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The Advantage of Industrial Clusters in a Prolonged Economic Recession

Abstract

Industrial clusters have various forms and, in their essence, are very dynamic concepts. According to Porter, they are spatial concentrations of interrelated enterprises, suppliers, knowledge workers, universities, and research and development institutions, that create competitive advantages by establishing and maintaining intense linkages between them..

In Europe, industrial clusters draw much from the economic and cultural tradition of the regions. In some cases, the advantage comes from the natural resources of the regions, and there are many examples of agglomerations of knowledge-based industry clusters around notable university centers or regions, such as that around the University of Cambridge in England.

Industrial clusters allow companies to be more productive and more innovative. The Industrial clusters develop unique knowledge and skills difficult to be replicated. Thus, the Industrial Clusters in fact contribute to the competitive advantage of the region in which they exist, and this seems to be case even in the situation of a prolonged recession and economic crisis.

In this paper we explore the most probable behavior of the members of the clusters under conditions of prolonged economic crisis, examining their readiness to trade the conducive climate of the cluster for the significant tax reductions offered by other regions. In other words, we argue that the advantages of being a member of a cluster are crucial for relative growth and even survival, and that the members of successful clusters will not be willing to swap these advantages for the tax incentives offered by various regional or state authorities elsewhere.

Keywords: *industrial clusters, recession, tax incentive, advantage, recession, economy.*

What are the Clusters?

The clusters are defined as spatial concentrations of interrelated enterprises, specialized vendors, universities and research development institutions that are interrelated and closely cooperate, thus contributing significantly to the competitiveness of their offer and to the competitiveness of the regions and states in which they operate.⁹⁷ Clusters allow companies to be more productive and more innovative than in the case when they operate isolated. Clusters develop unique knowledge and skills combinations that are difficult to be copied and replicated. They allow the companies, regions and states in which they operate to develop sustainable competitive advantages and even to develop despite the overall recession.

Several fundamental conditions have to meet for a successful cluster. However, it seems that the following are crucial: clear and shared mission and perception of the value to locate the operations within a particular cluster, clear leadership and agile management of the key actors in the cluster, clear support (spontaneous, or organized) by all relevant stakeholders, and certainly a high level of trust among the participants in the particular agglomeration.

⁹⁷ See for example the famous Michael Porter Article: *Clusters and the New Economics of Competition*, Harvard Business Review Nov-Dec 1998

According to Alberto Pezzi, the Head of competitiveness analysis and foresight at the Observatory for Industrial Foresight of the Catalan Government: “the trust is the glue of clusters.”⁹⁸ However, it does not mean that everybody in cluster trusts each other, uncritically and clusters are not incarnation of the “imaginary perfect world”. Simply, in the cluster environment, information and knowledge share, including the tacit knowledge, circulate in a more effective way. This allows “all agents to react quicker and eventually, to punish those who infringed the ethical and business rules”. Nevertheless, clusters are among the main drivers of the innovation and the prosperity, helping entire regions to create unique profiles of specialized skills that allow constant upgrading of the role of its participants in the global economy. This at a glance a paradox: to concentrate the business in particular area in order to be globally successful in the era of global sourcing, was originally referred by Porter.

Forms of Clusters

Clusters differ significantly in relation to the actual form of agglomeration, they are far from being static systems and there is no universal organization of a cluster. They differ by the level of specialization and the level of their sophistication. The highly innovative clusters, like Silicone Valley are rare. The highly - innovative clusters are time very narrow specialized and target only particular market segments. Despite to them, many agglomerations are production oriented and target commodities and mass market. These clusters create their competitive advantages by creating practical means and vehicles, like: subcontracting networks, pools for sourcing and sales, provision of highly qualified business development services with strong industry focus to the main product.

Nobody so far managed to offer a recipe for successful establishment of a cluster. Behind every successful cluster, there is original story, although there are many attempts to replicate successful models: Cyberjaya, the new Silicone Valley in Malaysia⁹⁹, Education City in Kenbridge Australia,¹⁰⁰ or the Knowledge Village in Dubai¹⁰¹, just to mention few. The simple

⁹⁸ <http://www.competitiveness.org/article/articleview/1041/1/63/>

⁹⁹ www.cyberjaya.gov.my

¹⁰⁰ <http://www.educationcity.com.au/>

¹⁰¹ <http://www.kv.ae/en/default.asp>

agglomeration of science, technology and entrepreneurship is not sufficient for achieving the desired synergy of a cluster. The replicated concepts grow very slowly, tend towards entropy, or simply miss the objectives by significant margin. One of the reasons to this is the different business and socio-economical environment that can not be replicated together with the model.

