Lietuvos klasterizacijos studija
Lithuanian Clusterization Study

2017

Vilnius, 2017

SUMMARY

A report is prepared according to the public service contract Nr. 10V-83, which was signed on 9th of August, 2017, with the client who implements the project "Promotion and development of Innovation Networking - InoLink" (project no 01.2.1.-LVPA-V-842-01-0002). Research Institute for Changes (RICh) implemented public service contract and prepared the report **"Lithuanian Clusterization, 2017"**.

The aim of the study is to identify the potential and possibilities of the enterprises to join the clusters and foster maturity of existing clusters in the market; to identify the most viable sectors for clusterization; to define and predict clusterization trends and prospects; to assess the clusters' abilities to enter international clusters and to evaluate the effectiveness of support measures.

Methods. The study is based on the review of scientific literature, analysis of official documents, studies and statistical data, survey the cluster coordinators' and semi-structured expert evaluation.

Trends and perspectives of Lithuanian clusterization

In Lithuania, clusterization processes were most active in 2010-2015, when organizations got access to financing instruments for the development of clusters. Micro, small and medium-size enterprises are the most involved in clusterisation processes. Associations are the least involved in the membership of cluster organizations. The members of Lithuanian clusters are spread out in 34 cities / districts of Lithuania. It was observed that public entities are more engaged in clustering processes than companies in smaller towns / districts. The biggest engagement of clustering processes take place in Vilnius and Kaunas counties. The most sluggish clustering processes occur in Taurage, Marijampolė and Telšiai counties.

Lithuania's clusters have been focusing mainly on co-financing activities, i.e. preparation of joint project applications; development of joint products / services and establishment of national and international partnerships till now. The least attention was paid to the formation of a legal ecosystem, certification and the training of cluster members' employees. There were three clusters identified which have already reached the maturity level when new joint ventures are registered.

In the future, clusters plan to focus on developing new products and services and to increase foreign sales, as well as, to develop the competencies of cluster members, develop joint R&D activities.

The study revealed that the vast majority of clusters carry out R&D activities, but mostly cluster members perform their own R & D activities that are relevant to them, and mainly they are carried out by using their own resources. The least amount of R&D services is purchased from third parties', i.e. research institutions and / or consulting firms.

All in all, the participation of a research and study institution in a cluster contributes to enhancing the image of cluster members and helps to access the necessary experts. However, direct functions of a higher education institution, such as training of staff of the necessary qualification or requalification of the current staff, are rarely used in clusters. The study revealed that research and study institutions currently benefit less than enterprises from being a cluster member. On the other hand, being a cluster member provides research and study institutions with the possibility to carry out relevant research and development activities. Besides, taking part in the activity of a cluster can help such institutions shape entrepreneurial thinking, attract new students, and develop relevant forms of education and training topics. The study revealed that successful cooperation between science and business is hurdled by a difficulty to perceive a true value of science (financial and non-financial) and by flawed procedures of science commercialization. There is a lack of science commercialization procedures that would be more in line with the needs of the market and satisfy the interests of all three stakeholders, i.e. a higher education school, a scientist and business (e.g. an adequate

split of intellectual property rights). On the state level, there is a need to come up with ways of encouraging research institutions and researchers to participate in R&D activities (e.g. to review the rules of higher education institution funding and assessment of researchers). While developing the funding measures for clusterization processes, the terms and conditions should be set out in a way that they satisfy the interests of both business and science.

The study showed that R&D parks as well as integrated science, study and business centres (valleys) have also been poorly used for the development of clusterization processes in Lithuania so far. The valleys and R&D parks should have more human potential in order to be able to initiate the cooperation of business and science in a professional manner, to encourage research output, which contributes to the development of high value added products/services and to the increase of profit margin. R&D parks and valleys should be more active in developing the infrastructure for business and science clusters (by way of technological centres or alike), to encourage the creation of niche clusters on the basis of university spin-offs, to organize training about what innovation and R&D is, how to describe it, how to be actively involved in the area of shaping the culture of science and business cooperation.

