

# Dynamics between safety, trust and management during organizational change

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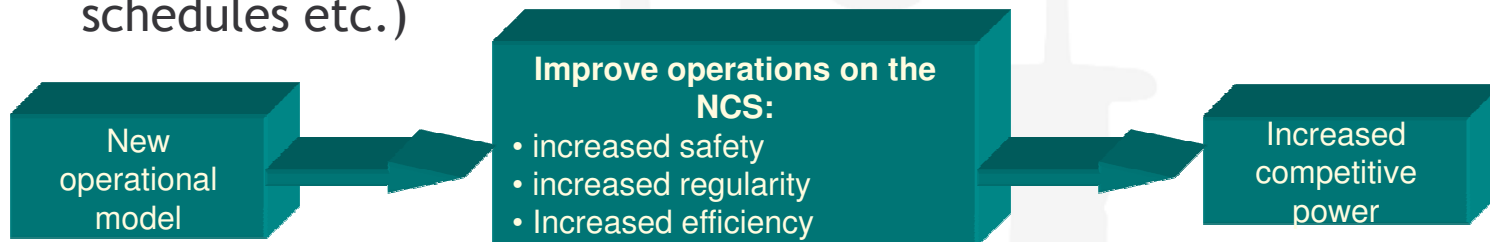
# Integration research programme (2008-2010)

- Phase 1 - targeted divisions onshore (2008)
- Phase 2 - operational work environments involving (2009-2010):
  - All oil and gas installations
  - (some) onshore support units
- Motivation:
  - Scale advantage
  - Simplify (reduce variety and diversity)
  - Improve overall evaluation of critical maintenance work
  - Improve planning capacity
  - Improve flexibility
  - Better management of modification and maintenance
  - Improve cooperation between on & offshore units

= Treat the platform as part of a larger shared operating system

# Goals, means & principles

- Compliance (laws, rules and regulations)
- Equality & Equal opportunities
- Voluntariness
- (develop or keep) "The best from both"
- Union cooperation and Involvement (Nordic Cooperation Model)
- Right and tight information & communication
- Effective coordination (on time, schedules etc.)
- New manning of the organization
- Relocation bonus
- Commuter packages
- 58 + ("Leaving experts")
- "Blending" of personnel (tight integration)



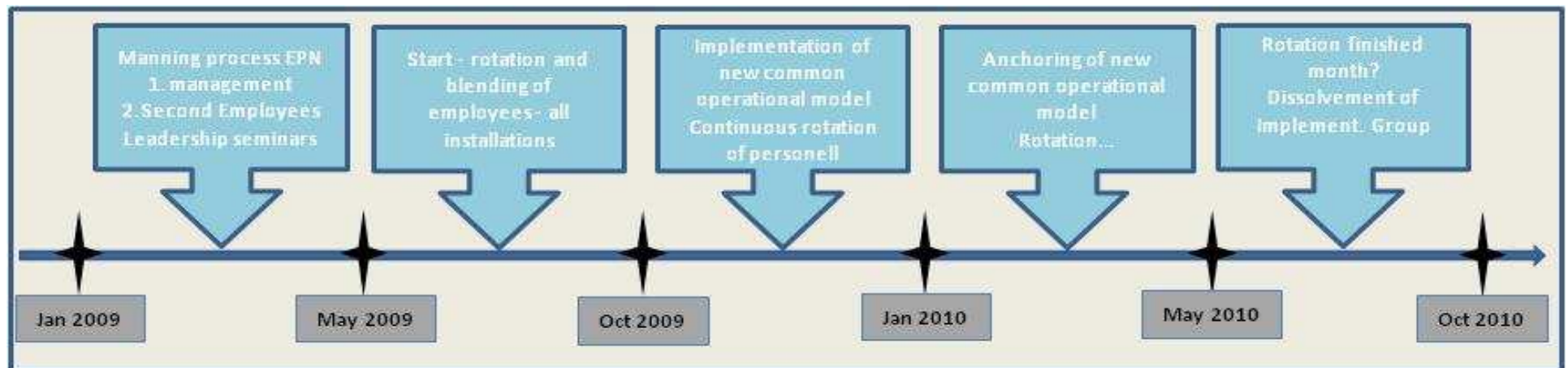
# Main strategic principles: Standardization and flexibility

