

Innovative clusters: a solution for the economic development of Romania

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Abstract. *The Europe 2020 Strategy emphasizes the importance of the smart, sustainable and inclusive growth. The flagships of the strategy (digital agenda for the EU, innovation union, resource efficient Europe, industrial policy for the globalization agenda) are setting the frame for economic development. Innovative clusters are seen as a solution to the crisis, a tool for competitiveness and regional development. Given the economic situation of Romania we bring in discussion the potential of clusters in our country and the arguments and critics regarding their development.*

Keywords: innovative cluster; competitiveness; economic development; Romania.

JEL Codes: O10, R11.

REL Codes: 16G, 19H.

1. Introduction

The Europe 2020 Strategy continues the Lisbon Strategy for growth and employment; it includes three main objectives: smart, sustainable and inclusive growth. This new strategy has on the short term the priority of fighting the crisis and on the long term to facilitate more work places and a higher life standard and to bring the European Union in the international ranking on the top. The solutions for the crisis concentrate on the social and green economy where prosperity is brought by innovation, a better use of resources and knowledge. The objective of the European Commission is to lead a Europe that sustains on knowledge, rapid and sustainable growth, employment and social progress. One way of achieving these goals is to foster the cooperation between the business environment, universities, research institutions and government. In this case one popular but still not so exploited form of cooperation is the one of clusters. Defined by many terms as research cluster, ICT clusters, industry clusters or innovative cluster this form of partnership comes more often in the discussion and public debate.

Clusters are now subject of different documents and position papers of international and national organizations (OECD, 2005, 2010, European Commission, 2008) and based on the previous experience several authorities promote the idea that by clusters competitiveness increases, the work force specializes, companies grow and regional economy develops.

2. The cluster concept

The cluster concept has a long history starting with the first mentioning by Alfred Marshall in 1920. An adept of the neoclassical economic school, Marshall observed and analyzed the economic space around London and came to the conclusion that the organizations and businesses within this area were interconnected by three main factors. These are a pool of work force, specialized suppliers and easy access to knowledge and information, and are known under the term of “Marshallian Trinity” (Dan, 2011).

When defining the cluster we may state that there isn't a unique definition. Starting with the 50s, the subject came in front and was debated by specialists from regional sciences, architecture, urbanism, regional and urban economics, political science, business organizations. All of them defined the concept of cluster, emphasized the drivers of clusters, the positive or negative effects of the clusters in the region. For example, the urbanists consider that cities are playing a major role in the forming process of clusters; regional

economics consider that clusters are influenced by economical factors as localization, transportation, infrastructure, work force etc.

Further the definition launched by Michael Porter in the 80s is promoted at all levels, but not all over accepted. Porter described in his work a so called “diamond model of competitive advantage” which is the base of clusters. The main elements of the diamond are the factor conditions (skilled labor force), demand conditions (the demand influences the innovation of the enterprises), related and supporting industries (thanks to the network of providers the distance between suppliers and producers will be shorten), firm strategy, structure and rivalry (in order to remain competitive organizations are forced to upgrade and invest continuously) (Porter, 1998). Other authors consider that Porters definition is a static one, and doesn’t take into account the dynamic of spin-outs, the networking or the project focused businesses (Asheim a.o., 2006) or, even, that Porter contributed to the concept confusion of clusters. At the beginning he defined a cluster as an effect of interrelated industries (inside of a country) and after the year 2000 he brought in debates also the geographical proximity (Malmberg, Power, 2006).

In the early 90s the politicians recognized the existence and sustaining of the clusters and stated that clusters are not a simple business agglomeration, but a platform for innovation. “Innovation is heavily concentrated geographically, much more than high prosperity or productivity. Clusters – regional concentrations of specialized companies and institutions linked through multiple linkages and spill-over – provide an environment conducive to innovation. They lower the barriers for transforming new ideas into businesses and capturing the benefits of globalization” (European Cluster Memorandum, 2007, p. 2). But even with this recognition, clusters are still part of the industrial policy, competition policy or innovation and higher education policy and don’t receive a special policy (Dan, 2011).

Clusters are geographic concentrations between enterprises, universities and research institutions and local or regional authorities, and due to this they attract specialized suppliers, can select from a pool of work force, and have an easy access to knowledge and information. By facilitating such dynamics as labor market pooling, supplier specialization, and knowledge spillovers, all sorts of firms and regions can benefit by enhancing the local and innovation potential, encouraging entrepreneurship, and ultimately promoting growth in productivity, wages, and jobs (Muro, Katz, 2010). Clusters are characterized by a flexible organization, each member has several activities, and a clear role in accordance with the cluster strategy and market needs (Tanțău, 2011). Clusters have been seen as a tool of promoting and sustaining competitiveness, innovation, growth on local, regional and national levels. In the majority of

cases the initiative to cluster influences the strategy of enterprises, it increases their competitiveness because of the delivered added value, and the authorities are reshaping their public policy and analyze in a new perspective the regional economy.

