

Deploying Prototype Warfare

.... 'getting to yes' at the speed of relevance



Iain Harrison

QINETIQ

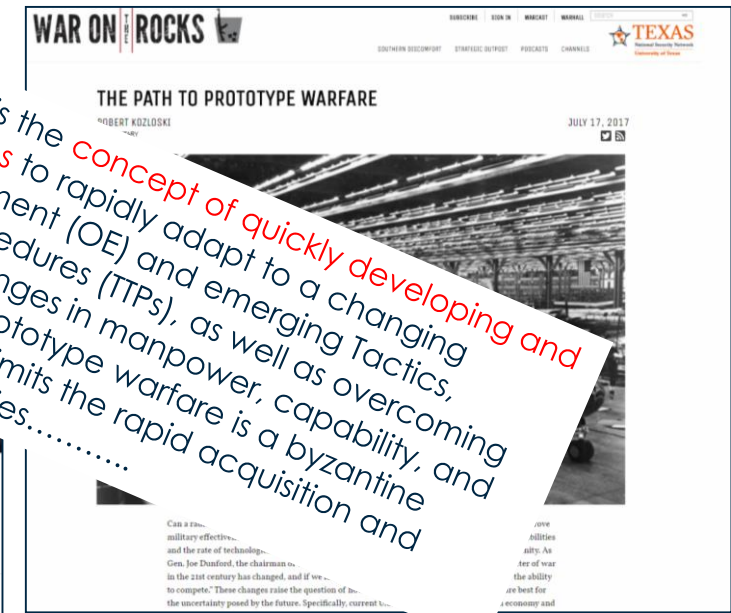
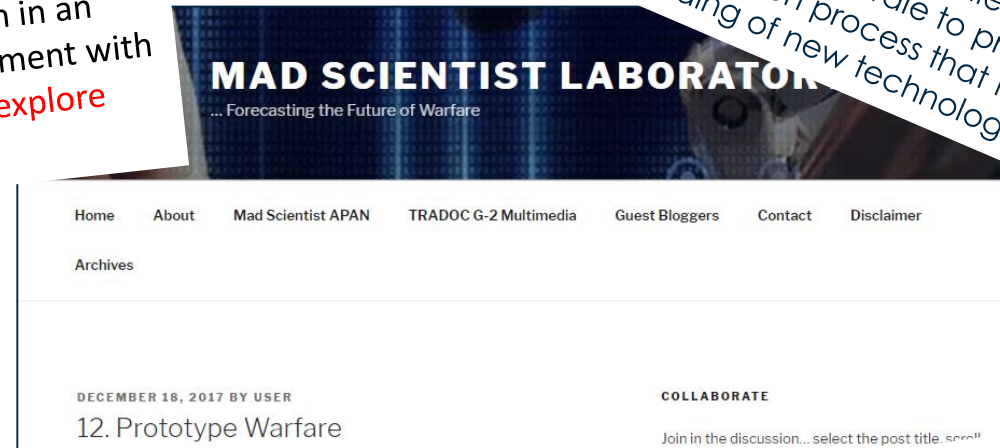
Prototype Warfare – anything new?

Prototype warfare is often dismissed as something relegated to the smaller, more narrowly focused special operations forces and not applicable to conventional forces. However, if the Army is to maintain its competitive advantage and win in an increasingly contested operational environment with continually evolving technologies, it **must explore the potential of prototype warfare.**

Prototype Warfare represents a paradigm shift from **fielding large fleets of common-one-size-fits-all systems to rapidly fielding small quantities of tailored systems.** Tailored systems focus on specific functions, specific geographic areas, or even specific fights and are inexpensively produced and possibly disposable.

But in the future, mass production of the implements of war will not work. Technological advancements will happen too fast in the Information Age.... Instead, the future of materiel acquisition will be the rapid development and fielding of prototypes

Prototype warfare is the concept of quickly developing and fielding technologies to rapidly adapt to a changing Operational Environment (OE) and emerging Tactics, Techniques, and Procedures (TTPs), as well as overcoming shortcomings or challenges in manpower, capability, and reach. One hurdle to prototype warfare is a byzantine acquisition process that limits the rapid acquisition and fielding of new technologies.....



Prototype Warfare – anything new?



This one's for Kev Copsey!



