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WIND POWER POTENTIAL OF THE VOLGA FEDERAL DISTRICT AND RATIONALE OF THE USE OF LOW-POWER WIND-DRIVEN POWER-PLANTS

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ABSTRACT

A considerable enough attention is paid to the issues of wind energy resources assessment in various countries around the world, especially in Western Europe, USA, Japan, and China. In Russia there was developed an energy strategy for the development of the country until 2030, where it has also paid attention to the development of wind power engineering. This paper describes the wind conditions in the vast territory of the Volga Federal District and considers the possibility of using wind energy with a uniform measurement material, as well as evaluates the wind power potential of the Volga Federal District. The paper discusses the wind regime in the territory of the Volga Federal District using time series of mean monthly wind speeds at 183 meteorological stations in the period 1966-2009. There were analyzed the mean values, measures of variability, anomalies of wind speeds, linear trends, correlations between points, etc. We have revealed an inhomogeneous distribution of the mean monthly wind speeds (MMWS) in the territory, and the general trend of lowering wind flows. The wind power potential of the Volga Federal District in the atmosphere layer of 10-150 m was assessed. The analysis led to the conclusion that one of the priority directions of development of wind power in the near future will be a stand-alone use of small and medium-sized wind-driven power plants in remote areas where the population density is low, there is no large electrical networks, and it is appropriate to use wind-powered generating plants for energy supply purposes.

Key Words: *Wind Speed, Wind Speed Variability, Linear Trend, Wind Power Potential, Possible Wind Power Resources*

INTRODUCTION

By definition, wind is an air movement relative to the earth surface that depends on the circulation of the atmosphere and terrain features. Flows pattern is largely determined by a baric field and its gradients. Direction and speed of wind, and its gusts should be known when making the weather forecast, assessing pollution transport, for the purposes of aviation security, for construction needs, and for the needs of wind power (Huber et al, 2014.; Guo, He, 2012). Characteristics of wind are calculated both for the low heights starting from 10-12m - mounting height of a wind vane within the range of surface and boundary layers of the atmosphere, and for the free atmosphere.

This paper describes the wind conditions in the vast territory of the Volga Federal District and considers the possibility of using wind energy with the use of a uniform measurement material, as well as gives an assessment of the wind power potential of the Volga Federal District.

Source Material and the Methods of Calculation

In the capacity of a source material we have used data of meteorological observations from the database of All-Russian Research Institute of Hydro meteorological Information International Data Center for wind speed at 183 stations of the Volga Federal District in the period of 1966-2009 spaced evenly enough on the territory, the statistical series of wind observations data with prefix of time at 20 stations evenly covering the territory of the District during 1966-2011, as well as statistical series of NCEP / NCAR reanalysis for the period of 1948-2013, distributed by NOAA / OAR / ESRLPSD, Boulder, Colorado, USA.

We have calculated long-term monthly mean values of wind speed, standard deviations σ, coefficients of variation Cv, linear trend slope coefficients (LTSC).

The known formula was used for calculation of wind power potential:

$$N_{уд} = \frac{1}{2}\rho(\bar{v})^3(1 + 3C_v^2 + AC_v^3), (1)$$

Where N $_{ud}$ - specific power of the wind flow, ρ - air density, $\bar{v}$ - average speed, Cv - coefficient of variation, A - skewness coefficient.

Calculation of the wind speed at different heights z greater than the height of the weather vane installation h was carried out by the power formula:

$$\frac{\bar{v}_z}{\bar{v}_h} = \left(\frac{z}{h}\right)^m, (2)$$

Where $\bar{v}_z$ and $\bar{v}_h$ - mean wind speeds at heights z and h, respectively, m - dimensionless parameter depending on the state of turbulence, thermal stratification, and local physical and geographical conditions.

In the calculations values m should be assumed equal to: m = 0.864exp $(-0.31\overline{v_h})$ for the average annual wind speed, for the period September-May m = 0.798exp $(-0.28\overline{v_h})$, and for the period July-August when convection in lowest atmospheric layers is the most developed, m = 0.911exp $(-0.35\overline{v_h})$.

The calculations performed in this study are presented in the form of numerous charts and tables. Naturally, the limits of this paper do not allow us to include all the material in it.

Distribution of Mean Monthly Wind Speeds in the Territory of the Volga Federal District

Let's consider the climatic distribution of wind speeds in the territory of the Volga Federal District. Results of calculations are presented in the form of maps and tables. It should be noted that the territory of the Volga Federal District is a fairly heterogeneous in physical and geographical terms, it has a series of hills with the valleys of large rivers; East of the region is occupied by the Ural foothills. Three vegetation zones are located in the territory of the region: forest, forest-steppe, and steppe.

According to Fig. 1**,** the monthly mean wind speed at a height of 10-12m from the earth's surface are characterized by the lowest values in summer (1.3-4.1 m / s) and high values more frequently in winter (up to 5.1-5.6 m / s) due to an increase in the pressure gradient from summer to winter. The spatial distribution of wind speeds is non-uniform: highest values are found in the central part of the region in Saransk, Cheboksary, Kazan, Bugulma, Izhevsk, as well as in the south-east of the Orenburg region. Maximum average speed in January (≈7m / s) was identified at the Arzamas station (Nizhny Novgorod region), in the north of the Volga Federal District in the forest zone (the average speed in the order of 3 m / s), in the east within Bashkortostan (the Cis-Ural region) speeds drop up to 2 m / s, and significantly increase at the border with Kazakhstan (up to 4.5 m /s).

Figure 1
AVERAGE MANY-YEAR WIND SPEED (M / S) AT A WEATHER VANE LEVEL: A - JANUARY; B – JULY

a)   b)
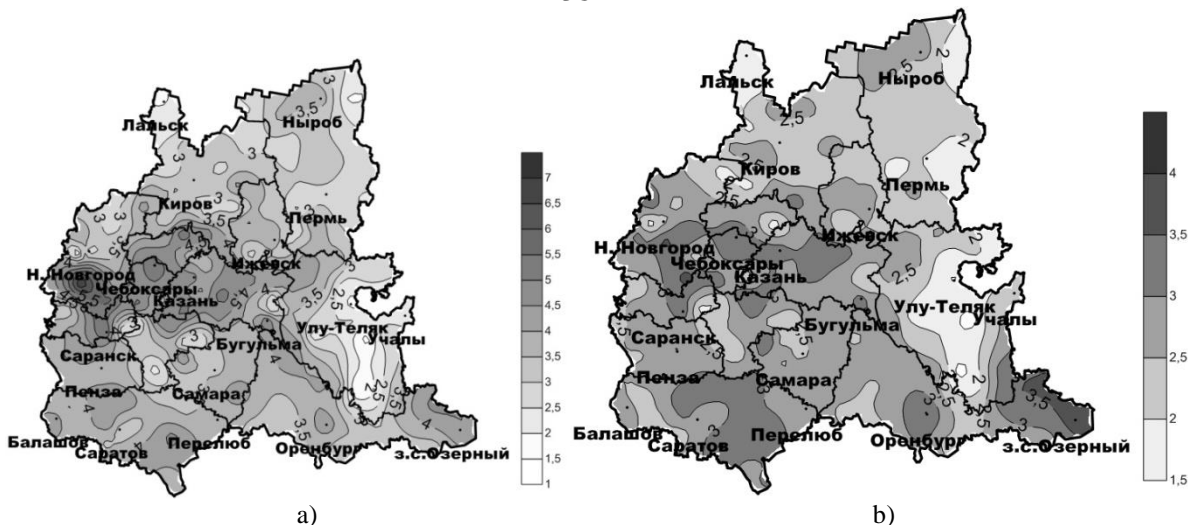
The spatial pattern of average speeds distribution is very diverse (mosaic) what is determined by the nature of atmospheric circulation and topography. In July, at the most stations the speed is 0.9-1.3 m / s lower than in January what leads to the annual variation. It should be noted that in the summer in the southern part of the district in the afternoon an intense convection develops that contributes to increase of wind near the ground.

During the year, the location of foci with high and low velocity values is preserved. For many years the map of the average annual wind speed makes an emphasis on the station Bugulma (4.4 m / s) with a maximum value and the station Tukan with a minimum value (1.3 m / s). Note that the station Bugulma is located on the Bugulma-Bebeley upland.

The resulting climatic wind distribution is influenced by the structure of the baric field (its gradient), atmospheric circulation, terrain, and local specifics. In general, a latitudinal zoning manifests itself except for the eastern regions where a significant effect of the terrain is shown.

Variability of Wind Speed

We have calculated a set of parameters to characterize the temporal variability of wind speed. Let's consider their spatial and temporal distribution. The value of the standard deviation (SD) σ characterizes inter annual variability of wind speeds. The value of standard deviation varies with the annual course from the minimum values in summer (0.3-0.9 m / s) up to a maximum in winter reaching 0.6-1.7 m / s.

Also, in order to identify trends in wind speed over time we have calculated linear trend slope coefficients (LTSC) ((m / s) / 10 years) for each station. Analysis of the results shows that for the entire territory of the Volga Federal District, the sign of the slope of the trend line is negative indicating a widespread lowering of the wind speed. In January, the value of the linear trend slope coefficient ranges from -0.2 ((m / s) / 10 years) in the north of the District to -0.6 ((m / s) / 10 years) in the south. A similar picture emerges in the other months of the year; the picture in the space is also non-uniform. The fact of lowering wind speeds in the European territory of Russia in the last decade has been also pointed out in other works.

It is known that the intensity of the wind flows determines the dynamics of pollutant transport in the lower layer of the atmosphere, and also affects the evaporation of moisture from the underlying surface, particularly from the water surface what affects the hydrological regime of the territory and other natural processes. Perhaps one reason of attenuation of the wind regime in the region is a global warming at which meridional thermal contrasts are faded what affects the pressure field (attenuation of pressure gradients) and hence reduces the wind speed. In addition, in the summer period blockings began to appear more frequently that also contributes to the lowering of the wind and create calm situations.

Evaluation of Wind Power Potential of the Volga Federal District

A considerable enough attention is paid to the issues of wind energy resources assessment in various countries around the world, especially in Western Europe, USA, Japan, and China. (Yao et.al, 2014; Hallgren et al, 2014.; Adaramola et al, 2012.; Gökçek et al, 2009). In Russia there was developed an energy strategy for the development of the country until 2030, where it has also paid attention to the development of wind power engineering.

The advantage of wind-powered generating plants (WPGP) over conventional energy sources is a fast capacity commissioning, the ability to build up power of wind farms on a modular scheme, and significant economic efficiency. The installed capacity of wind power in the world has increased from 6.2 MW in 1996 to 94.3 MW in 2007. Over the past 25 years, the basic cost parameters of wind power have lowered significantly and now account for 4.5 eurocents per 1kW.

Energy wind areas, i.e., the areas where the use of wind power is clearly appropriate, are also located in areas of the Arctic coast and the Far East, Middle and Lower Volga, the Caspian Sea, etc.

Natural wind power potential is a long-term average value of wind energy of air masses motion over a territory. Gross potential of wind energy resources is calculated as the power of a wind flow excluding the properties and capabilities of wind motors by the formula:

$$N = \frac{1}{2}\rho v^3 S, (3)$$

where N - overall power of total (full) wind flow; ρ - air density; v - wind speed; S - area perpendicular to the wind flow.

The use of alternative energy sources is crucial, including with due account for the sustainable development of the territory (Gabdrakhmanov, 2014, Rubtsov, 2015). For economic reasons, it is advisable to develop wind power only in those areas where the mean monthly wind speed is not less than 3-5 m / s. At a wind speed of 7 m / s installation of high wind-driven power plants (WDPP) becomes expedient [Herbert et al, 2007].

Favorable conditions for choosing a site for the construction of wind-driven power plants are high wind power potential (mean monthly wind speed of 5 m / s, a relatively large duration of the operating speed from 9 to 25 m / s, the energy lulls repeatability (less than 3 m / s) is 20-30%, lower variation coefficient values (preferably less than 0.3), the absence or low repeatability of occurrence of "windstorm" (more than 20 m / s) and "hurricane" (more than 33 m / s) wind speeds (Li et al, 2008).

Using the formula (1) calculations of wind energy resources at the level of the weather vane (10 m) and at altitudes of 50, 100 and 150 m for which the wind speeds have been pre-calculated according to power law (equation (2)) were carried out for the Volga Federal District. Some calculation results are presented in Fig.2. As can be seen, the most favorable conditions for

the development of wind power are in the central part of the Volga Federal District and in the southeast region. With increasing height a marked increase in wind speed (wind speed at altitude of 100m is in 1.5-1.7 times higher its value at altitude of 10 m) and hence the generating capacity of the wind flow, as cube power of speed value is used in the calculation.

Figure 2
SPECIFIC POWER OF THE WIND FLOW (W / M $^{2)}$ AT AN ALTITUDE OF 100M: A - JANUARY; B – JULY

a)   b)
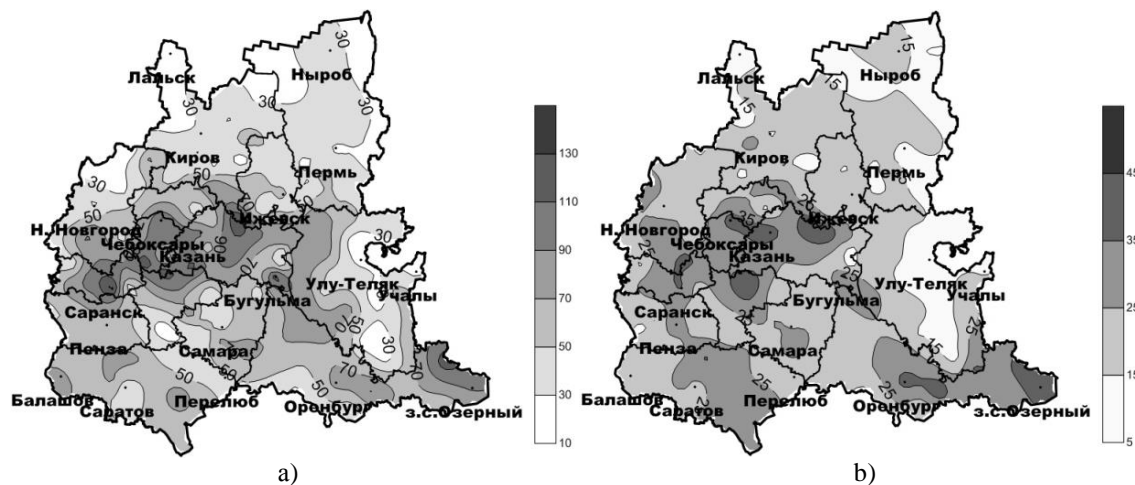
On The Effectiveness of the Use of Low-Power Wind-Driven Power Plants at the Territory of the Volga Federal District

The priority direction of development of wind power industry in the near future will be a stand-alone use of small and medium-sized wind-driven power plants in remote areas where the population density is low, there are no large electrical networks and use of wind-powered generating plants for energy purposes is appropriate (Bett, Thornton, 2016; Snyder, Kaiser, 2009).

Power supply of stand-alone consumers using renewable energy sources, particularly wind energy, in some Russian regions already is economically more viable (new energy policy of Russia, 1995) than the use of liquid fuels, and is more efficient for low-power consumers compared with construction of power lines from centralized energy systems.

The purpose of this study in this section is to find out the possibility of using wind-driven power plants in the Volga Federal District, as well as identification of the types of wind-driven power plants the use of which is possible and appropriate in the district.

According to the standard (GOST R 51990-200), wind-driven power plants are classified into four groups depending on their power: high power - more than 1 MW; average power - from 100 kW to 1 MW; low power - 5 to 99 kW, and a very low power - less than 5 kW.

Let's consider the feasibility of using wind-driven power plants of low and very low power. These wind-driven power plants are used for power supply of small houses and farms.

Today, wind turbine electro-generators are reliable and easy-to-use installations and the only issue to address is "if there are enough wind resources in the area where it was planned to

install wind-driven power plants?" One of the goals of this research is to identify the areas where there are sufficient wind resources.

In the regions which are attractive for the use of low-power wind-driven power plants the mean monthly wind speed must be 4 - 6 m / s or more. When considering the average annual wind speed field (Fig. 3a) it is clear that on 87% of the District territory mean monthly wind speed does not exceed the value of 4m / s (Fig. 3b).

The annual course of wind speed means the maximum speed in winter and minimum in summer when the circulating factors are weak. So, in January, the area of the territory on which the monthly mean monthly wind speed exceeds 4 m / s is about a quarter of the District area (Figure 3c, Table 1). Thus, the seasonal use of wind-driven power plants is possible and appropriate in the central part, in the south-west of the District, as well as in the south-east of the Orenburg region.

Figure 3
ANNUAL MEAN MONTHLY WIND SPEED AT THE WIND VANE HEIGHT (A), AREAS WITH V $_{AV.}$ $_{ANN.}$≥4 M / S (B), STATIONS WITH V$_{JANUARY}$ ≥4 M / S (C)

a)

b)

c)
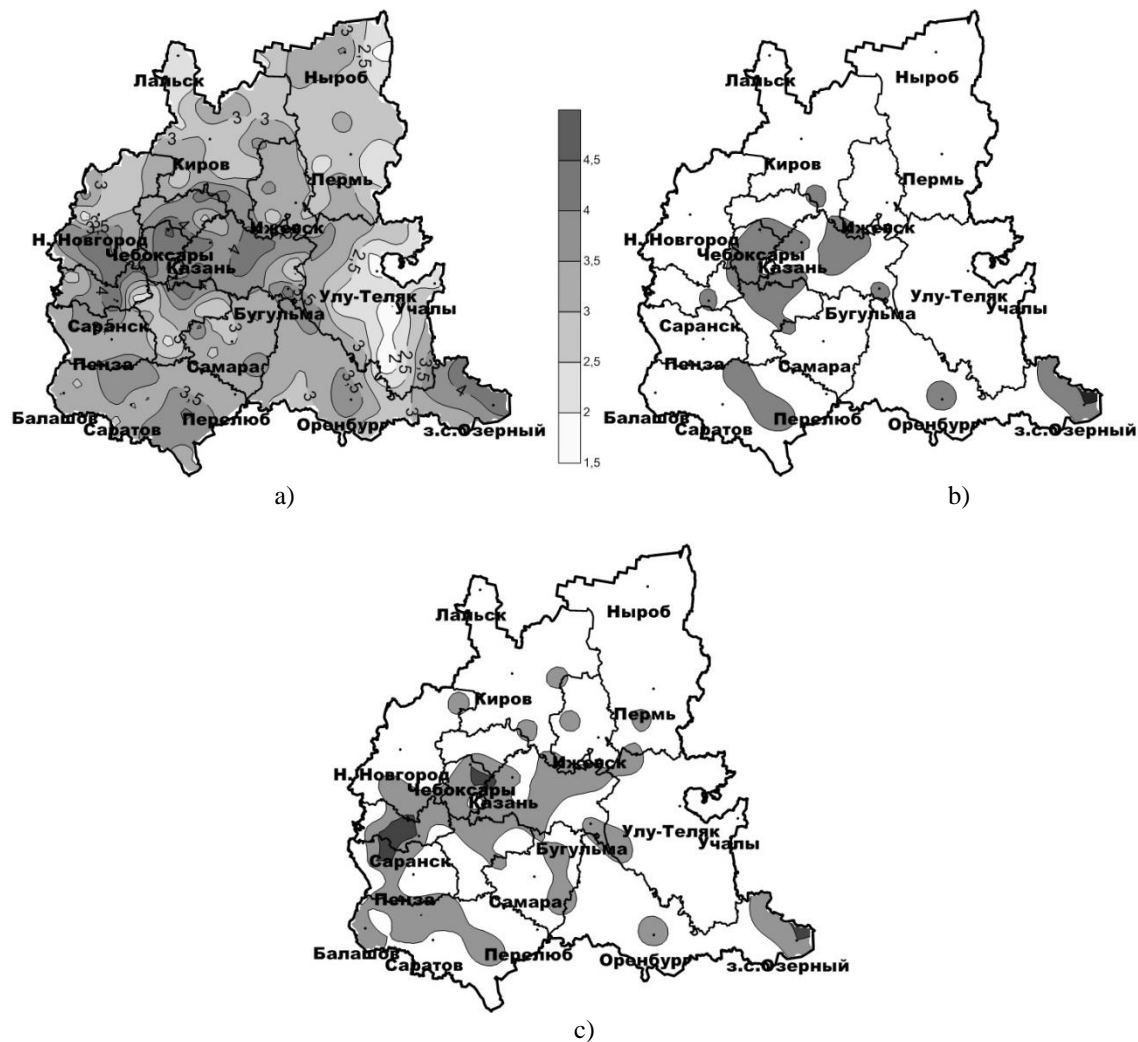
Table 1
THE RATIO (%) OF THE NUMBER OF STATIONS WITH V $_{AV.\ MONTH.}$≥4 M / S TO THE TOTAL NUMBER OF STATIONS (AT THE HEIGHT OF THE WIND VANE Z = 10M)

Month	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average per year
% of stations	26.1	21.2	17.0	15.8	12.1	1.2	0.0	0.0	4.8	18.8	22.4	24.2	12.7

For the needs of the wind energy industry it is necessary to know the actual frequency of occurrence (%) of wind speed by gradations in order to identify the total time for useful electricity production and time of the forced installation downtime (Askarzadeh, Zebarjadi, 2014).

If we look at the specific models of low power wind units, one of the most efficient wind-driven power plants in this class are wind generators EuroWind 5, EuroWind 10, EuroWind 15) which starting speed is v≥2 m / s (Márqueza et al, 2012).

The data in Table 2 reflect the proportion of the time when rotors of wind-driven power plants will rotate and the installation will produce usable electricity.

Table 2
REPEATABILITY OF WIND SPEEDS V≥2 M / S CALCULATED FROM THE TIME-DEPENDENT DATA FOR THE PERIOD 1966-2010

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Среднее
Lalsk	54	54	57	56	61	57	52	52	55	65	61	59	57
Nyrob	81	79	82	82	83	80	74	75	79	86	83	80	80
Kirov	84	82	81	80	79	73	67	70	74	84	84	85	79
Perm	73	68	71	73	71	64	56	60	68	78	75	72	69
Izhevsk	86	84	85	86	86	82	75	78	84	89	89	85	84
Nizhny Novgorod	84	81	84	82	78	75	70	71	76	86	88	86	80
Cheboksary	92	92	92	92	91	88	85	88	91	94	95	93	91
Kazan	75	74	71	74	71	67	62	64	68	76	78	74	71
Saransk	89	86	86	88	86	82	78	79	85	90	92	90	86
Ulyanovsk	89	87	87	87	86	80	80	81	84	89	88	90	86
Bugulma	87	87	86	88	88	82	79	81	85	90	90	86	86
Ulu Telyak	45	46	46	50	52	47	41	38	43	53	51	43	46
Uchaly	48	51	53	61	64	60	55	53	57	64	57	48	56
Penza	77	77	75	74	70	67	61	60	64	75	78	77	71
Samara	83	82	77	70	67	68	72	74	75	76	78	84	75
Balashov	85	85	84	84	78	74	70	72	74	82	85	85	80
Marks	80	81	82	80	77	74	74	71	72	77	83	82	78
Perelyub	76	76	74	75	73	71	68	65	67	74	78	75	73
Orenburg	85	83	85	88	87	85	83	82	82	85	88	86	85
Ozerny	80	82	81	84	86	85	83	81	80	82	83	80	82

High wind speed increases the amount of passing air masses. Therefore, with an increase in wind speed the amount of electricity produced by a wind power plant increases also. Wind energy is proportional to the cube power of the wind speed value. Thus, for example, if the wind speed doubles, the kinetic energy received by the rotor is increased eightfold.

Mean monthly wind speed value is a universal characteristic. However, it does not reflect the length of observations of wind activity. Most information can be obtained by studying the frequency of wind speed repeatability.

Earlier it was also stated that the rationale for the wind power industry development prospects in the region requires knowing the frequency of occurrence of "working" speeds and repeatability of hurricane speeds. All these data could be available if to know the wind speed distribution parameters for gradation. In addition, these data can be used to evaluate the amount of generated electric power for which it is necessary to know the wind speed repeatability by gradations (Table 3, the data obtained by processing the information from observations with prefix of time).

Table 3
REPEATABILITY OF WIND SPEED (IN %) BY GRADATIONS AVERAGED OVER THE TERRITORY OF THE DISTRICT (FOR THE PERIOD 1966-2010)

Wind speed (m / s)	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0-1	22	23	23	22	23	27	31	30	27	20	20	22
2-3	31	31	33	34	35	38	39	38	37	35	34	32
4-5	24	24	24	25	24	23	21	21	22	25	26	24
6-7	13	12	12	12	11	9	7	7	9	12	12	13
8-9	6	5	5	5	4	3	2	2	3	5	5	5
10-11	3	2	2	2	2	1	1	1	1	2	2	3
12-13	1	1	1	1	1	0	0	0	0	1	1	1
14-15	-	-	-	-	-	-	-	-	-	-	-	-
16-17	-	-	-	-	-	-	-	-	-	-	-	-
18-21	-	-	-	-	-	-	-	-	-	-	-	-
22-25	-	-	-	-	-	-	-	-	-	-	-	-

Along with high repeatability of "working" wind speeds, the speed in the installation place of a wind-driven power plant should have a low frequency of occurrence of high (critical) wind speeds at which the installation goes into idle rotation mode and dangerous to set the speed (in which can occur the destruction of the wind generator). These values differ for different models. For most models of low-power wind-driven power plants this value is 20 m / s.

Repeatability of "dangerous wind speeds for the plant" can be selected from the data of the wind gusts. On the average for the District, repeatability of dangerous speeds does not exceed 1%. When considering the field of this indicator, Bugulma (1.5%), Orenburg (1.0%), and Ozerniy (1.1%) stations stand out.

Data from tables and maps presented above are valid for the altitudes of 10 m/s (height of wind vane installation) in the network of meteorological stations. While the standard height of the low-power wind-driven power plant installation is 18m.

Taking into account the fact that wind-driven power plants do not always set at the height of a wind vane, wind speeds were calculated using power law for all stations in the District for heights other than the height of a weather vane installation (Formula 2).

Based on the obtained wind speed values at the height of installation of the wind power plant rotor, we carried out the approximate estimation of the number of stations (in a rough approximation - an equivalent to a land area) with favorable conditions for electricity generation (Table 4).

Table 4
THE RATIO (%) OF THE NUMBER OF STATIONS WITH V $_{AV. MONTH.}$ ≥4 M / S TO THE TOTAL NUMBER OF STATIONS (AT THE HEIGHT OF THE WIND-DRIVEN POWER PLANTS ROTOR Z = 18M)

Month	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average per year
% of stations	2.	2.	2.	2.	43.0	14.5	4.8	8.5	20.0	49.1	54.5	52.1	39.0

The circumstances that the maximum monthly average speeds are accounted for the cold season and coincide with the seasonal peak of heat and electricity consumption says in favor of rationality of wind energy industry implementation. At the same time it coincides with a minimum annual flow of local rivers, i.e. makes it possible to compensate for the seasonal shortage of hydropower. It was revealed that the daily change in the average speed in the Volga Federal District is significant in a summer period; with speed in the afternoon is by an average of 1-2 m/s higher than at night what is favorable for efficient use of the wind because the maximum power consumption also falls in the daytime.

CONCLUSIONS

1. We have revealed spatiotemporal heterogeneity in the distribution of wind speeds in the territory of the Volga Federal District: average speeds vary during the year within the limits of 1ю8-5ю6 m / s. The highest wind speeds occur in the area of Bugulma-Bebeley uphill and Orenburg region. With trend-analysis, we have determine the speed of attenuation of wind movements in the territory during the year that reach their peak in January (0.2-0.6 m / s / 10 s);

2. Trend analysis has showed a temporary trend of lowering wind speed on the whole territory of the district at a speed within the wide range of values depending on the location of a station and the months of the year -0,2-0,5 (m / s) / 10 years;

3. Maps of the mean monthly wind speeds distribution at 50, 100 and 150m levels were plotted. Vertical gradients of the mean monthly wind speed were defined. The wind speed at altitude of 100 m is in 1.5-1.7 times higher than at the level of 10 m;

4. Maps of the mean monthly wind speeds distribution at 50, 100 and 150m levels were plotted. Vertical gradients of the mean monthly wind speeds were defined. The wind speed at a height of 100m is in 1.5-1.7 times higher than at the level of 10 m.

5. Wind power potential of the Volga Federal District at 100m varies throughout the year in the district territory within 10-140 W / m ^{2} and is determined by local conditions and features of wind regime. The most favorable conditions for the operation of wind-driven power plants are developed in January in central part of the district, in the south-west, and extreme southeast;

6. Favourable conditions for the use of wind-driven power plants and wind energy utilization on the dominant part of the district territory may be in winter period.

