Creation of strategy of steady growth of the region on the basis of tools of economics of quality

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Abstract. In the article the possibilities of spatial development of regions on a basis to development of strategy of steady growth with the use of tools of Economics of Quality are considered. The author investigates the analysis of conditions of development of regions in Russia, features of modernization and a perspective of stability of economic growth, influence of Economics of Quality in various aspects of its manifestation.
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Introduction

Contemporary history keeps the record of attempts to modernize Russia to support steady growth that always met insurmountable barrier in its vast territory. Many authors noted that “reformists tried to outrun time, but got stuck in space” [1].

Spatial barriers to modernization and growth of Russia are indisputable: tremendous distances, extensiveness of territories with unfavorable comfort and life quality conditions, with poorly developed infrastructure, relatively low population density and sparse net of big cities in most part of its territory (see Fig. 1).

Indeed, according to different sources of statistic information including materials to St.-Petersburg Long-Term Strategy Development [2] with analysis of objective and subjective conditions of development of some regions, the following may be stated:

Firstly, one quarter of population lives in regions with substantial economic modernization resources, almost 2/3 of population lives in “middleweight” regions and 10-15% of population lives in poorly developed regions.

Secondly, weak development of urban structure should be noted. 38% of population lives in cities with more than 250 thousand of population, 36% - in rural areas, urban settlements almost without resources for development.

Thirdly, there are few big cities in the country capable of influencing smaller cities in the scope of their agglomeration and surrounding periphery that do not cover all the territory of the country.

Fourthly, regional policy of the state requires grounded development priorities that comply with the rules of spatial development.

It should be noted that the most developed industrial regions of the Volga Region, Ural and Siberia haven't yet became new “growing points”. Modernization of middle developed regions where 2/3 of population of the country lives goes on slowly because their own economic resources are insufficient for steady development and these regions lack federal resources.

These capabilities of spatial development of a territory are defined both by conditions of territory development and objective development trends that are characterized by the following:

- spatial inequality of regional economy;
- attractiveness of investments and availability of human capital;
- concentration of the country's economy in capital agglomeration despite the attempts to stimulate development of St.-Petersburg as the second federal city and comparable economic center;
- insufficient development of other big agglomerations of the country due to the deficit of investments;
- limited budget resources and low migratory attractiveness.

Undoubtedly, quality is one of the most important components of development of different management systems. According to global experience it is the factor that affects stability of economic growth and development. In other words, while high quality of production is being supported by stable operation of a business, high quality of life supports sustainable development, social stability, growth of competitiveness of a country as a whole and impacts effectiveness of social sphere, health protection and education.

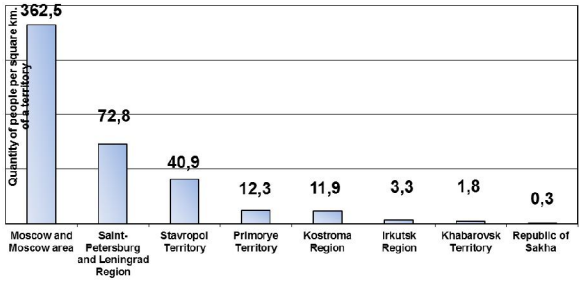

Fig. 1. Population density in different regions of Russian Federation

One of the most vital problems of today is the improvement of the quality of everything that surrounds a man and eventually the quality of life.

Results of surveys in this area in last decade show that this problem may be solved only under the condition of steady development of communities.

Social development that allows satisfying demands of current generations without damaging capabilities that are being cut up to further generations for satisfying of their own demands are called sustainable development.

Sustainable development provides conditions for managed growth of industry and utilization of natural resources, controlled processes of life activity of people.

Managed and controlled character of growth is extremely important because sustainable development is not constantly invariable. It has dynamic character and requires scientifically grounded approach and strict forecast of interaction and cross-effect of three components: "nature", "population" and "economy".