Deploying Prototype Warfare – what do we mean by it?

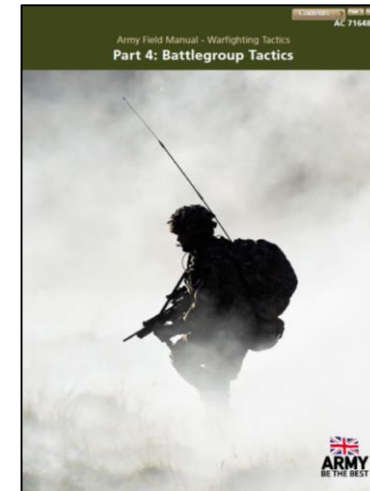
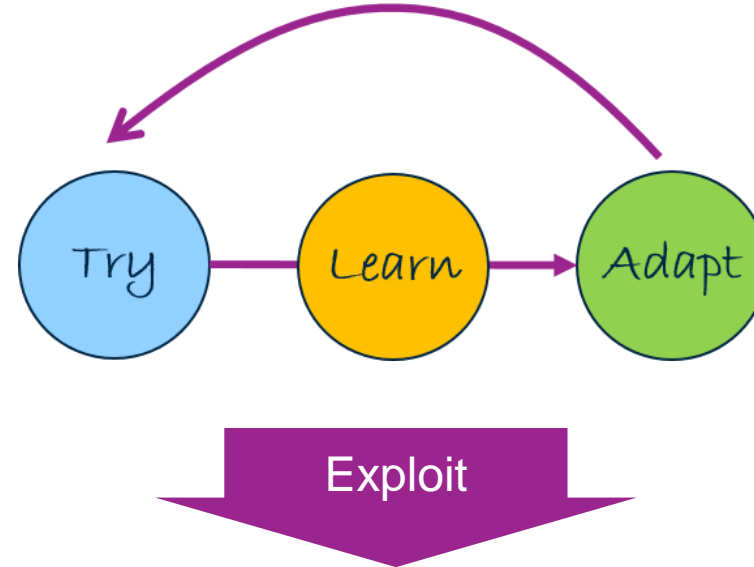
....linking technology horizon-scanning with innovation and experimentation....

...the value of exploring early stage technology for operating concepts...to deliver competitive advantage...at the right pace

...willingness to engage in military operations with capabilities not normally considered ready for deployment...

...‘*experimentation in contact*’with sufficient safety and security measures

...as much mindset as strategy...



Deploying Prototype Warfare – why does it matter?



Pace of technological change



Acceleration of threats



Contribution to modern deterrence

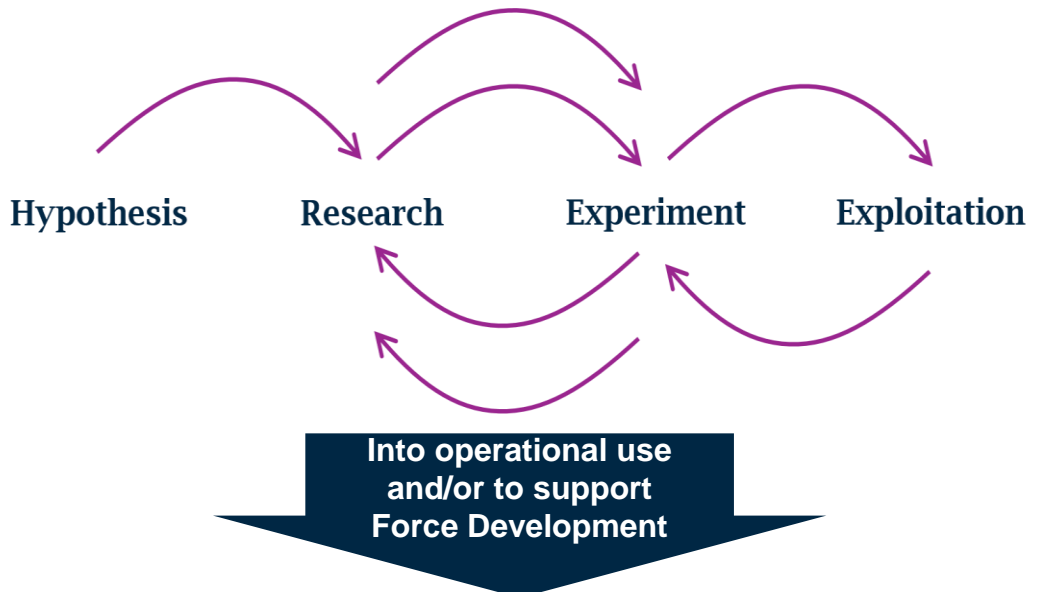
Deploying Prototype Warfare – what do you see?



