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Practice over perfection

A case study in building an in-house Systems Engineering Capability

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Defence Equipment & Support



Overview

- Background and context
- What were we trying to achieve?
- What did we do?
- How did we do it?
- Results
- Lessons learnt



Defence Equipment & Support (DE&S) is part of the MOD. We work with the military commands (Royal Navy, Army, Royal Air Force and Joint Forces) as well as MOD Head Office, managing complex programmes that provide equipment and support to the UK's armed forces.

What we do

We're responsible for:

- The procurement and support of ships, submarines, aircraft, vehicles, weapons and supporting services.
- General requirements such as clothing, food, medical supplies and temporary accommodation.
- Defining, designing, deploying and controlling coherent support chain processes and services.
- The British Forces Post Office.

What's different about us?

We're a bespoke trading entity (BTE) and that gives us certain freedoms:

- Separate governance to MOD
- Hard charging of our customers
- Customer-supplier relationship more of a business-like approach
- Our employees are still crown servants – a mixture of military and civil servants



Our role in the MOD

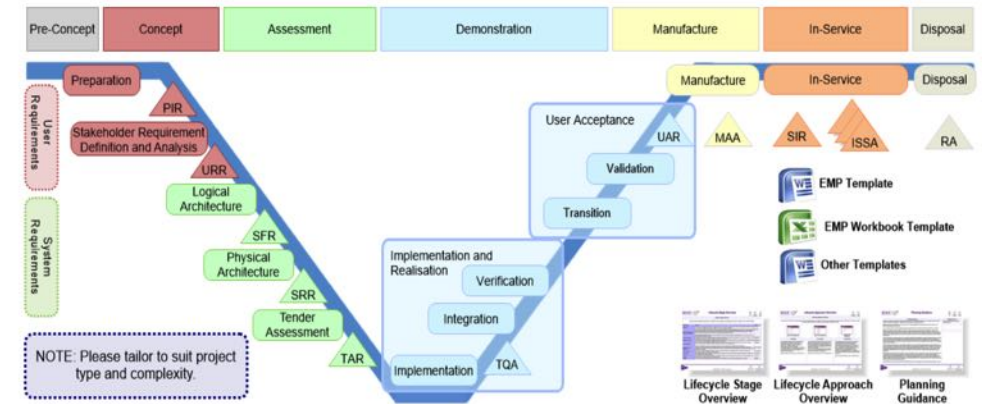
We're a crucial part of the overall defence operating model. Our work links defence suppliers to our military customers.



SE in DE&S



- Systems engineering
- Safety
- Information security
- PPM
- Mixture
- Deep specialist



Guide to Engineering Activities and Reviews (GEAR)



Internal Technical Support Team Mission

“To save money, and build our skills, by delivering technical services in-house rather than buying them in”

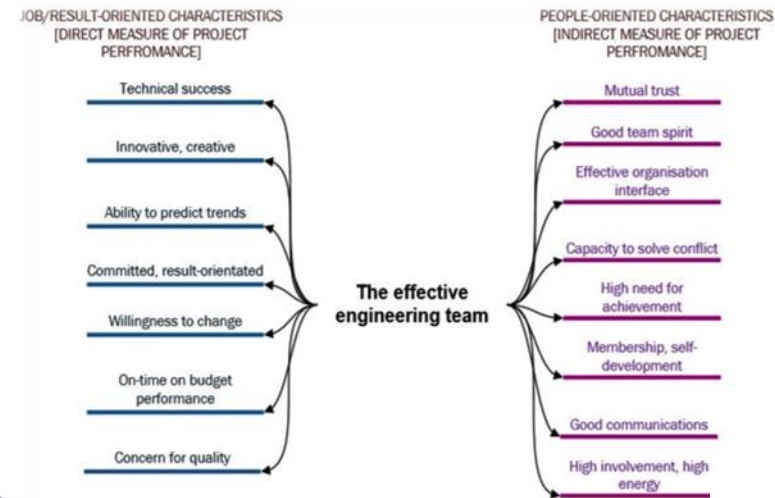
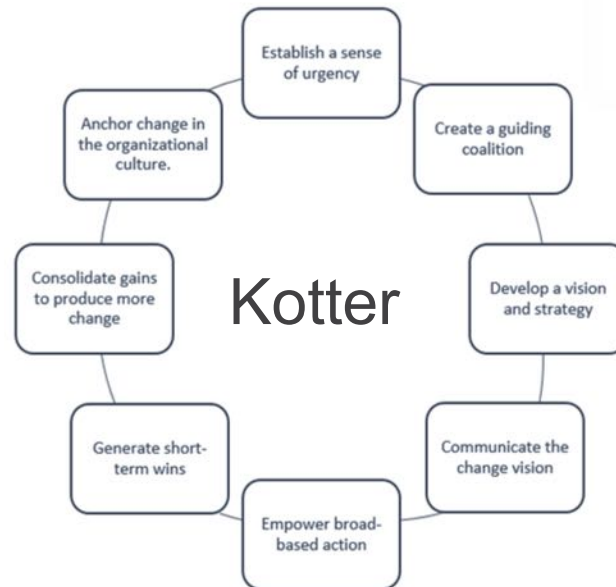
“As much as you can, as fast as you can”