Companies from fast growing clusters, often spontaneously initiate formation of other satellite, or even distant clusters, like in the case of the Macedonian shoe cluster, established around the Italian companies that are outsourcing part of their manufacturing operations to the Macedonian small businesses around Skopje.

Clusters and the Industrial Policy

The real outcomes of the cluster supporting policies are often questioned among the scholars. In addition, there is no statistical evidence of the correlation between the direct and deliberate state intervention and the formation of the clusters. For the sake of the truth, the first clusters really developed without any direct and organized support in terms of the coordinated state policy for their co-location and establishment. However, the fact that there is no evidence of the existence does not automatically entail that there is no such correlation. An objective analysis of the cluster policies best practice reveals some positive experiences present at all successful attempts, as well as, some common mistakes that can be traced with much of the failures. Moreover, since the clusters, inevitably contribute to the development of the regions in which they operate, cluster fostering strategies and policies, as way for harvesting the benefits of such agglomerations can be found almost worldwide. Finally, if the spontaneous initiatives for the formation of an agglomeration are not supported in an organized manner and by all relevant stakeholders including the local, regional and state government, they can easily vanish. Consequently, the organized support to the clustering process become standard tool for nurturing the development of the competitiveness of the enterprises, regions and national economies during the processes of creation the industrial policies at all levels of government.

As an example of successful implementation of regional development policy, one of the benchmarks is the Spanish province of Basque, well

known by its two mega clusters: the Maritime Industry Cluster in Bilbao and the Hegan Aerospace Industry cluster. The latter, has more than 30 highly specialized companies and 32 R&D centers. The example of the Italian Province Emilia-Romagna, with its Textile Cluster in Carpi and Agriculture Machinery in Modena, is also indicative. The greater Carpi area hosts 1.600 textile companies with more than 10,000 employees that make one billion euro, or 6.5% of the gross domestic product of that industry in Italy. In Modena, there are 4,000 companies in five clusters, and they make seven billion euro turnover.

The Benefits of the Clustering

Clusters are interesting for micro and macro economists, since they create tangible economic benefits for the businesses and the community. Clusters lead to higher effectiveness and efficiency, through availability of specialized skills, agile vendors and concentration of key customers. There are also many links with the research institutions in the area. This fosters the innovativeness of the companies in the agglomeration. The fast dissemination of the knowledge and the close interactions with the customers create more new ideas and pressure for further innovation, since the cluster environment lowers the costs of business experimentation. Information and knowledge are easily shared, and the interaction with the academia and research is much less formal and flexible. Financial institutions, seed and venture capital, seems much inclined to the cluster members than to average company outside such agglomeration. As outcome, the survival ratio of the newly established small businesses within a cluster tends to be higher than the average. In the cluster, they offer high quality of products and services at comparative prices, customized to the various requests from the big companies in the value chain. Within a cluster, small businesses transform their main disadvantage-the fact that they are small, into a source of their competitiveness, offering their higher flexibility and faster response to the needs of the big players.

It is interesting to predict the most probable behavior of the members of various clusters from the developed world in the situation of a prolonged recession and economic crisis. This particularly in the light of the common trend among several developing countries, including Macedonia, towards flat and low corporate tax rates as main strategy for attracting foreign direct investments. The evidence show that the companies in clusters have

very low readiness to trade off the climate of their cluster environment that is very conducive, for a risky pursue of other regions that offer significant tax reductions. In other words, the advantages of being a member of a cluster, in fact are crucial growth and the members of s vivid clusters from the developed world are not be ready to swop these advantages with the tax incentives offered by various regional, or state authorities elsewhere.

