Cross-Cultural Collaboration in ICT Procurement

ICSE 2006, GSD workshop

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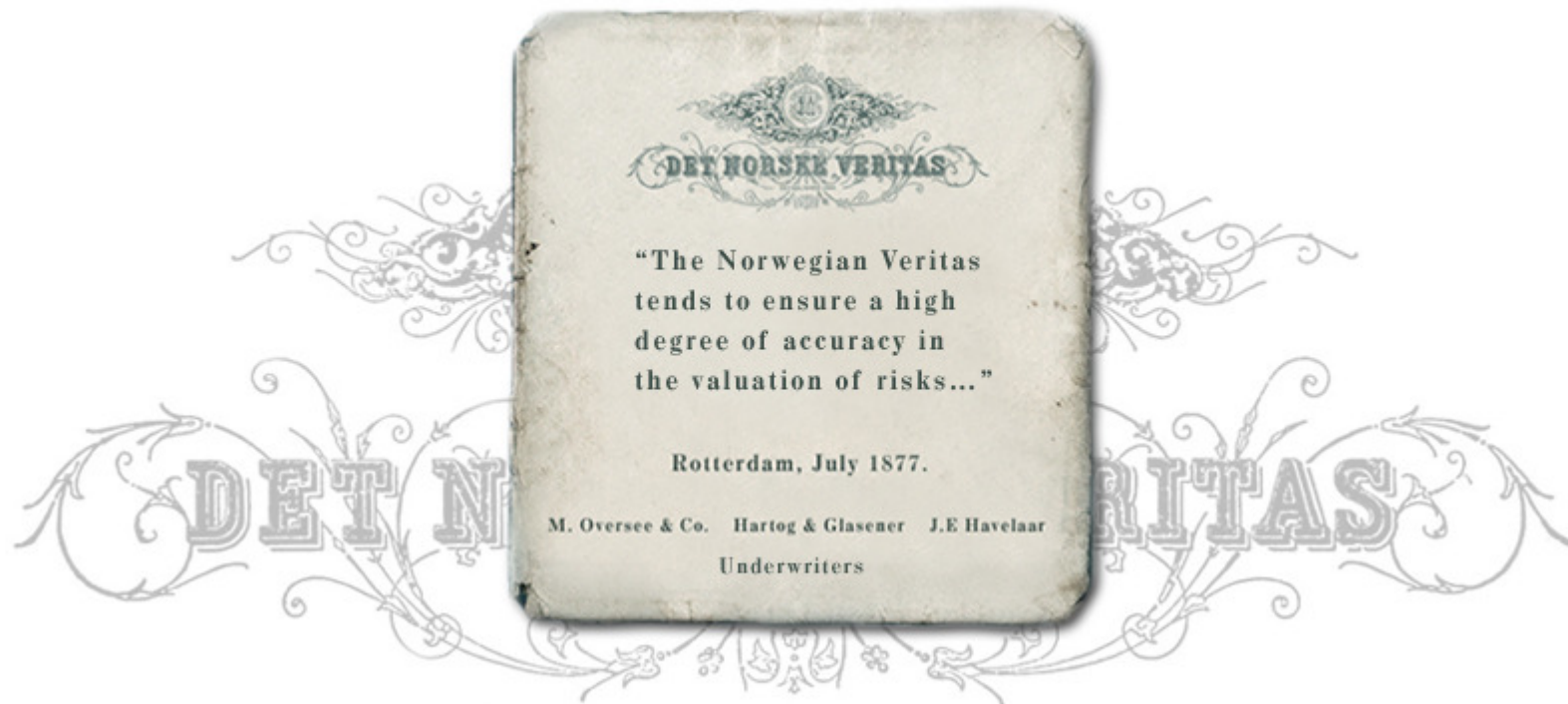23.05.2006

DNV – an independent foundation

- Objective: To "Safeguard life, property, and the environment"

- Established in 1864 in Norway

"The Norwegian Veritas tends to ensure a high degree of accuracy in the valuation of risks..."

