

# Innovative development of higher education institutions in the context of competition and network cooperation

## Desenvolvimento inovador das instituições de ensino superior no contexto da concorrência e da cooperação em rede

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#### ABSTRACT:

Authors aimed to study the role of innovative development of higher education institutions in the context of competition and network cooperation. It was determined that the search of an optimal balance between competition and network cooperation aimed at creating systemic recommendations that ensure optimization of innovative development of higher education institutions. The need to create optimal conditions for innovative development of higher education institutions was established.

**Keywords:** Competition, state regulation, co-competition, market mechanisms

#### RESUMO:

O estudo visa analisar o papel do desenvolvimento inovador das instituições de ensino superior no contexto da concorrência e da cooperação em rede. Foi determinado que a busca pelo equilíbrio ideal entre competição e cooperação em rede tem por objetivo a criação de recomendações sistêmicas que otimizem o desenvolvimento inovador das instituições de ensino superior. A necessidade de criar condições ótimas para o desenvolvimento inovador das instituições de ensino superior também foi fundamentada.

**Palabras clave:** Concorrência, regulamentação governamental, cooperação, mecanismos de mercado

## 1. Introduction

Currently, the issue of innovative development is applicable to educational organizations of the higher education is especially urgent and involves the search for ways of intentional and predictable changes in their structure and activity focuses, and as a result a new superior state.

An expanding role of innovative development is caused by a need for deep, meaningful reforms in the educational system of Russia.

Innovative development, regarded as a sequence of several stages, at the start involves the creation of new knowledge, which in the development process will transform from an idea into a novation, recognized by the scientific community, and at the end - into innovation, meaning it results in a commercial innovative project. Sometimes, this path can be infinite, in case innovative processes are inert. The creation of new knowledge and ideas in Russia is not a problem, but accepting knowledge as novation and implementation of innovations into educational and production processes is definitely problematic.

The research of innovative processes in higher education should answer the following question: Which methods and instruments are the most advanced and effective in innovative development of higher education system in Russia; what do competition and network cooperation contribute to innovative development of higher education institutions; how incorporated are competition and network cooperation in the process of innovative development of higher education institutions.

The main goal of this study is to research conditions that determine successful innovative development of higher education institutions in Russia.

The study was conducted using methods of scientific generalization, comparative analysis, and complex, systematic and situational approaches.

The study is based on the works of Russian and foreign scientists, focused on the research of the role of competition and network cooperation in innovative development of higher education institutions. The urgency of this issue is reflected in the wide range of domestic and foreign studies. Competitions is the topic of many studies for more than a century and a half (Porter, 2010; Kirzner, 2001; Robinson, 1986; Salin, 2004; Stigler, 1995; Yudanov, 2007; Chamberlin, 1996), yet studies into the topic of network cooperation began only the second half of the twentieth century (Chen and Liu, 2011), (Wasserman and Galaskiewicz, 1994), (Nohria and Robert, 1992), (Oliver and Ebers, 1998) etc. The empirical basis of this study is comprised of the results of an investigation into the higher education system in Russia, conducted using statistical data analysis.

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## **2. Discussion about the effectiveness of competition in the higher education system of Russia**

The widespread understanding about competition as a universal tool, which requires the transformation of higher education institutions into the education business schemes with the purpose to trade knowledge as a product with an eye-catching label (Lisitsky et al., 2017), is not operational in Russia. It is unknown how effective the competition is between education institutions in Russia today, since nearly all of them are public (non-state sector of education is being destroyed), are being downsized (according to Main Computing Center of the MES of the RF, just in 2017, the quantity of universities and their branches has been reduced by 10% and 26% respectively) (MCC of the MES of the RF), amalgamated and merged (Koprov and Sapir, 2016), have been purposefully dragged into the top 100 of best universities in the world (the Executive Order of the President of Russia...), they depend directly on "behind the scenes" allocation of state-funded quotas by the Ministry of Education and Science of the Russian Federation (Sizov, 2015), have strict management over the education process (meaning it is regulated by government similar to monopoly-dominated sectors) and like to engage in gradual inert innovative development, which is characterized by minimum changes per time unit. But how does success of one university influence the opportunities for the other one, are the interests of participants in the education market in opposition? What competitive power can contribute to innovative development of higher educational institutions today (Main Computing Center...; Rakitov, 2016)?

