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The Prospects of Development of Clusters on the Territory of the Regions

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Abstract
Clusters present an absolutely new type of special organization of markets and vertically-integrated systems in the regions as well as the alternative way of value added chains formation. Cluster type of organization leads to creation of the special innovation form - *The aggregate innovation product*.

Key words: Horizontal competition; Vertical cooperation; Region; Innovation territorial-production cluster

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INTRODUCTION
Some researches have approved cluster that it appears for the means of raising competitiveness of the regions, transition to industrial processes with a large value added and facilitate the establishment of constructive attitude between enterprises, bodies of power, research, educational and financial institutions (Porter, 1998). The enhanced interest in creating technology parks and innovation technological centers turns out to be a part of the economical policy based on clusters since forming the organizations of this type is needed to provide a necessary engineering and manufacturing infrastructure for the enterprises' access to productive resources. Clusters represent one of the potential patterns of territorial dispersal of industry most often appearing for a generalized form being a more pragmatic approach but simultaneously characterized by certain peculiarities and limitations.

Clusters simultaneously provide horizontal competition and vertical cooperation since the given processes flow in different spatial dimensions and among various economic entities. Clusters present an absolutely new type of special organization of markets and vertically-integrated systems in the regions as well as the alternative way of value added chains formation. As compared to market transactions between the purchasers and vendors being spatially separated the proximity of institutions and companies situated in one geographical space, neighboring relationship and frequency of similar transactions raise the level of industrial cooperation and credit of trust. Thus, clusters help to avoid problems intrinsic to the so called "system of extended hand" providing at the same time flexibility of upstream integration, creation of various tie-ups, partnerships and cooperation and, in the long run, make provisions for improving mobility and effectiveness.

1. OBJECTIVES
In the meantime cluster is a stable partnership of interrelated enterprises, organizations, individuals and is possible to possess the potential that exceeds a mere sum of separate constituents' facilities. This increment arises as the result of mutual work and effective utilization of partners' opportunities within the long-term period and the combination of cooperation and competition as well. In the course of time effectively acting clusters become the objects of large investments and the focus of the government's close attention, so cluster appears for something more than a mere sum of its constituents what is characteristic of synergy. The center of a cluster is formed by a several potent companies with competitive relations. Concentration of rivals, their clients and deliverers facilitates the effective growth of indirect production.

Cluster type of organization leads to creation of the special innovation form - *The aggregate innovation product*.

Clusters can be characterized by the following distinctive features, namely:

- Geographical concentration and /or operational partners' interrelatedness.
- Specialization profile of the firms – cluster subjects.
- Abundance of the participating economic operators.
- Competition and cooperation.
- Socially related embeddedness.
- Innovation character.
- It is possible to outline the following cluster types:
- Functioning (operational) clusters which are able to realize its potential in full and produce in aggregate better cost advantages than individual groups of companies;
- Latent (under ripe) clusters with potential but not yet realized opportunities of development and where synergy is not yet obtained;
- Prospective clusters with the existing conditions for further development but absence of the most important factors and their critical mass.

2. RESEARCH METHODOLOGY

The financing sources of Kamsky territorial-production cluster for the period of 2013-2016 are reflected in Table 1. (Niznekamskneftekhim Company Limited, 2012).

Table 1
Amount and Sources of Financing in Kamsky Innovation Territorial-Production Cluster, Million Rubles

Period	Federal budget	The Republic of Tatarstan budget	Municipal formations' budget
2013	3545.2	2438.4	893.6
2014	295.9	236.3	596.2
2015	272.7	213.6	591.3
2016	147.1	147.1	0
Total	4260.9	3035.3	1012.4

Table 2
The Enterprises Used the Products of OJSC *Nizhnekamskneftekhim* - Participant Petrochemical Cluster in the Republic of Tatarstan

