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THE ROLE OF KNOWLEDGE INNOVATION BUSINESS SERVICES IN SUPPORTING CREATIVE & INOVATIVE CLUSTERS

Case Study

Keywords

Knowledge intensive business services (KIBS)
Cluster
Innovation
Regional development
Sustainability

JEL Classification

M21, O10, O11, O14, O18, O32, R11

Abstract

This article aims to highlight the role of knowledge intensive business services (KIBS) into supporting creative & innovative clusters. The paper focuses on the analysis of Romanian clusters, by identifying first their members and by underlying later the importance of these highly important actors for the regional development. It is structured into three parts. The first part presents a brief literature review by highlighting the most important characteristics of the creative & innovative clusters, and of the KIBS. In the second part the focus is on the analysis of creative & innovative clusters, observing their structure and projects, with the purpose to illustrate their impact for regional development. In the last part, it is highlighted the link between the KIBS and the creative & innovative clusters, emphasizing the essential strengths for the regional development strategy.

In the end we present the main conclusions, underlying the novelty and the importance of the chosen topic for the Romanian economy.

Introduction

The economy is continuously changing and it is becoming more complex mostly due to the global development pressures. Companies are forced to adapt and to keep their development according to the global tendencies. One of the most important trends regards the need to produce better, innovative and creative products. Under these circumstances it is easily to create and develop partnerships and collaboration relations between companies from all around the world.

The new economy is considered by many authors to be a new type of economy called creative economy that is developing under the umbrella of a knowledge and innovation intensive society. Thus knowledge management and creative and innovative management had an increasing role and knowledge intensive business services (KIBS) become more and more important. Through knowledge accumulation and development the business activity had been improved and the performance, in terms of efficiency, effectiveness and competitiveness had increased.

Globalization process involves new actors in business that may contribute to increasing knowledge flows and technological transfer. It also implies an increasing mobility of the qualified human resources, at the international level (OECD, 2011).

On long term, the competitive advantage is based more and more on human competencies and thus knowledge management and intangible resources (such as intellectual capital) management are becoming key factors for performance and competitiveness. In every activity domain (technological-mostly ITC-marketing, design, management, others), there is a strong need to stimulate innovation, creativity and communication abilities. In order to benefit of well-prepared employees, companies should invest in human capital especially in education and they should focus on experts that may provide the best consultancy. Well prepared and well sustained training programmes, workshops or meetings with other specialists to support experience exchange between experts might make the difference. Learning organizations and knowledge based organizations are mostly proving to understand the importance of investments in education and special dedicated programmes to support the development of skills and competencies (including soft skills) for their business activity.

Knowledge intensive business services (KIBS)

Miles (1995) is one of the first promoter who had described the companies that focus on the so called *knowledge intensive business services (KIBS)*.

The most important characteristics of these companies are: they manage to use and develop an important amount of professional knowledge; they are very competitive and assure an essential support for their clients; they could be one of the primary sources of information and knowledge (as the training or consultancy companies), but they also could use their own knowledge in order to create and develop intermediate goods and services for their clients.

KIBS are connected and usually associated to regional development. The expansion of this sector based on knowledge intensive business services, is determined by the inter-penetration and inter-dependence of different economic sectors.

According to den Hertog (den Hertog, 2000, pp.15), KIBS are based on using a higher level of innovation as compared to the rest of economy. The author argued this statement, through the fact that these services are based on the intensive efforts among both the providers and the people that are finally benefiting on them. This determines a process of co-creation and co-production, in which the result is dependent on the quality of the collaboration between these two parts.

One of the most important characteristics of the KIBS' supplier is referring to its position as one of the potential catalyst in the relation with other companies. This fact is due to the fact that, by using their general and scientific knowledge they are satisfying the client necessities. In a pragmatic way, these companies are using their information and knowledge, in the most efficient and effective way in order to accomplish the needs of the client. It is a double *win-win solution*: first it is based on the innovation resulted from the client's feedback, while the second stands in these innovative services themselves. Moreover, the client is accumulating knowledge and information, while the KIBS supplier gathers more experience and knowledge in other activity domain, discovering and identifying new opportunities for a long-run smart, sustainable and inclusive development.

