Chapter 9 – NEW DEVELOPMENTS IN LCC ANALYSIS

Over the duration of the SAS-054 study a number of associated requirements that will impact on cost analysis have been identified. However, although there is some understanding at this stage, the actual requirements and therefore the likely scope of the change in terms of the demand on cost analysis is not clearly known.

The topic of joint war-fighting[1] (or operational activities) is becoming more important to NATO. At present, there is insufficient information on how to evaluate the situation where a number of discrete assets share the information/data to provide a total capability solution. The costing of the assets themselves is straightforward, but when combined the interpretation on apportionment where multi-mission systems feed into several capabilities is not clear.

To more effectively manage scarce defence resources, several nations are initiating efforts to analyse the costs, capabilities, and risks of entire portfolios of assets in a joint war-fighting environment.[2]

Viewing capabilities across the entire portfolio of assets enables decision makers to make better informed choices about how to reallocate resources with the ultimate goal of delivering needed capabilities to the joint force more rapidly and efficiently[3]. Capability portfolios are intended to serve as a basis for strategic level trades by senior decision makers, as depicted here in Figure 9-1.

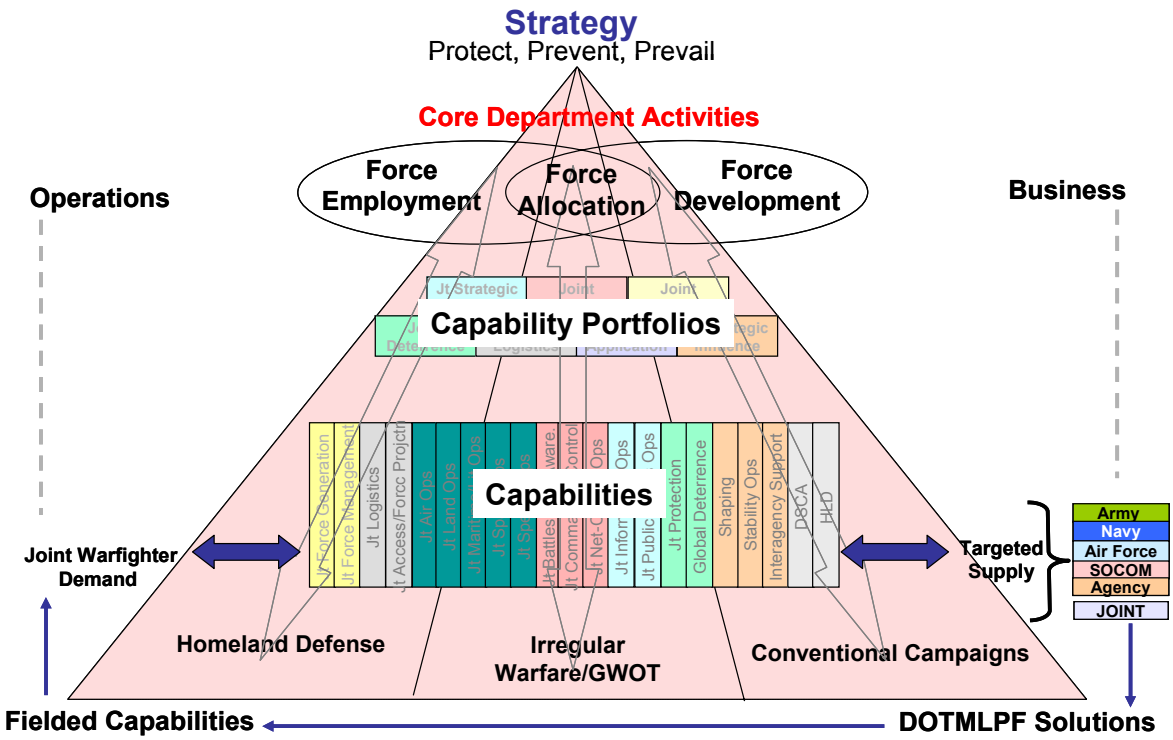

Figure 9-1: Prioritising using Portfolio Analysis.

[1] NATO report entitled 'Backgrounder' interoperability for joint operations.

[2] The 2001 Quadrennial Defense Review (QDR) in the United States directed DoD to shift from threat-based planning to capability-based planning. Further, the 2006 QDR reaffirmed the shift to capabilities-based planning and directed the use of joint capability portfolios to manage DoD resources.

[3] Draft letters from the Undersecretary of Defense [U.S.] for Acquisition, Technology, and Logistics on four pilot programs for conducting portfolio capability analyses, July 2006.

In the United States, four pilot programmes or test cases are currently underway for performing portfolio capability analyses: Joint Logistics, Joint Battlespace Awareness, Joint Command and Control, and Joint Net-Centric Operations. Further, last year, the Department of the Navy in the United States conducted a pilot programme for portfolio analysis of mine countermeasure assets.

Portfolio analysis, according to one of several possible implementations, would be conducted in conjunction with a concept decision review early in the planning, programming, and budgeting cycle, that is, prior to concept refinement in the U.S. acquisition framework. In this paradigm, an entire portfolio of assets, large and small alike, would be analysed. Gaps would be identified by the combatant commands (war-fighters) and trade-space would be offered as an option for at least partly funding these gaps. Further, ideally, a menu of portfolios would be generated from which senior decision makers could choose to meet strategic requirements.

In terms of cost estimating for NATO and PfP countries, these guidelines are suggested:

- Generate costs in constant-year monetary units (e.g. dollars or Euros).
- Generate life cycle costs.
- Depending on where a system or concept falls in the life cycle, this might include estimates of science and technology costs, development and production costs, operating and support costs, and disposal costs.
- Generate costs for a ten or twenty year period.
- Ensure that an entire portfolio of war-fighting assets is included in the analysis. Small systems are important, too, and completeness is essential.
- Perform risk and uncertainty analysis.

For the NATO and PfP cost community, this shift in emphasis from the analysis of individual programmes at key gates or milestones to the analysis of entire portfolios of assets, some of which are merely concepts rather than programmes, will entail:

- Earlier involvement in the planning process.
- Use of high level cost estimating relationships based on technical and performance characteristics of proposed systems.
- Extensive data gathering as well as the creation of new databases linking systems to capabilities.
- Use of new methods and models for analysing the costs, capabilities, and risks of a large group of proposed and existing assets rather than individual systems.

It is recommended that further study be conducted to provide a better understanding of the processes and application to the benefit of NATO and PfP nations.

9.1 REFERENCE

[97] Transformation of analytical tools – using portfolio analysis techniques in defence applications, Capt J. Field USN, and Dr B. Flynn, DoD Comptroller magazine, September 2005.