Potential and possibilities of enterprises to form clusters and to mature the existing clusters on the market

The main reason behind the formation of clusters has been enterprises' attempt to develop joint projects/services and to jointly launch them on the market as well as to optimize the value created by joining activities. Currently, 87.5 percent of the clusters surveyed are in their third stage, i.e. the stage of innovative development; 9.4 percent are in the second stage of initiative and 3.1 percent are in the fourth stage of maturity.

The opportunities to create clusters in Lithuania were mainly due to the support provided by EU investment funds, but after the end of this support as many as one fourth of clusters confronted an issue of the lack of cluster management team in 2016, and 53 percent of clusters were able to afford only one person in their management. It shows that Lithuanian companies are still not capable to fund a cluster coordinator on their own. Such a situation is threatening the development of successful clusterization processes in Lithuania.

It is important that cluster coordinators, who employ one or two people for the development of cluster activity, define the key principles of partnership, organizing activity, and activity co-financing from the resources of cluster members. To develop innovative activities, a cluster has to have a clear goal to pursue such activities and to define development processes of innovative activities. If a cluster pursues innovative activities, key partnership principles have to be defined and it necessary to ensure that all cluster member will have access to the output created. The cluster coordinator should also ensure the dissemination and use of knowledge necessary for pursuing innovative activities.

The study revealed that certain personal qualities are primarily required for the management team of the coordinator, such as entrepreneurial spirit, creativity, diplomacy, receptiveness to innovations, etc. The management team of the cluster coordinator should also have strong competences in marketing. Financial viability of the cluster is mostly related to the ability of the cluster coordinator to attract external funding and to manage projects. The management team of the cluster coordinator should have strong communication and coordination competences, to be able to manage processes of international expansion and to have traditional managerial competences, such as strategic management, administration, management of finances and innovations, etc. However, as many as 15 clusters (46.9 percent) stated that they have not been involved in any activities related improving the competences of the cluster coordinator's team within the last 12 months. The most considerable threat is posed to the management of the cluster when members of the management team with experience and acquired competences resign. The biggest number of persons who left the teams of cluster coordinators was in 2014. Since 2015, the number of cluster coordinator's team members has stabilized.

The most viable sectors for clusterization

The European Commission's cluster policy guidelines foresee that clusters should play a key role in creating the emerging industries - a new value chains (Ketels ir Protsiv, 2016). An emerging industry is the creation of a completely new value chain or a radical reorganization of the existing industry structure, driven by the disruptive idea (or convergence of ideas), creating new and higher value-added products / services. The European Commission identifies ten emerging industries: Advanced packaging; Biopharmaceuticals; Blue Growth Industries; Creative industries; Digital industries; Environmental industries; Experience industries; Logistical services; Medical devices; Mobility technologies.

The cluster coordinators' survey revealed that the most active enterprises in the processes of clusterization represent sectors of manufacturing and engineering, information and communication technologies, energy and construction as well as creative industries. Cross-sectoral cooperation mostly involves enterprises that represent information and communications technology, creative industries and manufacturing and engineering sectors. Table 21 shows Lithuanian clusters who act in the sectors of emerging industries and cross-sectoral initiatives, which were identified by European Commission.

The study revealed that most of the clusters involved in the research are developing their activities in the sectors of emerging industries which were identified by European Commission. Results of semi-structured experts' evaluation shows that a more active cross-sectoral cooperation in Lithuania could be encouraged by examples of international good practice, specialized events for generation of ideas and funding measures that encourage the intersection of at least several areas of smart specialization.

Potential of clusters to join into international clusters

The cluster coordinators' survey revealed that International exhibitions are currently the predominant international initiative where clusters take part. Participation of clusters in international initiatives provides them with greater potential to expand the business network abroad, enables them to make marketing activities more effective, provides them with an access to a greater network of customers and improves the image of all cluster enterprises.