- Strengthen the shared functions. Each installation shall now be seen as part of a bigger shared production system
  - Scale economy, develop bigger expert communities, flexible use of personnel (rotation systems), use experts when needed, increased capacity to draw upon experience
- Strengthening of integrated operations. Interface on- & offshore
  - Better use of technology and cost reduction because of fewer personnel offshore
- Standardization of production and maintenance work
- Standardization of work processes (harmonization of systems and procedures)
  - Improve safety, regularity and more effective production

# Goals

- Examine if and how the integration and change activities influence organizational safety performance
- Promote an understanding of how various organizational aspects influence trust and safety during a post-merger and major organizational change process

# Measurements - self completion questionnaire



	January 2009	May 2009	Oct 2009	January 2010	May 2010
Response rate	65 %	55 %	75 %	52 %	62 %
Number of responents	1367	1460	2138	1848	1363

# Managing safety during M&As

- Organizational safety and the M&A literature are huge, but separate
- Strategic organizational change may exert an important influence on safety in High Reliability Organizations (Lofquist, 2008)
- Management commitment and worker involvement have shown to be important for organizational effectiveness and safety performance
- Limited evidence that radical organizational changes should result in increased risks or major accidents (Grote, 2008)
- Organizational change processes have been regarded as critical factors in accident investigations, and might be highly relevant to the level of both process and worker safety (Baker, 2007; Grote, 2008).
- Deregulation has been found to have an impact on corporate culture, management and organizational aspects that are relevant for safety (Bier et al., 2001)

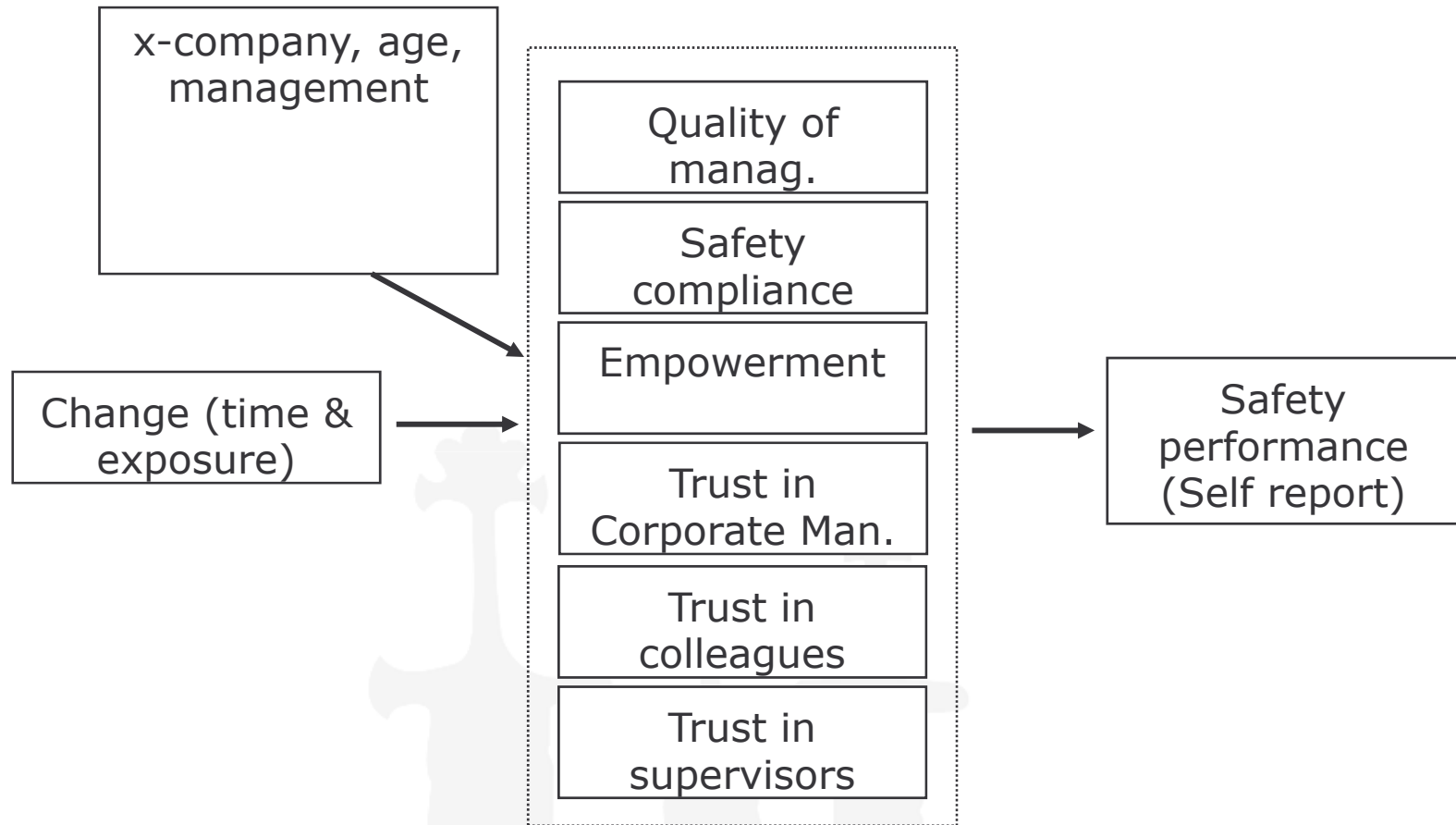
# Trust in highly complex risk organizations

