



Facilitating Informed Decisionmaking: The E-DEL+I* Analytic Technique

Dr. Carolyn Wong

*Electronic Decision Enhancement Leverager plus Integrator
(E-DEL+I™, ©, provisional patents, RAND 2001)

Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE JUN 2006		2. REPORT TYPE		3. DATES COVERED 00-00-2006 to 00-00-2006	
4. TITLE AND SUBTITLE Facilitating Informed Decisionmaking: The E-DEL+I* Analytic Technique				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Rand Corporation,1776 Main Street,PO Box 2138,Santa Monica,CA,90407-2138				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES The original document contains color images.					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 24	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

Informed Decisionmaking with Diverse Stakeholders Is Complicated

- **Issues are complex**
- **Actions have far reaching impact on many organizations**
- **Meaningful communications among stakeholders may be limited, unorganized, based on different assumptions, and “unofficial”**
- **Each stakeholder must balance his focused interest with need to interact with others**
- **Requires awareness of others’ needs and views**

Existing Techniques for Informed Decisionmaking Are Lacking

- **Undisciplined**
- **Costly**
- **Logistically burdensome to implement**
- **Ineffective**
 - **Fractured focus**
- **Independence and anonymity not supported**
- **Input mechanism not balanced**
 - **Written versus verbal**

Agenda

- **What is the E-DEL+I approach?**
- **Why is E-DEL+I valuable?**
- **How has E-DEL+I been used—an example is Smart Outsourcing?**

E-DEL+I Is an Analytic Technique That Facilitates Informed Decisionmaking

- **Applicable to complex issues that involve multiple dimensions**
 - **Technical, political, military, cost, return on investment, legal, or other aspects**
- **Can blend technical expertise and understanding of military operations/doctrine/policy to arrive at a balanced solution acceptable to all stakeholders**
- **Especially effective when critical data must be derived from information that resides in the collective knowledge base of many individuals and organizations**

E-DEL+I Exercises Are Tailored to the Application

- **Expert panel**
 - Panel's collective knowledge base spans the issues to be addressed
 - Panel is balanced in representation
- **Metric**
 - Devised to assess dimensions critical to the issue
- **Questionnaire**
 - Designed to solicit assessments
- **Standard for consensus**
 - Higher than simple majority

A Typical E-DEL+I Exercise Has Four Rounds

Round 1
Assessments
& rationales
based on
experts'
knowledge
and
background
material



