



The determinants of the science-based cluster growth

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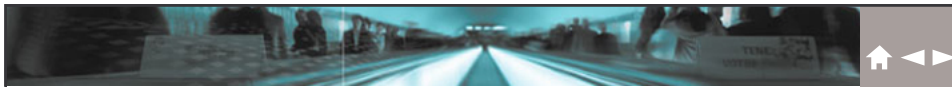
Mancef Conf., August 2010, Albuquerque, USA



About Grenoble Ecole de Management

- Fully accredited business school, AACSB, EQUIS, AMBA
- Major player in Europe; amongst the 50 best business schools in Europe
- About 5,000 graduate students, MBA, DBA, Ms
- Specialised in Management of Technology and Strategic Management of Innovation
 - Expertise in high tech (bio, nano, TT, energy) and in cultural industries
 - Specialised curricula from 1 week to 3 years
- Group working on nanotechnologies in close relation with the regional and European eco-system





Motivation, intuitions

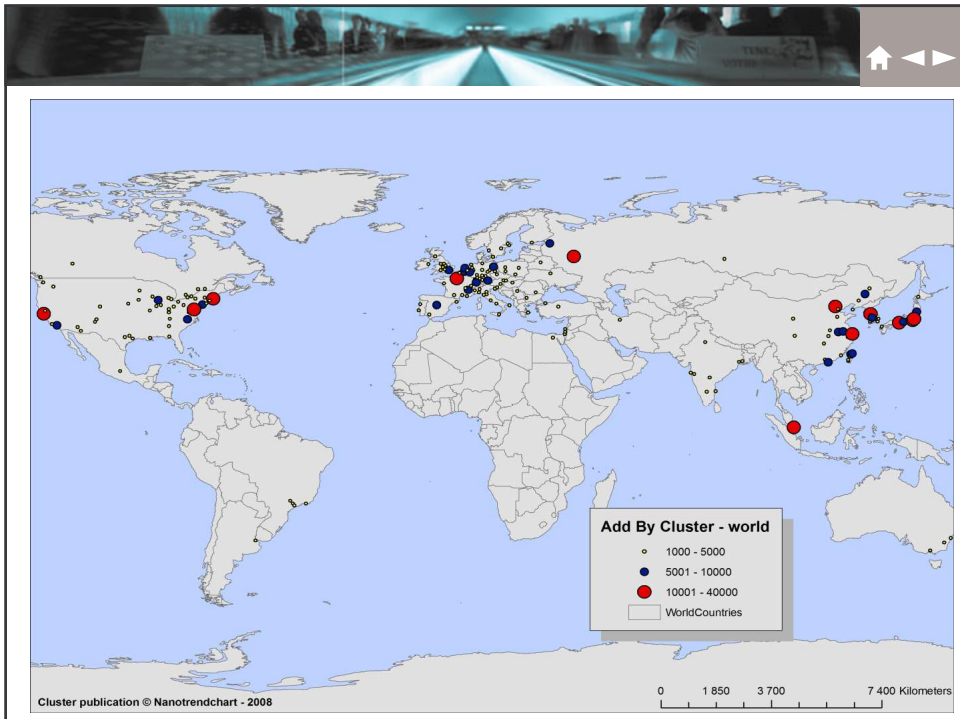
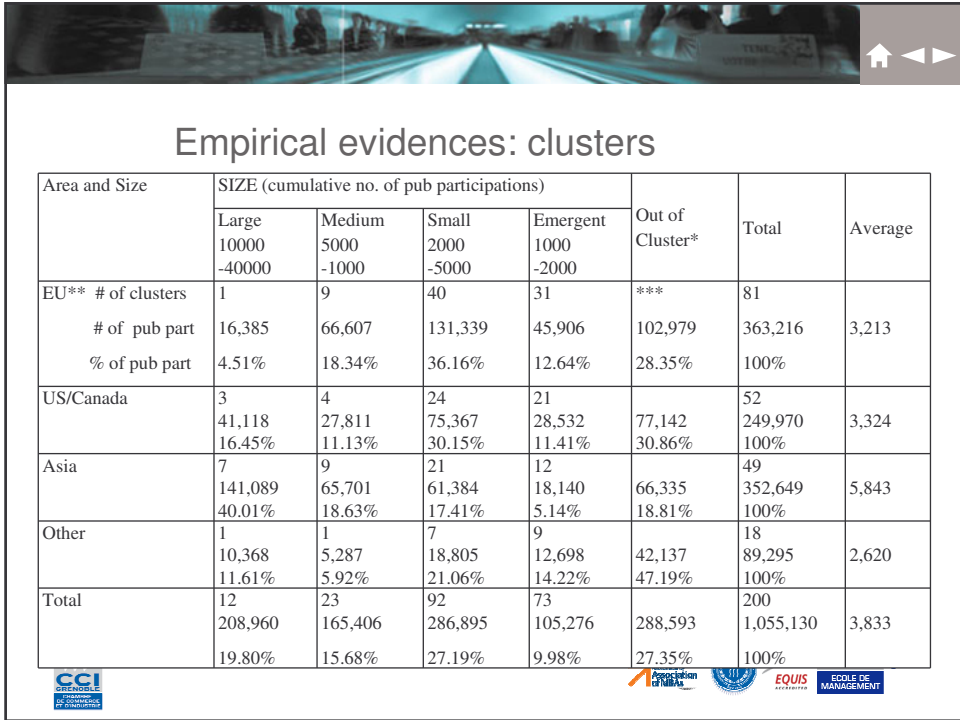
- Motivation
 - High geographic concentration of nanotech
 - Key role of clusters in the innovation policies (*geographically proximate groups in a particular field, linked by commonalities and complementarities*)
 - What determine the emergence and the growth of cluster?
 - Which are the limits of the cluster growth
- Intuitions
 - Polarised situation between Asia, Europe and US
 - Changing rules of the game. Growth is not sustainable
 - Which are the changes under way