Referring to the cluster thinking we find in the economics literature several types of clusters. Because there isn't a common definition for clusters we observe in practice different types of economical agglomerations; all of them define themselves as clusters. Markusen (1996) made a first classification by their size and identified (1) the "Marshallian" cluster (small and medium enterprises, with strong relationships, dependent from the synergies of clusters); (2) "Hub and spoke" (the members are one big company and several small enterprises which deliver specialized and support services, it functions on the principle of a hub, the big company establishes the cooperation conditions); (3) "Satellite platforms" (its members are branches/plants of medium and big companies with a minimum of cooperation and networking) and (4) "State-anchored" (formed by state-owned companies, with relationships with specialized suppliers, the development of it is dependent from the finance schemes of the public services).

Other types of clusters refer to the geographical source, Italian, American, Latin American, European clusters (Meyer-Stamer, Harmes-Liedtke, 2005), but if we analyze their definitions we may state that these are combinations of the typologies of Markusen.

Coming back to the innovative clusters, the literature (Simmie, Semmet, 1999, OECD, 2001) shows that this concept has similar meanings with the industrial cluster or cluster initiative. In practice, we understand the agglomeration of enterprises, suppliers, associated institutions, local and regional authorities; all are interconnected and the enterprises benefit from an innovative milieu.

3. Competitiveness and regional development

The new thinking about regional development raises the question "How to fit clusters into the economic development?" For instance a cluster analyses can help diagnose a region's economic threats and opportunities and identify what a region might do to influence its economic future.

Clusters have an important place in the general policy of the European Union, which may be observed in the numerous official documents and position papers adopted by the European Commission since 2005; the EU established an European Cluster Policy Group which in the time period 2008-2010 analyzed the cluster policies of countries outside the European Community. Till now the

cluster policy was part of several policies (competition, industry, entrepreneurship, education and science), and this means that at the European level there isn't a clear cluster policy and we are still in the stage of identifying and testing the strategies and instruments needed for an independent policy.

The general thinking about clusters shows that these are drivers for the economy and development. They bring competitive advantages for their members, influence structural changes, they revitalize industrial sectors, and deliver the necessary frame for research, innovation and regional development.

At the level of EU we may speak about policies which "reflect where a country or region wishes to position itself in global competition with a mid-term perspective, building upon existing strengths and mobilizing the necessary commitment from all innovation stakeholders to move into the right direction (ProInno Working Paper no. 9, 2008, p. 32). There are three different categories of cluster policies. The first category concerns facilitating policies directed towards creating a favorable microeconomic business environment for growth and innovation that indirectly also stimulates the emergence and dynamics of clusters; for instance, by encouraging the networking and knowing the enterprises in the same field and in the geographical proximity. A second category comprises traditional framework policies, such as industry and SMEs policies, research and innovation policies, and regional policy that often use the cluster approach to increase the efficiency of a specific instrument (OECD, 2007). A third category consists of development policies aiming at creating, mobilizing or strengthening a particular cluster category resulting specific branches cluster initiatives.

The importance of clusters in the EU economy is emphasized by the European Cluster Observatory which identifies around 2000 clusters (defined as regional agglomerations); it also shows that 38% of the work force are active within clusters. This initiative is mainly a platform for enterprises, universities, actors interested in clusters. It offers also a clear image about a modern cluster. The main indicators for the analyze and definition of clusters are applicable both at regional and sectoral level. These are: number of employers, growth rate of employers, number of enterprises, growth rate of enterprises, ratio employers/enterprise, wage/employer, size of the industrial agglomeration, the classification of the experts (in stars), specialization and concentration in a certain activity.

The EU encourages the development and finance of clusters; we mention here initiatives like Regions for Economic Change, Regions of Knowledge, the Community Strategic Guidelines on Cohesion, European Grouping on Territorial Cooperation. In the same time, the EU asks the Member States to include in their national programs for reforms measures for cluster.

In the regional development process the state is seen as an important player for sustaining clusters and networking. For instance, all Member States have implemented measures in order to make cluster success an economic goal. Further at the European level there are some schemes and programs which are funding collaborations between different economical actors and local authorities and other institutions. We mention here the European Regional Development Fund within the Cohesion policy. In the same time, we can speak about a cluster management and scholars trying to identify what kind of skills and competencies are required for a successful management. In some countries clusters are promoted in the same way as brands. The concept of regional cluster brand is expanding very quickly; it gives advantages by putting together the individual brands and their membership, roots in one particular region (Kaminski, 2009). We mention here another platform created by the European Commission, www.cluster-excellence.eu. This platform addresses to cluster managers and has the scope of sustaining the interaction and cooperation between clusters with the objective of competitiveness increase.