Background
material

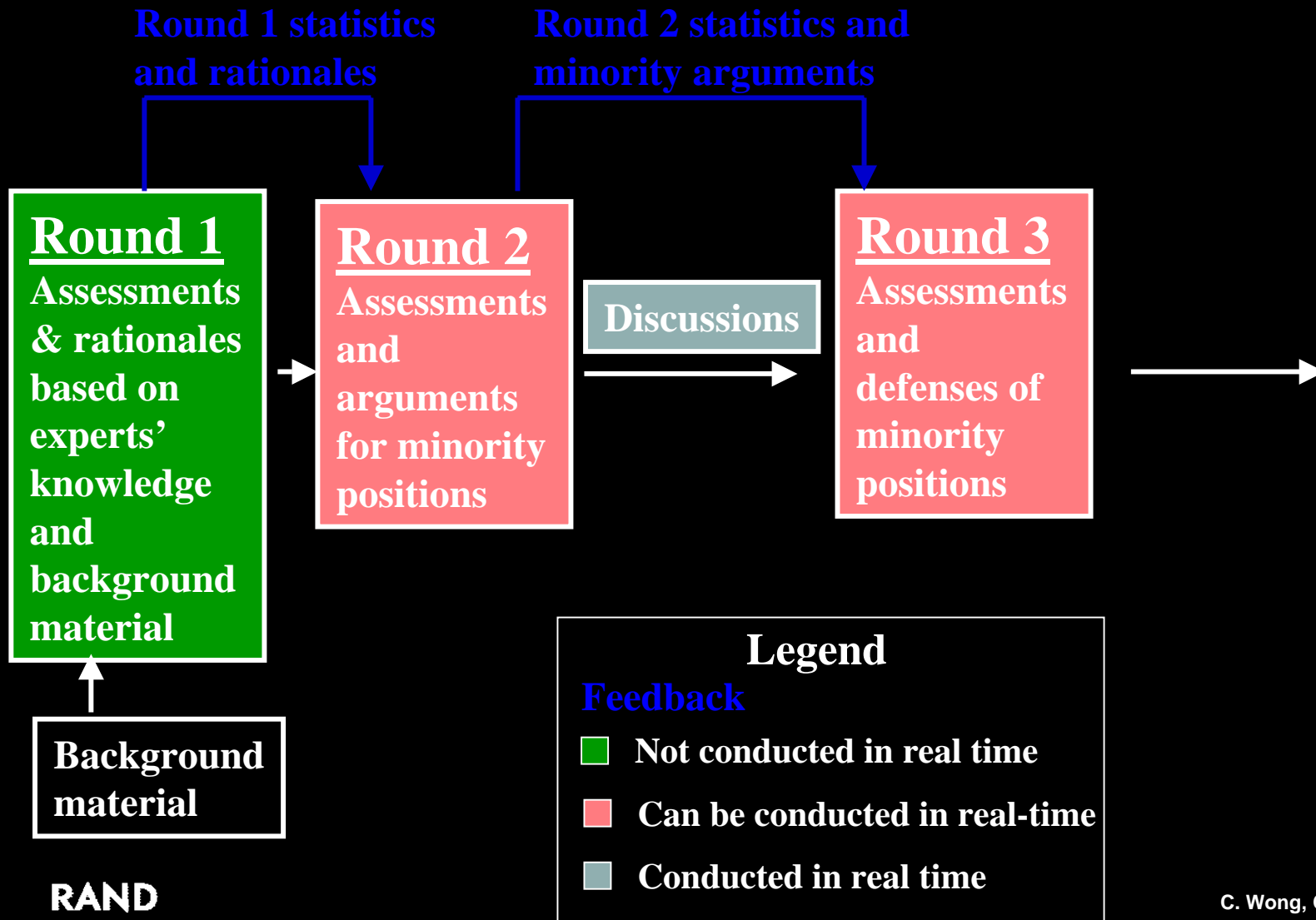


RAND

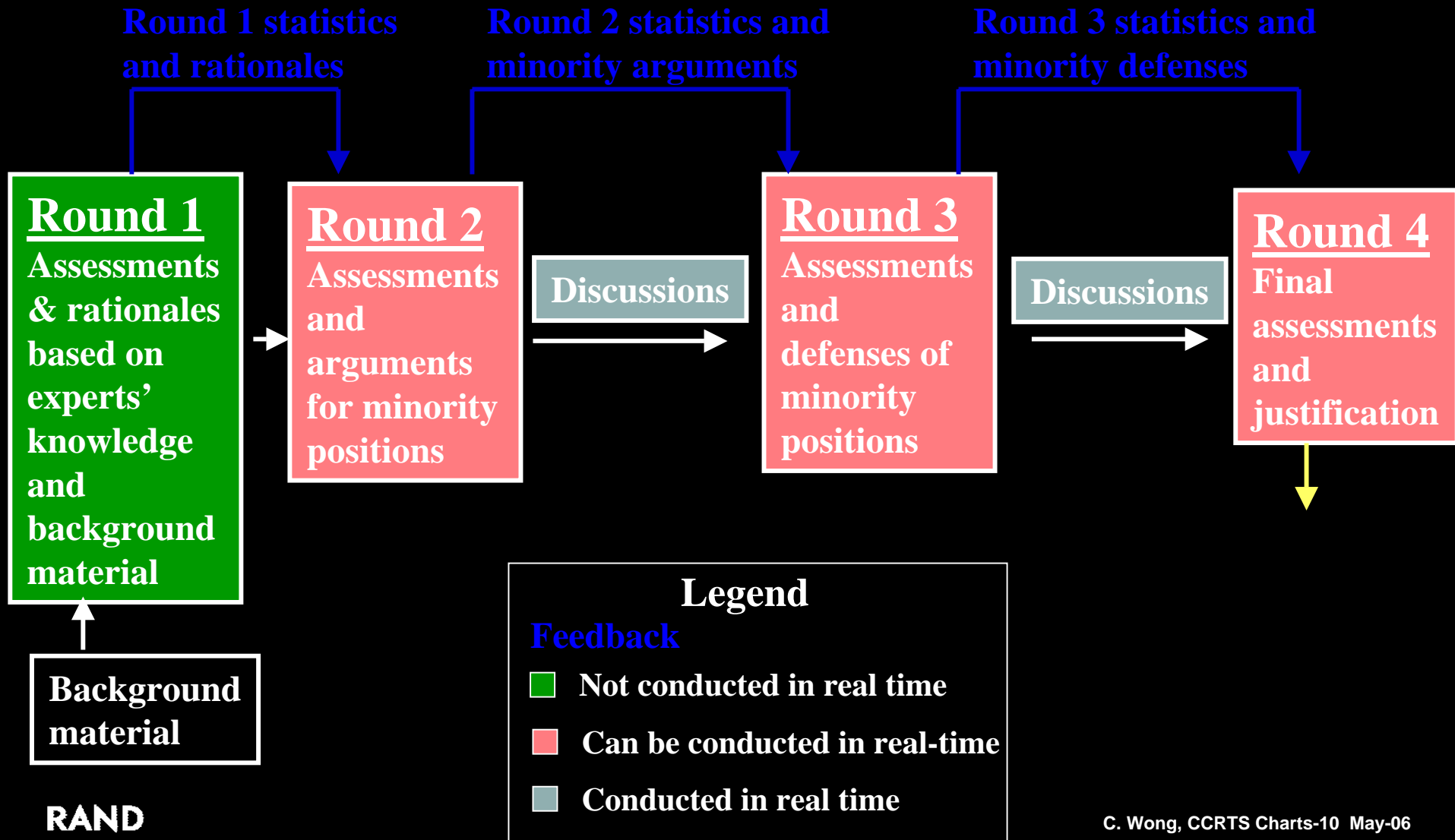
Legend

 Not conducted in real time

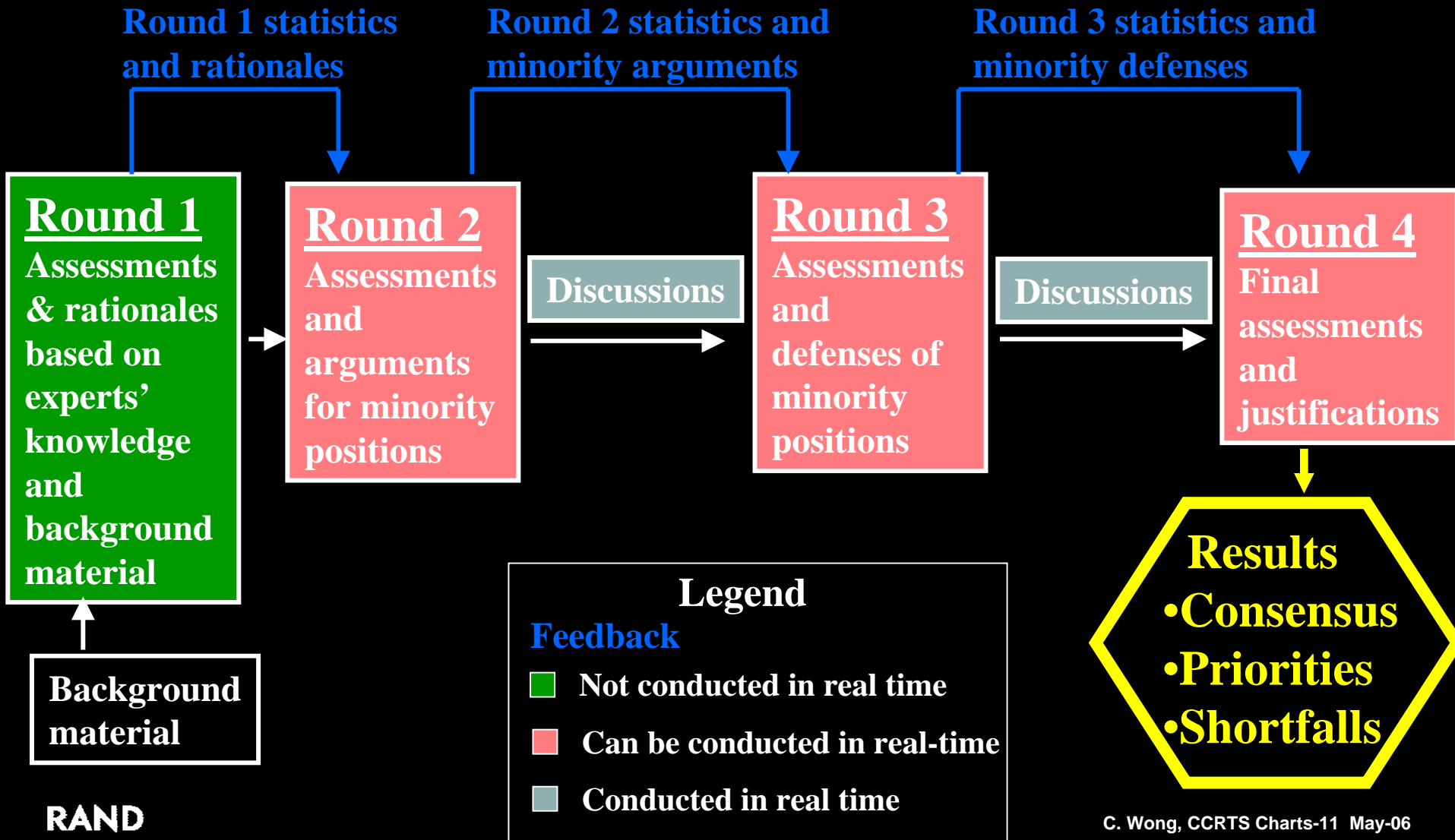
A Typical E-DEL+I Exercise Has Four Rounds



A Typical E-DEL+I Exercise Has Four Rounds



A Typical E-DEL+I Exercise Has Four Rounds



Agenda

- What is the E-DEL+I approach?
- Why is E-DEL+I valuable?
- How has E-DEL+I been used—an example is Smart Outsourcing?

E-DEL+I Consists of a Framework and a Process with Built-in Flexibility

- **Incorporates structured integration of diverse inputs**
- **Supports electronic exercises enabling many experts to participate from diverse physical locations**
- **Has iterative feedback feature to encourage a team approach**
- **Includes discussion sessions to encourage collaborative solutions**
- **Allows for comprehensive tracking and quantitative measures of priority/importance**

E-DEL+I Maximizes Objectivity

- **Independent assessments**
- **Anonymity of expert panel members**
- **Discussion sessions are facilitated by neutral party**
- **Final E-DEL+I exercise results define a way forward**
 - **Feasible alternatives are identified**
 - **Relative priority/importance of alternatives**
 - **How many and which stakeholders agree/disagree and why**
 - **Areas of concern and negotiation points**

E-DEL+I Minimizes Cost and Logistical Burden

- **Uses commonly available resources**
- **Exercise material sent electronically to participants**
 - E-mail with capability to read attachments
 - Microsoft Excel to complete questionnaire
 - Telephone to participate in discussion sessions
- **Exercise is iterative**
 - Can take 2-3 hours or activities can be spaced over weeks
 - Participation requires filling out questionnaire for each round and engaging in discussion sessions
- **Past exercises used 7 to 24 teams of participants**

