

Manufacturing Operations Reimplementation

Aim: To deliver efficiencies to the supply chain of a large public sector storage and distribution network through the design of an implementation plan for a staged transformation.



Optimise Warehouse and distribution network



Optimise inventory levels and locations



Reduce time and cost to deliver



Reduce estate liability and increase network resilience

1. Establish a baseline model of the current network:

Established a baseline as-is costs across modelling pillars.

Developed a conceptual Supply chain model in Power BI to flexibly simulate the supply chain.

Compared the Supply chain to industry using Gartner maturity model to compare against industry standards.



2. Use the conceptual supply chain model to answer hypotheses and gain an overview of the network:

Collated data using Excel, SQL, Access to build a supply chain data model in Power BI and Llamasoft. Models aided supply chain visualisations for building understanding rapidly, including producing dashboards within workshop to answer questions on the fly.

Deeply focused into modelling pillars whilst continuously collated back in cost model to track cost benefit analysis.



3. Model each element of the supply chain to optimise the whole network:

Infrastructure Calculate total usable storage and volumes of inventory to find inefficient warehousing.

Distribution Simulate laydown of supply nodes and then modelled stock holding and cross docking hubs and impact to time and cost to deliver.

Inventory Model stock savings on through consolidation of safety stock of different types.

People Establish baseline costs for personnel related to logistics.



4. Findings and Output:

Project outputs included a modelling report, supply chain models for further analysis, options analysis and a business case.

Headline results from analysis included:

Infrastructure Identified up to **10%** unneeded warehousing costs across the network

Distribution **13% reduction** in warehouse transactions, **41% savings** in miles and increase of transport utilisation of up to **88%**.

Inventory Proposed laydowns with **up to £60M** of reductions in stock and freeing up to **8000m³** of storage space.

People Identified large resource efficiency if network optimisation was implemented.

