The Transformation of Region’s Economic Area Governed by the Development of Industrial Region

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Submitted: Sep 15, 2013; Accepted: Oct 19, 2013; Published: Oct 25, 2013

Abstract: The article comprises a set of theoretical and methodological statements and practical suggestions about the development and realization of industrial regions enterprises’ resource potential. The national economy development within postindustrial times placed a priority on the maintenance and implementation of the industrial enterprises potential. The latter act as “growth points” of the region’s economic area, transform its structure and provide progressive dynamics of mezoeconomic indicators.

Key words: Region’s economic area · Industrial region · Industrial enterprise’s resource potential · Economic area “growth points”

INTRODUCTION

The progressive dynamics of macroeconomic indicators within the unbalanced region level speed activity characterize the present stage of Russia’s socio-economic development. The increased strategic uncertainty and high chances of local crises are caused by numerous factors. Those are: the activation of globalization processes, the development of high-technology industries, the information’s turn into the modern economy’s key element that stipulates the global economic area network, the growth of interstate and interregional resource mobility under low ratio of Russia’s GPD value adding sectors and its dependence on the export of raw materials.

The lack of sufficient number of theories and valid methodology on the industrial enterprises and their complexes within the transformations of national and regional economic area, predetermine, to a large extent, the extension of intra- and interregional imbalance. This suggested the research line, its theoretical and practical significance.

The methodologies and the character of research attributed to the modern economy fail to monitor and explain current changes. The scale of economic area transformation requires the resort to the interdisciplinary correlation and exchange and the application of theoretical tools. Thus, foreign and national experience adapt to the regional economic area terms and postindustrial challenges. The national economy development within postindustrial times placed a priority on the maintenance and implementation of the industrial enterprises potential.

The target of the research is to formulate theories, methodologies and practical guidelines that contribute to the transformation and restructuring of the region’s economic area by the development and implementation of the industrial enterprises potential. The research rests on the modern economy approaches and hypotheses on the regional administration, geopolitics, productive power distribution, network economics, the growth of manufacturing regions and clusters. It also considers materials on the identification, structuring of the economic area, its formation and transformation mechanisms backed by the state, the regularities of industrial markets performance.

The information base of the research comprises data by the official federal and regional statistical offices.

Theory: In the frame of the research the regional economic area is defined as territorially detached set of transactions within which the economic agents (such as households, profit oriented businesses, state, local community) perform property rights for production factors and results. This ensures their interests implementation. The economic area quality is governed by the combination of its characteristics and static and dynamic properties, which correspond to agents’ needs and
strategic interests. The basic properties rest on the following principles: to activate the uniform economic area as a system (fractality, variability, stability, self-organisation, priority and integrity); to correlate economic area and external environment (cohesion and availability); to correspond to the external environment (balance, optimality, goal orientation, innovativeness, response).

The economic area configuration is determined by the correlation of 3 core elements. They are: 1. transactions that perform property rights; 2. economic time, which is relatively manifested in the transactions correlation; 3. institutions or (non-) formal transactions interwork limitations. The economic area concentration level is constituted by the private/agents' transactions ratio. The higher is the concentration, the less time is required to complete transaction. Its duration is generally caused by the deviation from limitations which are imposed by institutional environment.

The development of the region’s economic area may be viewed as a fractal model of innovations distribution. The model suggests fluctuation-idea that appears in science as a result of fundamental researches, R&D, bench-marketing analysis or other studies. The fluctuation idea is substituted first by innovations, then, by fractal clusters (sets of basic, associated, support, expanding and clarifying innovations) and, finally, by multifractals. The latter provide change within one functional area that result in cascade transformations, innovations diffusion and generate an array of new phase fractals, accordingly.

The region’s economic area is irregular due to the configuration distortion brought by innovations. This irregularity prevents the growth if economic area divergence caused inefficient resources allocation. Or it contributes to it if transactional interaction of inter- and intraindustry carries growth impulse.

**RESULTS**

Industrial districts reach the form of advanced growth zones in the frame of development strategies hierarchy. It reflects the interaction of regional economy paradigms, economic area development stages and structural elements of the region’s territory. The industrial districts within complex heterarchical system, i.e. region’s economic area, appear to be synergetic innovations that transform region’s as well as adjacent industries and territories. Should this factor be omitted at the design stage, the industrial districts’ (i.e. the multifractal’s) allocation and development expectations fall short.

