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ALTERNATIVE TO RUSSIAN MODEL OF CLUSTERS INNOVATIVE ECONOMIC DEVELOPMENT

Markova Olga Vladimirovna
1- Volga Region State University of Service, 445677, Togliatti, Gagarin str., 4
Candidate of economical science, associate professor of the chair "Management"
markovaolga@yandex.ru

Abstract: The aim of research was to study the prospects of integration of the functioning of the network form of business entities with a view to innovative development of the national economy. To this end, the European experience has been reviewed and clustering by comparing the peculiarities of this process in Russia. The subject of the study were the organizational and economic relations between the participants of integrated units, which applied the modern concept of neo-institutionalism. On the basis of the approach proposed business model innovation networks, modernized methods of strategic management and klientoorietirovannogo approach formed the organizational structure of innovative network management. This management model will allow balanced development is not only a pilot clusters, but also throughout the meso-level of the economy, including small businesses, which form the entrepreneurial, innovative environment.

Keywords: integration and balanced development of the innovation, clusters, innovation networks, meso-economic system, business model, and management model innovation network, customer-oriented approach.

Introduction

Today operates many programs for the development of pilot clusters, technology parks, business incubators and other support institutions for innovative development of the Russian economy. The conditions exacerbated the financial crisis in Russia is necessary to change the model of bureaucratic control in the business, which is based on no budgetary allocation of resources and partnership of government, business and science. But until there is a balance and integration in economic entities these actions one area, the effect will not work. At the same time, this integration should not focus centrally on the part of government authorities, and to be initiated from the main consumers of innovation - business structures that are only in the process of interaction determine the need for innovation, effective use of resources and develop innovative potential.

1. Features of the development of clusters in Russia

Supported by the Russian state pilot clusters in the center of a large enterprise does not contribute to the creation of a competitive environment within the integrated education. It does not create the conditions for entrepreneurship and initiative to develop at the expense of cross-flow of knowledge and innovation. Therefore, it should change approach to management, which above all must become an innovative, balanced the interests of all economic entities integrated form. In contrast to the existing literature in the national view of the innovative management only to a single (specific) management innovations, argued a broader view of innovation management as a coherent interactive business activity, power, science and society, aimed at the continuous positive economic changes.

The basis of this control concept are the provisions are not evolutionary theory Schumpeter, based on the "creative destruction" (innovators selected from conservatives resources) (Schumpeter, 2008) and co-evolutionary theory G.B. Kleiner, which provides simultaneous development of two economic entities regulated third subject (the focal point) (Kleiner, 2004). This will be possible with the implementation of partnerships in the horizontal formations integrated with the mobile structure and a focal point for the effective delivery of innovative services to members of the network and implementation of key competence areas.

The author believes that the innovative development of the Russian economy will not be without an appropriate initiative and interest in all businesses meso-economic system, as administrative methods of innovation in them are not appropriate. The development of innovation sphere, which began with the establishment of scientific and innovative structures "from above" can be continued in the form of active promotion of initiatives put forward by the direct participants of innovation activity "from below".

This hypothesis is confirmed by the European experience of integrated units. According to Mervi Kaki, now within the walls of universities and research centers there is not more than 4% of the total number of high-tech start-ups, in spite of the created office of technology commercialization network. 96% of innovation projects appear in private companies. "It is amazing, but our research shows, if you go the traditional way, that is, doing" push "technology to the market, the entire project development cycle takes at least 10 years. And when it comes to biotechnology and other industries, it may be 15 years, or even 20. But if the idea comes from the business, this period shall be reduced on average by half. Innovation should be produced on the market, from market needs. Actively develop the processes needed and the ideas that arise under the pressure of demand from the market. Therefore, the new company in Finland there are already thousands of existing companies in the country " (Expert RA, 2012).

From an interview with a professor of management and computer science at Stanford University, the founder of several companies in Silicon Valley by William Miller, a correspondent of the magazine "Expert" identified the main problems of the innovation development of the economy (Nikiforova, 2011).

First, in many countries believe that the main thing in the development of this innovative technology. Therefore, these countries are focusing their efforts on research rather than on the creation of the necessary environment for the development of innovative activity of business entities. "Too much emphasis on everything related to the research and development of new technologies, but does not support a business idea that one and can bring success." Outdated linear model "of research - knowledge - development - implementation in the business." The modern model of "business communication - implicit knowledge -Studies and development - introduction of the business." As you can see the current model is a cyclical form, because it begins and ends in the innovation cycle businesses.