The KIBS companies are managing usually to accomplish three roles for their clients: "*facilitator*" in the innovation process for their client, "*bearer*" of innovation due to the fact that they assure the transfer of innovations from one client to another, and not the least the role of "*innovation source*", developing new innovations for the client.

Nonaka and Takeuchi (1995) had identified four types of knowledge conversion: described in their famous SECI Model (*socialization; externalization; combination; internalization*).

Socialization refers to the process of developing the tacit knowledge through the transfer of tacit knowledge.

Externalization means to rationalize the tacit knowledge into explicit concepts and formal models.

Combination illustrates the process of developing explicit knowledge from explicit knowledge.

Internalization stands for transforming the explicit knowledge into tacit knowledge.

Starting from these types of conversion, the authors described four dimensions, which could define the interactions between KIBS companies and their clients, through the perspective of supporting knowledge and innovation management. *The first dimension* is determined by the tangible knowledge versus intangible knowledge. *The second dimension* is determined by the presence of human resources or non-human resources. *The third category* is represented by the explicit knowledge versus tacit knowledge. *The last category* is represented by the contractual or non-contractual types of knowledge.

KIBS companies have an important role in the knowledge transfer, because they are creating and combining information and knowledge within innovation systems. This is the reason why the authors consider that these companies are developing a new infrastructure of knowledge, as the education and research institutions are doing. In consequence, the discrepancies between the public and private services based on knowledge, seem to disappear in time such as to create the premises for the development of professional collaborations and clusters, which could combine these two types of knowledge based services, sustaining the process of innovation.

According to Ionita et.al (2014), the future well being and prosperity could be improved through the nation's ability of stimulating the creative and innovative capacity of companies. Moreover, the access to financial resources for companies, the entrepreneurship support, the access to consultancy services and the development of the innovative technology, influences the regional dynamics. These authors analyzed the entrepreneurial activity at the European level, and have identified four categories: "*the experimental countries*", "*the ambitions countries*", "*the prudent countries*", and "*the moderate countries*". Romania is included in the first category, being characterized by a high percent of startups and also by a high percent of closing companies.

According to a study published by *Europa INNOVA (2009)*, referring to knowledge based services, these are considered responsible in order to explain 59% the GDP variation. Moreover, the regions that are focusing on these activities, have a higher level of innovation.

Although these activities are located usually into urban areas, the large regions do not have a large amount of knowledge based services. According to many studies dedicated to this topic it is observed

that the regions that experience an expansionary period, do not have a large amount of employees in this sector.

The strategy for Creative Europe (European Commission, 2012), aims to promote and protect cultural diversity and to increase the regional competitiveness. In order to achieve these objectives, it is necessary to create and support international networks of learning to build a financial mechanism for sustaining the companies and promoting the creative industries. According to the European Commission, companies that offer knowledge intensive business services, are determining an increase of GDP and employment rate.

The knowledge transfer and the learning process, should be integrated into the institutional practice and thus, they need to become quite "natural" for the institutional development and governance structures (Suciu, Florea, 2014). The knowledge based services stand in the center of mature and developed economies – this is the main source for getting a long-run competitive advanced based on an intensive use of knowledge and innovation capabilities, which could be turned into more complex products.

Cluster theory and the role of knowledge intensive business services in supporting creative and innovative clusters

Clusters are joining together networks of people from different structures and activities, such as companies, financial institutions, public authorities, research and education institutions and final consumers. These networks facilitate the communication between public and private actors. Moreover they facilitate the collaboration and partnerships between their members. The strategic purpose of the local innovative and creative clusters is to increase the revenues and to become more competitive. In order to create these networks, the entrepreneurs should understand the benefits while local authorities should support closely the start-ups within the region economic environment.

