



Transformation of knowledge flow in
globalizing regional clusters

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[Structure]

- Background
- Challenges
- Research agenda
- Two diverging strategic narratives within the maritime leadership
 - "The regional cluster"
 - "The global cluster"
- Conceptualising implications

[Background]

- Innovative ways of sharing knowledge in global and local networks are emerging as fundamental assets in modern capitalism ((Asheim and Cooke 1999, Asheim and Isaksen 2002, Dunning 2000: 195–208, Held (ed.) 2004, Bathelt, Malmberg and Maskell 2004, Bathelt 2005, Cooke 2005, Claes et al 2006: chapter 8, De Propris, Menghinello and Sugden 2008, Gupta and Subramanian 2008, Hervás–Oliver and Albors–Garrigós 2008, Lorentzen 2008, Semlinger 2008)).
- In regional clusters, globalisation thus poses new challenges to cluster–based firms in terms of being participants in multiple knowledge networks on multiple geographical scales (Gereffi 2003, Chiarvesio, Di Maria and Micelli 2003, Gupta and Subramanian 2008, Semlinger 2008).

[Background]

- Globalisation attach economic activity in clusters to more tightly woven and global production networks, market networks and knowledge networks (Porter 1998, Enright 2000, Bathelt et al 2004, Hervik et al 2004, 2007, Andersen, Bøllinghof and Christensen 2006, Andretsh and Lehmann 2006, Gertler and Wolfe 2006, Steiner 2006).
- MNE affiliates constitute the most important channel for transfer and diffusion of global knowledge between and inside clusters (Hervás–Oliver 2008, Cooke 2005).
- In a global world economy, a region cannot on its own contain a full ensemble of related industries and services to underpin a self-sufficient base for an innovative system (Nachum and Keeble 2003, Gertler and Levitte 2005, Gertler and Wolfe 2006).
- The positive effects of globalisation on knowledge sharing feature strongly in recent research (Cooke 2005, De Propriis, Menghinello and Sugden 2008, Gupta and Subramanian 2008, Hervás–Oliver and Albors–Garrigós 2008, Lorentzen 2008).

Challenges

- Globalisation accelerate institutionalisation of new forms of collaboration and knowledge flow in **clusters** (Andersen and Christensen 2005, Andersen et al 2006, Christophersen and Clark 2007, Lorentzen and Mankhe 2002, Semlinger 2008).
- Global corporations establish activity in clusters based on their own corporate managerial and **administrative models** (Asheim and Herstad 2003, Andersen et al 2006, de Martino et al 2006).
- Institutional tensions and dualities in regional clusters between the “hierarchy” and its weight on dissemination of formal encoded knowledge, and the cluster “milieu” which is more dependent on **diffusion of tacit knowledge** (Lam 1998, Grandinetti and Tabacco 2003, Asheim and Herstad 2003).

[Research agenda]

- Globalisation expose the horizontal flow of tacit and formal knowledge to asymmetries and closing mechanisms?
- In – depth interviews, company background studies and cluster analysis expose diverging perspectives among central actors on the maritime clusters' changing *geographical scope*, *social capital* (cooperative relations) and *innovative capacity*.
- Ordering narratives reveal different strategic and simultaneously ambiguous frameworks for interpretation of globalisation and thus for decision–making processes (Doolin 2003).
- Means of handling globalisation in the form of complex processes of negotiation between local and global strategies (Haarstad and Fløysand 2007, see also Boje 2001, Moen 2006, Squire, Andrews and Tamboukou 2008, Czarniawska 2008 for different narrative approaches).

A regional cluster in transition (1)

- The cluster's *geographical scope* is changing. Increasing globalisation
- Success in terms of cooperative patterns and knowledge sharing (Hervik 2000, Hervik et al 1998, 2003, 2004, 2007)
- *Social capital* seems to be maintained and strengthened
- The cluster has developed its *innovative capacity*
- A coherent and consistent story of a globalising cluster strengthening the local capabilities and interactive learning
- The picture presented above is in itself an important meta-narrative of the present cluster and its transition

[Cluster in transition (2)]

- “I think that the conceptualisation of the cluster as a “regional” cluster has probably never been quite correct. Some of the best design– and production environments are found outside the region. It is more appropriate to speak of a regional cluster in terms of the Western part of Norway, and also more national. It is at the same time global, and we share knowledge through global networks. It is an open cluster with basic competences and production locally, but the cluster is in terms of knowledge sharing a much wider phenomenon”.
- “On the other hand, there are some problematic sides. Internationalisation and globalisation has fostered a kind of specialisation of knowledge networks, so that the cluster is growingly consisting of a range of professionalized sub–clusters. In a cluster milieu perspective, therefore, networks are becoming more closed and exclusive. The cluster consists of more parallel networks than hitherto, but this is my subjective opinion”.