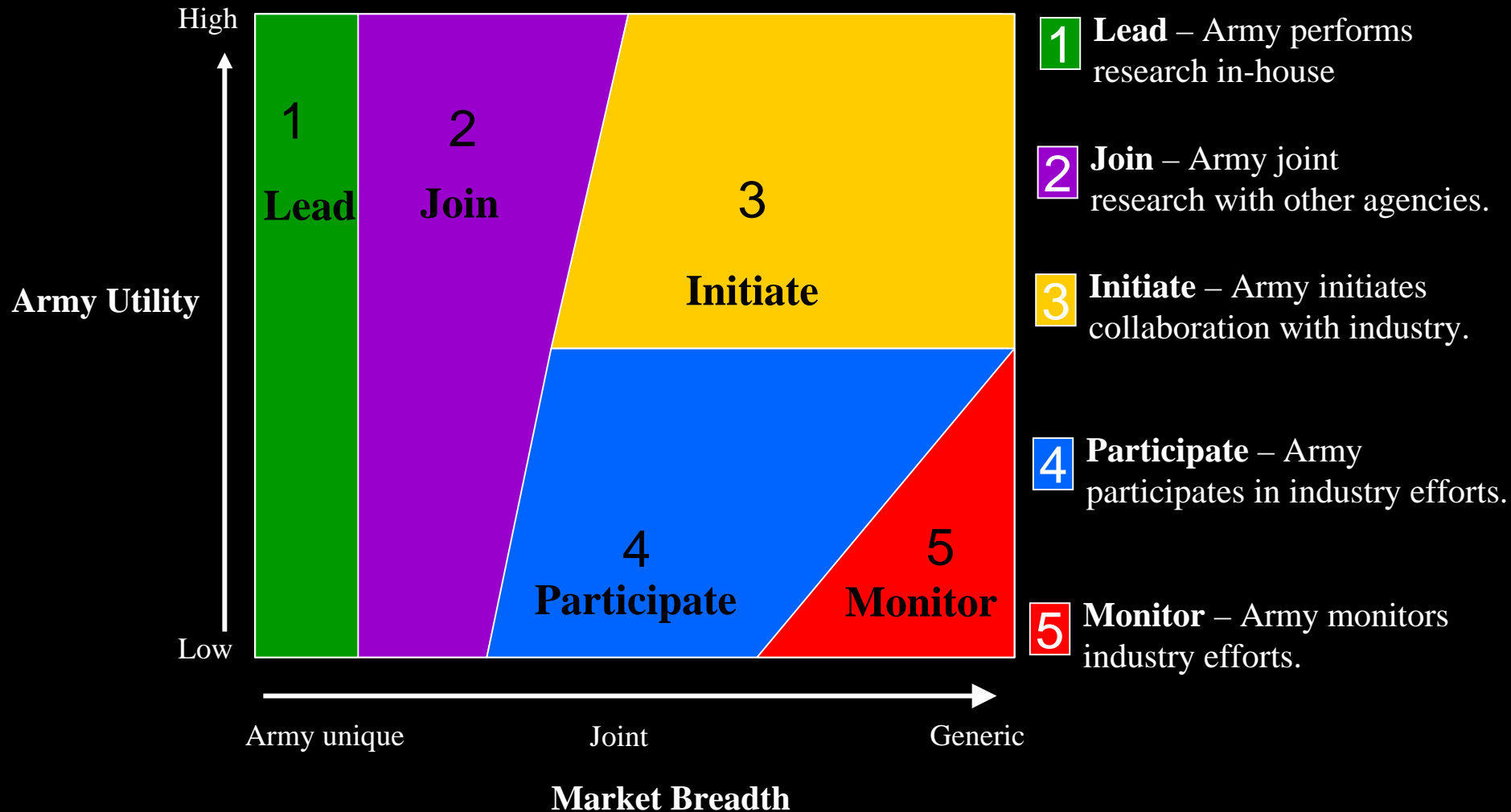
Agenda

- What is the E-DEL+I approach?
- Why is E-DEL+I valuable?
- How has E-DEL+I been used—an example is Smart Outsourcing?