Relationship in this triad is presented via three components of sustainable development (Fig. 2): support of stability of environmental systems, balance between nature and artificial (man-made) environment; economic development that is most frequently understood as the growth of qualitative indicators of economy (economic growth); social development, related to creation of favourable conditions of life activity.

Growth of population, high rate of industrial growth, development of transport and building and constantly increasing pressure on the environment caused by these reasons make the task of balancing today demands with future demands more and more pressing.

Sustainable development components have direct or indirect influence on indicators of life quality (Fig. 3). Economic growth affects GDP per capita, life span and the quality of life, education level. Social development influences life span and education level and environmental component has direct influence on life span and the quality of life.

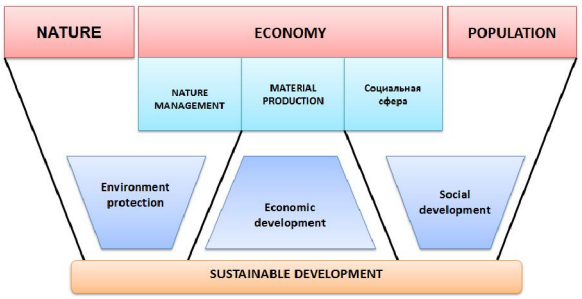

Fig. 2. Triad "nature-economy-population" and sustainable development components

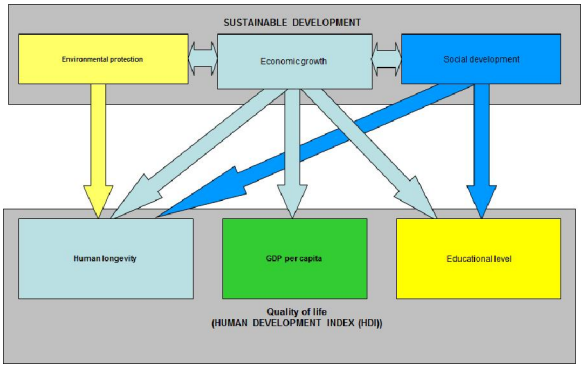

Fig. 3. Sustainable development components' effect on indicators of the quality of life

Economic growth is the key factor that defines the quality of life. In post-industrial society it is achieved due to innovations.

Innovative development and related improvement of the quality of life are the most important factors of economic growth and increase of the other indicators of sustainable development and eventually the quality of life.

In the world and in Russia as well promotion of innovative activity is being paid much attention. The concept of social and economic development of Russia up to 2020 is based entirely on innovative scenario. As academician of the Russian Academy of Science V.V. Ivanter said "modernization is realistic only under relatively high rate of economic growth due to the growth of investments to innovations". Academician of the Russian Academy of Science N.Ya. Petrakov in turn said that "Russia should reach the level of high-tech production, modernization of leading industries on innovative basis and reform managerial and information foundation" [3].

Research carried out by the author allowed determining the types of innovations necessary to obtain required parameters.

Let us consider the main types of scientific and technological innovations in all the components of sustainable development we have proposed basing in the analysis of possibility to apply this or that novice (Fig. 4).

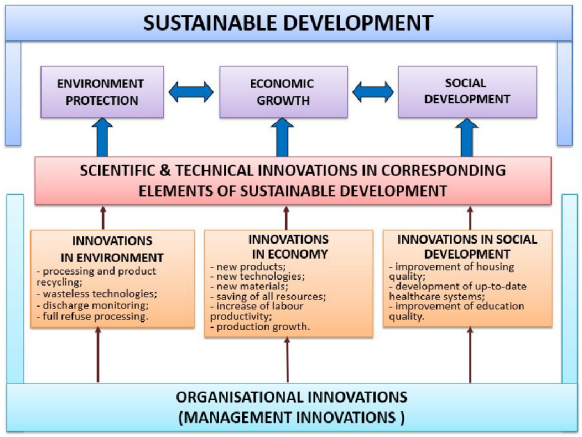

Fig. 4. Innovations necessary to support sustainable development of economy and society

Non-waste technologies, tight control for discharge level, utilization and recycling are environmental protection innovations.