A confusing structure of providers, purchasers and consumers in the education system complicates the assessment of the competitive environment of higher education institutions. Having evaluated each out of five competitive powers, proposed by M. Porter, to determine the state of an industry, it can be stated that the appearance of new competitors is suppressed by considerable barriers for entrance into this industry. The main one, in our opinion, is the power of brand (image) of already existing higher education institutions on

the market (Zhukovitskaya, 2017). The creation of a distinct image requires much more time and intellectual investments. This drastically limits opportunities for their competitors to enter.

*Consumers.* Consumers of educational services include the state and separate entities. Additionally, if the state is the main, or even the only -consumer of services of higher educational institutions, the power of its influence over the state of competition cannot be overestimated. The system of forming state order that relies on the rating of higher education institutions forces the latter to depend on a certain list of attributes, where innovative activity does not take the last place.

*Resource providers.* The main resource, necessary to conduct educational activity, is information. In other words, universities prioritize the unlimited access to new resources - ideas, information, knowledge, projects, methods and technologies related to education. The providers of this information are scientific-research and higher education institutions. Competition between them for information is possible when the knowledge about its existence, cost and provider is available. But with weak university connections, which do not contribute to the formation of an open platform for exchange of information, new knowledge is not provided to society in a prompt manner. This effect emerges under weak competition.

*Substitutes.* As a result of technological advances, a question about the possibility of replacement of the usual process of education for substitutes. Are there any service-substitutes, which can replace the process of consumption of education services? The answer depends on the market of education services boundaries. Education services, as a wide category of services, possess virtually inflexible demand. However, a narrower category of education services in a specific field features more flexible demand and has service-substitutes. A very narrow category, for example, is a different type of pedagogical education, characterized by highly flexible demand, given that other types of pedagogical education - are their perfect substitutes. Service-substitutes create a constant danger since the replacement is always possible. Although, a growing number of ways and forms of realization of education services (on-campus, off-campus, distance learning, MOOCs - massive open online courses), used by almost all higher education institutions (Sokolov, 2017), leads to the absence of specialization and makes it impossible to accumulate high-quality human capital in all conceivable fields of study. Therefore, expanding the range of education services by universities leads, on one hand, to a relatively brief financial stability, and on the other - to the absence of innovative development.

*Competitors.* Competition between existing higher education institutions should have a monopolistic nature. In this situation, with enough standardization of services, each higher education institution will be forced to create such differential features (innovative breakthroughs), which will distinguish it from similar to it and will allow different consumers (private entities) to make a choice in favour of a specific institution. However, in Russia, the competition on the market of education services resembles an "unnatural monopoly" Monopolism, artificially created by government, is motivated by economic benefits for the state. It is evident that educational sphere is being extracted from under the influence of strictly market competitive mechanisms of self-regulation, the number of universities is being reduced, its functioning occurs exclusively within state regulation etc.

Consequently, when evaluating competitive powers in the Russian educational sphere, the absence of effective competition and its substitution for state regulations become apparent. Innovative development of universities is not born from competition that creates imbalance and uncertainty, rather it is stimulated only by the volume of state order, which is essentially a sole motivation prompting educational institutions to innovate. What needs to be done to create the environment of effective competition? The solution is quite simple, it requires conditions of a severe loss of stability of universities, imbalance and uncertainty, which enable the generation of unique ideas (Haken, 2003). The creation of these conditions can be achieved through providing opportunities for undergraduates to make an individual decision between universities, rating certificates upon completing the Unified State Exam. Stimulating competition through certificates has been successfully implemented in medicine when all perinatal centers have to compete for maternity patients and their certificates while

having minimum state involvement, it affects competition - quality of medical services and their innovativeness increase.

The existing artificial state regulation of competition in the educational sphere destroys mechanisms of support for scientific and technical progress that determine the capacity for integration of universities in solving problems of innovative development. All-encompassing nature of a tendency of competition to stagnate requires a deep scientific understanding about the importance of network cooperation and its capabilities for innovative development.

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### **3. The role of network cooperation**

Innovative development of the Russian high education system is impossible without creating a unified educational space, capable to produce, accumulate, distribute and upgrade educational innovations.

The analysis of Russian and foreign studies of the past years confirms that the most promising and effective development focus of Russian education is the transition to network forms of cooperation between universities.

Mutually beneficial assistance and collaboration in the form of network cooperation enables to redistribute resources, coordinate activity, and stimulate innovative processes in higher education. Innovative development of universities, as an incremental process of search for and realization of new ways of accomplishing strategic goals, covers all significant functional areas, relies on the internal potential and necessity to adapt to the changing environment. Both internal potential and the state of the university environment can be correlated within network cooperation. It is hard to argue against the opinion of Kapustin V.S. that within network cooperation less strong universities can use the experience, knowledge, information, material base to achieve innovative results in diversified fields through integration with leading higher education institutions (Kapustin).