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THE USE OF HIERARCHY ANALYSIS IN THE DIFFUSION OF ORGANIZATION INNOVATIONS

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ABSTRACT

The article describes the results of studies concerning innovation diffusion issues in organizations. The analysis showed that the main factors of innovation successful diffusion are: the corporate culture of an organization; a feedback between managers and performers; the amount of investments and the coverage of organization departments by innovations; socio-cultural and institutional environment of an organization; the age and the position of the personnel involved in innovation diffusion; the individual characteristics of workers. The diffusion of innovations in an organization is provided by using three possible instruments: 1) the development of regulations, instructions, which oblige workers to participate in the implementation of innovations without the change of material and non-material motivation system; 2) the change of current material incentive system (wage organization); 3) the change of non-financial incentive system. We considered the use of the hierarchy analysis method (Saaty method) during the selection of possible innovation diffusion instruments in an organization. The most preferred tool is the use of organizational and administrative documents. The management develops regulations governing the staff conduct during the implementation of innovations. They are created for each organization department, for the categories of staff involved in the implementation of innovations. The use of hierarchy analysis method allows considering any number of criteria and indicators taken into account in the implementation of innovations in any organization.

Key Words*: Innovation in an Organization, The Corporate Culture of an Organization, Innovation Diffusion, The Problem of Innovation Diffusion, Hierarchy Analysis Method - Saaty Method.*

INTRODUCTION

Over time, each enterprise is faced with the necessity of various innovation introductions. Innovation is a new or significantly improved product (a good or a service) introduced into use or a process, a new sales method, or a new organizational method in business practice, workplace organization or in external relations. The role of innovations in enterprise competitiveness provision, in market share expansion and the formation of market power are doubtless.

The diffusion of innovations is the process of spreading, penetration, introduction of technological, organizational and other innovations in production and business activities.

The greatest influence on the innovation activity of the staff is performed by a corporate culture of an organization (Nikiforovich at al., 2014, pp. 184-195). A type of management, the culture of communication, communication system may generate an opportunistic behavior, an innovative passiveness of personnel. Management may declare a value system, create an image, ensuring the success in competition, but can't keep it among organization personnel.

Chen T.-L. notes the importance of a feedback between staff and management during innovation diffusion (Chen, 2014, pp. 450-466). He suggests using questionnaires to identify the perceptions and the attitudes towards innovations, the factors which determine the innovation diffusion success. The results allow making the adjustments in the documentary support, requirements and the conditions of work in an organization.

B.R. Nabiyev and R.A.Nabiyev consider the diffusion of innovations in socio-cultural and institutional environment a determining factor. The main elements of this environment is a civil - legal responsibility, cultural and historical identity, the awareness of solidarity, trust, sense of belonging, and other components of social institutions importance (Nabiyev et al., 2015, pp. 1710-1713). Grigoryeva N. and Kundukchyan R. identified the indicators which have a significant impact on the level of innovation activity: organizational innovations and investments for increase of innovative activity of economic entities (Grigoryeva and Kundukchyan, 2014, pp. 1579-1583). Culture is the beliefs and values held by management and communicated to employees through norms, stories, socialization processes, and observations of managerial responses to critical events (Tesluk et al., 1997, pp. 27-41). Similar results were obtained by the scientists from Japan, based on the data analysis from 58 countries. They assessed the impact of national characteristics on the acceptance of innovations. Besides, they studied the perception of innovation and the participation in innovations of next-generation representatives (Arai et al., 2014, pp. 406-411). Lavoie M. also evaluates the impact of the workforce aging on the innovations within a macro level. The author notes that older workers may have specific and exclusive knowledge, that they can play a decisive role in the diffusion of innovations. At the same time, there are different scenarios of public policy and corporate initiatives of employee encouragement to stay longer in the labor market. Lifelong learning strategy is another initiative developed by numerous countries that allows workers to maintain and develop skills during their careers (Lavoie, 2009, pp. 641-661).

The efficiency innovation diffusion process depends on the individual characteristics of workers (Kabasheva et al., 2015, pp. 435-439). The research results confirm necessities of the system formation of material and moral stimulation of the staff to take part in creation and realization of the innovation.

Kim S.-J., Park M. identified the following factors of innovative behavior on the basis of nurse survey data: self-leadership, creative self-efficacy, and individual knowledge (Kim and Park, 2015, pp. 615-621).

The innovative behavior is a direct impact on business performance. Except the staff characteristics, organizational innovation climate is also an important influencing factor. The organizational innovation climate impacts more on performance through the intermediation of employee innovative behavior (Zhao, 2013, pp. 529-536).

The dedicated employees contribute to the development of an enterprise innovative activity. Results revealed significant relationships between affective and normative commitment and employee's innovative behavior (Hakimian et al., 2016, pp. 70-83). The innovative activity of a staff depends on the position occupied by an employee in an organization hierarchy and the length of stay in it. For those who are low in status hierarchy and short in position tenure, their organizational tenures are positively related to innovative behavior, but for those with a longer position tenure in organizations, their organizational tenure may relate to innovative behavior negatively, whatever their status hierarchies are (high or low). A long stay at a post regardless of hierarchy level reduces the innovation activity of the personnel (Liu, 2016, pp. 99-126).

The management of organizations may be faced with a number of problems concerning innovation implementation:

1. Low level of department, manager action consistency,
2. Blurred definition of functions and problems during the implementation of innovations,
3. The absence of financial motivation system between employees at the implementation of innovation system,
4. Administrative barriers (bureaucracy, abuse of power among individual managers, etc.)
5. The absence of innovation non-material stimulation system,
6. The absence or poor quality of innovation documentary support,
7. The resistance of personnel to innovations,
8. Poor quality of colleague professional training,
9. The problems of opportunistic behavior among managers and performers.

In this regard, the leadership inevitably raises the question of choosing the most effective tool during the organization of innovations. Management may use various methods of decision-making. In this study, we want to demonstrate the application of hierarchy analysis method during decision-making concerning the implementation of innovation process or on the basis of the internal organizational and administrative documents, or on the basis of material and non-material stimulation system. The method of hierarchy analysis takes into accounts not only the advantages and disadvantages of each of them, but also the opinion of professionals from an expert (innovative) company center.

Methods: The method of hierarchy analysis is used worldwide for decision-making in a variety of situations: from the management at an international level to the solution of industrial and private business issues. The analysis of a decision-making problem begins with the construction of a hierarchical structure, which includes a goal, criteria, alternatives, and other considered factors influencing a choice. This structure reflects the understanding of a problem by a decision maker. Every element of a hierarchy may represent different aspects of a problem being solved, and material and non-material factors, measured quantitative parameters and qualitative characteristics, objective data and subjective expert assessments can be taken into account. In other words, the analysis of a decision selection situation resembles the procedures and techniques of argumentation, which are used on an intuitive level. The next step of the analysis is the determination of the priorities which represent the relative importance or the preference of elements concerning a developed hierarchical structure, using a paired comparison procedure. The unlimited priorities allow comparing diverse factors reasonably. And it is a distinctive feature of the hierarchy analysis method. At a final stage of the analysis the synthesis (linear convolution) of priorities is carried out on a hierarchy, which resulted in the priority of alternative decision calculations relative to a main goal. The best alternative is the alternative with a maximum priority value.

Results: We examined three tools of staff innovative behavior development:

1. The development of internal organizational and administrative documents (regulations, instructions) (I),
2. The development of incentive schemes that encourage innovative activity of the personnel (II),
3. The development of non-financial incentive system that encourages a perdonnel innovative activity (III).

The assessment of alternative solutions will be carried out according to the following criteria:

1. The willingness of managers to participate in innovations (A),
2. The willingness of performers to participate in innovations (B),
3. Satisfaction of managers with labor (C),
4. Satisfaction of performers with work (D),
5. Management labor productivity (E),
6. Productivity of performers (F),
7. Working interest of managers (G),
8. Working interest of performers (H).

The hierarchy of objectives for our problem is shown on Fig. 1.

Figure 1
HIERARCHY OF GOALS DURING THE FORMATION OF PERSONNEL INNOVATIVE ACTIVITY
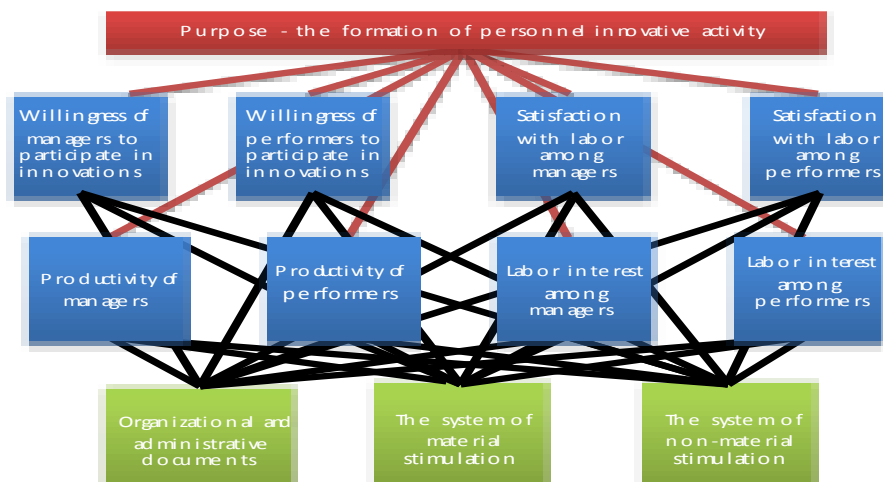
In order to develop the matrix of pairwise comparisons according to the criteria we will use the each criterion evaluation result by an expert.

An expert is offered to estimate the importance of each criterion according to 9-point scale, where 1 point - equal preference, 9 points - absolute priority.

The results of expert estimations are presented in Table 1.

Table 1
EXPERT EVALUATION OF CRITERIA

Factor	A	B	C	D	E	F	G	H	Priority vector
A	1,00	6,00	8,00	6,00	0,13	0,25	8,00	8,00	0,22
B	0,17	1,00	0,13	0,14	0,20	0,20	3,00	7,00	0,07
C	0,13	8,00	1,00	7,00	2,00	3,00	0,20	0,20	0,13
D	0,17	7,00	0,14	1,00	9,00	0,50	0,20	8,00	0,15
E	8,00	5,00	0,50	0,11	1,00	6,00	0,25	0,33	0,12
F	4,00	5,00	0,33	2,00	0,17	1,00	0,17	0,50	0,08
G	0,13	0,33	5,00	5,00	4,00	6,00	1,00	0,17	0,13
H	0,13	0,14	5,00	0,13	3,00	2,00	6,00	1,00	0,10

Priority vector column was obtained by the standardization of amounts for matrix row (the row values were summed and divided by the sum of the entire matrix values).

Next, let's perform pairwise comparisons of alternatives, also using the fundamental scale. The data are presented in Table 2.

Table 2
PAIRWISE COMPARISONS OF ALTERNATIVES

	I	II	III	Standard priorities	Ideal priorities
Willingness of managers to participate in innovations					
I	1,00	5,00	9,00	0,70	1,00
II	0,20	1,00	4,00	0,24	0,35
III	0,11	0,25	1,00	0,06	0,09
Willingness of performers to participate in innovations					
I	1,00	8,00	9,00	0,71	1,00
II	0,13	1,00	5,00	0,24	0,34
III	0,11	0,20	1,00	0,05	0,07
Satisfaction with labor among managers					
I	1,00	8,00	6,00	0,64	1,00
II	0,13	1,00	0,17	0,06	0,09
III	0,17	6,00	1,00	0,31	0,48
Satisfaction with labor among performers					
I	1,00	8,00	7,00	0,65	1,00
II	0,13	1,00	0,17	0,05	0,08
III	0,14	6,00	1,00	0,29	0,45
Productivity of managers					
I	1,00	9,00	7,00	0,67	1,00
II	0,11	1,00	0,17	0,05	0,08
III	0,14	6,00	1,00	0,28	0,42
Productivity of performers					
I	1,00	9,00	7,00	0,67	1,00
II	0,11	1,00	0,17	0,05	0,08
III	0,14	6,00	1,00	0,28	0,42
Labor interest among managers					
I	1,00	7,00	6,00	0,62	1,00
II	0,14	1,00	0,17	0,06	0,09
III	0,17	6,00	1,00	0,32	0,51
Labor interest among performers					
I	1,00	7,00	6,00	0,62	1,00
II	0,14	1,00	0,17	0,06	0,09
III	0,17	6,00	1,00	0,32	0,51

In order to determine the global priorities of alternatives we put down the local priorities of the options considered for each criterion into the matrix. Then, each matrix column is multiplied by the corresponding criterion priority (specified in parentheses). Summing up by rows, we obtain the components of the global priority vector of our alternatives (Table 3).

Table 3
THE COMPONENTS OF ALTERNATIVE GLOBAL PRIORITY VECTOR

Criterion weights	A (0,22)	B (0.07)	C (0,13)	D (0,15)	E (0,12)	F (0,08)	G (0,13)	H (0,1)	Global
Distribution method									
I	0,7	0,71	0,64	0,65	0,67	0,67	0,62	0,62	0,661
II	0,24	0,.24	0,06	0,05	0,05	0,05	0,06	0,06	0,109
III	0,06	0,05	0,31	0,29	0,28	0,28	0,32	0,32	0,23
Ideal method									
I	1	1	1	1	1	1	1	1	1
II	0,09	0,.07	0,09	0,08	0,08	0,08	0,09	0,09	0,085
III	0,35	0,34	0,48	0,45	0,42	0,42	0,51	0,51	0,432

CONCLUSIONS

In the case of priority calculation by a distributed method the material and non-material incentives are estimated as low ones. The most preferred is the use of organizational and administrative documents. This, above all, the development of regulations governing the behavior of personnel during the implementation of innovations. They are developed for each organizational unit. It is also the change of existing job instructions. New instructions will contain a list of employee additional features, ensuring their participation in the implementation of innovations. Besides, the organization management may enter into additional agreements to a labor contract. The choice of this innovation diffusion instrument by experts is explained by its low cost of use.

SUMMARY

The method of hierarchy analysis provides an effective diffusion of innovations. It allows you to provide a more precise and a more accurate assessment of possible tools. This method takes into account all choice estimation criteria defined during the implementation of innovative projects.

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LOGISTIC BARTER FEATURES AS A NEW CONCEPT OF SUPPLY CHAIN MANAGEMENT

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ABSTRACT

A huge role in current economy is played by those who do not have any relation to a real productive activity. Speculation shows its results now. The world economy undergoes a great stress during several years. This problem may be corrected by barter relationships between producers and an integrated logistics, that is, the logistics barter. The logistic barter theory (barter logistics) does not give up money, but ignores it between manufacturers. Logistics and has reached and continues to reach such heights, when the need for such "universal equivalent as goods" between the manufacturers simply disappears. New LBP-providers are considered, who not the serving members of the economy are. They act as operators of other economic system where there is no place for money and banks between producers. At the moment, the upper limit of supply chain management are 5PL providers, but the logistic barter needs 6, 7 ... PL providers, or they need to be called LBP providers (logistic barter providers) because it has to be a completely different, predominant view of logistic and logistic barter role in new economy. Logistics barter is a web, a spider - the LBP provider. Logistic barter operators (providers) must meet not only the requirements of logistics barter between manufacturers, but also respond to the new challenges of supply chains. LBP-provider may exceed the capacities of barter logistics standard requirements, because an operator is engaged not only in the replacement of monetary relations, but works in the field of supply chain improvement.

We must understand that a new economy theory based on logistic barter requires a developed infrastructure, i.e., a super system of supply chain management based on LBP providers.

Logistics is developing, and the possibilities of supply chain management may be completely different. In terms of prospects logistic barter may play its role in economy.

Key Words: *Logistic Barter, Principle, LBP-Provider, Indifference Ratio, Indifference Threshold, Added Value.*

INTRODUCTION

An effective vision has several key distinguishing characteristics. Thus, it should not be a static, but an evolutionary one. The system of values that it represents must have both implicit and explicit components. It can never be achieved completely, that is, there are always some areas of tension between implemented things and the things which can be achieved. And most importantly, it has a high energy, clearly formulated, consistent, inspires energy and provides inspiration (John Gattorna, 1990, 518 p.).

A financial market feature is a speculative activity, expressed in desire to obtain quick profits only on the difference of product price fluctuations. The persistent objects of speculative market are currency, securities, exported and imported goods, real estate, etc.

Speculative activity covers all segments of the financial market (stock market, credit market, currency market), which forms a threat for a balanced economic development of society (Kotova and Malkhasyan, 2013, pp. 54-59).

The growth reduction factors of the Russian financial market speculative component shall be presented by monetary policy through the purposeful actions of the Bank of Russia:

1. At foreign exchange market - the mitigation policy concerning the ruble value volatility of bi-currency basket;
2. At credit market - the policy of financial multiplication regulation in commercial banks (by increasing or decreasing reserve standards and refinancing rates;
3. At stock market - the member discipline policy by standard acts (Kotova and Malkhasyan, 2013, pp. 54-59).

But all this is impossible, since "the market as the most efficient form of management creates the best conditions for economic growth and defends the priority of economic subject freedom. A state should provide the conditions for competition and perform monitoring where these conditions are absent" (Bulatov, 2003, p. 896.). The contradiction takes place here: on the one hand, a state which manages poorly market weakly, on the other hand, the conditions must be provided in the poor "areas" of economy. There is only one conclusion: a stock market in the basis is "not right" and it is not needed at the logistic barter.

Supply chain management concept was developed on the basis of logistic business process integration. Now the focus in a content interpretation of this concept is increasingly moved towards the expansion of Supply Chain Management understanding as a new business concept. Supply Chain Management is a natural continuation and the development of integrated logistics concept in terms of cross-functional and inter-organizational logistic coordination (Sergeev, 2008, p. 670). Consequently, there are no restrictions in development, including logistics as a science. Maybe it's time to break down the existing ideas of money value, the importance of banks, and the domination of financiers over manufacturers. But everything has its time; a pawn can also become a king over time.

The economic reality is very complex, contradictory and changeable, and economics is not entitled to an absolutely accurate, adequate reflection of real processes and trends.
In current economy a huge role is played by those who do not have any relation to a real productive activity. These are stock exchanges, debt markets, banks, etc. This speculation shows its results now. The world economy is in a severe crisis for several years. This problem can be corrected by barter relationships between producers, i.e. by barter logistics.

Logistics barter involves the negation of monetary relations between producers; therefore, the role of banks in a new system is reduced dramatically. The justice, which mankind tries to reach for centuries, is restored and a producer's domination is achieved. Society and technologies become more prepared for the introduction of this concept, and the possibilities of such implementation increase each day (Gabdullin, 2012, pp. 166-169).

Will banks agree with such a concept? No, because a huge layer of artificially created banking activities will sink in oblivion. These activities appeared with the appearance of product analog (general equivalent) - money.

METHODS

Logistics barter (barter logistics) is a natural exchange of goods between manufacturers, at which one thing is changed to another one without a cash payment, based on a globally integrated business processes (Gabdullin, 2013, pp. 332-336).

Why do we need to complicate the process of exchange by necessary material resources and services? Payment process can be replaced by information exchange process! It is real in the age of high technologies and Internet! Yes, there is an issue of tax legislation. But this problem can be solved. The issue of a tax base appears. It also can be solved, because no one cancels the laws of supply and demand, and the price will be formed by an end customer, i.e. a household. Money should only among final consumers (households) and the end consumers may go to a bank if necessary.

Banks will work with "households". The basic principle (the law) of the logistic barter is that an end enterprise, the money for the goods received by a company from a household, will be given via the supply chain to the employees and the companies of all categories in accordance with the value-added share (Gabdullin, 2013, pp. 332-336), i.e. no one is going to cancel capitalism.

If we analyze the US and Russian exports, we can see that the United States export mainly only the products with a high added value (feature films, products in the field of show business, branded clothing, etc.), and Russia exports the goods with low added value - raw materials. Hence, the developed economies will have the greatest profit from the introductions of logistic barter to an economy. This was expected. The introduction of logistic barter should have an appropriate overall developed structure of economy and society. There is a lot of development trends for others.

Let's invent a time machine. After that, go to the end of the 1980-s, kidnap one of their supply chain managers, and take him back to our time. The part of things which the manager will see in the current supply chain will be completely new for him: public and private market spaces with a web basis, the providers of logistic services at 3PL and 4PL level and the joint planning and forecasting. New ideas, backed up by new technologies, led to the emergence of some new business methods, totally different from the previous ones (Gabdullin, 2013, pp. 332-336).

In recent years, the focus of many operations in the supply chain changed. Earlier the managers of supply chains were confined to domestic tasks. Now they pay a lot of attention to the external communication links, joining their organization to other parts of supply chains. The providers of 3PL and 4PL category, joint planning, e - the procurement and other developments led to the expansion of the traditional supply chain, which became possible largely due to new advances in technologies. Within the unprecedented scale the supply chain management today is aimed at the creation of relationships with other structures, the understanding of this relationship nature and their optimization (Gabdullin, 2012, pp. 166-169). At the moment, the upper limit of supply chain management are 5PL providers, but the logistic barter needs 6, 7 ... 10 PL providers, or they need to be called 1LBP, 2LBP ... providers (logistic barter provider) because it has to be a completely different, a dominant representation of logistic role and logistic barter in new economy. Logistics barter - a web, a spider, LBP provider. Will it be a "monster" created by us? There is some probability, but there are the laws of different countries concerning anti-monopoly regulation. 4PL-provider - the system integrator of supply chain (Dybskaya, 2008, p. 944). 5PL-provider - a "virtual" operator using global information technology space (Sergeev, 2008, p. 670).

LBP-provider - a system integrator of global business processes to an end user based on the natural exchange of goods between producers (Gabdullin, 2014, pp. 27-29).

We anticipate the progress of logistic operators and logistic barter capabilities (LBP provider) in the future (Figure 1).

Indifference coefficient (@) is the ratio of development level and logistic operator (provider) opportunities to a reference state (requirement) of a logistic barter (Gabdullin, 2014, pp. 27-29).

$$@ = \varphi\,(I)\,/\,\psi\,(J)$$

where $\varphi\,(I)$ is the level of total logistic operator (logistics) possibilities, not only according to the possibility of monetary relations replacement between producers by barter (it is the similar to a full age for 18 years and for 45 years - the same level of responsibility, but the experience and the skills are different);

$\psi\,(J)$ – the reference condition (requirement) of a logistic barter.

Figure 1
LOGISTIC BARTER INDIFFERENCE LEVEL (THRESHOLD)
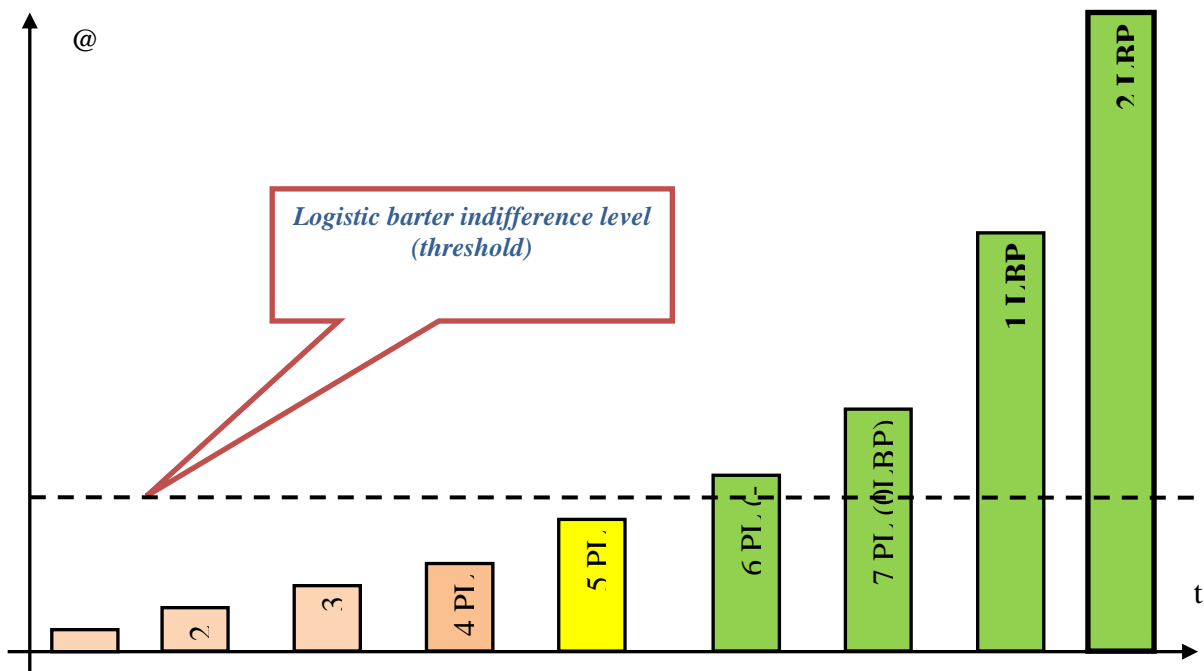
The ratio can be more than one, and this suggests that logistic barter operators must meet not only the logistic barter requirements between manufacturers within development, but also to respond to new challenges of supply chains. LBP provider may exceed the capacities of a standard barter logistic requirement, because an operator is engaged not only in the replacement of monetary relations, but works in general on the supply chain improvement.

The level (threshold) of logistic barter indifference is the level of logistic barter requirements in which a provider may replace all (remaining) financial-credit relations between producers by barter (Gabdullin, 2014, pp. 27-29).

Undoubtedly, an LBP-provider is unimaginable without advanced IT technologies. A magnificent progress of digital technology development allows you to think of an LBP-provider

creation possibility in the near future. It should be borne in mind that an LBP-provider is not a serving element of the economy. He is an operator of different economic system without money and the banks (money-lenders) between producers (b-2-b) (Gabdullin, 2014, pp. 27-29).

In order to make a supply chain operate effectively, organizations need to understand the principles of market operation and the principles of customer (households) behavior influence on its dynamics. Having analyzed the customer values for a company, a final organization of the supply chain will be able to formulate clear offers for customers based on their needs and thus provide consumers an expected price. This approach enables a supply chain to offer a differentiated approach, which automatically reduces the likelihood of excess and insufficient customer service. The agreement with the market is reached (Sergeev, 2008, p. 670).

There is the issue of pricing within a new system. The basis of pricing at a logistic barter (barter logistics) is added value.

Added value is mental and physical costs of staff (team) of an enterprise unit in a barter supply chain (Gabdullin, 2014, pp. 62-66).
And where is an entrepreneurial ability? It is represented by an original set of mental and physical abilities.

In contrast to the prime cost of the added value rejects raw material cost, which nature provides. Why should we evaluate the things given by nature? It belongs to all humanity. Tell me simple if everything is shared. But who could have imagined at the beginning of the 90-s that everyone will have a smartphone with Internet, telephone, and a bunch of additional services?

RESULTS

The essence, the base of logistic barter science (theory) is that natural resources are not subject to assessment. Education, intelligence, and development must reject the "division" of land pieces with natural resources and take human possibilities as the main wealth. According to this theory only supply chain management may fully appreciate the added value of each chain link.

We must understand that the theory of a new economy based on logistic barter requires a developed infrastructure, i.e., supply chain management super system based on LBP providers (Gabdullin, 2014, pp. 27-29).

Banks will work with households. The graphic principle of logistic narter can be represented on Figure 2.3 (Gabdullin, 2014, pp. 397-400).

Figure 2
LOGISTIC BARTER PRINCIPLE
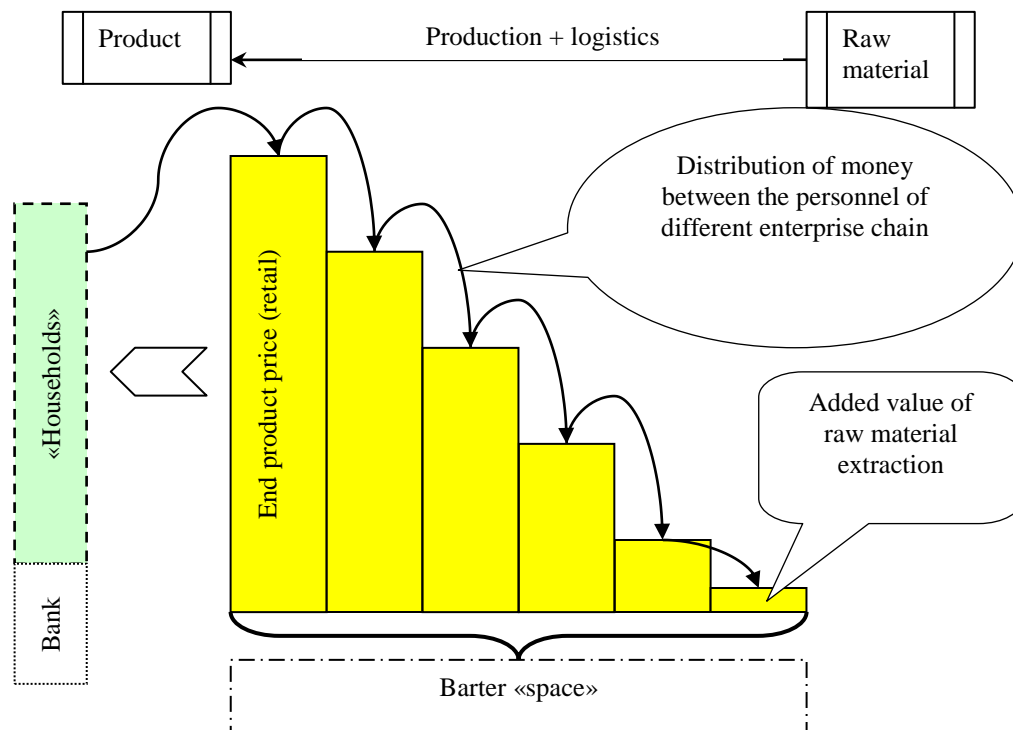
CONCLUSIONS

Logistics is developing, and the possibility of supply chain management may be completely different. In terms of future prospects logistic barter can play its role in the economy. If the logistic barter theory plays a role, it will play the main role.

