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## **The Information Support of the Innovation Activity**

### ANNOTATION

The entrepreneurship evolution in the Republic of Belarius has been strongly influenced in 2006–2010 by the support of innovation activity of the infrastructure of its subjects. Therefore, it can be concluded that investigation of the problems of information support of the innovation activity is essential in order to promote the competitiveness of the national economy. The paper deals with the essence of the setup of information support of the innovation activity disclosing the need to support entrepreneurship innovation. The innovation potential in the Republic of Belarius has been explored; the correlation regressive analysis of relation between the main indicators characterizing the effectiveness of the innovation activity in the republican economy has shown need conducting studies revealing the interrelation between the scope of investments in the development of research and innovation businesses and fortification of the economic situation in the Republic. The prevailing situation in the sphere of information support of the innovation activity of businesses has been studied in the Gomel Region, that has revealed a number of problems manifesting in some cases poor awareness of the participants in the innovation process.

To solve the confronting problem it is necessary to create the structures in the region that would facilitate promotion of the information of technologies among the economic subjects and that would be capable to finance and encourage business education of new emerging innovative enterprises.

The project of establishing a virtual business incubator is the outcome from the existing situation in order to render information support of the innovation activity that permits to promote the innovation activity in the region by providing fast access to the information to a broad circle of economic subjects. The project implies the arrangement of an information field permitting the utmost fast and effective cooperation between industries, research institution, educative structures, and investors. In this manner, the activity of the деятельность VBI will be based on controlling information flows to yield the maximum gain. The effectiveness and practical significance of the project is confirmed by the fact that it has been included into the program of action of implementation of state support of small businesses.

## DEVELOPMENT OF INFORMATION SUPPORT OF THE INNOVATION ACTIVITY IN BELARUS

Investigation of the content of innovation processes and features of the venture activity permits to conclude that it is necessary to establish special managerial and economic mechanism of support of small venture, innovation and technology-oriented companies. The situation has emerged in which more financing of research and technology fails to yield adequate growth of the economic potential and business performance. The problem can be solved by creating an infrastructure encouraging the innovation processes, venture efforts and creating favorable conditions for the progress of small businesses in the scientific and technological sphere.

At present the information has become one of the leading production factors. Virtual technologies keep penetrating into man's everyday life. Small business and private businessmen fail to use fully the opportunities offered by the worldwide web. Hence, it is reasonable to establish the mechanisms that stimulate progress of small business by utilizing the worldwide web information resources.

Small innovation businesses should also play a specific role in the development of innovation entrepreneurship in Belarus because this country possesses a powerful potential to encourage small businesses in the sphere of innovations. However, lack of databases of scientific and technological needs and developments and inability of individual managers to restructure their businesses independently hinder adoption of innovations.

The ability to overcome the barriers of penetration of small businesses into the market is governed by the ability of the economic subject to arrange and support relations with all counterparts in the external and internal environment in addition to management of costs of production of goods and services and to bear the transaction overheads of such relations. The transaction overheads include such components as the information search cost (the cost of searching the information about the market situation and losses from incomplete information); the cost of conducting negotiations and transaction conclusion (including the cost of legal ad illegal formulation of the transactions); the cost of assessment (the cost needed to assess the quality of goods and services subject of the transaction); the cost of specifications and protection of property rights (reimbursement of the services of a lawyer ad an arbiter for ensuring safety, the losses due to improper specifications); the cost of opportunistic behavior (the cost of supervision of observance of the transaction terms and prevention of their violation).

One of the tools of information support of innovative businesses can be establishment and adoption of the information system providing the opportunity of virtual interactive communication with potential buyers, suppliers and local authorities.

Further innovative progress in this country is governed by the socio-economic development program of the Republic of Belarus in 2006–2010. Certain success has been achieved in the course of implementation of the prediction indicators set by the present program in the sphere of innovation activity management is successful.

