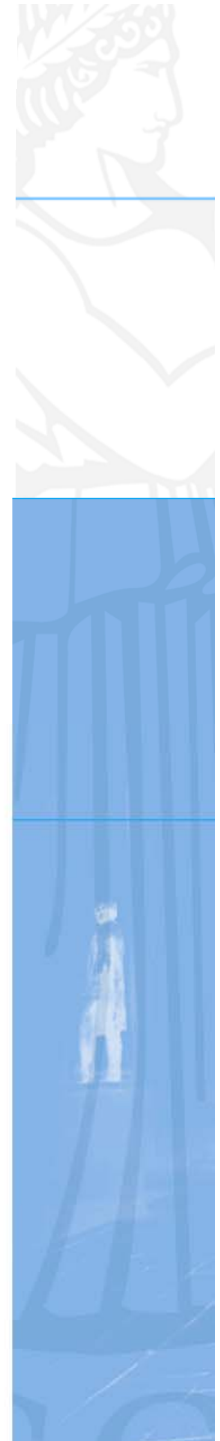


**A knowledge networking lens:
Making sense of intra-organizational
networks of practice**

Dissertation Defense for the Degree of Ph.D. October 26, 2007
Eli Hustad

Content

- About the dissertation
- Research motivation
- Research objective and research questions
- The knowledge networking lens
- Research setting
- Methodical approach
- The research publications
- A theoretical framework for making sense of intra-organizational networks of practice
- Contributions and implications



About the dissertation

AFFILIATION

- PhD program at the Faculty of Mathematics and Natural Sciences, Department of informatics
- The research group of Global Infrastructures
- Funded by and conducted at the University of Agder
- Supervisors: Professor Eric Monteiro, UiO
Professor Bjørn Erik Munkvold, UiA

CONTENT

- The thesis consists of six articles and an introduction chapter that synthesizes the findings
- Package of PhD courses



Research motivation

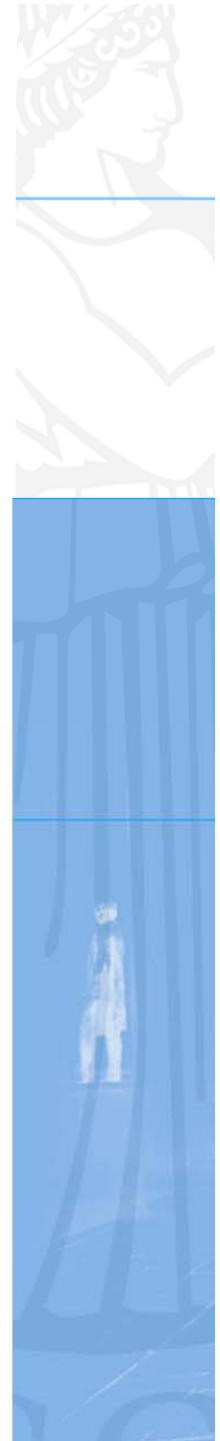
- theoretical motivation to bridge different research gaps identified in the literature:
 - to improve our understanding of a particular knowledge networking structure denoted as intra-organizational networks of practice
 - to understand central characteristics that differentiate these networks of practice and how ICT may facilitate their knowledge practices
 - to understand the impact of structural diversity and boundary spanning mechanisms in these networks
 - to understand how these networks might be cultivated to evolve and sustain over time
- personal motivation
 - Former research experience in the telecommunication corporation Ericsson did trigger a personal motivation and research interest for increasing the understanding of the phenomenon of knowledge networking and the role of distributed networks of practice in multinational companies

Research objective

- Generally: To improve our understanding of how multinational companies facilitate knowledge practices in the distributed work context to utilize their organizational knowledge potential
- Specifically: To improve our understanding of a particular knowledge networking structure denoted as *intra-organizational networks of practice*

