The I3I Model

Identifying Cultural Determinants of Information Sharing via C2 Information Technologies

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Introduction (1)

Joint Common Operational Picture

The I3I Model
Introduction (2)
Network Centric Operations and Information sharing

“A robustly networked force improves information sharing and collaboration…enhances the quality of information and shared situational awareness…ultimately results in dramatically increased mission effectiveness.”
Introduction (4)

- C2 systems are designed to maximize situation awareness by *sharing information!*

- Information within joint combined coalitions?
  - Joint (organizational culture?)
  - Combined (national culture?)
  - Civil-Military (organizational/national?)
  - Multiple cultures!

- Research question:
  
  *How do differences in national, organizational, and professional culture influence information sharing via C2 systems during joint and combined coalition operations?*
Relevance

• Existing research on:
  • Information sharing
    » scattered over multiple disciplines (IS, OS, KM, IM)
    » models information sharing as single act
    » neglects multidimensionality of information sharing
  • Cultural influences on C2
    » but only decision making
    » neglects multiple levels of culture

• Need for research on:
  • *Coalition* information sharing,
  • In a cross-cultural setting at *multiple* levels,
  • Acknowledging the *multidimensionality* of information sharing
Multidimensionality of Information Sharing (1)

- Information sharing:
  - Is a behaviour, not a technology!
  - Is embedded within multiple levels of culture
    - National
    - Organizational
    - Professional
  - Consists of three dimensions!
    - Cognitive
    - Social
    - Technological

- We label this: *I3 Information Sharing*
Multidimensionality of Information Sharing (2)

I3 Information Sharing:

1. Cognitive: **Identification**
   
   The selection and valuation of information that may or may not be shared with coalition partners, or with assigned individuals representing these coalition partners.

2. Social: **Inter-relation**
   
   The selection and valuation of the recipients as coalition partners, or assigned individuals representing these coalition partners.

3. Technological: **Interchange**
   
   The selection and valuation of the technology used for sharing information with coalition partners, or with assigned individuals representing these coalition partners.
I3 Information Sharing

Information sharing (IS) only occurs when the conditions for I1, I2, and I3 are fulfilled and coexist within the source of the information sharing process!

The I3I Model
Methodology

• Ongoing research project at the Netherlands Defence Academy (NLDA)
• In cooperation with the NATO Command and Control Center of Excellence (NATO C2CoE)

• Multiple Case Study: *Preliminary* Findings
  - NATO Response Force (NRF 10-12)
  - Steadfast Jaw (Naples, IT), Steadfast Juncture (Ulsnes, NOR), Steadfast Joiner (Solenzara, FRA)
  - Command Post Computer Aided Exercises (CPX/CAX)
  - 3x10 day visit: participant observations, semi-structured interviews, informal conversations
The I3I Model (1)

Resulting set of *preliminary* determinants:

**I1: Identification**
- Perceived Information Value
- Perceived Information Shareability
- Information Ownership

**I2: Inter-relation**
- Anticipated Reciprocity
- Relational Trust
- Perceived Relational Characteristics

**I3: Interchange**
- Perceived Usefulness
- Perceived Ease of Use
- System Trust
The I3I Model (2)

Integrated *multidimensional* model

- **I1**: Identification
- **I2**: Inter-relation
- **I3**: Interchange

- **Moderators**
  - Demographics
  - Training and Experience
  - Task Interdependence
  - Sharing Control
Outline

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Implications within Joint Combined Coalitions (1)

Information within joint combined coalitions?
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Culture
“Fundamental system of meanings shared by members of a society, distinguishing one group or category of people from another.”

Example: National cultural dimensions (Hofstede)
- Power Distance (PD)
- Uncertainty Avoidance (UA)
- Individualism (IND)
- (Masculinity)
- (Long-term orientation)
Implications within Joint Combined Coalitions (2)

• *Multiple* national cultures within *one* combined coalition

• Some examples; PD & UA
  
  • Anglo Saxon cultures
  • Former Yugoslavia cultures
  • Southern Mediterranean & Latin American cultures
  • Scandinavian cultures

Source: Hofstede, 2001
Implications within Joint Combined Coalitions (3)

- *Multiple* national cultures within *one* combined coalition

- Some examples; IND (&PD)
  
  - Anglo Saxon cultures
  - Former Yugoslavia cultures
  - Southern Mediterranean & Latin American cultures
  - Scandinavian cultures

Source: Hofstede, 2001
Implications within Joint Combined Coalitions (4)

I3I Information sharing
  Identification
  Inter-relation
  Interchange

Cultural dimensions
  Power distance
  Uncertainty avoidance
  Individualism

Examples
  Anglo Saxon cultures
  Former Yugoslavia cultures
  Southern Mediterranean & Latin American cultures
  Scandinavian cultures
Discussion

• Important:
  • Scope of this paper is on national cultural influences, at the individual level. However:
    » Multiple levels of culture exist!
    » Culture influence information sharing behavior at the individual and at the organizational level!

• Furthermore:
  • Multiple theories and frameworks of culture exist!
Future directions

- Empirically explore the determinants and implications of I3I information sharing within joint combined coalitions (EX & OPS):
  - Qualitative (subject matter expert interviews)
  - Qualitative (multiple case studies)
  - Quantitative (survey)

- Focus on:
  - National, organizational, and professional level
  - Both individual and organizational level

- Partnerships:
  - NATO C2 Center of Excellence
  - Tilburg University, The Netherlands
Thank you for your attention
Questions or comments?

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