Second, the emphasis on the involvement of large companies innovate. However, small businesses and start-ups for them (and especially the service sector, are between the producer and consumer of material goods) to create an innovative environment and increase the innovative activity in the region (positive example of Taiwan). Startups are developing new types of activities, scope of business, and large enterprises mainly operate in existing industries. Many start-ups are created precisely in times of crisis, when people lose their jobs, but they have some ideas, thoughts, and they open their companies

Thirdly, clusters in Europe to develop small and medium-sized businesses and the state's role in them is limited. It uses a variety of funding sources: membership fees, income from fee-based services, individuals contribute (crowdfunding), in-kind contributions (equipment), labor participation (staff). The significance of the governing body of the integrated formation and evaluation highlights the competitive status among existing consulting structures, rather than monopoly constant presence of government authorities in the Russian clusters.

Thus, because of the special development of cluster policy in Russia (support for pilot clusters), was the difference in domestic and European understanding, and above all the effectiveness of cluster economy. European cluster consists of independent small and medium-sized enterprises (SMEs). This regional cluster, ie, present spatial agglomeration on the basis of social capital and geographic proximity. Firms in these less interdependent than in the industrial clusters, where there is a so-called "core" - a large industrial company. Clusters are structures formed independently, and not artificially authorities.

In the case of forced formation of clusters arise from pre-images of clusters by the authorities in the region's economy. These complexes exist in the old industrial regions of Russia, characterized by the development of certain large enterprises. Samara region is no exception, so there have been created the pilot aerospace and automotive industry clusters. To improve the entrepreneurial and innovative activity of economic entities is necessary to change the approach to the management of such groups and should start with a meso-economic level, which according G.B.Kleynera is the "center of economic development" (Kleiner et al., 2011).

2. Changing the paradigm of management of innovative development of the macroeconomic system.

The traditional understanding of the macroeconomic system is connected with the regional economy or to the part of the national innovation system, it emphasizes its intermediate position between the macro and microeconomics. However, the complex representation system makes mesoeconomic consider it not only static, but also dynamic. Accordingly, the meso-economic system is a dynamic structure, which is characterized by flexible forms, including networking. The dynamic approach and leads to the nonlinear nature of innovation development when innovations are born in the interaction of economic agents seeking the best way by sharing the potential to solve its problems of macro and micro level.

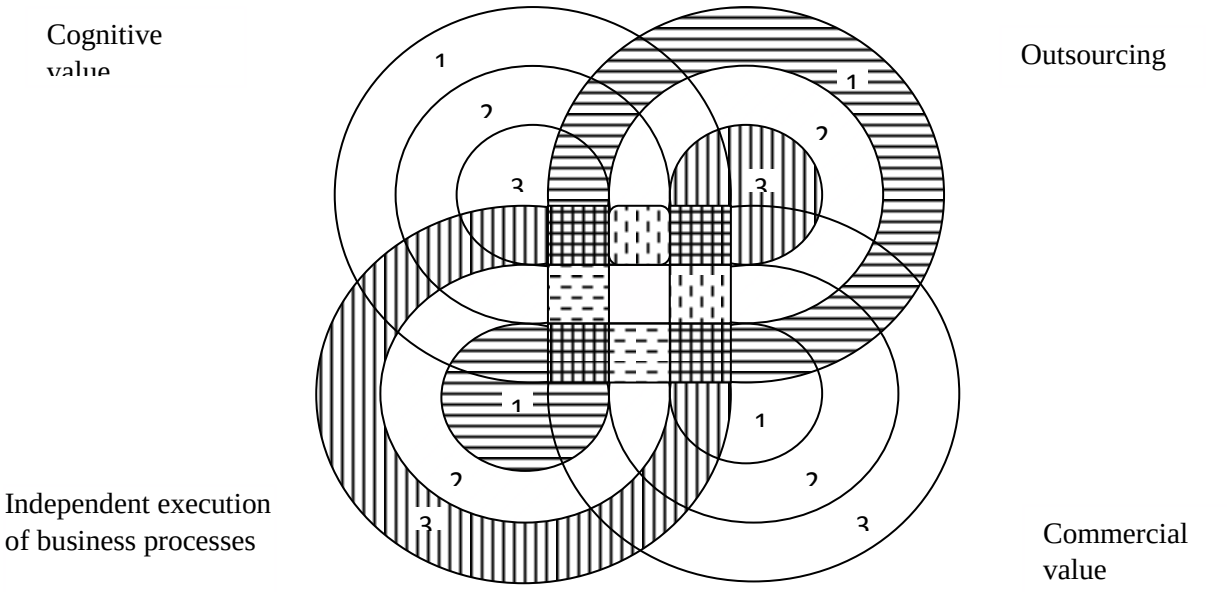
At the heart of the integrated relationship of economic subjects of the macroeconomic system are institutional communication, ie different social norms and agreements. The development of post-industrial society makes appeal to the modern concept of neo-institutionalism, the main mechanism is the use of contract agents and the paradigm theory. Under this

approach, any economic system, including mesoeconomic, a coalition of owners of factors of production and innovative development, linked by a network of contracts. In this connection, will the actual creation of innovative networks offered by the author. An effective business model innovation networks should be based on market relations "client - provider of innovative services."

