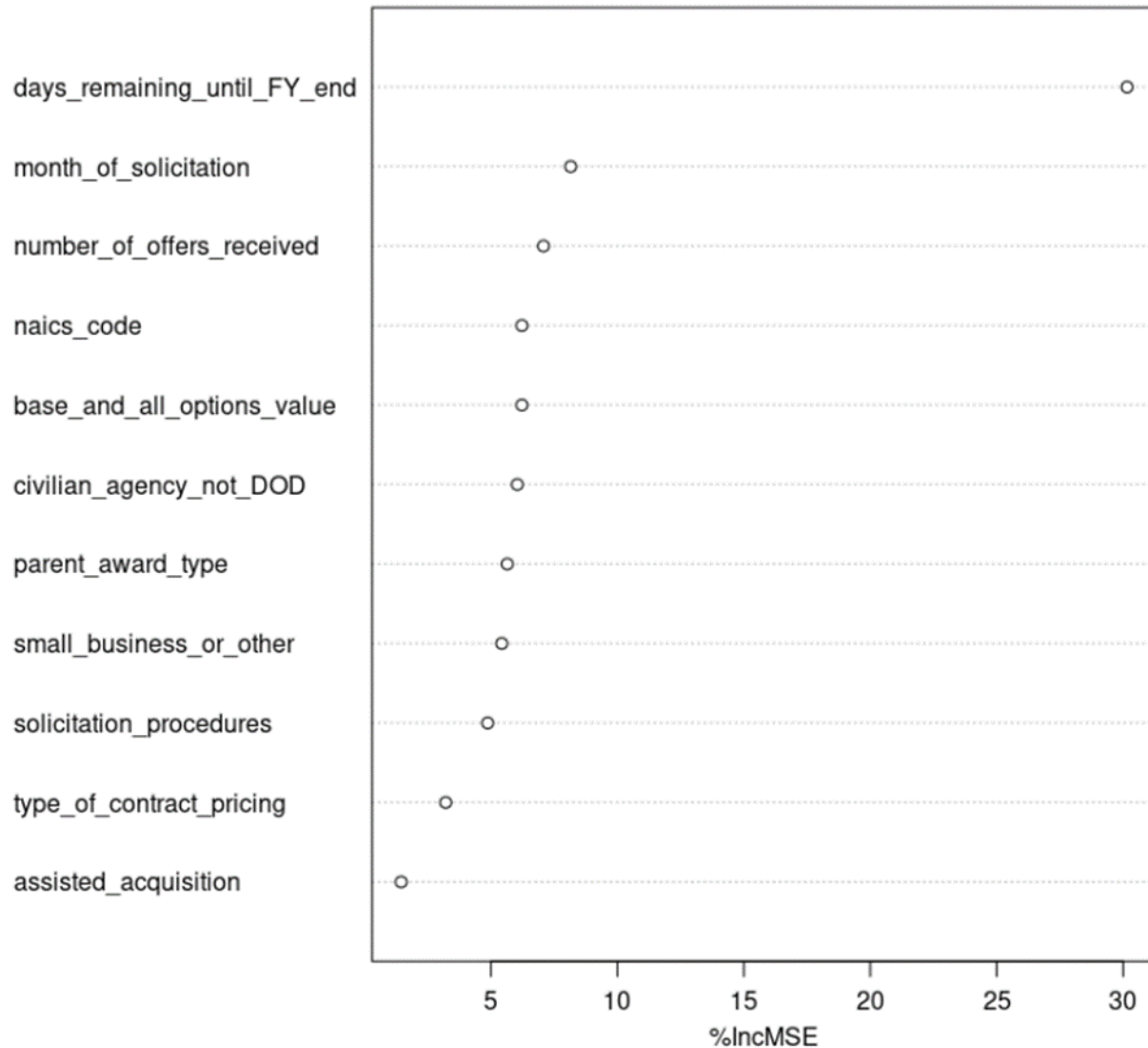
New, Very Large Dataset on PALT Timeframes

- This analysis supports the Cross-Agency Priority Goal of Frictionless Acquisition. The intent of this goal is to procure commercial items at the same speed as the private marketplace & break down barriers to entry using modern business practices and technologies.

- FPDS PALT timeframes have been entered for over 5 million contracts. Machine learning and data visualization techniques were used to better understand factors influencing time to contract award. The research paper explains the key factors impacting PALT, identifies opportunities to increase efficiency and reduce PALT, and uses a data-driven approach to generate milestone schedule estimates informing customers when their contract is likely to be awarded.

Key Findings – What Drives PALT Timeframes?

