The Crossing

LT Suzanne L. Schang
1. REPORT DATE  
MAY 2007

2. REPORT TYPE

3. DATES COVERED  
00-00-2007 to 00-00-2007

4. TITLE AND SUBTITLE  
The Crossing

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

6. AUTHOR(S)

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)  
Naval Postgraduate School, Monterey, CA, 93943

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  
4th Annual Acquisition Research Symposium: Creating Synergy for Informed Change, May 16-17, 2007 in Monterey, CA

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:  
   a. REPORT  
      unclassified
   b. ABSTRACT  
      unclassified
   c. THIS PAGE  
      unclassified

17. LIMITATION OF ABSTRACT  
Same as Report (SAR)

18. NUMBER OF PAGES  
   25

19a. NAME OF RESPONSIBLE PERSON

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Standard Form 298 (Rev. 8-98)  
Prescribed by ANSI Std Z39-18
President’s DoD Budget Authority FY07 ($601.9B)

- MILPERS: $130.9B
- O&M: $240.7B
- PROCUREMENT: $130.5B
- RDTE: $77.1B
- OTHER: $22.9B
Agenda

1. Coordination
2. Complications
3. Command and Control?
4. End-User Issues
5. Case studies
6. Graphs
1. Coordination

• Externalities
• Network Externalities  
  (Direct and Indirect)
• The Telephone
• VHS versus Beta VCRs
• TAL and The Chasm
Technology Adoption Life Cycle (TAL)

- Innovators: 2.5%
- Early Adopters: 13.5%
- Early Majority: 34%
- Late Majority: 34%
- Laggards: 16%
Technology Adoption Life Cycle (TAL)

Technology Adoption Chasm

- Innovators: 2.5%
- Early Adopters: 13.5%
- Early Majority: 34%
- Late Majority: 34%
- Laggards: 16%
2. Complicated

- Decision-Maker / Buyer / End-User Chain
- Benefits > Costs ???
- DoD Acquisition Process
- AS&C Office
- JCTD Program
The Defense Acquisition Management Framework

- Process entry at Milestones A, B, or C
- Entrance criteria met before entering phases
- Evolutionary Acquisition or Single Step to Full Capability

- Concept Decision
- Design Readiness Review
- FRP Decision Review

- Technology Opportunities & User Needs
- System Integration
- System Development & Demonstration
- Production & Deployment

- Pre-Systems Acquisition
- Systems Acquisition
- Sustainment & Support
- Disposal

- Initial Capabilities Document (ICD)
- Capability Development Document (CDD)
- Capability Production Document (CPD)

Validated & approved by requirements Validation Authority

Relationship to Joint Capabilities Integration & Development System
FY 2007 RDT&E President’s Budget Request

DDR&E/AS&C Transition Programs are Highly Leveraged across Service and Agency Budgets
Less than 1% of RDT&E each year

(BA6 + BA7 = $27.23B)

Components (All RDT&E) $B
USA 10.9
USAF 24.4
USN/USMC 16.9
Def Agency & SOCOM 20.8

Development
(BA4 + BA5 = $34.66B)

BA7 Operational Systems Development ($23.47)
BA6 RDT&E Management Support ($3.76)
BA5 System Development & Demonstration ($19.28)
BA4 Advanced Component Development & Prototypes ($15.39)
BA3 Advanced Technology Development ($5.18)
BA2 Applied Research ($4.48)
BA1 Basic Research ($1.42)

DDR&E/AS&C Total is $0.553 B
(Includes USJFCOM $0.220B)

Technology Base (BA1 + 2) = $5.90B
Science and Technology (BA1 + BA2 + BA3 = $11.08B)
15% of RDT&E
FY 2007 AS&C Direct Resource Oversight

FY 2007 PBR (Feb 2006)

Total PresBud ($000)
$553,246

- ACTD (BA-3) $158,334 (29%)
- JCTD (BA-3) $180,127 (40%)
- TTI (BA-3) $28,728 (5%)
- DACP (BA-5) $29,500 (5%)
- DPA Title III (P) $18,484 (3%)
- FCT (BA-6) $31,995 (6%)
- Tech Link (BA-3) $6,822 (1%)
- JCTD Trans (BA-4) $3,047 (1%)
- DAEPilot (BA-5/P/O&M) $10,015 (2%)
- JWP (BA-3) $10,641 (2%)
- JFCOM (BA-3/4/7) $220,127 (40%)

Source: FY 2007 PresBud June 2006
COCOMS Warfighters (end-users)

AS&C/JCTD Scientists

Service Sponsors (buyers)
UNIFIED COMMAND PLAN

THE WORLD WITH COMMANDERS' AREAS OF RESPONSIBILITY

[Map showing areas of responsibility for USNORTHCOM, USEUCOM, USPACOM, USSOUTHCOM, and USCENTCOM.]
3. C2?

- Command and Control solution?
- Aligning incentives
- End-user issues
4. End-User Issues

- control
- mission and pressures
- misaligned incentives
- management commitment
- technology champion
- complementary goods
5. Case Studies

• Civilian
  – CASE (technology with org externalities)
  – HTAs (technology with org externalities)
  – QWERTY (indirect network technology)
  – RFID (direct and indirect network technology with org ext)

• Military
  – NMCI (direct network technology with org ext)
  – RFID (direct and indirect network technology with org ext)
6. Graphs

(1) Situation One
   - there are **no externalities** to complicate the situation
   - buyer is the **same** as the end-user

(2) Situation Two
   - there are **organizational externalities** involved
   - each end-user’s benefit is determined only by his/her own adoption decision, but some external benefits accrue to the organization as more end-users adopt

(3) Situation Three
   - there are **direct network externalities** involved (value depends on size of user-base)
   - buyer and the end-user are **different** entities

(4) Situation Four
   - there are **indirect network externalities** involved (value depends on number of complementary goods available which affects the size of the user-base)
   - buyer and the end-user are **different** entities
(1) NO EXTERNALITIES

Value ($$$)

Total Benefits

Hi-Value User

User COST

Med-Value User

Low-Value User

Total # Users

Number of Hi-Value Users

Number of Med-Value Users

Number of Low-Value Users

Total Benefits

User COST
(2) EXTERNALITIES
(benefits accruing to individuals and org)

Value ($$$)

Total Benefits

Hi-Value User
User COST

Med-Value User

Low-Value User

Total # Users

Number of Hi-Value Users

Number of Med-Value Users

Number of Low-Value Users

Total Benefits

User COST
NETWORK EXTERNALITIES
(no overarching organization)

Value ($$$)

Total Benefits
(increase exponentially as a sum of individual network benefits)

Hi-Value User
Med-Value User
Low-Value User

User COST

Total # Users

Number of Hi-Value Users
Number of Med-Value Users
Number of Low-Value Users
(3) and (4) NETWORK EXTERNALITIES
(benefits accruing to individuals and org)

Value ($$$)

- Hi-Value User
- Med-Value User
- Low-Value User

User COST

Total Benefits
(increase exponentially as a sum of individual and org network benefits)

Number of Hi-Value Users
Number of Med-Value Users
Number of Low-Value Users

Total # Users

NETWORK EXTERNALITIES
(benefits accruing to individuals and org)
(3) and (4)
NETWORK EXTERNALITIES
(benefits accruing to individuals and org)
Recap: End-User Issues

- control
- mission and pressures
- misaligned incentives
- management commitment
- technology champion
- complementary goods
Conclusion

1. Coordination
2. Complications
3. Command and Control?
4. End-User Issues
5. Case studies
6. Graphs
Questions?