SUMMARY

Let us try to understand why money is not constant and replace each other over time: natural products - precious metals - paper money - "substitutes" for money (futures, options ...) - electronic money. What's next? You can trace the pattern - more modern money becomes cheaper to produce and now they have only information aspect. If money is only information, why the information about products, materials and components (means of production) cannot also be informative between producers? It may be after all. That is, a mediator ("a loan shark") is not necessary during the barter logistics between manufacturers with the money! Then a logical question arises concerning the need of money for "households", i.e. for end consumers. That's where the money need is justified by the need to delay the consumption of all goods and the market economy stimulus in the form of demand for finished goods of consumption.

The benefit of logistic barter implementation will be "stunning". Maybe there is no perfect tool of logistic barter today and goods cannot be produced on request and delivered quickly. Therefore, the money is necessary as a temporary deferral tool. Yes, of course, a

temporary tool in a man's century was long enough, but science does not know limits. It is developed, including logistic aspect.

The theory of logistic barter (barter logistics) does not give up the money, but ignores it between manufacturers. Logistics has reached up and reaches such heights, when the need for "universal equivalent goods" between the manufacturers simply disappears. An ideal option of money cancellation between producers and logistic barter implementation is "teleportation" technology or "teleportation" theory. Is it fantastic? Yes, it is!

May logistic barter (barter logistics) replace the monetary relations between producers? Yes it may over time. But everything has its time. In conclusion I would like to note that "the development of a unique vision is an extremely difficult task, but it must be solved necessarily and proper (Gattorna J., 1998, p. 669)".

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DEVELOPMENT OF THE PROCUREMENT PRINCIPLES AND MANAGEMENT SYSTEM OF THE «LEAN PRODUCTION» TECHNOLOGY

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ABSTRACT

As a result of continued study as to the Lean Production application, a set of principles was proposed for application of this technology in the machinery production; and a new principle of standardization and flexibility was developed and introduced into such set of principles. In implementing any business processes, this principle allows to focus on standardization of the operations and actions that contributes to the cost reduction unification when implementing these operations. Flexibility enables management of personnel, load of the used equipment, efficient application of the existing facilities (equipment, area). Flexibility of the production processes becomes even more possible and expressed if unified standardized operations exist. Application of this principle was demonstrated on the example, how the machine tool's lubricating-cooling fluid was changed in the production.

Procurement management system with a reorder point system was developed; it should be implemented in ZF KAMA, LLC. In the reorder point system, the procurement volume becomes optimal, and it remains unchanged later. The minimum aggregated stock holding and repeated order costs become the optimization criterion. The order is given when the current stock reaches a threshold level. It is assumed here to consider the security stock, which covers the need for the period of alleged delay in delivery.

Key Words: Lean Production Principles, Procurement Management, Reorder Point System, ZF Production System

INTRODUCTION

ZF KAMA, LLC is a strategic partner of KAMAZ, JSC in the production of gearboxes for KAMAZ trucks. ZF KAMA assembles a 16-speed Ecosplit and 9-speed Ecomid gearbox, and it also has its own production of shafts and gears for these gearboxes, including heat treatment of parts. In introducing the lean production, the ZF KAMA, LLC personnel has undergone both quantitative and qualitative changes (http://www.zf.com/russia/ru_ru/corporate/company_corporate/zf_in_country_corporate/zf_kam a/index.html).

The need to develop and implement projects aimed at improving the efficiency and increasing the productivity is associated with the need to ensure the modern enterprise's high competitiveness and to enhance the global competition in traditional sales markets (Kuzmin, 2007). One of the effective tools to achieve such goals is the ZF Production System (hereinafter referred to as the "*ZF PS*") – the production system of Zahnradfabrik GmbH. In 2011, as part of the project "*Go 4 ZF*" implementation of the unified production system ZF Production System started. The aim of creating the unified production system for all ZF locations is to combine the

best experience of all production systems, as well as to create a common standard that is the basis for improvement.

The study undertaken and submitted in the work aims to justify the new principle of Lean Production application and development of the reorder-point procurement management system in ZF KAMA, LLC as part of the Lean Production application.

METHOD USED TO STUDY

Purpose of work: to improve the Lean Production application through development of a set of principles and implementation of the reorder-point procurement management system (as exemplified by ZF KAMA, LLC). The study was conducted through literature review and analysis of articles, conference proceedings on the application and implementation of the Lean Production application in enterprises of different industries in different countries. The analysis allowed to understand and to develop a set of principles for the Lean Production application and a reorder-point procurement management system.

STUDY RESULTS

Based on the study, the following set of principles was proposed for ZF KAMA, LLC; it relies on both the existing and newly developed principles.

1. The "Exception of defects" principle states that it is necessary to exclude the possibility of production, delivery and acceptance of defective parts. The reasons for possible defects are found out immediately, and they are systematically eliminated through effective solutions. An example would be a Poka Yoke solution - in Japanese it means "error prevention" (BNP Media Staff, 2008). This principle is aimed at developing some production process implementation tools and methods, by which it would be possible to eliminate the errors often occurring due to the human factor.

2. The "Innovation and continuous improvement process" principle. It states that all processes should be constantly reviewed as to the presence of losses and, therefore, improved. The principle allows moving away from losses throughout the business process chain and implementing the team ideas. The Idea Management System (system of supply, accounting and awarding of improvement proposals) backed by all employees at all levels and positions that no idea would remain unnoticed is one of the tools to support this principle at ZF KAMA. This principle tells us that the value stream optimization can take place through a combination of innovative solutions and low-cost improvements (Kaizen solutions) (Womack, 2004, p. 473; Sheree Hanna, 2014; Safronova, 2012, pp. 431-435; http://www.emsstrategies.com/dd110105article.html)

3. The "Process-oriented modelling of customer-vendor relationship" principle means that each next process in the chain of processes is the customer of a previous one. And this customer should be in the spotlight. Therefore, each process is both a vendor and a customer.

4. The "Personnel and teamwork" principle means that the focus is on an individual - the main key to success. The managerial staffs are interested in the knowledge and experience of employees at all levels to make good decisions. The company holds regular open conversations and meetings with the personnel aimed at increasing the level of independence in organizing the labour process (Akbar Javadian Kootanaee et al., 2013, p. 9).

5. The "Just in time" principle means that the required part and information should be at the right time, in the right quality and quantity and in the right place. The Zug system (or MilkRun in English) that is translated from German as a train concept may serve as an example of a tool that supports this principle. It allows making arrangements for a smooth flow of materials, thus, only that is delivered what is actually used or required (Michael A. Cusumano, 2016).

6. A new principle for the Lean Production application is proposed to introduce - the "Standardization and flexibility" principle. It states that each local improvement becomes a standard for all employees, and this new standard, in turn, becomes a basis for continuous improvement in the future. Thus, ZF

KAMA should use identically designed standard forms as in other ZF locations. The only difference will be the language.

What standards and instructions are today, we will examine as exemplified by the instructions for changing the machine tool's lubricating-cooling fluid (hereinafter referred to as the "LCF") in the production. The operator's instructions for changing the LCF include 16 standard A4 sheets of paper filled with small text on both sides. In detail, with technical terms and exact names of the assemblies taken from the equipment documentation, the instructions describe all equipment specifications and LCF parameters and explain in detail and step by step the processes that occur in the equipment. They describe, similarly in detail, the process of LCF changing and recovering with the parameters and chemical reactions, as well as occupational hazards when dealing with the LCF and this equipment. These instructions are hard to be used, since it is difficult to digest this information. But these instructions are required as a means of protection. A worker in real conditions does not use these instructions or reads it once, when he/she put his/her signature in becoming familiar with this document.

The most acceptable option of the instructions is offered to ensure the correct operation and safety measures; it is presented in Table 1.

Table 1
FORM OF INSTRUCTIONS FOR CHANGING THE LCF

1.	Turn off the machine; disconnect the main power supply circuit.
2.	Turn on the LCF system's supply circuit.
3.	Open the valve to supply the LCF from the accumulator tank.
4.	Turn on the supply pump.
5.	Wait until the pump creates pressure in the system (number 3 on the scale, pressure is necessary to prevent air from entering the system).
6.	The pressure is controlled by a single gauge.
7.	Upon reaching the required pressure, open the return valve for LCF recovery.
8.	Wait 12 minutes, according to its own measurement, this is the period required for the full LCF replacement in the system.
9.	Close the return valve for LCF recovery.
10.	Turn off the supply pump.
11.	Close the valve to supply the LCF from the accumulator tank.
12.	Turn off the LCF system's supply circuit.
13.	Connect the main power supply circuit, turn on the machine.

These instructions should be placed in a visible place for their use. According to the Lean Production technology, such standards decrease the risk of injuries, equipment failure, downtime, etc., which results in reduced unanticipated costs and allow the use of the released funds for other needs.

The ideal situation to be pursued is when all carry out the most important operations in an equal way; that is what provides the results of all controlled areas. Correct actions lead to the correct results. All operations, corresponding methods, quite simple and natural things should be spelled out and standardized. This is not an error but an ugly reality. Performance of the simplest actions should be explained, demonstrated and controlled. This is a normal procedure in the Lean Production technology. It is necessary to achieve the predictability, so the standard items should describe the correct actions eliminating the maximum number of the problems discovered during

observations or reduce their impact on the process. The same performance of employees with different work organization, skills and equipment is not achievable; therefore, it is required to bring these factors to a common denominator. This is the goal (Rabunets, 2014; Womack and Jones, 2005, pp. 37–49; Rabunets, 2014; Harbour, 1981; Alesinskaya, 2009, pp. 38-39) that the standardization pursues.

Flexible personnel and load management also involves certain difficulties in the absence of standardized operations. Not knowing the exact time required for a job, it is possible to overload or under load a production sector. The standardized work - a basic description of a work assignment - provides repeatable, predictable processes. It becomes the learning basis, and it is used as a planning tool. The standard should consider five main positions:

1. Safety (injury prevention);
2. Quality (flaw prevention);
3. Method (comfortable work, appearance and feel);
4. Cost price (optimal use of materials);
5. Performance (working speed and efficiency).

The "Standardization and flexibility" principle focuses on the enterprise's ability to change an activity, while maintaining the maximum unification of certain operations and activities; ability to reduce the production costs associated with implementation of standard and unified operations, actions.

Based on the proposed set of principles for the Lean Production technology application, it is proposed to develop a new reorder-point procurement management system. Determining the reorder point is the first task to be solved when using this stock management system. In the reorder point system the procurement volume should be optimized because the costs of delivery of the ordered product unit also include the costs of storage, and that is 5% of the order value. This optimal size is not changed subsequently. The minimum aggregated stock holding and repeated order costs should be the optimization criterion. In the reorder point system, an order is given when the current stock reaches a threshold level.

In addition to the current stock, it is also expected to have the security stock, which allows, in calculations, to cover the need for the period of alleged delay in delivery. Possible delay in delivery means here the maximum possible delay (Pavlovskaya, 2014). The security stock is restored during subsequent deliveries through the use of the second calculation parameter of this system - the stock threshold. The stock threshold determines the stock level, at which the next order is made. The threshold is calculated in such a way that an order enters the warehouse when the current stock is reduced to the security level. In calculating the threshold, any delay in delivery is not considered.

The system's third main parameter is the desired maximum stock (DMS). Unlike the previous two parameters, it does not have a direct impact on functioning of the whole system. In order to make any changes in the situation and to achieve the desired stock size, a single increase in delivery is required from vendors. This action will allow supplementing the stock to the maximum desired level, and in this case, the system will function as expected.

According to calculations of parameters (reorder point system), orders are issued and sent to the vendor for approval (Nerush, 2001, pp. 315-318). The vendor confirms the delivery of goods: it indicates the date of goods delivery and payment schedule. After order confirmation (before delivery) or after delivery of goods, a payment request is issued and approved. At delivery of the goods, receipt of the goods at the warehouse is recorded. The vendor's financial

documents may be issued and submitted to the enterprise later. For effective management of the reorder-point procurement system, all functions are assigned to the external logistics service, in which authorities are clearly delegated (see Table 2). ZF KAMA should have such department.

Table 2
DELEGATION OF THE EXTERNAL LOGISTICS SERVICE'S AUTHORITIES

Name of position	Number of employees	Specialists' powers and responsibility in the implementation of the project
Head of Service	1	Incoming parts quality control
Chief Logistics Specialist	2	Logistics department work coordination
Chief Customs Specialist	1	Execution of financial documents on customs procedures
Senior Logistics Specialist	2	Ordering and order coordination with the vendor
Senior Customs Specialist	1	Customs declaration of the goods transported across the customs border; provision of documents to customs authorities
Logistics Specialist	3	Calculation of procurement (stock) parameters

The introduced system enables to obtain the following performance indicators during the 2-year life cycle of the project and investment of RUB 1,680,000: IRR = 80%; NPV = RUB 663,657; Pay-Back Period (PBP) of 10 months.

CONCLUSIONS

The study resulted in a proposal to supplement the existing set of principles through a new "Standardization and flexibility" principle of the ZF PS system. Each local improvement becomes a standard for all employees, and a new standard becomes a basis for continuous improvement in the future. ZF KAMA will use identically designed standard forms, procedures, actions as in other ZF locations. The only difference will be the language.

The material flow of ZF KAMA, LLC was analysed. The enterprise's procurement data management process was described. To minimize the production costs, introduction of a system of improving the procurement management system is proposed as part of the Lean Production technology. To this end, (reorder-point) calculation of parameters, ordering and sending an order to a vendor for approval were developed and implemented. Based on the identified defects, a project on implementation of the reorder-point procurement management system of components was proposed for improving the ZF KAMA, LLC activities with its vendors; for minor investment, it enables to significantly reduce the current production costs.

SUMMARY

Improvement of the Lean Production technology application does not have any certain limits in time, as time contributes to the activities the new factors, prerequisites, terms and facts that cannot be avoided or ignored. The proposed principle for application of the well-known

technology and new reorder-point procurement system allow addressing the fundamental economic issue - more efficient use of scarce resources - only partially, for a specified period, and it cannot be the absolute truth. Therefore, this issue is studied, until the object of study – the Lean Production technology - is relevant in the activities of economic entities.

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ROLE OF SPACE AND STABILITY IN THE DEVELOPMENT OF TOURISM

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ABSTRACT

In this paper tourism is considered by the authors as a geographical phenomenon which can be evaluated and used in a geographical perspective for understanding the forms and functions of tourism resources, together with the features of the demand for tourism. Tourism is one of the tools to achieve stable and balanced regional development. Separately, the authors consider the concept of "tourism space" and "tourism industry", as a result of analysis of which the authors have made the conclusion that essentially they are in very long standing and close connection with the locally-spatial aspects and elements. The paper discusses various approaches to the study of tourism development sustainability, their relationship with spatial concepts. In order to put into circulation and to assess such complex concepts as stability or sustainable development, the paper has been used already accepted structures such as a prism of stability. In particular, we have considered the indicators proposed by the United Nations (UN CSD), and the World Tourism Organization. The analysis allowed us to define the concept of "stability of a system" as its ability to remain relatively unchanged (save its structure and functional features) within a certain time frame regardless of external and internal perturbation actions. At the same time, we have distinguished three types of stability related with taking into account the spatial factors: 1) positional stability - relatively static notion which reflects fixity of elements of the system in a given area; the existence of systems and their components is related with this; 2) structural stability - a concept that reflects availability of the links (real and potential) between the elements of the system or different systems and having a static-dynamic nature; 3) the functional stability which defines the dynamics of systems, the actual existence of spatial interactions between elements of the system and other systems.

Key Words: *Stability, Tourism, Development, Space, Territorial System, Prism of Stability, Stability Standards*

INTRODUCTION

The term "region" has different definitions and interpretations, but in most cases it means "a space limited by certain borders". In tourism, this space is a complex of tourist destinations each of which has its own characteristics and capabilities. Therefore, the study of sustainable development of tourism should be carried out in accordance with these features, as well as fit into the more general program and be based on a balanced, rather than a partial development.

According to Formica, tourism is a geographical phenomenon which can be evaluated and used in a geographical perspective for understanding the forms and functions of tourism resources, together with the features of the demand for tourism. In addition, a regional analysis

can help to determine the important variables that affect the tourism attraction in the region, as well as to organize the space in the region, and if, moreover, to take into account the characteristics of supply and demand in the tourism industry of a given region, then all this will allow also to achieve a sustainable tourism development. Upon the spatial approach development of the tourism industry can be an effective factor which will accelerate achievement of the objectives of sustainable and balanced development. Goals achievement of which is expected in this industry are go far beyond only economic or social purposes, and require a common pan-industry orientation (Gey O'Chak, 2003), i.e. an integrated territorial approach.

If to consider about the concepts of "tourism space" and "tourism industry", we could understand that essentially tourism is in a very long-standing and close connection with the locally-spatial aspects and elements. Similarly, in its interaction with the natural ecological environment and cultural heritage, tourism is formed in close contact with invisible - and sometimes quite visible - aspects of culture that is connected with human civilization or man-made environment.

Therefore, if we take into account the concept and essence of space, having started to develop the tourism industry, it is necessary not only to create the grounds to satisfy the diverse needs of a wide range of tourists, but also have an impact on a significant proportion of the local population and a vast part of the geographic space in this area causing positive socio-economic and environmental changes with it. For example, by establishing a balance in the spatial distribution of the obtained positive effects of tourism development (Birzhakov, 2006). Such an approach will ultimately lead to sustainable tourism which will bring the space-time and the social equilibrium in conjunction with security, economic stability and preservation of environment.

In order to put into circulation and to assess such complex concepts as stability or sustainable development, it would be useful to draw on the adopted structures such as a prism of stability. This structure was designed to move away from the definition of sustainable development represented in the report by Brundtland. The prism was built based on four interrelated dimensions: (a) environmental stability, (b) economic stability, (c) socio-cultural stability, and (g) institutional stability (Figure 1).

Issues of environmental stability are related with a natural capital and the dominance / conditions of renewable and non-renewable resources. Economic stability includes a man-made capital (natural capital) including most forms of infrastructure (including roads, railways, buildings); it contributes to the improvement of human material, increase in employment and income. The socio-cultural stability includes human capital (e.g., consciousness, experience, knowledge, skills and behavior) including also fundamental human rights. Finally, institutional stability focuses on social capital which includes public institutions, government organizations, and interpersonal relationships, the processes on involvement in planning, partnership / collaboration and power relations.

Figure 1
PRISM OF STABILITY (SPANGENBERG, VALENTIN)
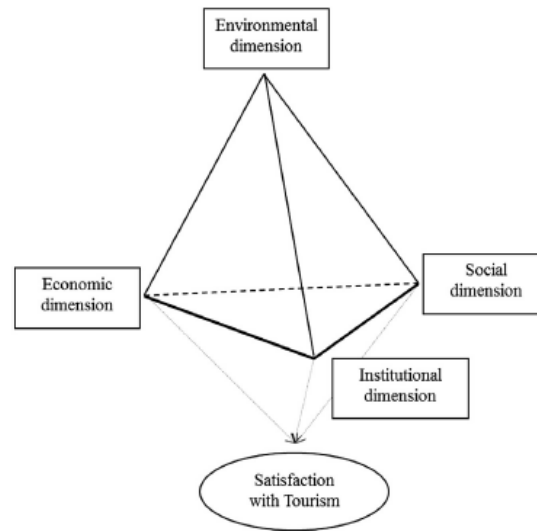
Figure 1 shows a structure consisting of four edges which can be used to develop stability indicators. It is based on such fundamental principles as "people / profit / planet" in the capacity of the main frame of reference, although it includes an institutional perspective as a key dimension.

METHODS

Prism of stability allows setting stability indicators and standards for the needs of planning and management of local communities. The indicators are biophysical, social, administrative and other conditions that afflict people in some situations. Standards also formulate management objectives in terms of numerical values and determine the appropriate level of acceptable limits for the ultimate efficiency indicators, i.e., what final performance will be too high for each indicator. The standards define the conditions that are desired in nature, and the conditions which administrators do not want to exceed.

Indicators and standards for sustainable tourism have been proposed by several organizations. For example, in 1995 g. the UN Commission for Sustainable Development (UN CSD) took the initiative of the five-year program for the development of stability indicators. These figures, though, were centered on a global (not local) level and environmental (rather than cultural, economic or institutional) aspects of stability.

World Tourism Organization has also developed 11 key indicators for sustainable development of tourism which are divided into four categories: (a) environmental, (b) social, (c) economic, and (d) planned. Unfortunately, these figures included only two psychological indicators; they did not leave the choice of opportunities, limit the degree of involvement of all interested parties, are not focused on the local level, and do not offer anything for data tracking.

Other researchers have developed stability indicators for specific geographic areas such as Chongming County, the city of Shanghai in China, the island state of Samoa, and New

Zealand. Modern attempts to define stability indicators focus on the creation of special practical indicators for private communities included in an overall social context.

RESULTS

Thus, the problem of stability of regional socio-economic systems (Gladkiy and Chistobaev, 2002), including tourism and recreation, arose as a result of the space-time conditioning of living, continuity of its stretch, and discontinuity of organization.

As noted above, in the 1980s the concept of "sustainable development" was put into circulation in the sense that unlimited economic growth will lead to undesirable environmental and social impacts, and it challenged the pre-existing model of economic development. After the so-called "Brundtland Report" in 1987, the sustainable development concept began its long journey to become a modern age development paradigm. The analysis of scientific literature has shown that no concept has not been given to as much attention as to "stability".

Initially, for the territorial systems, including for recreational, they tried to use the concepts of stability developed in physics, mathematics, and biology (Armand, 1983). A.L.Serebryanny and A.Yu.Skopin examined the origins of the term and the meaning put in it, and came to the conclusion about the need to replace the term by a "sustained development". Some authors, for example, A.M.Trofimov, V.M. Kotlyakov, Yu.P.Seliverstov, V.A.Rubtsov, R. G. Huzeev consider the concept of "stability" in terms of efficiency and strength structure of the system, search for compromises, the taking into account of the interests of the various components in territorial systems in conditions of uncertainty.

In general systems theory the stability refers to the ability of a system to keep moving on the intended trajectory (to maintain the intended mode of operation) despite the impacts of perturbation actions. It is possible to represent the following definition based on the concept of socio-economic systems. Stability of a system (Gladkiy and Chistobaev, 2002) is its ability to remain relatively unchanged (save its structure and functional features) within a certain time frame in spite of external and internal perturbation actions.

Currently, there are dozens of definitions of sustainability. Upon that, only some of them the state of stability in certain specific respect. This includes the presence of many synonyms (Batoyan, 1989).

In turn, a number of researchers classified the process of sustainable development into categories (e.g., absolutely stable, intermittently-stable, cyclically unstable), or try to beat the terms (for example, whether it is sustainable or balanced, or some other, or simply to justify the term.

No matter how much inconsistent were determinations of sustainability of territorial systems (Kasimov, et. al., 2004), quite obvious unity can be traced there.

The concept of "sustainable development" (Animitsa, 1996, p. 194 - 204) is greatly blurred in its content. For example, the overall stability of territorial systems consists in stability of economic growth (production and consumption levels), stability of economic development (per capita welfare), stability of natural resources (reserves of these resources in the environment) (Gorlinsky, 1994), etc.

However, two semantic components can be distinguished in the definition of sustainable development: the essence of development and the conditions necessary for realization of stability.

In general, the development involves a process aimed at improving human life. According to Dudley, "development is not just the increase in wealth. It means a change: change

in behavior, aspirations and way of perception of the world". "Economic growth in itself does not determine the development. Development is a broad concept which includes changes in the human and institutional levels, as well as economic growth ". It involves a wide range of issues related to quality of life such as average-expectancy life, infant mortality, education level, access to fundamental freedoms, the composition of food, and spiritual well-being.

In other words, a development should not be seen as a problem for technicians and engineers, it is necessary to pay more attention to the historical, cultural, social, economic and political reality. In addition, the main focus of sustainable development is made on transfer of achievements in the future, so that future generations would not left at a disadvantage. In this context, sustainable development has received the following definition of the UN World Commission on Environment and Development (WCED): "development that meets the needs of the present time and without prejudicing the ability of future generations to meet their own needs".

In the work of D. Reid, the sustainable development refers to a development strategy covering all the assets (natural, human resources, financial and other), so that to increase the wealth and prosperity in the long term perspective. Sustainable development as the goal reject policy and practices that support the existing standard of living at the expense of depletion of the production base, including natural resources, and leave future generations in the face of less rosy prospects and greater risks than they have themselves.

CONCLUSIONS

Above context of understanding of sustainable development focuses on the following criteria. Firstly, sustainable development primarily regarded as a long-term environmental preservation and conservation strategy without ignoring the present time. Secondly, it offers a balanced level of prosperity for generations at all levels. Thirdly, it is perceived as a universal setting which is applied to all countries regardless of their level of development, socio-cultural and political conditions.

At the same time, we can distinguish three types of stability related to accounting of the spatial factors: 1) positional stability - relatively static concept which reflects fixity of system elements in a given area, it is related to existence of systems and their components; 2) structural stability - the concept that reflects the availability of links (real and potential) between the elements of the system or different systems and having a static-dynamic nature; 3) functional stability which defines the dynamics of systems, the actual existence of spatial interactions between elements of the system and other systems (Lipetz, 1983).

RESUME

To sum up the above, we can say that stability is an ability to maintain qualitative distinctiveness, i.e. the structure of the territorial system being in a certain state, while a sustainable environmental and socio-economic development (Agafonov, 2000, p. 110 - 118) refers to a forward movement along the chosen strategic path that allows to reach the objectively progressive social goals of the system.

Responding to the question in relation to what this property is considered, it is noted the ability to withstand stresses, environmental changes, perturbation actions, and extreme conditions for a specified length of time. But there is a problem how to evaluate a stability margin of a territorial system. By and large, an estimation of a stability margin by various sub-

systems cannot be reduced to an integral parameter characterizing any mean value. In each case, the territorial system stability margin can be measured:

1) In terms of the intensity of the impact, including the temporal characteristics - duration of continuous exposure period;
2) In terms of the indicators tracking a status of the changes under the influence of anthropogenic impact on the territorial system;
3) In terms of the indicators reflecting the effects of social and economic nature resulting from the impact of changes of the territorial system.

An important notice here is that the stability limits are very mobile, so a stability margin should be constantly updated for monitoring.

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STRATEGIC MANAGEMENT IN HIGHER EDUCATION SYSTEM: METHODOLOGICAL APPROACHES

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ABSTRACT

The article deals with the problems of strategic management in the system of higher education. Today Russian organizations of higher education system are in active search for the strategies of restructuring and development of new managerial and organizational mechanisms. According to the authors, universities should be the main elements of innovative development of infra-structure of their countries, and make a contribution to the formation of human capital. However, to date, strategic management in Russian universities are still deprived of their own serious methodological concept.

The investigators reviewed methodological approaches of strategic management in higher education system of such the authors as P. Drucker, I. Ansoff, K. Tavernier, B. Sporn.

The analysis of development strategy was made; the mission and the main achievements of the university were considered on the example of Kazan (Volga) Federal University.

The paper concluded that, since the institutions of higher education have their own specifics, their strategic management mechanism should be based on its own methodology and should differ from the methodology of strategic management of commercial organization.

Conclusion noted that the strategic management is a risky management, and in the case of its implementation at the university level, the risk of social consequences of the risks, associated with the employment of personnel, is increasing.

Key Words: Strategic Management, Managerial Strategies, Higher Education, Education Management, Innovative Development, Management in Education

INTRODUCTION

Currently changes in higher education system affects not only informative and educational components, but also the scientific and technological components of education and some strategic concepts, developing by national universities.

The problem of strategic management in the system of higher education is not new at the present day, but should become priority in scientific understanding. In spite of quite a number of scientific papers on this problem - so far there is no single methodological "frame." In the context of strategic university management, the state has a great importance - because at this level there is an understanding of higher education strategy, since the role of the state is unquestionable, because it is the main customer and the subject of influence, forming curricula, programs, types of the work and rules of educational activity assessment. (Efimov and Lapteva, 2012)

The significance and importance of universities are largely determined by their ability to solve the following important tasks: to become a major part of the infrastructure of states and territories innovative development; to contribute to the formation of human capital, to

reproduction and development of socio-cultural code of each society and humanity as a whole. P. Drucker accurately described this new role of knowledge as "sociogenerating": undergone radical changes, knowledge from the sphere of existence turned into a sphere of activity. (Drucker, 1993). And, therefore, the universities today, more than ever, play the role of creators a new society, using knowledge for the production of knowledge: "systematically and consistently applying the knowledge to determine what new knowledge are required, whether the obtaining of such knowledge appropriate and what should be done to ensure the effectiveness of its use. In other words, knowledge is used for systematic development and innovation." (Drucker, 1993) This new role of the universities, in fact, involves the creation of strategic management mechanism, aimed at the development of their strategic advantages, which can ensure the devolution to the educational management in innovative development mode. (Burganova, 2004)

Strategic management is becoming the one of the most promising management mechanisms of higher education development in conditions, where universities are faced with new opportunities and new risks, arising due to globalization, the increasing role of human factor. Today, many Russian universities, both large and small, begun to prepare their own development strategies, reflecting the vision of the university development prospects.

