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Quantifying, Visualizing, and Tracking Capability Gaps

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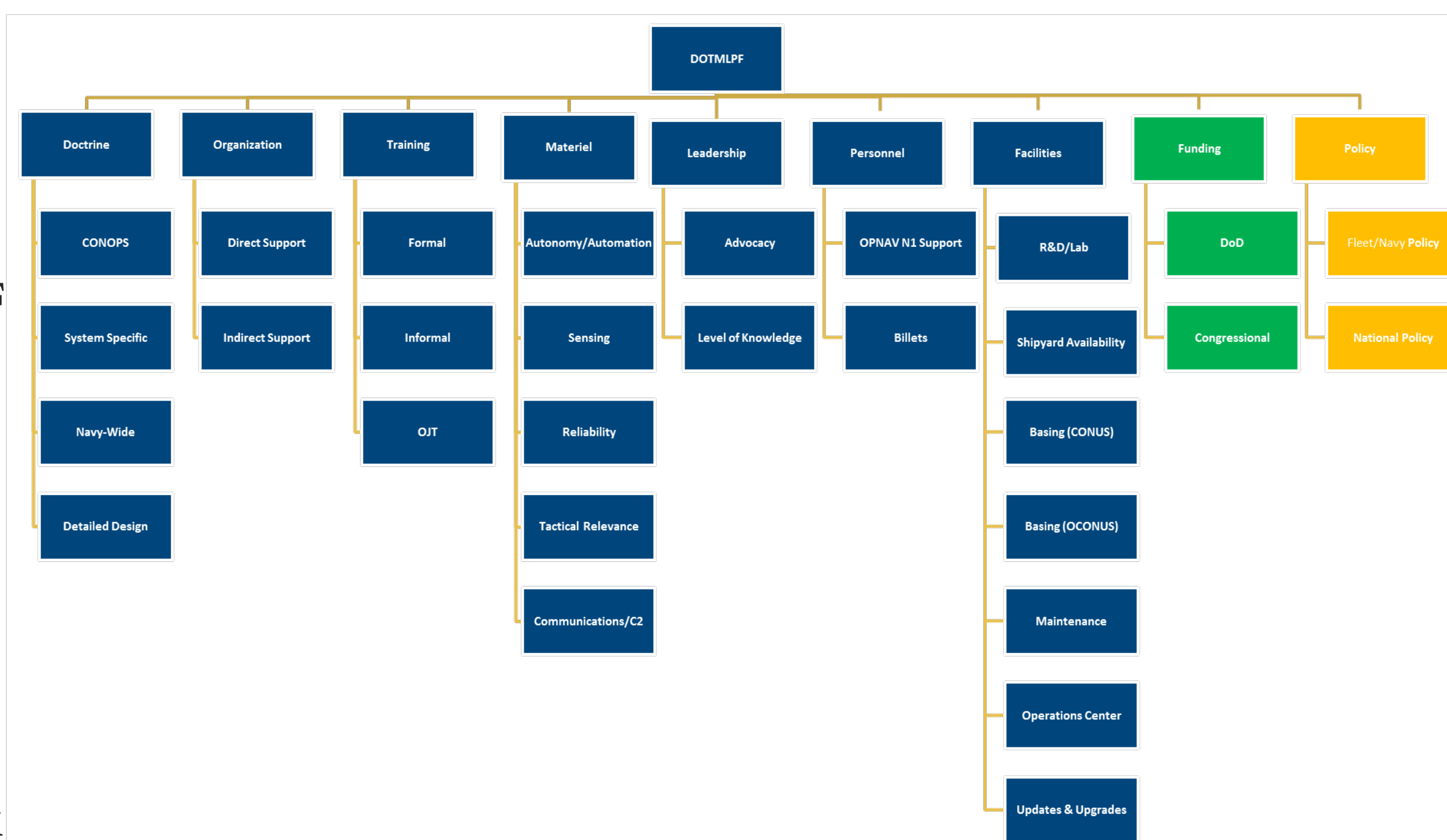
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Research Objectives

- Develop a hierarchical framework of factors for evaluating capability gaps based on DOD DOTMLPF framework
- Develop a methodology for calculating and visualizing a capability gap score at any given point in time to depict capability gap resolution progress
- Develop a dashboard to provide decision makers with an at-a-glance view of the status of each capability across time and elements of the framework



Expanded DOTMLPF Framework

$$A_i^{WASM-score} = \sum_{j=1}^n w_j a_{ij}$$

Weighted Sum Model

$$A_i^{WPM-score} = \prod_{j=1}^n x_{ij}^{w_j}$$

Weighted Product Model

$$A_i^{WASPAS-score} = \lambda A_i^{WASM-score} + (1 - \lambda) A_i^{WPM-score}$$

