

Viktor Chuzhykov

Prof. Doctor of Economic Sciences

Kyiv National University of Economics, Ukraine

Social Consequences of Innovation Models Diversification of Economic Growth

INTRODUCTION

The rapid transformation of global economic relations in the 21st century causes enormous changes at the organization of innovation increase of separate countries as well its coalitions, because the capital movement is changing fast and substantially its dynamics is growing up, the evolution of clusters, industrial parks, technology towns, innoteches, causes the formation of new economic growth models. Properly speaking, the evolution ceased to be effective long-run process and from now on the innovation dynamics process is defined not by hundreds of years as it was in the 18th – 19th centuries, not by ten of years as it was in the 20th century, but just by years, when the full cycle of new commodity is strictly regulated by placing the competitive relations in the world.

Lately unexpectedly quickly the geographical centers of economic activity began substantially to change the disposition. The level of national authentication of innovations from now on already has an analytical value mainly, and competition intensifying of relations between transnational companies, transnational banks and local companies was displaced on two new levels: local and virtual one and to define positions of which (especially the last one) became sufficiently problematic.

Regardless of the point that ten years ago there was considered that described by M.Porter, K.Sabela and B.Harrison models of innovative and non-innovative clusters would serve not yet a year, but nevertheless life amended. Though their models were a classical example, however not long-run. To define character of these changes in a global economy and theoretically to ground the research levels of new clusters' model through the estimation of social consequences from their placing in a region is the purpose of the offered article, which can be realized through the using of research model of spherical approach as opposed to traditional for domestic scholar it is systematic one and it has not been grown into a scientific panacea yet. The levels of co-operation of social, innovative and economic spheres must be, to our opinion, cluster which appears on a certain area.

THEORETICAL BACKGROUND

It is considered for some reason, that the founder of cluster models in the world is Michael Porter, indeed, as it certifies the list of references at the end of the article, the first articles related to forming the new models of development are belonged of all that K.Sabeli and B.Harrison. At the beginning of the 90s in the 20th century they grounded the financial and investment system of organization of areas of quick economic growth with an innovative constituent or without it.

At that time it was considered that if there were created the optimum proportions of infrastructure development, scientific laboratories, which can offer know-how, attracted considerable external investments, then a cluster would be successful with no doubt. M.Porter's competitive rhombus (the very same diamond) millions of times circulated all over the world, got to all textbooks and gradually assumed qualities of implicitness. There is mature formula at consciousness of scholars that it is obligatory any cluster will be successful. Arguments to this assertion's good were in the author's book „International competitiveness“. Successful tourist clusters in Greece, wine productions' ones in Portugal, clusters on a cladding tile manufacture in Italy and others like that and it already not speaking about innovative models in the USA, EU, Canada, Japan, China, quickly enough absolutized the above mentioned idea, however for a short time.

At the end of the 90s it became known that a recipe of M.Porter's success is relative as well as in the world we live in. A successful biotechnological cluster in Amsterdam was not able to become successful in Munich, although thoroughness of Germans and ardent aspiring is to its rapid „cloning“ led to anything. Wine-making clusters in the Mediterranean states stipulated the presence of considerable surplus of wine in the states of EU. And to market it even by increasing its „shelf-life“ (life on the shelf of shops) became sufficiently problematic not only in the community tabs but also in the whole world, in fact competitive wine-making clusters existed in Chile, South Africa Republic (SAR) and in California (USA). Successful „cloning“ tiled clusters in Spain created considerable problems with realization of products in the world market by the Italian firms because its global positions were considered as incontestable ten years ago.

Innovative clusters were undergone too during its creation of new infrastructural terms were pulled out, and the production of goods became more allocated, in fact from now on it is possible it was to have a scientific laboratory from pharmaceuticals in Oslo (Norway) experimental production in Jakarta (Indonesia), and production factories in Basel (Switzerland). The management from single center allowed to use maximum effectively the potential of each

megaregions, hardly localizing its activity in the selective centers of global economic space. This process was named as glocalisation and Dutch scholar Jan Neverveen Pitere (2008) named a cascade „globalization – regionalism – subregionalism”, supporting here R.W.Cox, in that „...globalization encourages makroregionalism, which encourages mikroregionalism the turn” (p. 80).

