Risk Complexity: The Arctic Offshore as a Case Study

May 12, 2011
Research Objectives:

1. To critically examine existing risk management processes for identifying risks in complex projects

2. To apply these processes to the case study of Arctic offshore projects
Project Management?
• Founded in 1969
• 340,000 members globally
• Advance knowledge
• Many organizations and companies require PMI’s certifications
• Uncertain event or condition
• known or unknown
• likelihood * impact
Risk management – 6 *PMBOK* processes

- Start
- Plan
- Identify
- Quantitative
- Qualitative
- Response
- Monitor/Control
- End

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How is Risk Management Conducted?

• Not done consistently
• Lack of support
• Lack of expertise
• Adds to scope, time and costs
• Underestimate complexities
75%
Linear, rational
Premise of my argument: Conventional risk management tools and training are *inadequate* to address complexity.
“Some *problems* are so complex that you have to be highly intelligent and well informed just to be undecided about them.”

- Laurence J. Peter
Wicked Problems

- Unstructured
- Novel
- No final solution
- Different stakeholder values
- Complex
- Adaptive

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Wicked Problems- Brief Context

• Developed by Rittel & Weber in 1970s
• From social planning
• applied in different disciplines
Wicked vs. Tame Complexity

- Novelty
- Technical complexity
- Social complexity - Stakeholder values
- Political complexity - Stakeholder values
- Uncertainty
- Irregularity
1. MACRO: To what degree do natural resource development projects in the Arctic offshore fit the definition of a wicked problem?

2. MICRO: How do various stakeholders perceive, define, and identify risk?
Unique!

Source: Mike Fisher (2006) OGP in Alaska

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complex
Opposing values
Main Finding – Macro Analysis

THAT? WE WERE FORCED TO COMPLY WITH THE ONEROUS ENDANGERED SPECIES ACT.

WE ❤️ POLAR BEARS!

ARCTIC OIL & GAS, inc.
Micro – Level Analysis

• data: risk seminar series (14 presentations)

• Methodology: content analysis

• Research variables
Risk Management Contexts of Arctic offshore projects

- Resource development
- Disaster management
- Resource management
Analysis based 5 Risk paradigms

• Probabilistic- deterministic: technical-engineering design perspective
• Traditional risk assessment: process and expert based
• Holistic: multidisciplinary
• Precautionary: risk averse
• Cognitive Psychology of Decision Making: Risk as a Feeling
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<tr>
<th>Data Sources</th>
<th>Quantitative - hard</th>
<th>Qualitative - soft</th>
<th>Complementary</th>
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<tr>
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<td>Geophysical, metocean and technical</td>
<td>Expert judgement</td>
<td>Lessons Learned</td>
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<td>Precautionary (3)</td>
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Analysis based on Risk attitude

Findings from Micro-Analysis

• Risks definitions vary among stakeholder groups

• Different domains and familiarity levels with risk

• systematic biases in using tools and expert judgment
What can we do to improve the process?

• Diverse risk management team (outsiders to mitigate systematic biases)
• New collective tools to identify & structure definitions
• New research frontiers...
Project Management of the Second Order (PM-2)

- New project management paradigm

- Includes theories from chaos, complexity and systems thinking

- Extension of traditional framework

- Won national and international research awards
Risk Leadership

- Risk management competency
- Hancock, UK (November, 2010)
- Reflective listening
- Project framing within social context
- Adaptive process
- Risk management = value creation
- Includes wicked/ tame categorization
What can we learn for the Arctic Offshore?

• Know stakeholders and their definitions

• Recognize limitations of existing risk management

• Wicked problem concept offers systems view and new tools (PM-2; risk leadership)

• unknowns & consensus building
Risk assessment and management will never be *perfect*!

_Humble and vigilant_ approach
Thanks to Sharman, Hajo and Andrew!