- Highly complex systems are supposed to need *both* more trust and distrust, often in the case of institutionalized distrust (systemic and formal control mechanism) (Luhmann, 1979)
- Reliability is higher when people trust each other (Weick, 1987)
- Keep an eye on the limits to faith *and* the benefits of doubt or distrust (Tharaldsen, Mearns & Knudsen, 2010)

## *Central anticipation in this study:*

- During change, “social order” will be perceived as more “chaotic” and trust relations will most likely be affected at various levels
- Operational flexibility and change - trust and distrust may be treated as central coping mechanisms

# Conceptual model



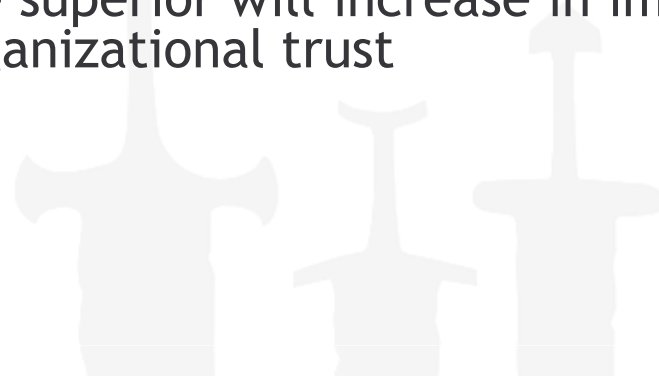
- Change exposure: computed on behalf of the company's own definition of how strongly each installation was affected by organizational changes