**Table 1. Indicators characterizing the efficiency of innovation activity in Belarus [6]**

Indicators	1998	2003	2007
A	1	2	3
1. Number of research institutions	272	295	340
2. Number of scientific research worker in Belarus, thous. pers.	32,477	29,981	31,294
– scientists	19,153	17,702	18,995
in Gomel Region, thous. pers.	3,122	2,996	2,980
– scientists	1,445	1,461	1,464
3. Specific gravity of scientists in scientific research worker in Belarus, %	59,0	59,0	60,7
in Region:			
– Brest Region	56,2	54,4	67,2
– Vitebsk Region	44,1	53,8	58,6
– Gomel Region	46,3	48,8	49,1
– Grodno Region	49,8	55,5	64,7
– c. Minsk	63,5	62,0	63,3
– Minsk Region	47,6	47,6	45,3
– Mogilev Region	49,7	48,9	58,6
4. Average personnel of one research institution in Belarus, pers.	119	102	92
in Region:			
– Brest Region	37	24	25
– Vitebsk Region	67	39	43
– Gomel Region	116	111	110
– Grodno Region	49	43	31
– c. Minsk	143	123	113
– Minsk Region	152	125	73
– Mogilev Region	47	36	45

Table 1 shows the data characterizing the innovation activity in this country during the last nine years. The Table shows that the number of research institutions in Belarus has reduced, but specific gravity of scientists in scientific research centres in Belarus have been growing stably. This growth characterizes the increase of personnel's quality in research institutions in republic.

Average personnel of one research institution in Belarus has reduced from 119 to 92 peoples. Minsk has the most numerous personnel. Brest Region and Grodno Region have the least personnel in one research institution.

One of the most essential factors of progress of innovation activity of economic subjects is the availability of the innovation infrastructure in the Republic of Belarus within the national innovation system that would represent an entity of legal, structural and functional components ensuring progress of the innovation activity in the Republic.

The innovation infrastructure as the most essential segment of the modern National innovation system in the Republic of Belarus has been actively progressing in recent years. The scientific technological parks (technoparks), centers of technology transfer and venture enterprises exist now as the innovation infrastructure subjects. Figure 1 shows the territorial location of the innovation infrastructure subjects in the Republic of Belarus.

At present there are ten functioning institutions in this country that belong by their chartered activities to the technological parks, they are the Republican technology transfer center and its regional affiliates, business incubators. All in all over 80 various structures have been established in the Republic operating in the sphere of information, consulting, managerial and other support of innovation activity, namely one high-technology park, ten research and technological parks, 56 production research centers, five innovation centers, 24 technology transfer centers, one Belarusian information fund, ten information and marketing centers, nine business incubators, etc.

The functioning innovation infrastructure subjects contribute considerably into the country's economic progress. It is noteworthy that growth of the number of innovation infrastructure subjects will lead to the relevant growth of the number of innovation-minded enterprises in this country.

Taking into account the urgency of innovations for achieving the socioeconomic purposes, the problems of intensification of innovations and investment activity are identified too as one of the priorities of progress of the Republic of Belarus and its individual regions. Yet, the GIP science consumption continues to remain at a rather moderate level.

The innovation activity in the economy of the Republic of Belarus plays a more important role each year. However, the situation emerging in this country is such that it is quite hard to finance the functioning of the centers of entrepreneurship innovation support. It is primary due to the growth of the state consolidated budget cost portion. In combination with the vigorous Internet progress and that of the communication systems, the prevailing situation has pushed development of economic subjects in this country that deal with the information support of innovation activity.

The solution to the problems of information support of the participants in the innovation process depends in many respects on their financial opportunities in the modern market economy since the information is one of the most essential commodities.