Such universal form of innovative development of higher education facilities as network cooperation arranges unification of separate elements into a new type of entity through the processes of influence of subjects on each other on the basis of social relations. This cooperation gives an opportunity to generate innovative products (Wu, 2014). Web-based educational programmes, joint scientific investigations, joint educational projects can be considered innovative results. (Zborovsky and Ambarova, 2017). Providing access to information is significantly higher in the educational network of universities that provide information to higher education institutions on the early stage of its emergence (Pillai, 2006).

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### **4. Key elements of innovative development of educational institutions**

The main effect of network cooperation concerning the creation of innovative space in an educational environment is the development, approbation and transmission to the pedagogic community of new knowledge (Carayannis and Grigoroudis, 2016), innovative models of educational content and methods of its realization. Networks possess an independent role in maximizing benefits from creation and diversification of knowledge and intensification of cooperation (Cetinkaya and Erdil, 2016).

Network cooperation reinforces resources of any innovative higher education institution. M. Castells noted that cooperation and networks provide the only opportunity to share expenses and risks, to follow constantly updating information (Castells, 1998), increased dynamics and openness to innovations is common for social structures that have the network basis (Castells, 1999).

However, the experience, gained by Russian universities, shows that the listed effects of network cooperation emerge only under the condition of existing internal motivation for universities to participate in such cooperation. It means that the state launched initiatives on the creation of educational networks do not yield the intended effect since they are formal and the only effective power prompting universities to network cooperation is competition.

The main requirement for such co-opetition (Carayannis and Grigoroudis, 2016) is an orientation on achieving common goals of innovative development.

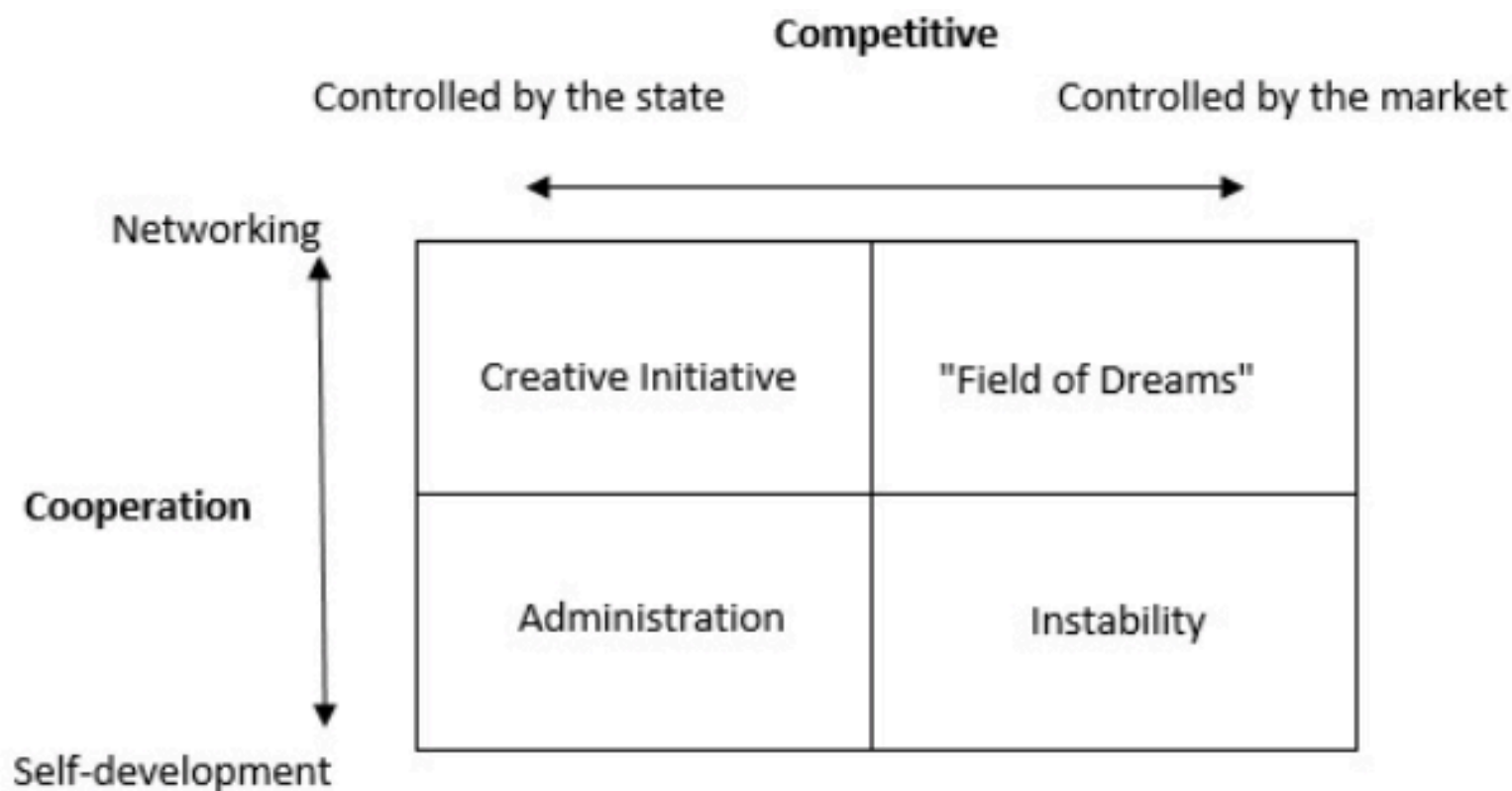
Innovative development of higher education institutions is impossible without competition and network cooperation.