Number	The name of enterprises used the products of OJSC *Nizhnekamskneftekhim* (NNKh)	The types of chemical products	Output per year, th./rub.	The industry used the made production	Location
1	The Industrial park "Kamsk's glade"	Polymeric products: - propylen thread	92 thousands tons	Construction branch	Nizhnekamsk city, Republic of Tatarstan
2	OJSC "Polymatize"	Non woven fabrics	20 thousands tons	Construction branch, agriculture	Elabuga city, Republic of Tatarstan
3	LLC "Polymer coldness technique"	Polymeric sprinklers and water catchers	30 thousands tons	Construction branch, chemical industry	Nizhnekamsk city, Republic of Tatarstan
4	OJSC "Chemical plant named Karpov L.Y."	Product of the inorganic chemical industry: Plates from expanded polystyrene; Reactants; Reagents for water processing; Innovative inhibitors	110 thousands tons	Construction branch, chemical industry	Mendeleevsk city, Republic of Tatarstan
5	OJSC "Kamsk's plant of polimer materials"	Concentrate of technical carbon; Polymeric composites; Polystyrene.	66 thousands tons	Petrochemical, automobile, construction, packing branches.	Nizhnekamsk city, Republic of Tatarstan
6	LLC "Agricultural plant"	Polymeric products for construction of agricultural industry: Polyethylene pipes for water supply; Pipes the corrugated polypropylene	30 thousands tons	Agricultural industry	Naberezhnye Chelny city, Republic of Tatarstan

To be continued

Continued

Number	The name of enterprises used the products of OJSC *Nizhnekamskneftekhim* (NNKh)	The types of chemical products	Output per year, th./rub.	The industry used the made production	Location
7	LLC "Betar"	Metering devices of water and gas; Components for systems of water supply.	40 thousands tons	Agricultural industry, construction branch	Naberezhnye Chelny city, Republic of Tatarstan
8	LLC "Kamsk's plastic"	-Plastic products	35 thousands tons	Automobile, construction	Nizhnekamsk city, Republic of Tatarstan
9	Technopolis Chimgrad	Chemistry and pharmaceutics products	11 billion roubles	Aviation industry, construction	Kazan city, Republic of Tatarstan
10	Technology park "Idea"	Composite materials of biotechnology	4,2 billion roubles	Services sector, education	Kazan city, Republic of Tatarstan

The share of enterprises within the structure of industrial production of petrochemical products in the Republic of Tatarstan made 36.6% in 2012 what is 7.1% more as against 2010. Petrochemical produce within the structure of the Republican export equals to 11.5%.

The association Nizhnekamsk Industrial District includes ZAO (Private Limited Company) Polymatiz, Industrial Park Kamskie Polyany, ZAO LLC Polymercholodtechnika, OJSC Chemical Plant Named After L.Ya. Karpov, LLC Elastic Plant, LLC Kamsky Plant of Polymer Materials, LLC Kamplast, LLC Betar, LLC Agroplast as shown in Table 2. (Ministry of the industry of the Republic of Tatarstan, 2012).

3. FINDINGS AND ANALYSIS

Investment projects in the given industrial district and objects of petrochemical cluster infrastructure in the Republic of Tatarstan within the period of 2005-2020 made in total more than 60 billion rubles what is shown in Table 3. (Ministry of the industry of the Republic of Tatarstan, 2012)

Two innovation sites of Nizhnekamsk industrial district - the technology park *Idea* (composite materials, biological technologies) and technopolis *Chimgrad* (chemical and pharmaceutical produce) make the budget of 3,7 billion rubles.

Introduction of specific tools and mechanisms in support of investment activities promote its effectiveness improvement. The share of petrochemical sector within the frames of the given tax breaks makes 70 % of the total amount, as it is shown in the Table 4. (Ministry of the industry of the Republic of Tatarstan, 2012)

Table 3
The Volume of Investment in the Period 2005-2020 on the Territory of the Region

Enterprises	The volume of investment in the period 2005-2020, billion roubles	The name of products produced by the enterprises
OJSC "Polymatize"	2	Non woven fabrics
OJSC "Chemical plant named Karpov L.Y."	0.185	Product of the inorganic chemical industry
LLC "Polymer - NNKh"	0.13	Polymer materials
Technology park "Idea"	2	Composite materials of biotechnology
Technopolis Khimgrad	1,7	Chemistry and pharmaceutics products
OJSC "Nizhnekamskneftekhim" (NNKh)	40	АБС - plastics (60 thousand tonnes per year)
The group of companies "Nefis"	10	The complex of production on deep processing oil of seeds race

Table 4
The Volume Before the Left Tax Privileges in the Republic of Tatarstan in a Section of Branches of Economy, Millions of Rubles

