

Problems of Innovative Economy: Forming of «Innovative Society» And Innovative Receptivity

Zhanna Mingaleva, Kseniy Balkova

Abstract—Today many countries have the ambitious purposes of long-term and continuous development: constant growth of competitiveness, maintenance of a high standard of living of the population, leadership in the world market. One of the best possible ways of achievement of these purposes is a transition of the countries to innovative economy.

The paper presents the analyses of problems of forming of innovative receptivity to innovations and creation of «innovative society». Creation of an innovative culture in a society and increase of the level of prestige of innovative activity are the best ways of developing of innovative processes.

The base of the analysis is a comparing of Russia and different developed countries according to the level of some indicators of innovative activity.¹

Keywords—innovative activity, innovative development of economy, innovative receptivity, «innovative society»

I. INTRODUCTION

IN the modern world innovations and an innovative activity get the increasing value for successful financial and economic activity of the countries and regions. The level of development of innovative sphere defines a country or region place in world economy and forms a basis of steady economic growth.

Various changes in economic processes of country or region can cause a resistance to innovations. Such problem takes place in many organizations and in the society as a whole, because people feel more confident and comfortable in the conditions, which are not changed and their behavior tends to be stable. Absence of innovative culture and receptivity to innovations is a serious obstacle for forming of new economy.

That's why, the key problem of innovative development is creation of conditions for formation in people a right attitude to the innovations and aspiration to the competent innovative activity, in other words - formation of «the innovative society» as the main subject of all innovative transformations.

II. INNOVATIVE ECONOMY: FACTORS AND PROBLEMS OF DEVELOPMENT

Today many countries have the ambitious purposes of long-term and continuous development: constant growth of competitiveness, maintenance of a high standard of living of the population, leadership in the world market. One of the best possible ways of achievement of these purposes is a transition of the countries to innovative economy.

In the XXI century, the developed countries embarked on the path of creation of absolutely new, postindustrial economy - economy of knowledge. Creation and adoption of advanced technologies can favour a social and economic development of the state and define a place of a country in the world economy.

The innovative economy is the economy of a society based on knowledge, innovations, on benevolent perception of the new ideas, new machines, systems and technologies, on readiness for their practical realization in various spheres of human activity. It allocates a special role of knowledge and innovations, first of all, scientific knowledge. In innovative economy traditional spheres of production of goods are transformed because of the influence of scientific and technological knowledge and considerably change the technological basis, because the manufacture, which is not leaning on the new knowledge and innovations become impractical in the innovative economy. The information technologies, the computerized systems and high industrial technologies are a basis of innovative economy [1].

The innovative economy can be defined as a type of the economy, which is based on a stream of innovations, on constant technological improvement, on manufacture and export of hi-tech production. It is supposed that profit is created by intelligence of innovators and scientists, information sphere, but not by production of goods (industrial economy) and concentration of the finance (capital) [2].

The innovative economy should be based on a special innovative infrastructure and institutes of support of innovative process:

- the legislation regulating of the relations in sphere of innovations (intellectual property protection, patents, other);
- the innovative centers, which can direct researches and analyze the innovative supply and demand, coordinate efforts of collectives-developers;
- the centers of commercialization of technologies and developments, which could help the innovation to perform the whole way from idea to the final product;
- financial institutions (state and private), which can support an innovative activity by different grants and credits;
- the educational centers, institutes and schools on which base engineers, scientists, and other experts in the sphere of innovations will be prepared [3].

Innovative economy is one of the most considerable phases of the country's and regional economic development. Michael Porter has defined four stages of competitiveness of national economy: first three stages are characterized by constant growth of competitiveness of national economy that, as a rule, is combined with growth of national well-

¹ Zhanna Mingaleva is with the Faculty of Economics, Perm State University, 15, Bukireva street, Perm, Russia (corresponding author to provide fax: +7-342-239-66-85, e-mail: mingal1@psu.ru). Kseniy Balkova is with the Faculty of Economics, Perm State University, 15, Bukireva street, Perm, Russia (corresponding author to provide fax: +7-342-239-68-90, e-mail: balkova.k@yandex.ru).

being. The fourth stage means gradual delay of economic growth and finally decline. These stages Porter defined according to four motive powers, including innovations, so they are:

1. A stage that is actuated by factors of production.
2. A stage that is actuated by investments.
3. A stage that is the most interesting for us and is actuated by innovations. All determinants work, and their interaction is maximum. This stage is called «is actuated by innovations» because firms not only receive methods and technologies from other states, but also create the original technologies.

