# Cluster Mapping: Creating the Knowledge Infrastructure for Accelerating Innovation and Entrepreneurship

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**EU Cluster Portal** 

### **Research About Clusters**



## "Cluster Mapping"

# **Cluster Mapping: The Method**

- 1. Classify industries by their geographic footprint
  - Traded geographically concentrated
  - Local present everywhere

#### 2. Group traded industries into cluster categories

- Co-location of employment and establishments
- Similarities in skill use (national)
- Input-Output linkages (national)
- 3. Group clusters
  - Data on weaker linkages to track relationships across clusters



- Reflect fundamentally different competitive dynamics that matter for policy
- Are more informative on actual economic linkages and similarities than traditional groupings by technology, policy priority

- Critical for development paths, while clusters are key for current performance
- Unique allocation of all narrow industries to one cluster category
- Aggregation of data into indicators by cluster category and location (establishments, employment, wages, patents, skills,...)
- Can be linked to location-specific outcome data

### Linkages Across Clusters / Emerging New Clusters

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Computer consultancy activities			Manufacture instruments a appliances fo measuring, tes Informastic Analytic	of nd Man r el cor m Technolo cal Instrum	ufacture of ectronic mponents ogy and ents	Other telecommunications activities Communications Equipment and Services	
Business Services		Other information		Manufacture of	lanufacture of Wireley		Manufacture of
Computer programming activities		computer service activities	Other software publishing	computers and le peripheral equipment Manufacture of optical instruments and photographic equipment	Manufacture of consumer electronics	telecommunicat activities	communication equipment Satellite telecommunications activities
			Manufacture of other specialpurpose machinery n.e.c. Production Technology and Heavy Machinery		Plastics Manufacture of other plastic products		Manufacture of tools Metalworking Technology
	Wholesale of computers,	Wholesale of	Manufacture of other generalpurpose machinery n.e.c.				Treatment and coating of metals
Distribution and Electronic Comm		telecommunications merce <sup>d</sup>					Book publishing
Wholesale of other machinery and equipment		parts	Manufacture of Lighting and Elecc electricity distribution and control apparatus	trical Equipment	Medical Devices and dental instruments and supplies		Marketing, Design, and Publishing
	Wholesale of electrical household appliances	Wholesale of other office machinery and equipment		other electrical equipment			Market research and public opinion polling

#### **Digital Industries**

# What data is now available?

### Production Technology Clusters in Europe Relative Employment Specialization



### Midtjylland (DK) Cluster Portfolio





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# What do we learn from the data?

### **3000 Strong Clusters Across Europe**



#### NUMBER OF STRONG CLUSTERS BY PERFORMANCE STARS

### **Clusters and Economic Performance**



## **Clusters and Entrepreneurship**

• 67 700 gazelles in traded industries in Europe employ 1.9 million workers or 1.6% of all employees



- 25 000 or 38% of all trade industry gazelles are located in strong clusters; gazelles are as concentrated geographically as overall employment
- Gazelles in strong clusters account for 46% of all gazelle employment; they employ 35 employees on average compared to 24 in gazelles elsewhere

### **Profile of Regions by Emerging Industry Strength**



# How does it matter for policy?

# From Cluster Mapping to Cluster-Based Policies

Cluster mapping data provides critical intelligence to guide policy action



- How does industrial composition (what) and performance within specific industries (how) contribute to a location's overall economic performance?
- What clusters can specific policy programs, for example on entrepreneurship, leverage in a given location to enhance impact
- What **opportunities for industrial upgrading do specific locations have** given their unique cluster portfolio and neighboring locations?
- Where are the hotspots of specific industries, clusters, or groups of related clusters that make them **the most suitable locations for cluster-specific programs**?

## **Types of Government Interventions in Clusters**

- Direct intervention at the firm level
  - Attraction of firms
  - Subsidies, directed credit

- Investments in the clusterspecific business environment
  - Specific to the cluster
  - Benefiting the cluster but part of a general upgrading strategy

High short-term impact/High distortion/low productivity impact

Long-term impact/Low distortion/high productivity impact

- Intervention into the market
  - Provision of monopoly rights; Entry/trade barriers
  - Demand subsidies

- Enable collaboration with and within the cluster
  - Support for cluster initiatives
  - Active engagement with the cluster in setting and implementing policies

#### **LEVERAGE CLUSTERS!**

#### **CREATE CLUSTERS?**

# Policies for Entrepreneurship and Innovation: What Role for Clusters?

- Cluster data as a key part of the diagnostics to identify locations and fields of economic activities that promise the highest returns for policy action
- Clusters as an organizing principle to bundle traditional entrepreneurship and innovation programs with other complementary policy tools for strengthening firm level performance
- Cluster organizations as key partners in designing and delivering entrepreneurship and innovation programs