The management of higher education becomes the independent field of studies, and strategic management is a separate and completely independent direction. There are an increasing number of works in the West and in Russia, the authors of which try to comprehend the classical heritage of strategic management in relation to specific area of university management. (Stukalina, 2013; Kettunen, 2011) However, despite the active discussion, many theoretical and methodological aspects of the problem are still waiting for their solutions.

MATERIALS AND METHODS

Strategic management is difficult to describe in the framework of a single concept or paradigm. Consider some of the approaches to strategic management.

As you know, guru of American management A. Chandler was among the first to give the idea of strategy to the management theory. He formulated the following principle: "The strategy defines the structure" (Chandler, Alfred D, 1962), and this means the priority of the strategy before the structure. It is important to ensure the adequacy of the organizational structure strategy; as long as changes introduce in strategy, it is necessary to make appropriate changes in the organizational structure. We have seen on the example of many leading foreign universities, that just the education market demands, the pursuit of efficiency and situational changes encourage universities to develop a new strategy.

Similarly, for developing universities strategy, the ideas of I. Ansoff have exceptional value (Ansoff, 2011), because he formulated the main principle of the strategy: it is focused on the external environment of the organization; the analysis and interpretation of the organizational environment is the key to its strategic success.

K. Tavernier ideas had a great influence on the development of strategic management mechanism in higher education, because he offered the most popular approach to the management of strategic changes at the Universities, associated with the SWOT-analysis. (Tavernier, 1991) He shows that there is a real possibility to explore the university and its environment in the framework of SWOT-analysis in terms of the business world: the university produces its own product, has certain resources, competes on a certain market and occupies its

certain share; it is characterized by a specific production process, it is associated with customers, etc.

The most important mechanism of strategic university management is a mission - this conclusion was reached by B. Sporn, the founder of the open systems theory in management science and conductor of a systematic approach to strategic management in higher education sphere. (Sporn, 1999) On the basis of qualitative empirical researches, B. Sporn showed that the effectiveness of strategic management depends on the ability of the University to define precisely its mission. (Sporn, 1999)

RESULTS

In a fast-changing environment the great bulk of Russian universities are involved, to some extent, in market-oriented activities, based on competition for resources. These new conditions force universities to work, guided by a reasonably chosen, unique concept that meets the realities of the particular socio-economic situation in the region. We illustrate the strategic development of one Russian university - Kazan (Volga) Federal University (further KFU), and the changing process of its activities.

Like the vast majority of public universities in Russia, Kazan (Volga) Federal University during the last decade of the twentieth century, was forced to look for direction of active development. Over the past 20 years, the activity of Kazan (Volga) Federal University can be conventionally divided into two phases: adaptation to the new conditions in the 90 years of the twentieth century ("survival") and development under the conditions of recovery in Russian economy in the 2000s – when there were the realization of major projects, infrastructure renewal, number of development programs of KFU were designed at this time.

Its own unique approach to the university management was developed at Kazan (Volga) Federal University. In general, the strategic mission of the federal universities – is the formation and development of competitive human capital in federal districts through the creation and implementation of innovative services and developments. As early as in 2010, Kazan (Volga) Federal University choose strategic course, adopted the Development Programme (Development Programme for Federal State Autonomous Educational Institutions of higher education "Kazan (Volga) Federal University" for 2010 – 2019) and focused financial and infrastructural, scientific and human resources to priority areas of development.

Since the assignment to Kazan (Volga) Federal University the status of federal, its organizational structure has undergone a number of changes. Currently, Kazan (Volga) Federal University include 16 institutes, 1 faculty and 3 high schools, which are combined in natural sciences, physical and mathematical and socio-humanitarian groups.

Five priority directions for solving the problem of forcing transformation of Kazan (Volga) Federal University in a world-class research university were defined:

1. Biomedicine and pharmaceuticals.
2. Oil production, refining and petrochemicals.
3. Info-communication and space technologies.
4. Advanced Materials.
5. Socio-humanitarian researches, within this framework Kazan (Volga) Federal University is planning to 2020 to achieve globally recognized scientific results, following its development strategy.

At the same time, new interdisciplinary disruptive research areas are formed based on the analysis of global trends in the development of science, world and regional markets, prospects of scientific schools of the University.

One of the main tasks of Kazan (Volga) Federal University is to develop a strategic partnership and networking with leading universities, research centers and organizations in Europe, USA, South-East and East Asia and the Middle East. Only within the framework of partnership agreements, the University will realize scientific and educational cooperation with 190 universities, scientific centers and companies from 54 countries. Kazan (Volga) Federal University cooperates with the largest enterprises of the Republic of Tatarstan, as well as with the leading production and engineering companies in Europe and Asia. Cooperation activities include the creation of training systems for enterprises, the development of joint research laboratories and educational centers, consulting and other activities.

In general, Kazan (Volga) Federal University expanded its presence and increased its positions altogether in 10 leading Russian and international rankings. Kazan (Volga) Federal University moved to the fourth place after St. Petersburg, Moscow and Novosibirsk universities, among 78 classical universities of the country.

And although today Kazan (Volga) Federal University has some difficulties, related to budget cuts, tighter fiscal policy, the optimization of the state, it can be stated about the successful implementation of strategic goals.

DEDUCTIONS

Turning to the deductions, we should note that Russian universities strategies are often developed by copying American or European model of Research University. However, the analysis of historical development of Russian education system and academic traditions force us to think about the choice of its strategic path.

Successful implementation of the strategy depends on radical changes in all components of the university, concentrated work of the entire team for coordination of these changes, and focus the efforts on the embodiment of initiatives and achievement settled strategic goals.

Underlining the importance of the above ideas of strategic management theorists and the analysis of strategic development of one of the Russian higher education universities (Kazan (Volga) Federal University) for the formation of managing mechanism of universities changes, it should, however, recognize that it reflects the specifics of management mainly economic organizations, compelled to exist in competitive environment of the market. Since higher education institutions have their own specifics, their strategic management mechanism should be based on its own methodology, differ from the methodology of strategic management of commercial organization.

CONCLUSION

Strategic management of universities should be oriented not only on the implementation of their cultural and economic goals, but also on fulfilling its social obligations towards the population and employees, on creation for them conditions of desired level and quality of life. We must not forget that the strategic management is a risky management, and in the case of its implementation at the university level, the risk of social consequences of the risks, associated with the employment of personnel, is increasing. The university cannot risk the health and welfare of its employees and the subject of university management should be responsible for the

negative consequences of their bad decisions. This fact determines the particular complexity of the strategic management in higher education system.

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THE INDICATIVE MODEL OF FINANCIAL STABILITY MANAGEMENT OF THE BANKING SECTOR

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ABSTRACT

During the latest decade, the problems of strengthening of the financial stability of the banking sector of Russia become especially topical in condition with increased connection between economical and financial spheres of activity, sharpening of competition at the market of banking products and services, as well as in connection with increasing number of financial transactions. At the same time, in conditions of financial markets' globalization and activation of transboundary process of formation of the world financial system, a significant influence on development and stability of the banking sector is caused by environmental factors. New challenges condition the necessity in extension of the researches on the content and directions of strengthening financial stability of credit organizations (De Haas and Van Lelyveld, 2014).

This article is dedicated to the problem of an adequate assessment as an element of financial stability management of the banking sector. As a part of this research, the authors tested the indicative model of assessment of financial stability of Russian banking sector, which is about defining the level of stability of system's functioning based on the value of an integral indicator. Besides, with the help of correlational-regression analysis, we detected the factors that define the financial stability of Russian banking system, analysis and prognosis of which favor overcoming destabilizing tendencies in the system's activity. The methodological base for the research was represented by general scientific and specific scientific methods (economics and statistics, calculative and constructional ones). As per the results of the research, it was detected that the financial stability of the Russian banking sector is influenced by such indicators as capital adequacy ratio, the share of assets that yield interest in the gross assets, current arrears rate, return on total assets, and at preserving the current trend the level of stability of the Russian financial sector will decrease soon.

Key Words: *Financial Stability, Banking Sector, Indicative Model, Correlational-Regression Analysis, Prognosis, Management*

INTRODUCTION

One of the directions in maintenance of the stable functioning of Russian banking system in conditions of development of global economic processes is an assessment and prognosis of stability of the banking sector of Russia.

Both Russian and foreign academic and practical communities are constantly searching for the model of assessment of banking system's financial stability, and they are also selecting the coefficients that are needed to perform these calculations. The method of assessment of stability of commercial bank and banking system is described in detail in domestic and foreign economic literature. Existing methods are differentiated according to the means of conduction, the availability of the information, the principles, spheres and scales of assessment, the complexity of calculations, the organization of their conduction, their length and correctness

(Naveh et al., 2012).

However, despite the diversity of the methods used for assessment of financial stability of credit organizations and banking sector, an ideal model that would allow the most accurate specification of the banking system's stability has not been created yet, and the single index of its assessment has not been concluded yet (Klaas et al., 2014).

M.A. Bobrik offered the solution of this problem, represented by the developed economic model of assessment of financial stability of credit organizations and banking sector, which is based on aggregated indicator. Within the frameworks of the research, we tested this model, exemplified by the banking system of Russia. Besides, with the help of correlational-regression analysis, we detected the factors that define the financial stability of Russian banking system, analysis and prognosis of which favor overcoming destabilizing tendencies in the system's activity.

METHODOLOGY

The calculation of an aggregated indicator (AI) implies the definition of some synthetic value as a geometric average of the following indicators: capital adequacy ratio (H1.0) - CAR, the share of assets that yield interest in the gross assets (AYI), credit activity coefficient (CAC), the level of past-due debt (PDD), return on total assets (R), and the coefficient of urgent resources use (COURU) according to the following formula (Lavrushin and Mamonova, 2011):

$$AI = \sqrt[6]{H1 * AYI * R * \text{CAC} * \text{PDD} * \text{COURU}} \qquad (1)$$

Formulas for calculation of the indices for calculation of aggregated indicator are presented in Table 1.

Table 1
INDICES FOR CALCULATION OF AGGREGATED INDICATOR

Index	Numerator	Consequent
Capital adequacy ratio (H1.0)	Own funds (capital)	Risk weighted assets
The share of assets that yield interest in the gross assets (AYI)	Income-earning assets	Assets
Credit activity coefficient (CAC)	Loan indebtedness	Assets
The level of past-due debt (PDD)	Past-due loan indebtedness	Loan indebtedness
Return on total assets (R)	Net profit	Assets
The coefficient of urgent resources use (COURU)	Borrowed funds (credits obtained from the Bank of Russia, funds of credit organizations, clients' funds, bank's dept obligations)	The assets that yield interest (funds at credit organizations, investments in securities, loan indebtedness)

RESULTS

Let us test the method of calculation of aggregated indicator exemplified by the Russian banking system and let us make a prognosis regarding the stability of the system in the future. The results of indicator's calculations on the banking system of Russia are reflected in Table 2. (http://www.cbr.ru)

Table 2
THE RESULTS OF CALCULATIONS OF AGGREGATED INDICATOR'S INDICES, IN %

Dates	Capital adequacy ratio (H1.0)	The assets that yield interest, in the total amount of assets	Credit activity coefficient	The level of past-due indebtednes s	Return on total assets	Coefficient of urgent resources' utilization	Aggrega ted index
01.01.2013	13,70	85,86	68,66	3,70	0,53	94,56	15,69
01.04.2013	13,40	87,83	69,93	3,74	0,48	92,35	15,46
01.07.2013	13,50	87,92	70,80	3,59	0,48	92,62	15,40
01.10.2013	13,40	87,84	71,67	3,59	0,48	92,48	15,41
01.01.2014	13,50	86,82	70,59	3,45	0,42	94,23	14,99
01.04.2014	13,20	87,18	70,97	3,62	0,39	93,42	14,87
01.07.2014	12,80	87,47	71,60	3,77	0,36	92,79	14,68
01.10.2014	12,60	87,09	71,68	3,88	0,36	92,48	14,75
01.01.2015	12,50	83,08	67,11	3,80	0,12	97,47	12,13
01.04.2015	12,90	85,13	69,10	4,47	0,01	94,31	7,98
01.07.2015	12,90	86,50	69,68	5,06	0,06	92,75	11,45
01.10.2015	13,00	86,32	69,84	5,08	0,09	93,24	12,34
01.01.2016	12,70	86,54	69,29	5,30	0,08	93,46	11,99

For solving the task of predicting the stability of banking sector of Russia, let us use multivariate correlational-regressive analysis. At the first stage of the analysis, for detection of the most significant indicators that influence financial stability of the Russian banking sector, let us use an economic tool, namely, the linear coefficient of pair correlation, the essence of which lies in definition of the correlation ratio between the two factors.

The calculation of the coefficient is performed according to the following formula:

$$r_{xy} = \frac{\sum_{i=1}^{n}(x_i - \overline{x}) * (y_i - \overline{y})}{\sqrt{\sum_{i=1}^{n}(x_i - \overline{x})^2} * \sqrt{\sum_{i=1}^{n}(y_i - \overline{y})^2}} , (2)$$

where y is a dependent variable;
x is an independent variable;
$\overline{x}$ is a mean value of independent variable;
$\overline{y}$ is a mean value of dependent variable

Let us take an aggregated indicator of financial stability of Russia's banking sector as a dependent variable, and the following would represent the independent variables: capital

adequacy ratio (x_2), the share of assets that yield interest in the gross assets (x_2), credit activity coefficient (x_3), the level of past-due debt (x_4), return on total assets (x_5), and the coefficient of urgent resources use (x_6).

Based on the calculations of linear coefficient of pair correlation, we obtain the correlational matrix, which is presented in Table 3. It is represented by the square array, in which at the intersection of the corresponding row and column a correlation coefficient is found between corresponding parameters.

Table 3
CORRELATIONALMATRIX, IN MEAS

Variables	y	x_1	x_2	x_3	x_4	x_5	x_6
y	1						
x_1	0,867783	1					
x_2	0,800597	0,472678	1				
x_3	0,502982	0,207084	0,863556	1			
x_4	-0,78507	-0,47946	-0,20869	-0,30311	1		
x_5	0,929399	0,618494	0,589944	0,49198	-0,62295	1	
x_6	-0,33206	-0,2616	-0,92329	-0,80783	-0,08657	-0,31707	1

At correlational matrix, the values of the linear coefficients of pair correlation of more than 0.7 were pointed out, i.e. those that reflect the close interconnection between independent variables, and these independent factors were consequently excluded.

The choice of indicators that would be significant in terms of stability of the Russian banking sector was made on the base of correlation between independent variables, which allowed excluding the indicators that are multicollinear, i.e., which have close correlational connection, which makes a multiple regression equation built on their base an unstable one and the one that is exposed to strong changes even at insignificant change of independent variables.

According to the results, the factors that meet the requirements of variables' selection include x_1, x_2, x_4, x_5.

At the next stage of multivariate correlational-regressive analysis, we built the linear equation of a multiple regression of the following form:

$$y = b_1 x_1 + b_2 x_2 + b_4 x_4 + b_5 x_5, \qquad (3)$$

where b represents the coefficients at an independent variable x;

y is an aggregated indicator of financial stability of banking sector;

x_1 is acapital adequacy ratio (H1.0);

$x_2$is the share of assets that yield interest in the gross assets;

x_4 is the level of past-due debt;

x_5 is a return on total assets

For building the model, we used one of the basic methods of regression analysis, necessary for the assessment of unknown parameters of regression model – the least square method (hereinafter referred to as LSM), implemented with the help of "Data analysis" MS Excel package.

Then, we analyzed the significance of regression parameters. In the first turn, we

considered the value of R-square coefficient (determination coefficient). It is considered as a measure of dependency of one random value from the multitude of the others. The closer is coefficient's value to 1, the stronger the dependency is. The value of determination coefficient that equals 1, means a functional dependency between the variables (Brauers et al., 2014). In our model, the value of determination coefficient equals 0,9222, consequently, we may suppose that the dependency between the factors is close to the functional one.

According to the results of the model, we derived a linear equation of multiple regressions that defines financial stability of Russian banking sector of the following form:

$$Y = 35,8 + 1,73*x_1 + 0,12*x_2 - 1,44*x_4 + 18,15*x_5 \qquad (4)$$

As we can see from the obtained equation, each indicator has both multidirectional impact on the dependent variable and various levels of impact on dependent variable. Thus, the growth of the capital adequacy ratio, the share of assets that yield interest in the gross assets andthe return on total assets leads to enhancing of financial stability of Russian banking sector, and the increased level of past-due indebtedness leads to decreased aggregated indicator, while the highest level of influence on financial stability of Russian banking sector belongs to return on total assets (b = 18,15), and the least influence belongs to the share of assets that yield interest in the gross assets (b = 0,12). This equation describes the dependence between aggregated indicator of financial stability of Russian banking sector with the parameters that influence it, with a high accuracy

Analyzing and controlling the parameters that are included in the equation as independent variables with the usage of built equation, one may not only assess the current level of financial stability of Russian banking sector, but also make predictions concerning its stability in future with the purpose of determination of problematic zones and the search of ways to overcome them yet now.

Then, we made a prognosis regarding the level of stability of Russian banking sector in 2016-2017 with the help of correlational-regression analysis. For this, we predicted independent variables that influence the indicator of financial stability of Russian banking sector, namely capital adequacy ratio (x_1), the share of assets that yield interest in the gross assets (x_2), current arrears rate (x_4), return on total assets (x_5). The prognosis of these factors was performed with the help of Excel function "Tendency". Obtained prognoses of the factors were substituted into the built multiple regression equation that defines the level of financial stability of Russian banking sector. Thus, we obtained predicted values of the indicator of financial stability of Russian banking sector. The results of the prognosis are presented in Table 4 and Figure 1.

Table 4
PROGNOSIS OF INDICATOR OF FINANCIAL STABILITY OF RUSSIAN BANKING SECTOR, IN %

Dates	Capital adequacy ratio (H1.0)	The assets that yield interest, in the total amount of assets	The level of past-due indebtedness	Return on total assets	Aggregated index
01.04.2016	12,53	85,62	5,07	-0,02	10,74
01.07.2016	12,45	85,49	5,21	-0,07	10,27
01.10.2016	12,37	85,35	5,35	-0,11	9,79
01.01.2017	12,29	85,21	5,50	-0,16	9,32
01.04.2017	12,21	85,08	5,64	-0,21	8,85
01.07.2017	12,13	84,94	5,78	-0,25	8,38
01.10.2017	12,05	84,80	5,92	-0,30	7,90
01.01.2018	11,97	84,66	6,06	-0,34	7,43

As we can see from the results of the prognosis, presented in Table 4 and Figure 1, we may observe a negative tendency, and, thus, if the current trend is preserved, the level of financial stability of Russian banking sector will be decreasing.

Figure 1
PROGNOSIS OF INDICATOR OF FINANCIAL STABILITY OF RUSSIAN BANKING SECTOR
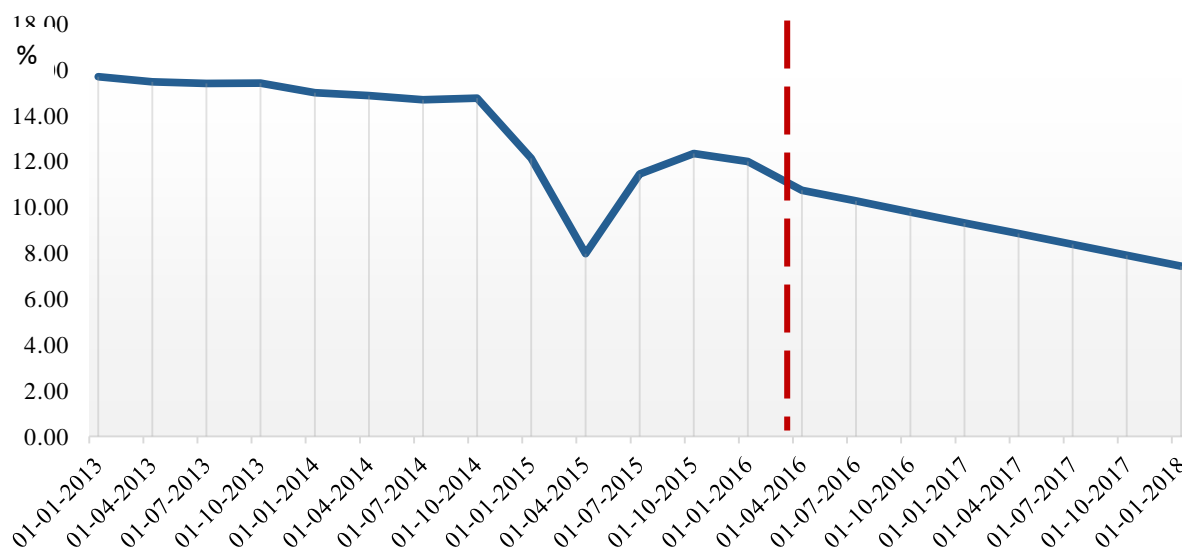
CONCLUSION

Summing up the research, we may conclude that by means of correlational-regression analysis it was detected that the financial stability of Russian banking sector is influenced by such indicators as capital adequacy ratio, the share of assets that yield interest in the gross assets,

current arrears rate, return on total assets, and if the current trend is preserved, the level of stability of the Russian financial sector will be decreasing.

SUMMARY

The application of an indicative model of managing financial stability of the banking system on a regular basis by both particular credit organizations and regulatory authority, will not only allow detecting problems in the activity of commercial banks, but also to timely takes measures to eliminate them, to detect reserves for increasing financial stability, which in the long run will lead to banks' stability and will create conditions for stable development of banking sector.

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INTERNET MARKETING AS A FACTOR OF DEVELOPMENT OF SMALL AND MEDIUM BUSINESS IN CONDITIONS OF ECONOMIC CRISIS

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ABSTRACT

In the article, small and medium business is presented from the point of view of its influence on the parameters of the national economy. Key trends and factors of its development in conditions of crisis were identified, the sector with the most negative and positive dynamics, as well as reducing the scale and scope of state support of small and medium business were noted. A sociological survey of small and medium business is the basis for the formation and argumentation of the author's findings and suggestions. The results of a survey on the subject of identifying the problems and expectations of entrepreneurs of the city of Kazan the Republic of Tatarstan in 2016 were shown and analyzed. The survey results the relationship of the use of technologies of Internet marketing by the subjects of small and medium business and their relations to the economic conditions of doing business in the country and expectations for 2016. Respondents that use Internet technology have a positive attitude to the economic situation in the country; they are seeing an increase in the number of Internet users in Russia, the creation of new tools and applications to promote companies and brands on the Internet, the growth of customer confidence in Internet Commerce. It was concluded that Internet technologies are of great importance not only in the marketing promotion of the projects, but also directly affect the dynamics of development and the psychological state of the entrepreneurs: their relation to the economic crisis and expectations for 2016.

Key Words: *Small and Medium Business, Entrepreneurship, Financial Crisis, Internet Marketing, Social Networking, Surveys, Problems, Expectations, Business Requirements, Business Activity, Government Support*

INTRODUCTION

In the modern world with a predominant market economy entrepreneurial activity is an important factor in the development of the state. Functioning in the system of national economy small and medium business can solve many social and economic problems, among which the most important is the provision of employment, generation of income and ensuring the demand of society for goods and services. Actualizing the role of small business, scientists consider it also as "...a catalyst for sustainable economic development of the region, creation of an active business environment and mitigation of social problems" (YaGorfinkel, 2016). Emphasizing the importance of small business to the country's development, pay attention to its ability to quickly adapt to changing market conditions, a significant contribution to the development of the regions, as well as the ability to quickly implement technological innovations and renewal of production (http://www.tpp-inform.ru/regions/5822.html).

However, based on data from the Ministry of Economic Development of the Russian Federation in conditions of economic crisis for 2014-2016 the paces of development of small and medium business have decreased significantly.

Active discussion of current approaches to the development of efficient algorithms and finding the most optimal solution for development of small and medium business, taking into account international experience and national peculiarities of Russia has a long history. The economic situation in the world dictates new rules and laws in order to become a successful entrepreneur.

METHODS

The problem of substantiation of approaches to the development of small and medium business has a fundamental basis of scientific research. World economic science postulates the theory of small and medium business, regularly supplementing them with the results of modern author's development. Policymaking of the state support of small and medium business in conditions of economic crisis attracts the attention of scientists (Volkova and Popova, 2016). Considerable interest has the range of viable solutions, considering the world experience in conjunction with the national organizations of marketing techniques to promote the brand in crisis (Frenkel et al., 2015). It should be noted that the proposals of Russian scientists in this field have also become part of the international scientific discussion. Thus, a comprehensive analytical review of aspects of the development of the research topic, conducting a sociological survey of small and medium business is the basis for the formation and argumentation of the author's findings and suggestions.

RESULTS

Features and criteria of definition of subjects of small and medium business in the Russian Federation pay key attention to the number of employees, size of turnover and balance sheet value of the assets. The small size and limited value of assets, prejudice of the superiority of small organizations and business, at the same time, lead to typical business risks. If in the first case, small and medium enterprises are considered as the most mobile, flexible, innovative, capable of rapid adaptation to changes in consumer demand, which also have low operational costs, efficient management structure and high level of entrepreneurship (Skibitskiy et al., 2011), in the second, their activity is substantially complicated by imperfect tax and legal system, limited access to finance, low level of development of market relations, a high percentage of the shadow economy and the lack of qualified personnel in the labor market (Frenkel et al., 2015).

Therefore, strengthening of institutional risk factors resulting from the imposition of financial and economic crisis of 2008 and 2014, as well as a number of structural imbalances, determined the sharp deterioration of conditions for small and medium business in the Russian Federation. The influence of external factors, including the decline in world oil prices and trade and financial sanctions against the country, determined the rapid devaluation of the national currency, rising inflation, falling consumer demand and, as a result, lower income levels (Bondarenko and Kupchinskiy, 2015).

According to the data of the Department of development of small and medium entrepreneurship and competition of the Ministry of Economic Development of Russian Federation, since 2014, the work of small enterprises recorded a reduction of turnover by 4.4% in comparison with 2013. It is worth noting that from 2009 to 2013, the overall dynamics of

indicators of small business has been extremely positive. In this period 29 % increase in the number of small enterprises, 14 % - number of employees by 12% the volume of trade. The performance indicators of medium enterprises in the specified period indicate negative trends, accompanied by an overall reduction of 45% in the number of enterprises 34% of employment, 36% of turnover medium-sized enterprises.

The largest negative impact in the sphere of small and medium business crisis has had on trade, business transport, activities in the field of advertising and tourism. A deep crisis has affected the construction and related industries. Worrisome almost complete suspension of projects related to the innovative development, the curtailment of projects promoting rural and youth entrepreneurship.

On an background of incensement of manifestations of the crisis in the economy in general and the sector of small and medium business, note the number of industries characterized by positive dynamics – this is it-technology, food processing and pharmaceuticals. The growth of development indicators in these industries was a result of increasing demand for import-substituting products within the country. The main problem, thus, lies in the lack of qualified personnel, able to solve complex tasks and provide enterprise development.

Given the importance of small and medium business to the economy and crisis situation, complicating its work, the Government of the Russian Federation implements the policy of stimulating development and support of income. In accordance with it in 2016 on the provision of direct subsidies to small and medium enterprises by the Ministry of Economic Development of the Russian Federation planned to 10.2 billion rubles. In addition to this amount, 1.6 billion rubles are allocated for co-financing of objects of capital construction and development of objects of infrastructure of support of small and medium enterprises. It is worth noting that the declared sum of 5.1 billion less than allocated in the previous year.

Commending the work of small and medium enterprises, it is not so much to outline the main trends and indicators of their work, how to consider the conditions of their work and the general attitude of the formed situation. To this end, we have produced a survey "Business activity, problems and expectations of small and medium business in 2016". The respondents were 100 businessmen of Kazan. 80% of them were micro-businesses, 10% for small and medium business. Respondents were residents of the Industrial Park "Nikolskoye", Technopark of high technologies "IT-park" of city of Kazan and small innovative enterprises of Kazan (Privolzhsky) Federal University. Entrepreneurs responded to 50 questions relating to their current situation and expectations for 2016. Key results of the survey are presented in Fig. 1.

The results of the survey identified the deterioration of conditions for business development in the region in the result of the growing crisis. So consider 62 % of the respondents. Key factors expected deterioration, identified by the respondents, - the decline in consumer demand; the reduction of the capacity market; the flaw of investments and financial resources for the development of small and medium enterprises, including due to the increase in loan interest rates; restricted access of small enterprises to the accounts of several banks due to the recall of their licenses by the Central Bank.

35% of respondents (all the questions associated with the use of Internet technologies in promoting their company with positive respond) make maximum use of Internet marketing in their business. 44% - use partly. 21% - do not use.

