RISE AND FALL OF SME CLUSTERS IN LATVIA

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Abstract. One of the leading driving forces of every state economy is Small and Medium Enterprises. In Latvia, SMEs counts for 99.7% from national industrial system, creating 70% from states' value added. The recent crises heavily affected SMEs and highlighted one of the modern economic imperatives for SMEs – need for collaboration in order to survive and successfully compete. In modern economic environment SMEs need to establish collaborative links with other SMEs, operating in same industrial sector and region, thus forming business networks and clusters. The objective of the paper is to provide analysis on development of Latvian government supported SME clusters and outline the factors influencing rise and, sometimes, fall of SME clusters. The task is to compare Sweden experience against the Latvian one and evaluate the impact of Latvian cluster initiatives. This analysis can be useful in the development and planning of SME cluster projects. The methods of the research are systematic, logical and comparative analysis of scientific literature, analysis of statistical data, case study and expert method.

Keywords: cluster support policies, clusters, Latvia.

Jel classification: J58, L16, O41, R38, M19.

1. Introduction

One of the leading driving forces of every state economy is Small and Medium Enterprises. In Latvia, SMEs counts for 99.7% from national industrial system, creating 70% from states' value added (Central Statistical Bureau Data Bases, Market Sector Economically Active Statistical Units by Size Group in Statistical Regions in Latvia in 2011). The recent crises heavily affected SMEs and highlighted one of the modern economic imperatives for SMEs – need for collaboration in order to survive and successfully compete. In modern economic environment SMEs need to establish collaborative links with other SMEs, operating in same industrial sector and region, thus forming business networks and clusters.

Since Latvia became independent in 1990 and till it joined the EU, many structural economy reforms have been made, but unfortunately there is still big gap between Latvian and developed EU countries in terms of cluster development. One of the reasons is previous planned economy-regime heritage, when industries were located not in accordance with region labor force concentration, but in accordance with Moscow plan. In 1999–2002 the PHARE project investigated the potential for clusters in Latvia and identified four potential sectors of which two – IT and forest-

ry currently have functioning organizations, compared to Sweden, which has roughly 38 regional clusters with significant specialization levels and minimum levels of absolute size (Lindqvist *et al.* 2003). Therefore in comparison with Europe Latvia has undeveloped clusters and it needs to exploit Cluster initiatives in order to support cluster development to achieve sustainable long-term development.

The objective of the paper is to provide analysis on development of Latvian government supported SME clusters and outline the factors influencing rise and, sometimes, fall of SME clusters and networks. The task is to compare Sweden experience against the Latvian one and evaluate the impact of Latvian cluster initiatives. This analysis can be useful in the development and planning of SME cluster projects.

## 2. Clusters, cluster initiatives and need for impact assessment

Already at the end of 19th century, A. Marshall observed that firms can enjoy benefits from locating close to others engaged in related activities (Marshall 1890). This observation is still valid nowadays both in developed and in developing economies. The main benefits firms can enjoy are:

- potential to attract more specialized suppliers and interact with them more efficiently, thus increasing higher level of productivity
- labor market that is deeper and provides more specialized skills, labor market is more competitive as employees are seen to work longer hours in strong clusters
- knowledge spillovers through different channels that one can only tap into locally. The cluster environment creates stronger pressure to innovate, a richer source of relevant ideas, and lower costs of turning ideas into new products and services. New companies are more reliant on external assets and capabilities than incumbents. This leads to higher levels of entry in cluster environments (Ketels 2009).

Clusters, i.e. geographically co-located end producers, suppliers, services providers, research laboratories, educational institutions, and other institutions in a given economic field, are important drivers of dynamic regional economies. Recent trends in management, such as the focus on core activities/competencies and the move towards open innovation have increased companies' reliance on partners in close proximity (Europe Innova 2007). Mentioned above findings suggest that cluster initiatives could be more efficient than traditional entrepreneurship support policies, as cluster policies not only supports the creation of new companies, but also supports it growth and competitive advantages.