Novice environmental effect is defined as a capability of innovation to seize negative effect on the environment of production, exploitation and utilization.

Economy demands innovations related to increase of production volume, growth of productivity. But what is the most important in this component are qualitative changes in raw materials, production and technology. The task of saving of all types of resources remains topical and also requires innovations.

Economical effect manifests itself via the growth of economy process rates, production and service cost reduction. High economic result of a novice stimulates further development of innovative activity, leads to the growth of competitiveness of the business.

Social development is impossible without innovative transformations that support substantial improvement of the quality of health care, education and housing conditions.

Social effect manifests itself via the growth of people welfare, living environment becomes significantly better.

These results give convincing evidence that one more type of innovations is necessary for effective support of innovative process. These are management innovations. The following measures may be considered as innovations of management:

- Deployment of management systems;
- Self-assessment;
- Participation in quality contests;
- Assessment of innovative projects;
-Corporate social responsibility provisioning;
- Multilevel personnel training system.

Result that supports scientific and technological progress, steady economic growth and improvement of life quality of population as a whole is achieved in development and supply of innovative products (goods, works and services), utilization of new materials, application of new or modernization of existing production methods (technologies).

Taking into the account that one of the most effective ways of influencing steady growth of a region is relying on principles, methods and tools of the Economics of Quality in different management levels we list the complex of measures that promote steady growth of a region in three strategic directions.

In economy these are:

- methodical help and consulting provided to organizations in development of normative and technical documentation;
- provisioning of information on standards in force and technical regulations contained in Federal Fund;
- metrological expertise of developed normative documentation;
- certification of testing equipment;
- technical and certification testing carried out by certified laboratories.

In environmental protection these measures are:

1) development and certification of measurement methods;

2) check and calibration of discharge level measurement instruments;

3) certification of testing (analytical) labs for testing in the sphere of environmental protection.

In social development these measures are:

1. measurement and assessment of dangerous and hazard production factors;
2. certification of work places;
3. certification of testing (analytical) labs for the works on provisioning safe work conditions and safety arrangements.

Listed measures may be successfully deployed only under the condition of deployment and effective functioning of management systems.

Working out a strategy sustainable development of a region it is necessary to consider the fact that modernization is aimed on intensifying the process of economic reproduction and allows improving wide range of characteristics from labour conditions to the quality of life providing sustainable development in general (Fig. 5).

Economy modernization is direct result of deployment of innovations that means the new quality of products, services, structures, systems, communities. The quality of life is a category which different components are synthesized in but it is

impossible without sustainable development of both businesses and regions and the country as a whole. These components cover economical and social sphere and are realized in production of goods and delivery of services, health protection, ecology, education. Requirements to these components are listed in legal norms and standards. Our scientific research in the Economics of Quality aimed on determining correlations between improvement of qualitative characteristics of different objects or phenomena and the growth of economical indicators has allowed us to determine one of the key factors affecting modernization, technological and social and economical development of the country that is standardization.

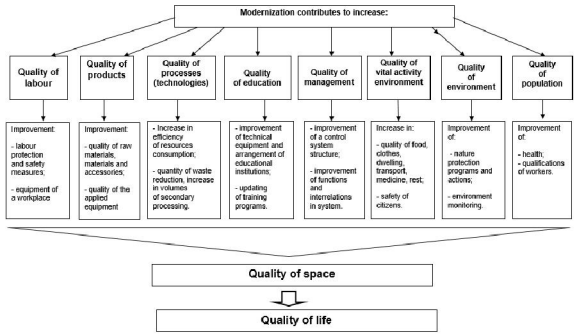

Fig. 5. Aims of modernization

Standardization is setting norms, rules and characteristics to support safety, technical and information compatibility, safety and interchangeability of production, saving of all types of resources, provisioning of economical and social stability and defense potential of a country.