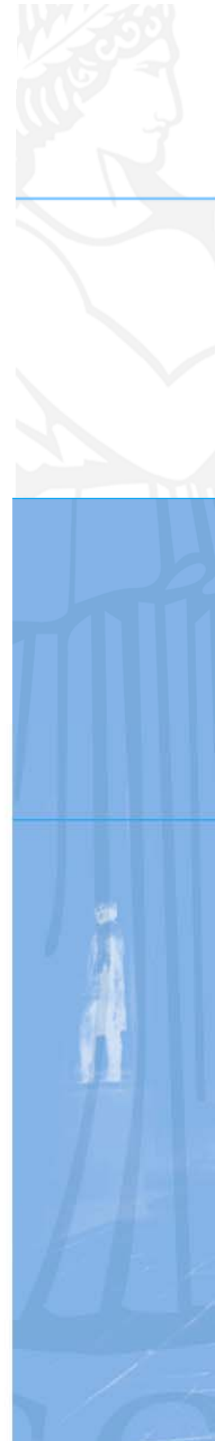
Main research questions

- RQ 1: What are the primary differentiating characteristics of intra-organizational networks of practice?
- RQ 2: How do intra-organizational networks of practice manage structural diversity to facilitate effective knowledge sharing?
- RQ 3: How do intra-organizational networks of practice evolve over time?



The knowledge networking lens

- Build upon four research areas and related concepts
 - Epistemology of practice
 - Situated learning theory
 - Intra-organizational networks of practice
 - Communities of practice
 - Viewing an organization as “a network of networks”
 - Boundary spanning literature
 - Boundary objects
 - Knowledge brokers
 - Boundary spanners
 - Information infrastructure literature
 - Cultivation
 - Evolution



The concept of intra-organizational networks of practice

- Build upon the definition of communities of practice (Brown and Duguid, 1991).

...consist of relatively tight-knit groups of people who know each other and work together directly...typically face-to-face communities that continually negotiate with, communicate with, and coordinate with each other directly in the course of their work...

- Intra-organizational networks of practice

...is an ICT facilitated dynamic relationship of geographically dispersed participants who share and create knowledge related to their daily work practices and business problems...

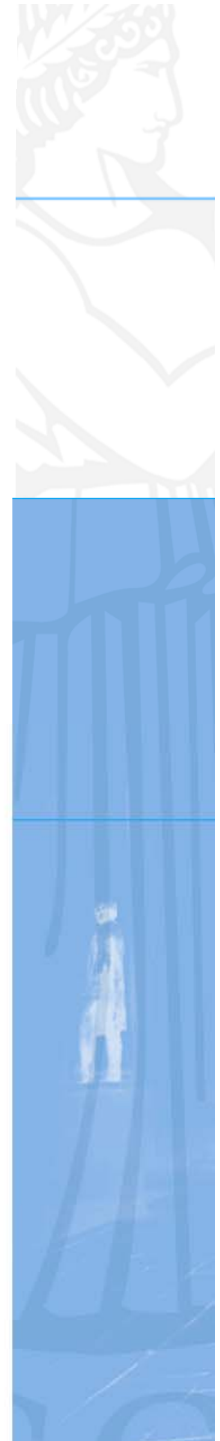


Table 1. Comparing communities & networks of practice

Communities of practice	Networks of practice
Emergent, self-organizing groups that share knowledge related to daily work practice	Concurrent with a community
Different from project teams and work groups	Concurrent with a community
Co-located groups	Geographically dispersed groups
Strong ties, tight-knit groups	Weak ties, loosely connected groups
Homogenous member composition, low degree of diversity	Heterogeneous member composition, higher degree of diversity
Danger of competence traps, and redundant knowledge	Exposed to several knowledge sources that may stimulate innovation
Shared, common base of knowledge	Combination of different knowledge bases
Share knowledge directly in face-to-face meetings	Share knowledge primarily through distributed interaction supported by ICT
Limited need to span boundaries (single community)	Knowledge brokering may be critical
Limited need for boundary objects (single community)	Boundary objects to manage the inter-community structure and geographical dispersion may be critical