Factorial conditions do competitive advantages more and more rare. The lack of some factors stimulates innovations, the new mechanisms of creation of the developed and specialized factors and their constant perfection appears.

Firms at the innovative stage of economy compete on the world markets in more differentiated segments of the industry. They continue to compete in the price, but on the basis of high efficiency of work.

Firms compete on the basis of own global strategy and possess own marketing and serving international networks along with growing reputation abroad. Thus, the innovative stage is a stage of considerable direct foreign investment.

Usually some industries of the country leave behind others in transition to the innovative stage, taking more high-class advantages. Perfection extends on other sectors of industry. At the innovative stage the economy possesses the greatest resistibility to external events and macroeconomic fluctuations, especially when the country finds ability to create «clusters». The industry is less vulnerable to price shocks and movement of exchange rates, because it competes on the basis of technology and production differentiation. Globalization of strategy of firms creates the additional buffer against such fluctuations. Multiplication of number of prospering firms reduces dependence from one concrete sector.

All economies based on innovations has higher share of internal services, than the countries on the earlier stage of development. The state role at this stage considerably differs from the previous. The economy extends, and the state can't follow each existing and new sectors of economy and communications between them. Efforts of the state should be used for indirect stimulation.

Great Britain, for example, reached an innovative stage in first half of XIX century of the USA, Germany and Sweden – XIX–XX centuries, Italy and Japan – only in 1970.

4. A stage that is actuated by riches. Progress in economy is not inevitable, because many countries for a number of reasons cannot move from the first or second stage to the stage, which is connected with innovations [4].

It is caused by basic problems, which can impede the developing of innovative processes in a country or a region:

- shortage of money resources allocated for researches and development and for the creation of innovative projects. The given problem doesn't allow to scientists or the enterprises to realize the ideas because there can be a scarcity of money, that are allocated on development of innovative projects;
- undeveloped system of stimulation of innovative activity. Often expenses for introduction of innovation are so high; therefore innovative projects cannot be repaid. In

the Russian economy low development of innovative processes is connected with this problem. Thus, a monetary encouragement (various awards, grants and other payments) and encouragement, for example, in the form of the letter of commendation, etc. can become a certain way of stimulation of innovative activity;

- unwillingness to eliminate the basic lacks of social and economic system of the state before the introducing of innovations. It is possible to include degradation to such lacks in socially - economic sphere, spheres of housing and communal services, education and health services. Solutions of these problems can create necessary conditions for development of innovations, and also stimulate the enterprises, centers of science or scientists and researchers to continuous innovative activity.

- also, it is possible to note such problem, as a raw orientation of economy, which is important for Russia. Despite the industrial growth of the country, Russia didn't lost a reputation of «a raw appendage of the West". The basic goods in the russian export are raw materials - oil and gas, metals and cellulose, etc [5]. The state doesn't allow Russia to realize other advantages of its economy by concentrating forces only on development of these sectors of economy. Russia has a set of preconditions for becoming a developed, competitive and innovative country. While scientific and intellectual researches will remain unclaimed in the manufacture, our state will never have an opportunity to become one of the world economic leaders; one of the main obstacles which impede the development of innovative activity is the problem of lack of information about innovations and new technologies and as a consequence a low level of innovative culture. So this problem is very actual in the modern, rapidly developing world for many countries, especially for Russia.

III. FORMING OF «INNOVATIVE SOCIETY» AND RECEPTIVITY TO INNOVATIONS

Various changes in working processes of different sectors of economy can cause a resistance to innovations. Such problem takes place in many organizations and in the society as a whole, because people feel more confident and comfortable in the conditions, which are not changed and their behavior tends to be stable. Absence of innovative culture of a society is one of the main reasons of innovative stagnation.

That's why, the key problem of innovative development is creation of conditions for formation in people a right attitude to the innovation and aspiration to the competent innovative activity, in other words - formation of «the innovative person» as the main subject of all innovative transformations.

«The innovative person» is not a synonym of "the innovative businessman». «The innovative person» is a wider category, which means that each citizen should become adaptive to constant changes: in his own life, in economic development, in development of a science and technologies, – the active initiator and the producer of these changes. Thus each citizen will play the role in the general innovative society according to his own interests and potential.

