

Value Engineering, is that all we need?

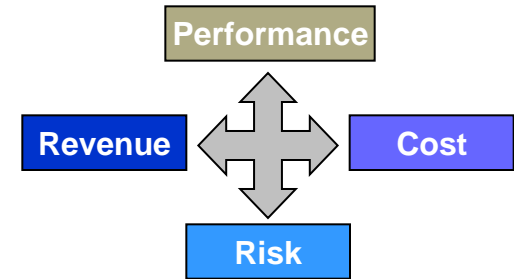
SCAF Workshop

3rd June 2014



What is Business & Solution Modelling (B&SM)?

- **B&SM =**
 - **Business Modelling = How will we make money at this piece of business i.e. Cash flow, NPV, costs, risk?**
 - **Solution Modelling = Will our Solution deliver performance required?**
 - **B&SM = Integration to ensure we provide optimised solutions, Value for Money and understand the relationship between cost, performance, risk and revenue.**
- **B&SM encompasses a wide range of analysis and modelling techniques, e.g.**



Business Winning

Value Proposition
 Solution Optimisation
 KPI Analysis
 Trade Off studies
 Sensitivity Analysis

Solution Modelling

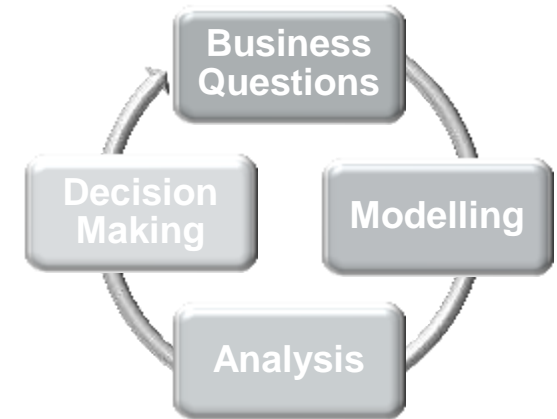
Supply Chain Modelling
 Inventory Optimisation
 Process Modelling
 Fleet Modelling
 Operational Analysis
 Resource Modelling
 Logistics Modelling

Commercial & Financial Modelling

Life Cycle Cost Modelling
 Payment Mechanism Analysis
 Value Analysis
 Risk Modelling