Innovative macroeconomic system network - a geographically localized group of economic actors, combining formal independence and internal competition with cooperation. Organizationally, it may be identified by the presence of a coordinating center (CC) necessary for the functioning of the interconnected and complementary core competencies in the delivery area of innovative services in order to achieve synergy effects. To provide feedback to the CC economic entities created from representatives of innovative development of the Committee. Unlike clusters, they are not "core" or a large enterprise, but on the basis of parity integrate small and medium-sized enterprises with the formation of partnerships that combine competition and cooperation that forms the basis of the local environment, it contributes to overflow of knowledge and promotes various forms of learning and adaptation.

The community of interests of participants of the innovation network model is well demonstrated in Figure 1, where the author has identified three main stages of the innovation process and have different value and the degree of isolation of its members.

The basis of the horizontal integration of economic entities on the basis of partnership and mutual interest in the development is the concept of open innovation, originally proposed by scientists Chesbrough, which is based on the sharing of knowledge at different stages of the innovation process, from the idea to its implementation in the new product (service) and spread on the market. On the basis of benchmarking is necessary to draw on foreign experience in open innovation management: the definition of organizational and economic relations between the parties to the process of diffusion of innovations; the formation and distribution of mutual value in use of open innovation; integration of small businesses to share knowledge, expertise and resources necessary for innovative development (Consoli and Patrucco, 2008; Pisano and Teece, 2007; West, 2011).



1 – Stage of brainstorming, the use of "open innovation"
2 – Stage of implementation of ideas: the development of a new product (service, technology), its production
3 – Stage of commercialization: Product novelties launch, marketing and promotion

Figure 1. Model of the intersection of interests of subjects of innovation networks at different stages of the innovation process

The strength of the success of innovation networks is the so-called "social capital", reflecting the increase in the level of trust and awareness of each other, thereby reducing the costs of cooperation called "transaktsionyye costs." In underdeveloped institutional environment in Russia, horizontal linkages increase the confidence of participants of innovative network. In contrast to the industrial parks, business incubators and innovative technology centers, they are not created artificially by the authorities, and on the basis of the initiative of economic actors and voluntary membership.

A striking example of international practice is an activity Connect network, established in 1985 in the San Diego region (Southern California) and today brings together 18 thousand. Enterprises and organizations of the region. Over the past 15 years, it has created more than a dozen unique (actually deductibles) of the network in foreign countries. Connect successfully creates industry subnet ("virtual clusters") (Expert RA, 2012).

The network is the most efficient form of organization of objects in innovation systems. For example, an innovative speaker in horizontal forms of networking between research institutes and companies is radically different from the dynamics of the market or in hierarchical relationships. In addition, debugged institutional ties optimizing network operating and organizational costs, thereby reducing the transaction costs of establishing partnerships. After all, the network participants use the so-called "open innovation", ie convert the existing knowledge for their development needs. Thus there is a transformation of explicit (explicit) knowledge in the implicit (tacit) knowledge, which can only be obtained through practical activities in the process of interaction and knowledge of the media interested in their faces. In this case, the innovation network entities may act as integrators of another's knowledge and bring the following benefits the national economy:

- in the country and abroad are selected, mutually link the best technology and modified for use in the Russian context, taking into account regional specificities;
- in this complete and adapted form of innovative products become attractive for Russian users, which in turn stimulates demand for future innovation;
- under the influence of innovations in Russian economic agents accumulate competence to create a marketable product, ie they become more competitive

Evolutionary theory Schumpeter divides all economic actors with respect to innovation and innovators to conservatives. In contrast to the diametrically opposite criteria of this assessment the author proposes to use the matrix structure ratio of the "innovative receptivity" and "innovative capacity", which will develop meso-economic entities on the basis of mutual potentials supplements (Markova and Kulapina, 2015).

It is for assessing the ability to innovate, and the susceptibility of innovations in terms of innovative process management efficiency can determine prospects of economic entity (Table 1).

Table 1. Role structure of business entities in the development of innovative MES

		OPPORTUNITIES		THREATS	
		used poorly (1-5)	use a good (6-10)	overcome bad (1-5)	to overcome the well (6-10)
The degree of manifestation of strengths	high (6-10)	"Locomotives" large enterprises	"Integrators"	"Customers" changes	The role of the deployment and commercialization of innovation
	low (1-5)	Necessary infrastructure support	"Innovation Generators"	"Guided"	"Consultants deviations"
The degree of manifestation of the weaknesses	high (6-10)	Necessary organizational support	"Kastomiziruemy innovation"	"The Outsiders"	"The catalysts of innovation"

	low (1-5)	Financial support	"The mediator for the diffusion of innovation"	Technologically associates	"Communicator"

Table 1 shows the behavior of the main roles in the innovation process, which corresponds to the most economic entity in its potential. Based on this classification, we can conclude that even small businesses with a low innovation susceptibility due to lack of resources may have significant innovative capacity as a result of efficient management on the basis of potential synergies.