The main objective of the implementation of creative and innovative clusters in a specific region is to create and to develop a long-run competitive advantage, by sustaining its industries or by exploring the regional tangible and intangible resources. This will contribute to an increase of the competitiveness, in terms of efficiency, effectiveness and performance of the region.

This becomes crucial mostly in the context of the third stage of competitive development named symbolically by Michael Porter (1990) "*the stage of innovation*". According to Michael Porter regional creative and innovative clusters have to increase the number of employees and to create

new opportunities for business environment. The author considers that creative and innovative clusters are facilitating the transfer and share of knowledge, technologies, resources and technics, and thus this might create an additional value added as an important prerequisite for a long-run competitive advantages, especially for their members and for the specific region in which they activate.

The access to different types of organizations (hospitals, universities, research centers, education institution, etc.) facilitates the entrepreneurs' activities by creating access bridges to all these institutions and by accumulating useful information and knowledge for developing their activity. The competences and skills developed based on these partnerships are sustained through viable and competitive investments for long terms, by attracting other stakeholders which can contribute to the creative and innovative cluster development.

According to the Eurostat Study (2013), in average, for one of nine products, companies are cooperating with European partners. Considering this an advantage for the European Union, companies should invest more in creative and innovative partnerships, by applying the principles of open innovation and by developing platform for collaboration with universities, research institutes and other local actors interested to be involved in such partnerships. Moreover, the European Commission has a well-defined strategy for stimulating innovation, creativity, based on which *an Innovation Union* is developed.

As Dabija et.al. (2014) explain, the higher education institutions should be connected to the local economic environment, in order to support the partnerships between universities and business environments. The most important purpose of these partnerships is to invite within the academic environment, successful business managers, aiming to improve the performance of investments in human capital. Thus, students are stimulated to learn, to develop and to find solutions according to the new challenges specific to the local business framework. The higher education institutions are considered "globalization subjects and agents", having the responsibility to training the future generations of international specialists, by supporting the *quadruple helix* formed by learning and research institutions cooperating with the local communities.

As well, Pamfilie et.al. (2014) consider that universities should perform the role of a *knowledge and innovation hub*. Moreover, these institutions could become a *mediator of knowledge between companies and market*. In order to facilitate the transition to the next growth and development model, the authors propose the integration of universities in clusters and

partnerships with the business environment. Moreover, the authors suggest that a proper development of business incubators and the creation of a system for awarding the academic researches, could promote a constantly increasing flow of knowledge and innovations based on exploring people creativity.

Study case

The purpose of this research is to identify the presence of knowledge intensive companies, within the Romanian clusters framework. On the basis of this study we intend to support the idea of the need to investigate the relationship between companies that offer knowledge-based products and the network of clusters, in order to identify some of the most important set of explanatory factors.

The research collectivity is represented by the Romanian Clusters. At this moment, there are approximatively 47 active clusters. 15% of them are located in capital area (Suciu, Florea, 2014). The choice of the selected clusters was based on the activity domain, according to the *European Clusters Observatory*.

The data were extracted from two databases,

- one is from *the Romanian Cluster Association (Clustero)*
- and another one is from *the European Cluster Observatory*.

Taking into account that these institutions do not provide a complete list of information for the clusters, it was necessary to apply a supplementary procedure to capture all the data and to bring the information in the same format. In order to facilitate the analysis and interpretation of data, we collected the existent data from the two sources mentioned above and we integrated them into an unitary database, using the tables and functions taken from a tool applied also by the business intelligence approach.

We have identified five types of clusters in order to better analyze them and to observe their structure. We had identified the following clusters: *Innovative Regional Cluster Packaging-Printing-Design*, *Cluster Traditions Manufacture Future TMV South East*, *AUTOMOTIVEST Regional Cluster and Transylvania Furniture Cluster*.