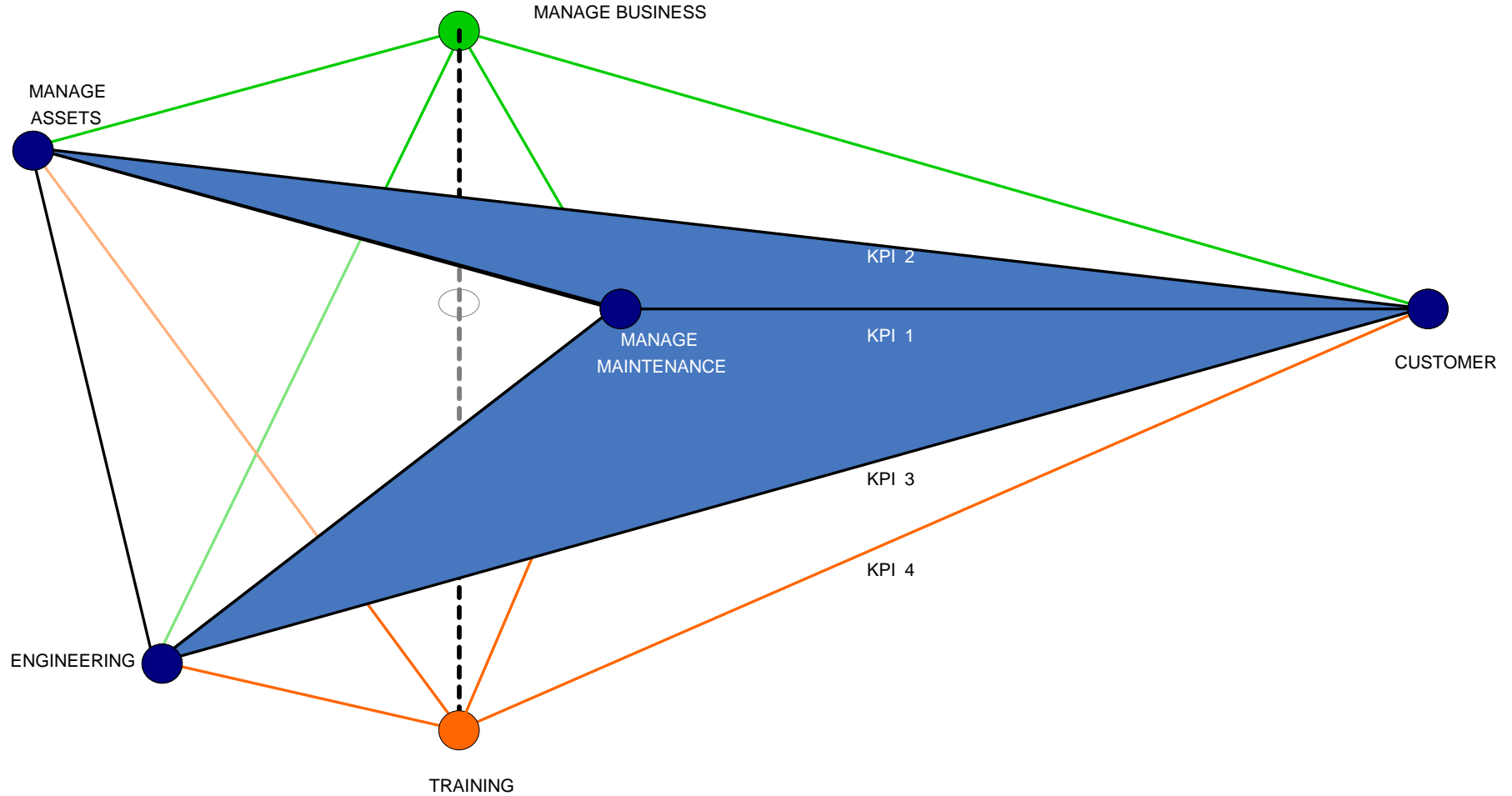
B&SM is used in each Phase of the Project Lifecycle

- B&SM is used in the Bid Phase to:
 - Inform 'trade offs' early and optimise solutions/proposals through scenario analysis
 - Establish increased understanding of projected 'through life' operational performance, costs and risks
 - Identify key Value Drivers
 - Establish appropriate contracts
 - Establish Customer & Management confidence in our proposals
- In Through Life Delivery to:
 - Improve predictability and forecasting of future performance against KPIs and so optimise business performance
 - Continuous improvement of our solution/service offerings
 - Reduce the level of Risk through improved decision making