Innovative network should not be the center of the distribution of state support. It is necessary to develop a business model, not a bureaucratic model, divorced from practical life. Otherwise it begins pulling resources rather than their multiplication. When creating innovative networks the main thing - not the material and physical assets, and knowing which services customers need innovative network. This will help to organize the community and informal networks (eg NAPTO - National Association of technical service and repair of vehicles, Russia).

According to senior vice president of the Chinese company TusPark Herbert Chen of "science and business innovation have long been out of the heroic period, when success depended on the exploits of the pioneers of single. Now a team of business, in which one has to play the role of general manager, to manage the business as a whole, the other responsible for the research, and the third - just be an assistant or consultant, etc. (Expert RA, 2012).

3. An effective business model innovation networks

To balance the development of these factors is necessary coordinating structure. The leaders of the Coordination Center (CC) innovation network must have experience in an organization earning, rather than distributing money. Autonomy KC innovation network must be from private investors, who benefit from easy to build a business property (real estate developers) and take it on lease. The purpose of the innovation network - to create a special business environment. Promotes the growth of innovative companies and improve innovative activity. The majority in the CC should be independent directors or their representatives in the Committee of innovative development.

The focal point should have the autonomy of the founders and owners. However, at an early stage to reduce the risk is to attend state and municipal authorities (autonomous management companies), public-private or private-municipal joint venture. Power gives to the use of land and is in talks with private investors, acting as a guarantor. At the stage of maturity of the Coordination Centre of innovative development can go public and legal form to become a public, accessible to a wide range of investors.

It should be noted that in Silicon Valley, there is no central government, and there are structures that help to coordinate the various activities. There is one important non-profit organization "Joint Venture - Community of Silicon Valley", which has ensured that all jurisdictions have adopted the same rules of the game, to companies it easier to do business. Community organizes activities so that people can meet and held a collective learning process. It's not just that the institutions carried out research and development, and then they were sent to production, in the business, but also to the business itself asked questions. And there is a mutual interest. Students and teachers master the language of business, learn to think like businessmen. Thus is realized the effect of "triple helix" suggested Mr. Etzkowitz when there is a mutual penetration of interests of business, science and government and provides a balanced innovative development of the entire economic system (Etzkowit, 2008).

Horizontal innovation company staff will work in autonomous groups to solve critical issues. The main objective of the autonomous innovation groups will be the most complete satisfaction of the specific needs of the buyer. This is especially true for service companies providing technical services to repair cars.

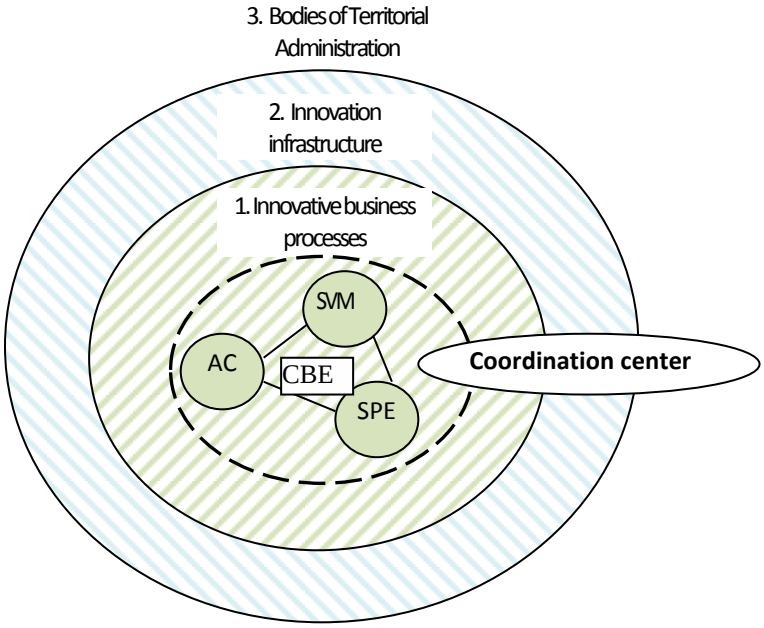
Selection of maintenance vehicles stations for inclusion in the network is due to three main reasons:

1. the scope of services the most rapidly respond to market needs, as interact directly with end-users, while between them and the manufacturer;
2. the increasing technical and environmental requirements for cars, the development of a modular production leads to an increase of competencies based on knowledge-sharing, including with customers;
3. the enterprise service centers are small and medium-sized businesses, so have sufficient innovative capacity, but small innovative susceptibility due to limited resources, so in need of infrastructure support.