The aforementioned features of clusters' modern development change the whole traditional picture about business activity cycles. The time lags play a decision value at the designing of these innovative forms, in fact the 70s annual cycles, which at the beginning in the 20th century were discovered by Kondratev, have already remained in history. The modern cycle of activity lasts in a cluster 10–15 years and must a present tendency grow short to 5–7, coinciding thus with the term of planning at EU.

Completing in 2003 the thesis research of problems of regional recurrence an author of this thought that the model offered by him „Modern variants of regional evolution of cycles” is perfect and such, that represents the tendencies of softening of regional differentiation expressly, however life amended. Neoliberal changes which happened in the world lately transform the model of recurrence of development of regions in more difficult which in our understanding acquires something unusual foreshortening (see Fig. 1).

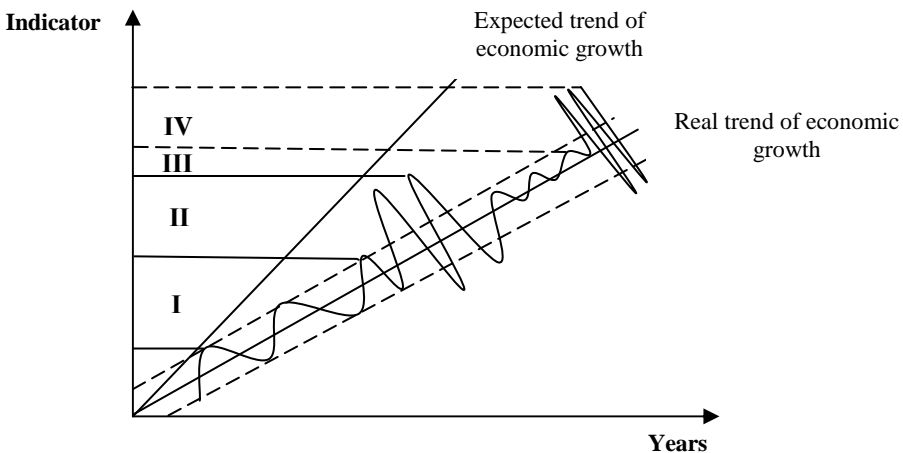


Fig. 1. Influence of basic players of global economy on a regional recurrence (V.I. Chuzhykov, 2008)

The legend:

 ----- expected trends' fluctuations of regional cycles

I passive model of regional policy

- II innovative (venture) model of regional policy
- III highly regulated model of regional policy
- IV transcorporate model of regional policy

From my point of view, the conception of steady development, on which continue to refer domestic and some foreign research scholars, does not answer the real tendencies of global economy already a long ago. A crisis became a characteristic modern progress of world economy, which the English researcher V.Kiggundu (2002) considers as the characteristic sign of present days. At the same time industrialized developed countries cannot be considered an exception, in fact „price“ of crises, as a percent of GDP that reduced, sufficiently strongly by distance them one from other, for example, from 57% in Argentina to 3% in the USA (end of 90s). If to take into account, that in the developing countries the crisis is more protracted and „expensive“ after its consequences, then global trend, as it is shown on Figure 1 will be on a few degrees below, and amplitude of vibrations of regional cycles (max and min) will occupy overhead and lower symmetric position from the real trend of economic growth. During the conducting of passive regional policy, as, for example, in the USA the oscillation will be near to ideal, however will represent only averaged information about the noncommunicative innovative area of growth and agricultural lands where the changes are sufficiently slow. Second model is the innovative (venture) foresees the revival of vibrations, in fact on one successful innovation can be ten unsuccessful (in pharmaceutical industry – such unsuccessful attempts it can be on a few orders anymore). Though already through ten of years a regional trend can be displaced to the overhead maximum. But in the case of system failures it will be slipped down.