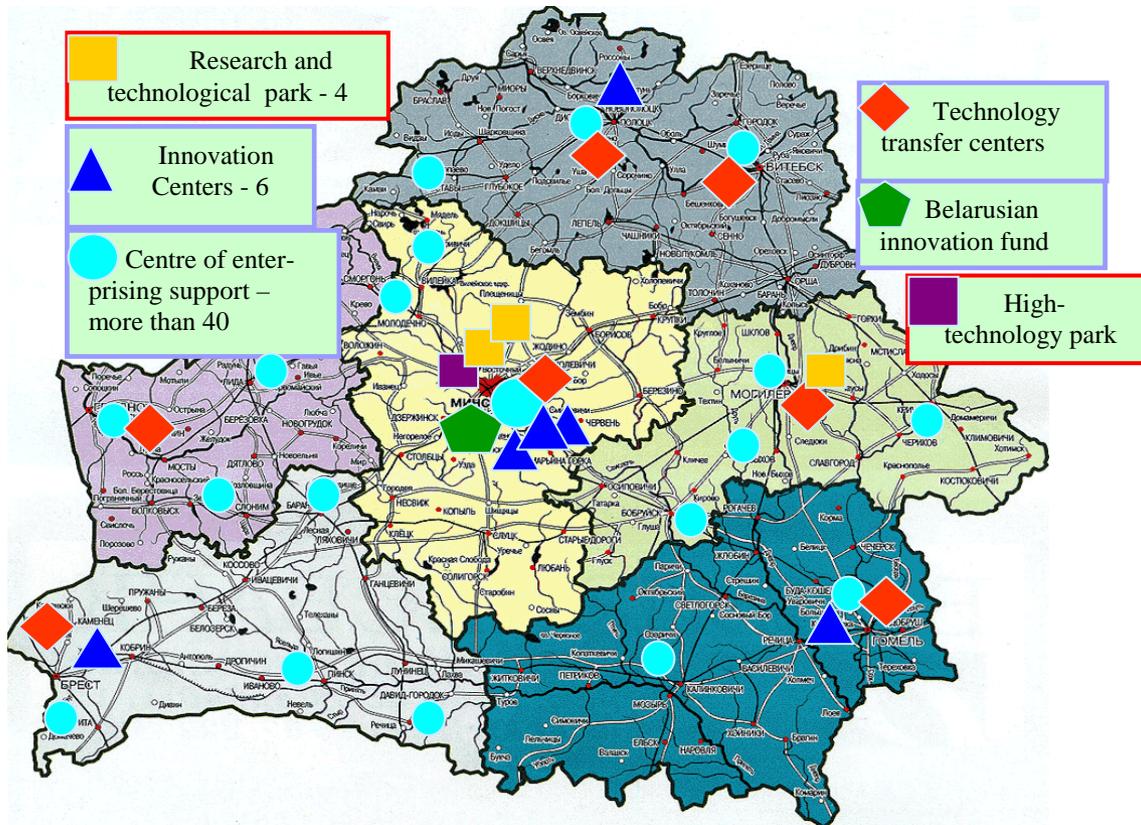


Figure 1. Subjects of innovation support in Belarus

At present the information support of innovation activity here occurs through establishing by innovation infrastructure subjects of individual Internet portals that contain special information relating to the spheres of activity in which the above economic subjects operate. The availability of these portals facilitates significantly the operation of innovation companies in certain spheres of activity.

However, there are a number of problems with the main one being poor information of the participants in the innovation process of the availability of such sites.

For instance, the site of the technology transfer center has been visited by 49,000 during 18 months (83 visits per day, on the average). But 41% visitors were Americans, 22% Russians, and just 19% Belarusians. It should be remarked that only two applications have been received for search for both interested local customers of technologies, meanwhile 300 foreign applications have been received during the first two years since the site has been in existence [8].

The information support of innovations in the Gomel Region is the mission of the Center of scientific, technological and business information, a branch of the Republican center of technology transfer, and the Gomel regional executive committee. The state structures render support too to small innovative facilities in the city and region.

During the study the sites of the leading institutions of information support of innovation activity were evaluated (Table 2).

**Table 2. Study on the sites of the leading institutions of information support of innovation activity**

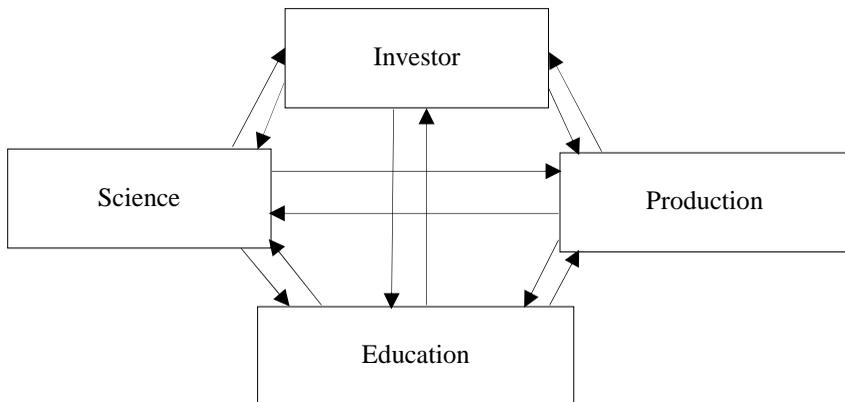
Institution	Positive aspects	Negative aspects
The Center of scientific, technological and business information	<ol style="list-style-type: none"> <li>1. The site is maintained by competent specialists</li> <li>2. The site information is frequently updated</li> <li>3. It provides the information about the latest scientific developments</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of client targeting</li> <li>2. The site functions in one direction only</li> </ol>
State structures	<ol style="list-style-type: none"> <li>1. A broad variety of presented information</li> <li>2. Convenient system of references</li> </ol>	<ol style="list-style-type: none"> <li>1. The information is of the news character</li> <li>2. Individual visitors of the site lack attention</li> </ol>
Bureau of Patent Solicitors of E. Belyaeva	<ol style="list-style-type: none"> <li>1. Well presented description of provided services</li> <li>2. Well-structured information about the subject of innovation activity in the country</li> <li>3. Convenient search system</li> </ol>	<ol style="list-style-type: none"> <li>1. The information deals with a narrow sphere, namely protection of intellectual property</li> <li>2. Lack of client-targeted service</li> </ol>
State Science and Technology Committee	<ol style="list-style-type: none"> <li>1. Complete information in the domain of research (state programs, competition, a catalog of projects, etc.)</li> <li>2. Convenient system of references</li> </ol>	<ol style="list-style-type: none"> <li>1. Poor updating of some data on the site</li> <li>2. Common reference nature of the information</li> </ol>
Site by Levonevsky	<ol style="list-style-type: none"> <li>1. Detailed investigation of a legislation</li> <li>2. Convenient search system</li> </ol>	<ol style="list-style-type: none"> <li>1. Activities only in legislation sphere</li> </ol>