Rotterdam, July 1877.

M. Oversee & Co.   Hartog & Glasener   J.E Havelaar

Underwriters

Core competence

Maritime industry	Renewable energy sector	Food and beverage	Aviation
Oil and gas industry	**Managing risk**		ICT
Process industry	Automotive	Rail industry	General

DNV worldwide

■ Head office   ■ Main support and service centres   ■ Local offices

Research and development in DNV

Competitive advantage from continuously updated knowledge and expertise

- R&D ensures DNV's position at the forefront of technological development

- R&D is used to enhance and develop services, rules, and industry standards

- R&D is carried out in the business areas and in DNV Research

- Key research areas for DNV:
  - Information and processes
  - Biological risk
  - Global transport and short-sea shipping
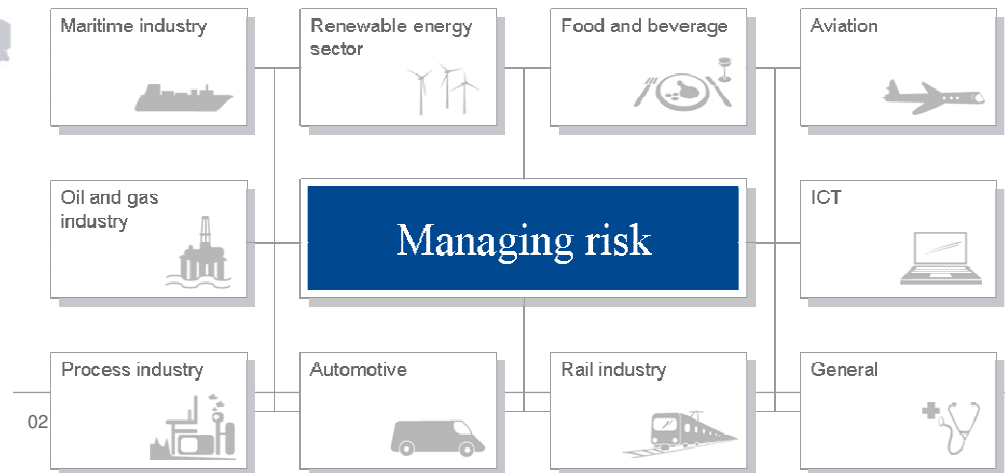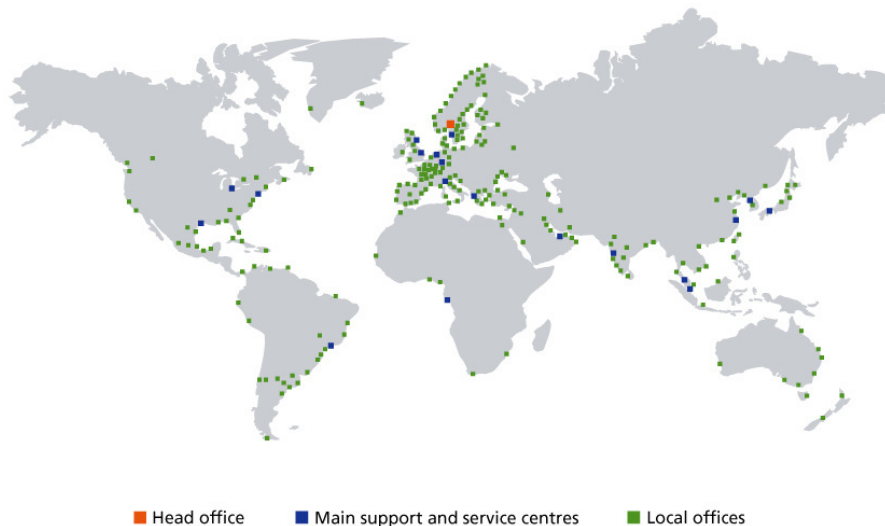 - Future energy solutions
  - Nanotechnology

Introduction

- When working across cultures, new and added risks appear, related to:
  - The different cultural backgrounds of the partners
  - The collaboration between the partners
  - The work processes within the group
  - The contextual issues, ranging from domain knowledge to political influences

- An assessment of partners identifies the gaps in the global team, which are potential risk elements.