In addition to these factors, mention must be made about the future development of modular production, which has long been written abroad (Chesbrough and Prencipe, 2008). Due to the parallel design and manufacture of modular components independent economic entities they have a competitive advantage by accelerating the innovation cycle. At the

same time it requires participants modular manufacturing technology standards compliance, general principles and rules, it is possible to implement the process, provided the availability of appropriate coordination and management of the subject.

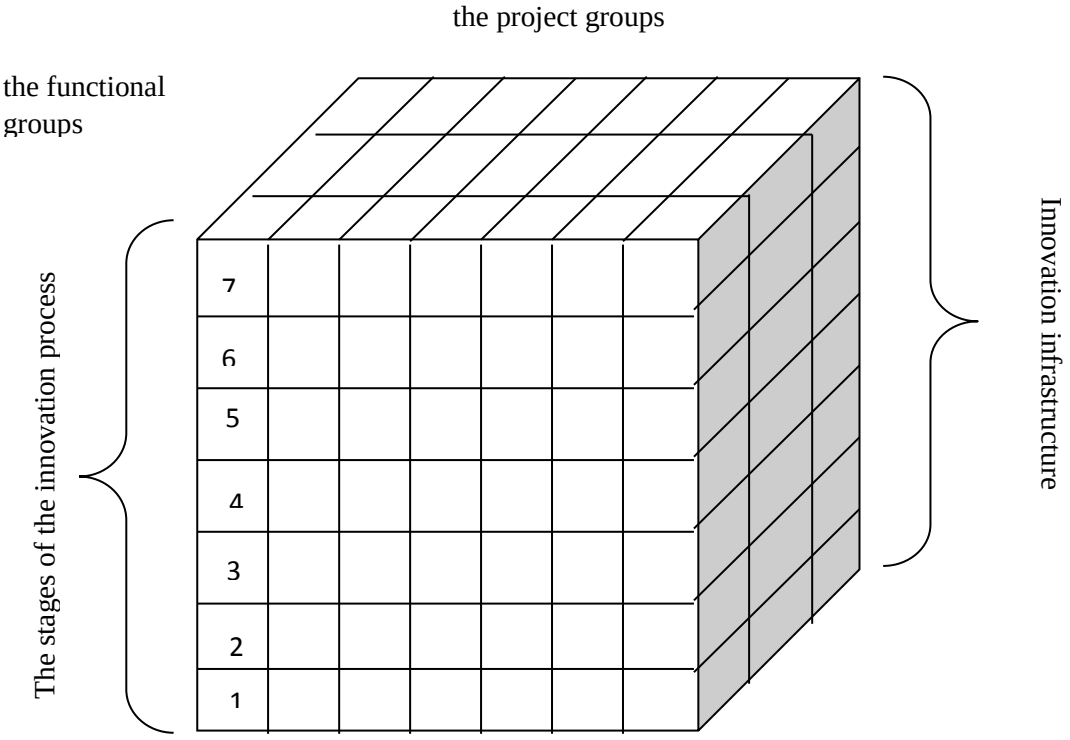
For service stations modular vehicle production provides a variety of model series and will cause difficulties authorized maintenance vehicles. This will necessitate the cooperation of enterprises service center to each other, as well as horizontal connections with manufacturers of automotive components and finished products. For effective implementation of innovation in business structures requires appropriate infrastructure and government support and regulation. Taking this into account, the overall model innovation network encompassing various business entities that are interested in the innovative development of meso-economic system (Figure 2) was formed.



CBE – Committee business entities
SVM - Stations vehicle maintenance
AC - Automotive Companies
SPE - Spare parts and equipment for repair of automobiles

Figure 2 - Innovation network car service

As seen in Figure 2 the representatives of business structures will be part of the committee of economic entities in the communication process to determine the best targets for the development of innovative business. Integrate their activities in an innovative network will Coordination Center (CC), acting as a service intermediary. This type of mediation in innovation networks already distributed abroad in technological clusters (Wolpert, 2002; Zhang and Li, 2010). Structural Coordination Center will be located between the customer innovative services (business entity Car) and the performer (the subject of innovative infrastructure) and its operation will be carried out on a competitive basis taking into account the degree of satisfaction of the demand for the timely fulfillment of certain functions represented in Figure 3.



The stages of the innovation process:
1. Initiation of innovation in the service station in accordance with the strategic development plans
2. Marketing Innovation. Search stakeholder
3. Manufacturing Innovation. Harmonization of interests of business, science, government and society
4. The implementation of innovations. Operational management and infrastructure support projects
5. Promotion of innovation to all participants of the network, sales promotion
6. Evaluation of innovation in the number and value of contracts. Determination of payback
7. Diffusion of innovations in other industries, such as automotive, to improve the quality management system

Figure 3. Model structure of the Coordination Center of innovative network service center

To perform effective management author of the article the possible functional groups of the Coordination Center have been identified, which include the appropriate positions is presented in Table 2.

