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The use of clusters as a tool for system innovation

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System innovation – a re-cap

What is it?

System innovation is a concept to illustrate a horizontal policy approach that mobilises technology, market mechanisms, regulations and social innovations to solve complex societal problems in a set of interacting or interdependent components that form a whole 'socio-technical system'

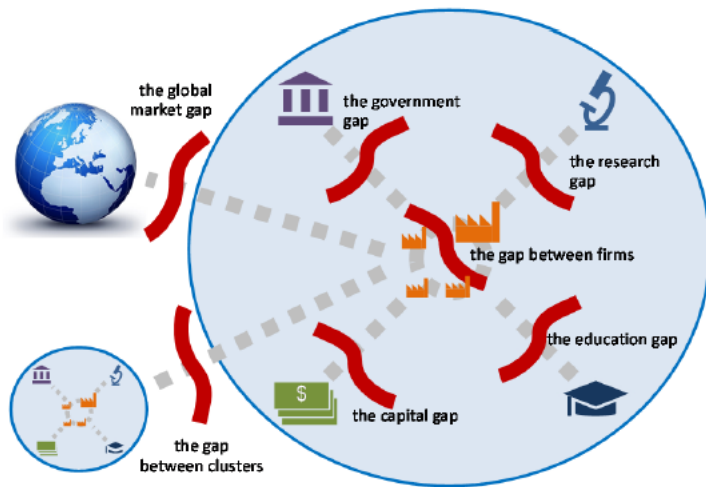
What's new?

- Changes/transitions in 'whole' socio-technical systems
 - Technological innovation + innovations in organisations and institutions
 - Production + use/consumption of knowledge
- Longer-term, problem-oriented processes focused on addressing systemic problems
 - Reliant on engagement/ inclusiveness of broader range of stakeholders
 - Reliant on leadership and a shared societal vision
- Role of government/policy as coordinator/facilitator + enabler of transitions delivering on social needs



Cluster policy addresses system (or coordination) failures

Clusters address seven "innovation gaps"



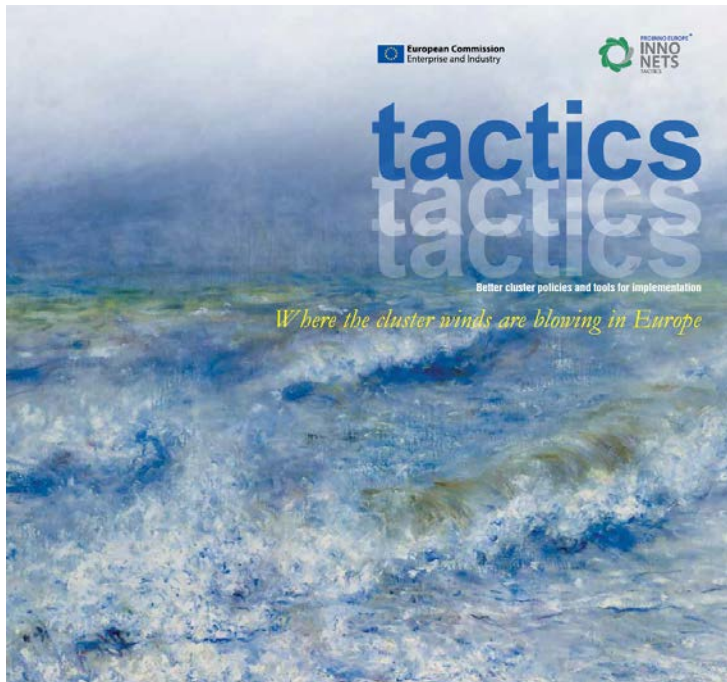
Source: Lindqvist, Ketels and Sölvell (2013),
The Cluster Initiative Greenbook 2.0

The stated objective of cluster programmes (examples):