Figure 1
THE RESULTS OF THE SOCIOLOGICAL SURVEY "BUSINESS ACTIVITY, PROBLEMS AND EXPECTATIONS OF SMALL AND MEDIUM BUSINESS IN 2016"
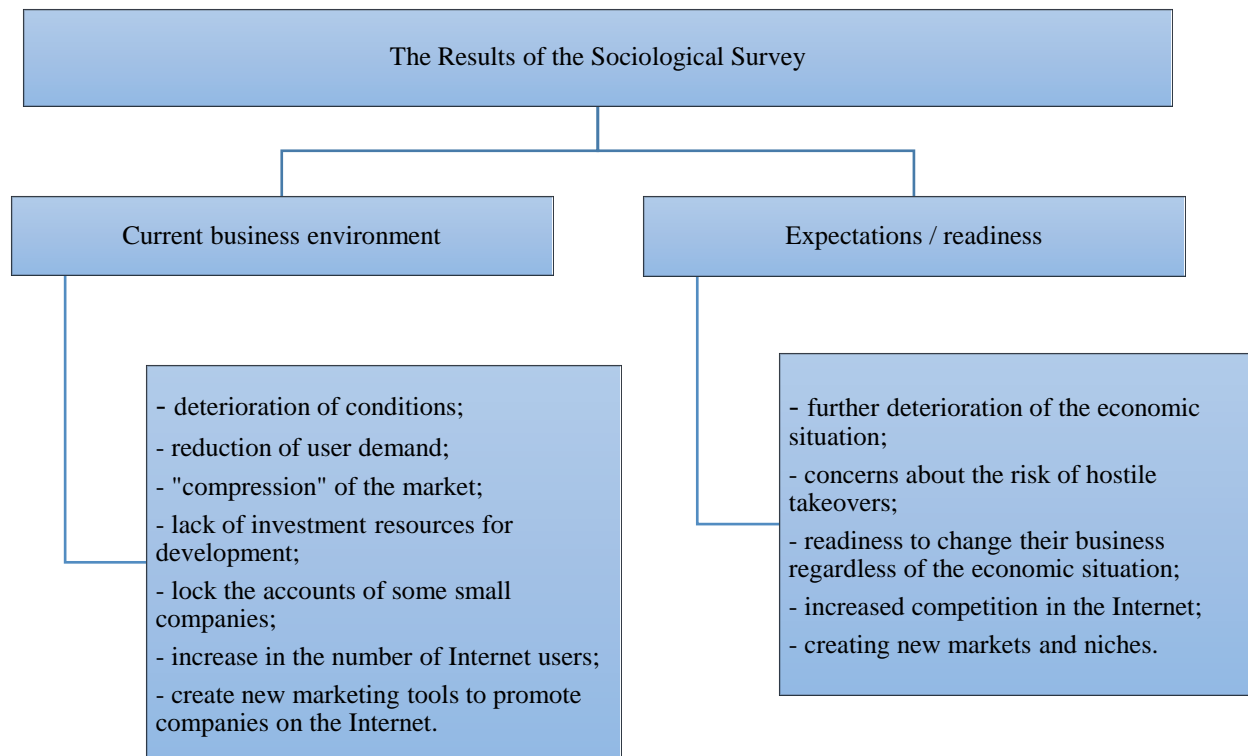
It is important to note that the result of this survey was to identify the relationship between entrepreneurs responded positively to questions about using Internet technologies in promoting their business and entrepreneurs responded positively to questions about current business conditions and dynamics of development. 89% of entrepreneurs who make maximum use of Internet technologies in promoting their business relate to the 38% who see positive aspects in the economic crisis for their businesses. They note the following improvement conditions: growth in the number of Internet users in Russia, the creation of new tools and applications to promote companies and brands on the Internet, the growth of customer confidence in Internet Commerce.

67% of respondents said that they expect worsening of economic situation. The remaining 33% of respondents seeing a positive future using the Internet-technology (33% responded positively, 83% of entrepreneurs make maximum use of Internet technologies in promoting their business).

Despite the fact that the survey has many responses describing the deteriorating conditions in the economy, more than 88 % of the respondents declared their willingness to make structural changes in their own business, regardless of the current economic situation, including the introduction of Internet technologies in promoting their brand. The most resolute attitude in this matter was shown by the representatives of small forms of business organization, especially, representatives of micro-business. In this context, it is confirmed by the characteristics of small business as the most flexible and mobile, able to adapt to any economic environment.

SUMMARY

Generalizing the above, we note the absence of critical phenomena in the sphere of small and medium business in the conditions of crisis. So, not paying attention to the deterioration of business conditions and expecting deterioration of the economic situation in the future, small businesses say they are ready to reconstruct your business according to the market requirements, the use of Internet technologies in promoting their business. It is worth noting that the crisis is not only problems but also opportunities for development: our survey showed that the majority of respondents that use Internet technology have a positive attitude to the economic situation in the country and show a positive trend in the development. Because of it the industries, ensuring growth even in difficult conditions deserve the attention. Their experience and promoting using Internet resources should be used in other industries, which require innovative and flexible solutions. As under existing conditions, the small and medium business using Internet technologies based on their characteristics (flexibility), can provide for overcoming the crisis and economic development.

CONCLUSION

We believe that a fast-growing audience on the Internet can represent an area of high interest for most advertisers. The Internet is a vast field for the development and promotion of a variety of businesses in many industries, and the audience network is a young, modern, generally well-educated and affluent part of society. Therefore, the use of Internet technologies is one of the key factors in the development of small and medium business in conditions of economic crisis.

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INVESTIGATION OF THE SPECIFIC FEATURES OF CHANGE MANAGEMENT IN STATE CIVIL SERVICE ORGANIZATION

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ABSTRACT

In ongoing research on issues of public service, the idea of using organizational change in the civil service is more and more clearly formulated.

Based on the methodology of Bourdieu, the authors studied the established patterns of consciousness and behavior of officials (doxa), as well as trends in the rethinking of (changes in) their well-established content of values (heterodoxy).

The authors attempt to analyze the changes in organizations of public service and to understand how the studied situation is comprehended by civil servants. In order to study the subject it was necessary to turn to the micro level to include in the focus of analysis the everyday practice of the organization's employees, their life experience and value orientation.

To study doxa, or the existing value orientations of civil servants, a research was conducted using the questionnaire by M. Rokich system. According to the method of M. Rokich, two types of values were allocated: terminal and instrumental. Values were merged into a collective notion of doxa, which becomes a research tool of rooted samples of consciousness and behavior.

The main research interest was caused by the differences in the groups of public servants according to the distribution of instrumental and terminal values.

On the basis of this research the conclusion has been done about the exhibiting of heterodoxy, that is, a critical attitude to the existing doxa, about the degree of awareness by public officials of new values, new patterns of behavior, thinking and perception.

The information, obtained by the authors in the study, shows that for the success of change management in organizations of the state service it is necessary to develop special methods of informing employees about the nature and inevitability of introduced innovations and their involvement in the change process, train and develop the younger generation of public servants, to take seriously additional vocational training and retraining.

Key Words: Organizational Change Management, Civil Service, Professionalism, Value Orientations, Terminal Values, Instrumental Values, Doxa, Heterodoxy

INTRODUCTION

The subject of the proposed research is organizational changes within the state civil service. Undoubtedly, the state civil service is a kind of social organization and like any organization in the process of it's operating, must develop, implement new technologies, master programs and mechanisms of development, and develop a system for the upcoming changes.

In order to detect specific of changes in the organizations of state service and to understand how the studied situation is comprehended by its partisipants, it is necessary to turn to the micro level to include in the focus of analysis the everyday practice of the organization's employees, their life experience and value orientation. (Caira, 2016) Our methodological position is based on the recognition that the individuals themselves create and change the world around them. That is why the study of organizational changes in the state service means the study not only structural changes of the state administration system, but also an active role in its changing of the agents of this system themselves. (Burnes and Jackson, 2011)

METHODOLOGY

To describe the relationship between the everyday experience of individuals and contexts that define it, we use the theory of social praxeology by P. Bourdieu, and introduce special concepts of doxa and heterodoxy (Bourdieu, 1975). "Doxa", in the understanding of Bourdieu, is what is accepted by everyone, and is taken for granted. It is possible to understand 'doxa' as socially accepted, welcomed by everybody "subtext" about how a social world exists. For example, considering the state civil service, we often perceive it as something obvious, as a universal and absolutized Institute. For institute of state civil service in a number of different properties are inherent, that are perceived as self-evident, for example, the value of stability, government support for the administrative resource,but not for the initiative from downwards, social security, image of the public service and benefits for belonging to it. Using the approach of Bourdieu, we will try to examine the "doxa" of public service attentively and try to see what is behind it, what it allows and what it consists of. (Bourdieu, 2005)

The Bourdieu approach is based on the fact that doxa includes the processes of the everyday world, and it is opened for changes. At the moment when the "doxa" ceases to be perceived as something natural, alternative to the "doxa" is formulated. Bourdieu calls this situation "heterodoxy". The heterodoxy is a manifestation of disagreement with prevailing ideas about how the life should be arranged, that is "doxa". The emergence of heterodoxy means that the "doxa" began to be discussed, analyzed, and can be rejected. For Bourdieu, the heterodoxy is a sign of the awakening of human consciousness.

Thus, in the context of the review of public administration, the heterodoxy is the moment of awareness by the state civil service itself and its agents of necessary changes. The process, by which the organization will begin the implementation of changes, is a change of doxa to heterodoxy. The heterodoxy involves changing of old values and norms, and, it is obvious, that for any organizational changes new legal instruments, motives, values and goals, ways of functioning are needed.

Based on the ideas of Bourdieu, we can say that at the moment it is necessary to create "heterodoxia" for getting changes and their adoption by the agents, i.e. the consciousness of new values, new patterns of behavior, thinking and perception. (Fram, 2005)

Based on the methodology of Bourdieu we will study the established patterns of consciousness and behavior of Russian officials (doxa), as well as trends in the rethinking of (changes in) their well-established content of values (heterodoxy). We proceed from the assumption that the change in the outlook of government servants, in the system of value orientations and their behavioural samples is a major component of transformation of the whole institute of the public service, happening in our days. In order to understand what makes people accept or resist the change, you need to understand the values and experience of the individual or group.

THE STUDY

A special feature of our study is that in the procedure of the study civil servants, with different work experience in the public service were involved. The data obtained will help to answer the question: what are the specifics of doxa of employees in the state civil service for more than 7-10 years, and what are the ideas about the values of public service junior professionals, whose experience is less than 3 years?

The respondents were represented by two groups:

1. group A: the state servants of the level of the main posts of civil service of the Republic of Tatarstan, whose experience ranged from 7 to 10 years (N=72, 2015.);
2. group B: public servants of the level of Junior posts in the ministries and departments of the Republic of Tatarstan, whose experience ranges from 1 to 3 years (N=69, 2015).

To study doxa, or the existing value orientations of civil servants, a study was conducted using the questionnaire by M. Rokich system. According to the method of M. Rokicha, there are two types of values: terminal and instrumental. Terminal values are the belief that certain of the ultimate goals of individual existence from personal and social points of view deserve to be striving for. Instrumental values are beliefs that certain courses of action, such as honesty, rationality, are preferable in all situations from personal and social points of view.

In our study, we believe that an important component of doxa are relevant to the values of public servants, and their study is intended to show what is doxa for the civil servants at the moment. We will look for manifestations of characteristics of doxa both in terminal and instrumental values.

THE RESULTS OF THE STUDY

Terminal Values

The results of the survey at the level of terminal values (table 1), indicate that the most important in group A is "material security" (13), however, pay attention to the results of Russian sociological studies that show that any changes in pay for staff is becoming not motivating after two or three months, because the effect of habituation to income occurs.

In contrast to the responses of group A, in group B the highest score was given to several categories of values: "interesting work" (9), and "life wisdom" (9). Just at this stage, visible differences in the basic components of the doxa are evident. The emphasis should be done on what the least importance at this level of the ideals in both groups have values such as "beauty of nature and art" (0), "love" (0), "the availability of good and true friends" (0).

Table 1
THE RESULTS OF THE ANALYSIS OF THE SURVEY OF STATE SERVANTS OF GROUPS A AND B ON THE FORMATION OF TERMINAL VALUES

The list of values	Group A	Group B
The active life (completeness and emotional richness of life)	6	4
Life wisdom (maturity of judgment and common sense achieved in life experience)	9	9
Health (physical and mental)	2	0
Interesting work	7	9
The beauty of nature and art (the experience of the beauty in nature and art)	0	0
Love (spiritual and physical intimacy with a loved one)	0	0
The material provided life (lack of financial difficulties)	13	7
The availability of good and true friends	0	0
Public respect (respect from others, team mates at work)	10	4
Cognition (the ability to expand their education, outlook and general culture, intellectual development)	5	6
Productive life (maximum use of their capabilities, powers and abilities)	5	5
Development (work, permanent physical and spiritual perfection)	8	6
Entertainment (pleasant, easy pastime, no responsibilities)	0	0
Freedom (autonomy, independence in judgments and actions)	1	2
A happy family life	0	0
The happiness of others (welfare, development and improvement of other people, all people, humanity in general)	2	5
Creativity (ability of creative activity)		
Self-confidence (internal harmony, freedom from internal inconsistencies, doubts)		

As can be seen from table 1, the differences in the answers of respondents from both groups are highly significant. The value of "social recognition" is the most popular choice of group A (10), whereas in group B this value was allocated only by 4 people.

Such values, as "confidence", young professionals showed higher scores (6), and the value of "productive life" in both groups of respondents is equally at the middle level (5), indicating the installation for a partial realization of their capabilities, efforts and abilities in professional activities.

It should be emphasized the parameters of value "happiness". Among civil servants of group A this value has a low score (2), while in group B "the happiness of others" is at the level (5). And this, as we believe, is due to the fact that the officials, having long experience, in fact, are not as interested in the welfare, development and improvement of other people, all people, and humanity as a whole. This fact deserves special attention. We must transform the minds of such officials; focus them on more openness in relation to society.

Certain divergence in value orientations of the two groups is detected in the distribution of responses on creativity. For civil servants of group A this value was quite low (3), while in group B the score is higher (6). This, in our opinion, can be explained by the specifics of the legislative-bureaucratic nature of the activities of senior public servants, while the youth demonstrates the desire of self-realization at work as creative individuals.

The findings of this study confirm that service at governmental bodies for the more experienced part of the bureaucracy is a value in the format of "personal welfare" and "public recognition". And young professionals see in it the possibility of realization, above all, their creative potential, having an interesting job and service to the society as a whole. At this stage of the study a significant difference in the terminal values of these groups of respondents was

revealed: the predominance of the material component doxa from group A, while respondents of group B prefer other values and have other priorities.

Instrumental Values

Next, we consider the instrumental values, which are essentially the tools/resources to achieve career goals.

The analysis of the responses reveals the following hierarchy of instrumental values, according to reducing their significance (table 2).

Table 2
THE RESULTS OF THE ANALYSIS OF THE SURVEY OF STATE SERVANTS OF GROUP A AND GROUP B ON THE FORMATION OF INSTRUMENTAL VALUES

The list of values	Group A	Group B
Responsibility (sense of duty, ability to keep his word)	12	7
Efficiency in business (diligence, productivity in work)	11	7
Rationalism (the ability to think sensibly and logically, make sound, rational decisions)	10	5
Education (broad knowledge, high general culture)	9	8
Diligence (discipline)	8	7
Strong will (ability to insist on, not to retreat before difficulties)	7	6
Mindedness (the ability to understand someone else's point of view, respect other tastes, customs, habits)	5	4
Self-control (restraint, self-discipline)	4	6
Honesty (truthfulness, sincerity)	3	4
Sensitivity (caring)	2	0
Courage in insisting on personal opinion, views	1	4
High demands (high requirements to life and high claims)	0	1
Neatness (cleanliness), ability to keep things in order, order in affairs	0	3
Politeness (good manners)	0	3
Independence (ability to act independently, resolutely)	0	0
Cheerfulness (sense of humor)	0	1
Tolerance (the views and opinions of others, ability to forgive others their mistakes and errors)	0	3
The intransigence of the disadvantages in yourself and others	0	0

Attention is payed on very high results on such instrumental values as "responsibility" (12 and 7) and "efficiency in affairs" (11 and 7) found among all respondents in both groups. Significantly are represented such values as "diligence" (8 and 7) and "education" (9 and 8), which is, in our view, correct, because these values can be called a basic. The above mentioned results clearly show that these two values depend on career growth of a professional, as well as his job satisfaction and so on.

At the same time, such values as "self-control", "honesty", "accuracy", have relatively low levels in group A and slightly higher in group B (4 and 6 respectively). And the values of "high standards", "independence", generally have a single and zero results, and can be interpreted as neglection of these norms and principles in the process of achieving goals.

Main research interest was caused by the differences in both groups in the distribution of such instrumental values as "courage in defending their opinions and views" (1 and 4

respectively), and "tolerance of views" and opinions of others (0 and 3), "the ability to forgive others their mistakes and errors" (0 and 3). As you can see, these parameters in group B are higher than that for experienced officials; they clearly fix the problem: for the last tolerance is of no value, they tend not to respect people who do not adhere to common positions, and are not focused on defending their views in disputes with superiors. These results can be associated with the passage by the group A members of the various complex situations during the job practise that influenced the formation of their value orientations (doxa). State employees in a group are of great interest, especially in the attainment of material values which can be provided for them by job, they focus on social security and high status.

RESULTS

The results of our study, according to the method of M. Rokich, allow to draw a general conclusion on the completeness for the more experienced officials of the system of values (doxa), primarily in the format of "personal welfare" and "public recognition" and the guidance of professional identity, based more on the value of "discipline" than "creativity". The result obtained for group A can be linked with a lot of experience of this group of respondents, which influence the values system of civil servants, with work experience from 7 to 10 years.

According to our research methodology by M. Rokich, especially in B group, i.e. among young professionals, it is possible to detect a trend to rethinking the existing values of the samples of public service, as well as the content of the required competencies. The younger generation could be described as more independent and socially responsible and focused on achievement (personal success through demonstrated competence according to social standards). The youth is a potential expression of heterodoxy in the public service, by which we mean the manifestation of disagreement with established ideas about its mission and values, i.e. doxa. The appearance of a critical discourse, the emergence of various interpretations shows the formation of the heterodoxy. This is what we perceive in the estimates of young officials; moreover, we can see an updated version of the mission of public service, and them themselves – as potential agents of changes who can bring the very state structure to a new level.

CONCLUSION

The information above convince that for the successful policy of changes in state service organizations special technologies of informing employers on the essence and inevitability of new changes and involving them to this process should be elaborated. It is important to teach and develop young generation of officials, to form among them the motivation for further education and retraining.

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INNOVATIZATION OF SPATIAL STRUCTURES OF SUSTAINABLE DEVELOPMENT OF ECONOMIC SYSTEMS

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ABSTRACT

The article discusses the need for innovatization of spatial structures of sustainable development of economic systems; innovative saturation index for regional economic growth structures (ISIREGS) is offered; the paper also presents the characteristic feature of dynamic stability as an ability of an economic system to create and maintain its innovative structure-forming relationships. The objective of the study was to determine the nature, reveal the contents and forms of innovatization processes of spatial structures of economic systems sustainable development; to offer innovative saturation index for regional economic growth structures (ISIREGS) and to provide rationale for the dynamic stability as a key feature of an economic system, which allows it to create, accumulate and develop its innovative structure-forming relationships.

Key Words: *Economic Systems, Spatial Structures, Innovatization of Economic Development, Innovativeness, Innovativity, Innovative Saturation of Regional Economic Growth Structures, Structural Elements of Sustainable Development of Economic Systems*

INTRODUCTION

The economical theory of innovatization of economic systems is one of the most popular present-day economical paradigms for most of developed and developing countries of the world, including Russia. This paradigm is now at the stage of its "genetic push". Its "genetic code" is revealed; its fundamental principles and vectors of the dynamic development of innovatization processes of spatial economic systems are formed and systematized at the present stage. Adaptation and forming-up of the mechanisms of their innovational interaction in the hierarchical structures are in progress, with the purpose of optimizing solutions of theoretical and practical tasks on innovatization of regional economic systems.

The relevance of this study, according to the development of economical theory, lies in the fact that it offers to introduce a new category into the discourse of the economical science. It is the category of "innovatization". We also offer to introduce a general economical theory of innovatization based on the aforementioned category – the theory basically is an ordered interacting set of tenets of various innovation theories existing in the modern academic discourse.

The genetic origin of the general economical theory of innovatization, which resolves itself into a conclusive scientific result, can be found and traced while analyzing problems of the development of certain innovation theories belonging to various areas of economical discourse – mainly in the works of G. Hospers, R. Smits, M. Laranja, E. Uyarra and K. Flanagan. In his work

"Joseph Schumpeter and His Legacy in Innovation Studies" G. Hospers analyzed the results of J.A. Schumpeter's legacy   in the context of emerging theories of innovation within the framework of neo-classicist, evolutional economical theory. R. Smits, in his article "Innovation studies in the 21st century: Questions from a user's perspective", separates the developing "process school" and "systematic school" in the studies of innovation. The fundamental work "Policies for science, technology and innovation: Translating rationales into regional policies in a multi-level setting" by M. Laranja, E. Uyarra and K. Flanagan analyzes the existing research areas (the neo-classicist endogenous growth theory, the new growth theory, the ne-Marshallian cluster approach, the evolutionary and structural approach, the systematic institutional approach) in terms of recommendations for innovation policies.

This analysis has shown that, firstly, the principle underlying meaning of these works and other similar studies is providing rationale for the dynamic of accumulation, implementation and development of innovations – or, in other words, the innovatization process in various fields and levels of public life: the technical, technological, organizational, managerial, economical, institutional, political and other levels and fields.

Secondly, the existing studies suffer from the insufficient use of holistic approach, which examines the implementation of innovations as both a variable systematic innovational interaction of business, government and society and an integrated whole which is most adequately embodied in the category of "innovatization" on mega-, macro-, meso-, micro- and nano-levels. Moreover, on the meso-level, in definite local formations, these processes can be observed more clearly.

Thirdly, the analysis of the existing economical literature has also shown that the evolution of the general economical innovatization theory is characterized by the stages of its methodology principles' formation in the form of key fractals. At the first stage (1910s – 1940s), N.D. Kondratyev and J.A. Schumpeter conceived the key fractals for the basics of the general economical innovatization theory: the interrelation between innovations and long cycles, the "technological" explanation of long cycles, the fundamental principles of innovation theory. At the second stage of the general economical innovatization theory development (1940s – 1970s) the main macro-economical fractals were conceived after having been established at the first stage. For instance, J. Bernal's analysis of the relation between the progress in science and technology and the society, the inclusion of the technology parameters in R. Solow's neo-classicist models of growth, or S. Kuznets' research of the epochal innovations problem in the context of economic growth. The third stage (from 1970s on) is marked by a growing number of publications on innovational issues, emerging rationales for new key fractals, mainly associated with the innovatization of companies and organizational and managerial focus areas of business entities. At the third stage G. Mensch offered a classification of innovations, R. Foster developed a model of an 8-shaped curve, A. Kleinknecht analyzed the main problems of innovation clusters, C. Freeman developed a theory of industrial revolutions. Also, the Russian technological modes school was formed, R. Nelson and S. Winter developed the evolutionary economical theory, P. Romer's works on endogenous growth theory appeared.

At the present stage (from mid-1990s) innovations are studied using methods of system analysis. It is in the present conditions when some new areas of innovational problems were established. These areas included the theory of innovation as a field studying renovation and innovational interaction in technical, technological, economic, institutional, organizational, managerial and other systems; the innovation economy as a field studying peculiarities of economic relations in the innovational sphere; innovatology as a science researching the genesis,

formation and development of views, doctrines, theories on innovation; the general theory of innovatization of economic systems as the new paradigm of the development of economical theory and business practices. All this is confirmed by the significant increase of publications on innovational policies, creation of effective spatial innovational systems, as well as commercialization, transfer and internationalization of the innovations.

This paper analyzes the processes of innovatization of spatial structures of economic development.

MATERIALS AND METHODS

A holistic approach and the method of structural and logical decomposition have been applied to the investigation of dynamics of sustainable development of national economic systems, which made it possible to determine the nature, reveal the contents and forms of the processes of innovatization of spatial structures of economic systems sustainable development, to offer innovative saturation index for economic growth structures (ISIREGS), to provide rationale for the dynamic stability as a key feature of an economic system, which allows it to create, accumulate and develop its innovative structure-forming relationships and to develop an innovatization algorithm of the structure-forming elements of regional economic systems sustainable development.

ORIGINALITY

The originality of the study lies in the fact that the innovatization of spatial sustainable development structures of economic systems is presented and justified as a process of accumulation, preservation, usage and development of innovative capacity of business entities of an economic system. Innovatization is manifested and implemented in two basic forms of economic activities of business entities: innovationality and innovativeness. Innovationality is the creative ability and capacity of business entities to create various types of innovation by means of creative destruction (J. Schumpeter) of its technical, technological, organizational, managerial, social, ecological, economical, institutional and other forms of internal surrounding medium. Innovativeness is creative possibilities and abilities of economic entities to transmit and multiply various types of innovation by borrowing them from other technical, technological, organizational, managerial, social, ecological, economic, institutional and other forms of external surrounding medium. Sustainable acceleration of economic systems development is performed by a variety of methods of strategizing the main forms of innovatization that are the basis for raising the efficiency of economic activities of businesses and affect innovative saturation of regional economic growth structures.

Priorities of Innovatization and Stability of Development Structures

The definition of innovatization priorities in our study is based on the following methodological principles: firstly, innovatization basically is the process of accumulation, preservation, usage and development of the innovational potential of business entities within the economic system. Secondly, innovatization is manifested and implemented in two basic forms of business entities' economic activity: innovationality and innovativeness. Innovationality is the creative ability and capacity of business entities to create various types of innovation by means of creative destruction (J. Schumpeter) of its technical, technological, organizational, managerial,

social, ecological, economical, institutional and other forms of internal surrounding medium. Innovativeness is creative possibilities and abilities of economic entities to transmit and multiply various types of innovation by borrowing them from other technical, technological, organizational, managerial, social, ecological, economic, institutional and other forms of external surrounding medium.

Thirdly, besides the novelty criterion (according to various academic classifications, disruptive, basic, ameliorative and complementary innovations), while choosing innovatization priorities for structures of sustainable development of a national economic system it is necessary to consider, which form is more preferable for it – the innovational or the innovative form. I.e., to decide whether it is better to create one's own innovations or borrow them from other economic systems. In addition, the conditions of innovatization of certain spatial economic systems require clarifying the question of basic forms of innovation being alternative to each other or complementing each other.

Commitment to creating and accumulating one's own disruptive innovations implies partner interaction between business structures, government and society, which is supposed to support the scientific research and development segment, as well as relevant infrastructure (technology parks, innovation incubators, centers of prototyping and commercialization of technologies, etc.). The choice of innovative development by means of borrowing technologies from other national economic systems requires other type of structural budgeting and strategizing within the given economic space. For example, the positive experience of Japan and South Korea shows that on the first stage of innovatization of spatial development structures of their national economic systems the innovative form, i.e. borrowing foreign technologies, dominated. Later it was balanced out by the innovational form, which is the dominant and priority form at the present moment. However, this form becoming dominant and gaining priority in the innovatization of development structures of national economic systems of these countries would hardly be possible with such dynamics and in such a short time without the USA actively supporting it, since the USA, due to the international geopolitical situation, are interested in conducting this sort of policy in this region.

The negative consequences of using the innovative form of innovatization strategizing of spatial development structures of national economic systems were discovered by C. Perez for the countries of Latin America. In the 1980s – 1990s these countries, being considered peripheral, had outdated technologies of the previous (fourth) technological wave exported to them, while in the developed countries the technologies of the next, fifth, wave were already becoming widespread. As a result, the Latin American countries created an infrastructure of the same level as the technologies they borrowed. This infrastructure was not able to become fully efficient because of obsolete technologies of the fourth wave, which provoked a debt crisis in this group of countries.

Innovatization priorities of spatial structures of development of economic systems on all levels, all economic sectors and spheres of the Russian economy result from its specific nature. On the one hand, the country has a scientific and developmental base (contrary to Japan and South Korea in the middle of the past century) for the innovational form of development based on its own breakthrough technologies. On the other hand, there is a significant differentiation and misalignment between innovatization levels of spatial development structures of economic systems, and they are also seriously lagging behind the foreign countries' level. The strategizing of innovational form of development based on the country's own breakthrough technologies on the whole territory of Russia is too risky, whereas commitment to borrowing foreign

technologies may not give the necessary results, thus confirming the country's peripheral position in the innovatization processes on the mega-level.

While choosing the innovatization priorities for spatial structures of development of the Russian national economic system, it is very important to monitor their innovational potential in the sphere of creating or borrowing new technologies. The analysis has shown that part of the regions of Russia can reproduce the development model based on creating breakthrough technologies, while the other part can specialize on borrowing the already existing technologies. This will facilitate the diversification of innovatization of spatial development structures of the national economic system of Russia, which will allow reducing the risks of implementing various parts of its innovational policy.

The innovatization priorities for spatial development structures of national economic systems in some of the most powerful nations of the world are mainly associated with providing the dynamic stability of these processes on different levels represented in Figure 1.

