

QINETIQ



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Blended Wargaming Techniques

Operational Analysis and Wargaming



Blended Wargaming Techniques

Wargaming & OA

This talk gives an Operational Analysis (OA) perspective of Wargaming, looking at how they can be used along side other Tools, Techniques, Models and Methods (TTMM) to support and enhance analysis.

Wargaming is a widely used methodology across Defence and Security, which has many different meanings to everyone who delivers them.

OA according to the Operational Research Society is *“the discipline of applying advanced analytical methods, such as mathematical modelling, optimisation, simulation, and data analytics, to improve decision-making and solve complex organisational problems”*

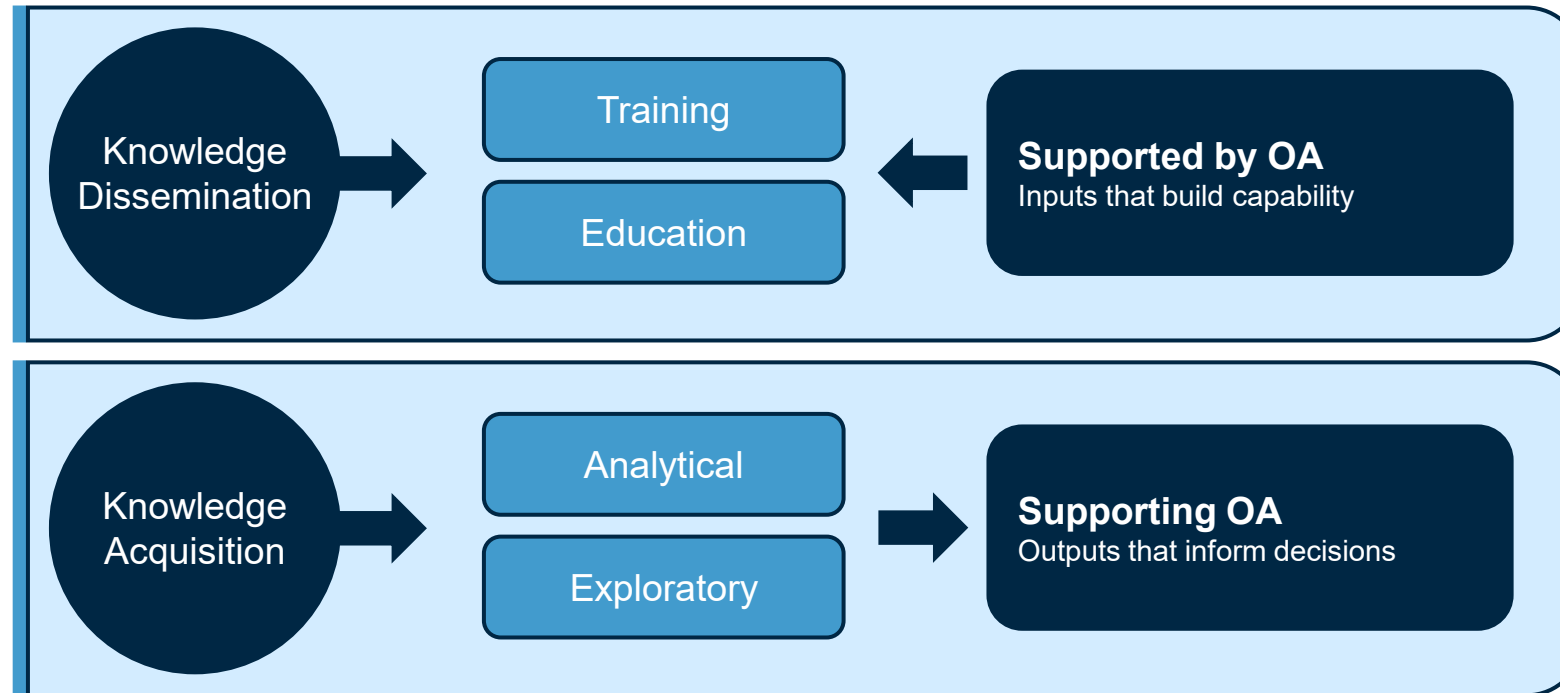
Wargaming has a more widely debated definition, but is defined in the MOD Wargaming Handbook as *“the employment of a scenario-based warfare model in which the outcomes and sequence of events affect, and are affected by, the decisions made by the players, to assist decision making, improve understanding or develop operational skills”*



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Spectrum of Wargaming

From an OA perspective wargaming can be split into two tranches these being knowledge dissemination and the other being knowledge acquisition.



