



Human Performance Improvement Through Mission Engineering®

**Ready for what's next.**

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delivering results that endure

# Human Performance Improvement Through Mission Engineering®

Complex training systems often fail to provide the right balance between practical engineering solutions and the functionality desired by the user, resulting in escalating costs and ineffective training. Decision makers are under increasing pressure to justify proposed expenditures for training systems by forecasting return on investment (ROI) and tracking training effectiveness. As training systems become more complex and immersive, making a convincing argument for obtaining and defending necessary budget becomes even more complicated.

## Booz Allen Can Help You Be Ready for What's Next

Booz Allen Hamilton, a leading strategy and technology consulting firm, has considerable experience in using our Mission Engineering (ME) process to analyze and deconstruct these complex situations into rational, understandable parts. Our focus is helping you meet your training objectives and defend your budget with facts, not opinion or emotion. We understand that every dollar spent is important, and our team of ME experts works in tandem with our learning experts, and yours, to help you prove ROI.

## The Booz Allen Mission Engineering Methodology

ME is a rigorous analytical methodology and engineering approach that bridges the gap between training and engineering by addressing each dimension of the Live, Virtual, and Constructive–Training Environment (LVC-TE) mission holistically, from the operational and technological perspectives. ME uses a proven four-phased approach to:

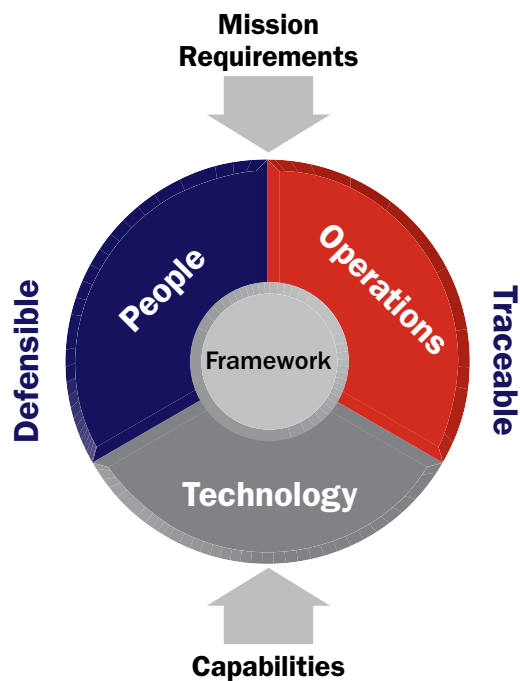
- **Examine the Community and Mission** to develop a common view of the operational environment through deconstruction into its component pieces and their interactions
- **Perform Operations Analysis** to identify and visually document the activities, processes, technologies, and information flows performed by the users and stakeholders during their mission and determine the required integration of disparate system capabilities
- **Perform Systems Analysis** to provide an integrated view of the operational workflow, applications, and data

required for each activity to define the required system augmentations and resource requirements

- **Perform Test & Evaluation Analysis and Design** to reduce program risk incurred as part of the operational test construct

The ME methodology provides a structured framework to optimize integration of people, operations, and enabling technology. The ME framework incorporates a top-down analysis of mission requirements and stakeholder needs with a bottom-up analysis of current and future capabilities. Each data product incorporates the dimensions of people, process, and technology, and provides defensible and traceable facts, thoroughly informing difficult resource tradeoff decisions to make them more manageable.

ME's goal is to deliver a more comprehensive analysis to reduce design, development, and testing time by providing a structured methodology and set of core products that align to the system deconstruction and allow reuse of numerous components of the project team. The system deconstruction begins at the mission level, increasing in granularity down to the individual data element. ME products and analysis align to that deconstruction, beginning with the mission level and increasing in granularity to the ROI calculations.



## Leveraging Mission Engineering to Determine ROI

The ME analysis provides a framework and set of data elements from which ROI can be determined. As a thought leader in the ROI methodology, Booz Allen helps clients:

- Measure the impact of investments in training and training systems
- Analyze current and future training solutions
- Provide tangible, quantitative evidence of the effectiveness of the integrated training environments

This analysis demonstrates how monetary investment benefits and justifies business decisions by using a step-by-step methodology to measure effectiveness of programs. The data provided by this process informs business decisions, eliminates inefficiencies improves processes, and identifies programs that need to be redesigned or eliminated. The result is a much deeper understanding of what training truly costs and how effective and persistent that training is.

