New Frontiers in DoD FM Data Analytics
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US Department of Defense
the challenge: NDAA + NDS + PMA + H.R. 4174 = OMG!

Use **Common Enterprise Data** to enhance Department-wide oversight and management...

and achieve commercial sector levels of efficiency and productivity.

to improve affordability and performance...

**H.R. 4174 – Evidence-based policy-making**
Defense Repository of Common Enterprise Data  
- a domain-oriented approach

Data Platform
enables data discovery and self-service analytics (e.g. Data Orchestration, Data Catalog)

Audit
supports analytics and reporting directly in support of the audit (e.g. Workbooks, NFR Tracker)

Financial Management
supports financial compliance and control analytics (e.g. Data Act, QDAR)

Cost Management
supports cost benchmarks across the DoD (e.g. LOB Dashboards)

Performance Management
supports reports on established KPIs, across DoD (e.g. LOB Applications)

Readiness
supports defense wide readiness for personnel, equipment, and capability (e.g. Predictive Analytics)
Example 1

Average list price discounts offered by Earth Moving Equipment Manufacturers to DLA

1. Based on expert interviews with equipment OEMs and construction companies
2. DLA transaction data – N/A exists where there was a contract, but no transaction spend captured – may not capture full spend with specific supplier
3. From HEPP contracts
Source: DLA HEPP (Heavy Equipment Procurement Program) contract pricing (non-transactional data)

Initial interviews with sample of these companies indicates that DLA contract discounts are consistent with discounts received by other industry clients
Example 2

Model highlights where challenges exist in meeting readiness goals and allows user to compare potential mitigation strategies

Manpower targets vs number of billets sustained, by role (example)

Legend

<table>
<thead>
<tr>
<th>Measure Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total billets above target</td>
</tr>
<tr>
<td>Total billets to target</td>
</tr>
<tr>
<td>Target</td>
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</tbody>
</table>

Model highlights the roles where it is difficult to achieve manpower targets given readiness thresholds
For any given scenario, the model user is able to see how workload is allocated between ABC and DEF.

Model highlights which workload remains in ABC and is used to achieve readiness (blue). For this scenario, where manpower targets are set to authorized billet levels, the majority of the workload remains in ABC to achieve readiness.

Model also highlights which workload (pink) is cost-optimized and sent to DEF, subject to capacity constraints within the local market.
Example 4

The user can also quickly compare the total staffing footprint at each facility across scenarios.

The green dots represent the total number of billets placed at each facility for a scenario where inputs for manpower, readiness thresholds, and workload are held at historical levels.

The orange dots represent the total number of billets placed at each facility for a scenario that solves only for cost optimization plus access to care (i.e., locations where load cannot be absorbed locally). This scenario does not include any readiness in the model inputs.

The delta between these two scenarios highlights differences in staffing footprint that relate to the readiness mission. These deltas can also be translated to cost savings to inform the cost of readiness.
Example 5

Cost per sq. ft.
The size of each bubble reflects the size of the lease (in sq. ft.)

Annual lease cost per sq. ft.

Redacted
Example 6

Distribution of FM Spend by Capability
Example 7

Workforce fragmentation across CODE capabilities
Example 8

Warehouse Locations
Map of DOD-wide storage locations by Service
Example 9 Transportation - Significant potential opportunity of $\lambda$mm across 8 top AMC Cargo routes

Cost per ton per route compared to IATA commercial benchmarks

Potential opportunity

Tool allows decision-makers to quickly focus efforts on large top routes where average price per ton is above benchmarks

Example: ~300,000 individual transactions across 8 routes; 20% of these records could achieve over $\lambda$mm in savings if brought down to the commercial benchmark
Example 10 Potential savings of $\lambda M on \textit{facility-a} where operating costs significantly exceed local-area benchmarks

Cost per SqFt compared to CBRE benchmarks

Potential opportunity

\textit{Tool focuses reform efforts on locations with elevated operating costs}

\textit{Site-specific context may drive operating costs to exceed benchmark}

\textit{But only re-baselining operating cost to no more than 50% above benchmark would yield $\lambda M savings}
Example 11 Opportunity to drill down to specific item purchase history to test savings hypotheses and ID decisions driving cost and performance

Example: cost and purchase history for [NIIN]

Potential opportunity

Tool allows users to surface detailed item-level data underlying price opportunities exposed by triage-level visualizations

Example: Across three separate contracts for [NIIN] – two were floating-price, considered best-in-class when sourcing food distribution. A third was fixed – which typically requires price premium, and did not benefit from deflation seen in the market FY15-16
Example 12 Aligning Org-X IT personnel spend w/ CORE ~$\lambda M$ opportunity

Org-X IT personnel ($M$ opportunity):

Org-X

We would expect to see high personnel or external services depending on the insourcing model, but not both

Org-Y

While, personnel costs are low in Org-Y indicative of heavily outsourced model

Org-X’s delta with CORE\(^1\) for external services is in line with Org-Y, however, their personnel delta is ~60% greater than Org-Y’s