Why hadn't we done this already?

- Belief
- Capacity
- Flexibility
- Competence
- Credibility
- Confidence

Key considerations





Why hadn't we done this already?

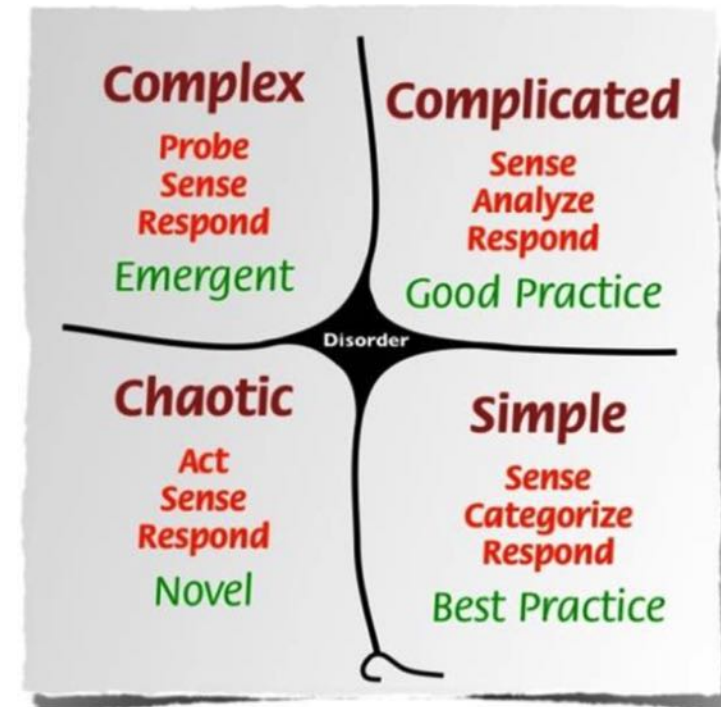
- Belief
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Phase 0 – The idea

- April/May 2016
- Catch the ball
- Build the case
- Design the operating model
- Agree funding and timescales





Phase 1- Can we do it?

- Recruit the team (June-August 16)
- Agree initial tasks
 - Short
 - Supportive customers
 - Critical work
 - Aligned to team SQEP
- Understand delivery model
- Deliver (August-October)
- Grew from 1 to 6 people





Phase 2- Grow the team and practice

- Continue delivery
- Recruit new team members
- Onboard, sustain culture
- Grow from 6 to 19 people
- Franchise out the model to
 - Human Factors Integration
 - Independent Safety Assurance