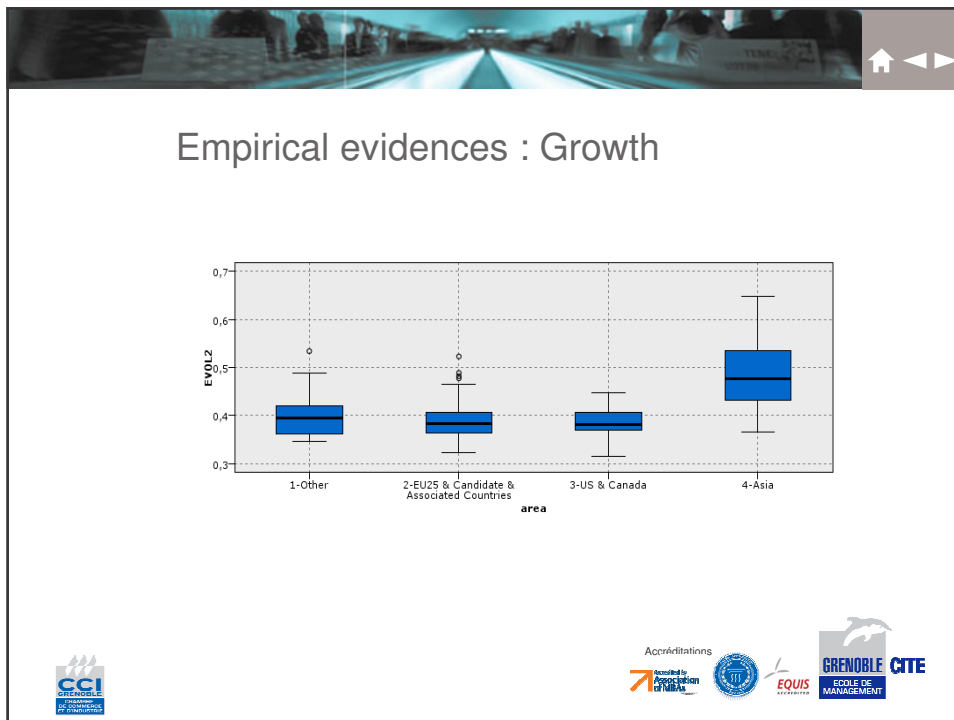



Data and methods

- Publications focusing on nanotechnologies (Query from Mogoutov et al.) : 1,000,000 participation to publication. 70% within clusters
- Cluster : at least 1,000 publications from the same geographic area
- Identification of 200 clusters worldwide











- ## Econometric models
- Significant variables
 - Asia is an outlier
 - The initial size plays a slightly negative role
 - the degree of openness of the cluster (collaboration with others outside the cluster) plays a negative
 - Field Engineering computing has a positive effect
 - Field Physics plays a negative role
 - The percentage of firms in the clusters does not enhance in growth in terms of publications
- 

Accréditations





Interpretation and conclusions

- Huge clustering effect worldwide. The rate of growth of the # of pub higher in clusters
- Huge scientific investment in Asia. Rather centered on Asia, fostering collaboration on Asia.
- Usually degree of openness has a role on the medium term. Surprising !
- Unsustainable development: just like for firms, diseconomy of scale, increasing rigidities, increasing costs and competition for resources
- Production does not mean visibility and centrality
- Changing strategy of leading univ. : remain small and increase centrality



Thank you for your attention !

Questions and comments welcome

To know more www.nanoeconomics.eu

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