European Experience

One of the earliest forms of business agglomerations with elements of cluster were prissily the industrial regions of Europe. These early clusters in Europe capitalized the traditional activities of entire regions and thus managed to preserve significant knowledge and skills for centuries: the stainless steel in Solingen, financial services in London, Danish cheese, Bohemian and Dutch glass. Often, these advantages stem from the abundant natural resources of the regions, like in the case of the French and Spanish wineries, the Polish coal industry, the Slovenian spa resorts on the Alps rim, and so on. The European Cluster Observatory systematically publishes the EU best practice in the area of clustering, as one of the instruments for experience interchange.¹⁰² Examples of best practice and success stories can also be found on the web page of Ingforegio, a platform for knowledge and technology transfer.¹⁰³

Cluster	Empl oyees	%	Special ization	Focus	Po wer	Innov ative ness	Expor t
Construction	45 474	0.69 %	1.63	5.82 %	*	Mild	N/A
Metals	43 984	1.12 %	2.64	5.62 %	***	Mild	Stron g
Financial services	23 054	0.32 %	0.76	2.95 %	*	Mild	Weak
Transport	23 021	0.37 %	0.88	2.94 %	*	Mild	Stron g

¹⁰² <http://www.clusterobservatory.eu/index.php?id=68&nid=>
¹⁰³

http://ec.europa.eu/regional_policy/cooperation/interregional/ecochange/studies_a_en.cfm?nmenu=5#cl1

Food	20 489	0.41 %	0.97	2.62 %	*	Mild	Weak
Furniture	10 970	0.97 %	2.28	1.40 %	**	Mild	Very Stron g
Heavy Machinery	9 330	1.12 %	2.64	1.19 %	**	Mild	Stron g
Plastics	8 491	1.04 %	2.44	1.09 %	**	Mild	Stron g
Electronics	5 268	0.99 %	2.33	0.67 %	**	Mild	Very Stron g
Leather	2 512	1.48 %	3.48	0.32 %	**	Mild	Stron g

Table 1: Active Clusters in Slovenia

The European clusters differ in intensity of the interactions between the businesses. The competitiveness of the regions is build upon the creativity of the people in the clusters, the high capacity for innovativeness and intensive interactions between the businesses. For example, around the University of Kenbridge in England, a network of high-tech companies capitalizes the vicinity of the University.¹⁰⁴

¹⁰⁴ *Wissema H, Towards the Third Generation University, UACS, Skopje 2008*



Figure 1: Larger Clusters in Germany¹⁰⁵

The Italian model of clusters, “the culprit” for some of the famous Italian export items like the high fashion and shoes, ceramic tiles, furniture, packaging equipment, all endorsed by the “*Made in Italy*” label, slightly differs from all others. While analyzing the determinants of its success, the Italian scholars put emphasis to the spatial concentration, but also to an extensive sub-contracting between the vertically interrelated small and medium companies on the value chain.¹⁰⁶ Porter also stressed that the proximity itself is not sufficient. It results in competitive advantage only if it covers the vendors and suppliers, suitable work force and only if the process requires intensive interactions between the companies. Obviously, the spatial concentration only, does not imply the existence of prerequisites for a cluster.¹⁰⁷

¹⁰⁵ http://www.clusterobservatory.eu/index.php?country_ID=Germany®ion_ID=

¹⁰⁶ C. Boari *Industrial Clusters, Focal Firms, and Economic Dynamism: A Perspective from Italy*, <http://siteresources.worldbank.org/WBI/Resources/wbi37186.pdf>

¹⁰⁷ Porter, M. 1998. “Clusters and the New Economics of Competition.” *Harvard Business Review* 76(November–December)

It seems that in the case of the Italian clusters, the cooperation with the R&D institutions is not critical for success of a cluster; rather it is the subcontracting practice and the existence of a focal firm, like FIAT and Ferrari, near Modena.¹⁰⁸ The Italian example shows that cluster can grow around some bigger company (focal point) that diffuses the technology and the knowledge over a larger area around it. The small and medium sized companies around the focal company are much more heterogeneous and different, then similar.¹⁰⁹ They are result of the outsourcing of the operations of the focal company to the small businesses around it, using sub-contracting. Focal company can also obtain market (in the case of the furniture manufacturing in Southern Italy) to be incubator for new business ventures (in the case of the textile cluster around Prato) or to serve as an archetype and agent of change (like in the case of the Magneti Marelli).