The cluster initiatives in a broad use appeared only in a middle 2000s, see Figure 1. At the very beginning of 1990th only few individuals were interested in cluster initiatives and most of the governments support was designed in form of industrial policies targeted to the concrete companies, thus distorting the competi-

tion. According to the European Cluster Observatory survey conducted in 31 countries, half of the respondents started to use cluster policies only after 2000 (Europe Innova 2008). For this reason cluster support policies in many European countries were still in the early stages. With the growing number of researches and case studies cluster initiatives become more and more popular and by the middle 2000s already every developed country had various cluster initiatives, targeted on developing the regional clusters, thus enabling effectiveness among the companies – cluster members.
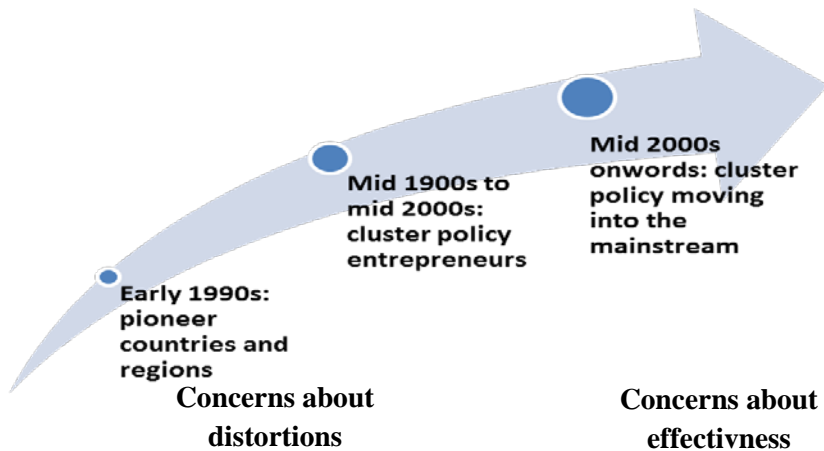
Fig. 1. Evolution of cluster initiatives (Source: Adopted from Ketels 2012)

The fact that cluster initiatives are relatively new in most European regions is also recognized by Landbaso, Mikel, Rosenfeld in their paper 'Public policies for industrial districts and clusters' (Landbaso *et al*. 2009). They conclude that these new cluster initiatives have influenced the creation of new support policy instruments which are based on private and public partnerships, as well as business cooperation or networking. According to the authors it is important to encourage regions to exchange information on success and failure of the application of cluster support instruments to make them even more efficient (Boronenko, Zeibote 2011).

Cluster initiatives are defined in the Cluster initiative Greenbook (Solvell *et al*. 2003) as 'organized efforts to increase the growth and competitiveness of a cluster within a region, involving cluster firms, government, and/or the research community'. The cluster approach has the advantage of incorporating SMEs and large firms along with, trade associations, business intermediaries, and regional political actors. The clustering effort can indicate new areas of investment both private (in new areas of the value chain) and public (in specialized infrastructure, research or educational programs), or could just act as a new way of lobbying to obtain more resources by the traditional players. Improve human, financial and knowledge mobility (Europe Innova 2008).

According to the Cluster initiative Greenbook, there are 2 ways how the local externalities (information asymmetries and coordination failures) might be addressed by cluster policies:

- Targeting of public policy at clusters – Clusters provide a framework for organizing the implementation of public policy with a superior ratio between impact and distortion:
- Creation of platforms for joint action – clusters organizations provide a platform to better leverage existing assets in the business environment and cluster efforts can mobilize more effective collective action to improve the business environment:

In practice governments are deploying the mix of mentioned above programs thus trying to find the 'best mix' in addressing the local externalities. European countries and regions have launched a wide range of cluster initiatives in recent years. Despite this high level of activity, there is a sense that cluster-specific policies have yet to show their full power. This might be just a temporal issue, as cluster development takes many years and many of the initiatives are still relatively young (European Commission 2007).

With cluster initiatives and other cluster-based economic policies increasingly common across EU Member States, there is a growing demand for a systematic assessment of their impact. Individual countries, for example Austria, and groups of European regions, for example Catalonia, Sweden and Yorkshire, have already initiated such efforts. But there would be a huge advantage from designing and organizing such a monitoring effort from a central and neutral position (European Commission 2007). Due to their fragmented nature, existing cluster policies may be considered to be in their early stage of development. As various clustering activities and concentrations of firms have been identified across sectors, thorough impact assessment is required to validate the best path forward.