- Knowledge about gaps make it easier to apply risk management

Det Norske Veritas (DNV):

- An independent foundation, 300 offices in 100 countries

- Established in 1864 in Norway

- Objective: To Safeguard Life, Property, and the Environment

- *Managing risk:* Classification, certification, consultancy

- New business area: *DNV ICT Risk Management*

- DNV Research: GSW research area

- **Market for services on *managing risk in globally distributed software work***

- Head office
- Main support and service centres
- Local offices

Maritime industry	Renewable energy sector	Food and beverage	Aviation
Oil and gas industry	Managing risk		ICT
Process industry	Automotive	Rail industry	General

02

Research method

Information elicitation

- Multi-method approach:
  - Literature study
  - In-depth case study:
    - Document studies
    - Web-based survey
    - Interviews: Semi-structured, open ended, interview guide. Key people.

Information analysis

- Interview scripts analysed and compared to existing literature

- Identification of recurring patterns (attention to source quality)

Threats to validity

- Limited number of responders

- Only seen from one country side

- Not tested yet

Case: Schengen Information System II

- **European Union**

- **Schengen: Police collaboration across national borders**

- **To build Schengen Information System II**
  - Central Schengen system
  - National systems

National system

National system

Integration

Integration

Central Schengen system

Integration

National system

Case findings

- Variations between nations, challenging for collaboration:
  - Domain knowledge, due to varying complexity
  - National level of hierarchy
  - Delegates with different authority
  - System development methods
  - Project management methods
  - Political situations
  - Priorities:
    - *Time:* New countries depend on system to be a fully member of Schengen
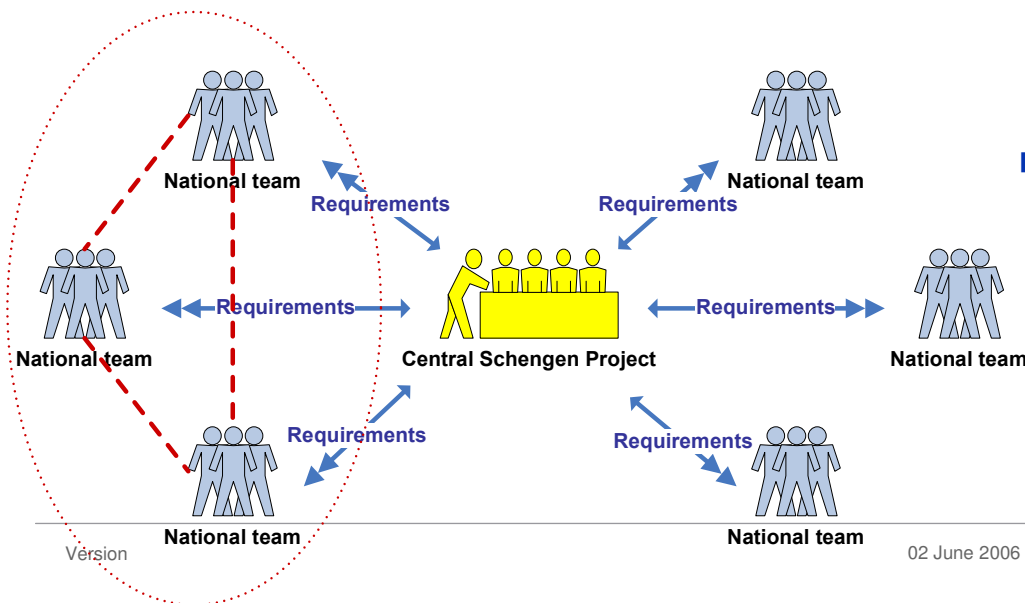   - *Quality & functionality:* Old countries