# Hypotheses - Change process - January to May 2009

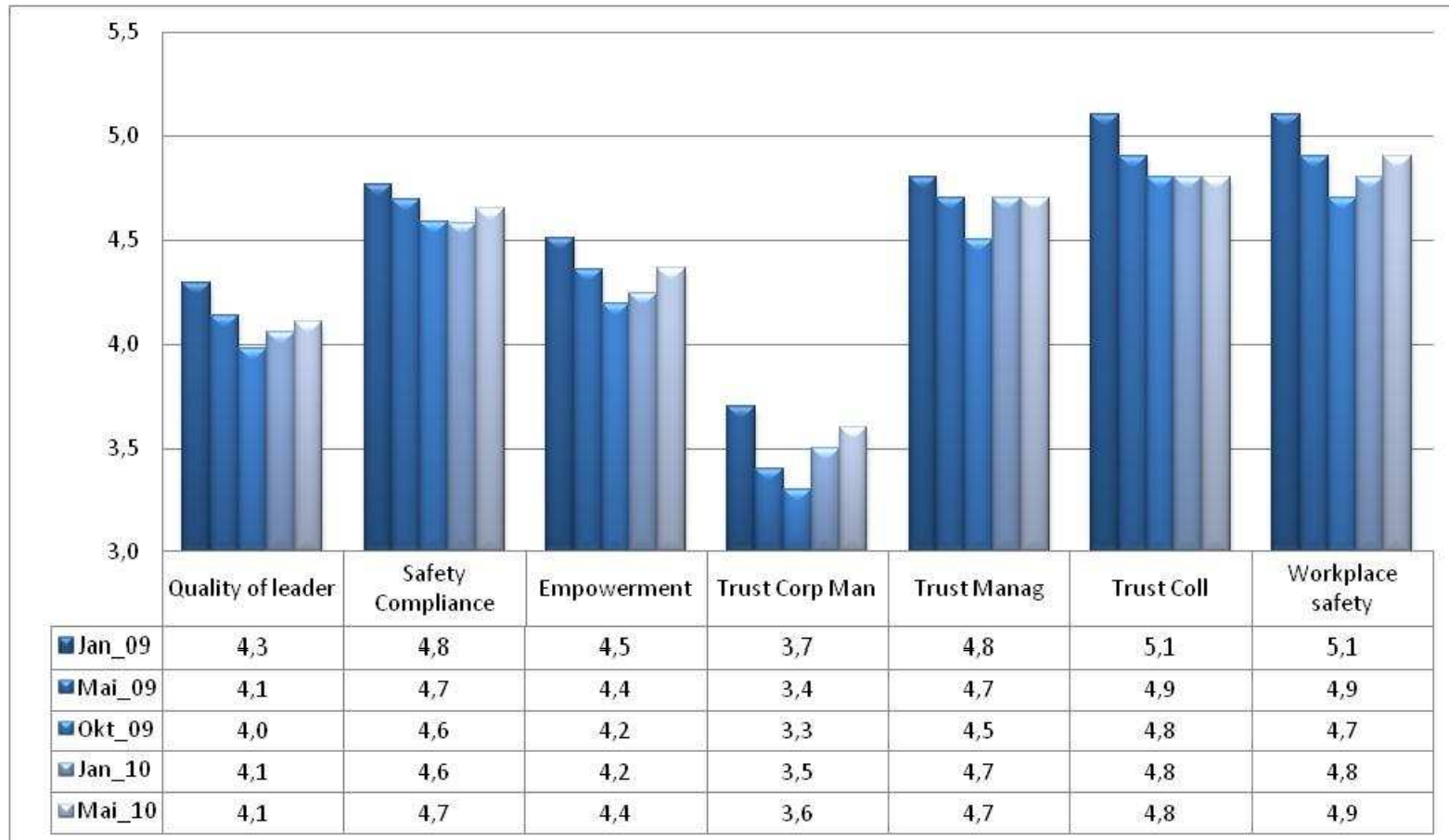
- H1: Degree of change (DoC) will have a negative impact on Safety Performance (SP) (increased complexity). Multiple changes will affect the organization more vigorously in the periods before May and October than at other measurements
- H2: Managers will have significantly more positive perceptions of SP at all measurements
- H3: Former company belonging will have a non-significant effect on safety performance at all measurements
- H4: Older (more experienced workers) will hold more critical perceptions of SP at all measurements

# Hypotheses

- H5: Quality of management, Safety compliance and Empowerment will have a positive influence on safety performance at all measurements
- H6: Trust in Corporate management, Trust in immediate superior and Trust in colleagues will have a positive impact on organizational safety performance at all measurements
- H7: TRUST DYNAMICS: When having to navigate within changing organizational frameworks, we expect that trust in colleagues and immediate superior will increase in importance - at the expense of Organizational trust



# Development all dimensions at all measurements 2009 and 2010 (mean)



Internal consistency: varying between 0.772 and 0.919 for all dimensions at both points in time. Exception: Trust in colleagues – ranges from 0.602 – 0.694 (two items)