Macedonian Clusters

More formal approach to the clustering in Macedonia was introduced through the USAID supported Macedonian Competiveness Activity Project, implemented between 2002 and 2006,¹¹⁰ with a mission to foster Macedonian companies to develop and implement various initiatives which will result in a sustainable competitiveness on the national, as well as on the international markets. Five clusters were initiated, out of which three proved successful and survived the adjourning of the Project: the ICT, the Wine and the Apparel clusters. Currently the support to the clusters is domain of the Ministry of the Economy, and partly of the Ministry of Local Self Government in the case of the regional and local, small scale agglomerations.

Macedonian companies still have difficulties in perceiving the clustering (organized or indigenous) as value added and worth of the efforts. For the sake of the truth, our clusters are more professional, business associations then clusters, and very often, there are no visible benefits for the prospective members. However, this is maybe the common drawback of the imposed membership in the agglomerations, in opposite to the spontaneously established clusters. Indeed, there are several examples of

¹⁰⁸ <http://www.italtrade.com>

¹⁰⁹ Schmitz, H. 1995. "Small Shoemakers and Fordist Giants: Tales of Supercluster." *World Development* 23(1):9–28.

¹¹⁰ http://macedonia.usaid.gov/Macedonian/EG/MCA_n_mk.htm

spontaneous clusters built upon the concentration of business tradition (like the Shoe Industry in Kumanovo, or Apparel in Tetovo) or natural resources (Apples around Resen and Tetovo, Cheese around Berovo) that are not receiving the needed state support.

As one of the main obstacle to the development of the clustering in Macedonia is the low general level of business confidence and trust. There are also problems with the sustainable partnership along the value chain, the Macedonian clusters are not integrated into networks of regional, or EU clusters, the links with the seed and venture capital funds are not established. There is general lack of continual organized support from the state, or it tries to establish new clusters, rather than to support the already established and particularly, the spontaneous agglomerations. On the other hand, the state should not be blamed for all of the problems of the Macedonian clusters. The state intervention can only pave the ground, help obtaining a wide support from all stakeholders, and adopt favorable industry and fiscal policies. However, the core of the activities should be performed by the private companies and their initiative, particularly having in mind that the clustering seems very attractive vehicle for protection and amortization of the impact of the global crisis to our small and medium sized companies.

Clusters in the EU Strategic Papers

Clusters in EU are listed among the nine strategic priorities in promotion of innovativeness. Suitable policies for support to the clusters are established on regional, national and the level of the EU.¹¹¹ As outcome of the EU, policies implemented so far there are more than 2,000¹¹² active clusters. The EU obtains relatively abundant sources for finance of the operations of clusters and implementation of their various programs. For example, one fourth of the Cohesion Fund or 86 billion euro, are dedicated to R&D only for period between 2007 and 2013. As vehicles for support to the clusters, almost all instruments designed to promote the innovativeness and innovations, are used:

¹¹¹ *European Cluster memorandum 2008*

¹¹² *Source: European Cluster Observatory*

- Innova¹¹³, as part of Competitiveness and Innovation Program, designed for small and medium enterprises, their networking, partnership and clustering.
- The Small Business Act,¹¹⁴ that practically serves as the EU Entrepreneurship and small business charter, in which the small businesses with strong innovative potential are encouraged to agglomerate in clusters
- The so called Initiative for Change, which explores various models for trans-national networks for innovativeness.¹¹⁵
- Cordis Initiative - Regions of Knowledge (FP7 and European Research Space¹¹⁶) fosters R&D clusters and establishment of pan-European infrastructure.
- European Cluster Alliance¹¹⁷ as a form of support of the dialogue between the policy creators at all levels of the government.

The following challenges are identified in these and other strategic EU papers: 99% of the EU companies are small and provide 75% of the work posts.¹¹⁸ Despite the fact that the banks offer various credit lines, the development money for the small and medium businesses is available only through the financial components of the innovativeness and trans-border cooperation programs as part of the Innovativeness and Comparatives Framework, designed to support the growth of the competitiveness of the European economies,¹¹⁹ the 7th Framework Program for Research¹²⁰ and the Trans-Border Cooperation Program.¹²¹ Having in mind the complexity of the requirements and the extensivity of the application procedures, it is clear that jointly through clusters, the small and medium sized companies have much more chances to access development money, then if they would act individually.