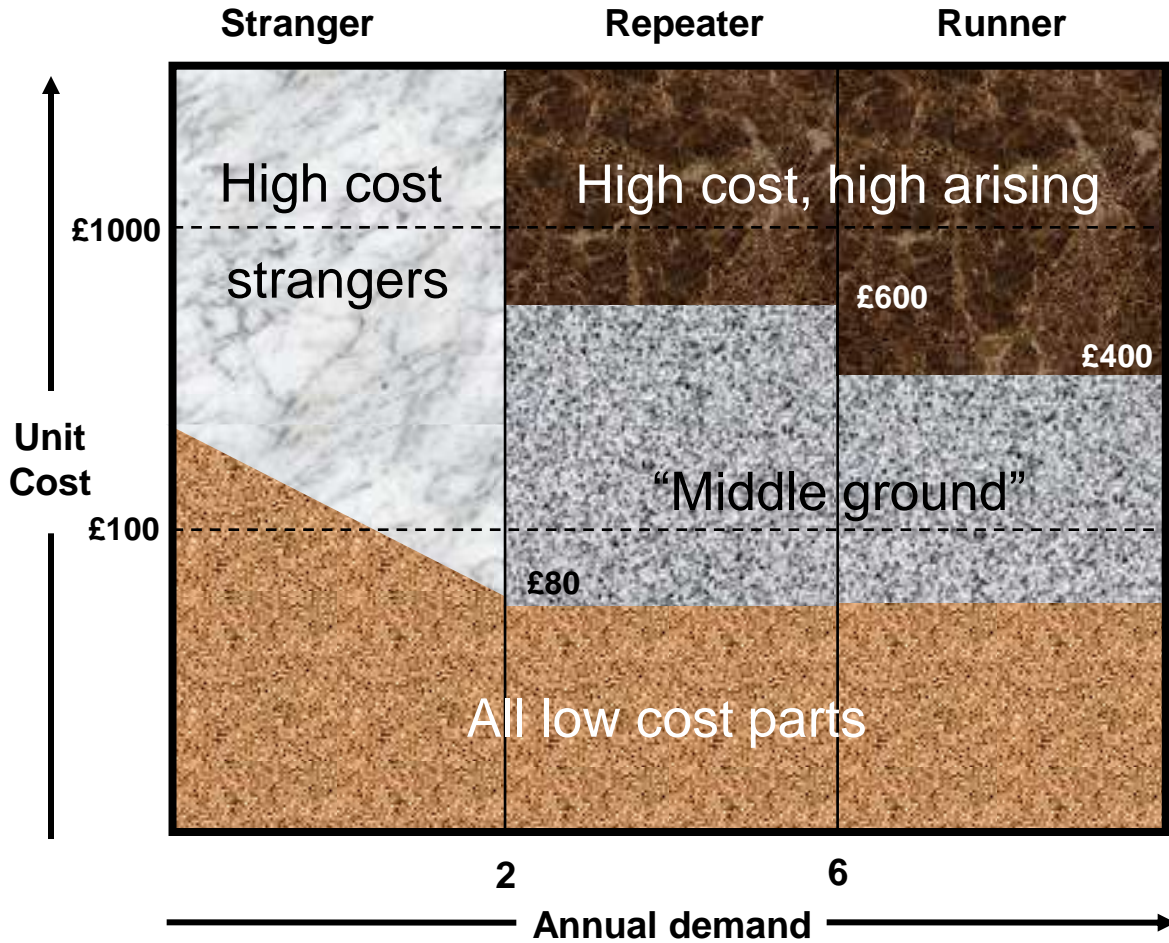


Focusing B&SM on the key business questions ensures most efficient use of resources.

Business and Solutions Modelling adopts a top down process focused on the key levers and drivers to deliver an integrated view of the E2E project / contract.