# Correlations between concepts (all measurements)

DIMENSIONS	M1	M2	M3	M4	M5	M6	Dep
<b>1 Trust corp management</b>	1	,477	,355	,500	,440	,579	,522
<b>2 Trust immediate superior</b>	,477	1	,488	,757	,554	,599	,551
<b>3 Trust colleagues</b>	,355	,488	1	,465	,514	,548	,517
<b>4 Quality of management</b>	,500	<b>,757</b>	,465	1	,559	,607	,500
<b>5 Safety Compliance</b>	,440	,554	,514	,559	1	,562	,579
<b>6 Empowerment</b>	,579	,599	,548	,607	,562	1	,613
<b>Workpl safety (dependent)</b>	,522	,551	,517	,500	,579	,613	1

- All correlations are clearly significant
- Follow the approximately same patterns also when measured separately
- Strong relations between Trust in immediate superior and Quality of leader
- Our dependent variable does not seem to be too strongly correlated with other organizational Aspects – it shows the strongest correlation with Empowerment

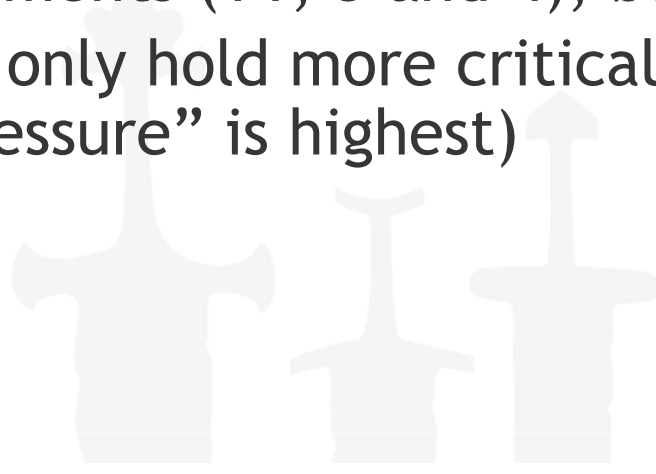
# Regression model

	JANUARY 2009 (T1)			MAY 2009 (T2)			Oct 2009 (T3)			January 2010 (T4)			May 2010 (T5)		
VARIABLES	R <sup>2</sup>	Std. β	Sig.	R <sup>2</sup>	Std. β	Sig.	R <sup>2</sup>	Std. β	Sig.	R <sup>2</sup>	Std. β	Sig.	R <sup>2</sup>	Std. β	Sig.
Degree of change	0,456	,012	,568	0,511	-,039	,042	0,535	-,068	,000	0,548	-,013	,418	0,531	-,020	,288
Comp1		,064	,003		,011	,583		,059	,000		,041	,012		,011	,576
Leader		,037	,088		,008	,673		,031	,084		-,004	,805		-,005	,800
Age		-,011	,609		,009	,640		-,037	,024		,028	,077		,010	,617
Quality leader		,159	,000		,164	,000		,165	,000		,187	,000		,104	,000
Saf_Compl		,079	,011		,235	,000		,258	,000		,134	,000		,139	,000
Empowerm		,191	,000		,242	,000		,093	,000		,194	,000		,212	,000
Trust corp man		-,010	,741		-,090	,003		-,077	,006		-,053	,042		-,088	,005
Trust superior		,336	,000		,150	,000		,117	,000		,273	,000		,291	,000
Trust coll		,149	,000		,204	,000		,290	,000		,172	,000		,229	,000

- DoC show the strongest influence at T2 and T3
- Former company membership shows an impact at T1, 3 and 4
- Having leader resp has no impact on SP
- Your age only show a sign influence at T3 (high change exposure period)
- Our organizational dimensions all show a sig impact on SP, except for Trust in CM at T1

# Conclusions

- High change exposure exerts a negative impact on SP. DoC has a stronger influence on SP at T2 and T3 than all other measurements (higher degree of complexity?)
- Having managerial responsibilities or not do not have a significant impact in our model
- Former company belonging plays a significant role at three measurements (T1, 3 and 4), but not at T2 and T5
- Older workers only hold more critical perceptions at T3 (when the "pressure" is highest)



# Conclusions

- Quality of management, Safety compliance and Empowerment indicate a significant, positive influence on SP at all measurements.
- All three trust dimensions show a positive impact on SP at all measurements - except for Trust in CM at T1. Trust in colleagues seem to strengthen its importance at T2 and T3, maybe at the expense of Trust in IS and CM