Aims of standardization were different in different periods but they were always tied with the aims of the state.

Today standards define both indicators of the quality of products (works, services) and management methods. Besides, standardization proliferates to higher levels. While in previous years standards were focused on activity of individual organizations, later on different spheres of activity, now it is accepted that standards should be deployed in regional and federal levels.

At the same time society sets new requirements to standards. According to surveys, standards should help to:

- account for balanced demands and expectations of all interested parties for improvement of life quality;
- set balanced system of transparent indicators of life quality in different countries and regions as well as global indicators;
- apply effective instruments of life quality: quality management systems, smart technologies, etc.;
- define requirements to interaction of society and authorities for effective sustainable development of different communities: countries, cities and settlements;
- monitor changes of life quality indicators in different regions of the world.

Standards are the tools for lowering technical barriers in international trade.

According to international experience, standardization as one of the major components of technical regulation in market economy may contribute to economic growth greater than relevant indicators of patents and certificates deployment.

According to results of research carried out in some countries of Asia-Pacific region effective application of technical non-tariff regulation allows increasing profit share by 0,26% GDM in average, while tariff regulation measures profit is not greater than 0,14%. So a state should be directly interested in effective realization of standardization as a control lever. Global researches show that standardization affects GDP growth and labour productivity growth (see Table 1) [4].

Results of analysis of research carried out in 2012-2012 by ISO experts and “Baltika” brewery company professionals showed that standards application along with providing a number of qualitative advantages allowed to save 5.8% of costs in 5 main business-processes: purchase, logistics, production, distribution and service provisioning.

According to ISO assessments aggregate benefits of standards application in most cases varies from 0.5 to 4% of annual sales revenue [4].

In every stage of economic development of our country standardization served different purposes. Today in market economy the main task of standardization is economy modernization and improvement of people's life quality [3].

It should be noted that basics of the quality should be set by legal and normative documents including standards that contain not only a certain indicators but requirements to processes including management processes.

Improvement of people's life quality is what standardization development process in Russia is focused on now. There are also some legislative initiatives that have been realized recently.

Standards are being developed not only to be applied to certain goods, services or technological processes but to all enterprise management system.

Table 1. Comparative analysis of results of different researches focused on revealing the extent of standardization effect on the economy

Countries	DIN Germany	BSI Great Britain	SCC Standards Council of Canada	SA Standards Australia	AFNOR France
Title of a research	"Economic benefit of standardization"	"Empirical economy of standards"	"The economic cost of standardization"	"Standards, innovations and economy of Australia"	"Influence of standardization on economy"
Year	1999	2005	2007	2007	2008
Influence in % on GDP growth	0.9	0.3	0.2	0.8	0.8
Contribution to GDP growth in %	27.3	11.0	9.0	21.8	23.8
Contribution to growth of labour productivity, %	30.1	13.0	17.0	-	27.1

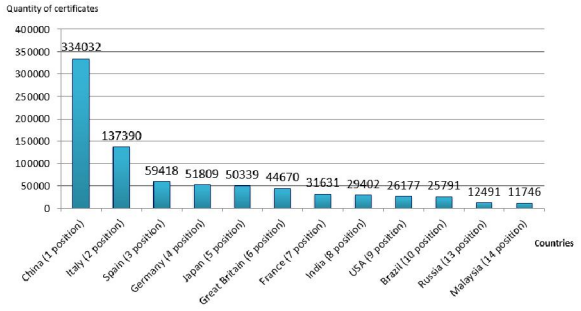

Fig. 6. Number of quality management system certificates ISO 9000 issued in different countries (total 1101272 certificates in 184 countries, according The ISO Survey of Certificates 2013)

Quality management systems are one of the most effective and widely spread quality management models today. Quality management systems based on international standards ISO 9000 are most widely used in global scope (see Fig. 6). These standards are the set of requirements to organizational structure, methods, processes and resources. High quality of corporate management on base of ISO 9000 allows achieving high quality of goods and services.