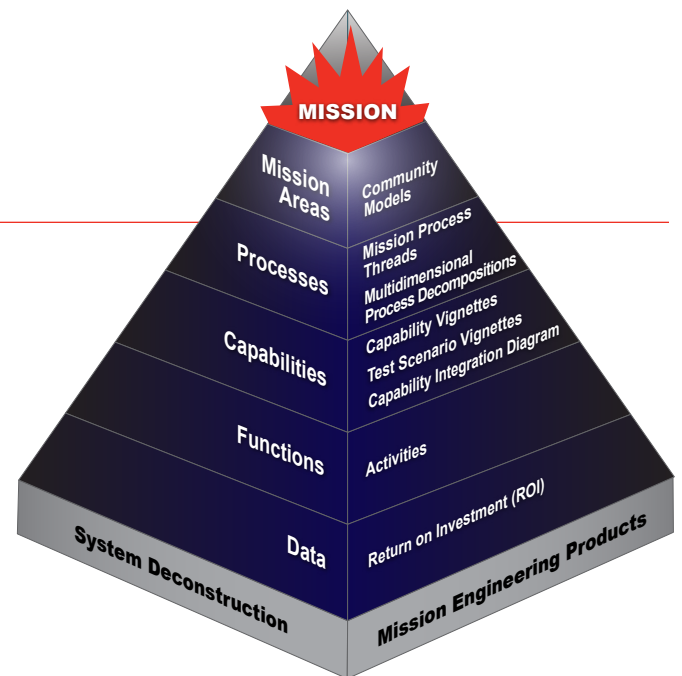
Booz Allen works directly with clients to build a customized ROI plan using the following steps:

- Develop/Review Objectives of a Solution
- Develop Evaluation Plans and Baseline Data
- Collect Data During Solution Implementation
- Collect Data After Solution Implementation
- Initiate the Effects of the Solution
- Convert Data to Monetary Value if Appropriate
- Identify Tangible Results
- Capture Costs of Solution
- Calculate the Return on Investment
- Develop, Re-post, and Communicate Results

Our methodology provides quantitative, visually compelling evidence for senior military leadership and other stakeholders to effectively architect the solution and show the ROI of the integrated training environment.

## Success Stories

**Space and Naval Warfare (SPAWAR).** Foreign Military Sales (FMS) P-3C aircraft. We used ME to capture, analyze, and document SPAWAR's FMS client (P-3C) aircraft stakeholder community, operational environment, user needs, required capabilities, mission processes, test strategy, and



functional requirements. The ME analysis allowed the system engineers to reach design review gates with greater requirements clarity and design definition that ever before.

**Department of Defense Joint Forces Command (JFCOM), Empire Challenge 2010.** We used ME as an actionable architecture to support the development of architecture and capabilities assessment for JFCOM Joint Experimentation resulting in integration of the system capabilities with the least risk and in the most operationally relevant context.

**Cyber Security Practitioner (CSP) Professionalism Program: Training and ROI.** We made redesign recommendations for an existing training curriculum and performed five evaluation tasks with a student cohort—student satisfaction, student learning effectiveness, student performance effectiveness, ROI analysis, and gap analysis. The data and resulting analysis enabled the client to determine which training objectives were met, the factors that affected learning, the effectiveness of the training, where gaps existed, and the impact of their training investment. We also provided data-driven recommendations for improving the cost/benefit ratio.

**Phoenix Tactical Super High Frequency (SHF) Training System (TS) Interactive Media Instruction (IMI).** We performed a comprehensive front-end analysis of several factors (skills, knowledge, technical requirements, and cost/benefits) associated with the multiple individual and crew tasks performed by the entire team of Phoenix operators and maintainers. Our implemented recommendations resulted in a 33-percent reduction in training time and less wear and tear on scarce equipment.

Whether you're managing today's issues or looking beyond the horizon, count on us to help you be ready for what's next.

## About Booz Allen Hamilton

Booz Allen Hamilton has been at the forefront of strategy and technology consulting for nearly a century. Today, the firm provides professional services primarily to the US government in defense, intelligence, and civil markets, and to major corporations, institutions, and not-for-profit organizations. Booz Allen offers clients deep functional knowledge spanning strategy and organization, engineering and operations, technology, and analytics—which it combines with specialized expertise in clients' mission and domain areas to help solve their toughest problems.

Booz Allen is headquartered in McLean, Virginia, employs more than 25,000 people, and had revenue of \$5.59 billion for the 12 months ended March 31, 2011. To learn more, visit [www.boozallen.com](http://www.boozallen.com). (NYSE: BAH)

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