Research sites

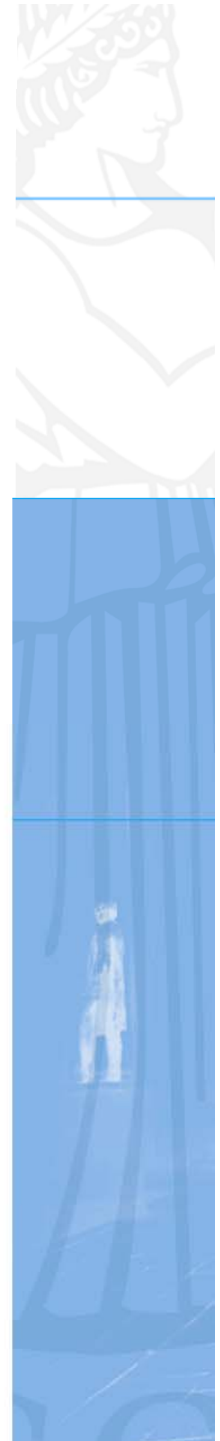
- Ericsson – introductory case study (telecommunication corporations)
- Insure (pseudonym) - main case study
 - Marine and energy insurance industry
 - 3 business divisions
 - P & I (protection and indemnity) association
 - Marine division
 - Energy division
 - Claims and underwriting activities
 - Insurance of all kinds of marine vessels
 - Insurance in oil and gas industry
 - Insurance in hull and machinery market

Methodical approach

- Philosophical hermeneutics of interpretive understanding (Gadamer 1976)
- Klein and Myers' principles (1999)
- Interpretive case study method
- Exploratory study
 - Insure – main case study
 - Ericsson - introductory case study
- Inductive data collection techniques
 - Interviews (main data source)
 - Insure: 38 interviews with 24 informants
 - Ericsson: 9 interviews with 6 informants
 - Observations (in Insure)
 - Secondary material
- Data analysis and interpretation
 - iterative cycles with new data collection
 - Writing analytical memos – creating thick descriptions
 - Categorization of themes from data sequences

Research publications

- Hustad, Eli. (2004). "Knowledge Networking in Global Organizations: The Transfer of Knowledge" in *Proceedings of the 2004 SIGMIS conference: Careers, culture, and ethics in a networked environment*. Tucson, AZ, USA, ACM Press. 55-64.
- Hustad, Eli and Munkvold, Bjørn Erik. (2005). It-Supported Competence Management: A Case Study at Ericsson. *Information Systems Management* 22(2), 78-88.
- Hustad, Eli and Teigland, Robin. (2005). "Taking a Differentiated View of Intra-Organizational Distributed Networks of Practice: A Case Study Exploring Knowledge Activities, Diversity, and Communication Media Use" in *Communities and Technologies 2005* P. van den Besselaar et al. (eds.), The Netherlands, Springer. 239-261.
- Hustad, Eli. (2006). "Mediated Communication Behavior in Distributed Networks of Practice" in *Cooperative Systems Design: Seamless Integration of Artifacts and Conversations- Enhanced Concepts of Infrastructure for Communication*. P. Hassanaly et al. (eds.), The Netherlands, IOS Press. 148-163.
- Hustad, Eli. (2007a). "A Conceptual Framework for Knowledge Integration in Distributed Networks of Practice. *Proceedings of the 40th Annual Hawaii International Conference on System Sciences* Computer Society Press. 10 pages.
- Hustad, Eli. (2007b). "Managing Structural Diversity: The Case of Boundary Spanning Networks. *Proceedings of the 8th European Conference on Knowledge Management*", Academic Press. 492-498.