For the local economy, clusters can increase the competitiveness, increase the income, offer quality jobs, develop investments in R&D, and support potential winners. And the government can use the funding projects more efficient by sustaining the start-ups, innovation companies, and implementing more efficient public policies (for health, education, infrastructure etc.).

Romania is recovering slowly from the financial crisis that affected the entire world in the last three years. In comparison with other East European countries, Romania has the highest inflation (12.6% for 2011), a high unemployment rate (10%), the lowest percentage in contracting EU funds (3%) and a decreasing percentage of direct foreign investments. If we analyze some macro economical indicators we will observe that Romania has lost competitive advantages and dropped some places. The Transformation Index shows where the countries stand in the process of democracy and market economy and compared with the neighbor countries Hungary and Bulgaria Romania has a bad position (Bertelsmann Stiftung, 2011). The Transformation Index is an average of different indicators such as: political participation, stable democracy, political and social integration, socio economical development, price and currency stability, personal property, management performance, resources, international cooperation etc. If we analyze the Transformation Index for 2010 Romania has the following ranking: status (16 of 128), democracy (15 of 128), market economy (16 of 128) and management index (25 of 128); all these ranks are below Bulgaria and Hungary. The numbers show that Romania doesn't use all its capacities to increase the development level and smaller countries with fewer resources manage to be more efficient.

Another interesting index analyzes how easy it is to do business in a country. Ease of Doing Business Index evaluates the conditions for an enterprise to develop its activity in a country and takes in account factors like the process of founding an enterprise, financing possibilities, recruiting personnel etc (IFC & World Bank, 2011). A lower number indicates good conditions for business. Romania dropped two places from 54 to 56, Bulgaria kept its place 51 and Hungary went 6 places higher (from 52 to 46).

Another index, the Global Competitiveness Index, puts out information about the competitiveness of 139 economies in the world. The index is comprehensive and analyzes micro and macro- economical factors as infrastructure, institutions, business environment, health and education, trade efficiency, financial market, technological maturity, market dimensions, innovation etc. In the time period 2008-2011, Romania positioned between 64 and 68 places, Bulgaria between 71 and 76 and Hungary from 62 to 52.

Given the position of Romania in the last years we may state that the country has a pace with slopes, it lost competitive advantages and it doesn't have a coherent policy in order to develop the business environment and increase its importance for foreign investors.

4. Cluster movement in Romania

Why cluster? Research has provided evidence that clusters bring economic benefits at a time of economic uncertainty, they reflect the nature of the real economy which means that the nation gets clearer about the true sources of growth, and they offer a compelling framework to rethink, reorganize and reform national and regional economic development efforts (Muro, Katz, 2010). Clusters influence productive growth in several ways: innovation, entrepreneurship, firms and industry, performance of regional economies, their impact is quantifiable.

The role of the Romanian state is very important in the development of clusters. The theory says that cluster initiatives should appear only in the regions where we find already different forms of networks and partnerships, but due to the underdeveloped economy we think that the Romanian government should intervene and help more the businesses.

The first steps were taken by the Ministry of Economy which financed studies for defining a Romanian concept of cluster. Starting with the "triple helix" model which includes three natural partners (industry, especially SMEs, universities and the state) that in reality don't cooperate, or even more, they don't know each other; the conclusion was that a Romanian cluster concept should have the form of a clover "the four clover model" where the fourth actor

is represented by the promoter organizations. These are organizations specialized in technological transfer and innovation, consultancy firms etc.

The past experience of Romania shows that, on one hand, the government facilitates the funding of clusters, it introduced measures favorable to industries and SMEs, on the other hand, there are few examples of clusters and fewer are functioning, although there is a potential (Guth, Cosnita, 2010). For example the document “Ghidul pentru implementarea în România a conceptului de cluster inovativ”, financed by the Ministry of Economy (2009), presents a list of industrial parks, entities of innovation and technological transfer, universities, foreign and Romanian investors that by associating can benefit from the advantages and benefits of a cluster. Even so, we observe at national level that such initiatives and partnerships are rare or if they exist they have only the goal of spending funds without a mid or long-term strategy. Another initiative represents the platform www.clustero.eu which is part of the project Innov Cluster II. Between 2010-2012 the members will analyze the industrial sectors of Romania and propose strategies, programmes and measures for adapting and integrating the Romanian industrial policy into the European Union policy.