Taking into account the above-mentioned it is possible to establish the following:

- the cluster model of world economy development cannot be considered as the unique and perfect the blind printing-down of which necessarily will result in economic success of the territories depressed in the past;
- economic and regional cycles (according to J. Lessinger (1986)) gravitations have to reduce a time tag, that is predefined above all things diminishing of duration of existence of innovative product which during 5–7 years fully loses qualities of uniqueness;
- glocalisation of world economy caused the transferring of centers of its activity from national to global, regional, and in a prospect to a virtual level. On the assumption of conception „local competition“ H. Siebert (2007), as it

will be shown further, there will begin the bitter competitive activity at the nearest time;

- „social effect” from organization of cluster can be not always identified at local level. In the case of failure in organization of cluster the expenses of local budget can appear extraordinarily large.

THE INFRASTRUCTURAL AND SOCIAL BACKGROUND

Regardless of the point that the development level of any country depends on a combination of many factors, involvement of investments in the innovation complex in many cases will depend on the quality of the infrastructure which has been provided in that, and which will be set up for a certain period of time in the future. It is clear that the development level of an infrastructure (or of so called goods produced for the public), as a rule, depends on financing from the local and state budgets, hence there may be a mistake to stand the ground that provision of communication networks, airports, buildings to be used as storages must be taking place at an increasing rate. The risk that all these will never be used is rather high, while the involvement of a foreign capital will require additional privileges, guarantees from the government (for instance, in Ukraine a number of airports do not function, the navigating is not regular, and in terms of the quality the motorways are among the worst ones in Central and Eastern Europe, therefore it would be too hopeful to expect „an investment boom to happen”).

When the German scholar H.Siebert (2007) formulated his local paradigm of the competitive capability he agreed with M.Porter (2000) that its level will depend on companies and firms operating within the considered area, a series of production factors and the corresponding infrastructure, though the latter one must be optimal, that is to meet completely the conditions for a certain business to be operated. If the infrastructure is of a high quality level, it may become underused, and that will mean inefficient use of the tax-payers’ money, so often cause their dissatisfaction and protests (see Fig. 2). In the world practice there are a lot of examples of „making an infrastructural breakthrough”, in particular concerning the developing countries. For example, the construction of the Trans-Amazon Motorway in Brazil did not result in activating the economic life of the internal regions of the country. Similar problems rising from underusing (insufficient loading) of the Baikal-Amur Rail- and Motorway in the USSR for which great prospects were predicted.

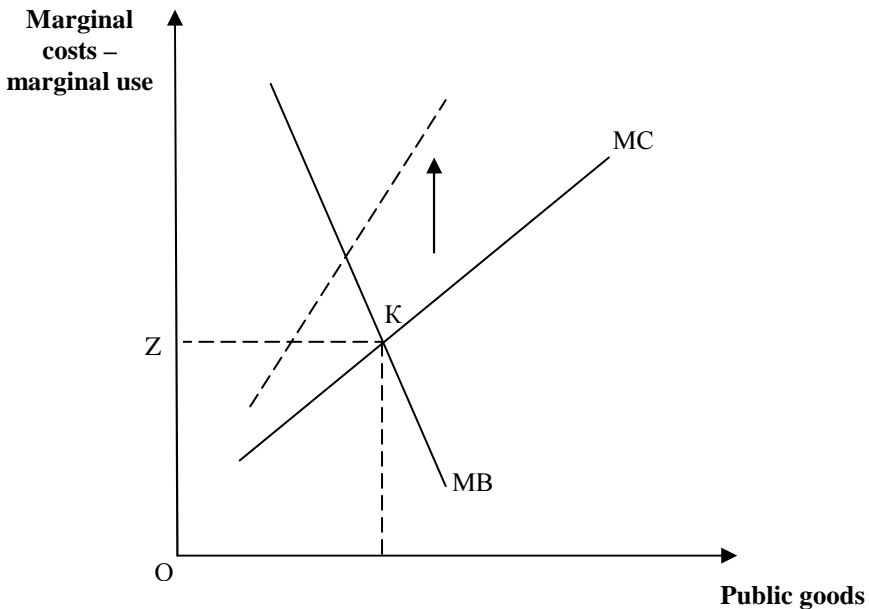


Fig. 2. Marginal expenses and the marginal prices of the infrastructure
(H. Siebert, 2007)