Key competences of innovative community should become:

- Ability and readiness for continuous formation, constant perfection, training and self-training, professional mobility, aspiration to something new;
- Ability to critical thinking;
- Ability and readiness for reasonable risk, creativity and spirit of enterprise, ability to work independently and readiness to work in a command and in competitive environment;
- Foreign language skills as communication tools of effective participation in globalization processes, including ability to free everyday, business and professional dialogue in English.

Building up such competences is a long and difficult process including necessity of adaptation not only of simply separate directions of the social and economic policy (first of all, politicians in an education sphere) for these purposes, but also the public environment as a whole, "climate" formation in a society [6].

Process of formation of innovative receptivity of society is extremely complicated. According to K. Tsiolkovsky, the reason of the wrong relation to the foundations and inventions is connected with human weaknesses. He has deduced the whole system of the factors, which put obstacles in the way of realization of innovations: inertness, stagnancy, conservatism; distrust to unknown names, self-love, narrow egoism, provisional losses, resistance to unusual things from workers, unwillingness to be retrained, corporate interests, professional envy. The conclusion, made by Tsiolkovsky's more 70 years ago is the first attempt of statement of the given problem [7].

Forming of the receptivity to innovations should include several directions:

1. Creation of an innovative culture in a society and increase of the level of prestige of innovative activity. Forming of innovative culture and its cultivation should be realized purposefully since the childhood, gradually based on the new technologies, focused on changes, innovations, science, strengthening of collective spirit, development of cooperation. At the level of organizations and enterprises, as a rule, decisions about adoption of innovations accept at top levels of business, without having prepared for changes the employees. Thus, the understanding of importance of changes should have not only the heads of business, but also all personnel. Enterprises that introduce innovations in the activity, must develop the innovative policy, if they want to avoid resistance to changes.

2. Also, a good opportunity for forming of innovative receptivity can become involving of young people like students or graduates, in innovative processes. It's important to make them be interested in the developing of science, create indispensable conditions for it and encourage young people for their scientific activity. Creation of stimulation system of innovative activity of youth by different competitions, forums, meetings, the Olympic Games, and also by special programmes and courses in leading high schools with application of modern network forms of communications. An effective way to make young people interested in innovations is a guarantee of commercialization of their ideas and developments. New ideas and projects should have possibility to be realized.

3. Besides, one of the tools of stimulation of innovative processes is an organized system of support of

innovative activity. Costs of a creation of innovations are often so high; therefore, innovative projects can't be repaid. So, it's necessary to encourage an innovative activity. The forms of encouragement can be in the form of various awards, grants and other payments or letter of commendation, etc.

4. The innovative nature of education. Forming of innovative thinking and innovative receptivity should begin, as it was noted, from childhood. It is necessary to develop system of uninterrupted education according to requirements of innovative economy. Besides, scientists, innovators, managers and other interested in innovations people should have an opportunity to receive and additional education.

5. Forming of innovative infrastructure. Innovative infrastructure is a complex of the interconnected structures serving and providing realization of innovative activity. The centers, technological incubators, technoparks, educational and business centers, innovative clusters can form an innovative infrastructure of a country or a region [8].

IV. THE INNOVATIVE CULTURE IN RUSSIA: PROBLEMS OF FORMING OF «INNOVATIVE SOCIETY»

The innovative culture is a set of the purposes and the values focusing the individual and a society on changes in their lives, on quantitative and qualitative expansion of satisfied requirements of the person, groups, societies. The innovative culture is the historical phenomenon, and modern innovative development thanks to the historically developed innovative culture of a society. So, there is a reason to believe that efficiency of realization of innovative programs directly depends on features of the cultural environment of a society as a whole.

The innovative culture of Russia can be defined as a conservative culture. On the one hand, it includes ability to form new senses and difficult social interactions, aspiration to personal realization, ability to nonstandard approaches in labor activity and informative process. These characteristics can be called «growth points», promoting innovative development. On the other hand, «conservatism of action», expressed in fear of introduction of ideas, is the major «block point» of innovative development [9].