# ”Distributed and dependent” Going from local production units to an integrated production system

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# Aim and research questions

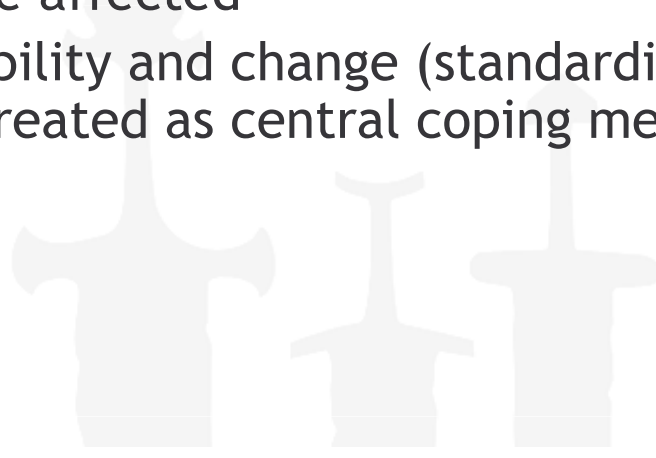
- Examine the implementation of the new operational model during a post-merger integration of two former competitors in the Norwegian petroleum and energy sector
- How may integration, standardization and flexibility be pursued in the context of a geographically distributed organization with strong local identification among employees?
- How do one secure capacity to implement the changes and installation specific competence while rotating employees; between installations, offshore and onshore and "blend" employees from the two former companies?

# Method - qualitative

- Document studies
- Short fieldworks & qualitative interviews during 2009 and spring 2010
- 3 offshore units and 1 department onshore (several subunits)
- Key informants
- Ca 150 interviews altogether (transcribed)
- Quantitative data are used to complement qualitative findings

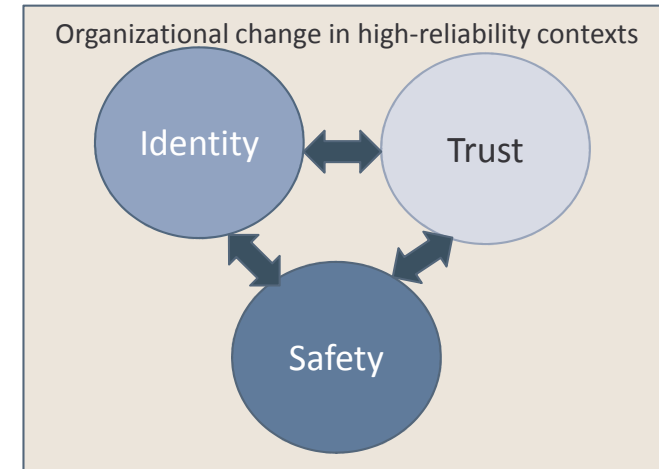
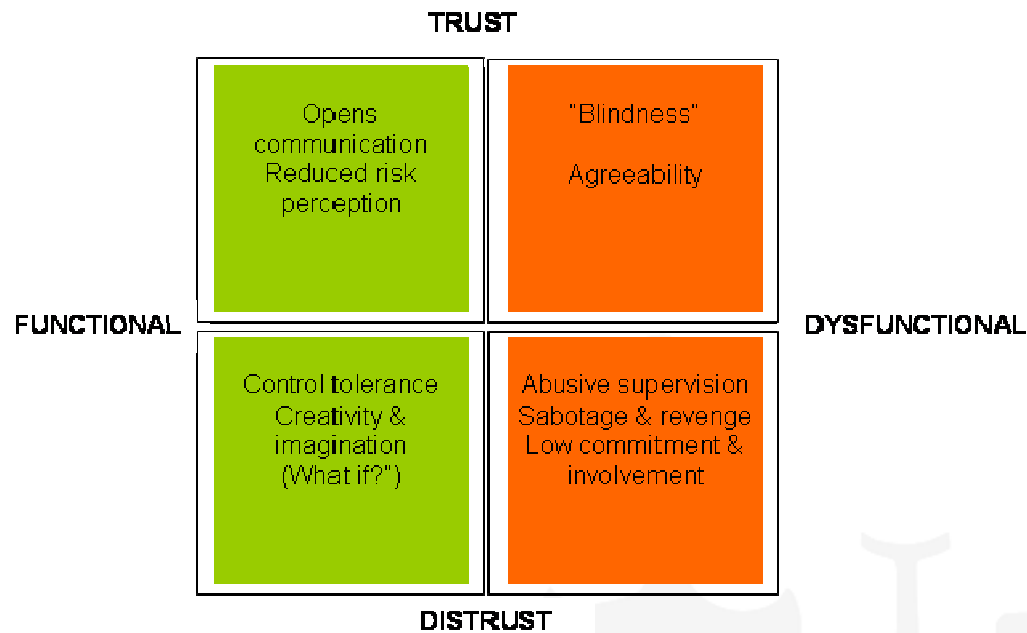
# Trust and distrust