Table 2. Recommended functional groups of the Coordination Center of innovative network service center

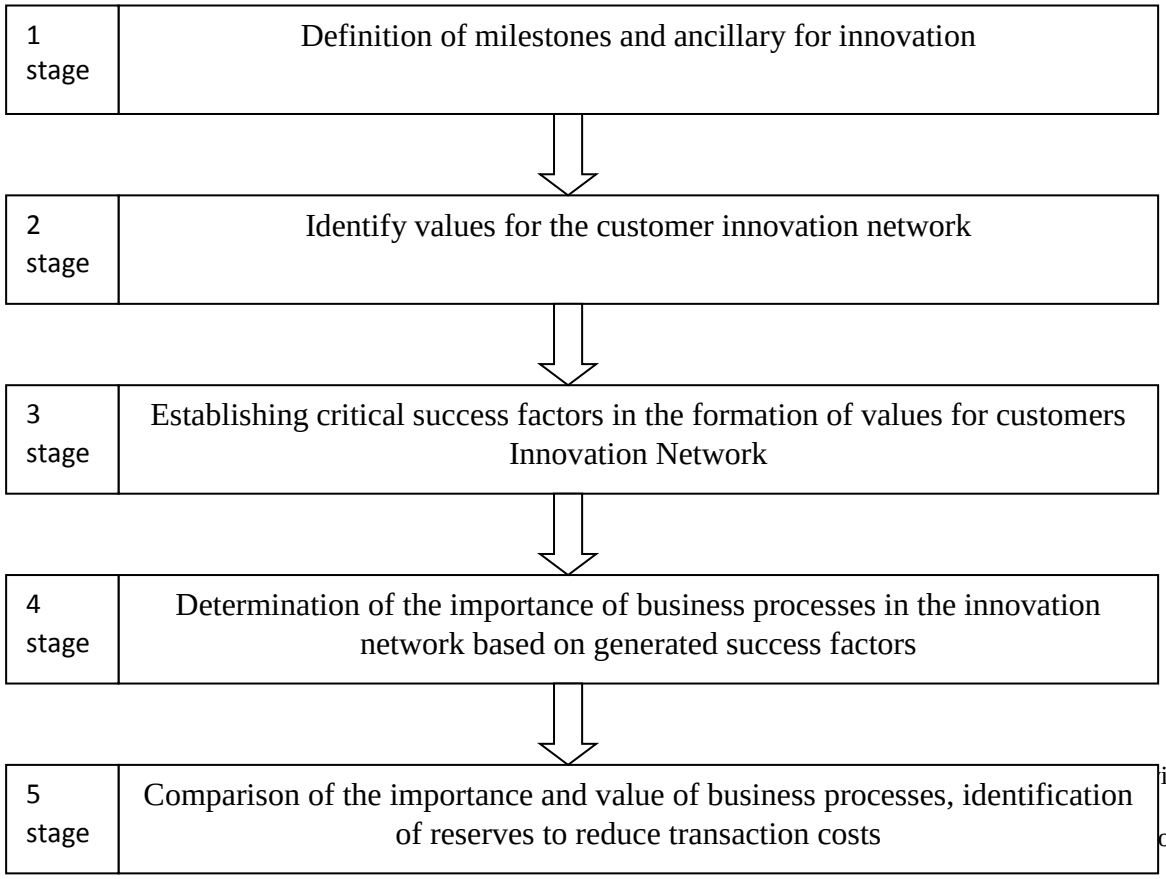
№	Group name	Post
1	Group formation and strategic development of the innovation network	Executive Director. Public Relations and Business Informatics. Marketer. Contracts manager.
2	Group management preparation and implementation of innovative projects	Sales Manager. Manager supporting projects. Assistant.
3	support unit	Public Relations and Business Informatics. Marketer. Manager supporting projects. Quality Manager. Legal Counsel.

Setizatsiya economic entities through the interaction between businesses themselves and with the infrastructure elements helps to find, create and implement innovations, to establish links between different creative teams working on some problems.

4. The implementation of customer-oriented approach to innovation networks

Using a client-oriented approach in the management of innovation networks is justified previously mentioned contact neoinstitutional concept, involving a contractual relationship in the provision of innovative services to customers, which serve business structure and mediate a management company.

Based on this, the clients in the proposed innovation network is not considered final consumers aftermarket services, and enterprise workshop, included in this integrated formation. General scheme of the client-oriented approach in the management of the innovation network is shown in Figure 4, where the steps to the results of this process are reflected.