Lithuanian clusters are just starting to be involved in international programmes. Cluster members expend effort to be a part of international project initiatives, however, they lack competences of preparing applications for international projects and high value added research output, which would be of interest for international partners. Therefore, cluster coordinators are required to have strong communication and coordination competences, to be able to manage processes of international growth and to have traditional managerial competences. Cooperation with foreign clusters would be encouraged by the support to enter foreign markets and increased funding. Also, wider experience in international business development and knowledge about the potential of international development are necessary. Greater innovativeness of cluster products would also play a significant role in joining international cluster networks.

Assessment of effectiveness of support measures

The study of the impact and need for support measures revealed that the former and the current measures have a positive impact on clusterization processes in Lithuania. The current measures focus on activities which cluster members feel that they need to undertake, however, they are insufficient. The study showed that consistent and sustainable development of clusters is highly influenced by consistent and stable activity of the cluster coordinator. Lithuanian clusters still lack the experience and motivation of cluster funding from own resources, therefore, it is crucial to design funding instruments which would ensure a stable and successive activity of cluster coordinators.

Recommended criteria and indicators for the assessment of clusterization processes

Traditionally the goals of the development of clusterization processes are defined in policy documents, such as regional/national clusterization strategies or clusterization development agendas. Therefore, the criteria and indicators for the assessment of clusterization processes are designed with respect to cluster policy tasks and foreseen activities. The process is evaluated by analyzing the change performance indicators over time.

The predominant assessment indicators of cluster activity are the following: cluster size and economic activity, business setting for cluster activity (i.e. specific for cluster activity), the power of cluster organizations, compatibility of cluster organizations' strategy and action plan.

Cluster size is recommended to be assessed as an absolute number of subjects forming a cluster, the so-called critical mass, i.e. the number of subjects forming a cluster in relation to the total number of subject in a sector and the number of complementary subjects in the region. The following criteria are recommended for a more detailed analysis: the development of cluster competitiveness, the development of cluster innovation, the growth of social capital in a cluster, the growth of confidence in a cluster, and decline in costs of settlements with external subjects.

Proposals for promotion of clusterization process

- To improve the ecosystem for clusterization in Lithuania by enhancing business conditions, extending knowledge and developing skills, attracting know-how from abroad, encouraging restructuring of sectors, boosting public sector demand for innovative products;
- To design a National Clusterization Strategy in order to ensure consistent development of cluster policy as well as focus and continuity of activities that encourage and support clusterization;
- To develop the registry and data base of clusters in order to ensure effective monitoring of clusters' activity and impact;
- To develop clusterization monitoring tools;
- To set up a funding system of cluster administrators, which is in line with European Union recommendations laid down in the documents (European Commission Regulation No. 651/2014, and their explanation document *General Block Exemption Regulation* (GBER) clause 27 (European Commission, 2015/2016) and *New Rules for State Aid for Research, Development and Innovation* (2015));
- To encourage cross-sectoral cooperation by organizing targeted events for entrepreneurs on generating ideas for cross-sectoral cooperation, where special techniques of idea generation would be used, and by developing funding measures, which would encourage the intersection of at least several areas of smart specialization (e.g. the project idea should cover several areas of smart specialization or the applicants would be required to form consortia that cover several areas of smart specialization);
- To encourage amalgamation of clusters in order to promote their involvement in international cluster networks and participation in international cooperation programmes;
- To encourage high value added research output by transforming AMI funding system, research assessment system and adequate distribution of intellectual property rights;
- To encourage the aspiration for the excellence label;
- To provide greater assistance in preparing applications for international project initiatives;
- To raise awareness of the good examples of clusterization in the European Union and Lithuania.

Proposals for cluster activity monitoring

The monitoring of cluster/clusterization activity can be exercised on two levels:

- On the European Union level by using the results of Cluster Observatory and Regional Ecosystem Scoreboard;
- On the national level by developing the methodology of cluster activity monitoring.


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