- Complex setting
  - 25 nations
  - Each nation has own laws, practice, finance, preferences, history
  - Reach agreements on requirements & design

- Norwegian team:
  - Extended decision authority, flat national hierarchy, easy access to top ministry
  - No right to vote; joined *the informal collaboration group*
  - Trust & status built on knowledge
  - Focus on new technology

- Informal collaboration group (5 members)
  - Influence the Central project to choose their requirements
  - Distribute written documents to other countries

National team

National team

National team

National team

National team

National team

Requirements

Central Schengen Project

What it is

- *Risk assessment of project partners in cross-cultural collaboration on public ICT procurement*

- Challenges scale up as the differences become larger. The more challenges, the greater the risks.

- Assessing the partners' experiences, interests, preferences, and abilities, will make the project more efficient:
  - Identified gaps
  - Increased predictability
  - Easier to apply risk management

How it is structured

- Structuring using Goal-Question-Metric (GQM) paradigm.

- Single-side analysis: *Own* judgement of project partners and situation

Goals – *Identification of…*

- **Collaboration and work processes:**
  - …partners' corresponding international experience.
  - …communication skills and standards.
  - …the mutual connection within the group.
  - …trust and status within the group.
  - …the partners' stability in functional and technical requirements.
  - …the partners' priorities related to the project.
  - …the partners' relation to the main project.
  - …risk if the informal group dissolve.

- **Culture:**
  - …the partners' approach to tasks.
  - …the partners' way of relating to others.
  - …the partners' relation to time.
  - …the partners' preferences for visionary solutions.
  - …the partners' decision making practise.
  - …the partners' preferred way of communicating.

- **Context:**
  - …the partners' competence and experience within the application domain area
  - …the partners' competence and experience working with political governed projects.
  - …the partners' approach to project management.
  - …the partners' approach to system development.
  - …the partners' competence and experience on technical issues.
  - …the partners' corresponding views on the project.
  - …political processes of the nations that may have consequences for the project execution.

GQM example

Goal: Identification of the partners' way of relating to others.

- *Question*: To what extent does the partner seem to focus on relationships? *("yes" on metrics tends to relationship orientation)*
  - *Metric*: The partner seems to need time for building relations before going into detail discussion of the case in question
  - *Metric*: The partner is likely to find trust and loyalty to be a result of long-term relationships, and something that not easily is achieved
  - *Metric*: Members with high skills of managing relations are also those with the most status and power in the group
  - *Metric*: Members with several lateral relations are also those with the most status and power in the group

- *Question*: What is the important factor for the establishing of relationships? *(choose two)*
  - *Metric*: Technical knowledge is the most important factor for establishing relationships
  - *Metric*: Personal chemistry is the most important factor for establishing relationships
  - *Metric*: Lateral relations and important contacts are the most important factor for establishing relationships
  - *Metric*: Knowledge of the politics are the most important factor for establishing relationships
  - *Metric*: Application domain knowledge is the most important factor for establishing relationships

Conclusion & further work

Conclusion

- The study identified important aspects of risk related to cross-cultural collaboration

- Results based on a specific context (equal partners, public sector), but:
  - *Hypothesis I:* Can be used for regular GSD projects
  - *Hypothesis II:* Can be adapted to other industries

Further work

- Study other partners of the project

- Test, verify through other case studies -> Improve framework

- Extend assessment to multi-side analysis

- New DNV Research project:
  - **Global Work – Opportunities and risk in the software domain**
  - From the buyer's point of view
  - *Main objective:* To improve the competitiveness of the industry through development of comprehensive, research-based and industrially validated processes, models and tools for improved exploitation of opportunities and management of risk in GSW.

Contact

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- We have the Goals-Questions-Metrics available on CD. Please contact Dalberg to receive a copy.

www.dnv.com