- Relational trust: Characterized by repeated interaction, reliability and interdependence - reciprocated care and concern - also referred to as “affective” (McAllister, 1995) or “identity-based” trust (Coleman, 1990)
- Identity-based trust has shown to be functional for employees having a nomadic work life offshore (Tharaldsen et al., 2010)
- During change, “social order” is being disturbed and trust relations will most likely be affected
- Operational flexibility and change (standardization) - trust and distrust may be treated as central coping mechanisms



# Conceptual models

## Functional trust and distrust with regards to safety



Tharaldsen, 2010 (PhD-thesis, submitted). The model represents a further development of work done by: Pidgeon, Walls, Weyman and Horlick-Jones' (2003) and Conchie & Donald (2006)

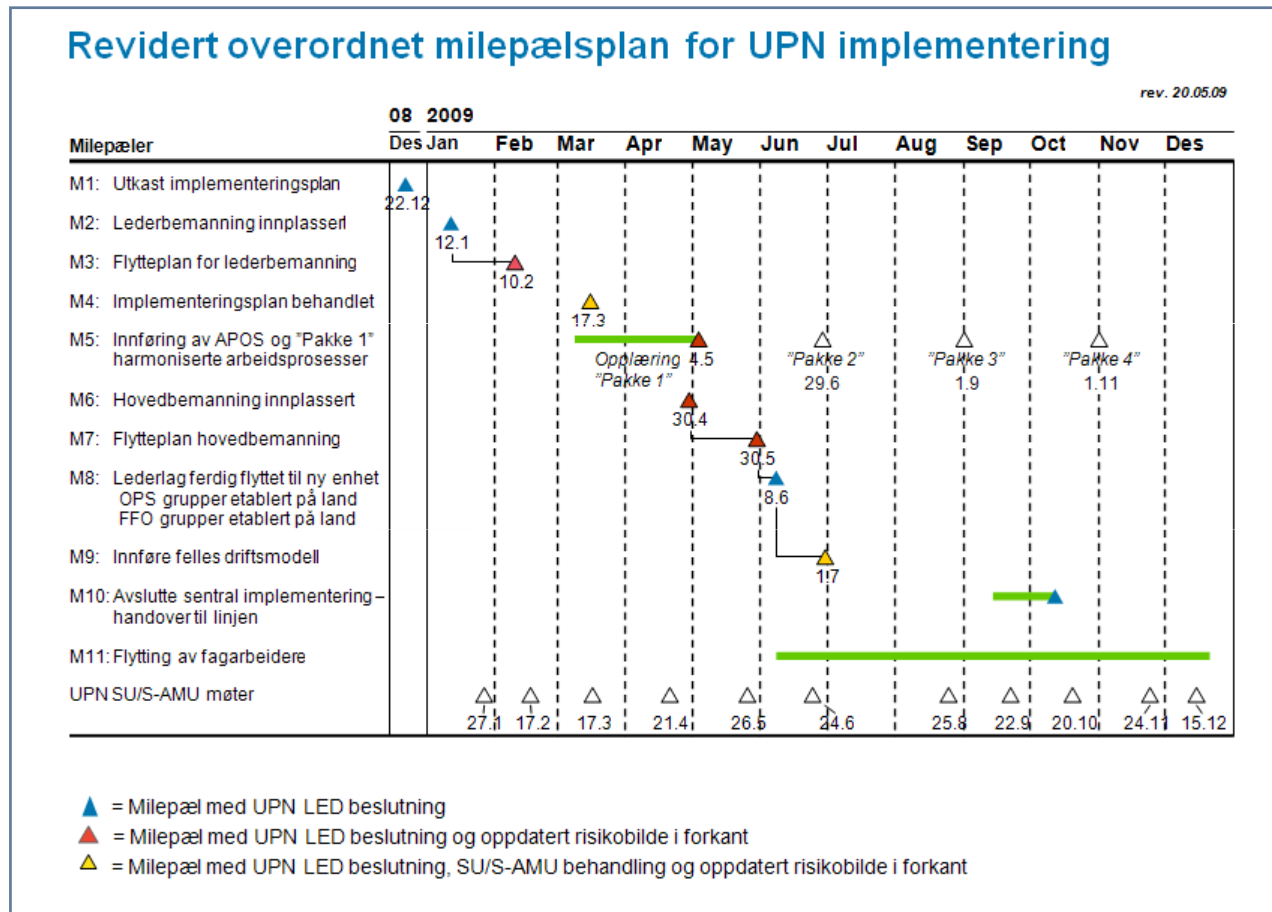
# Results

- Survey: Organizational safety indicators show a decreasing trend during change (bottom Oct 2009)
- Degree of change exposure have an impact on respondents (self reports of) safety performance (bottom Oct 2009)
- Trust dimensions show a decreasing trend (bottom Oct 2009). Trust in colleagues and immediate supervisor seem to increase in importance

# Results - Sequencing the change events

- Combination of "big bang" and stepwise change process
  - Development project, Risk and consequence analyses, Implementation project, Follow up project
- Long planning and implementation frames
- Putting together - puzzling - solving "sudokus"
- Early and continuous search for "blind spots"
- Organizational redundancy is created by providing:
  - Extra resources
  - Three weeks shift rotations
  - Tempo
  - Focus on core activities

# Example - implementation timeframe



# Results

- To secure appropriate installation specific competence was regarded as crucial and a challenge with regards to safety and regularity during the implementation process and may also constitute an intrinsic function of the new operational model (functional distrust)
- New manning and personnel rotation systems do not seem to decrease employees' sense of installation belonging (functional and identity based trust)