By analyzing the structure of these clusters) we can notice that, as illustrated in Table 1, in the majority of cases, at least 10 companies and one catalyst are actively involved in this type of structure,

From the previous mentioned clusters, we had selected for this paper to analyze *the Innovative Regional Cluster Packaging-Printing-Design*, due to its activity which implies a mix of creativity, innovation and knowledge based resources. Among the members, there are trading companies, publicity

agencies, companies with photographic activities, paper and packing companies, and not at least companies that offer consultancy on business management. Within this clusters, there is no university, instead it is a research institute: *National Institute for Research and Development in Food Bio resources –IBA Bucharest*. Furthermore, there are two catalysts represented by *the Agency of Environment Protection Covasna* and by *the County Agency for Employment Covansa*. What is uncommon is the presence of two financial institutions: one *branch of CEC* and one branch of *the Transylvania Bank*.

This cluster focuses on *the services supply for packing, printing and design*, for the national and international market. Its aim is to provide innovative, creative and high standards products and services.

Regarding the management team of this cluster, it is important to mention that it is a company which has partnerships with other three clusters: *Proo Wood, Agro Food and Transylvania Textile and Fashion*. This company is gathering many more professional groups, companies, agriculture associations and clusters, providing different services form sessions of account and techniques, seminars regarding financing sourcing, consultancy on the industrial properties protection, courses for selling skills, legal advice, even the space for workshops and cluster meetings.

Continuing the analysis with the *Traditions Manufacture Future TMV Cluster*, this is one of the most important textile clusters belonging to the textile sector from Romania. It can be noticed that this cluster is also recognized by *the European Cluster Observatory*. The aim of this cluster is to promote the textile products made by its members. This cluster is developing training programs, instructions for technological capacity use and consultancy in order to attract European funds. This cluster includes two universities (*University of Textile Iași, University of Arts and Design Cluj-Napoca*), a regional authority (*The Agency for South – East Regional Development*), two research institutes and one catalyst. From this point of view, the cluster is an example that applies the principles of the *"four clover model"*, which implies the presence of universities, research institutes, public authorities and catalysts.

This cluster had participated at two important projects, which helped the members to become more efficient and promote them at the European level. The first project *"Sustainable Energy Saving for the European Clothing Industry" – SESEC*, was financed by the *Executive Agency for Competitiveness and Innovation (EACI)* through *The Program "INTELLIGENT ENERGY – EUROPE"* at the *INCDTP initiative*. For the realization of this project other nine clusters and textile associations from Europe participated. The

Project joined together manufacturers from Belgium, Italy, Bulgaria, Portugal, Germany and Romania. Along these 30 months of project, the companies improved their performance and diminished the cost based mostly on applying an energy efficiency programme. The second project of this cluster was sustained by *AMPOSCCE* through *"The Plan for Traditions Manufacture Future TMV development"*. The purpose of this project was to increase the visibility of the cluster, attract new members, and promote their products at the international level.

One of the most active clusters from IT field is *Cluj IT Cluster*, founded in 2012. This cluster gathers 32 companies from different sectors, four universities, three public authorities, one research institutes and five catalysts. The members of this cluster have the same goals: competitiveness increasing, products and services promoting and building the most extended network of IT specialists. Moreover, this cluster is attracting young, skilled and talented students in order to develop new projects and discover new opportunities for development. Starting from 2013, this clusters is organizing annually events as *Cluj Innovation Days*, gathering specialists, entrepreneurs, and aiming to create a network of business leaders, entrepreneurs, students, researchers and policy maker. The cluster is offering high quality services for companies, and also is involving the *eHealth Platform* development. In order to accomplish these projects, the cluster collaborates with *the University of Agricultural Sciences and Veterinary Medicine* from Cluj Napoca, *The National Institute for Research and Development of Isotopic and Molecular Technologies* from Cluj Napoca (*INCDTIM*). As catalysts it should be mentioned the *Cluj Hub*, which offers management consultancy, workshops and debates for start-ups, legal advice, support services for intellectual rights and copyrights.