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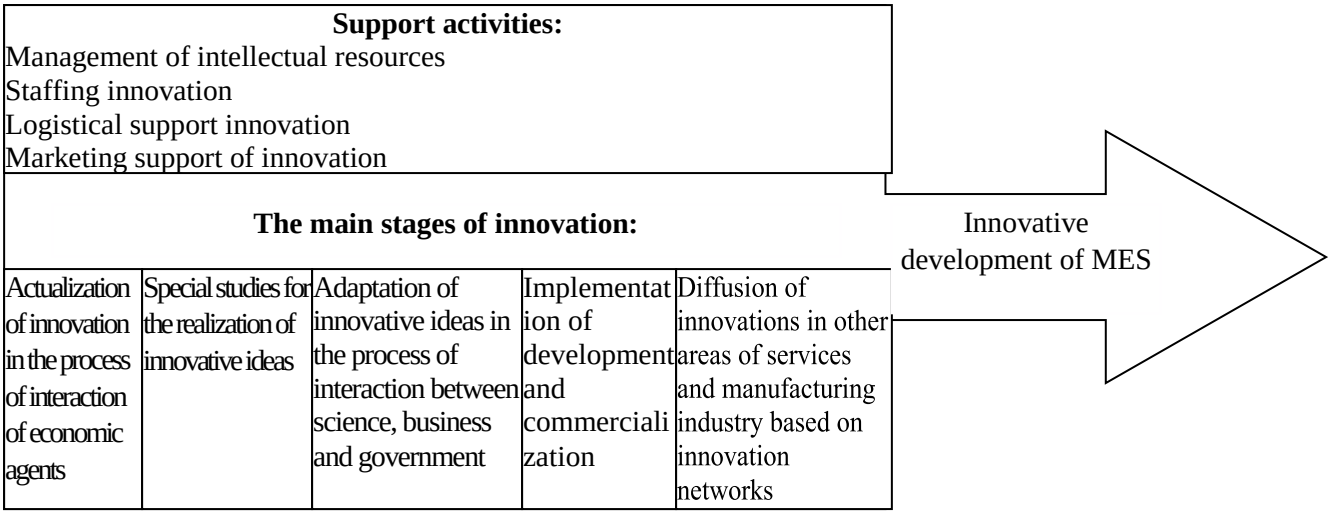
value for businesses, vehicle maintenance stations. It is based on a diagram of the process of value creation, proposed by M. Porter (Porter, 1998).

As shown in Figure 4, to create customer value in the innovation process are distinguished primary and secondary activities. Supporting business processes necessary for the effective delivery of basic types of innovation. The innovation network data business processes will perform infrastructure institutions have for this particular resource.



The main types of innovation are related to the management of knowledge and turning them into a competitive advantage in the changing market conditions. At the same time the innovation cycle begins with the actualization of innovation in the process of interaction between business structures and ends as a communication process with the purpose of diffusion of innovations, which contribute the most to the formation of an integrated horizontal type. To determine the value of an innovative network for its members, service stations Car will be based on the proposed table 3.

Table 3 - The value system for members of the innovation network

№	Stages of innovation	Create value for members of the innovation network, numerical score *					Total
		the embodiment of progressive ideas	synergistic effect	reducing transaction costs	strengthening of market position	growth opportunities	
1	Actualization of innovation in the process of interaction of economic agents						
2	Special studies for the realization of innovative ideas						
3	Adaptation of innovative ideas in the process of interaction between science, business and government						
4	Implementation of development and commercialization						
5	Diffusion of innovations in other areas of services and manufacturing industry based on innovation networks						
6	TOTAL						

* The scale for the assessment:
0 points - does not affect
1 points – almost no effect
2 points – It affects slightly
3 points – It has average effect
4 points – the effect of above average
5 points – It has a maximum impact

Using the form on the basis of expert method it will be possible to evaluate the significance of individual stages of innovation, as well as components for the benefit of customers innovation network. Carried out on the proposed structure of the assessment will allow to manage the innovation network to focus on those aspects that create the highest customer value for the customer innovation network.

Once we identified the main consumer values innovation network members control subject (Coordination center) is necessary to identify the critical success factors (CFI), which contribute to improving customer satisfaction. To identify the CFI used value chain made up above, and as the factors identified ancillary activities in innovative networks (Table 4).