- This study confirms findings from prior PALT research and also provides a more comprehensive, government-wide explanation of factors driving time to contract award. Confirmed factors affecting PALT include:
  - Dollar value, number of offers received (i.e., extent of competition), the goods or services procured (i.e., NAICS code), and type of contract. A number of new insights into PALT have been quantified using a large dataset.
  - The choice of solicitation procedures by the Contracting Officer impacts time to contract award.
  - Use of small business concerns and assisted acquisition is associated with reduced PALT timeframes.
  - Further, the number of days remaining until the fiscal year end is a powerful driver of contract award dates. The contracting personnel's 'workload also affects PALT, as does the organization to which they support.
  - Finally, certain words and word-combinations in the award description field are related to PALT. A better understanding of these factors should help acquisition teams to reduce PALT and help acquisition leaders to set policies and processes to mitigate PALT.
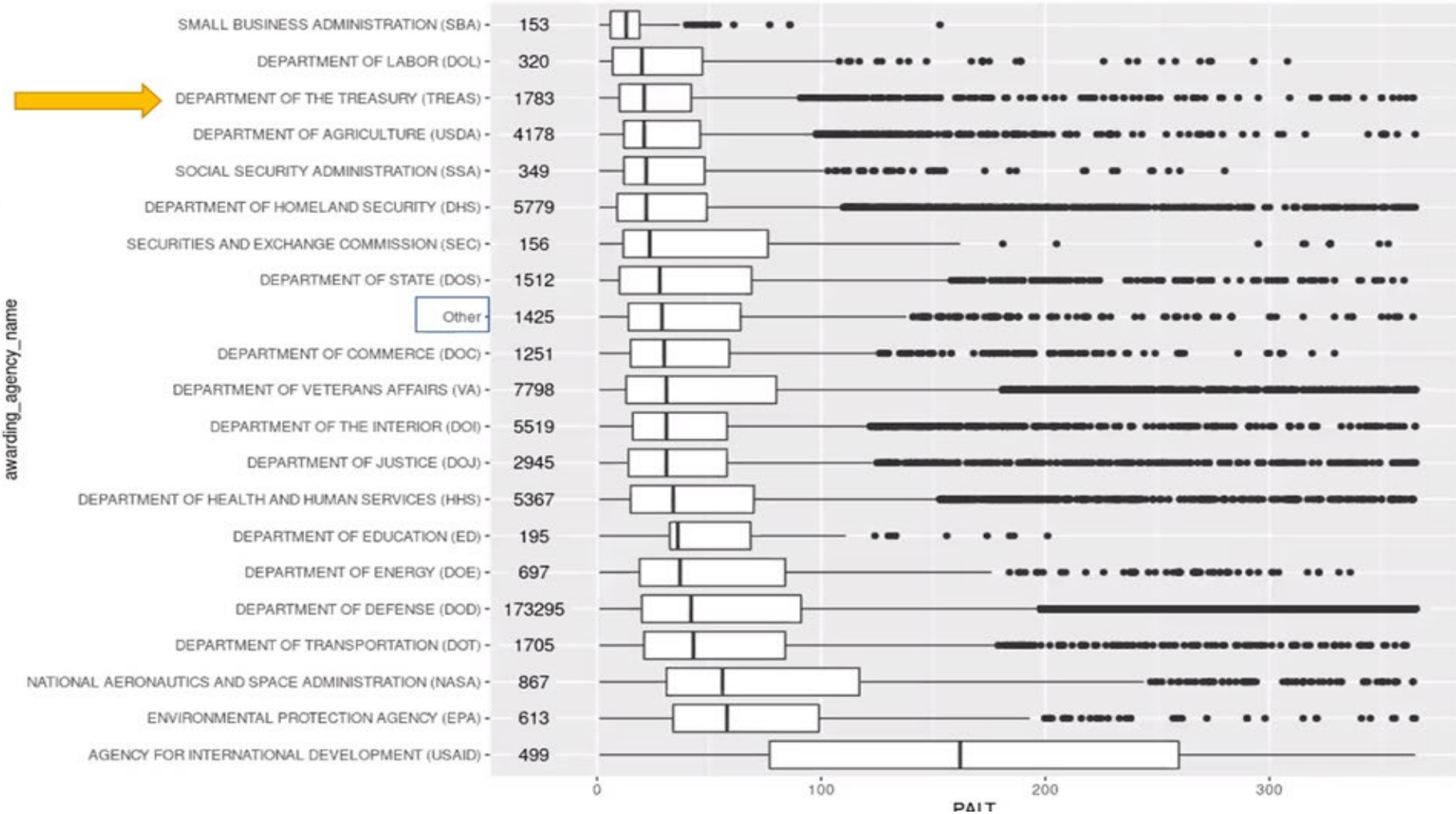
Understanding PALT with Machine Learning

Trained a random forest machine learning model to identify some key drivers of time to contract award. The model is based on a forest of data-driven decision trees.

Time drivers are statistically ranked in descending order of importance. Days until fiscal year end has the strongest effect on PALT days.

PALT Timeframes by Agency (FY 2020)

USA Spending FY 2020 Boxplot - PALT Timeframe by Awarding Agency
Date Notes: PALT filtered between 1 and 365 days. Agencies with less than 150 records grouped as `Other`. Excludes C

Bot plot displays median PALT timeframes (solicitation to award) with a vertical line (|). Rectangular boxes show upper and lower quartiles (25th and 75th percentile timeframes).

Most acquisitions are executed promptly with PALT timeframes lasting a few months. Outliers (longer PALT timeframes) are displayed as black dots on the right.

Statistically Predicting When Shopping Carts (aka Requisitions) Will Be Awarded on Contract

The IRS can auto-generate ballpark predicted award dates for each contract action using report data on in-process acquisitions.

Evaluation Metric	Value
Percent within +/- 30 days	86.75%
Percent within same month	61.62%
Percent within +/- 7 days	44.32%
Percent within same week	24.19%