It is vital for higher education institutions to be under conditions of effective competition and cooperate with each other to accomplish innovative development. Two opposites – competition and network cooperation are interconnected or interdependent, and together they form an occurrence “co-opetition”. Fundamental studies in the field of “co-opetition” – competition and cooperation, conducted by a great number of authors (Bresser, 1988), Brandenburger and Nalebuff (1992), Lado, Boyd and Hanlon (1997), Loebecke, Van Fenema, and Powell (Loebecke *et al.*, 1999); Bengtsson and Kock (2000), Chen (2008), Kuznetsova, Kuzmenko, and Yumayev (2017), were aimed at assessment of paradoxical interconnection between two opposites – competition and cooperation. However, competition and cooperation can be viewed not only as independent, oppositional or paradoxical, but also as, according to Chen M.-J., “two separate, seemingly parallel, ‘lines’ that converge at the end”, meaning that two opposites can be interdependent in their nature and together form a total (Chen, 2008). Authors suggest presenting this total as a matrix (Figure 1).

The matrix of innovative development of universities depicts positions of a specific university in the strategic space, which is limited by two coordinate axes. The vertical axis reflects the status of cooperation and collaboration between universities. The horizontal axis reflects the status of the competitive environment on the market of educational services. The names of quadrants represent the sources of innovative development. According to the matrix, identification of the status and perspectives of innovative development of universities depends on whether they land in one or the other matrix quadrant:

1. Administrating (“Cosy swamp”) Strict state regulation and the self-sufficient independent existence of universities do not contribute to innovative development, which is only possible as a result of administrating.

**Figure 1**  
Matrix of innovative development of universities



2. Creative initiative (“Sheer enthusiasm”). Organized network cooperation under strict state regulation can result in gradual slow-moving innovative development only under conditions of creative initiative and personal enthusiasm of an academic staff. The speed of receiving and exchanging new knowledge is high, but internal motivation of the university for innovations is absent.

3. Imbalance (“Lone fight”). The self-sufficient independent existence of universities under effective competition, that is under the competitive environment, controlled by the market,

encounters a constant imbalance of an organization that stimulates fluctuating innovative development. However, the speed of receiving new knowledge is low, since free exchange of novations between higher education institutions is absent; novations emerge spontaneously and may not overgrow into innovations.

4. "Treasure field" The total of network cooperation and effective competition, described by Chen M.-J as "all-encompassing, interdependent opposites" (Chen, 2008), creates an actual "Treasure field" for innovative development. Though, it would be incorrect to view competition and network cooperation as two independent antagonisms. These two forces, which work simultaneously, dynamically cooperate and form the total.

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## 5. Conclusions

Network cooperation enables any innovative higher education institution to enhance their resources by using resources of other institutions, receive an expert evaluation of their own developments, update content, forms and means of organizing the educational process, expand the list of educational services, set a strategic focus of innovative activity. An example of such effective cooperation is the whole living world where animals, birds and mammals compete with each other for the limited resources and at the same time unite in packs and cooperate to achieve common goals.

The problem of network cooperation is that it cannot be created by an administration; it can only gradually grow, created by itself, as a result of combined efforts. Network cooperation, organized not by orders, but by an initiative of universities themselves, is originally stimulated by internal, and therefore the most effective motivations for growth.

Viewing competition as exchanges of individual actions and counteractions, which, alongside network cooperation, are only some of many complex strategic interactions between universities, should be the foundation for innovative development of universities.

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