The accomplished analysis of the site content has revealed that all such sites of the institutions in this country are typically poorly targeted directly at the economic subjects here. These sites deal just with information provision (of the reporting and legal nature in the first place). The needs of specific economic subjects are ignored by all the sites.

It is noteworthy that, notwithstanding availability of the sites with the information supporting innovations, this support bears primarily the informative (news) or legal nature; it lacks the targeted information support of the innovation activity that is most challenging at present.

#### ESTABLISHMENT OF A VIRTUAL BUSINESS INCUBATOR AS A FACTOR OF INFORMATION SUPPORT

The way out of the existing situation is to establish a virtual business incubator (VBI) with a corporate site providing comprehensive information support of the innovation entrepreneurship in Gomel and in the Gomel Region. The project implies development of an information field to enable maximum fast and effective cooperation of industries, research, education institutions, and investors. Diagram 1 shows how cooperation between the subjects of innovation activity is projected.



**Diagram 1. Co-operation between the subjects of innovation activity in Gomel Region**

The VBI mission is to direct information flows to achieve the maximum gain (diagram 2,3). The virtual business incubators need for their performance a number of production factors, such as qualified staff, production areas, equipment.

The main tasks and purposes of the centers are the following:

- the strategic task is to proliferate stably operating innovative facilities at the market;
- the tactic tasks are comprehensive consultation support of small innovative facilities in their economic progress and market promotion of their products via Internet resources.

The trends of the VBI activity are the following:

- In the scientific and technological sphere they are formalization of innovative developments, integration and coordination of scientific and innovative activity in order to expand achievements and technologies in the production sphere;
- In the production sphere they are designing of engineering assignments of solving production problems, formalization of queries to the research community, integration and coordination of innovation activity of enterprises in order to search for available technologies and developers;

In the sphere of services it is provision of subjects of innovation activity with the entire range of accompanying customer-oriented services both paid and for free.

The functions of the VBI are the following:

- Charge, handling, storage, renovation and organization exchange of information about fundamental and applied researches, scientific-technological and innovation projects in research-technical sphere.
- Search of workers for development of innovation projects.
- Co-operation with everyone participant of innovation projects, organization of seminars, presentations, exhibitions.
- Analytical and methodological activities: study and forecasting the regional market of researches- technical elaborations and high technologies.

Targeted support in all its forms should be emphasized as the main function of the new virtual business incubator's site during its activity.