Likely to start with a question:

- *Would it be possible to....?*
- *I wonder what happens if.....?*
- *How can we.....?*

Deploying Prototype Warfare – not a ‘techfest’



THE CF(L)35 DOCTRINAL PREMISE

NEW WAYS

The concept proposes a new way of operating, force design, and capabilities to deliver a more effective force. A US sovereign war fighting doctrine will remain as the baseline offer to our allies. It does not consider offering capability to other nations and seeks to support a UK military industrial base capable of supporting a doctrinal warfighting effort, possibly scalable to the corps level. We will deliver multiple, cross-domain, dimensions to the enemy so that we impose decision penalties. Although consistent with the Integrated Action, Maneuverist Approach, and Mission Command, the fundamental premise focuses on the following principles:

- 1. **Dispersion.** We will manoeuvre dispersed as the norm, which will increase protection, improve deception and allow us to fight disaggregated where applicable. We will consequently challenge the enemy at more locations simultaneously, aiming to achieve decision paralysis. This will place higher demand on our C2 and maintenance but AIV evidence suggests this is more than a risk than concentrating combat power. To support both dispersion and generating tempo we will refine our TASCORO to lower the level of conditional areas grouping.
- 2. **Tempo.** We should seek to generate tempo at the expense of other factors. History and recent AIV experimentation has shown that whoever drives the decision-action cycle is more likely to win. On the basis that tempo is key, units must not wait for supporting assets from higher. CF(L)35 task organisations critical assets at lower levels so that tempo is easier to attain.
- 3. **Deception.** The force design includes elements whose focus is to deceive the enemy in both the physical and

across the EMS. AIV experimentation continues to point at the adversary's approach to deception and the UK lack of resource in this capability.

4. **Protection.** We will seek protection by speed of manoeuvre and decision rather than just physical armour, so that our forces remain strategically deployable. Evidence points towards 'big, heavy and slow' regarding to 'small, light

and fast'. (Review of Low, 31 Jan 18, 'Future Land Challenge 4 (PLC) Report', Def, Version 7.1)

5. **Dislocation.** Current doctrine focuses on the destruction of enemy combat power, specifically IEDTs, artillery and infantry. The CF(L)35 focuses effort on dislocation of the enemy by striking HQs, logistic bases and the narrative, to bring about cognitive dislocation and defeat.

UK ARMY CONCEPT CONCEPTUAL FORCE (LAND) 2025
by the Army Challenge Branch



Deploying Prototype Warfare - barriers to adoption

The User

- Knowledge vs. change resistance
- Suspicion of 'technology purveyors'
- Skills

Technology

- Perception of technology
- Reframing risk

Ethics (or perception)

- Real vs. perceived ethical issues
- Drawing red lines

Regulation

- Knowing the scale of regulatory challenge
- Being able to 'bring along' regulators

Security

- Mitigating the cyber risk
- Safeguarding physical security

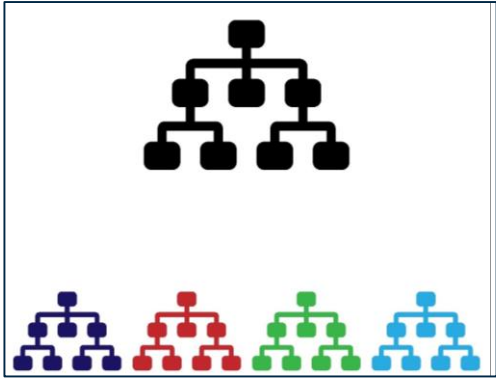
Safety

- Perceived low risk culture in procurement
- Challenge of explaining risk in prototypes