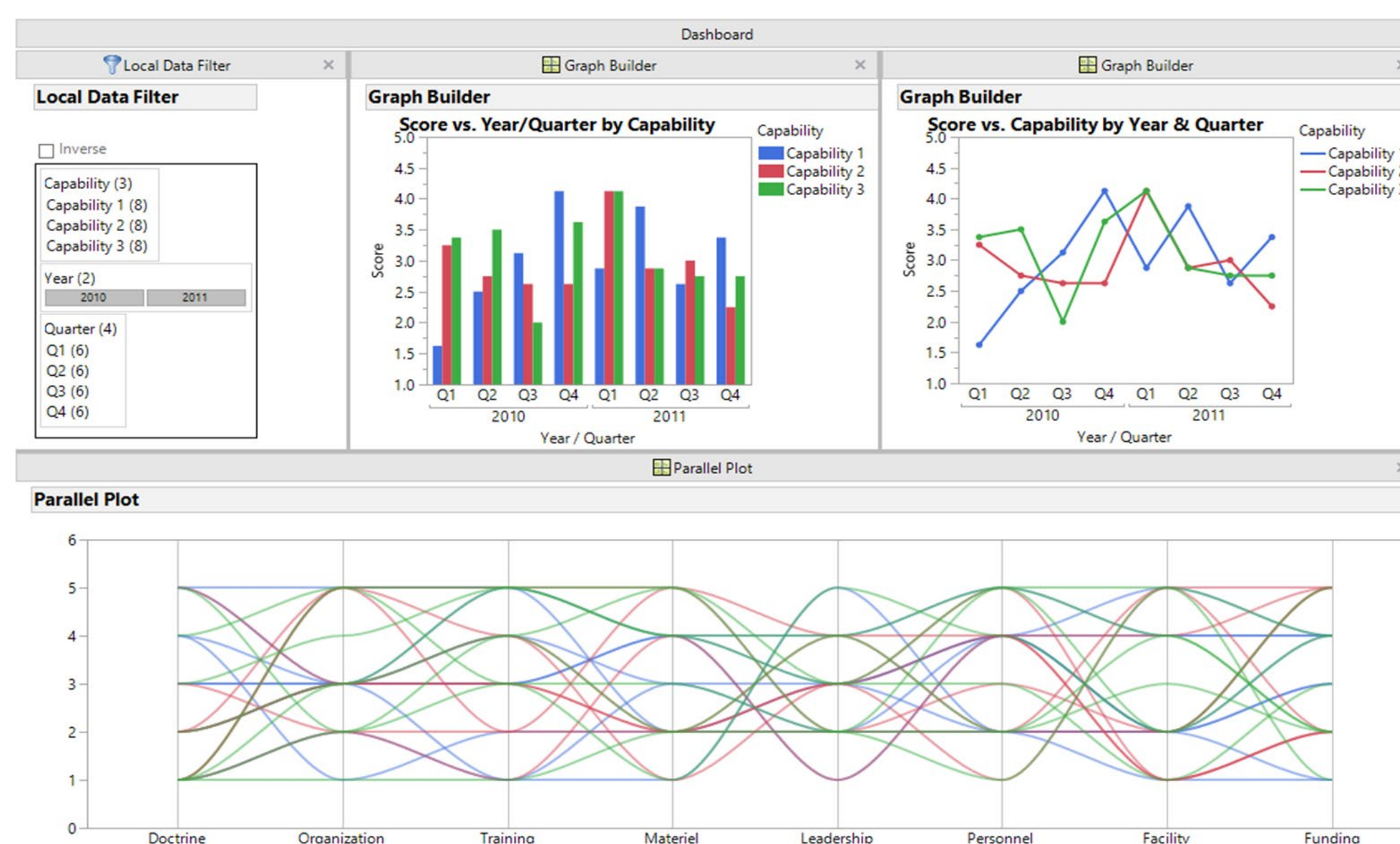
Weighted Aggregated Sum Product Assessment (WASPAS)

Proposed Methodology

- Identify factors that determine a capability gap
- Rate capabilities on identified factors
- Assign weights to identified factors
- Calculate a capability gap score using an appropriate model
- Conduct a sensitivity analysis
- Visualize capability score gap across time and factors

Data Visualization

- An IPCL dashboard provides at-a-glance view of capability gap scores by capability, year, quarter and factor
- Allows decision maker to monitor the progress of closing capability gaps by acting as a “progress report”



IPCL visualization dashboard

Expected Outcomes and Benefits

- Support prioritization of capabilities based on hard data
- Provide a clear and concise picture of progress being made, or not made, to close identified gaps and/or provide a capability
- Support the creation of a central repository for organizations to distribute pertinent information



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