Example: E-DEL+I Smart Outsourcing Exercise

- **Project purpose: How can the Army accomplish more with its research dollars?**
- **Approach: Use E-DEL+I to place Army technologies on a market breadth-Army utility framework**
- **Expert panel: 13 members in 13 physical locations**
- **Implementation: Round 1**
 - Not in real time
 - Designed to encourage participants to review background material and familiarize themselves with Excel format
- **Implementation: Rounds 2, 3, 4 with discussions**
 - Real time with e-mail file transmission and conference call

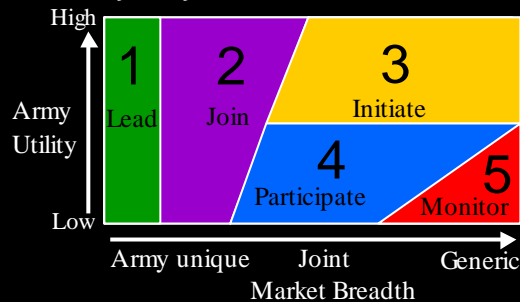
Example: E-DEL+I Smart Outsourcing Metric



Example: Smart Outsourcing Questionnaire

Directions: Please place the basic technologies in the framework domains using the numbers 1, 2, 3, 4, & 5 according to the following rating scale.

The Army Utility - Market Breadth Framework



1 = Lead - Technology has limited industry appeal. Army performs research in-house.

2 = Join - Technology of interest to other military or government agency. Army performs research jointly with other agencies.

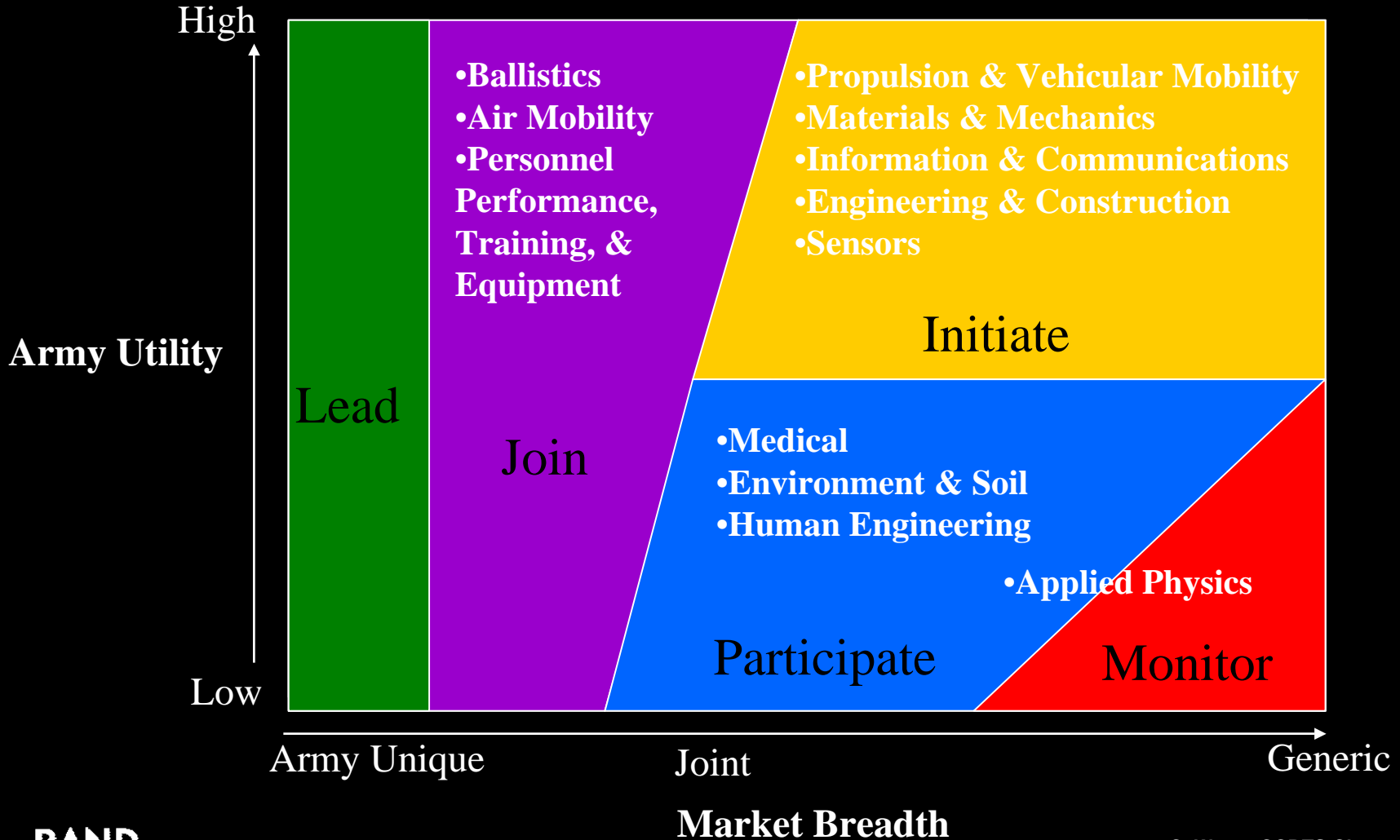
3 = Initiate - Technology of moderate to high Army utility appeals to industry. Army collaborates with industry in R&D.