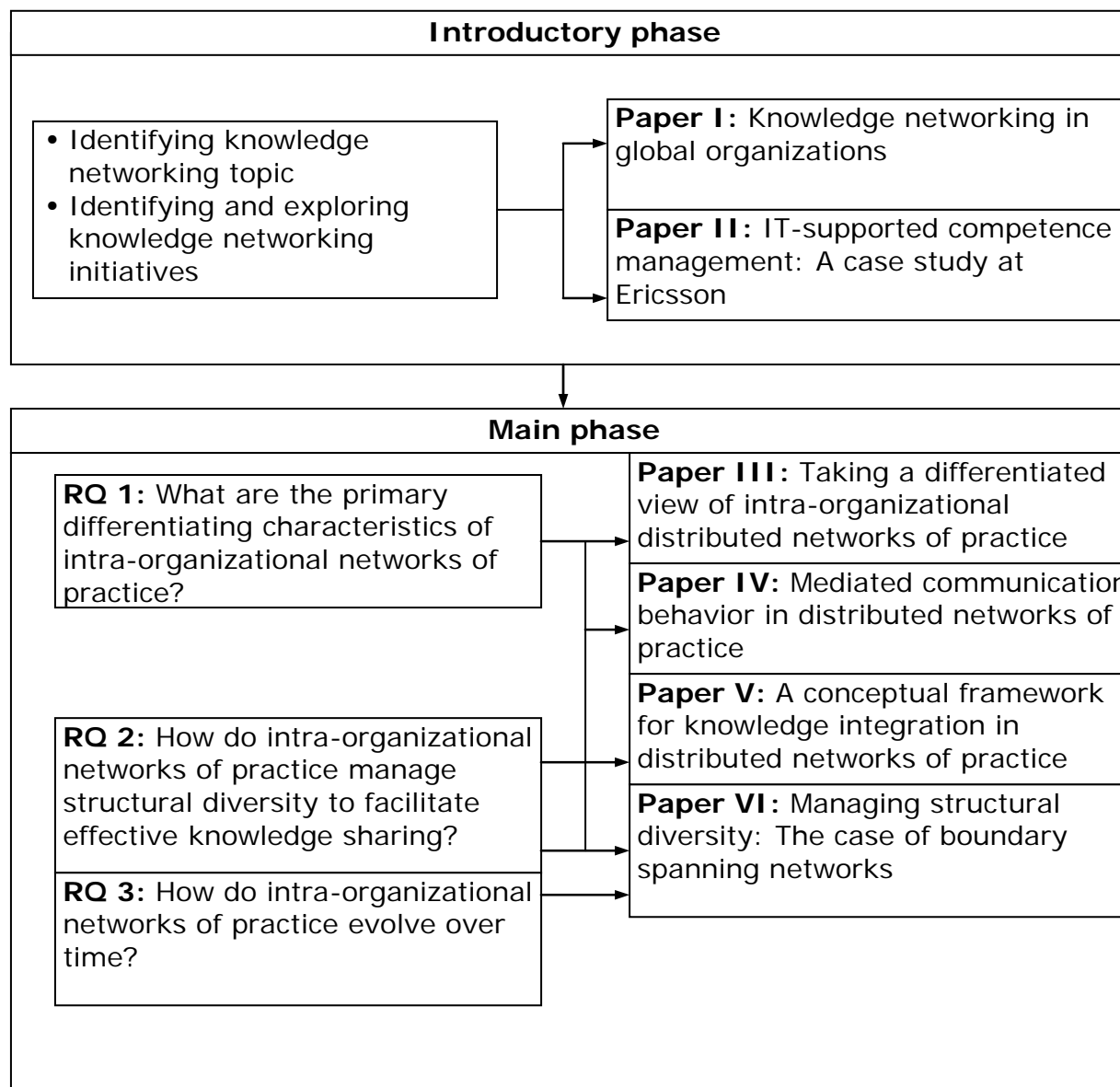


Figure 2:
Relationship between the research questions and the publications

Key findings and contributions

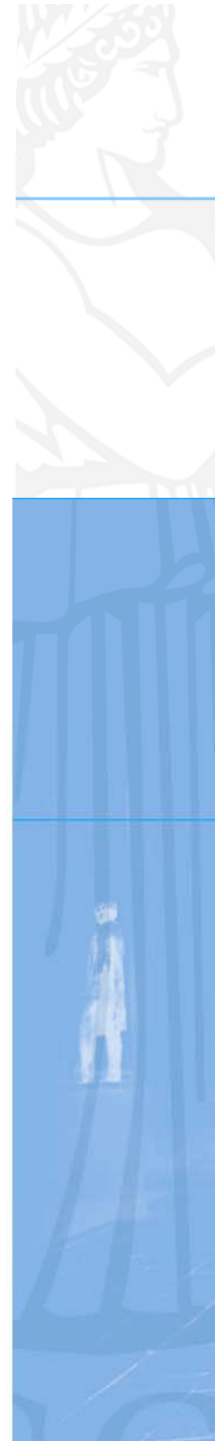
- The thesis develops a theoretical framework that improves our understanding of intra-organizational networks of practice
- The framework consists of four different categories in which each make a contribution to current bodies of research
 - Structural diversity
 - Mediated communication behavior
 - Boundary practices
 - Evolution patterns
- Theoretical contributions:
 - Communities and network of practice research
 - The boundary spanning literature
 - Information infrastructure literature
- Implications for practice
 - how to cultivate knowledge networking
 - Boundary management
 - Implementation of ICT in distributed networks
 - Organizational design

Three categories of networks

Network of practice	Category of network	Outcome
Contract consultancy network (<i>Insure</i>) Experience engine (Ericsson)	Problem solving networks	Learning
Underwriting networks (<i>Insure</i>) Claims handling network (<i>Insure</i>)	Business improvement networks	Incremental innovation
Product development network (<i>Insure</i>)	Innovation networks	Incremental / radical innovation

Evolution patterns in four networks

- Problem solving network – the contract consultancy network –
 - a short life cycle
 - started and dissolved during the study
 - Poor motivation to contribute
 - No coordinator was appointed
- Business improvement network – the Underwriting Networks
 - integration of knowledge practices through cross-network interaction proposals
 - perspective taking mechanisms
- Business improvement network - Claims handling network
 - recursive patterns where new ad-hoc networks emerged from the mother network
 - coordinator had boundary spanning role
