Value-Based Force Structure Design

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Structure of Talk

A journey about NCW:

– From Australia’s military strategic tasks
– Through tactical value chains
– Improving the performance of the tactical value chains
– Functional dependency implications
– What is the boundary of analysis, linking tactical to deliberate planning and to the strategic effect

*How does NCW affect Australia’s 2015 force structure design?*
## NCW Implications for Australia’s Military Strategic Tasks

<table>
<thead>
<tr>
<th>Military Strategic Task</th>
<th>US Coalition</th>
<th>Defence of Australia</th>
<th>Regional Coalition</th>
<th>Transnational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Characteristics</td>
<td>Can’t play without plugging into MCP requiring high-levels of interoperability. Global sensor space, small engagement space</td>
<td>Plugging-in enable info / mass trade-off to achieve an effect Broad mainland sensor space, potentially large engagement space</td>
<td>Social network, inherently multi-agency and multi-national</td>
<td>Shifting AO changes dynamics of multi-agency and multi-national</td>
</tr>
</tbody>
</table>

- **Do solutions that enable Australia to work in US coalitions work for Australia’s other military strategic tasks?**
- **Thinking about transnational threats gives us new insights into Defence of Australia**
**What is a Network?**

Value chains provide threads of dependencies through these networks to achieve an effect.
Implication: Peacetime value chain may deoptimise ability to achieve effects by focusing on optimising use of scarce resources versus optimising achievement of effect.
Rethinking the Strike Value Chain for Mobile Targeting

See — Plan — Respond

Plan — RF111 — Process Film — ASTJIC — HQAST — Mission Plan — F111

- What to see
- Where

Mission Plan

- Prioritise
- Allocate

>10 hours

- physically move film vs data transmission
- real-time imagery analysis, interpretation and target id
- who needs to make what decisions – get info direct to decision-maker
- handle response:
  - shooter on station weaponry up
  - weapons on the see platform
- fast response eliminates need to keep target under surveillance for long periods

Implications: resource tradeoff: surveillance assets vs keeping response asset on station
Plan-See-Decide-Respond

Effect to achieve – high value nodes

Type of response

#assets on #stations for time period

Decision chain

AO

sensors

authorised DM + info flows

asset on station weaponed-up

Plan

See

Decide

Respond

Evaluate
Replacing the F111 … with JSF …
Identifying the Functional Dependency Issues

US Conops – Mission Capability Package

<table>
<thead>
<tr>
<th>SIGINT</th>
<th>AAR</th>
<th>EW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F22</td>
<td>SEAD</td>
</tr>
</tbody>
</table>

Australia

AAR

• what are the functional dependencies?
• how does the threat structure change?
• is there a gap and how to handle?
Package of Platforms vs Information-Centric Approach

Radar can see 30k, SM-2 missile goes 150k

Surface Action Group

A threat with 3rd party targeting capability

Implication: SAG can’t detect strike aircraft before they launch
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JORN

Surface Action Group

• Focus forces to achieve an effect
• Only works in Australian region
What is the Boundary of Analysis? (1)

Example value chains for F111 strike:

<table>
<thead>
<tr>
<th>Process</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor-Shooter</td>
<td>Mins/secs</td>
</tr>
<tr>
<td>Mission-Planning—Weapon-on-target</td>
<td>6+hrs</td>
</tr>
<tr>
<td>Search for target—Mission-Planning—Weapon-on-target</td>
<td>30hrs</td>
</tr>
<tr>
<td>Search for target—Mission-Planning—Weapon-on-target</td>
<td>Weeks/months</td>
</tr>
</tbody>
</table>

Infrastructure (bases, refuellers, maps, HUMINT, rotation)

Sustainability (maintenance, weapons, fuel, food, personnel)

Different networks, different problems, different emphasis on solutions ...
What is the Boundary of Analysis? (2)

What is the East Timor Peacekeeping value chain?

- Land
- DFAT-Land
- US-DFAT-Land
- Contingency Plan-US-DFAT-Land
- Acquisition-Contingency Plan-US-DFAT-Land

- Is the boundary of analysis short-warning reactive warfighting?
- Or is it inherently strategic effects focused, and therefore naturally multi-agency and multi-national?
- and if so, how does the network design change (which networks to include)?
Conclusions

- NCW coupled with EBO has operational and strategic implications as well as tactical execution implications
  - What is the force structure design boundary of analysis?
- Trading mass for info enables focusing force to achieve an effect
  - Key heuristic: replace x by info
- Deliberate planning (shifting knowledge requirements to start of value chain) enables setting up networks to enable rapid response or proactive/preemptive actions
- Are we maximising utilisation of resources or maximising achieving the effect? Design value chains appropriately ...
- New threats provide opportunities to rethink value chains and design new solutions that map to existing military tasks

*Bottom line for 2015 force structure design: can we buy platforms that plug into US MCPs and retain ability to do other military strategic tasks?*