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Analytical Wargames

Topics for analysis have become increasingly more complex, increasing the emphasis on the need to track, manage and collect data.

Sponsors are often very quick to say, *“I want a wargame”*.

Choosing TTMM to use

There are a myriad of different OA TTMM which can be used, these will depend on complexity of the problem and the topic, to availability of time, and resources.

- Quantitative approaches typically require the use of mathematical modelling and empirical data analytics to model different things within the wargame.
- Qualitative approaches typically utilise methods for capturing and analysing player and SME discussions.



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Models & Tools

Pros

- Mathematical models and tools can bring an enhanced level of 'fidelity' for players and can improve discussion.
- Generate quantitative data.

Cons

- Models often require significant set up time and data from the sponsor.

Commercial Off The Shelf

- Easier to get access to and then use.
- Typically more generic or domain specific, have an associated cost.
- May not be applicable to the Research Question.

Bespoke

- More applicable to the Research Question.
- Requires development time, the right data, and significant V&V.

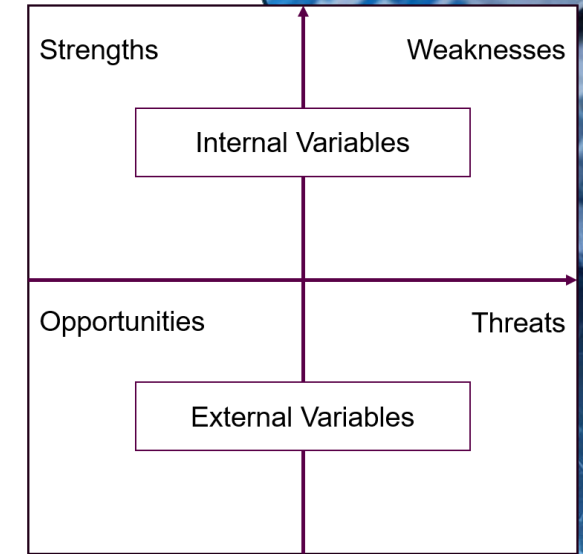


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Methods & Techniques

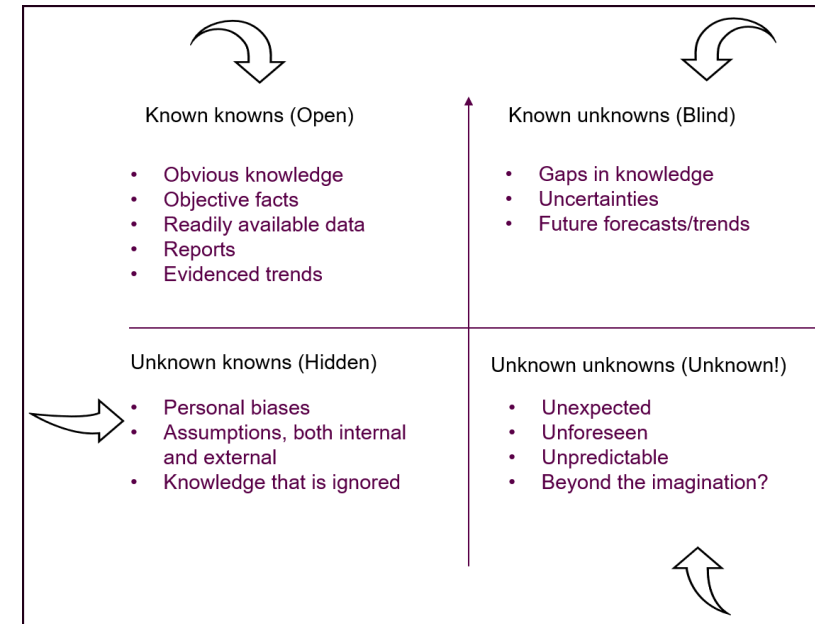
Data Capture and Analysis Frameworks can be used to support data capture and conduct analysis and are essential to analytical wargaming.