The next successful cluster is *Automotivest Regional Cluster* in the automotive industry. Although it gathers six companies, one university and two research institutes, it was awarded by the *European Cluster Observatory*.

Regarding the catalysts, the most important is *"Tehimpuls Association"*, a regional center for innovation and technologic transfer, aiming to sustain the innovation and research activity. This association gathers ten members and offers support and consultancy to companies involved actively for discovering new development opportunities, in attracting European funds, on tech transferring and since 2013, it has also organized regional events of innovation.

This cluster has partnerships with other national and international organizations from Germany, Spain, Italy, Serbia and Hungary. It had

participated at international fairs and expositions and it is financing projects mostly dedicated to human resources development.

Another successful cluster is *The Transylvanian Furniture Cluster*, which sustains the furniture industry from Romania. The purpose of this cluster is to promote the furniture sector and the wood products; to attract new members; and to create more innovative, creative and competitive products. This cluster is focusing on attracting economic resources and on investing into new equipment and software. Thus it is developing the activity, the infrastructure and is facilitating the production process.

This cluster is also recognized by *the European Cluster Observatory* and awarded for its success. As members, it gathers 27 companies, three universities, one research institute, one public authority and seven catalysts. Concerning the catalysts, the most important ones are one human resources company, which manages the employees, providing staff trainings and two companies that offer consultancy in management for entrepreneurs, access to European funds and solutions for increasing the economic performance of companies.

The cluster is involved in numerous partnerships with different associations of furniture from Romania and Europe. It had participated at the international conferences, expositions, workshops and fairs for creative and innovative clusters.

Following these analyses based on a Romanian case study it can be observed that KIBS companies have an important role in every successful clusters, and are a necessity for the cluster development.

Conclusions

In order to support creative and innovative clusters in Romania there is a need to adopt a specific strategy dedicated to support an endogenous growth, based on innovation, knowledge and technology. In order to implement such a strategy we need to support the development of networks and interactions between public and private organizations mostly on the regional level.

Emergent countries do not have the same facilities as the developed countries, and should find different methods to support the development of innovative technologies, and to adapt the strategies designed such as to contribute to the regional development. In order to implement on the local/regional level these strategies, we have to be connected also to knowledge intensive business services. Public education, trainings and all types of investments in human capital, represent one of the key ingredients for supporting innovation.

Technological development, knowledge accumulation, investments in competences, and corporate social responsibility are important instruments for generating and increasing the value added in the local/regional business environment.

A greater implication of all the partners through a participative management, could stimulate the knowledge and innovation management, ideas sharing and collaborations between employees and top management. Moreover, *European Commission* intends to support experience and good practice sharing between public authorities involved in regional cluster development.

Companies which invest in people and in the creative resources, have more innovative products estimated to be at least in an average of 25% more as compared to other products. In general, international partners from Europe and from other parts of the world are investing a lot in cultural and creative industries and sectors. For example, USA, China, South Korea and India invest in special programmes dedicated to stimulate the creativity and to support the most qualified employees, aiming to contribute to their economic and social development based on a long-run sustainable advantage promoted also based on the knowledge intensive business services.

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Table 1
The structure of the analyzed clusters

Cluster	Region	Activity Sector	Year of Foundation	Structure				
				SME	Univer sities	Public Authorities	Research Institutes	Catalysts
Innovativ Regional Cluster Packaging- Printing-Design	Center	Packaging and promotional products	2012	16	0	1	1	2
Cluster Traditions Manufacture Future TMV Sud Est	South - East	Textile	2011	10	2	1	2	1
AUTOMOTIV EST	West	Automotiv e	2007	6	1	1	2	5
Cluj IT	West	IT	2012	31	4	3	1	5
Transylvania Furniture Cluster	North- West	Furniture	2012	27	3	1	1	7

Source: Data obtained from *Clustero* and *European Cluster Observatory* and *clusters* websites.