The territory allocated entities strategic control model serves as a mechanism to support the industrial district’s development and the fluctuation-idea implementation. The model is based on the economic synergetics paradigm; it creates synergetic effect by means of positive and negative feedback of industrial district’s constituents. This provides the internal coherence (i.e. changes’ control) and project’s external synchronisation (i.e. development control) of the object under control. The coherence within strategic control phases’ realisation would increase the synergetic effect of innovations. The phases’ synchronisation is achieved through the object’s changes' control mechanism. The basic functions of the object are as follows: formation of innovations susceptibility on each level of innovations process, including scheduling and work progress control; compensation of stages delay, resources budgeting and reservation.

Project’s external synchronisation is performed in 2 ways: 1. environmental adaptation; 2. external dynamics reached through the flow of innovations.

In the course of time, following the increasing uncertainty factor, planned synchrony is lost when exposed to close and distant environment. The level of environmental uncertainty may either be continuous or incontinuous. The former corresponds to the stable, reactive or warning state and the latter relates to the research or creative states, respectively. Changes within external environment of industrial district belong to 2 categories: structural change of the object under control that arise from distant environment impact; substructural change of the object under control that are caused by close environment impact.

In frames of the present research the regional economic area differentiation is defined as a source of economic growth. The excessive polarisation, however, may cause fast decrease of its potential and activate state regulation measures that depend on the configurations of spatial organization.

The regions are grouped according to the levels of economic development. The classification is performed in several consecutive steps. They are: 1. the degree of Russia average deviation of arithmetic mean value of average per capita corrected GRD that is produced and utilised and similar deviation of produced and utilised GRD balance; 2. regions distribution within 50% deviation groups; 3. problem regions selection; 4. regions’ classification. Should the range of deviation be above 50%, but produced and utilised GRD - negative or zero, the region is classified as problematic. Subsequently,
Table 1: The industrial districts’ formation within region’s economic area

<table>
<thead>
<tr>
<th>Region’s development stages</th>
<th>Region’s economy development strategies</th>
<th>Environmental uncertainty level</th>
<th>Region’s economic area development stages</th>
<th>Region’s spatial structures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation (formation)</td>
<td>Strategic planning control by strategic positions</td>
<td>Continuous</td>
<td>Formation</td>
<td>Integral</td>
</tr>
<tr>
<td>Establishment (product adaptation)</td>
<td>Control by strategic tasks ranging</td>
<td>Continuous</td>
<td>Development</td>
<td>Processes synchronisation</td>
</tr>
<tr>
<td>Organizational economy</td>
<td>Low signals control</td>
<td>Continuous</td>
<td>Recession</td>
<td>Economic competition</td>
</tr>
<tr>
<td>Effectiveness (new industrial district formation / breakdown)</td>
<td>Strategic chances control</td>
<td>Incontinuous</td>
<td>Depression</td>
<td>Processes stabilisation</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Transactions</th>
<th>Time</th>
<th>Competition</th>
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experts define 4 groups of regions: highly developed - above 150%; developed – 100-150%, less developed – 50-100% and problematic – 0-50%.

The first group is not found in the Volga federal district. Mesoeconomic indicators deviate above 150% in the regions where economic development depends on the presence of industrial districts that distribute synergetic innovations. The 2nd group (mesoeconomic indicators deviate to 100-150%) includes the Republic of Tatarstan, the Perm territory, the Samara and Orenburg regions, the Republic of Bashkortostan, the Nizhni Novgorod region (in descending order in the Volga federal district). The Volga federal district contains following territories of the 3rd group (mesoeconomic indicators deviate to 50-100%, decay stage) the Udmurt Republic, the Saratov region, the Chuvash Republic, the Ulyanovsk region, the Republic of Mordovia. The Volga federal district contains following territories of the 4th group (mesoeconomic indicators deviate to 0-50%, no industrial districts) the Kirov and Penza regions, the Republic of Mari El.

According to the research, supply factors are functionally dependent on agglomeration effect. The latter states that transport costs preserve localization within certain centers of investors’ activity, resource market price variations within regional and national economic area and region’s institutionalization level.

