

What is *regional* in regional clusters? The case of the globally oriented oil and gas cluster in Agder, Norway

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Why this paper?

- Spatial clusters are no longer mainly 'regional' phenomena
- However, the phenomenon of spatial clustering persists and is deepening (and changing) in the global economy
- An obvious question: What remain of 'regional factors' in stimulating innovation activities in spatial clusters in a global economy?
- Approach: A theoretically informed case study of the oil and gas equipment supplier industry in Agder


Analytical framework

| Firms' main type of external knowledge sources | Main mode of learning in firms | |
|---|--|--|
| | ← Continuum → | |
| | Experience based (DUI) | Science based (STI) |
| Individual actors (network relations) | Sparring relations with customers and suppliers | R&D cooperation with knowledge organisations |
| Common knowledge pool (agglomeration dimension) | a) a specialised labour market, b) local buzz, c) technology centres | a) HEIs and R&D-inst. (for recruitment), b) 'virtual laboratories' |

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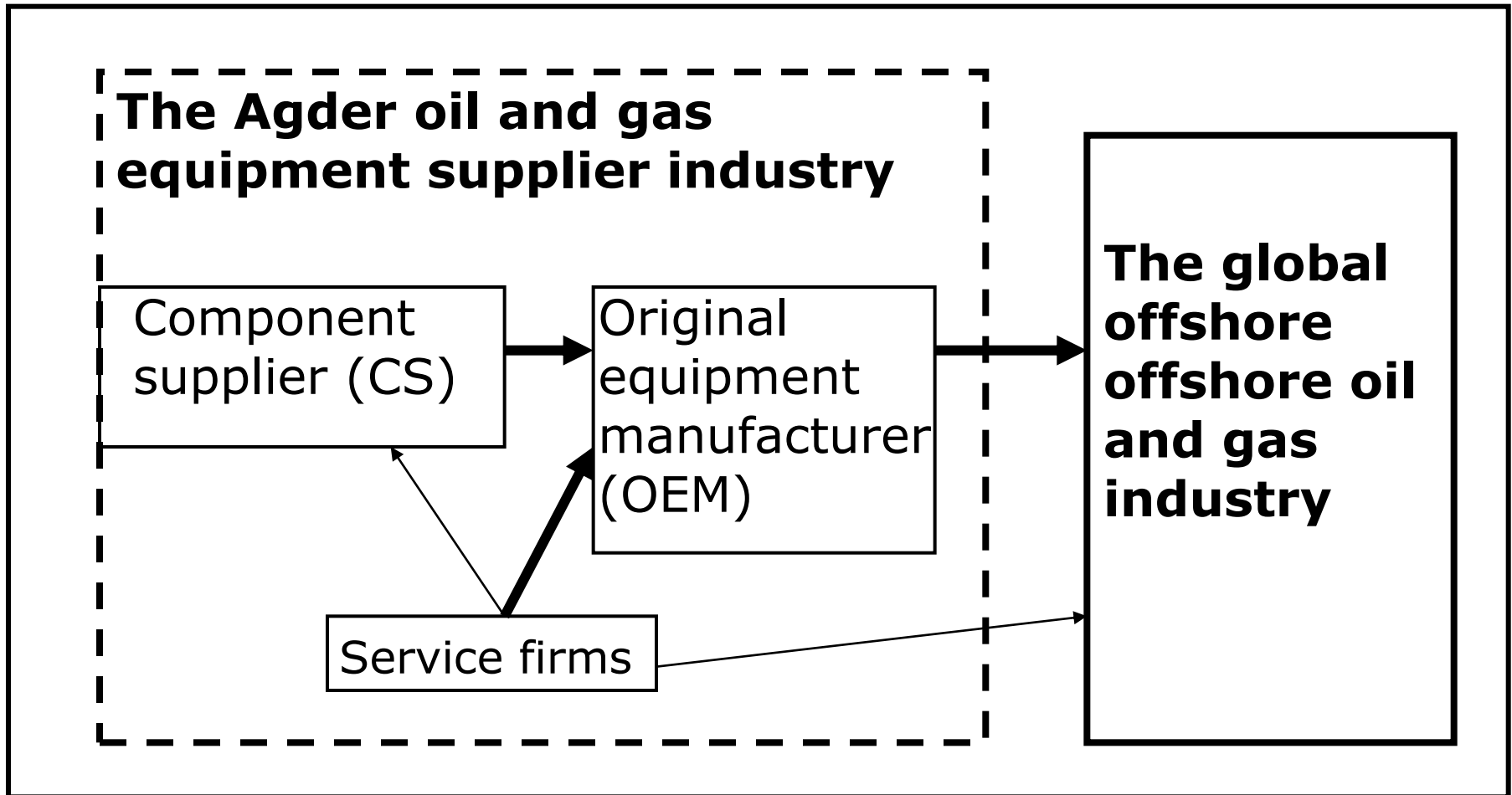
Theory led research questions

- The empirical investigation of the oil and gas equipment supplier industry in Agder has three main research questions:
 1. What characterises the mode of learning in different types of firms in the industry?
 2. What are the important external knowledge sources for firms with different modes of learning?
 3. What are the most important local knowledge sources and other factors that stimulate firms' innovation activity?

Empirical context and data

- The oil and gas equipment supplier industry, Agder, Norway
- Ca. 45 firms, 6000 jobs
- Nearly half of the firms owned by MNCs
- World leadership in some product niches
- Main data sources:
 - 12 firm interviews
 - Two surveys; 2007 and 2009, response rates 51 and 90

The production system



Main mode of learning in firms

Experience based (DUI)

Science based (STI)

Component
suppliers

Original equipment
manufacturer

Service
firms

Important external knowledge sources for firms' innovation activity. Max score = 3

| | Customers | <i>Local</i> know- ledge org. | <i>Extra- local</i> know- ledge org. | <i>Local</i> industrial milieu | <i>National/ intern. industrial milieu</i> |
|--------------------|-----------|--|--|--------------------------------------|--|
| OEMs | 2,4 | 1,1 | 1,1 | 1,3 | 1,8 |
| Comp. suppliers | 2,7 | 0,9 | 0,8 | 2,0 | 2,0 |
| Service firms | 2,4 | 1,4 | 1,3 | 1,6 | 2,0 |

The main picture

- *Internal* R&D-and innovation activity much based on know-how
- Adaptation of solutions to demanding *global* customers
- A specialised *local* labour market

Main challenges

| Firms' main type of external knowledge sources | Main mode of learning in firms | |
|---|---|--|
| | Experience based | Science based |
| Individual actors (network relations) | 3. Component suppliers have to develop more sparring relation to local | 1. OEMs need more innovation coop. with knowledge org? |
| Common knowledge pool (agglomeration dimension) | OEMs to upgrade their production? | 2. The Agder region has to upgrade its knowledge infrastructure to embed more science based OEMS? |