- Employees express a strong sense of being included when entering new installations. Hence, local identification does not appear to inhibit integration. It appears to contribute to integration, regularity and safe operations
- Identity based trust towards people near you does neither seem to inhibit overall company identification (not a either - or, but parallel processes)

# Results

- Onshore-offshore interface: A challenge to let tasks go from offshore to onshore personnel (functional distrust)
- More meetings between on- and offshore units - maybe at the expense of "hands-on-leadership" offshore
- Standardization may give higher predictability, but it remains to prove whether the new models yields higher efficiency and improved safety
- When having trained and integrated new personnel, the installation wants to keep them
- The new operation model seem to have made the company better rugged for future development and change processes

# *Discussion*

- Will it be possible to promote/permit cultural redundancy and requisite variety even if the system is standardized?
- How is suggestions of change (or deviations) being handled?
- How is variance in risk acceptance between employees or units to be treated?
- **Virtual organizations**
  - Often challenging - communication, cooperation and to reach a common overall understanding of a problem or situation
  - Risk perception and risk tolerance might be different in different units localised at different places
  - Virtual organizations might have longer time of incubation regarding potential incidents/accidents

# Discussion - safety culture and cultural redundancy

- To high degree of cultural conformism might have negative consequences for safety
- Potential benefits of rotation (standardized flexibility)
  - May promote cultural redundancy
  - May increase overall understanding, knowledge sharing and innovative thinking
  - Organizational learning - people with various mindsets meet
  - May yield “careful navigators”
- Challenges
  - “Nomads” - vulnerable to lack of knowledge and overall understanding
  - Steady personnel exposed to complacency or ‘blindness’
- Presupposes standardized flexibility higher degree of formal control?
- The balance between trust and control?

**Thank you for your attention!**

