

Ministry of Defence

UK Forces Cut Supply Chain Costs by £20m in Dirty Data Clean Up

The UK Ministry of Defence (MoD) Defence Logistics Organisation (DLO) is using TS Discovery within a data cleansing and data integration project to improve Supply Chain Management effectiveness. The Cleansing Project (TCP) is using TS Discovery to uncover the true content, structure, relationships, and quality of data in the many separate inventory management systems of the Royal Navy, Army, and Royal Air Force. In two years, the project has delivered supply chain cost savings in excess of £20m (roughly \$36 million USD).



Project Type

Supply Chain Management
Inventory and Supply Data Integration

Industry

Public Sector/Government

Environment

More than 860 Diverse Systems

Challenges

Improve Supply Chain Effectiveness
Reduce Supply Costs
Massive Data Volumes
Complex Systems Environment
Ongoing Quality Management

Solution

Use TS Discovery for complete data assessment across systems to quickly target anomalies

Benefits

Cost Savings of £20m in 2 Years
Operational Efficiency Gains
Administration Efficiency Gains
Proactive Approach to Data Quality
Consistency Across UK Forces

Saving £20m

The Defence Logistics Organisation (DLO) of the UK's Ministry of Defence (MoD) supports the Royal Navy, Army, and Royal Air Force by providing key supplies and logistics support. The DLO's ability to meet its customers needs is underpinned by over 860 systems that make up its global supply chain. The MoD recognized that this set up was complex, outdated, and in need of consolidation, especially if government guidelines on value-for-money for taxpayers were to be met.

In the late 1990s, the DLO decided to streamline its procurement processes and rationalize largely single-service systems to establish a more cohesive inventory management process. The new process would consist of tri-service systems to buy, track, and manage supplies for the entire UK armed forces. It was quickly seen that inaccuracies and structural inconsistencies across the many different systems had the potential to prevent the process from being established. Specialist IT consultants from Cornwell Management Consultants were called in to scope the problem in late 2000. Colonel Tony Anthistle and his deputy, Lieutenant Colonel Nigel Stafford, were appointed to lead the team of expert staff that was then recruited to take

the consultants' recommendations forward. The team would then work with the various inventory expert owners of the systems to resolve the problems through data cleansing activities. The Cleansing Project (TCP) team was to go on to deliver a major victory in the battle for data quality excellence, improved supply chain performance, and reduced costs. In November 2002, it was awarded the prestigious Team Commendation from the Chief of Defence Logistics for the remarkable progress it had made.

Plastic Bags and Printed Circuits

TCP first needed to gauge the size of the overall problem and then needed to find a means of analyzing in detail individual data relating to inventory items, item attributes, suppliers, contracts, storage locations, and other supply entities.

The MoD uses the NATO Codification System (NCS) to provide the basic code used by inventory, procurement, and supply systems. In theory, each item type should have its own unique code, but the reality was very different. Across each of the services, three separate NATO Stock Numbers (NSNs) could identify a single item. "Someone in the Navy could enter their stock number for a printed circuit board, but using the Army



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system, they'd get a plastic bag. To prevent the potentially catastrophic consequences of such a failure on operations, where lives could be at stake, we recognized that we needed a single master database for use by all," Stafford said.

The War against Dirty Data

To completely understand the data, the TCP team could have chosen to trawl through it using manual data profiling and analysis techniques. But this is an expensive, time-consuming application of skilled analysts, which given the huge data volumes to be assessed, delivers a very hit-or-miss evaluation. In contrast, the TCP team quickly realized that for comprehensive analysis, technology solutions would be the most appropriate route.

"We initially chose TS Discovery because of its success history with other very large organizations, its ability to profile and analyze massive data volumes, its breadth of functionality, and its ease of use," said Stafford. TS Discovery was chosen following an assessment of all similar packages then on the market.

"We looked at a number of options and provided each vendor with a large and complicated set of data so that they could demonstrate the suitability of their offering. In just 36 hours, TS Discovery provided us with impressive results. The choice was finalized. TS Discovery was also chosen because it's accurate, fast, easy to use, and able to cope with our huge data files. Critically, it did not change the source data in any way—this being a key control requirement to the owners of the source data," said Stafford.

Work of 178 Years in an Hour

TS Discovery enables the team to identify relationships, inconsistencies, and inaccuracies in data and to quantify the scope, complexity, and prevalence of issues found.

"When we originally investigated the problem, we calculated that it would take 100 staff 178 years to manually validate all the DLO inventory management data. In just one instance, we determined that TS Discovery would take just over an hour to check 1.7 million records with an assumed seven attributes per record. It offered an enormous time reduction and therefore a direct cost saving," explained Stafford.

"TS Discovery is great for proving whether data is fit for purpose. When it comes to identifying problems, it is fast, accurate, and much simpler than manual approaches."

*Lieutenant Colonel
Nigel Stafford
Ministry of Defence*

Indeed the project would have been financially impossible to justify had a manual approach to data profiling and analysis been the only option. "TS Discovery provided us with excellent intelligence about our data, including Venn diagrams, which visually highlight overlaps between data held in different databases. This makes issue identification simple and is a powerful tool for communicating key issues with non-technical management. User drill-down from high level issues to individual data elements is possible too, allowing for detailed analysis."

TS Discovery Takes the Strain

By providing an accurate and comprehensive record of the problems with actual live data, TS Discovery has helped TCP identify the root causes of many different types of data problems, and ensured that the average time to resolve an issue can be measured in minutes or hours of personnel time, rather than staff days, months, or even years of manual approaches.

In addition, while it is the responsibility of the newly established data owners within the DLO to maintain quality standards, TS Discovery provides a cost-effective, quick, and accurate way of assessing standards at any time, enabling TCP to check whether people are sticking to the new data-formatting rules and to plot trends in data quality levels.

£20m in Savings and Counting . . .

In another example, in January 2002, the Royal Navy alone had 510,770 unique items of supply within its inventory management system. By looking at just one single item attribute, Packaging Type, the DLO TCP team identified 56,035 rogue or missing entries. Incorrect numbers per pack might have led to wrongly ordered quantities for example and on occasion goods arriving at destinations which did not have appropriate handling facilities. In the two years following project commence-

ment, TCP is estimated to have delivered supply chain cost savings of £20m (roughly \$36 million USD), by removing data inaccuracies and inconsistencies, leading to the elimination of duplicate and obsolete items.

Preaching the Gospel of TCP

TCP has been so successful that the MoD is extending work into other areas beyond the DLO. "To obtain the necessary funding and executive sponsorship, IT initiatives must be linked to organizational goals. If key people understand the hard savings and productivity benefits of getting the data right, they will support it wholeheartedly," said Stafford. "TS Discovery is great for proving whether data is fit for purpose. When it comes to identifying problems, it is fast, accurate, and much simpler than manual approaches."



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