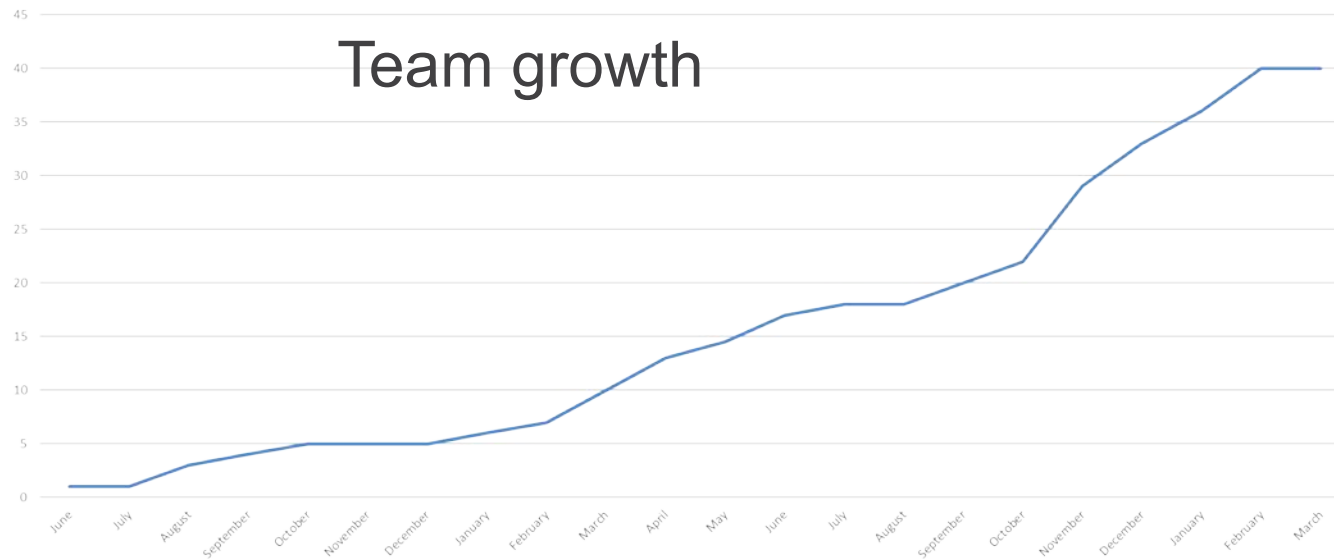


Phase 3- Grow the team and practice

- Continue delivery
- Recruit new team members
- Onboard, sustain culture
- Grow from 19 to 42 people
- Franchise out model to
 - Cyber



The results so far...



Benefits for 17/18- £3.6M



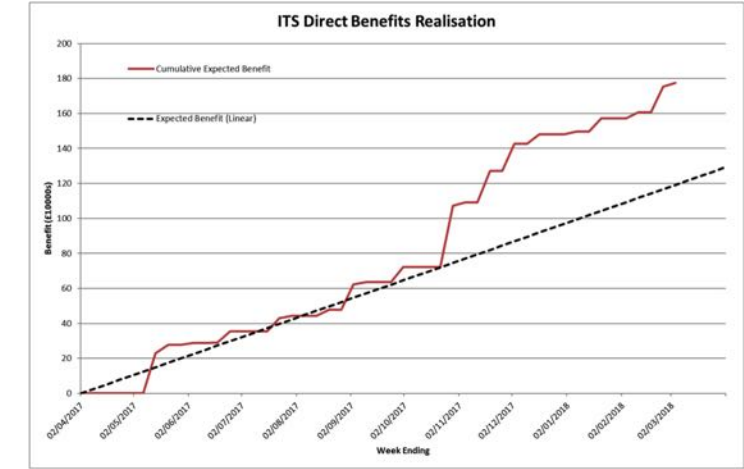
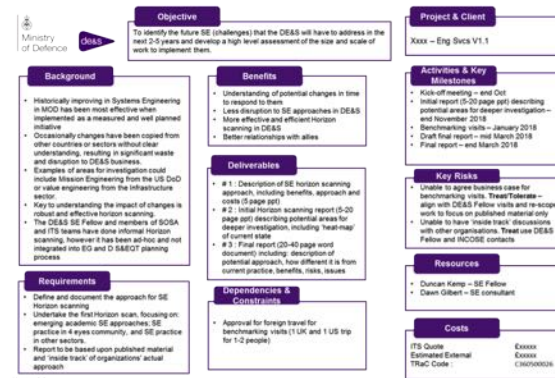