Unique experience of quality management in different social and economic systems allows understanding that studying quality problems it is necessary to analyze the system of economic relations as a whole, develop and study processes of management of all the activities of an enterprise, pay attention to such factors as finance, resources, human factor, etc.

One should deal with a search for optimal solutions of social and economic problems in all the levels of management hierarchy – from an enterprise to international unions, regions, countries and communities.

The project of multilevel quality management system on this basis was proposed for the first time in global practice. It is being successfully realized now in North-West Federal District of RF.

This system is an aggregate of organizational structure, methods of work, processes and resources necessary for affecting quality by operational measures in three interconnected and cross-effecting levels:

- ✓ microlevel – enterprise, corporation;
- ✓ meso-level — city, industry, region;
- ✓ macro-level — country as a whole.

The system is universal mechanism that may be effectively used in any management level (Fig. 7) [3]. PDSA (Plan-Do-Check-Act) cycle is the core of the system in all levels.

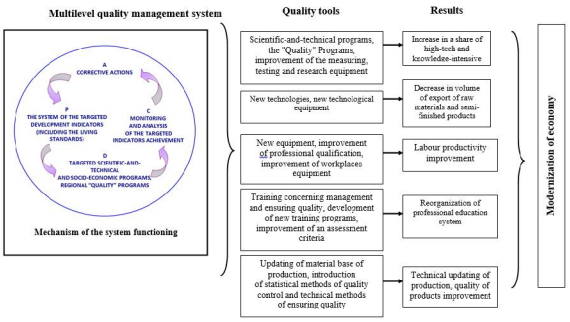

Fig. 7. Effect of multilevel quality management system on modernization process

Rationing of requirements for products, production volumes planning in accordance with demand from society and the state, control of quality of produced goods, support of effective functioning of en enterprise are fulfilled in micro-level. In this level quality system is focused on development and supply of new types of products, deployment of new technological processes, provisioning research, testing and production units with necessary measurement and control tools.

More than a 30-year positive experience of deployment of such systems in enterprise level has proved their high effectiveness. According to results of numerous surveys, systems promote increase of customer satisfaction, standardization (and, consequently streamlining) of business-processes, development of favourable conditions for other management systems deployment – environmental protection, health protection, safety provisioning, etc.

Macroeconomic analysis carried out in Massachusetts Institute of Technology has shown that total growth of GDP in the USA due to quality improvement by TQM methodology that is the foundation of ISO 9000 standard is 7% a year and this indicator will remain the same for 10-15 years [5].

More than 1000 users of ISO 9000 standard in 63 countries participated in survey that supported the development of ISO 9001:2000 revision concept. More than 80% said that they were satisfied with the standard and confirmed its urgency.

Standards are being developed not only for individual enterprises and organizations but for different territorial entities. Global and Russian experience has proved that it is impossible to solve the problem of life quality improvement without deployment of complex system approach to quality management in regional level (meso-level) [6, 7 and 8].

It is also necessary to account for substantial differentiation of social and economic situation in regions, different extent of regional authorities focus on quality, their creative approach to application of these of that mechanism of affecting factors that in turn affect quality. Methodology and theory of quality management used for regulation of enterprises' and organizations' activity may be applied also for improvement of reliability of territorial development.

Sustainable development is development in economic, social and ecological directions on behalf of the present and future generations. In other words, a man should participate in processes that form the sphere of his life activity, help making and realizing decisions, control their fulfillment.

Activity of that kind goes on since the turn of 2012 in the scope of technical committee ISO/TC 268 “Sustainable development in communities”. Aims of this TC are related to improvement of life quality via improvement of regions' quality [5].