“9 Box Model” – Inventory Segmentation

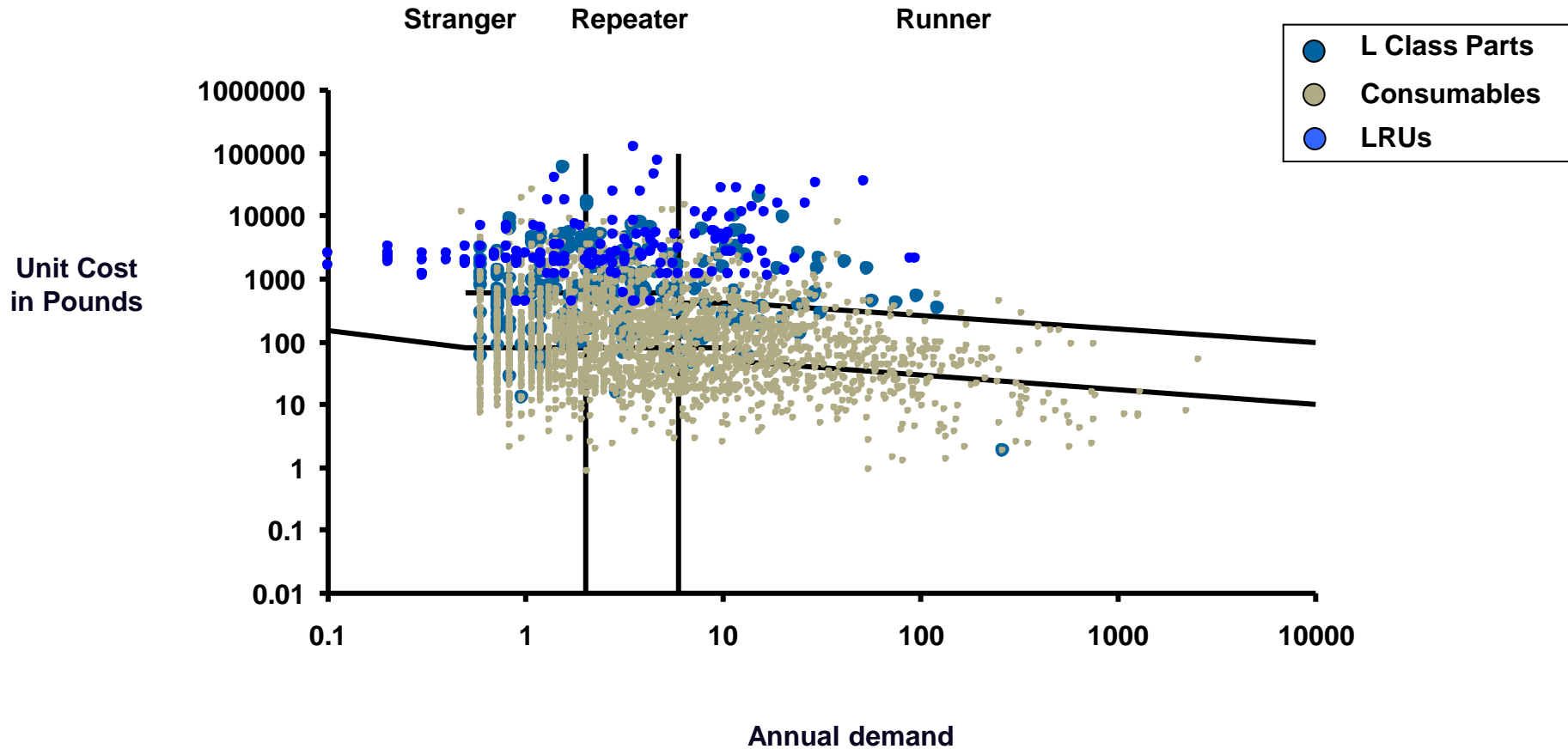


- The analysis takes inventory segmentation a stage further than traditionally applied, addressing the value of a part
- While managing inventory within an availability contract, we should also adopt a value based segmentation
 - All low cost parts
 - High cost Strangers
 - High cost parts with high arising rates
 - “Middle ground”