Nowadays our share in the world market of hi production is very small - 0,3 %. Today development and introduction of technological innovations are carried out by umber of the enterprises of the russian industry. It is considerable below indicators of developed countries Germany (69,7 %), Ireland (56,7%), Belgium (59,6 %), Estonia (55,1 %) and Czech of Republic (36,6 %). %).

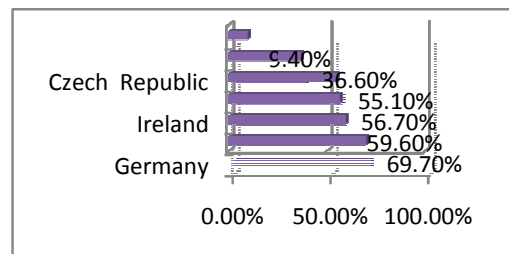


Fig. 1 Development and introduction of technological innovations in Russia in the compare with developed countries

The share of the enterprises investing in acquisition of new technologies in Russia is small too: only 11,8 %. It is low not only a share of innovatively active enterprises, but

also intensity of expenses for technological innovations in Russia it is 1,95 % (the similar indicator in Sweden - 5,5 %, and in Germany - 4,7 %) [10].

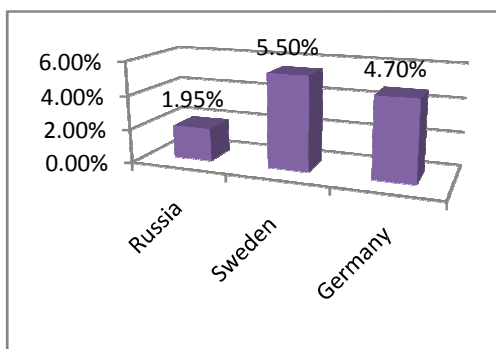


Fig. 2 Intensity of expenses for technological innovations in Russia in the compare with developed countries

The level of costs for research and development is low too. In 2008 our country has spent for research and development 1,03 % of gross national product, the USA - 2,77 %, China - 1,56 %. To estimate result of these costs is possible by using the data of share of russian high-tech production in export structure. In Russia this indicator was on the level of 7 %, in the USA - 27 %, in China - 29 %. Last ten years Russia had a small share of 0,3-0,4 % in the world market of high technology production.

TABLE I
SHARE OF RESEARCH AND DEVELOPMENT IN GROSS NATIONAL PRODUCT AND SHARE OF HIGH-TECH PRODUCTION OF THE COUNTRY IN EXPORT STRUCTURE, %

	Share of research and development in gross national product	Share of high-tech production of the country in export structure
Russia	1,03	7
USA	2,77	27
China	1,56	29

Within these problems of innovative economy in Russia last two-three years questions of stimulation of innovations were found on the tops of political discussions. The Commission at the president of the Russian Federation on modernization and technological development of economy of Russia in which frameworks the state scientific and technical priorities are defined, there was begun financing of concrete projects within the limits of these priorities.

Important points for introduction of innovations in national economy should become double increase of investments in research and development - 2,5-3 % from country gross national product, and 50 % of such investments should be carried out by business). Also there should be a double increase of a share of the industrial enterprises introducing new technologies to their production.

The world economic crisis of 2008-2009 has seriously complicated for Russia an entering in a path of innovative development. The financial condition of the enterprises impeded increase of a share of private financing of researches and development. In the conditions of reduction of incomes of the budget, a hard budgetary policy limits possibilities of use to the state of financial stimulus for increase of innovative activity. All these factors impede the innovative development.

The strategy of innovative development of the Russian Federation for the period till 2020» was developed by Ministry of economic development and trade of Russia for the forming of innovative processes in the country and creation of «innovative society». This strategy represents an enormous program, directed on development of innovation activity and innovative receptivity of people in the country in all spheres of life, which are connected with foundations and innovations.

Key problems of the strategy are:

- 1) Increase of human potential in a sphere of science, education, technologies and innovations.
- 2) Sharp, multiple increase of innovative activity of business and dynamics of occurrence of the new innovative companies.
- 3) Increase of the innovative activity of the government
- 4) Increase of an openness of national innovative system and economy [11]:

One of the main directions of the strategy is a forming of business, which should be capable to provide by means innovative activity, innovative projects and developments and, consequently, increase the level of investments and attracting of scientists to create new technologies.