MC – the expenses curve

MB – the incomes curves

OA – the optimal level of the infrastructure

OZ – the prices of the infrastructure use

The source: Siebert H. *The World Economy. A global analysis* (Revised and enlarged third edition). – Abingdon: Routledge, 2007. – P. 369.

In the above given figure one can see well that a transfer of the MC curve up does not produce any economic effect, but a hypertrophied rise of costs, as the investor cannot use all benefits of the infrastructure being created, instead of that „aging” of the communication networks and worsening of the quality of consumer’s goods will bring a decrease in effectiveness of the investments distribution in a region as well as an outflow of investments. Therefore the quadrangle OZKA is a reasonable (optimal) variant for matching the interests of the business and those of the state, whose role under such circumstances can be quite influential.

Besides, a blunder of many governments while creating „an infrastructural welfare” for the investors, that are expected to perform a profound „clusterisation in the region”, there can be reassessment of „the favourability”. The immense expenses of a region, and sometimes of a whole country, when

modernising the local network of motorways, airports, scientific laboratories, etc., can be quickly devaluated, if the companies consider their priorities in the arrangement of the clusters on these territories by using tax privileges, privileges in providing new working places, etc., and decide to terminate their productive businesses and transfer them to other regions in the world, which are more attractive for the parent company or a subsidiary production unit (this is what the transnational company „Tefal” did when it shut down its production plants in France, because of high labour costs and „overburdening” social packet, and transferred the production to China. The same reasons the Finnish Company „Nokia” had, that actively used its subsidies for making new working places in a set of regions in Germany, and after Roumania’s joining the EU, shifted its works to that new country of the European Union not pondering the moral aspect of that act)*.

So we are dealing with a real economic dualism, when, on the one hand, creation (an improvement) of a new infrastructure in a region has its positive social effect, but, on the other hand, if the business shifts the production facilities onto other territories, then the infrastructural under loading can be considered like an exceeding „social reimbursement” for the risk.

WHICH IS BETTER: TO CREATE NEW CLUSTERS OR REORGANISE THE AVAILABLE ONES? (THE HOLLAND CASE)

New-created innovation models of development can have in their base not only super-technologies, but also renovated old ones. And as elements of an economic innovation, not only those of a technical one, there can be a radically new form of the production organization that would take in account on a polystructural base both the needs of the region (in our case it is a depressed one), and the transborder opportunities of the other partners, that from now on will function as companies with competitive/uncompetitive positions (meaning that they can compete with one another in some fields, but in the basic branch they will secure definite co-operative interests, and later the integration ones too.

It is known that during 80s – 90s in the 20th century Europe was suffering from a severe crisis in the ship-building industry, which was accounted for by the expansion of the world markets by products from South Korea and Japan. The European product manufacturers did not seem to have any chances to survive then at all. Large cities in Sweden, Germany, Great Britain and the Netherlands started to face at that time a whole complex of problems relating to the restructuring of the ship-building industry, employment of the population

and the corresponding social problems. In some cases ship-building companies stopped their existence, and their former employees underwent a retraining in the professions that were on demand on the local labour markets. Though other companies decided to prevent their ruining, and for that purpose they upgraded their technological facilities, improved the managerial base and created a new organizational model – „a ship-building cluster”, which enabled them avoiding bankruptcy. While time was passing they achieved significant world positions in certain segments of the global market, and all that happened on condition that at least a few dozen years before that it was considered that their competitive benefits to have been lost forever.

A general (competitive) up-to-date model of a ship-building cluster likes the way as it is shown in Fig. 3.