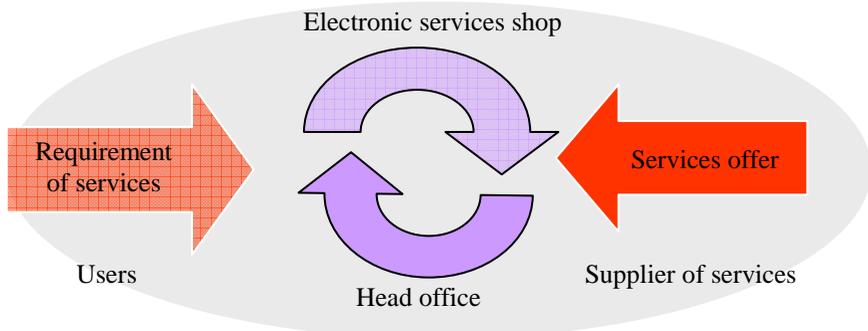
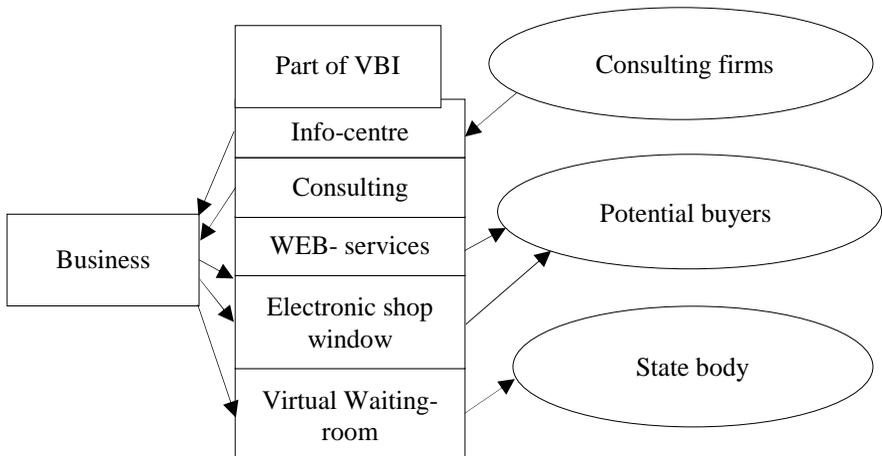


Diagram 2. Information flows on the server VBI



**Diagram 3. Scheme of information flows between the business and his partner in VBI**

The functioning of the virtual information system of support of small entrepreneurship as the virtual business incubator will enable to save significant cost of transaction between businessmen by resorting to the Internet information resources and by the opportunity of interactive communication between businessmen, potential purchasers and state authorities. It all together will foster conditions of information support of the innovation activity and boost the economic competitiveness.

## REFERENCES

1. Program of innovation development Republic of Belarus in 2007 – 2010 y.
2. Иванова И.В. Инновационная политика в государстве// Белорусский экономический журнал. 2007 №4. – с.33–35.
3. Исаев Г.П. Информационные системы в экономике. – М. Омега-Л., 2008. – 462 с.
4. Нехорошева Л.Н. Научно-технологическое развитие и рынок – Мн.: БГЭУ, 2005.–312с.
5. Фоломьев А.Н., Ревазов В.Г. Инновационное инвестирование – СПб: Наука, 2006. – 386 с.
6. Республика Беларусь в цифрах: Краткий статистический сборник. – Минск, 2007.
7. <http://www.scienceref.ru/>
8. <http://www.gomel.region.org.by>
9. <http://www.gknt.org.by/>
10. <http://belisa.org.by/>
11. <http://www.believa.by/>
12. <http://www.gosstandart.gov.by/>

## **Informacyjne wsparcie aktywności innowacyjnej**

### *Streszczenie*

Badanie treści procesów innowacyjnych, realizacja wytyczonego celu wymagała przeprowadzenia szeregu takich wielokierunkowych działań, jak formowanie specjalnych organizacyjno-ekonomicznych mechanizmów wsparcia małych innowacyjnych przedsiębiorstw.

Celem projektu jest stwarzanie wirtualnego biznes-inkubatora, a w jego korporacyjnych ramach mogą być realizowane wielofunkcyjne kierunki wsparcia innowacyjnych przedsiębiorstw Gomela.

Funkcjonowanie wirtualnego informacyjnego systemu podtrzymania małych innowacyjnych przedsiębiorstw „Wirtualny biznes-inkubator” może obniżyć transakcyjne koszty innowacyjnych przedsiębiorstw przy pomocy informacyjnych zasobów.

## **The Information Support of the Innovation Activity**

### *Resume*

Investigation of the content of innovation processes and features of the venture activity permits to conclude that it is necessary to establish a special managerial and economic mechanism of support of small venture, innovation and technology-oriented companies.

The way out of the existing situation is to establish a virtual business incubator with a corporate site providing comprehensive information support of the innovation entrepreneurship in the Gomel Region. The functioning of the virtual information system of support of small entrepreneurship as the virtual business incubator will enable to save significant cost of transaction between businessmen by resorting to the Internet information resources and by the opportunity of interactive communication between businessmen, potential purchasers and state authorities.