PREFACE

The purpose of this dissertation is to introduce and demonstrate a new approach to supporting high-level decisions. This new methodology, the hybrid, interactive, multiple-attribute, exploratory (HIMAX) process, combines multiple attribute decision making with exploratory modeling to integrate expert opinion to evaluate diverse options, with the intent of generating useful insights. The HIMAX process is demonstrated in this dissertation through an illustrative analysis of future military forces. The specific options considered, which include heavy armored, medium-weight, and light infantry forces, as well as tactical aircraft alone and in combination with special operations forces, are evaluated and compared across a wide spectrum of ground-oriented missions. The unique contribution of this work is the HIMAX process itself, and the mix of capabilities that it brings together, especially the ability to explore implications of divergent minority opinions.

This dissertation should be of interest to high-level decision makers, in the Army and the Department of Defense specifically, but also in other large private and public organizations. It should also be of interest to scholars of decision analysis and operations research, and practitioners of policy analysis, defense planning, and business strategy.

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