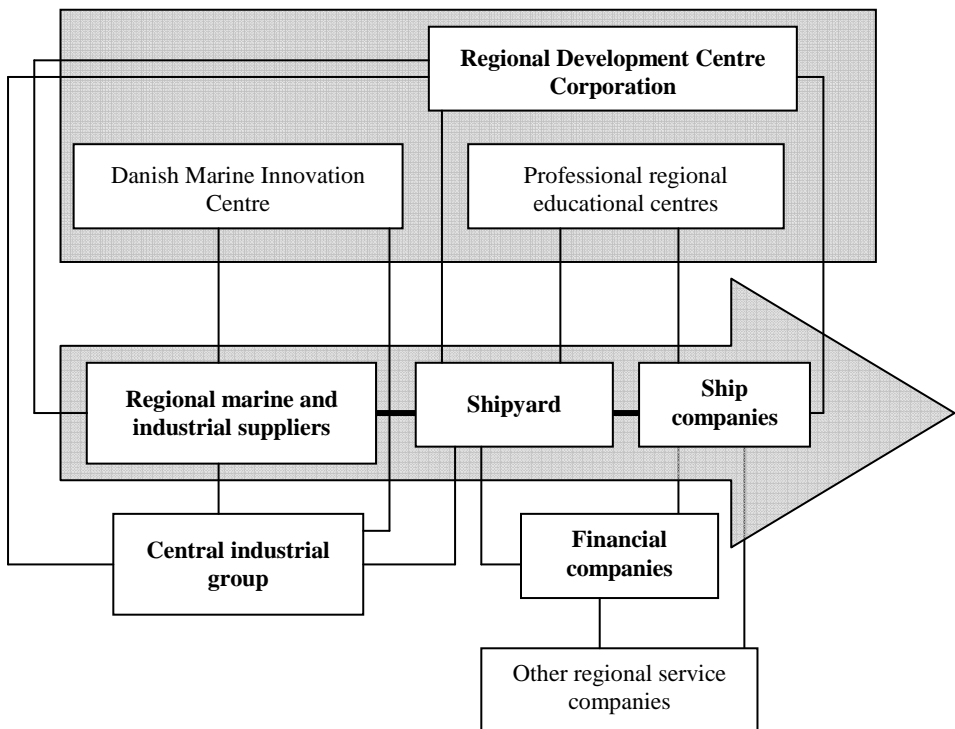


Fig. 3. The structure of the ship-building cluster in the Northern Netherlands (A. Klink, P. Langer, 2001)

As it follows from the above given figure, the base for a successive ship-building cluster is its co-operating with an innovative centre, education institutions, as well as with financial companies and an industry group that

initiated its foundation. The coordinating activities are responsibilities of „The Regional Development Centre Corporation”. A shipyard is considered not as a work only, but also as a localised combination of the infrastructure, auxiliary production units where all the cluster members have their offices, therefore A.Klink and P.Langer (2001) call that „a region” (though judging on the whole, anyway it is „a microregion”). The above described cluster is highly efficient, for between 1987 and 1999 the number of the ships manufactured by that rose by 14 times. It is owing to this model of the production organization that the regional crisis was overcome in the Northern Netherlands – a region that had always been oriented at sea-related industry. Perhaps, this is the sea (ship-building) clusters model which could be practised in Ukraine and in Poland, if not to apply it blindly cloning, but keeping its logistic model which proved to be justified in the example given above.

WHAT COULD BE DONE IN UKRAINE?

Innovative forms of the regional level are of tremendous importance in the modern economy, that is why definition of their international format should be made on the example of clusters. It is they which are significantly liable to be defined as „local complexes for the purpose of economic growth (not obligatory of an innovative one). Within Ukraine, providing the most reasonable way of their arrangement, there should be taken in consideration the following circumstances:

- clusters shall not be models of an exceptionally possible concentration of know-how technologies on a given area, hence, besides biotechnological, computer, nano-technological clusters there are clusters for production of traditional goods and commodities, as well for providing services needs for which are evident at the time;
- a cluster can be set up only under conditions of a really existing internal and external competition, so provision of a successful functioning of clusters can be achieved only though overcoming the regional monopolism;
- clusters evolve very quickly and their progressive specific specialisation results in a multiplication impact;
- systematic „amalgamation” of clusters leads to the formation of world regions, which, in their own turn, can become a higher phase in a regional economic cycle. While their further innovative evolution only improves their positions on the global markets. Destruction of at least one world cluster may result in a noticeable regionally national crisis.