As a form of regional economy industrial enterprises and services integration, the industrial district is formed due to the scale effect increase of enterprise and regional market. The district is characterized by: overall / partial assets management set on the agreement; concerted production; external contract business processes (such as operational: supply, marketing, sales; and supporting: recruitment, technical support, business activity analysis); maintenance of separate legal entities status of industrial district’s participants. Industrial districts are empowered to combine network results of service and ancillary activities with region forming enterprise core products by means of businesses basic competences synergism. The competences include: technical and technological, sales logistics, marketing, human capital, financing, organizational, scientific research, informational, entrepreneurial and floating capital.

Businesses basic competences and synergetic types classify forms of interfirm network territorial structures that constitute any industrial district. There are following types: operative and sales structures (enterprises’ external interaction competences merge: informational, sales logistics, marketing); financial and management structures (financing, organizational and entrepreneurial competences merge); deep complex structures (technical and technological, scientific research, human and floating capital competences merge).

The postindustrial economy predetermines the increasing role of production services and innovations diffusion. This explains the industrialization of ancillary businesses within industrial district. They include: R&D, consulting, transport, banking and insurance organizations. Industrial enterprises make contracts with organizations of abovementioned services in order to fulfill a number of intentions, namely, to advance strategies (to cut expenses and increase effectiveness); to create strategic business impact (to improve contribution into companies within present business lines) and commercial realization of assets (to focus on the economic evaluation of technological assets).

The present post-crisis stage of Russia economy presents the following key problems for regional industrial enterprises: 1. highly depreciated assets; 2. irrational structure of manufacturing supplies; 3. application of traditional administration models to the informational economy; 4. strategic and tactic administration decisions notwithstanding the specifics of base district (i.e. range of infrastructure facilities, informational infrastructure level, mobility and amount of resources, district’s transport accessibility). All the above mentioned factors considered, industrial enterprises raise effectiveness and, thus, develop methodological approach to establish rational strategy of industrial business growth with respect to base district specifics. The key parametres that
Table 2: The matrix of industrial enterprise development strategy choice considering key characteristics of base district

<table>
<thead>
<tr>
<th>District type / innovations infrastructure level</th>
<th>Old industrial district</th>
<th>New industrial district</th>
<th>Pioneer industrialisation district</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Expenses leadership strategy based on technological innovations</td>
<td>Diversification strategy based on innovative products supply</td>
<td>Focus strategy based on production of expenses</td>
</tr>
<tr>
<td>Middle</td>
<td>Expenses leadership strategy based on administration innovations</td>
<td>Diversification strategy based on improved products supply</td>
<td>Focus strategy based on realisation of production innovative technologies</td>
</tr>
<tr>
<td>Low</td>
<td>Expenses leadership strategy based on present technologies modernisation</td>
<td>Diversification strategy based on improved procedures of products realisation</td>
<td>Focus strategy based on realisation of sales innovative technologies</td>
</tr>
</tbody>
</table>

reflect base district specifics (i.e. its type, (innovations) infrastructure level,) and strategies of enterprises development (diversification, leadership and focus on expenses), in our opinion, would contribute to the effective businesses growth. Table 2 presents the matrix of industrial enterprise basic development strategy choice considering key characteristics of base district.

The matrix of industrial enterprises development strategy choice considering their location is based on the results of the held correlation analysis of industrial businesses economic activity indexes and the type of development strategy applied district-wise.

CONCLUSIONS

Forecasting results of the application of the methods introduced in the course of the research we resorted to OAO “Kazan Engine-building Production Enterprise” (OAO KEPE). The following scenarios were considered: 1. Low risks scenario – the introduced methods and mechanisms penetrate on an even basis and are completed in 3 years (in the estimation of specialists, realisation chances are 10%). 2. Risk scenario - the introduced methods and mechanisms penetrate discretely, influenced by external risks and are completed in 4 years (in the estimation of specialists, realisation chances are 70%). 3. High risks scenario - the introduced methods and mechanisms penetrate discretely, influenced by external risks and are completed in 5 years (in the estimation of specialists, realisation chances are 20%). 4. Weighted scenario represents a weighted average estimate of enumerated scenarios.

Forecasting results are depicted on Figure 1.

According to the figure, the realisation of introduced methods and mechanisms guarantees effective operation of the industrial enterprise. This leads to the increased regional budget income of the Republic of Tatarstan. As compared to the inertia development of given enterprise as described in the present research, weighted scenario provides enterprise with extra 40 mln. roubles of net profit within 5 years.

The obtained results prove the methods and mechanisms introduced to be effective and serve as key factors of region’s economic area restructuring.
REFERENCES