- **Denmark:** The objectives innovation networks are to **strengthen public-private collaboration and knowledge transfer** between public universities and private companies on research and innovation, thus promoting knowledge-based growth in business and industry.
- **France:** The goal of competitiveness clusters is to **build on synergies and innovative, collaborative projects** in order to give partner firms the chance to become first in their fields, both in France and abroad.
- **Germany:** The Leading-Edge Cluster competition supports high-performance clusters formed by business and science that enter into **strategic partnerships which boost Germany's innovative strengths and economic success**.
- **Sweden:** VINNVÄXT's mission is to promote sustainable regional growth by developing internationally competitive research and innovation milieus in specific growth fields. **Effective regional innovation systems speed up industrial and business renewal towards innovation-led sustainable growth.**

Cluster initiatives are organised efforts focused on improving interaction/collaboration between multiple actor groups in (geographically co-located) sectoral/thematic areas – in order to foster or speed up innovation/renewal processes, growth and competitiveness

Trends in cluster policies



Available for download at:
<http://www.vinnova.se/en/Publications-and-events/Publications/Products/Where-the-cluster-winds-are-blowing-in-Europe/>

TACTICS report (2012) analysed cluster policies in 17 countries, identifying four main trends:

1. Evolution of the concept of clusters as a policy tool

- Industrial productivity/efficiency, innovation AND economic transformation
- Evolution from local/industry-specific to broader platforms for collaboration

2. Opening innovation processes through clusters

- New types of partners (e.g. users/civil society, other clusters)
- New geographies of partners (e.g. inter-regional and international)

3. Smart implementation and integration of cluster-related policies

- Portfolios of clusters (support to both existing and emerging)
- Synergies across policy areas ("use" of clusters to achieve other policy objectives)

4. Continued strengthening of cluster initiatives

- Continued efforts to bridge existing gaps
- Evaluation of performance (both of management and economic factors)



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Clusters in the context of system innovation

System innovation challenges

- Improved governance mechanisms and better means of engaging a range of stakeholders are needed to facilitate longer-term systemic processes
- The complexity of system innovation requires a more holistic design and coordination across governments and innovation ecosystems; Multi-stakeholder engagement and foresight can help create a shared vision and inform policy action
- System innovation requires the sequencing and adaptation of policies with the different stages of transition – understanding and managing barriers (or resistance) to change

Possible use of clusters

- ***Mobilisation and process management***
Use of cluster organisations* to foster participatory approaches and manage longer-term transitions
- ***Linkages to and coordination between systems***
Use of cluster organisations* to help with coordination and vision-setting within and across innovation ecosystems
- ***Informants and advocates across policy areas***
Use of cluster organisations* to identify barriers/windows of opportunity during transition process and inform policy action (across policy areas)

**Cluster initiatives are increasingly managed by specialised institutions, known as cluster organisations, which take various forms, ranging from non-profit associations, through public agencies to companies.*



Some regions/countries are already experimenting...

- **Region Skåne**

VD nätverk (the managers of the region's "open innovation arenas") leveraged as sparring partners, initiators and process managers of broader collaborative initiatives that address identified actions/challenges within the region's prioritized innovation/S3 areas

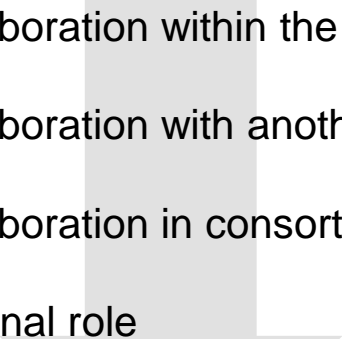
- **VINNOVA**

Clusters have been instrumental in mobilising actors and forming the partnerships in programmes for challenge-driven innovation and strategic innovation areas

- **Innovation Norway**

Programme management of Norwegian Innovation Clusters working pro-actively with cross-clustering activities to foster renewal and transformation (as well as targeting/leveraging clusters in other innovation programmes)