Focus for delivery

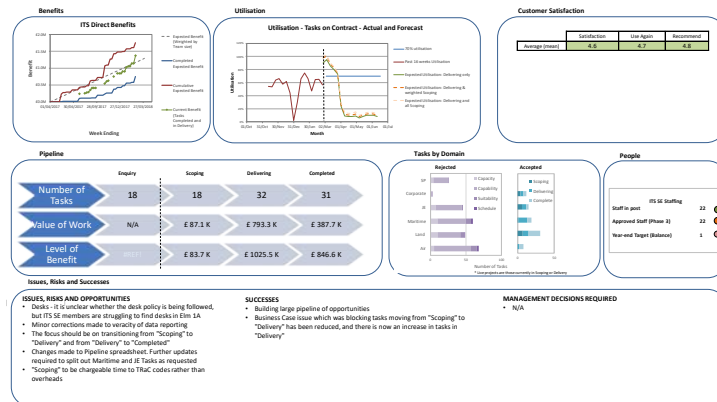
- Exploiting the right **opportunities** for work
 - High value and importance
 - Core SE tasks
 - High interest
- **Delivery** to customer satisfaction and cost
 - Deliver as per plan
 - Keep customers happy
 - Keep within budget!
- Capture and demonstrate business **results**
 - Capture customer feedback
 - Get bills paid
 - Capture and report all benefits
- Demonstrate **credibility**
 - Publish and communicate successes
 - Learn from experience
 - Grow the scale and competence of the team



Small set of core processes



Internal Technical Support (SE) - Progress Report - February 2018



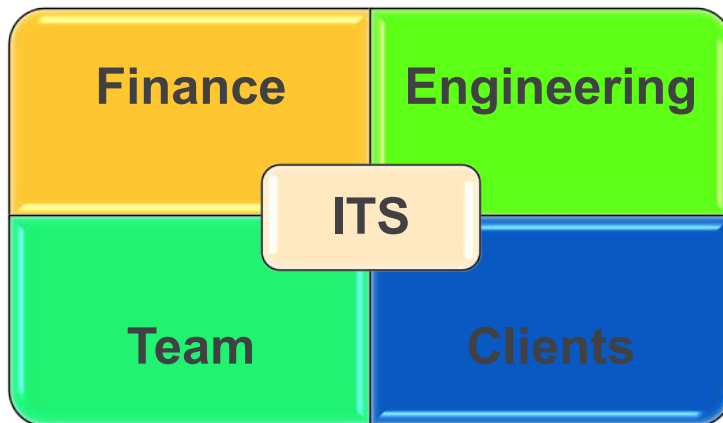
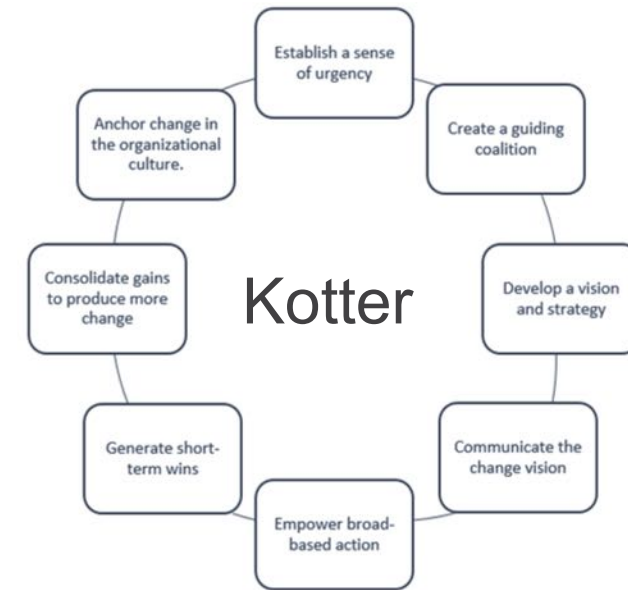
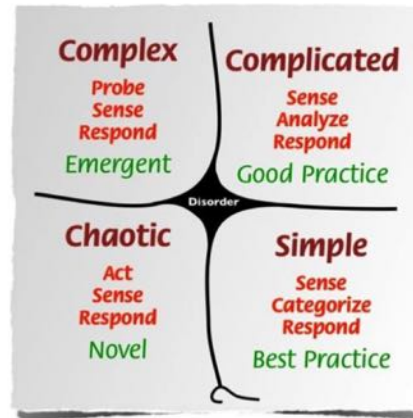


Focus on key stakeholders needs

- Finance
 - Save money
 - Recover costs
- Engineering function
 - Build capability
 - Fill SQEP gaps
 - Develop junior staff
- Clients
 - Solve problems
 - Start quickly
- Team
 - Interesting and varied work
 - A feeling of self worth
 - A fun place to work



Key lessons





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www.incose.org/symp2018