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Information Capabilities as a Force for Change and Force Multiplier

Andrew Sleigh
My themes:

Information Capabilities are in the front line of Crisis Management

*Agility* is the primary capability for the (new?) climate

1. Information capabilities as the glue for agility

2. Agile information assets

3. Agile capability based acquisition
Security Planning

- Prediction is impossible
  - un-knowable complexity of the way people and physical world interact to cause "events"

- The only strategy is to have good indicators and warnings and be able to respond fast

- Planning is therefore about
  - maximising ability to respond to the unexpected
  - watching the right indicators and warnings so as to act early
Section 1

Information capabilities: the glue
The Real RMA?

Campaign Objectives

Crisis Management

Mission Plans

Our model of the real world

Public Affairs

Stakeholders’ Perceptions

Sensors & Intelligence

Targeting

Combat Action

Target acquisition

Situation Awareness

Simulation

Rehearsal

C2

Intelligence

Opponents’ Perceptions

Diplomacy

Internal politics

Counter ISTAR

Force Elements

Sensors & Intelligence

Media

Communications

C2

THE REAL WORLD

QinetiQ
Information capabilities: the glue for agility

- Crisis management today: integrated deployment of political, military, economic and awareness means
- Information capabilities configure and bind assets to generate effect
  - orchestrates players to deliver desired outcomes
- We need to think of information capabilities as the primary instrument for managing security
  - the central trunk for crisis management, and effective warfighting
  - agility of all forces determined by information agility
Section 2

Agility in information capabilities
Agility in information capabilities will be vital to our overall ability to manage crises
Agility in information assets (1): Sensor to Shooter

- Threat event
  - Sensor (e.g., high resolution image)
  - Exploit
  - Decision
    - Targeting Cell
    - Manage ISTAR Assets
    - Authorise Strike
    - Manage Shooters
    - Shooter
  - Task Sensor
  - Shooters
Agility in information assets (2): Civil / Military

- No longer a distinction between military and civil “ISTAR”
  - events may originate as criminal investigation but move seamlessly to military involvement
  - policing and military action now operate in tandem
  - Military ISTAR could include sensing stock market deals, tracking people’s movements, analysing personality profiles
- Implies investment in ability to integrate civil and military ISTAR capabilities, and take a broader capability look
ISTAR product
Agility in information assets (3): Dynamic doctrine and tactics

- Approaches to pol/mil interaction, command style, decision making and security policy can all differ across any group of partners in a coalition
Agility in information assets (3): Dynamic doctrine and tactics

• Multi-National Interoperability Council held a Seminar Wargame in 1999. It highlighted several impediments to coalition operations, including:
  – fundamental differences in the way information is handled and security policy defined
  – different approaches to forming plans
  – different customs for decision making and delegation
  – different relationships between military command and the political crisis management dimensions
Agility in information assets (3): Dynamic doctrine and tactics

• We need to be able to adapt doctrine and procedures with type and phase of operation, lead nation, selection of partners, etc

• Information capabilities must support this flexibility

• Information capabilities (through simulation and battlelabs) support experimentation to evolve effective and harmonised ways of working
Agility in information assets (4): Helping commanders work together

• Many “soft” people issues to get right
  – high dependence on battlelab and synthetic environment capabilities to explore process and C2 application solutions

• Growing number of experiments where real command teams have taken part in research programmes as part of their training and development

• Several research techniques are being used in Exercise SAIF SEREEA to explore coalition command issues
Agility in information assets (5): Helping commanders work together

- Many “soft” people issues to get right
  - high dependence on battlelab and synthetic environment capabilities to explore process and C2 application

- Growing number of experiments where real command teams have taken part in research programmes as part of their training and development

- Several research techniques being used in Exercise SAIF SEREEA to explore coalition command issues
Agility in information assets (5): Crisis management C2

- Command and control for crisis management
  - like warfighting, C2 in the pol/mil space needs situation awareness, planning and command tools
- For example
  - Secure, trusted political decision making
  - Operational level situation awareness
    - including psychological profiling of adversaries, media and website monitoring, anomaly detection in transaction data, etc
  - Techniques to manage and minimise risks
    - esp avoid elephant trap outcomes
Agility in information assets (6):
Research examples feeding operational agility

- Flexible “reports & returns” process exploited by BAE Systems in GP3, moves away from 12 hour reporting
- COTS data mining tool able to rapidly find ‘hidden’ relationships and patterns in intelligence data
- A range of security products that allow controlled sharing of information
  - deployed in all recent operations
- FAST: intuitive ATO planner allows dynamic update and real-time verification of air tasking orders
  - tested by Air Warfare Centre and in use by Malaysia
Agility in information assets (6): Research examples feeding operational agility

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Section 3

Agile capability based acquisition
Smart Acquisition for agile capability development

- Smart Acquisition gives us the tools to achieve agility in capability development

- How do we get the right “customs” in place to use them to full effect
Capability based acquisition

• The UK Capability approach is a crucial asset
  – driven by outcomes, not programmes
  – Capability Plans provide the framework to articulate trends and risks, then judge investment priorities
  – no pre-commitment to a solution

• Can we strengthen Capability Plan process by focusing more directly on the flexibilities we need to create to hedge across events?
Capability based acquisition: Getting the right flexibilities

- Identify trends and synthesise implied “events” and associated indicators and warnings (I&W)
  - eg the RAND “Day before…” approach
- Focus on capabilities that mitigate events with an I&W “turning circle” inside current responses
- Balance investment to realise short term capability improvements
  - with option “hooks” that can be exercised in response to I&W or lowered technology risk
  - fast-track user needs to adapt equipment “fit-for-role”
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Providing hooks for latent capability

• Focus on minimum essential baseline capability,
  – get it in early
  – accept by outcomes not system performance
• URD should explicitly map out plausible avenues for extension options, updated regularly in partnership with IPT
  – make demonstration of flexibility part of acceptance
  – run parallel demonstrator programmes for extension avenues
  – maintain funding headroom to activate options rapidly
Fast-track user needs to achieve “fit-for-role”

- Use battlelabs and simulators to test emerging concepts
- “Pre-emptive UOR” aimed at risks with rising I&Ws
  - Use trade-off “envelope”, and in-year transfers, to fund rapid technology insertion
- Ensure research contractors have ability to exploit successes rapidly into field
- Allow contractors to introduce unsolicited innovative capabilities, charged to IPT or end-user if taken up
Making Smart Acquisition agile

• Smart Acquisition gives DECs and IPT Leaders very significant authorities to adapt programmes and funding to optimise capability benefit

• Have been instances where these authorities have been exercised with great effect

• Important now for DECs and IPT Leaders to stretch these authorities and tighten our procurement turning-circle
Concluding remarks

• Those responsible for information capabilities probably now bear the greatest influence on our future success in defence

• We will never know what is round the corner, but we can make good judgements on what we need to do to improve our agility to respond

• The UK approach to Capability based acquisition has all the right features for agility; we now need to make it really sing for us