When organising new forms of the economic growth quite an important point is involvement of direct foreign investments, in the second phase it is the

maximal exporting expansion of goods and services. In the next phase the need of using any additional stimulations already falls away. The cluster turns in a self-sufficient economic complex.

The majority of experts in the clusters theory, in particular M. Porter, K. Sabella, B. Harrison, when defining the economic policy in regard of clusters, single out at least six main trends in their implementation, and namely as follows: a legislative reform, the policy in the field of processing and technology, development of progressive and specialising factors, collection and distribution of the economic information, involvement of the direct foreign investments (DFI) and promotion of exports. These approaches became classic ones when organising innovative models, though they are not always exhausting.

At the end of the 1990s the first technological parks and clusters appeared in Ukraine too. Their specific structural organisation is different from the similar formations available in the EC and USA. The greatest challenges are as follows: non-availability of the market competition, nor sufficient investments provision, rather confused and inconsistent functioning scheme. Nevertheless one should understand that few clusters that are formed in the world are successful, since the risks related to them are quite formidable. Hence, the venture funds, some of which have already been set up in Ukraine, could in the least be considered as the form used to diminish those risks (2006).

Under the conditions of a globalising world economy and switching of the leading countries on the innovatively invested model of the development, there is expected an essential growth of the role and importance of institutionalisation. In addition to that, there can become quite a real threat of unnecessary parallel actions of, say, an investing agency and of a similar institution related to the regional development, that are targeted at the same object. To exclude that the following scheme for institutionalisation of the regional development can be proposed that is oriented at the cluster model (see Fig. 4).

Policies of the regional development, those of the innovative development and policies of the involvement of investments are organically connected, for they are focused at gaining the effect of a fast socio-economic growth. They must include common implementation mechanisms and instruments, but different tasks and clear functions, which enables each institution to achieve a differentiated effect (for instance, the agency „Ukrinvest” – an urgently needed agency to be set up – found a partner that is ready to invest in the region having the infrastructure with proper parameters). The two other effects together with the former one will produce together a synergetic effect which will increase the competitive advantages of each of the policies and lead to an additional growth in the regional economy, and therefore to a larger social return.