Name of branches of economy	2006	2007	2008	2009	2010	2011	2010	The share in the total amount of tax privileges, %
All of them	53.9	282.2	454.7	918.9	1051.8	1496.6	3240.1	100
Mechanical engineering		30,7	56,8	68,9	48,1	147,1	97,1	6
Chemistry, oil chemistry	28,3	149,6	290,35	700,4	795	1070,2	2926,2	79,5
Production of construction materials	1,7	2,9	6,15	12,9	39,4	53,4	47,1	2,2
Oil production	20,6	83,9	63,3	29.07.02	29	12	0	3,2
To processing of agricultural production	2,9	15,1	38,1	65,5	76,6	96,6	67,4	4,8
The others	0,4	0	0	41,5	63,7	117,3	102,3	4,3

According to the Mallika (2009) "cluster development means that Local Economic Development (LED) initiatives are concentrated on encouraging and supporting inter-firm collaboration, institutional development and support in targeted industrial sectors. Possible projects include:

- Developing broker and network agencies;
- Supporting joint research;
- Developing cluster-focused public procurement and local purchasing agreements;
- Providing cluster specific information;
- Developing cluster related marketing efforts;
- Developing demand-led skills and education training programs" (Mallika, 2009).

Porter's 1998 study defined the following: "today's economic map is characterized by "cluster". A cluster is a geographic concentration of related companies, organizations, and institutions in particular field that can be present in a region, state, or nation. Clusters arise because they raise a company's productivity, which is influenced by local assets and the presence of like firms, institutions, and infrastructure, that surround it. Key concepts:

- Clusters increase productivity and operational efficiency;
- Clusters stimulate and enable innovation;
- Clusters facilitate commercialization and new business formation". (Porter, 1998, p. 1)

Porter M. explains "how clusters affect competition in three broad ways:

- By increasing the productivity of companies based in the area;
- By driving direction and pace of innovation;
- By stimulating the formation of new business within the clusters". (Porter, 1998, p.2)

At the same time "the innovation process is:

- Identify the interfacing activity noise;
- Accumulate it by causal factor;
- Prioritize according to strategic intent for the most significant noise drivers;
- Design and deploy the required change;
- Measure achievement;
- Achieve gains while increasing compliance to the management principles focusing on strategic intent and, thereby, advance to world's best practice" (Bevington & Samson, 2012, p. 89).

In some researches clusters are defined as an industrial clusters. It has attracted increasing attention as important locations of innovation. The author has offered the new term: Industrial Cluster Project (ICP). "The ICP aims at building collaborative networks between universities, and industries, and supports the autonomous development of existing regional industries without direct intervention in the clustering process" (Nishimura, 2011, p. 117). In other articles regional industry clusters are defined as a geographic concentrations of interconnected firms and supporting organizations (Porter, 1998, p.4).

CONCLUSIONS

While analyzing the process of clusters uprising and development in the Republic of Tatarstan since 2006 it may be reasonable to conclude that:

- Key enterprises- leaders comprising the nucleus of oil and gas industry had been completely formed by the end of 2006. This petrochemical cluster was comprised of OJSC «Tatneft», OJSC TAIF NK – OJSC TAIF "The Plant of Oil Processing", OJSC Nizhnekamskneftekhim, OJSC Nizhnekamskshina, OJSC Chemical Plant Named After L.Ya. Karpov, OJSC Nizhnekamsk Plant of Technical Carbon, OJSC Kazan Plant of Synthetic Rubber, OJSC Nefis Cosmetics;
- The membership in the cluster made possible for the above enterprises to maximize potential for growth reflecting the main performance ratios: sustainable growth rate, actual growth rate of sales volume and strategic spread (Tsertseil, 2014);
- "Positive dynamics of this financial indicator economic value added (EVA) of the following

enterprises stipulates the growth of such index as market value added (MVA)showing formed value of the enterprises in dynamics" (Tsertseil, 2014, p. 92);

- This petrochemical cluster can be related to functioning ones;
- Alongside with the above mentioned enterprises that formed the model of Tatarstan's petrochemical cluster in 2009 two innovation sites of Nizhnekamsk industrial district - the technology park *Idea* and technopolis *Chimgrad* have been included in the cluster at the end of 2014;
- Expansion in the number of enterprises – the petrochemical cluster participants is stipulated by the fact that the main reserve of a company's growth in post industrial economy appears to be the potential for development of inner and outer institutional environment of the enterprise – cluster participant. The institutional environment inside the cluster consists of the assemblage of inner and outer institutional environment of the enterprises – cluster participants what is called for providing transaction expenses minimization, improvement of the factor use effectiveness.

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