- Data becomes organised
- Everyone contributes to Data Capture
- Begin analysis during the wargame



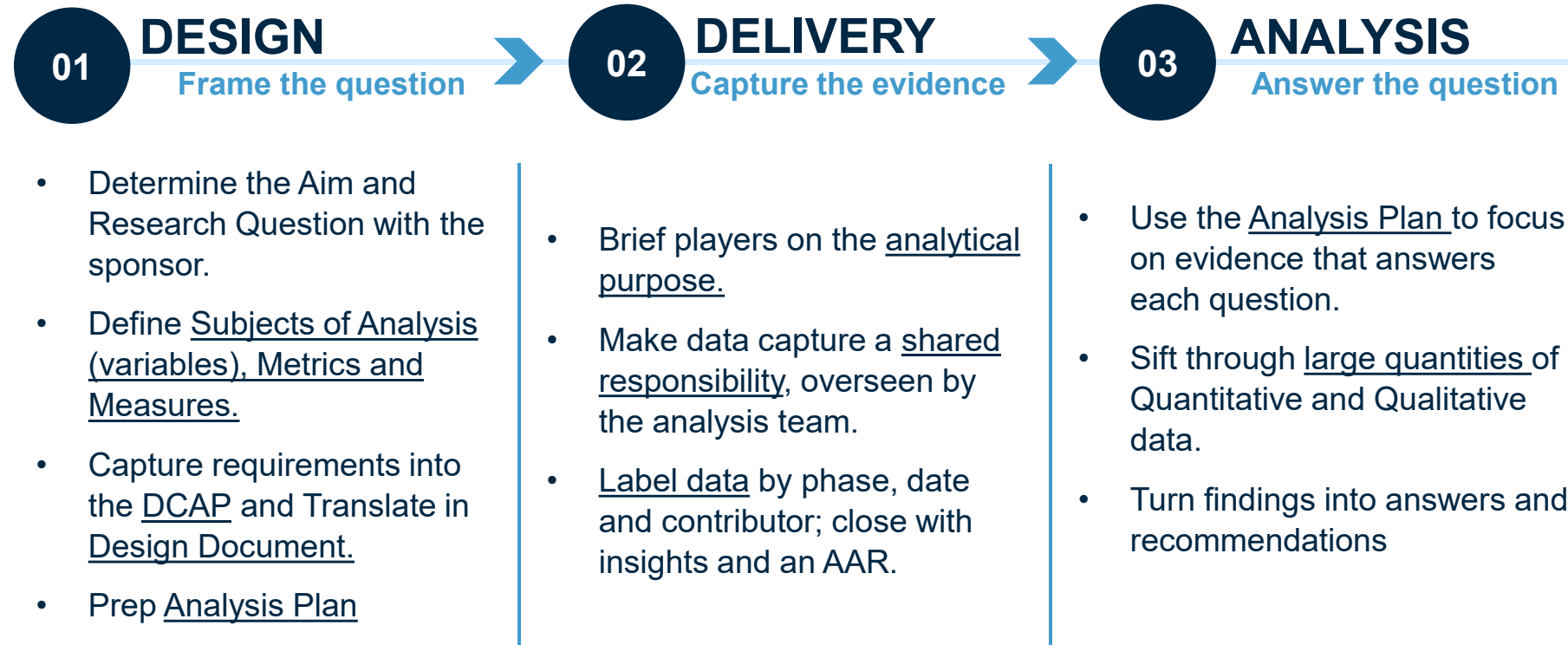
Task:

Workforce	Equipment	Training	Sustainment
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End-to-End Analysis Cycle



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Summary

Take Aways:

- Conducting analysis is challenging, and there are always multiple ways of doing it.
- When using wargaming design and delivery must be conducted with care and rigour.
- Design to a purpose
- Answer the Question

Workshop later today to apply this and discuss further.



A blue-toned image of a hexagonal board game, possibly Go or a similar strategy game. The board is composed of many hexagonal tiles, some of which are light blue and others dark blue. Numerous small, cylindrical pieces in blue and white are placed on the board. Two hands are visible at the bottom left and right edges, interacting with the board. The overall aesthetic is futuristic and technological, with faint digital patterns and lines visible in the background.

Questions?

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