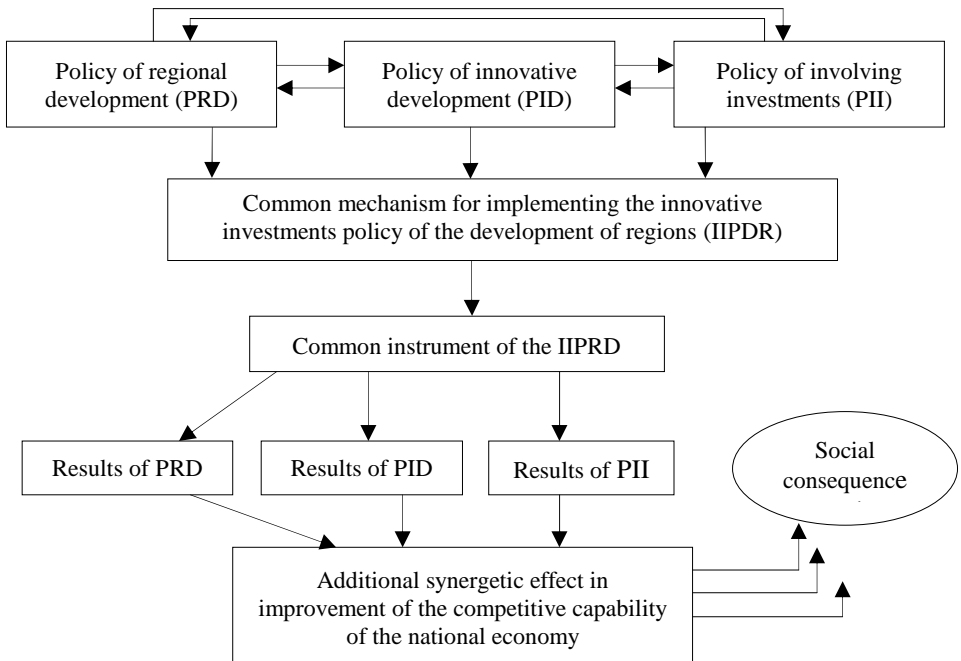


Fig. 4. A synergetic innovative model of the development of regions (V. Chuzhykov, 2008)

However, at the practical level in the modern Ukraine everything is not so well at all, as the problem of providing matching actions will always face the departmental preferences, endless discussions, etc., which finally destroys the idea and makes the initiators stop wishing to do anything. Nevertheless, such a state of things must be changed.

The considered schemes of clusters can be of the kind to be easily extrapolated in Ukraine. The industrial and investments triangle Kyiv–Donetsk–Dnipropetrovsk could prospectively become the frame for the formation of innovative clusters due to the western style, that stimulate the regional development immensely. Zaporizhia may be added to that, which would make a quadrangle. While time is passing, the expendable model could be moving to the south (Odesa) and to the west (Lviv), providing in such a way formation of a network adequate to the one having requested above. It is normal that the proposed model should be in harmony with the national scheme of the regional development, so both the regionally local, and the industrial network of the innovative investments poles of the growth that have been provided within the recent few years have to be analysed.

CONCLUSIONS

The above described considerations and the purpose of the article formulated in the beginning of the article permit to come to the following conclusions:

1. An up-to-date cluster should be understood as a locally regional formation made up of formations that are essentially different, and which being taken together make an integral model of a fast growth, and the model being based on using optimal synergetic systems and on application of the newest (renovated) technologies.

2. Up-to-date clusters are evolving rather quickly, which is accounted for by shortening the age of an innovative kind of goods, quick movement of the capital, changes in the people's preferences, intensification of the competition on the global markets. The time lagging of a whole cluster cycle is gradually going down, and in our time it is between 5 and 15 years.

3. Globalisation of the contemporary economy shifts the centres of the business activities on the global, local and virtual levels, in such a way diminishing permanently the effect of the national governments on the innovative (the clusters one being included) model of the development.

4. Provision of a better local infrastructure is far from being considered always the best argument when organising a cluster in a depressed zone. Shifting of the expenses curve up can result in creating such a quality of the goods for the public purposes that will not be used completely, and therefore the infrastructure will happen to be underloaded, and so „the social payment” for the creation of the cluster can exceed the economic effect of its structural organization.

5. When implementing new clusters in Ukraine one should bear in mind the point that the most successive can be not super-innovative models, but clusters that are subject to a regeneration based on a new economic form of the structural organisation, a new management system and relatively small innovative changes.

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Summary

The article deals with consideration of the main problems in the globalisation of the world economy and the place in that of clusters, as well as the role of clusters in creating local social advantages. There have been traced the principal trends of the clusters evolution and the responses to clusters setting-up of the local and national self-governing systems. Social risks of the arrangement of innovative models on the territories of some countries have been assessed.

Spółeczne konsekwencje dywersyfikacji modeli innowacji sprzyjających procesom wzrostu gospodarczego

Streszczenie

W opracowaniu omawiane są główne problemy globalizacji gospodarki światowej i miejsce w tym procesie klastrów. Analizie poddano również rolę klastrów w tworzeniu lokalnych korzyści społecznych. Przedstawione zostały podstawowe tendencje ewolucji klastrów oraz stosunek lokalnych i narodowych systemów samorządowych do ustanawiania klastrów. Ponadto ocenie poddano społeczne ryzyko realizacji modeli innowacyjnych na terytoriach wybranych państw.