Source : VBM Team Analysis

Parts cannot be solely managed by category and should also be managed by value

**Marble Chart -
L Class, Consumables and LRUs**



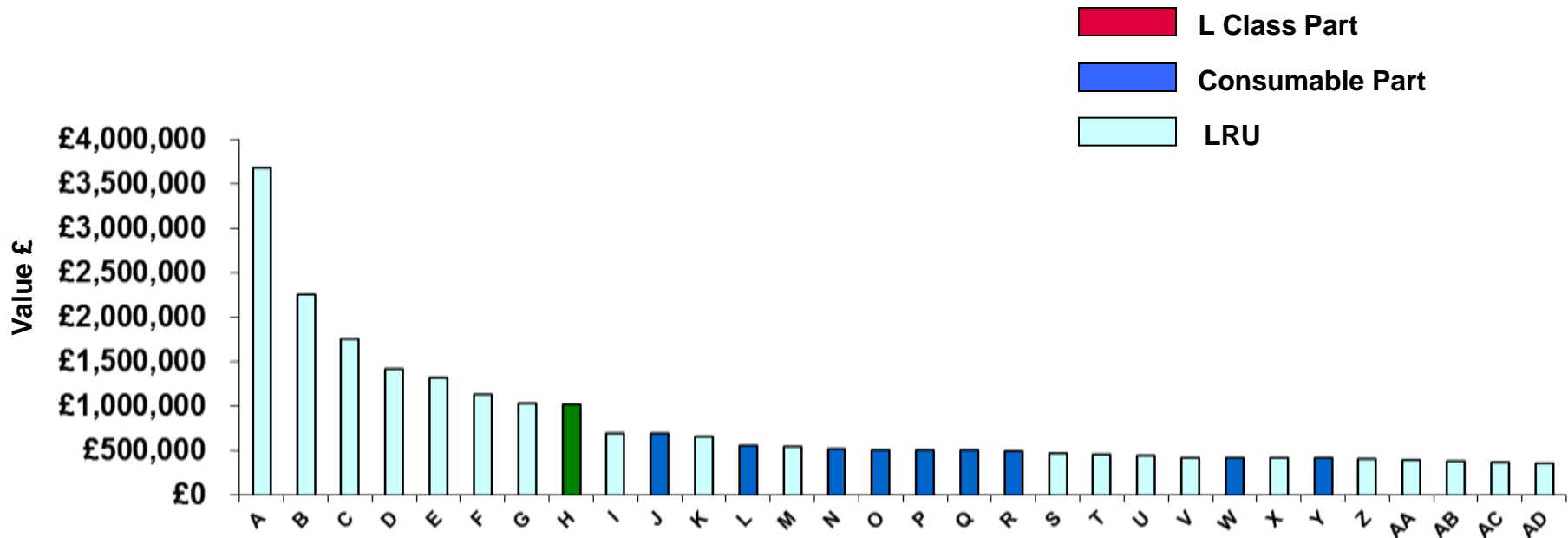
The different parts characteristics require different management and vendor strategies

	Management aspects	Vendor contract aspects
High cost parts with high arising rates	<ul style="list-style-type: none"> • Manage closely because of high cash requirements • Optimise stock levels to keep cash requirements low • Reduce arising rates through reliability engineering • Risk of unknown initial stock levels provided by the customer 	<ul style="list-style-type: none"> • Strategic vendor contracting • Reduce purchase and repair unit cost by negotiation on specific items • Reliability contracting • Repair turn around times • Contractual scrap conditions • Power by the hour
All low cost parts	<ul style="list-style-type: none"> • Hold higher amounts of inventory than strictly required to meet contract. e.g. 99% service level as opposed to 95% service level. • Reduce number of purchase transactions by buying in bulk • Ensure customer orders and deliveries are in bulk • Ensure high DSR to minimise stock-outs 	<ul style="list-style-type: none"> • Reduce purchase price through larger batch sizes • Compete vendors for high volume items • Explore Direct Line Feed as an option
High cost Strangers	<ul style="list-style-type: none"> • Manage closely because of inventory risk • Minimise stock levels to keep cash requirements low • Reduce arising rates through reliability engineering 	<ul style="list-style-type: none"> • Contractual short lead times • Ensure accurate and reliable estimates of purchase and repair costs
“Middle ground”	<ul style="list-style-type: none"> • Focus on high spend area in this segment • Set up computerised demand system (e.g. Xelus) 	<ul style="list-style-type: none"> • Compete vendors to reduce cost • Bundling of vendors • Contract to remove transaction costs • Contract to reduce lead times to minimise stock-outs



This approach provides the key information required within ARM and Inventory Optimisation



In this example the Top 30 Value Driving Parts account for 40% of the Net Present Value of cost



Example Part Strategy: For Part A there are several focused actions that could create significant value

**Profile of Part A
(Base case NPV of Cost: £3.68m)**

	Units	Base case values	Targeted change	NPV saving	Comment
Arising rate (MTBF)	Flying Hours	539fh	20%	£613k	•
Unit Repair cost	Pounds	£34k	-20%	£736k	•
Repair TRT (Source: VBM Team)	Days	40	-50%	£0k	• Stocking requirement reduced however current stock is more than sufficient
Purchase Lead Time	Days				•
Unit Purchase Cost	Pounds				•
BER (Source: VBM Team)	Days				•
Required safety stock level (VBM Team model)	Pounds				•
Total NPV saving (shaded areas only)				£1349k	