Figure 1
LEVELS OF SUPPORT OF INNOVATIZATION OF SPATIAL DEVELOPMENT STRUCTURES OF ECONOMIC SYSTEMS
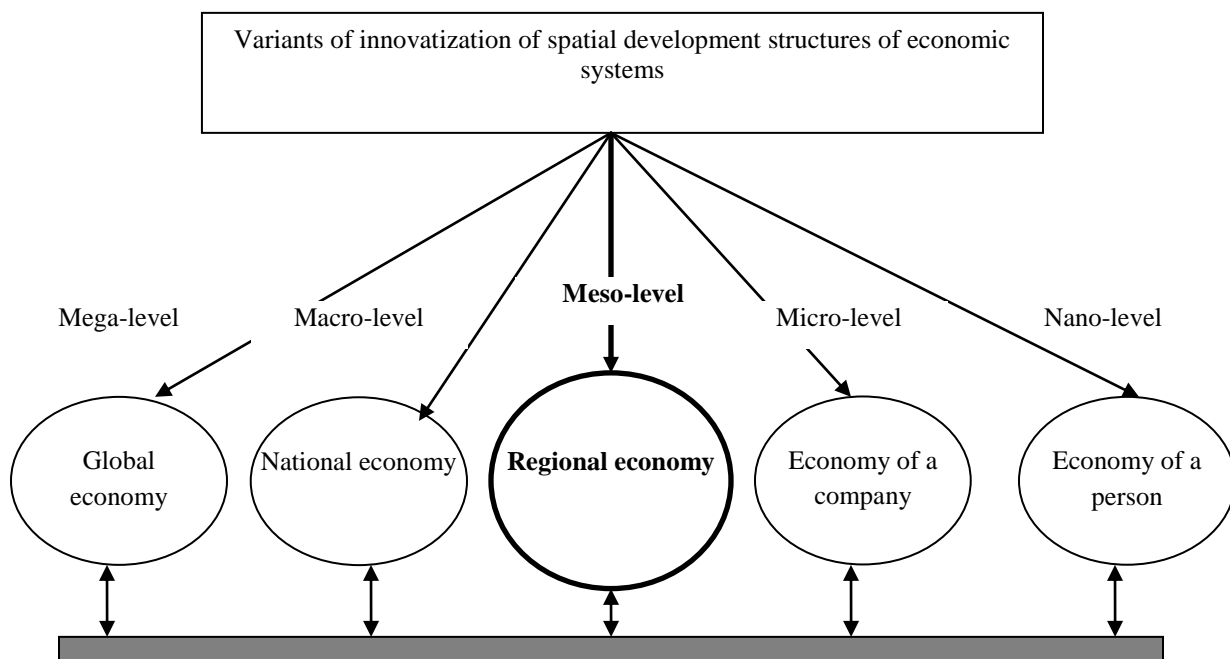
The innovatization of spatial development structures of the national economic systems only began receiving state support in the foreign countries relatively recently (from the second half of the 1990s – early 2000s), but this support has already become widespread. Appropriation of federal budget funds for the innovatization of spatial development structures of the national economic systems in most developed and some developing countries is, at present, one of the basic elements of their regional policy. Namely, this policy is conducted in EU for the purpose of harmonization and consistency in the interaction and development of certain territories, and it is financed via European structural funds. It is believed that co-financing the innovatization of spatial development structures of the national economic systems, scientific research and practical

implementation of its results will create additional possibilities for the social and economic development of EU regions without the distortion of the economic entities' market incentives. This also helps to increase their competitive ability on the mega-level.

The global experience of supporting innovatization of the local structures of development of the national economic systems shows that it is at its most effective on the meso-level, with certain regions and cluster formations concentrated on it. The support and stimulation of innovatization of their development structures, depending on their specific nature, can be implemented both by means of alternative approaches and by complementary forms and methods which provide the stability of innovatization of the local development structures for the national economic systems.

The problem of stability and its solution are based on maximizing the innovational potential of the sustainable development structures of a national economic system. In this regard we come across the need to define, regulate and preserve the stability outlined by presuppositions and principles of innovatization (Perez, 2002).

There are various approaches to defining the stability of development of an economic system. On the one hand, this category can be defined to be a guarantee of a system's purposeful movement. On the other hand, the stability is understood as invariability of the movement trajectory of an economic system, as well as a form of commensurability of social reproduction.

We think that the fundamental feature of the stability of the development structures of national economic systems is their ability to generate innovationality and innovativeness of conditions, factors and background on every level of the economic system's hierarchy. We understand stability in this case as the ability of an economic system to create and maintain such fractal relations between basic structural elements, which allow it to keep all the necessary parameters   of its dynamic renovation on a certain level for the purpose of the system's effective   functioning   in   a   competitive   environment (http://ec.europa.eu/regional_policy/thefunds/regional/index_en.cfm#2).

Besides, it is important to note the unity of stability and variability, the balance and the unbalance of the structures of dynamic development of an economic system. Due to that, the innovatization of the sustainable development structures of an economic system is represented by the stable initial criterion of a national economy going from variability, unbalance and misalignment to a state of a stable, balanced and consistent dynamic development. And this is exactly what predetermines the innovatization algorithm of the sustainable development structures of economic systems.

The Strategizing Algorithm of the Sustainable Development Structures

The strategic transformation of economic development structures is aimed at serving the interests of broad strata of the society, and it is based on the innovatization of the development structures of an economic system. The algorithm of this process is represented in Figure 2.

Figure 2
**THE ALGORITHM OF THE INNOVATIZATION OF SUSTAINABLE DEVELOPMENT STRUCTURES
OF AN ECONOMIC SYSTEM**

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                                        ┌──────────────────────────────┐
                                        │   SUSTAINABLE ECONOMIC       │
                                        │   DEVELOPMENT                │
                                        └──────────────────────────────┘

        ┌────────────────────────────┐         ┌──────────────────────────────┐
        │ INNOVATIZATION OF THE      │────────│ ─ economic mechanisms         │
        │ INSTITUTIONS OF DEVELOPMENT│         │ ─ political mechanisms        │
        └────────────────────────────┘         └──────────────────────────────┘

┌────────────────────────────┐         ┌──────────────────────────────┐
│  STRUCTURE-FORMING         │         │   TECHNOLOGICAL              │
│  ELEMENTS                  │◄────────│   INNOVATIZATION             │
│  (COMPETITIVE ABILITY)     │         └──────────────────────────────┘
└────────────────────────────┘

        ┌────────────────────────────┐         ┌──────────────────────────────┐
        │  SOCIAL                    │         │  - Professional              │
        │  MODERNIZATION AND         │─────────│  - Educational               │
        │  INNOVATIZATION            │         │  - Entrepreneuship           │
        └────────────────────────────┘         └──────────────────────────────┘

        ┌────────────────────────────┐
        │  INNOVATIZATION OF THE     │
        │  DEVELOPMENT               │
        │  INFRASTRUCTURE            │
        └────────────────────────────┘
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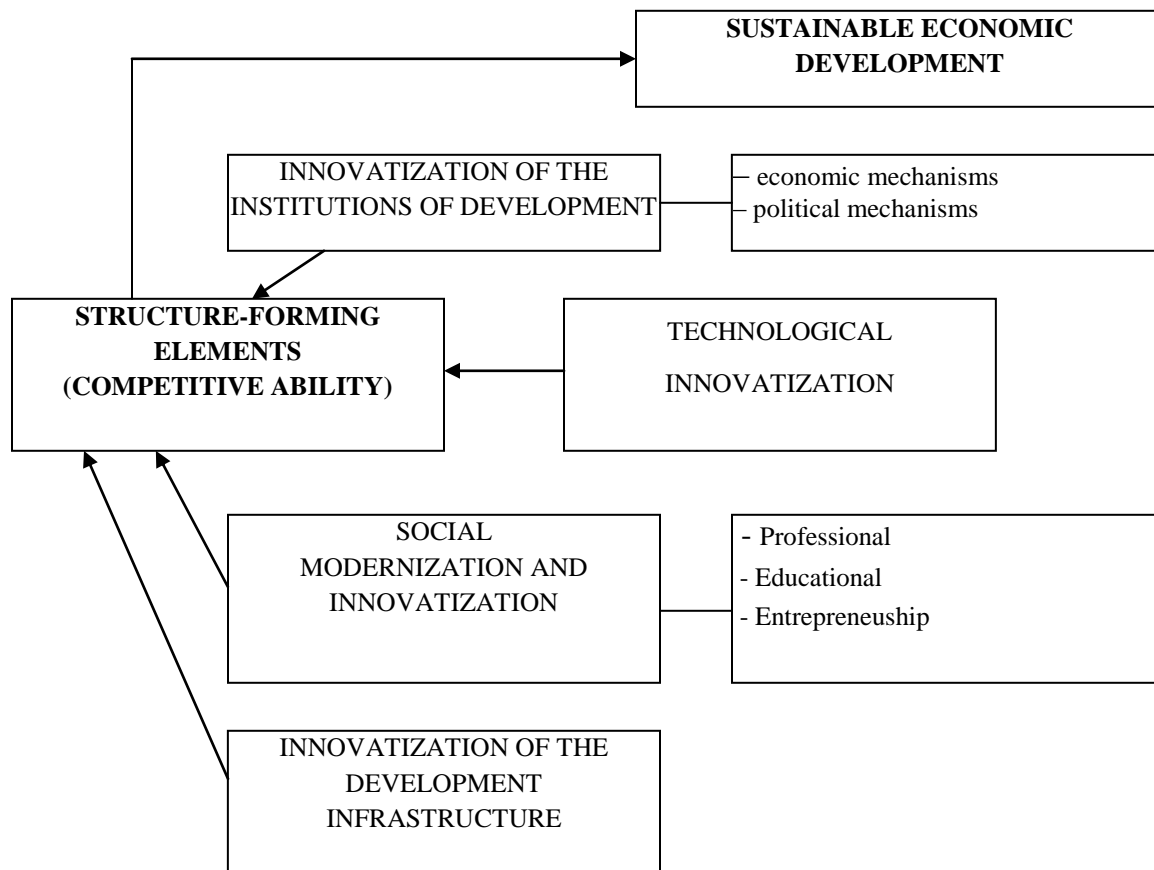
For the present-day situation this correlation is as follows: 65% - natural resources segment, 15% - human assets, 20% - physical capital. However, the structure of national wealth of most Western countries has an inverse ratio: 65% - human assets, 15% - natural resources segment, 20% - physical capital (Pavlov et al., 2012). Thus, while examining the innovatization of sustainable development structures of an economic system in terms of the correlation of its structural elements, it is necessary to choose an effective correlation of these proportions, which provide a high level of the system's competitive ability. (Fagerberg AND Srholec, 2008)

There is a direct relation between the level of competitive ability, the stability of an economic system and the innovatization of its development structures, because the competitive ability implies the ability of business structures, government, society and infrastructural organization to come to a sustainable development. The fundamental principle of the competitive ability and sustainable development of a national economy is a set of stable economic growth rates.

Thus it is possible to say that the sustainable development basically is a structural balance between internal and external elements of an economic system, which guarantee its continuous permanent growth and competitive ability.

Taking into consideration the transformation of the paradigm of modern economic growth, we can state that sustainable development is impossible without the innovatization of its structure-forming elements. Social transformation and modernization (professional, educational and entrepreneurial) become of crucial significance in this relation. It is the innovatization of human assets and education that contributes to the increase in labor productivity and the creation of products with higher added value, which is the basis for the economic growth. The innovatization of the technological element forms the basis for sustainable development by improving the efficiency of economic activity and giving rise to internal and external competitive ability. The qualitative ground for the informational and technological element makes it possible to achieve a competitive advantage in the system of the international division of labor and increase the value of the national economic system in the world. The innovatization of the informational and technological element is impossible without the participation of a personal, social element, because the former is the product of the latter. This condition determines the need to change the state of the labor resource supply in terms of upgrading the level of intellectual and professional capacity, as well as motivation priorities, which determine the quality and effectiveness of business activities. Accordingly, the reproduction of social welfare is based not only and not so much on material welfare accumulation, but on the accumulation of knowledge and innovatization of human and IT resources. The variety of institutional and infrastructural conditions today is determined by modernization and innovatization of the institutional structure model, which reflects the degree of economic development, the level of research, and the specific features of the society, culture and history (Furman et al., 2002).

Large scale processes of interaction of national innovation system's structural elements are based on the rules and regulations carried out through by organizational mechanisms. These rules and regulations form the conditions of the institutional structure innovatization and represent one of the fundamental elements of an innovational type of growth and development. The innovatization of institutional structures and the infrastructure of sustainable development relies primarily on the establishment of an appropriate institutional matrix. Tendencies and common factors of innovatization of the institutional matrix of the economic development are expressed in intellectualization, intensification and strengthening of interdependence of all structure-forming institutions. The innovatization of institutions provokes the formation of a complex process of economic, social and political interrelations, contributing eventually to the creation of appropriate structures and demanding the formation of an innovational institutional matrix. Consequently, the institutional structure (matrix) of the innovational economic development is a set of interdependent institutions, which form the mechanism of progressive sustainable innovational economic and social development. (Vagizova et al., 2014)

CONCLUSION

In summary, the innovatization of structure-forming elements of a national economic system's development will increase the level of its competitive ability by speeding up and stabilizing the innovational activity level and by fulfilling a number of paramount functions:

1. The reproduction function of innovatization of sustainable development structures of a national economic system is expressed in encouraging production with high added value as the basis for economic growth and development;

2. The transformational function of innovatization of sustainable development structures of a national economic system is represented by the need to modernize the original economic background, conditions and processes;

3. The structure-forming function of innovatization of sustainable development structures of a national economic system involves the spread of new knowledge, IT and intellectual potential of all elements of economic growth and development.

Thus, the defining characteristic feature of the modern state of innovatization of sustainable development structures of a national economic system is the complexity of the structure, the acceleration of scientific, technological and innovational changes in accordance with the expansion of globalization of world economic relations.

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FEATURES OF RUSSIAN ECONOMY IN THE CONTEXT OF INNOVATIVE MODERNIZATION AND INCREASING ROLE OF HUMAN CAPITAL

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ABSTRACT

In transition of any economic system to an innovative type of reproduction of its resources organization and management are particularly important. Practical experience of developed countries demonstrates that organizational and managerial changes in the economy provided them with an innovative sustainable development even during world crisis at the beginning of the twenty-first century. Therefore, we believe that the Russian economy as a whole and it`s regions in particular need to search for new management, organizational solutions, which are based on a systematic approach to innovative modernization and new management mechanisms, naturally built into all types of innovative processes of economic life in the center and in places.

Key Words: *Human Capital, Financial Crisis, International Ranking, Welfare, Economic Policy*

INTRODUCTION

The global crisis of 2008-2009 showed the relevance of scientific research of rational models of national industrial development as the foundation for sustainable overall socio-economic development of the country. (Vinslav, 2014) This becomes especially true if we turn to the doctrine of a multipolar world that Russia actively supports in the international arena through its power structure. So, in the same issue of "Russian Economic Journal" interesting ideas are expressed by A.Shvetsov: "The recent global financial and economic crisis has outlined the processes of redistribution of forces in the world economy and trade, which greatly enhanced the mutual relationship between the developing countries: their combined share in the volume of international trade in 2010 was 42%, and their total official foreign exchange reserves amounted to 75% of the world. It is integration regional associations of developing economies in the twenty-first century that will make the basis of a multipolar world. (Shvetsov, 2014). As international experience shows, to lift the economy of our country it is needed to increase the standard of accumulation (direct investment) up to 35-40% of GDP. For the realization of these tasks will be needed to increase the volume of lending to the economy of up to 100% of GDP and above (as is customary in developed countries) "(Vinslav, 2014). As it can be seen, the rate of consumption, in any case, will not increase – we have no resources or the alignment process for today. Hence, it is necessary to promote the employee primarily with non-financial incentives. There we have a large pool of human capital return, including, the standard of accumulation.

RESEARCH METHODS

The research methodology is presented by graphical methods of analysis, synthesis, relation between historical and logical matters, normative and positive analysis, economic and mathematical modeling, as well as expert evaluation methods.

RESULTS

We consider it is necessary to be cautious in international rankings, where Russia is not always fairly assessed first of all in terms of the human capital at our facilities. Just decide on your own: Russia managed to rise in the new rating Doing Business (DB) in 2015 up to 62th place. DB-15 ranking experts noted that the new changes in the methodology for calculation hardly affected the country's top twenty rankings. The first place is still after Singapore, followed swapping places by New Zealand and Hong Kong. The best of the European countries is Denmark, in the world ranking it is the fourth. The only country which is due to the reassessment significantly worsened its position is Malaysia (minus 14 points to 20th place). "In Malaysia any necessary reforms were not carried out ", - explained the expert V.Saltane. But in DB-15 beyond the first twenty, there are many past leaders and outsiders of the DB-14, which in the new rankings are reversed. Dominican Republic did the most notable jump, rising up to 33 places. The second fastest of positive dynamics are: Czech Republic (plus 28, up to 47th place) and Russia (plus 28, up to 64th place). Closing the three most underrated countries in the ranking of DB-14 Vietnam, and Honduras (plus a 27 - to 72nd and 100th, respectively). (Ilyinskaya, 2010) As you can see, Russia has received only 2 bonus points in a new ranking - but what fundamentally changed in its economy? Nothing in the past 2014. Then what is the stimulating role of these rankings - except for political? None. Well, let's take the other agencies. For example, the agency Fitch gave Russia rating «BBB-», reducing it to one stage to «BBB». The forecast of the agency's rating of the Russian Federation is "negative". «BBB-» is the lowest rating in the category, which investors are referred to as "investment." The next stage in the methodology of Fitch is «BB +" - refers to the "speculative" level. The agency FitchRatings is not really the first one that downgraded Russia to the last stage of the investment grade. First it was made by the rating agency Standard & Poor's. Moreover, S & P at the end of December 2014 has put the ratings of Russia «BBB-» on review for possible reduction, warning that there is at least a 50 percent chance that Russia could lose investment grade rating for the first time in the last ten years. If the S & P worsen rating of Russia at least to one stage, it will be "garbage." As for Fitch, the reason for its decision is the country's worsening economic outlook in light of the sharp fall in oil prices and the negative impact of Western sanctions, which put pressure on the economy by blocking the access of Russian banks and corporations to external capital markets. And the fall of the ruble to the rise in interest rates also contributes to the negative prospects for the Russian economy. (Gotsulyak and Ignateva, 2015) Again, there is a double standard of pro-American international rating services in relation to the Russian economy. This is confirmed by the fact that Russia is included in the list of countries with the lowest level of economic freedom. For this indicator, it ranked 143rd out of 178 countries, gaining 52.1 points out of 100, according to the promulgated rating of HeritageFoundation. This is worse than the last release of the rankings in 2014, when the state was on the 140-th line, between Tajikistan and Burundi, with 51.9 points. Last year's result was 0.8 points better than in 2013. Despite the growth of political and economic isolation and falling prices for oil and gas, Russia's economic freedom has increased, it rose by 1.6 points from 2011. And by 0.2 points compared to the

previous year. Corruption has become a little smaller, a little more was the freedom of labor, freedom of doing business, and taxation became more transparent. The situation with observance of property rights and public finance worsened. Among the 43 European countries Russia ranked 41-th place. According to the degree of economic freedom Russia has fallen below partners in the BRICS: Brazil took there the 118th place, India - 128th, China – 139th, South Africa - 72 th. From the partners to the Eurasian Economic Union Republic Belarus have the worst rating – it is the 153th place, the best ranking is of Kazakhstan - 69th place with 63.3 points. It is true, that it is necessary to note justice of some of the comments to our address: "In Russia, the state and the majority of companies still rely more on control than on trust. There is a fear that if employees do not be given the right job, do not define rigid performance criteria and monitor constantly the implementation of the work, people will not do anything or will do not the one intended and it can damage the business or even society as a whole ", - said General Director Hay Group in Russia D.Koole, whom we should agree. It is in terms of lack of attention to the initiative of the workers themselves - Russian managers is of little concern to it.

So, in economic science it is well known that industrial production is not only a source of goods on the market and not rather a form of realization of the desire for profit entrepreneurs, but the social doctrine to ensure the general material welfare of the country. This is so-called social aspect of the industrial employment of the workforce: wages as the financial basis of the welfare of employed members of households and taxes on labor as the financial basis of the welfare of unemployed household members. But this mechanism actuates when wage labor has an incentive to quality work, and the employer has an incentive to adequately compensate to the wage labor its efforts on high-quality production. Only a wage as a goal of achieving a qualitatively new economic growth will not be attained. We need new incentives - primarily labor factor or human capital. The level of human capital growth has a positive effect on the rate of labor productivity growth (Hanushek, 2000).

The source of income of the person (household) throughout his life is the total capital (total individual wealth) that he gained. In simplified form, the total accumulated capital of a person consists of two parts: the human and financial capital. Financial capital includes human traded assets, such as stocks, bonds, debentures. A human capital shall be understood as the knowledge and skills embodied in a person that play an important role in determining the labor productivity and the ability to familiarize with new knowledge and develop new technologies and innovations. Human capital is a factor of increasing economic efficiency, growth and frequency of national wealth. (Schultz, 1961) Human capital is the "nonliquid asset" and is defined as a sort of present value of all future labor savings, including the revenues that he will be later paid by pension funds. For the overwhelming majority of institutional and private investors the real human capital is the biggest asset throughout the life of its possessor. Thus, an economy based on knowledge and innovative economy is a natural result of the development of the productive forces of any society in the course of its scientific and technological progress, which leads to a permanent increase in the role of knowledge in terms of which the intellectual abilities of the person become the main accumulated wealth of society, the source of innovation. At the same time, the source of the distribution of scientific knowledge, innovation and growth of labor productivity is always the people and their capital (self-expanding) capability. The main component or internal content, which is based on the mechanism of human capital management, is his motivation. Here we understand the motivation system not as some external stimulus that is used by any employer (eg, awards, bonuses, etc.) to improve operational efficiency of their employees. We, in this case, understand another definition of motivation – through the

mechanism of management of hired staff as a resource of a capital asset of the enterprise - as a driving force that is inside of the individual, and encourage him to active work aimed firstly to the current satisfaction of his needs and secondly to justify any of his expectations in the future from that of their active work. Exactly at the level of non-financial incentives to work we see major growth of potential of innovation and intellectual activity of the employee in any domestic industrial enterprises. But this active promotion of innovation work should fit into a coherent system of motivating factors, where, as we believe, a fractal cluster method of reproduction of synergistic resource potential of both the enterprise and human capital available there represented by wage earners can be an indispensable structural basis.

For example, the model the Scandia Navigator estimates intellectual capital from the standpoint of "creation of value (value)" (Fig. 1):

Figure 1
MODEL SCANDIANAVIGATOR OR MODEL OF "HUMAN-CAPITAL"
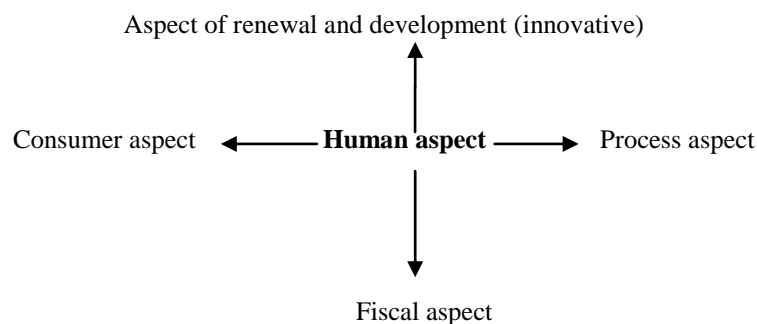
Source: [9]

As can be seen in said figure, the management model ScandiaNavigator provides information that exists as more than a supplement to the financial statements of the enterprise, rather than in the form of numbers that are integrated into the accounting statements. And then the authors of the article E.Kiselitsa and A.Stroykin do, in our opinion, an improper conclusion that the main drawback of this management model is that it is outdated and is not applicable in the present conditions. We are strongly against it, and furthermore, we believe that in connection with our proposed scientific approach to non-financial incentives, this model of innovative development of the enterprise will gain a second life.

CONCLUSIONS

We agree that price and value are important objective components of the whole market doctrine in terms of any economy. But behind these indisputable advantages economists often lose the idea that the cost and the price - this is only a converted form, in the words of Marx in its time, the fundamental relationship between the factors of production - capital and labor. For a reason, the more experienced market analysts from developed economies are sensitive to these issues. For example, about the price "passions of the ruble," analysts of The Guardian, citing the data from the World Bank immediately noted in early 2015: the depreciation of the ruble will severely affect the economies of nine countries that depend on remittances from citizens working in Russia. The British edition added that in some of these countries the fall of the ruble could eventually provoke a political crisis. The region's economies are closely connected with each

other, and the fall of the Russian currency has an effect on the currencies of Russia's neighbors. This collapse of the ruble, in particular, has led to a depreciation of the currency of Turkmenistan and could trigger a further fall of the Kazakhstan tenge. According to the World Bank, the following countries depend on remittances: 21% of the economy of Armenia, 12% of Georgia's economy, 31.5% of the economy of Kyrgyzstan, 25% of the economy of Moldova, 42% of the economy of Tajikistan, 5.5% of the economy of Ukraine, 4.5% of the Lithuanian economy, 2.5% of the economy of Azerbaijan, 12% of the economy of Uzbekistan. Most of the transfers to these countries are consist of money from Russia. Therefore, reducing the number of foreign workers in Russia since the beginning of 2015 is less connected with the tightening of the migration regime, but with the fall of the purchasing power of their wages in our country. And if their income or financial incentives were the only reason for them to leave their acquired places, the fact of their departure from Russia is not surprising.

SUMMURY

If we want to have stable and dynamic activities in all segments of the Russian market, we must pay close attention to the non-financial incentives at our facilities for a hired labor. The point here is to find adequate financial arrangements and convenient management tool form.

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THE MANAGEMENT OF DEVELOPMENT OF REGIONAL STOCK EXCHANGES IN RUSSIA (ON MATERIALS OF THE REPUBLIC OF TATARSTAN)

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ABSTRACT

It is well known that the stock market is a financial market segment, allowing the most efficient to reallocate financial resources from investors to issuers. At the present time in Russia only Moscow Exchange operates fully. Accordingly, the companies-issuers who wish to attract the necessary financial resources are forced to do so through the Moscow stock exchange. The development of regional stock exchanges will help strengthen the country's financial system and ensure the stability of economic growth.

We did evaluate the development of a regional securities market in the Republic of Tatarstan and did identify problems, among which are marked imperfections and underdevelopment of the Russian legislation, inefficient management structure of large companies, whose securities are presented at the national stock market, limited using of market instruments valuable papers. The authors of the proposed formula and performance indicators to evaluate the development of a regional securities market and its management.

An important factor in the development of the market of securities is the involvement of the individuals on this market, which currently remains an unsolved problem, including due to the low incomes of the population in Russia.

We believe that the proposed recommendations in the article are useful by the state.

Key Words: *Stock Exchange, Regional Stock Market, Securities, Economics, Economic Growth*

INTRODUCTION

The aim of this study was to identify the reasons of underdevelopment of the regional securities markets in Russia and the proposal of measures to address the problems identified.

The commercial banks are the most active participants of the Russian securities market. We did evaluate the activity of banks of the Republic of Tatarstan in the securities market. An unsolved problem is the large share of the state in the capital of the Republic of Tatarstan's largest companies that adversely affects the efficiency of the companies. We believe that the active involvement of the population and the use of Islamic financial instruments will facilitate develop the securities market

Most part of banks' activities in the stock market is speculative in nature and is aimed at extracting the maximum profit. In this regard, commercial banks are active participants of the Russian stock market is not interested in the development of regional stock markets. In addition, developed regional securities markets will compete with the credit activities of commercial banks.

To evaluate the development of the regional securities markets we proposed to use some indicators.

Government interventions will help to solve the problems mentioned above.

DATA AND METHODOLOGY

From the point of view of Mirkin Y.M., indirect data on the extent of activity and dynamics of regional markets and their relations to each other can be a count of investment institutions - professional participants of securities market (Mirkin, 1995).

As part of the above ideas of Mirkin Y.M., we note that in the Republic of Tatarstan there is varied number of professional stock market participants, including leading investment and brokerage companies. But, in our opinion, investment and brokerage company located in the Republic of Tatarstan, are not active participants in the stock market and do not contribute to its development, because they are mostly focused on attracting financial-illiterate population, namely, teaching them the basics of the market short, these companies continue to attract these customers to their service, while receiving commissions.

We think that the Russian securities market is an emerging market, especially comparing it with foreign markets (Asaturov, 2015). The activity of foreign investors has an effect on the Russian securities market (Kopytin, 2014).

Well-known is the fact that the most active participants of securities market are commercial banks. In the Republic of Tatarstan there are about 70 commercial banks, including federal and regional (Ramazanov and Grigoryan, 2014).

It is important, in our view, to trace the role of commercial banks of the Republic of Tatarstan in the stock market in recent years to assess the development of a regional securities market.

In particular, the PJSC "Bank ZENIT" is an issuer of shares, classical bonds, exchange bonds and Eurobonds. From 2005 to 2016 years the bank issued classic and commercial papers in the total amount of 40 billion Rubles.

PJSC "AK BARS" Bank issued any shares, bonds. As a result of placement of equity securities (stocks) PJSC "AK BARS" Bank in 2009 increased its equity capital by 9 billion rubles. Funds received from the bank's IPO were used to finance current operations. From 2005 to 2009, PJSC "AK BARS" Bank issued Eurobonds totaling more than 1 billion US dollars, exchange bonds from 2005 to 2016 in the amount of over 30 billion rubles.

PJSC "Tatfondbank" from 2003 to 2016 placed bond issues totaling more than 20 billion rubles, credit linked notes (CLN) in the amount of 90 million USD to 2009, Eurobonds worth 200 million USD (the repayment period of 26.04.2010) [7].