Table 4. Determining the CFI innovation network service centers based on customer value

Create value	**CFI service stations Car related**			
	management of intellectual resources	personnel maintenance of innovation	logistic support innovation	marketing substantiation of innovation
strengthening of market position	1. The cost of business growth by royalty		5. Increased susceptibility innovation through the integration of resources	
reducing transaction costs			6. Well-established relationships with suppliers	8. Integration (backward and forward, vertical and horizontal)
synergistic effect	2. Mutual exchange of knowledge and competences	3. Create a process-oriented teams (autonomous work groups)		
the embodiment of progressive ideas			7. The implementation of modern technologies in maintenance	9. The high level of satisfaction of the needs and demands
growth opportunities		4. Implementation and development of intellectual potential		10. New services that meet the requirements of the market

Highlighted in Table 4, the critical success factors for the implementation of innovative customer network values are generated in the implementation of the relevant business processes, which can be divided into four groups: basic, providing business development processes and management. According to this classification, the author of the article identified components of business processes (BPR) and the proposed tabular form in order to assess the significance of the BPR in the degree of their influence on the generated critical success factors is presented in Table 5.

Table 5. Identification and evaluation of business processes in an innovative network service centers based on CFI

Business processes (BPR)	Critical success factors (CFI)											
	1	2	3	4	5	6	7	8	9	10	amount of CFI	Evaluation of the importance
The main business processes												
Joint work on innovative projects												
Promoting Innovation in the Car Market												
Supporting business processes												
Market study of innovation in the service station												
Knowledge networking system between members of the innovation network												
Business processes development												
Monitoring needs innovation network members												
Work on the quality of service innovation network members												
Innovative network management business processes												
The formation and implementation of the strategic objectives of the innovation network												
Coordination and motivation of behavior of participants, providing the innovation network												

Having defined this way priority business processes, management innovation network service center can focus efforts and resources on their implementation. If in the process of further analysis, it turns out that the importance of business process at odds with the costs of its implementation, it is necessary to conduct appropriate adjustments based on the results of functional-cost analysis.

Thus, the use of customer-oriented approach in the management of the innovation network to determine the basic values, participants receive an integrated form and will enhance their innovative activity and the corresponding development of meso-economic system.

Conclusion

In conclusion, the article you must draw the appropriate conclusions and to determine the prospects for the development of scientific research. The result of the work became practical recommendations on the formation of innovative network service center to help, from the point of view of the author, "pull" the domestic auto industry to the forefront as flexible forms of innovative development of meso-economic systems management will create the appropriate market environment to initialize the "bottom" of innovation, that .e. entities business entities, especially small and medium-sized businesses. The proposed approach and management models can be used in other areas of service, requiring innovative development through the integration of existing capacity (housing and utilities, repair and construction services, transportation, etc.).

References

Chesbrough, H. W., Prencipe, A. (2008) “Networks of innovation and modularity: a dynamic perspective”, International Journal of Technology Management, Vol. 42. No. 4. pp. 414-425.

Consoli, D., Patrucco, P. (2008) "Innovation platforms and the governance of knowledge: Evidence from Italy and the UK", Economics of Innovation & New Technology, Vol. 17 (7). Oct. pp. 701–718.

Etzkowitz El. (2008), Triple helix innovation: Industry, university, and government in action. L.: Routledge.

Guidelines for the creation and development of innovation centers (technology and zakonomirnosti) (2012), Expert RA, Moscow, Russia

Howells J. (2006) "Intermediation and the role of intermediaries in innovation" Research Policy, No. 35. pp.715–728

Kleiner, G.B. (2004), Jevoljucija institucional'nyh sistem [The evolution of institutional systems], Nauka, Moscow, Russia

Kleiner, G.B. (ed.) (2011), Mezoeconomika razvitiia [Mezoekonomics of Development], Nauka, Moscow, Russia

Markova, O.V., Kulapina, G. M., Kulapina E.V. (2015), "Adapted Management Techniques for Innovative Networks", Review of European Studies Journal, vol. 7, no. 6, pp. 1-11.

Nikiforova, A. (2011), "Who manages the Silicon Valley", Expert Journal, vol.50, December, pp. 60-64

Pisano, G., Teece, D. (2007) "How to capture value from innovation – shaping intellectual property and industry architecture" California Management Review, Vol. 50. No. 1. Fall. pp. 278–296.

Porter, M (1998), "Clusters and the new economics of competition", Harvard Business Review, Nov.-Dec, pp. 77-90

Schumpeter, J.A. (2008), Teorija jekonomicheskogo razvitija [Theory of Economic Development] Translated by Avtonomov V.S., Dyrektmedya Pablyshynh, Moscow, Russia

West, J. (2011), "Tradeoffs of open innovation platform leadership: The Rise and fall of Symbian Ttd.", available at: http://siepr.stanford.edu/system/files/shared/ documents/2011—03_WestWood_SIEPR.pdf_WestWood_SIEPR.pdf (Accessed 4 January 2011).

Wolpert, J.D. (2002) "Breaking out of the innovation box" Harvard Business Review. Aug. No. 80 (8). pp. 76–83

Zhang, Y., Li, H. (2010) "Innovation search of new Ventures in a technology cluster: the role of ties with service Intermediaries" Strategic Management Journal, No. 31. pp. 88–109