-  Focus on value engineering
-  Reduce repair cost

Source : VBM Team Analysis

Example Part Strategy: For Part B there are a couple of focused actions that could create significant value

Profile of Part B (Base case NPV of Cost: £1.02m)

	Units	Base case values	Targeted change	NPV saving	Comment
Arising rate (MTBF)	Flying Hours	9295fh	20%	£180k	•
Unit Purchase cost	Pounds	£58k	-20%	£205k	•
Purchase Lead Time	Days	150	-50%	£218k	•
Repair TRT (Source: VBM Team)	Days				•
4 th line repair cost (Source: DLO)	Pounds				•
BER (Source: VBM Team)	Days				•
Required safety stock level (VBM Team model)	Pounds				•
Total NPV saving (shaded areas only)				£603k	

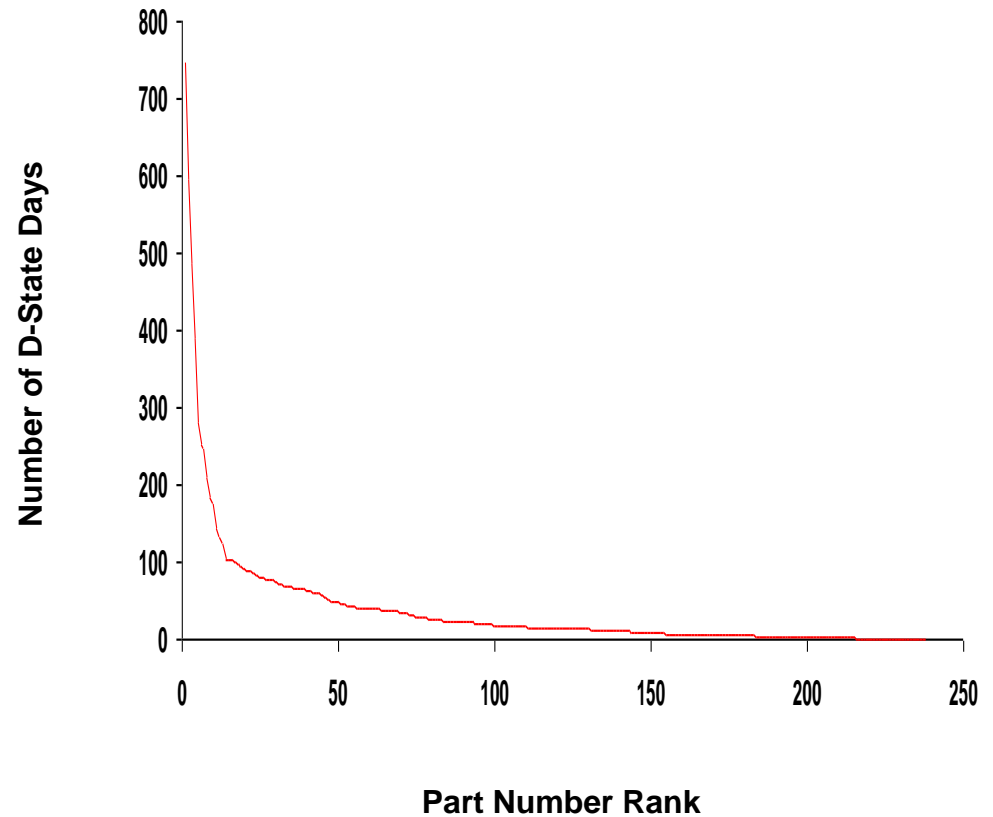
- Focus on value engineering
- Seek additional discount
- Is this assumption accurate and is there potential for reducing it
- Repair rather than scrap