There are different approaches what and how evaluate as an impact of cluster initiatives. Firstly cluster initiatives has long term goal, as clusters do not emerge within 2-5 years, it is a question of decades. Secondly, authorities and politicians cannot afford to leave any cluster initiative without evaluation as reports to society need to be produced. If EU funds money is involved in supporting initiative, then some specific goals in a program are set, the goals could vary from economic to brand awareness. The task is to measure the specific contribution of collaborative action as opposed to the outcome that would have been observed in the absence of a clustering initiative, i.e. to measure additionally. Taking to account above mentioned task following evaluation indicators might be distinguished:

- economic goals, such as the cluster's employment and wage growth, are ultimate goals of cluster policies but because they are also influenced by many other factors they are a problematic short-term indicator. As a sub indicators may be measured: number of firms in a cluster, production, exports, performance and the growth of these variables;

- changes in business environment quality, especially in those areas targeted by cluster initiatives, are another candidate for evaluation and more directly related to policies. As a sub indicators that may be measured: creation of new firms, the number of innovations produced in cooperation;
- operational performance is a direct reflection of cluster initiative quality although it is not a policy goal in itself (Ketels 2005).

In accordance to Prof. Dr. Christian Ketels (Ketels 2012), Harvard Business School, there are following findings after the evaluation of cluster programs:

- Program evaluation:
  - Positive impact on participants in program activities;
  - Companies make significant co-investments and continue to participate;
  - Regions report significant increase in 'social capital';
  - Direct economic benefits often hard to prove, especially at the broader cluster or regional level.
- Control groups of firms:
  - Positive evidence shown in some programs, with program participants reporting higher productivity and output growth (Sweden, Denmark);
  - Other studies find no significant effects (Martin *et al*. 2011).
- Cross-regional analysis of prosperity drivers:
  - Systematic regressions of business environment quality, cluster presence, and cluster efforts on economic performance have so far not been possible due to the lack of robust data.

Taking to account that in Latvia cluster policies and clusters are in embryonic state, resources, expertise and relevant official statistics available for evaluation are scarce, therefore evaluation approaches should be designed with a view to what findings are most important and most conducive to initiative learning. Taking to account above mentioned and exploiting as a tool Cluster Greenbook clusters policies description, for evaluating the impact of Latvian cluster initiatives, author suggest to use following 6 criteria:

1. Research and networking (Company networks, People networks) .
2. Cluster expansion (Incubator services, Spin-offs, Region branding, Firms attraction, Company growth).
3. Innovation and technology (Technical trends, Facilitation of innovativeness, New technology, Production process, Technology diffusion).
4. Education and training (Technical training, Management training).
5. Commercial cooperation (Purchase coordination, Market intelligence, Business assistance, Export promotion).
6. Policy action (Infrastructure projects, Regular lobbying, Subsidy lobbying) (Solvell *et al*. 2003).

For evaluation author proposes to use above mentioned 6 criteria in questionnaires, structured interviews of stakeholders: Ministry of Economy, Latvian Investment and Development Agency, Industry associations and Cluster managers. Later control group analysis and case studies could be exploited as it will help to gauge linkages that are informal and internal to clusters.

Cluster initiatives are not a panacea and they are not a substitute for efforts to remove weaknesses in the general business environment or the overall context. But if they are part of an integrated strategy for competitiveness upgrading, they can be powerful tools to reach an impact that cross-cutting policies alone will be hard stretched to have (Europe Innova 2007). The mere awareness of processes and objectives can assist in shaping more favorable government attitudes and strategies.

3. Cluster initiatives in Sweden and Latvia

There is not a single type of definition across EU Member States for cluster policy and cluster organizations that could be applied uniformly. While the general definitions and the way they are named vary across Member States, cluster policies all aim to promote and support knowledge based network building, which in turn contributes to increased value creation and the development of innovative solutions (Barsoumian et al. 2011).

There are two national programs in Sweden that are especially aiming at development of strong regional milieus by supporting clusters and innovation systems. These are:

- The VINNVÄXT program;
- The regional cluster program.