New technical committee ISO/TC 263 “Sustainable development in communities” has been founded by International Organization for Standardization. Main tasks of TC are development of criteria of communities' management bodies’ activity assessment and development of community management system. Community is an administrative and territorial entity aimed on support of safe and favourable life activity conditions, reduction of negative results of economical and other activity on the environment and support for protection and rational usage of natural resources on behalf of current and future generations. In our country foundation of national Technical Committee # 115 “Sustainable development of administrative and territorial entities” has been initiated that is a “mirror” of TC 268 [9 and 10].

Solving the problem of directions of possible quality improvement is important for standardization application aimed on higher stability of development. Considering the essence of the concept “sustainable development” and principles of the Total Quality Management these directions may be the following: management, ecological development, economic development, social development. The author's contribution to development of TQM principles is addition of definition “management”. The author stresses the key role of this direction and gives it the highest priority.

Application of quality management methods aimed on more stable development is shown in Fig. 8.

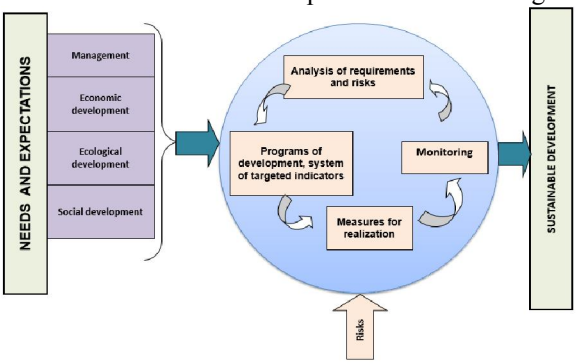

Fig. 8. Application of quality management methods aimed on more stable development

In macro-level measures undertaken by individual enterprises and organizations, cities and regions, authorities and municipal entities heads aimed on quality problem solving are oriented on eventual realization of national interests.

To support smooth organization of these works in the scope of the country it has been proposed to form national quality management system. Functional Block Diagram of national system is presented in Fig. 9.

Proposed structure is based on universal TQM principles set up above and consists of blocks analogous to blocks of management systems on enterprise and regional levels.

Functioning of national system is realized in accordance with national products and services quality policy.

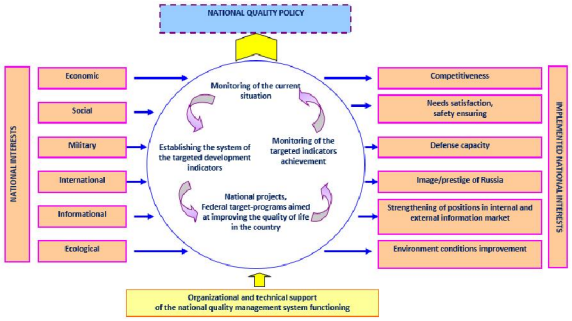

Fig. 9. Organizational Block Diagram of national quality management system functioning

"Input" of this system (left side) is federal interests with key role of quality problems: economic, social, military, international, informational, ecological. It may be considered as demand for quality from society.

"Output" of the system (right side) is results of realization of these federal interests, namely: support of competitiveness, satisfaction of demands of society, safety, defensibility, growth of Russia's prestige in the world, strengthening of positions in internal and global information market, improvement of ecological situation.

These results may be achieved in case mechanism of national system consisting of four blocks (central part) will start to work. These blocks are monitoring current situation; definition of target indicators of development; development of national projects, federal target programs; control of target indicators achievement.

According to analysis of factors that affect life quality not all of them are adequately reflected in documents accepted in the country. Improvement of life quality, satisfaction of society as a whole and as a consequence social stability should be the final result of the common multilevel quality system management.

Long-term experience of research of different dimensions of methods and tools of the Economics of Quality allows stating that development of steady growth strategy of a region on the base of modern methods of standardization and quality management are effective tools helping to realize initiatives aimed on modernization and support of steady growth of the economy of Russia, provisioning of world-high level of life quality of the citizens of Russia.

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