Source : VBM Team Analysis

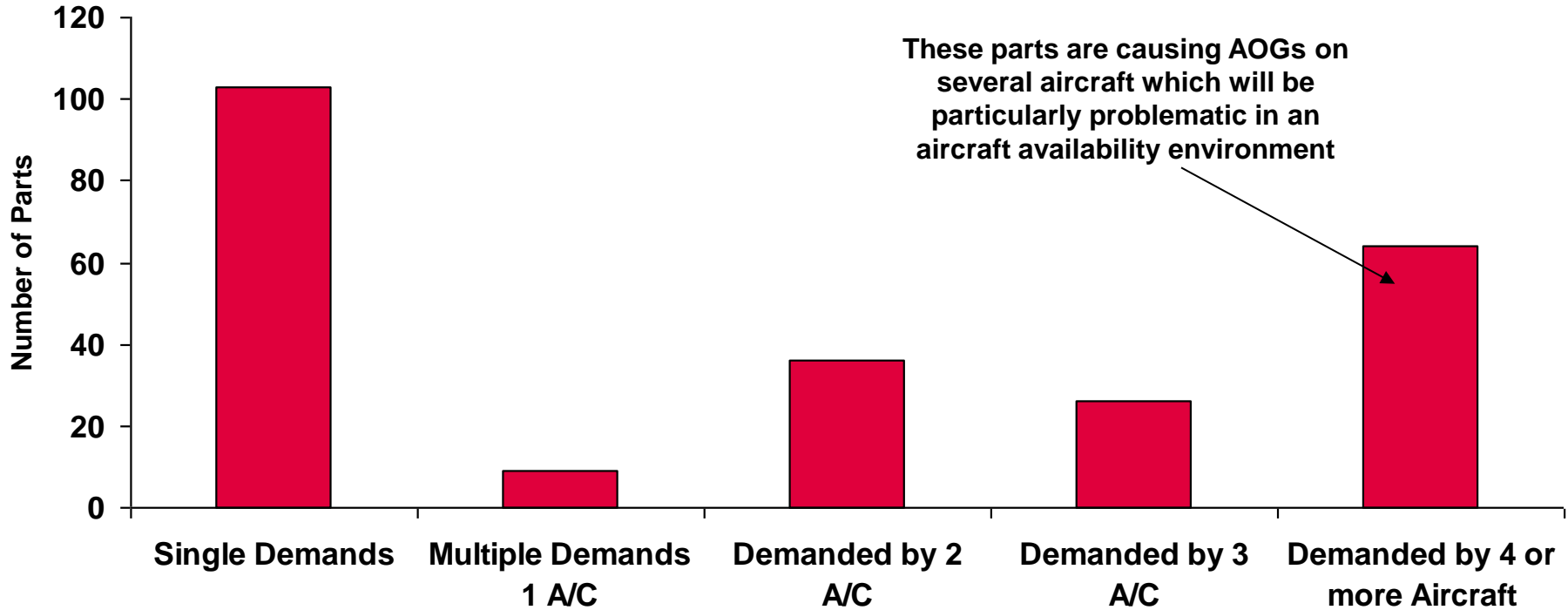
A similar approach can be utilised to identified and manage parts that have the largest impact on availability

- In this example of the 2854 parts only 238 have caused D-states in the past 2 years.