The flagship project for Swedish cluster policy is VINNVÄXT, a program run by VINNOVA. VINNVÄXT is a program that takes the form of a competition for regions. The aim is to promote sustainable growth by developing internationally competitive research and innovation environments in specific growth fields. The winning regions receive funding of up to 1.1 million euro per year for a period of 10 years. The objective is that the winners will become internationally competitive in their respective fields within this period. A prerequisite for the program is the active participation of players from the private, public and research sectors and from the political sphere. VINNVÄXT also comprises a number of support activities such as seminars, training/education and the exchange of experience and the extension of knowledge/research. The program began in 2001, and in 2003 the first three regional clusters were selected in a competitive process for a ten-year program with up to 1.1 million euro funding available per year, together with parallel process support. Five more clusters were selected in 2004 and in 2008 another four emerging clusters were accepted to the program. A unique aspect of VINNVÄXT is the long time horizon (VINNOVA Report VR 2011).

The initiatives in the VINNVÄXT program are to be evaluated every third year in order to determine whether they are complying with the demands set by

VINNOVA. The first three years of evaluation of the VINNVÄXT initiatives have both a summative and formative (learning) approach focusing both on achieved results in comparison to goals and action plan, as well as strategic issues related to the further development of the initiative. The objectives for the initiatives after three years are to demonstrate clear positive changes in innovative capabilities and international competitiveness.

The main findings on evaluation were:
- Program helped clusters to develop academic knowledge base; some are well recognized within Sweden, a few of them are well recognized globally
- In a number of the clusters, academic activity is strongly market/needs driven. Some of the initiatives have very fragmentary regional value chains, are not able to bridge missing members, or fall below a 'critical mass'
- The VINNVÄXT initiatives have made great efforts to support commercialization and entrepreneurship. The initiatives have made significant investments in both processes as physical arenas (e.g. test beds, prototype factories, business labs, etc.).
- Supported clusters are still very small contributors to their region's economy
- Some of the cluster initiatives are now strongly business led with active and committed local business people, together with senior stakeholders coming from the local universities and local or regional public and private institutions – reflecting the triple helix model – that are again pro-active, committed and supportive (VINNOVA Report VR 2011).

The regional cluster program is administered by TILLVÄXTVERKET (Swedish Agency for Economical and Regional growth). The program is an initiative seeking to strengthen regional concentrations of enterprises and public as well as non-public organizations, both competitive and cooperative, i.e. clusters. The cluster initiatives work as joint ventures between industry and public sector, and set off from current clusters. The program period is among 2005–2010 and is budgeted to 7.5 million euro. Among the activities supported are commercial cooperation (analysis, purchase collaboration), networking (triple-helix, dialogues) and cluster expansion (new establishments, spin-offs etc.). All activities should have clear market oriented qualities, which implies that the program does not support basic research and product development.

In Latvia, the first initiative to identify and promote development of industrial clusters was the project 'Support to Industrial Cluster Restructuring', funded by the EU PHARE program (1999–2001). According to the research findings, the following sectors of the Latvian economy were recognized as sectors having cluster development potential: IT, forests, machine building, and composite materials (Vanags 2007). Cluster initiatives were established in these sectors, but only two of the initiatives started in 2001 succeeded and are still operating as cluster initiatives today (Forest and IT clusters).

The EU PHARE support for cluster development activities had several significant results, such as an increased understanding of the importance of clusters and

their development, facilitating mutual co-operation between players of different sectors, and initiating the development of long-term activities and objectives of mutual co-operation. From analysis of cluster development processes in Latvia and the role of clusters in Latvian economic development, it is apparent that the role of clusters has not yet been fully recognized and understood. Today, with a renovated government, this policy is regarded with scepticism, as the idea is results were poor for such a high investment. One of the reasons for such scepticism is perhaps the misconception of what a cluster is and what to use it for. Government (and society) today understands that a cluster is related to the creation of an institution/ association where members actively collaborate, especially to export.

On June 28, 2007 the Cabinet of Ministers of Latvia, with Decree No. 406, adopted the Program for Promoting Commercial Innovation and Competitiveness 2007–2013, worked out by the Ministry of Economy of Latvia. It states that the creation of clusters is lagging behind, despite the current favourable industrial environment in Latvia, and more active co-ordination of state and business policies to promote cluster development is necessary.