¹¹³ <http://www.europe-innova.org/index.jsp>

¹¹⁴ ec.europa.eu/enterprise/entrepreneurship/docs/sba/com_2008_394_sba.pdf

¹¹⁵ ec.europa.eu/regional_policy/conferences/excellence/doc/pdf/excellence_en.pdf

¹¹⁶ http://cordis.europa.eu/fp7/capacities/regions-knowledge_en.html

¹¹⁷ <http://www.proinno-europe.eu/index.cfm?fuseaction=page.display&topicID=395&parentID=0&CFID=618176&CFTOKEN=97607108>

¹¹⁸ http://ec.europa.eu/enterprise/smes/facts_figures_en.htm

¹¹⁹ http://ec.europa.eu/cip/index_en.htm

¹²⁰ http://cordis.europa.eu/fp7/home_en.html

¹²¹ http://ec.europa.eu/regional_policy/interreg3/abc/progweb_en.htm

European Union is raising the expectations regarding the trans-border cooperation. Creators of the EU regional policy think that innovative capacity of national economies and their companies within the EU still lags behind that of the fast-growing economies of the Far East and the USA. They argue that generally speaking, the European countries are small and even their largest national clusters lack the critical mass for global competition. To address this issue and under the pressure from the USA and Asia, the EU countries try to find their chances and opportunities in:

- Perfection and innovativeness
- Mobility of the qualified work force and the knowledge
- Creation of common R&D and Innovativeness area
- Creation of regional business networks

The overall support to the small enterprise in EU is gradually turning to clusters, replacing the former blanket support to this very important part of its economy. This is caused by the switch of the demand for business development services from general towards more customized to the specifics of the industry or service, (standardization, capacity and capability upgrading concepts for particular industry). This, and the requirements the small businesses to constantly upgrade their offer and cooperate trans-nationally if they want to access the EU funds, will shape the EU support to this sector in the future.

However, the EU Cluster Memorandum sets only the general directions and the policies of the EU in cluster development for the future, stressing that the EU is challenged by the need for innovation, as the main driver for the new European vision for growth and prosperity. Clusters are perceived as a tool that catalyzes this process. Governments and small businesses of the member countries can not achieve this task alone, the big corporations are crucial in the networking initiatives and they should recognize that the clustering could serve, *inter alia* as very practical tool and strategy for mitigating the devastating effects of the global recession.

Conclusions

The European Compleitive Council, in December 2006 recognized the clusters, as one of the nine priority actions for strengthening the EU Innovativeness. However, turning the political orientation, support and

consensus into concrete strategic action plans of the corporations in Europe, sometimes seems to long. On the other hand, the innovative approach to the product development, the focus to the energy efficiency and the sub-contracting to the satellite small businesses (the Italian model of clusters) seem that serve as effective shields that protect some of the European car manufacturers from the financial calamity that wiped out their USA counterparts. The details of the ongoing takeover of Chrysler by FIAT, under which the Turin based Italian car maker will get 35% of the equity of the Auburn Hills, Michigan based Chrysler, in exchange only for “sharing small-car technology,”¹²² are illustrative enough.

In addition, any crisis always brings some opportunities too, and the innovation can not be necessary linked to the technology. It can also be in the area of marketing, for example. Hyundai achieved sales figures for January 2009, 14% higher compared to the same month of 2008¹²³ as direct result of the marketing program that allows buyers in US who purchase a Hyundai to return the car if they lose their jobs or income. “The initial response from consumers surprised everyone,” admitted David Zuchowski, Vice President of Sales at Hyundai Motor America.¹²⁴

“Since the formation of new businesses is easier within the clusters, these agglomerations can better respond to the crisis and recover more rapidly offering regeneration and new ideas to old business models. The capacity of certain clusters to reinvent themselves is strictly linked to the level of their social capital or immaterial assets. The most famous cluster, Silicon Valley has gone through different crisis and the high intensive level of social capital has allowed this community to reinvent its business many times.

There are no shortcuts or magic formulas for succeeding or overcoming the crisis. Focusing on cluster basic strengths and applying them to the distinctive skills of clusters is certainly a step in the right direction,” argues Alberto Pezzi from TCI.¹²⁵

¹²² *Denverpost March 31, 2009*

¹²³ <http://worldwide.hyundai.com/web/IR/SalesPerformance/USRetailSales/List.aspx>

¹²⁴ <http://www.hyundai-blog.com>

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