- . The top 20 parts causing 50% of the D-state days

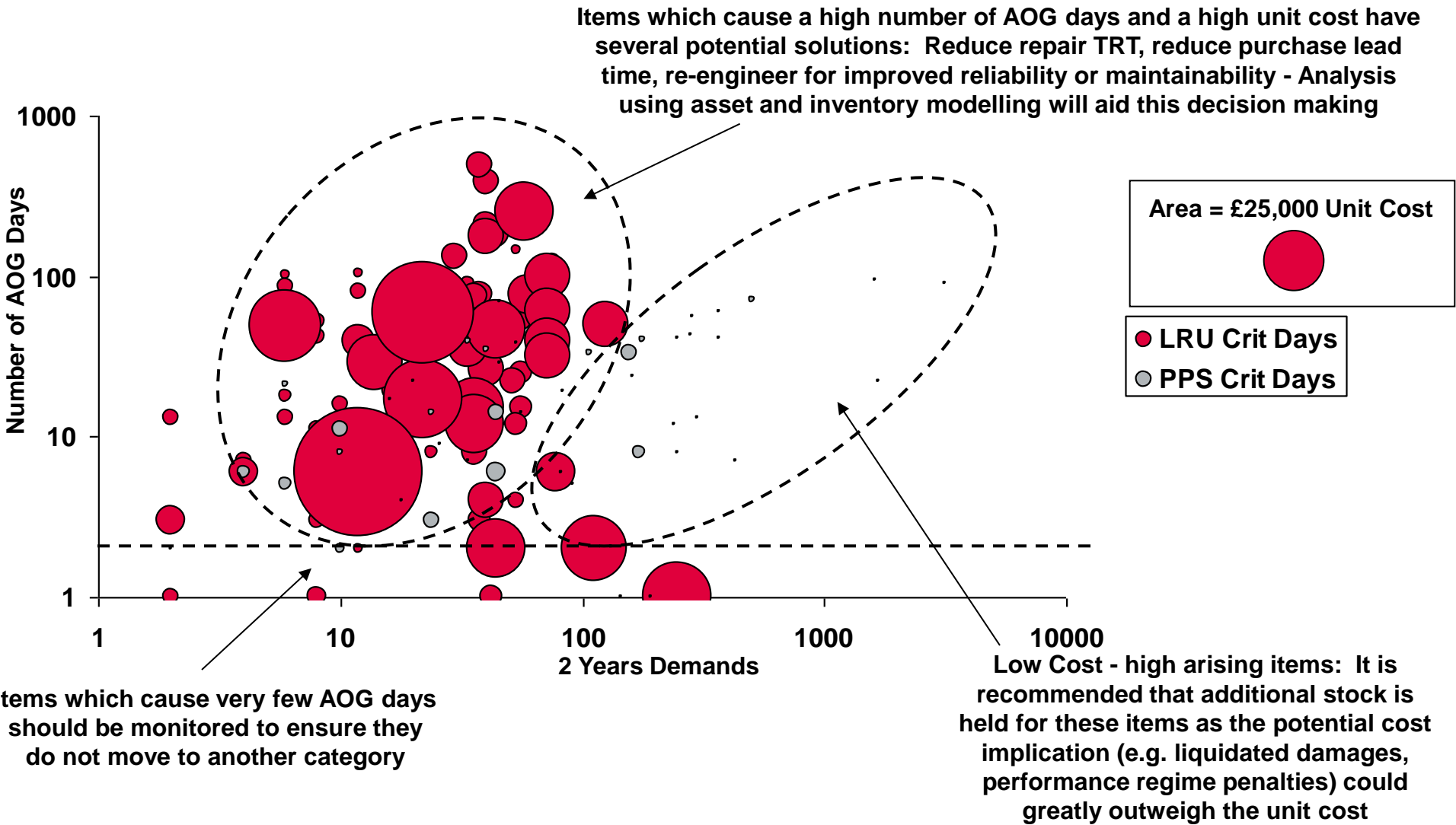


A significant number of parts cause more than one aircraft to be grounded





- 2 components have each caused D-states on 37 different aircraft!

AOGs have a major impact on aircraft availability, co-ordinated management of items which cause D-states will be critical



Operational Performance and Value moves within and across functional business boundaries and the KVD's reflect this behaviour and present a management challenge to deliver the required level of Operational Performance while delivering sustainable long term value through management across the organisation

KVI	Commercial	Project Management	Maintenance	Training	Supply Chain	Engineering	Procurement	Customer	Suppliers
Component Reliability (ARM)									

Value Engineering is an important element and approach in managing cost, performance and value. However when used in isolation it is unlikely to provide an optimal solution.