In the Program for Promoting Commercial Innovation and Competitiveness 2007–2013 a special support program for clusters was adopted by the Ministry of Economy within the 'Entrepreneurship and Innovation' program. The Cluster program is implemented with co-financing from the EU Structural and Cohesion Funds, and its objective is to promote co-operation of enterprises and related education, research, and state institutions, to support implementation of joint projects to facilitate a more rapid increase of industry and enterprise competitiveness, and to promote exports, innovation, and production of new products.

The Cluster Program supported nine cluster initiatives in 2009, nine cluster initiatives in 2010, and seven cluster initiatives in 2011. The supported cluster initiatives are the following:

1. IT cluster (2009, 2010, 2011),
2. Metalworking and related industries cluster (2009, 2010, 2011),
3. Electronics and electro-technical cluster (2009, 2010, 2011),
4. Pharmacy, chemistry, and related industries cluster (2009, 2010, 2011),
5. Furniture and related industries cluster (2009, 2010, 2011),
6. Cosmos technologies cluster (2009, 2010, 2011),
7. Supply chain cluster (2009, 2010, 2011),
8. Textile and related industries cluster (2009, 2010, 2011),
9. Food industry cluster (2009, 2010).

The Cluster Program implemented by the Ministry of Economy will continue in 2012-13, because, as experience shows, it has not been possible to create new cluster initiatives in Latvia without specially targeted state support. The program is aimed at promoting the preparation and implementation of efficient cluster development strategies, including implementation of joint projects, thus, ensuring, more rapid growth of competitiveness of industries and, indirectly, businesses themselves. Ambitions/goals: cooperation stimulation of mutually connected institutions

(research, education) and business people, by supporting joint project implementation, thus facilitating increase of competitiveness, innovations, increasing exports and developing new products (Vanags 2007).

Additionally, in 2011, the Cabinet of Ministers of Latvia approved decree, that provides additional 3.4 million LVL (approximate 5 million EUR), with program target: industries mutually unlinked companies R&D, educational and other institution cooperation fostering, by this supporting competitiveness, export production increase and innovation. It is presumed that Cluster program will promote cluster members companies: production facilities consolidation, specialization on definite areas and common products and technology elaboration. The program will support joint R&D activities, new education programs elaboration, joint marketing and export market enlargement, common supply chains and purchases, linkages with other international clusters.

3.1. Discussion

As it was mentioned in previous chapter, altogether from 1999 till 2011 in Latvia through the cluster initiatives 12 different clusters were supported. Only PHARE 1999-2001 project has been evaluated, impact from other initiatives has not been evaluated.

By exploiting evaluation methodology proposed by author in second chapter, author has conducted structured interviews with stakeholders and experts in order to evaluate impact from conducted cluster initiatives.

The results are summarized in Table 1. Respondents were asked to evaluate the impact of cluster program with a scale: 0 (weak impact), 1 (moderate impact), 2 (strong impact). Accordingly clusters were ranged in 3 groups: weak, in transition from weak to strong, strong clusters.

Table 1. Evaluation of Latvian cluster initiatives impact (Source: compiled by author)

Weak clusters	Transition clusters	Strong clusters
Machinery	Metalworking and related industries cluster	IT cluster
Composite materials	Electronics and electro-technical cluster	Forest cluster
Supply chain cluster	Furniture and related industries cluster	Pharmacy, chemistry, and related industries cluster
Textile and related industries cluster	Cosmos technologies cluster	
	Food industry cluster	

Based on interviews and experts' method author outlined the 5 major factors, which influenced the weak performance of clusters:

1. Short term thinking of cluster founders and relying only on EU funds,
2. Weak trust and interest in cooperation between cluster members,
3. No member fees introduced and members are not disciplined,
4. Weak cluster manager,
5. Weak industry companies representation in a cluster.

Based on interviews and experts' method author outlined the 5 major factors, which influenced the strong performance of clusters:

1. Professional and from industry cluster manager,
2. Member fees and Public-private-partnership financing,
3. Strong industry companies representation in a cluster,
4. Strong links with Academic and research institutions,
5. Continues investment in R&D.

Persistent market fragmentation, weak industry-research linkages and insufficient cooperation indicates that clusters in Latvia do not always have the necessary critical mass and innovation capacity to sustainably face global competition and to be world-class.

The fact that many new cluster initiatives have appeared in Latvia over the last few years indicates that enterprises have acknowledged their importance and the co-operation opportunities they provide.