AKB "Spurt" (PJSC) from 2004 to 2016 has placed 4 issues of bonds for a total amount of 3.5 billion rubles.

As can be seen, the activity of the largest banks in the Republic of Tatarstan in the stock market is high enough, but, despite the fact that most of the listed banks have specialized units dealing with securities, they were mainly as issuers of classical financial instruments.

Developing the theme of the development of the stock market, we note that the behavior of capital market can be analyzed with the help of the doctrine of an integrated system, which was developed over the last 20 years by various authors with the intention of explaining the work and the difference in the dynamics of productive systems. (Pak and Kretzschmar, 2016)

The doctrine of comprehensive development of capital market includes four interrelated factors:

1. Trust.
2. Entrepreneurial Culture.
3. Research and Innovation.
4. Regulatory and statutory framework.

RESULTS

The four factors in the Republic of Tatarstan, as well as in Russia, are not sufficiently developed, and underdevelopment of the stock market in the Republic of Tatarstan can be explained by these factors. We think that the development of the third and fourth factors (research and innovation, regulatory and statutory structure) is depended of development of the first two factors, which are in some way derived.

We look the impact of the third and fourth factors. We will analyze the actions of the authorities and the necessary actions of economic agents, contributing to the creation of favorable conditions for the financing of the reproduction and / or investment process and development of the stock market.

Regarding the actions of the authorities as a regulator there is project legal act "On peculiarities of investing in infrastructure using infrastructure bonds" developed by the Federal Service for Financial Markets.

The infrastructure bonds are a bond issued by a dedicated project organization with the purpose of raising funds in infrastructure projects.

By cons of the bill, in our view, include:

1) Under the infrastructure in this bill means the totality of the real estate, consisting of one or more individual objects and (or) technological systems designed to ensure transport activities, energy, social services, public utilities and telecommunications. Thus, the legislator has not provided for the financing of the production areas, in particular, light and heavy industry, high technologies, etc;
2) Competitive selection of applications for participation in the project will give rise to corruption, strengthening the "state-related" links that lead to inefficient use of financial resources.

To the positive side of the project designated normative document can be attributed the fact that within the context of future sporting and other international events in Russia with a lack of state budget funds, it can be used the private-enterprise financial resources involved within the issue of infrastructure bonds.

Unfortunately, this project did not become law.

From the viewpoint of N.N. Garakhanov, the level of development of the stock market in a developing country is directly dependent on the presence of three factors: a stable macroeconomic development of the country, retail ownership structure of the economy and traditional values of the population that encourage or hinder their active participation in the stock market.

From the set of above factors we are interested in factor associated with retail structure of ownership. Most of the strategic enterprises of the Republic of Tatarstan is under the control of the state, in particular of "Svyazinvestneftekhim", established in accordance with the Decree of the Cabinet of Ministers of the Republic of Tatarstan of April 11, 2003 № 201. This holding holds the shares of the largest national companies, such as PJSC "Tatneft", PJSC "Nizhnekamskneftekhim", PJSC "AK BARS" Bank and other. A similar situation is observed in other regions of Russia.

The JSC "Svyazinvestneftekhim" has the next goals:

1. Streamlining of the mechanisms of control over bodies of joint stock companies whose shares are transferred to the "Svyazinvestneftekhim";
2. Search and attraction of using various instruments of money market and long-term finance of capital projects and programs implemented by enterprises of the Republic of Tatarstan to meet the priority areas of the economy, defined by the Government of the Republic of Tatarstan.

The PJSC "Bank Zenit" and PJSC "AK BARS" Bank are included in JSC "Svyazinvestneftekhim"

The activity of JSC "Svyazinvestneftekhim" is not effective because:

1) The main used tools are simple and traditional - loans and bond issues, including the international capital market;
2) The absence of well-established system of marketing of products of the holding companies that had a negative impact of the crisis after 2008 and resulted in lower sales volumes and partial suspension of production in individual enterprises.

The above facts about the activities of JSC "Svyazinvestneftekhim" hinder the development of the national stock market.

Regional development indicators of the stock market may be the following:

The availability of investments = the minimum level of investments by the broker / minimum wage   (1)

If the value of the indicator "Availability of investments" more than 1, then the investments are difficult.

Involvement of the public in the stock market = number of registered participants of exchange trades / number of inhabitants of the region   (2)

The closer the value of the indicator "The involvement of the population in the stock market" to 1, the more the public is involved in the trading in the securities market.

The involvement of legal entities on the stock market = amount of funds raised by companies using market instruments Securities / total borrowed funds companies   (3)

The closer the value of the index "Involvement of legal entities on the stock market" to 1, the more companies in the region attracts financial resources from the securities market.

The ratio between the volume of debt securities (bonds and notes) and the volume of bank lending in the region   (4)

It characterizes the development of the regional securities market and etc.

A prerequisite for the development of the regional stock market may be the arrival of Islamic finance in the Tatarstan economy.

In July 2008, in the capital of Tatarstan, Kazan hosted Investment Conference of the Islamic Development Bank. Also in those days it was established JSC "Kuwait-Tatarstan investment company" for conducting investment activities on behalf of "Turkapital" on the territory of the Republic of Tatarstan and neighboring regions and others.

March 26, 2010 during the meeting of President of the Republic of Tatarstan R.N. Minnikhanov with the President of the Islamic Development Bank Dr. Ahmad Mohammad Ali signed an agreement on the establishment of the Tatarstan International Investment Company (TIIC). Strategy of newly created company will be actively working with the private sector. TIIC should be a kind of engine to promote investment projects.

19 - May 21, 2016 in Kazan was the eighth World Economic Summit: "Russia-Islamic World: KAZANSUMMIT 2016". A key theme of the 2016 Summit was to discuss the new architecture of the world economy and prospects of development of the financial industry of the OIC countries in the regions of the Russian Federation in the context of international economic relations.

In recent years, some banks of Tatarstan did trial publishes of Islamic securities.

SUMMARY

The foregoing aspects allow us to conclude that there are some activities of individual participants in the securities market of the Republic of Tatarstan, the manifestation of interest in the republic's economy by foreign investors, which will undoubtedly affect the further formation of this segment of the financial market.

DISCUSSION

Thus, the imperfection of legal regulation, the predominance of state-owned companies, the limited use of the securities, the lack of criteria for evaluating the development of the stock market, the lack of development of the regional securities markets, and other factors led to the fact that at the moment the stock market in Russia is emerging market.

We need create the favorable conditions for attraction of vast segments of the population to participate in the securities market.

Significant participants of the Russian securities market are commercial banks, whose activity in this market is aimed at maximum profit. We should not forget that the banks also receive income from the provision of loans and strong regional stock markets will be in direct competition with banks. In this regard, commercial banks have little interest in the development of regional stock markets. Regional stock exchanges can attract unused funds from households and send them to the satisfaction of the needs of small and medium businesses through the purchase and sale of securities. To solve this issue is possible with the help of state intervention.

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CURRENT TRENDS OF MEAT MARKET DEVELOPMENT IN THE REPUBLIC OF TATARSTAN

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ABSTRACT

The article reveals the basic sector-wide problems of meat industry in the Republic of Tatarstan, related to the insufficient productive capacity use as well as to inefficient cost structure in terms of fixed and variable costs ratio. As evidenced by the conducted analysis the operation of most meat-processing enterprises of Tatarstan Republic is instable and the proposed strategic development programs lack sufficient justification. This carries inference that the system of business processes management is inefficient. Sector-wide indicators of prime cost, sales and output profitability prove the consistent decline in efficiency of meat-processing plants in the Tatarstan Republic.

Key Words: *Output Profitability, Prime Cost, Sales, Production Costs, Competitiveness of Domestic Companies, Meat-Processing Plant, Meat Products, Enterprise Efficiency*

INTRODUCTION

Food Industry in the Republic of Tatarstan is strategically significant for the economic policy of the region and the country as a whole. The economic sanctions applied to Russia by some foreign countries and the resulted import substitution policy makes the problems of food industry even more relevant and acute. The current trend in the food industry determines the level of Russian economic and food security. The economy of the studied food industry is characterized by a number of problems that have various regional differences. The most important of these is the limitations in the domestic meat supplies. The statement of this problem is caused, first of all, by non-competitive products of the Russian agricultural producers.

During the years of economic reforms, the production in most republican agricultural branches has decreased, with live-stock breeding suffering the most. The main reason is the inefficient use of productive capacity in the current cost structure, especially in terms of fixed and variable costs ratio. This problem requires a fundamentally different quality of agricultural policy, where a tool to increase competitiveness should be the main criterion for effective state regulation and support, that is, reduction of production costs per unit, improvement of agricultural producer's financial standing and production profitability increase.

MATERIALS AND METHODS

The issues of the processed meat market development were touched upon in the papers of Keramidou, I., Mimis, A., Pappa, E., Filios, S. , Goldsmith, P., Salvador, A., Knipe, D., Kendall, E. who investigated the development of this industry. At the same time the problem of non-competitive domestic producers remained unsolved. For this we have studied the publication of

Kapaj, I., Kapaj, A.M., Muca, E.D., Kurmangaliyev, S.G., Mizambekova, S.K., Akylbaev, R.S., Turysbecova, G.K., who researched the questions of enterprises competitiveness in current conditions and the problems associated with the development of the meat market.

RESULTS

Statistical analysis of meat production has shown that the greatest potential for increasing raw material base of the meat industry is in poultry and pig production. According to some estimates, there is a possibility of annual increase in the supply of poultry by 10% (Keramidou, 2010).

Table 1
CATTLE AND POULTRY STOCK IN THE FARMS OF ALL CATEGORIES IN THE REPUBLIC OF TATARSTAN IN 2010-2014, THOUS

Year	Cattle	including			Poultry
		Cows	Pigs	Sheep and goats	
2010	1214,5	493,9	750,1	451,1	10686,1
2011	1196,3	478,3	755,6	428,7	9739,5
2012	1174,7	469,3	757,2	417,8	9267,0
2013	1150,1	460,1	720,7	397,9	9098,9
2014	1116,6	447,5	695,1	378,4	9061,7

The situation in the farms of Tatarstan predetermines the state of main livestock products manufacturing, as shown in Table 2.

Table 2
MANUFACTURING OF THE MAIN LIFE-STOCK PRODUCTS IN THE REPUBLIC OF TATARSTAN IN 2010-2014, THOUS. TONS

Indicators	2010	2011	2012	2013	2014
Cattle and poultry for slaughter, live weight	274,4	281,3	289,1	305,6	307,3
Carcass weight	171,0	179,8	183,7	194,9	198,2
Including : cattle	74,9	86,1	84,4	86,0	83,7
pigs	46,4	54,1	56,4	57,4	57,9
sheep and goats	10,1	9,1	8,7	10,1	8,7
poultry	37,8	28,5	32,2	38,9	45,3

One should highlight the sector-wide downward trend in lamb production. Despite this, some farms specializing in growing and fattening sheep remain viable and competitive in current market conditions (Strandskov, J., 2006).

A more favorable situation is observed in the production of pork. Compared to 2009, the production of pork in 2014 increased by 11% despite the fact that the overall situation in the sector in the period of economic reforms has worsened (a sharp decline in the mixed feed production, worse quality, decrease in the average daily weight gain in growing and fattening), which is caused by a relatively small period of the fattening and decreased costs.

Over the last four years (from 2010 to 2014) the production of beef and poultry has also increased by 12% and 20% respectively (Kurmangaliyev, S.G., 2013).

To support local producers and improve the profitability of the domestic live-stock breeding in Russia quotas on imported products were introduced, which resulted in a shortage of raw materials and a sharp rise in the prices for meat products (Jin H.J., 2008). From 2009 to 2014 prices for imported raw meat more than doubled (Figure 1).

Figure 1
DYNAMICS OF AVERAGE IMPORT PRICES FOR MEAT FROM 2007 TO 2014
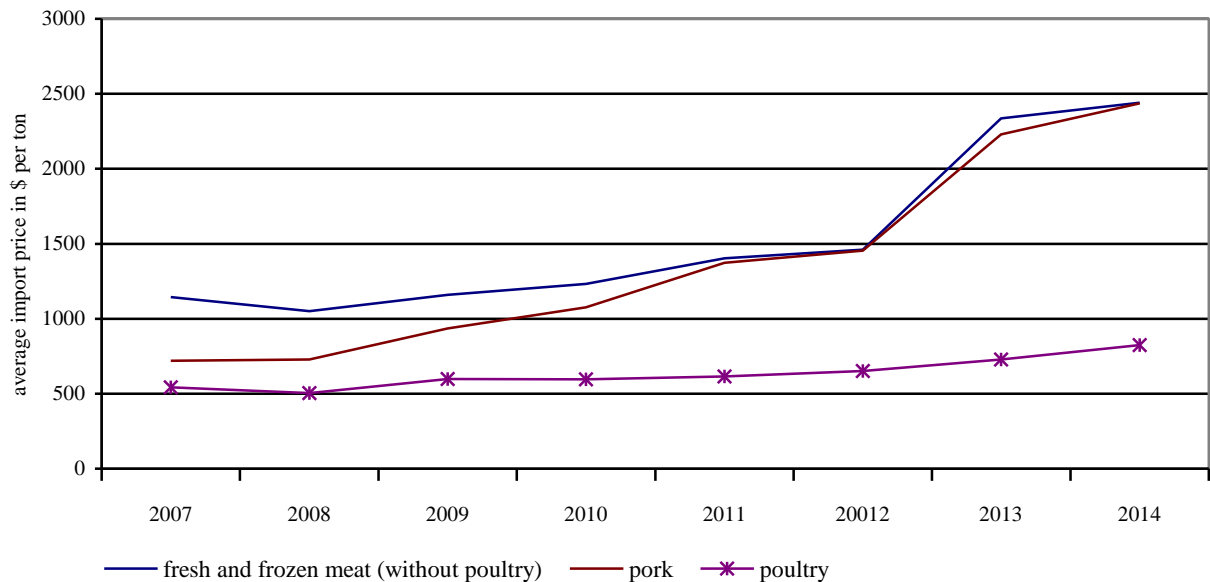
Epizootic has also affected the world prices for meat, as it was the reason for temporary banned supplies from various countries. For the period under review the whole regions were excluded from the meat supplies – South Asia with poultry, the USA with beef and Brasilia, which is the largest world exporter, with all sorts of meat. Prices for the imported meat rose due to an increase in transportation costs (high fuel prices) and currency rate growth (Ding, M.J., 2014).

During 2007-2014 the average retail price for all types of Russian sausage products increased almost two-fold. This is due to rising prices for basic raw materials as imported meat is mainly used for the production of sausages. Thus, for the period under review the price of imported beef and pork increased by 30%, for poultry - by 20%, for domestic beef prices rose by 126%, for pork - by 130% and for poultry - by 89%. Another reason for the rise in prices for sausage products is an increase in the inflation rate, which tends to grow by the end of the year (Marchant S. R., 2007).

The sharp rise in raw materials prices has resulted in the situation when almost all manufacturers of meat products ended in 2014 with a slight advantage, and some - with a negative margin. However the market experts indicate that the rise in prices for raw materials and for finished products of meat processing industry was disproportionate. Despite the fact that profitability falls, producers cannot raise the price of their products for consumers, since this will reduce the demand (Shchetinina C., 2013).

We will consider the performance of the meat-processing enterprises in the Republic of Tatarstan in recent years. According to the statistics 39 meat-processing enterprises were operating in the Republic in 2014. Since 2008 the number of enterprises in the meat industry has increased 1.6 times. In 2014 meat processing enterprises of Tatarstan Republic produced the products totaling 3 425.1 million rubles (Table 4).

Table 4
DYNAMICS IN THE VOLUME OF OUTPUT IN THE MEAT INDUSTRY (IN ACTUAL SALES PRICES) IN RUSSIA AND IN THE REPUBLIC OF TATARSTAN, THOUS. RUB

Years	Russian Federation	Republic of Tatarstan	Percentage,%
2008	37 935 192	859 399	2,27
2009	56 006 719	1 261 512	2,25
2010	79 146 945	1 816 280	2,29
2011	111 466 901	2 619 550	2,35
2012	123 917 444	2 705 387	2,18
2013	150 443 496	4 073 246	2,71
2014	195 960 971	3 425 141	1,75

Meat products manufacturing in the Republic of Tatarstan has an instable trend. The increase in meat production from 2009 to 2012, in sausage production from 2009 to 2014 and a decrease in their production during the last two years and in semi-finished meat products since 2012 (Table 5) is due to the fact that production volumes of meat products in physical terms have a significant tendency to decrease with an increase in the market price for the products. (Theuvsen, L., 2007) According to the statistics in Table 5, the rise in producer prices lags behind the growth of consumer prices in the market. We have considered the statistical sample for the meat-processing enterprises of the Republic of Tatarstan, which accounted for about 80% of the manufactured products (Hartmann, M., 2004).

Table 5
PRICE INDICES (DECEMBER OF THE CURRENT YEAR TO DECEMBER OF THE PREVIOUS YEAR; %)

Type of product	Years					
	2009	2010	2011	2012	2013	2014
Consumer price index						
Meat and poultry	128,3	128,5	102,7	108,9	119,6	118,6
Sausage products	123,8	122,4	106,0	107,0	119,4	110,1
Meat producers price index						
Meat	137,5	121,8	97,8	112,1	122,0	110,6
Cooked sausage products	134,6	121,1	105,3	106,6	121,6	107,8
Farmers price index						
Live-stock products	122,1	130,4	104,9	105,3	119,5	117,5

The business process of meat-processing enterprises material procurement (raw materials, main and secondary materials) is essential as the quality of raw materials, supply stability and prices for resources predetermine the effectiveness of the other processes and products competitiveness.

The share of unprofitable enterprises in 2014 amounted to 41.2%, whereas in 2010 this figure was 33.3% (Table 6).

Table 6
KEY FINANCIAL INDICATORS FOR MEAT INDUSTRY IN THE REPUBLIC OF TATARSTAN FOR 2010-2014

	2010	**2011**	**2012**	**2013**	**2014**
Net financial result, mln. rub.	33,1	48,2	46,1	22,7	26,8
Number of unprofitable enterprises, units.	3	1	3	8	7
Share of unprofitable enterprises in the total number of enterprises, %	33,3	9,1	21,4	61,5	41,2
Losses, mln. rub.	18,8	18,0	6,3	35,0	33,1
Selected indicators of solvency and financial stability of industrial enterprises at the end of the year, %					
Current liquidity ratio	83,1	76,5	108,5	113,3	136,2
Working capital to current assets ratio	-51,2	-58,7	-35,2	-9,4	1,0
Total debt to equity	37,0	35,7	53,5	59,8	55,0

CONCLUSIONS

Thus, over the past three years from 2012 to 2014, there is a downward trend in gross income of most meat processing enterprises of Tatarstan. The pattern of change in the profit of sales indicator, cost per 1 ruble of marketable products and profitability for the period under review lack any clear cut regularities

The analysis indicates instability of large meat-processing enterprises of the Republic of Tatarstan, the absence of strategic development programs, which leads to the conclusion about the inefficient management of business processes (Goldsmith, P., 2002).

The price situation on the market of meat and meat products is influenced by the level of costs, which are the basis for the distribution of revenue from sales and for determining the economic efficiency of the industry (Lozynska, I., 2014).

In this regard, it is necessary to analyze the cost composition of output by cost elements, in order to outline the reserves for increasing profitability and competitiveness, and to identify the opportunities for industry development. The data on the cost composition of meat output in the Republic of Tatarstan are presented in Table 7.

Table 7
COST COMPOSITION OF MEAT OUTPUT BY COST ELEMENTS FOR TATARSTAN ENTERPRISES, %

Cost item	2012	2013	2014
Raw materials cost	77,22	66,53	69,03
Fuel, power, water cost	2,91	5,97	6,14
Payment for intangible services, and other items of intermediate consumption	2,36	5,95	2,58
Labour cost	9,31	10,25	12,66
Amortization of fixed assets	1,99	3,22	2,83
Taxes and fees included in the unit cost of goods (work, services)	0,84	0,82	1,28
Other costs	5,37	7,26	5,48

The data in Table 7 give evidence to the fact that the largest share (more than 2/3 of the total cost) is due to the cost of raw materials. During the study period, this position has decreased by 8%. (Rudych, O.O., 2014).This suggests that the decline in the cost of raw materials will increase the competitiveness of the enterprise, which can be achieved through the development of raw material base and improvement of sales channels of raw materials between the supplier and the processor. One may experience a situation where farmers and meat processing companies, having common interests to increase the volume of production and sales, cannot determine a mutually beneficial terms of cooperation, promoting the development of enterprises (Sadler, I., 2002).

The economic efficiency of the industry, as noted earlier, is determined by the ratio of costs and profits from the sale (Kapaj, I., 2013). Industry indicators of prime cost, sales volumes and meat output profitability are given in Table 8.

Table 8
INDICATORS OF PRIME COST AND SALES FOR LARGE AND MEDIUM-SIZED ENTERPRISES OF THE REPUBLIC OF TATARSTAN, MLN. RUB

Indicators	2012	2013	2014
Output of goods and services	1 359	1 158	1 348
Prime cost	1 342	1 164	1 397
Profit	16,327	-6,627	-48,441
Profitability , %	1,2	-	-

Indicators from Table 8 confirm the downward trend in the profitability of production for the meat industry enterprises in Tatarstan, due to the disparity of prices for raw materials and finished products (Horská, E., 2008).

It should be noted that the profitability of production in the whole country tends to decrease. Profitability is an indicator for measuring the efficiency of using company's assets and liabilities (Battalova, A.R., 2015).

Overall profitability shows how much of net profit (net economic benefit) accounts per one ruble of invested total capital in the company (Kundakchyan, R.M., 2014):

$$R = \frac{P}{C} \cdot 100\%$$ (1)

Where R – overall profitability;
P – sales profit;
C – cost of products sold.

Thus, the overall profitability shows the performance of the enterprise.

n our view it is possible to improve the profitability of output and to increase the production of the company by purchasing the equipment of increased capacity, allocating additional production areas and improving the supply of raw materials, as well as by attracting additional financial resources, which might be government subsidies or investments of the third business entities (Bagautdinova, N.G., 2013).

Analysis of this issue at the international level shows that in developed countries agribusiness has been heavily subsidized by the government for many years. However, in the Republic of Tatarstan, as well as in Russia as a whole, the situation is different: the volume of public subsidies to domestic agricultural producers does not allow them to develop their potential. Therefore, raising investment from domestic and foreign producers could be one of the solutions to the problem (Nesterov, V.N., 2015).

SUMMARY

Considering everything mentioned above, we can conclude that the meat processing enterprises of Tatarstan require a detailed marketing analysis of their own capabilities, because it is important for domestic and foreign investors to have complete and accurate information about the prospects of the funded projects. The methods of marketing analysis allow giving a reliable estimation to the company potential, to develop and implement a marketing strategy in the company management practice that could provide a competitive advantage in the meat market.

CONFLICT OF INTERESTS

The author confirms that the provided data do not contain any conflict of interests.

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PROFIT FORECAST AS A TOOL TO IMPROVE ENTERPRISES COMPETITIVENESS

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ABSTRACT

This article is devoted to the analysis and model forecasting of enterprise profits to enhance its competitiveness using the meat processing industry as a case study. The research, based on correlation analysis identifies factors generating business profits; builds a dynamic regression profit equation taking into account the economic performance of the enterprise; proposes a model for managing the process of enterprise competitiveness improvement which includes a constant and continuous monitoring and analysis of the company marketing strategy.

Key Words: *Enterprise Profit, Dynamic Regression Equation, Company Competitiveness, Economic Efficiency, Competitiveness Indicators, Enhancement of Efficiency, Meat Processing, Competitiveness Forecasting Methods, Model for Managing the Process of Enterprise Competitiveness Improvement*

INTRODUCTION

Forecasting methods are successfully applied for business performance comprehensive assessment and improvement. The aim of the simulation is to get new information about the studied objects, which are not related with the initial data.

The general method of systems research, when the efficiency is affected by both external and internal factors (product demand, price fluctuations, and others), is the economic-mathematical modeling, which is the theoretical analysis and practical actions directed at development and use of models. In this case, the model is the image of the real object (process) in material or ideal form (i.e. described by the signs in a particular programming language), reflecting the significant properties of the simulated object (process), and replacing it during research and management. The simulation method is based on the principle of analogy, i.e. the possibility of direct study of a real object through a review of similar and available models.

It is known that the profit is one of the economic indicators of the company performance. Therefore, the investigation of this indicator dynamics to prospective forecasting is an important objective of our study. The forecasts of the profit volume are one of the tools to increase the validity of decisions, reduction of the possible adoption of sub-optimal decisions during assessment of company economic performance.

MATERIALS AND METHODS

The study of economic indicators of the meat-packing companies was performed by Keramidou I., Mimis A., Fotinopoulou A., and Tassis C.D., who investigated the trends of industry development (Keramidou et al., 2013). However, the problems of these processes

modeling were omitted in these studies. To research the problem, we have referred to the articles of Ketels C., Ye G., Mukhopadhyay S.K., Chen H.L., Chen C., Liu C., Wei N., Mehrabad M.S., Anvari M., and Saberi M., who investigated the assessment and modeling to identify the effect of various factors on the company competitiveness. (Ketels, 2013)

RESULTS

The accurate forecast requires taking into account a number of factors and their dynamics for a certain period. There are complicate relationships between various factors, therefore, their effect is complex and cannot be considered as a simple sum of isolated influences. In this case, the multivariate correlation-regression analysis allows the quantitative assessment of particular factors influence.

To analyze and study the effects on the performance variable (volume of profit from sales of the investigated objects) of the factorial features x_i, the following indicators have been considered: volume of sales of the Kazan meat-packing plant (Russia), production cost, cash income of the population per month and per capita, the average monthly nominal wage of workers, production of cattle and poultry for slaughter, the import volume of meat, population size, average producer's prices for cattle (in live weight), average producer's prices for pork (in live weight), average import prices for fresh and frozen meat, and the average price of electricity. (Ye and Mukhopadhyay, 2013)

The influence level of these factors was determined by the correlation analysis of stepwise multiple regression with the gradual reduction of the independent variables (the method of step-by-step inclusion-exclusion of factors).

The pair correlation coefficients obtained after analysis revealed the five most important factors to be included into the final model (multiple regression equation) (Table 1).

Table 1
THE CORRELATION DEGREE OF THE IDENTIFIED FACTORS AND PROFIT RECEIVED OF KAZAN MEAT-PACKING PLANT (KAZAN, RUSSIA) FROM SALES

Factor	Correlation coefficient
x_1 – volume of sales (thousand rubles)	0,82
x_2 – production costs (thous. rubles)	- 0,78
x_3 – unit value of imports (thous. rubles)	- 0,58
x_4 – production of cattle and poultry for slaughter in the Russian Federation (thous. tons)	0,14
x_5 – total imports of meat (thous. tons)	- 0,24

To build the final forecasting model of the volume of sales based on the Multiple Regression program of STATGRAPHICS system, the coefficient of multiple regression (multiple determinants) (R-squared), the coefficients of the regression equation – standard error coefficient (Std. error), the Student's coefficient (*t*-value), and the autocorrelation coefficient (Dur. Wat.) have been calculated. The estimated values of these indicators for Kazan meat-packing plant are shown in Table 2.

Table 2 suggests that there is direct relationship between the volume of profits received by Kazan meat-packing plant (y) from sales, volume of sales (x_1), and production of cattle in the Russian Federation (x_4), and inverse relationship between y and x_2, x_3, x_5.

The form of correlation was empirically determined, according to which, it was suggested that linear dependence and multiple regression equation for Kazan meat-packing plant is as follows:

$$Y = -71661,36 + 0,45x_1 - 0,42x_2 - 12,04x_3 + 10,98x_4 - 8,85x_5 \qquad (1)$$

Table 2
REGRESSION ANALYSIS FOR KAZAN MEAT-PACKING PLANT

Variables	Coefficient	Std. error	t-value ($p<0,05$)	R-squared	Dur. Wat.
a_o	-71661,36	46768,48	-1,53		
a_1	0,45	0,09	4,71		
a_2	-0,42	0,08	- 5,12	0,79	2,3
a_3	-12,04	1,94	- 6,20		
a_4	10,98	2,36	4, 65		
a_5	-8,85	1,81	- 4,90		

Each equation coefficient shows the influence level of appropriate factor on the analyzed indicator at a fixed position of other factors. The changing of each factor by unit the y changes to appropriate regression coefficient. Absolute term of an equation shows the average effect on the result feature of unaccounted factors. (Chen et al., 2013) In particular, the model shows that the increase of sales volume by thousand tons increases the profit by 0,45 thousand rubles in average if the influence of other factors is constant. The increase in the production of cattle and poultry for slaughter by thousand tons increases the profit by 10,98 thousand rubles. In the same time it should be noted that the increase in production cost by a thousand rubles reduces the profit by 0,42 thousand rubles in average, increase of average import prices by a thousand rubles results in a decrease in profit by 12,04 thousand rubles in average, and the increase of meat import by a thousand tons decreases the profit by 8,85 thousand rubles in average if other equal conditions are equal. (Mehrabad et al., 2011)

One of the most important characteristics of the quality of the selected regression equation and the adequacy of the model is the multiple determination coefficients. The determination coefficient for the econometric model developed for Kazan meat-packing plant is R-SQ = 0,79. This coefficient shows that the variation of the profit volume of 79% is determined by all above-mentioned factors. Consequently, the selected factors significantly influence the volume of net profit of the studied companies. Average import prices for fresh and frozen meat are shown in Table 3.