In our previous articles [12]-[16], we analyzed a condition of innovative activity in various Russian regions and influence of different factors on formation of innovative economy, such as legal problems of innovations, transfer of innovations and intellectual property, patents, institutional mechanism, innovation infrastructure and etc. The analysis of such factors as innovative receptivity, innovative mentality, innovative thinking, their development separate societies and regions has shown change of a position of regions in innovative activity.

Comparison of positions of 9 Russian regions, which have taken the highest places at the level of innovative competitiveness in 2008, has shown influence of socially-psychological factors at the level of their competitiveness.

9 subjects of the Russian Federation have been accepted as the basic objects of comparison, 8 from this objects are the strongest and the most competitive regions of Russia, and also the Perm region which will be a comparative base [17]-[19]. *They are:*

- 1 - Moscow, city;
- 2 - Saint Petersburg;
- 3 - Nizhny Novgorod region;
- 4 - Novosibirsk region;
- 5 - Perm region;
- 6 - Samara region;
- 7 - Saratov region;
- 8 - Sverdlovsk region;
- 9 - Tumen region.

TABLE II
REGIONAL INNOVATIVE COMPETITIVENESS

№	Region	2008		2011	
		RIC	Rank	RIC	Rank
1	Moscow, city	0,27	7	0,33	6
2	Saint Petersburg	0,38	4	0,49	3
3	Nizhny Novgorod region	0,40	3	0,38	4
4	Novosibirsk region	0,29	6	0,34	5
5	Perm region	0,58	1	0,57	1
6	Samara region	0,51	2	0,54	2
7	Saratov region	0,22	8	0,21	8
8	Sverdlovsk region	0,30	5	0,32	7
9	Tumen region	0,13	9	0,15	9

On the basis of the resulted data we can calculate a regional innovative competitiveness of the chosen subjects and we will carry out ranging of this indicator for the territories in 2008 and in 2011 (see Table II). Earlier calculation was made in 2005. The algorithm and the formula of calculations are shown in our paper [20].

In Perm Region the progressive innovation protect "Innovation cluster" was worked out. It was adopted by the government of Perm Region in 2011. The aim of the project is to create favorable innovation field, to involve entrepreneurs, government structures and foreign partners into innovation cooperation. In 2011 the number of technological starts up raised to 25, different types of organizations of innovative infrastructure were founded in the quantity of 7; 50 new innovation projects were created. It allowed to decrease regional innovative competitiveness from 0,58 in 2008 to 0,57 in 2011 (see Fig.3).

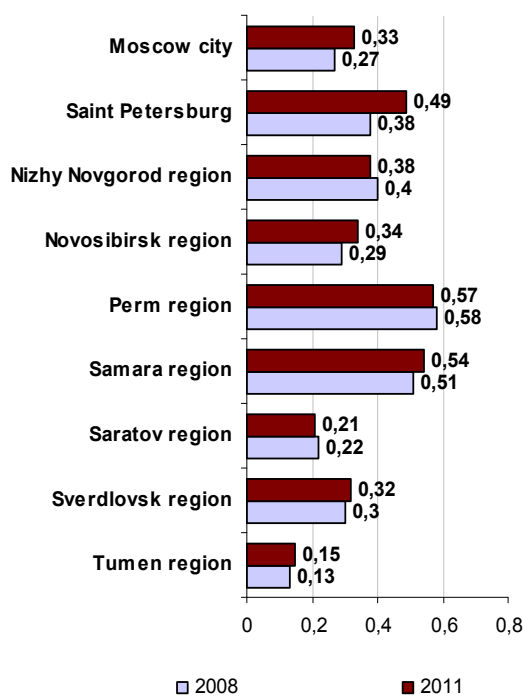


Fig. 3 Re-engineering number of region of Russia on the regional innovative competitiveness in 2008 and 2011

If we compare this data with the previous results of the research which were made in 2008 [21], we can conclude that Moscow city, Saint Petersburg, Novosibirsk region, Sverdlovsk region, Tumen region and Samara region became leaders in regional innovative competitiveness. The value of regional innovation competitiveness in the Nizhny Novgorod, Perm Region, Saratov region decreased.