Businesses and other innovation stakeholders involved in clusters need efficient, professional and appropriate support services to derive maximum benefits from their cluster organization. Yet, up to now, the skills and professionalism of cluster managers have not been properly recognized. Efficient, professional cluster organizations are critical for raising the quality of business support services and driving cluster initiatives towards self-sustainability.

Cluster management should therefore be recognized as a new professional qualification that requires high quality standards and professionalism in order to provide efficiently the services needed by enterprises and institutions working together in clusters and to fully exploit the benefits from university-industry-government relations.

It is not possible for territorially small countries such as Latvia to be successful in competitive international markets by sustaining the full production cycle. Therefore it needs to specialize in offering specific products and services. Prof. C. Ketels of Harvard Business School, who has visited Latvia several times, has emphasized that clusters should be created in the context of the Baltic Sea Region, because there is a need for regional specialization here. For example, if we see potential for the development of the design industry, one needs to think how will co-operate with partners in Scandinavia, Lithuania, Estonia, Poland, etc., to become more competitive as a region (Boronenko, Zeibote 2011).

Current cluster support policies, which support specific priority actions undertaken by clusters such as export promotion or product development, are beneficial

in the short term but may not have a long term impact on company and cluster performance.

This is a healthy market-driven process and clusters which are not working should not be artificially kept alive. Such clusters should not become a channel for subsidies which would undermine competition and even the emergence of new competitive clusters. New cluster initiatives should be carefully designed and underpinned by a very clear rationale based on precisely identified business interests, regional strengths, specific competences, knowledge hubs of international excellence and market foresight. If such conditions are not fulfilled, it is unlikely that a cluster initiative will be successful. The challenge then is to avoid a proliferation of cluster initiatives with little chance of long-term success.

Regional, inter-regional and international cooperation should be promoted and strengthened to create strong regional networks. For instance, the Baltic Sea Region Innovation Network, BSR InnoNet can help Latvian IT firms in this process.

In order to improve the cooperation between clusters the internet-based Cluster Portal and supportive communication activities need to be developed.

The full range of possible cluster services have to be explored, e.g. through an evaluation of established cluster management organizations (initiatives), existing supply networks and their IT-based business services or other SME-oriented service networks. Innovation transfer between academic R&D and business application should be a major activity of all cluster management organizations as well as support for market-oriented R&D within the business community itself.

Innovation and building of competencies is the key to SME competitiveness. Therefore the training and innovation should be put into the centre of the cluster management concept (Zeibote 2009).

4. Conclusions

Cluster initiatives need to promote and 'push' regional clusters to develop linkages along the Baltic Sea Region (successful example: Scanbalt, a network of regional clusters in biopharmaceuticals in the Baltic Sea Region).

Cluster support policy is a significant instrument for creating strong innovation systems, which, in turn, are critical preconditions for the creation of growth and new jobs. Policy makers can develop much closer dialogue with enterprises and academic and scientific research institutions, focusing on the needs of specific industries in order to reduce those barriers and obstacles which hinder economic development.

Due to their fragmented nature, existing cluster policies may be considered to be in their early stage of development.

It can be concluded that clusters and cluster organizations indeed add value in terms of technology and knowledge transfer and foster collaborative relationships between suppliers and clients. They establish a close link between SMEs, large com-

panies and R&D institutions and can thus help to overcome the lack of knowledge sharing and persisting information asymmetries in the innovation sector.

The flagship Swedish project for cluster VINNVÄXT has already shown positive results in cluster development and implementation of cluster initiatives.

Persistent market fragmentation, weak industry-research linkages and insufficient cooperation indicates that clusters in Latvia do not always have the necessary critical mass and innovation capacity to sustainably face global competition and to be world-class.

Short term thinking, weak trust and interest in cooperation between cluster members and weak industry companies' representation are the major factors, which influenced the weak performance of such Latvian clusters as Composite materials, Machinery, Supply chain and Textile and related industries cluster.

Professional and from industry cluster management, strong industry companies representation in a cluster, continues investment in R&D are the major factors, which influenced the strong performance of such Latvian clusters as IT, Forest and Pharmacy, chemistry, and related industries cluster.

The fact that many new cluster initiatives have appeared in Latvia over the last few years indicates that enterprises have acknowledged their importance and the co-operation opportunities they provide.

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