By analyzing the strengths and weaknesses of the Romanian regions, we observe that, on one hand, there are sectors and industries with economical potential (e.g. agriculture, textile industry, constructions, tourism, forestry, automotive industry), the SMEs have the wish for internationalization, the entrepreneurship is increasing and the entrepreneurs show more courage, there are local initiatives for associations, the business environment is dynamic, on the other hand, because of the political instability and lack of clear strategy for Romania, the mid-term strategies are inexistent or fragile, so it is impossible for the business environment to plan and forecast, the educational system isn't adapted to the needs of the market, the work force has migrated in the last 10 years, especially the age segment from 18 to 35 (the most active age group), the work force has a low mobility within the country, the infrastructure is underdeveloped (aproximatively 300 km of highway), the communication between the potential partners in a cluster is rare or inexistent, the universities have a bad image in the public, there isn't a coherent national strategy with clear subjects and priorities, there is a lack of cooperation between the members of industrial agglomerations.

Chances for building clusters are brought by the EU, which imposes to the Member States to transfer its policies and measures regarding clusters in the national programmes, to improve the conditions for the business environment. The Black Sea Strategy and the Danube Strategy bring opportunities for transboundary cooperation projects and economic development, implementation

of regional development programmes, increase the interest of multinational companies for opening subsidiaries and research units within the universities.

Regions have to face also risks coming from the attitude of the authorities who take the responsibility of major objectives regarding the competitiveness, industrial policy and clusters, don't fulfill or even drop them.

The Romanian state implicates different in the cluster policy. Like in other European countries, the policies about regional development, clusters, the role of SMEs in the economy are included in the programmes of several ministries and institutions. The main actors are the Ministry of Regional Development and Tourism, the Ministry of Economy, the Ministry of Environment, the Ministry of Transportation, Ministry for Administration and Internal Affairs (responsible for industrial parks). At the national level, the regions will play a more important role than now, especially because at this level projects are evaluated, the strategy for counties is developed etc. And at the local level, the counties councils and city halls are encouraged to involve more.

For the cluster financing there are three types of funds: European, Romanian and other funds.

At the European level, we find several funds and measures, the most important one are included in the Seventh Frame Programme (FP7), Competitiveness and Innovation Programme (CIP) and Social Policy for Employment and Social Inclusion (ESF).

The most important funding source for clusters is in the Cohesion Policy with a budget of 347 billions Euro for the time period 2007-2013 and the objectives are increase of competitiveness and work places and economic growth. The instruments are ERDF – European Regional Development Fund (for economic activities) and ESF – European Social Fund (for human capital development). 25% of this budget finances the innovation, entrepreneurship, start-ups, clusters, networks, business incubators, human resources development etc.

The Romanian funding schemes are included in the National Strategy Frame Programme (Cadrul Strategic National de Referinta), the National Strategy for Research Development and Innovation 2007-2013 (Strategia Nationala de Cercetare Dezvoltare si Inovare), the National Strategy for Sustainable Development of Romania (Strategia Nationala pentru Dezvoltarea Durabila a Romaniei), strategies for regional development.

Other funds are offered by international organizations like OECD, World Bank or UNDP.

In the majority of studies and research the SMEs and the managers criticize the bureaucracy and corruption which block the cooperation with the

state. This is one reason why local cluster initiatives are avoiding the local authorities. Traditionally, the state should assure the macroeconomic stability, improve the microeconomic frame, development conditions for the work force, business environment etc. The state sets up the rules and monitors the infringements; it implements strategies and funds for entrepreneurship and innovation.

The idea of cluster and the cluster process are also criticised by analysts and experts. There is the thinking of not creating clusters. They cannot be created out of nothing. The state should help the spontaneous, natural clusters. Cluster strategies should base on empirical information and analyses so that decision makers can make objective assessments about the competitive prospects of different regional industry concentrations. Cluster development needs to focus its work on truly viable, distinctive and competitive specializations. For this it is important to have objective market analysis to document the natural presence of clusters, their global market positioning, and the possible relevance of cluster-oriented development initiatives; fine-grained information about local clusters' institutional or resource deficiencies is essential to target and bound proposed interventions.

5. Conclusion

In conclusion, we may say that clusters are seen as an instrument to improve national and regional competitiveness. The "umbrella concept" of cluster includes the idea that by cluster a nation can force economic development; promote the cooperation between enterprises, universities, research institutions, clients and competitors, suppliers within the same geographical area. The members of a cluster have to cover some steps, the business environment has to establish priorities and accept collaborations with research-innovation units, universities to strengthen them, to improve their image, and the state represented by the public administration should invest in modernization and increase of the efficiency.

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