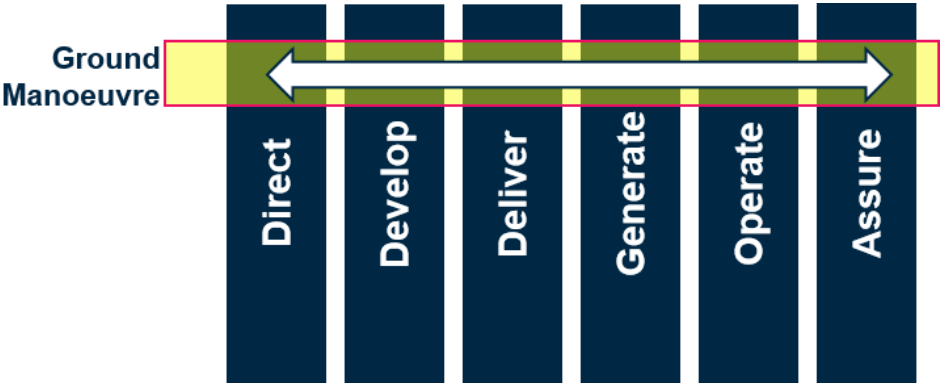
Procurement system

- Competition vs. collaboration
- SME culture, corporate resilience

Key institutional challenges to adopting Prototype Warfare



User inertia or suspicion



Disjointed capability management



Skills, experience and continuity



Agility of resourcing and fear of financial failure

Enabling successful exploitation of Prototype Warfare



Appropriate experimentation 'sandpits'



Evidence collection and exploitation plan



Greater/earlier use of simulation/synthetics



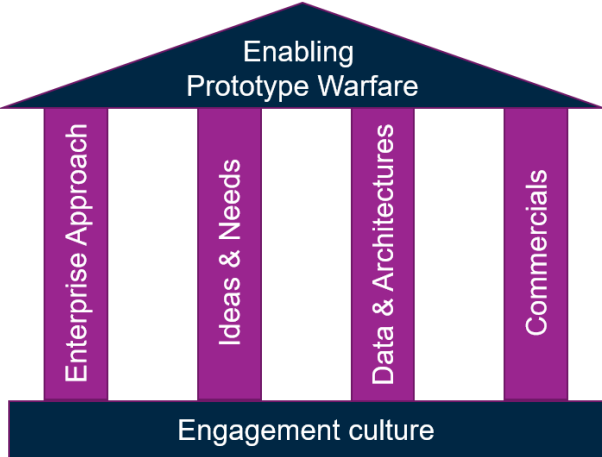
Engage early on safety and security

Deploying Prototype Warfare – ‘getting to yes’



Technology horizon-scanning

Encourage an experimental mindset



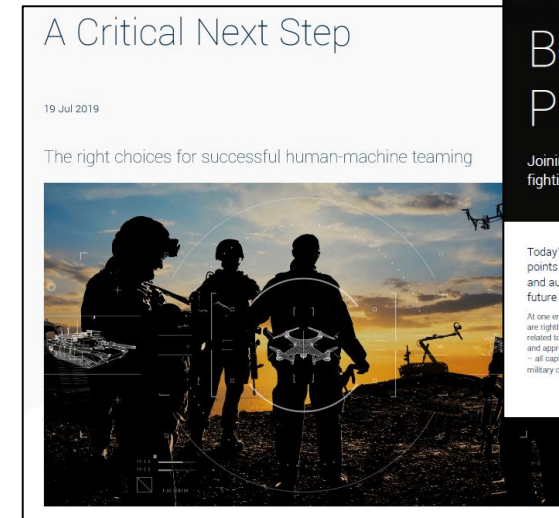
Establish business enablers



Harness the power of collaboration – with associated behaviours
Military, Civil Service, Regulators and Industry

Moving robotics and autonomy from Prototype Warfare label to Prototype Warfare capability

- Critical next steps
 - Focus on human in the team, and how much information they can handle
 - Enable tactical separation of soldiers and machines to reduce reliance upon constant human interaction
 - Enable effective human-machine teams by prioritising information fusion from multiple sources
- ...enabled by focusing on 3 priorities:
 - Apply technology findings to a range of tactical functions/use cases
 - Prioritise the information architecture
 - Determine how we want to fight first
- ...through considering the 3 key technologies:
 - Platform systems
 - Information systems
 - Enabling systems
- ...and taking deliberate steps through 3 epochs:
 - 2025
 - 2030
 - 2035





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