The problem of innovative development of Russia is extraordinary wide and actual. It includes all kinds of activity of people useful for society - not only economic, but also other fields of activity. Besides, it is a question of an all-around development of a society on the basis of the various innovations. Therefore complex discussion of innovative process in a society, in world and national aspects, - a difficult problem and it can take a lot of time. Correctly developed strategy of innovative development can accept a challenges and threats, prepared for Russia thanks

to forming of accurate system of the purposes, priorities and tools of the state innovative police.

V. CONCLUSION

Nowadays many countries have the ambitious purposes of long-term and rapid development: constant growth of competitiveness, maintenance of a high standard of living of the population, leadership in the world market. One of the best possible ways of achievement of these purposes is a transition of the countries to innovative economy. The key problem of innovative development is creation of conditions for formation in people a right attitude to the innovations and aspiration to the competent innovative activity, in other words - formation of «the innovative society».

For solving of these problems, the innovative economy should be based on special innovative institutes and forming of the receptivity to innovations should include several directions:

1. Creation of an innovative culture in a society and increase of the level of prestige of innovative activity;
2. Involving of young people like students or graduates, in innovative processes;
3. An organized system of support of innovative activity;
4. The innovative nature of education;
5. Forming of innovative infrastructure.

The problem of innovative development is very actual in the world nowadays. Every developed country wants to become a leader at the world trade market, and correctly developed strategy of innovative development and creation of «innovative society» can allow them to achieve their ambitious purposes.

ACKNOWLEDGMENT

This paper is based on the results of the research made by Zhanna Mingaleva as a team leader of research project and by Kseniy Balkova as a research of Russian Public Science Foundation (Grant № 11-32-00207a1) "The national and regional specific of formation of innovation's activities clusters".

REFERENCES

- [1] O. Kurginyan S. E., «Isav and Iakov. Destiny of development in Russia and the world, Moscow, 2009
- [2] Free encyclopedia / <http://ru.wikipedia.org>
- [3] Shmelev St., What is the innovative economy? / <http://www.ibs-alumni.ru>
- [4] Porter M., Competitive Advantage of Nations. — New York: Free Press, 1990
- [5] Vlasova E., Raw orientation of export / http://www.ng.ru/economics/2000-07-07/4_export.html].
- [6] Ministry of economic development and trade of Russia, Strategy of innovative development of the Russian Federation for the period till 2020, Moscow 2010
- [7] Tsiolkovsky K., Progress engines, Article from magazine "the Inventor and the rationalizer" 1980, № 3, p. 32-34.
- [8] Ogoleva L.N., Innovative processes, Innovative management: M, INFRA-M, 2007
- [9] Alekseeva E.A., Innovatine culture in Russia and socially-culture projecting / <http://innclub.info>
- [10] Kalysheva E., Creative class, "The Russian Business newspaper" - Innovations №798 (16) 5/17/2011.
- [11] Ministry of economic development and trade of Russia, Strategy of innovative development of the Russian Federation for the period till 2020, Moscow 2010
- [12] Zh. Mingaleva, O.Gaifutdinova. The main methodological approaches to the level of innovation competitiveness of economic systems //

Methodology of innovation development planning of economic systems. St.Petersburg, 2008. P.648-681.

Vol.5, No:11, 2011

- [13] Zh. Mingaleva, O.Gayfutdinova, E.Podgornova. Forming of Institutional Mechanism of Region's Innovative Development Proceedings of World Academy of Science, Engineering and Technology. Vol.58, October 2009. P.783-793.
- [14] Zh. Mingaleva, O.Gayfutdinova, K.Balkova. Formation of an innovative cluster. Proceedings of World Academy of Science, Engineering and Technology. Vol.80, August 2011. P.598-612.
- [15] Zh. Mingaleva. Clusters and foundation of regional structure. MEIMO. № 5, 2000. C.97-102.
- [16] Zh. Mingaleva. and I.Mirskikh. On innovation and knowledge economy in Russia. Proceedings of World Academy of Science, Engineering and Technology. Issue 66, June 2010. P.157-166.
- [17] Indicators of innovative activity: 2011.
- [18] Rosstat. Annual Report. Moscow, 2010.
- [19] Perm regional server. <http://www.regnum.ru>
- [20] Zh. Mingaleva, O.Gayfutdinova, E.Podgornova. Forming of Institutional Mechanism of Region's Innovative Development Proceedings of World Academy of Science, Engineering and Technology. Vol.58, October 2009. P.783-793.
- [21] Ibid.