['The regional cluster' (1)]

- The interviewees place a specific emphasis on flow of knowledge through open horizontal channels (logistics would say vertical) and social networks.
- Although some vital technological steps forward have emanated from vertical relations, the horizontal networks within a regional geographical scope are in general more important
- Horizontal networking has also been essential in order to take advantage of global opportunities, for example during the 1980s

['The regional cluster' (2)]

- “A vision or idea was developed horizontally in the milieu. A prototype emerged through this interaction. This was a process foregoing any contract, where actors took risks trusting the networking tradition and capacity. The next step was formalising a design and delivery contract with a central global actor, and for our company this resulted in deliveries of highly specialised equipment. The global connection was an essential player in this process, not only in terms of being an important customer, but also in terms of competences”.

['The regional cluster' (3)]

- Strong norms for knowledge sharing. Low distance between capital and labour and between management and labour. Ideas can be voiced and heard at all levels
- Flow of tacit knowledge drives innovation and rests on a territorially proximate production environment
- Consistent with recent research. Regional clusters represent forms of knowledge represented in a complex and interconnected form.
- As memory systems, clusters are characterised by localised practices, routines and norms of interaction among members (Camagni and Capello 1998, Porter 1998, Enright 2000, Andersen and Christensen 2005, Gertler 2003, 2004, Camagni 2005, Malmberg and Power 2005, Asheim, Cooke and Martin 2006, Malmberg and Maskell 2006).
- Strong interdependencies among firms and organisations may evolve based upon sharing knowledge, for which no market mechanisms exist (Granovetter 1992)

['The global cluster' (1)]

- “It is fair to say that resources are growingly channelled into strategically governed R&D projects. There is a need to protect information and thus sustain the integrity of partners. The tricky question is, then, what is in it for the cluster environment. This is somewhat a dilemma. It is not a new phenomenon, of course, this has happened before. But it is more systematic, formalised and exclusive now. Globalisation puts the traditional knowledge infrastructures under an enormous pressure. The most essential question of all will be to what extent the cluster can maintain this infrastructure unless it is connected to a substantial local production environment. Nevertheless, innovative capacity is increasingly stemming from global networking and must be sought in external links to customers and markets.”

['The global cluster' (2)]

- Global actors (outward and inward) are important institution builders
- Add vital knowledge to the cluster via their global networks
- International knowledge of vital importance
- Innovation structured through in-house innovation models. "Packages of solutions". Take it or leave it?
- Flow of knowledge through more exclusive global pipelines
- The cluster becomes more dependent on the motives of the major actors and their internal strategies (dependency structures vs. asset augmenting structures)
- Flow of tacit knowledge, the regional production milieu and the open membership is downplayed at the expense of national and global expert systems

['The global cluster' (3)]

- Cluster studies may qualify this narrative. Knowledge flow and innovative capacity may increasingly be dependent on power relations in firm networks and global networks (Christophersen and Clark 2007, Kristensen and Zeitlin 2005).
- Powerful actors are also removing resources from the region via rationalisation and restructuring rather than inducing regional growth (Boschma and Lambooy 2002, Dawley 2007, Christophersen and Clark 2007).
- Due to international competition and the pressure to reduce risks and costs, they also have to focus on innovations that they can control and render new products with large potential growth in the short term (West and DeCastro 2001)

Conceptualising implications (1)

- There is a broadly shared story of “the regional cluster”. Of specific value in the regional narrative is that cluster dynamics rest heavily on horizontal open-ended networking, a wide production environment and that the open flow of knowledge is a fundament in the regions social capital
- Aligned with cluster theories and recent cluster studies it is paramount that the regional narrative maintains its strength as an ordering and sense-making narrative among the regional leadership and within related discursive fields

Conceptualising implications (2)

- Knowledge sharing promotes innovation through forms of coordination for which no market mechanism nor hierarchical structure can suffice
- Simultaneously, cluster development will increasingly be depending on strategy formation and implementation inside the “hub” firms
- The global narrative demonstrates increasing weight on formal knowledge and national and global expert systems and the regional ‘glue’ is downplayed
- The narrative reconstruction signals that actor-based models are in circulation that may deviate from some widely accepted theoretical frameworks
- The research thus argues for a wider and more open discourse within different discursive fields on globalisation and knowledge sharing in globalising regional clusters