4 = Participate - Technology of moderate or low Army utility appeals to industry. Army collaborates with industry in R&D.

5 = Monitor - Technology of moderate to low Army utility has high industry appeal. R&D performed by industry with little or no Army resources.

FY2001 Army Technology	Domain	Rationale	Statistical Feedback from Round 1 Responses		
			Mode(s)	Mean	Median
Propulsion & Vehicular Mobility			3	2.615385	3
Materials & Mechanics			3	2.769231	3
Ballistics			2	1.692308	2
Air Mobility			2, 3	2.615385	3
Applied Physics			5	4	4
Information & Communications			3	3	3
Medical			3	3.538462	3
Engineering & Construction			3	2.923077	3
Sensors			2	2.692308	3
Environment & Soil			4	2.923077	3
Human Engineering			4	3	3
Personnel Performance, Training, & Equipment			4	2.923077	3

Example: Smart Outsourcing E-DEL+I Exercise Results



Selected E-DEL+I Applications

- **Development of smart outsourcing strategies for the Army**
- **Identification of affordable technologies for the Army**
- **Evaluation of alternative organizational structures for Army Laboratories**
- **Assessment of alternative strategic directions for the Army**
- **Specification of investment portfolio management for the Navy**
- **Functional-Area Analysis for Net-Centric Operational Environment**

Selected E-DEL+I References

- ***An Analysis of Collaborative Research Opportunities for the Army, MR-675-A, RAND Corporation, 1998***
- ***How Will the e-Explosion Affect How We Do Research?, DB-399-RC, RAND Corporation, 2003***
- ***“An Approach for Efficiently Managing DoD R&D Portfolios,” Acquisition Review Quarterly, Fall 1998***
- ***Applicability of Alternative Organizational Models to Army Laboratories, DB-347-A, RAND Corporation, 2001***
- ***Portfolio Analysis and Management for Naval Research and Development, MG-271-NAVY, RAND Corporation, 2004***

Summary

- **Informed decisionmaking is difficult**
- **E-DEL+I technique facilitates informed decisionmaking**
 - **Minimizes cost and logistical burden**
 - **Maximizes objectivity**
 - **Incorporates built-in flexibility**
 - **Tailored to application**
- **E-DEL+I has been successfully used to define ways forward in a variety of projects**



***For more information on the
E-DEL+I Analytic Technique contact***

Dr. Carolyn Wong

310.393.0411 Ext. 7843

Carolyn_Wong@RAND.org