- Innovation network – the Product Development Network
 - innovation in customer services
 - expansion in scope and size
 - Two coordinators acted as brokers and boundary spanning roles



Boundary practices

- Boundary objects
 - ICT artifacts – knowledge repositories and knowledge management documents
 - Technological artifacts – maritime laws, target lists (market interests)
 - Intangible artifacts – concepts (e.g. legal opinion)
- boundary spanning processes: email, video-conferencing, audio-conferencing supported the
- Boundary spanning roles: coordinators of the networks had important brokering and boundary spanning roles
 - transferring knowledge between different co-located networks
 - bringing resources into the network from the organization
 - crossing the organizational boundary and bringing ideas from the market into the network (e.g. product dev.)



Conclusion

- The thesis contributes to communities and networks of practice literature by moving beyond the traditional perspectives within this body of research
- the networks identified in this study are heterogeneous, structurally diverse and dynamic
- three categories of networks were identified
- these networks exhibit different evolution patterns
- Contributes to IS research by identifying ICT artifacts as boundary objects that emerged from practice
- Ericsson study contributes to IS research by providing knowledge about different challenges and benefits while implementing a global competence management IS.
- The potential role of IS in proactive competence management is highlighted
- How this kind of KMS may give rise to the emergence of new communities of knowing
- contributes to information infrastructures by conceptualizing intra-organizational distributed networks of practice as a knowledge networking structure that facilitate distributed collective practices