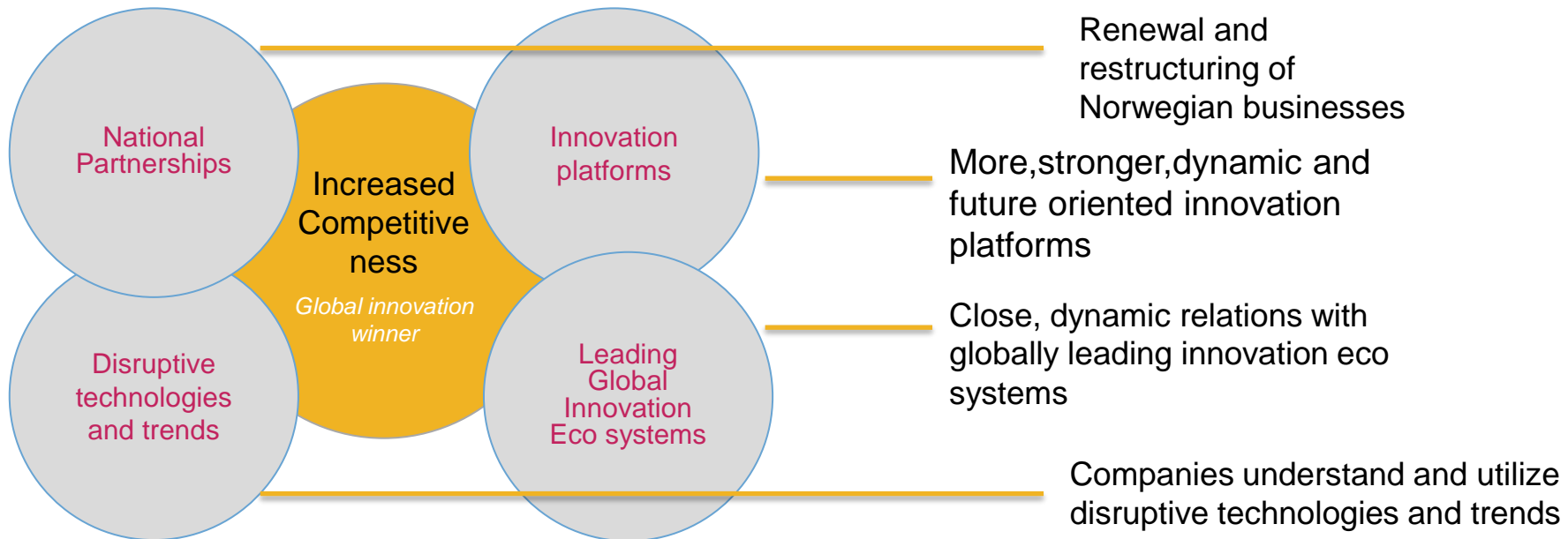
DEVELOPMENT STAGES FOR COLLABORATION WITHIN AND BETWEEN CLUSTERS

- 
- ❖ Collaboration within the cluster
 - ❖ Collaboration with another cluster
 - ❖ Collaboration in consortiums
 - ❖ National role

Clusters are also in a position
to take national responsibility
for further developing
Norwegian businesses



PROJECT : GLOBAL INNOVATION WINNERS THE CLUSTER'S CONTRIBUTION – FOUR FOCUS AREAS



Additional reflections

- We see clusters being "used" to address other policy objectives (e.g. SME internationalisation, development of new value chains, interregional cooperation/smart specialisation)
 - Do the cluster organisations/process managers have all the necessary capabilities and resources?
 - Any risks to being used as "a multi-purpose tool" (e.g. diverting focus and resources away from core purpose, not being able to meet additional expectations, or burn-out)?
- It seems that clusters (or a certain segment of "mature platforms for collaboration") are becoming a more stable part of the innovation support infrastructure in certain geographies
 - Is this type of long-term, collaborative platform and process management function needed/desirable?
 - If so, what implications may this have on existing cluster programmes (and state aid rules)?