Table 3
THE PREDICTIVE ECONOMIC INDICATORS IN DIFFERENT TRENDS FOR KAZAN MEAT-PACKING PLANT

Indicators	Volume of sales, thous. rubles	Production cost, thous. rubles	Average import price of fresh and frozen meat, USD	Production of cattle and poultry for slaughter, thous. tons	Volume of meat imports, thous. tons
Parameter	x_1	x_2	x_3	x_4	x_5
Type of trend	Exponential	Exponential	Linear	Linear	Linear
Equation of trend	y = 1389475 exp(-0,165 x)	y = 1328408 exp (-0,172 x)	y = 230,9x + 672,4	y = 160,2x + 7099,0	y = 115,7x + 670,3
Coefficient of determination (R^2)	R² = 0,975	R² = 0,980	R² = 0,810	R² = 0,676	R² = 0,832
Predictive value by year:					
2013 (8)	369557,9	334219,4	2520,142	8380,802	1595,878
2014 (9)	313174,5	281267,3	2751,107	8541,007	1711,574
2015 (10)	265393,6	236704,6	2982,072	8701,212	1827,269

Durbin-Watson autocorrelation coefficient (DW) indicates the presence or absence of autocorrelation and varies from 0 to 4. If DW is 2, then there is no breach of the prerequisites of the least squares method (LSM). For Kazan meat-packing plant, DW is 2.3, i.e. there is no autocorrelation that indicates the sufficient quality of a model.

To forecast using the multiple regression equations obtained above, the trend indicators $x_1 - x_5$ have been found. The trends for the indicators $x_1 - x_2$ are exponential and $x_3 - x_5$ are linear. Types of trends, the determination coefficients, and the predicted values for these indicators are shown in Table 3.

Substituting the predictive values of indices $x_1 - x_5$ shown in Table 3 into the model of sales volume, the forecast of sales volume of Kazan meat-packing plant for 2013-2015 was received (Table 4).

Table 4
FORECAST OF PROFIT VOLUME OF THE KAZAN MEAT-PACKING PLANT UNTIL 2015 RECEIVED BY MULTIPLE REGRESSION ANALYSIS

Indicator	Forecasted periods		
	2013 (8 period)	2014 (9period)	2015 (10 period)
Sales profit, thousand rubles	1822,703	-3355,57	-8186,36

Figure 1
PREDICTED PROFIT OF THE KAZAN MEAT-PACKING PLANT FOR 2013-2015
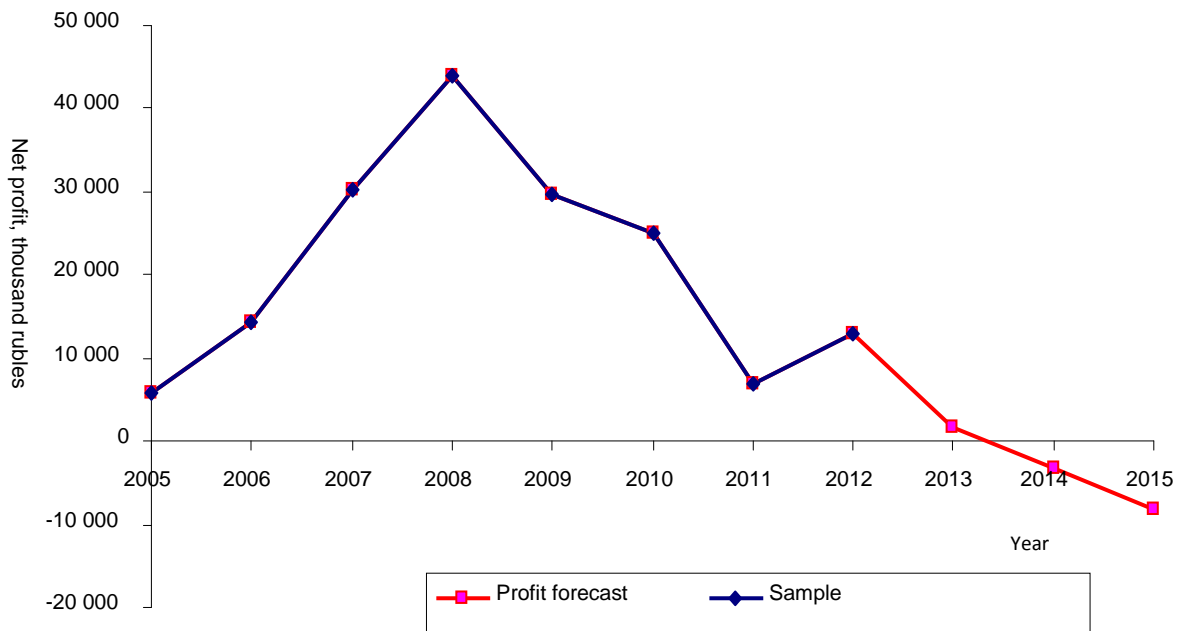

Fig.1 shows the tendency of decrease in profit of sales since 2008 that require the implementation of specific measures aimed at changing the existing declining trend of the performance indicators of Kazan meat-packing plant.

CONCLUSIONS

According to the performed forecast, the company will reach period of losses by 2015 if the existing situation continues (Fig.1). This situation has occurred largely due to decrease of the sales volume, which is related to the loss of market share during the analyzed period. At the same time, the decrease in revenue from sales was higher than decrease of production costs that caused the higher decrease in sales profit of the company. Thus, the measures to improve the financial stability and solvency are required to increase the competitiveness. Competitiveness of the products depends on different factors, criteria, and indicators determining the competitive advantages on the market and the ability to manage it, develop individual behavior model on the market in case of crisis situation.

To influence the internal business processes, the implementation of specific management tools that will stimulate the orientation in the environment and increase the economic performance of the company are required.

A specific feature of the proposed model on Fig. 2 is taking into account of the regular and continuous monitoring and analysis of the marketing strategy of the company.

In present conditions, the permanent and continuous monitoring of the products competitiveness is one of obligatory conditions. Development of efficiency of methods to achieve and maintain a competitive advantage on the market of meat products requires the

assessment of consumer preferences based on monitoring of competitiveness of production of meat-packing industry.
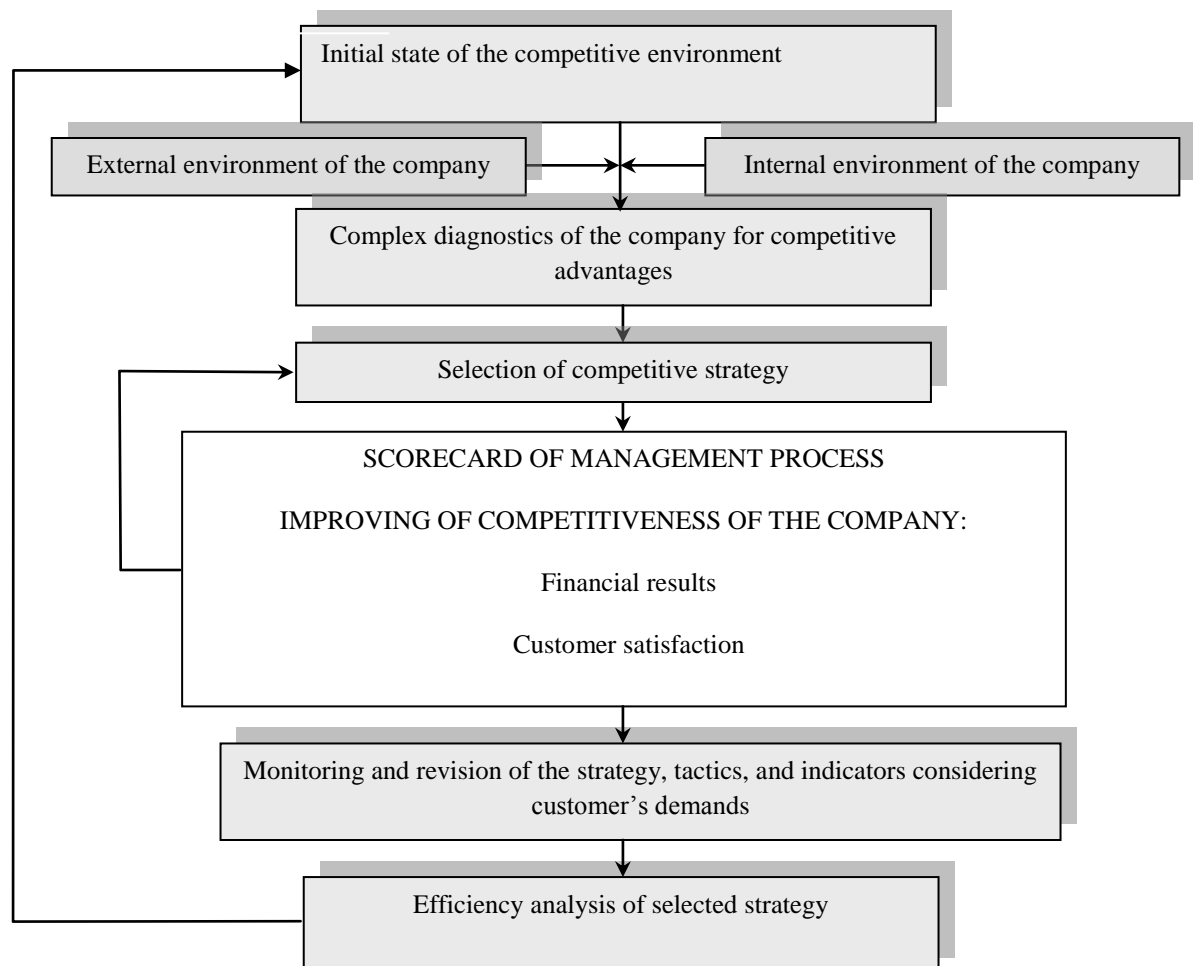
Introduction of the products competitiveness monitoring into the assessment method of consumer preferences is a prospective direction to increase the competitive advantages of meat-packing companies.

The general objectives solved during economic monitoring of competitiveness of meat-packing products, in our opinion should include:

1) Development of a group of indicators providing a holistic overview of the products of meat-packing company, and the conditions of the external and internal environment of the company based on the methods of mathematical transformation of individual indicators into integral ones.
2) Collection and systematization of information about the condition and development of products of a meat-packing company and its competitors at all stages of the life cycle.
3) Elaboration of software for processing the information received after economic monitoring of the competitiveness of the meat-packing company.
4) Ensuring a regular and visual presentation of the results of economic monitoring of competitiveness as the reports for managers and technical specialists of the meat-packing company.

Once the objectives are performed, the economic monitoring of competitiveness becomes a universal research and practical tool for the monitoring of products competitiveness.

Figure 2
MODEL OF MANAGEMENT FOR A COMPANY OF THE MEAT-PACKING INDUSTRY TO INCREASE THE COMPETITIVENESS AND MARKET SHARE

SUMMARY

Thus, the analysis of the factors stipulating the competitiveness of products and identification of the problems of the meat-packing industry has revealed the following management tools of the competitiveness of meat-packing products as the conditions to increase the efficiency of the integrated management system:

1. Analysis and formation of consumer's preferences in particular products of meat-packing company and promotion of a healthy lifestyle;
2. Development of trust to a regional brands and development of image of the product built on the main consumer's preferences;
3. Monitoring of products competitiveness of the meat-packing industry;
4. Implementation of quality control systems;
5. The policy of formation of the appearance of the final products (including packaging);
6. Price policy;
7. Formulated policy and development of new products.

Development of new meat products is one of the directions for building competitive advantages of products of the meat-packing company. Expansion of the variety of the products is a basis for increase of the sales volume and allows the exploration of the new market segments. The principle of systematic control of the development of new meat products requires taking into account the multistage life cycle of a product beginning from development of the composition, pilot production, experienced sales, introduction to the market and etc.

CONFLICT OF INTERESTS

The author confirms that the provided data do not contain any conflict of interests.

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PLANTING AS A FACTOR OF WEALTH PROMOTION (CASE STUDY OF "OLYMPIC" SPORTS COMPLEX, ALMETYEVSK, TATARSTAN)

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ABSTRACT

Article considers issues of softscaping as a factor of provision of urban amenities when creating sports complexes and its influence on aesthetic and artistic value of created landscape compositions. Features of sports complex of a large city softscaping are revealed. A selection of plants for landscape compositions is conducted. Possibility of expanding the range of means of expression by the use of traditional national patterns in the structure plane plant compositions.

Key Words: Softscape, Sports Facilities, Landscape Design, Landscaping.

INTRODUCTION

Issues of provision of urban amenities, particularly sports facilities are in a focus of great attention in the Republic of Tatarstan. To a large extent this was facilitated by the "Law of Establishing year 2015 the year of parks and squares in the Republic of Tatarstan" issued by the President of the Republic of Tatarstan.

When elaborating softscape projects of stadiums, which essentially are sports parks, inclusion of natural landscape, and especially green areas, are often included in their architectural solution.

Green areas make a significant impact on urban environment. They contribute to the fact that sports complex should be interpreted as a place where not only entertainment events, training and competitions sportsmen and athletes can take place, but organization of recreation for residents of nearby urban areas too.

 In this sense, issues of provision of urban amenities are addressed from the standpoint of urban ecology (Usiu, Kiper, Baris 2009).

Formation of favorable microclimatic regime on the sports fields, biological, and psychological comfort for athletes improves their performance and prolongs a season a comfortable environment for sports (Hostetler, Main 2009; Peterson, Thurmond, McHale, Rodriguez, Bondell, Cook 2012).

Professional, thoughtful and well-carried out landscaping enhances emotional state, the decorativeness of greenery. Their silhouette and shape, color, aroma, combination of plants with different colors have a beneficial effect on the psyche involved in sports.

TERMS AND METHODS OF RESEARCH

The object of softscape is a sports complex the "Olympic", belonging to JSC TATNEFT located in the central residential area of Almetyevsk city. A large building, including 14 sports halls, was built about 40 years ago; land for softscaping is of 0.4 Hectares, on a scale sanitary-

hygienic assessment of plantations can be attributed to the 2nd class; ingredient and parametric pollution types are observed.

RESULTS

During the softscaping, we were guided by National Codes and Standards of Russia, and considering an experience of authors (Colding, 2007; Daniel, 2001; Niinemets, Peñuelas 2008; Yao, Zhu, Xu, Yang, Wu, Li 2012 etc.). It was originally supposed to conduct geo plastic transformation of the relief to create artificial hills. This vertical planning would not only solve the problem of giving the site identity and artistic expression, but also to protect the territory from the impact of adverse factors passing near the motorway, as did, for example, authors of the draft children's playground on the H.Yamasheva street in Kazan. But later planar nature of the location of softscape elements was preferred such as the most appropriate to create smooth and broad prospects in the style of the regular park.

Softscaping area of sports facilities can be quite diverse as well as in assortment of plants or in their placement on sports complex territory. Choice of landings depended on the size of the territory and determined by the overall architectural design of the composition, as well as by regrettable and indisputable fact that approximately 30% of the front area of the complex was originally fetched out to parking area.

The basis of selection range of trees and shrubs for landscaping was formed by general and specific properties of plants that meet the entire range of requirements; the most effectively impact on climate and promote hygiene, physiological and psychological comfort of the environment. Since sporting events never take place directly on the territory, we did not avoid trees and bushes with glossy leaves and place the plants so that the shade of their crowns fell on the tracks and platforms.

In a city sports facilities carbon monoxide released by motor vehicles, sharply is reduced after appearance of the foliage on the protective strips - an average of 2 - 3 times in comparison with the leafless period; Depending on the density of planting from 21 to 86% of dust is delayed (Roberts, 2013). Green areas are also a kind of a filter to minimize and absorb some of the sound energy, especially Norway maple and tillet. The efficiency of the plant in the microclimate regime of the environment depends on the plant habit, and the density of the crown, with the manifestation of these properties is determined by the rate of growth and a period of foliage. To alleviate noise levels, improve the composition of air, heat and humidity conditions in the sports complex were planned special landing. Thus, during the formation of the external protection against dirt around the perimeter of the land provided the strip of shrub plantings of cotoneaster shiny, the width is 1.5-2m from the main road and 1m - from local driveways.

In current rules for the design of sports facilities is recommended not to use wood and shrubs with thorns, impeller, as well as those that are clogging up the courts and creating possibility of injury. Not recommended the plants strongly dusty during flowering and irritant human respiratory tract. When selecting a plant variety and its placement in the sports complex was considered a recommendation not to use prickly plants, as well as plenty of fruit-bearing or giving a large number of flying seeds.

When designing structures scenes, stripes and other elements of green space accounted plant resistance to mechanical damage and recreational loads, as well as the phase of vegetative growth and therefore displays the ionization and phytoncidic activity was taken into account. Selection of trees provides a continuous release of phytoncides throughout the season of sports activity and refusal of species that shed their leaves early (Shearin, 2013).

Were designed charts insolation on individual plots with the selection of the necessary range, thereby creating a comfortable environment at an early stage of the formation of vegetation and gave the economic effect in a significant reduction of planting material through the most efficient placement.

The object of a softscape designer is to use decorative qualities of plants. The estimation of aesthetics of the softcape reflects brightness and harmony in combination of herbal ingredients. To obtain parade flower garden directly in front of the building two color schemes with national ornaments were offered (Fig. 1).

Figure 1
SCHEMES OF NATIONAL ORNAMENTS USED IN SPORTS COMPLEX IN ALMETIEVSK CITY
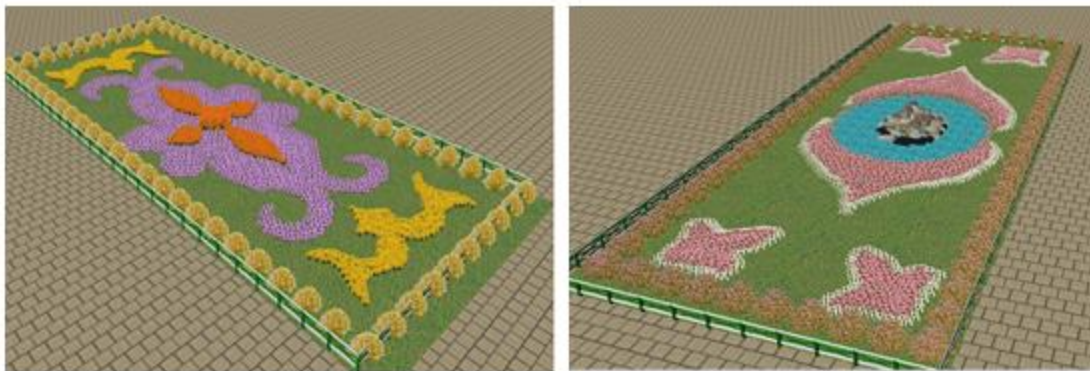
A significant role in the artistic and aesthetic design of the sports complex assigned to lawns. Skillful use of their decorative properties allows us to emphasize the dignity of compositions enrich the landscape, visually expand the existing territory and give the site a stylistic completeness. Lawns effect on the sanitary conditions and aesthetics of sports complexes, thus important that the lawns around the buildings intended for mass visits are also handling platforms in the emergency evacuation of the audience (at the rate of 0.5 m per seats).

DISCUSSION

Quality and longevity of a lawn is primarily dependent on the soil, on uniform structure and of humus layer power, sufficient permeability, porosity, porosity for the penetration of water and air to plant roots. Important prerequisites for high-quality lawns are smooth relief (gradient 0,006—0,008), providing the runoff of snowmelt and rainwater, as well as good drainage for fast drainage of excess water. However, we should not forget that the excessive use of drainage devices can lead to drying of the vegetation layer.

The composition of the grass mixture proposed for sowing grass on the open-lit areas, taking into account the average soil cultivation, included several cereals (Table 1).

Table 1
COMPOSITION OF THE GRASS MIXTURE FOR LAWN, USED IN SPORTS COMPLEX (%)

Cereal	Percent-size in mixture
Red fescue	30
Perennial ryegrass	30
Bent grass white	20
Meadow grass	20

Well-shaped, longstanding, smooth, resistant lawn allowed to not only significantly improving microclimatet of the territory, but also its aesthetic appeal.

CONCLUSIONS

Sports complex "Olympic" is located in the central part of Almetyevsk city, and acts as an object of intracity public facilities. Developed softscape project of the territory includes measures for improvement of separate areas, provides guidance on the composition of plant communities aimed at creating sustainable and highly decorative compositions.

Authors proposed to combine traditional techniques in sports structures design with ornamental plants, bearing characteristics of traditional national ornaments and colors. This approach allowed increasing spectator interest in sports facility and, as a result, his popularity among the population.

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THE DECOMPOSITION ANALYSIS INSTITUTIONAL SUPPORT OF TRADITIONALIZATION AND INNOVATIZATION OF RUSSIAN ECONOMY

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ABSTRACT

Variable-based decomposition analysis of traditional and innovative development of national economic systems and forms of its institutional support makes it possible to reveal specific features of the processes that occur in the real and financial sectors of economy, first of all in the sphere of its material production. The sphere of material production in Russia is undertaking a particularly difficult period. The destruction of old institutions that are to govern production activities and the lack of new effective institutions had the most negative impact on material production of the economy. Those Russian industrial enterprises that have survived are under the pressure of tough world competition. Many of them need serious support, including an institutional one. The article focuses on the theory and methodology of origin, functioning, development and transformation of institutions in the process of traditional and innovative development of national economic systems; the authors carry out a diverse contrastive decomposition of national economic systems, reveal the functional role of interaction of traditions, innovations, investments and institutions in Russian economy as well as their controversial poly furcation consequences.

Key Words: *National Economic Systems, Business, Power, Socium (Social Medium), Diversification, Institutions, Tradition, Innovation, Investments, Laws, Contradictions, Dissipations, Bifurcations, Fractals, Institutional Fields, «Tough» И «Mild» Institutions.*

INTRODUCTION

Objective

The aim of the study was to identify the nature of traditional and innovative development of economic systems and to prove its impact on the diversification of institutions; to reveal the interaction of traditional institutions as stable fractals of a national economic system, innovative institutions as the conditions for its creative destruction and renewal, and investment institutions as a way to ensure sustainable transformation and diversification of these processes in Russia.

Methodology and Results

A holistic approach and method of decomposition to the study of traditional and innovative development of national economies were used, what made it possible to identify "a genetic resource"- an economic tradition, "a genetic push" – "an innovative idea", the basis of dynamic transformation and diversification of institutions – intellectual property or intellectual

capital. With the help of deduction we were able to reveal the logic of occurrence, function, development, transformation and diversification of an innovation process and its institutional maintenance; to point out the peculiarities of open (innovation) and closed (traditional) areas of a national economic system; to identify it as a contradictory unity of traditional and innovative institutions, in which their general and specific, hard and soft forms interact and diversify. (Vagizova, 2009)

Originality

The original character of the study is implemented by the fact that the diversification of institutional matrix is presented and justified as the traditional and innovation process in the development of Russian national economic system, in which traditional and innovative institutions of business, government and society are interacting at different levels and in different social cultures.

RESEARCH TOOLS

Intellectual capital is the main in-system multifunctional form of institutional maintenance of traditional and innovative development of any economic system. It should be stated that at all stages of its formation, functioning and development the intellectual capital gives rise to an appropriate system of institutional self-sufficiency and the mechanism of its transformation, diversification and development. An innovative idea is a dormant intellectual capital. Originating on the basis of tradition, an innovative idea is transformed into intellectual capital. It specifies and distances itself in the economic system and in the system of its institutions within a certain set of rights. At this stage its personification takes place. It acquires its legitimate or shadow owner and a subjective transmitter and, like any capital that "abhors a vacuum", rushes on to get its result - economic innovations, and through them - to systemic effects. However, not every innovative idea is embodied in an economic innovation, but only that one, which finds its application in business practices and is transformed into intellectual capital; in other words, it becomes a self-expanding value. (Blyakhman, 2005) Consequently, an economic innovation is an intellectual capital applied or implemented in practice, which manifests itself in new goods, new capital and new institutions. The innovation, applied in an economic system, acts as an economic innovation and an adequate form of capital. They have a specific institutional arrangement, which transforms the economic innovation and its capital form into an economic tradition. The algorithm of emersion, functioning, development and transformation of an innovation process and its institutional support is given in Figure 1.

Figure 1
THE ALGORITHM FOR TRANSFORMATION OF A TRADITIONAL AND INNOVATIVE PROCESS AND ITS INSTITUTIONAL SUPPORT
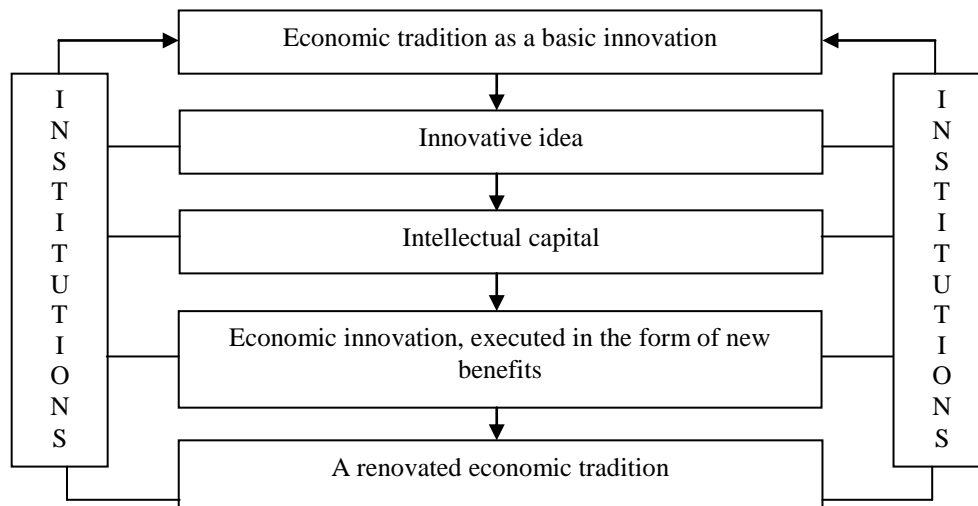
Consistent development of points of view on interactions of economic traditions, innovations, intellectual capital and their institutional support significantly enhanced the understanding of their origin, types and objective laws of evolution of these processes. The degree of closeness of connection or disconnection of these processes in various economic systems is multiple-valued. In this regard, it is necessary to state reasons for the existence of this ambiguity and to give their definition in an institutional aspect. (Kolodko and Grzegorz, 2009)

Reasons for the existence of an economic system in general are a universal law of relative scarcity of resources and conditions of uncertainty during its realization. Three factors form the basis of the law of scarcity: first, the continued growth of human requirements; secondly, the scarcity of material goods and services needed to satisfy them, and thirdly, adequacy or inadequacy, diversification or lack of it in the system of institutions that are to provide the implementation of the first two circumstances. The economic system operates by means of its structural traditionally innovative institutions such as specialization of labor, ownership, control, monetary system, labor organizations, government agencies, corporations, taxes, money, income, etc.

Within the context of this research a national economic system can be defined firstly, as an institutional form of organization of economy, in which ways and means of effective use of limited (scarce) resources are incorporated and distributed in the conditions of uncertainty and risk; and secondly, as a whole complex of traditional and innovative institutions, ensuring reproduction of goods that meets the requirements of people in conditions of scarce resources, uncertainty and risk.

In order to disclose the tendencies of traditional and innovative development of a national economic system, to identify the interaction of its traditions, innovations and institutions, their domains and sub-systems, laws and regularities of their dynamic transformation and diversification it is necessary to carry out a variable-based decomposition of the national economic system up. In conditions of globalization and regionalization each such system has both common and specific features. Therefore, by way of an illustrative example of such

processes, we will refer mainly to the Russian economy.

A SPHERE DECOMPOSITION OF AN ECONOMIC SYSTEM

The first variant of decomposition makes it possible to mark out three spheres of an economic system, in which traditions, innovations and institutions interact.

The first sphere of decomposition covers the institutions of state and its executive bodies, the second - the institutions of business, nonprofit organizations, households and an individual as a participant in social, economic and environmental relations, and the third - the institutions of socium, legislative bodies at various levels and various community organizations, unions and other associations. Flows of information are circulating within each institution, and among them. Besides, the institutions of governance and control provide an ideal eco information (II) in the form of regulations, the institutions of a real sphere - the real information (RI) - demand, supply, products, services, prices for them, etc., and the institutions of a socium - a coherent ideal-real information (IRI). Traditional institutions can be distinguished in each of these spheres, judging by the type of activity, where the reproductive activity and reproduction of traditional information are realized (culture) and innovative institutions, which productive activity is carried out and innovative information (culture) is created and reproduced. The law of reproduction of stability of a national economic system, or the law of stabilizing tradition plays the role of a moderator in a traditional sphere of institutions' activity; whereas a moderator in an innovation sphere of institutions' activity is the law of renewal of a national economic system. The interaction of these laws gives rise to a dynamic pattern of transformation and diversification of traditions, innovations, institutions and investments. (North, 2009)

Thus, based on the analysis of the first version of the decomposition of a national economic system, it is possible to conclude that in it there exist, interact and diversify traditional and innovative institutions.
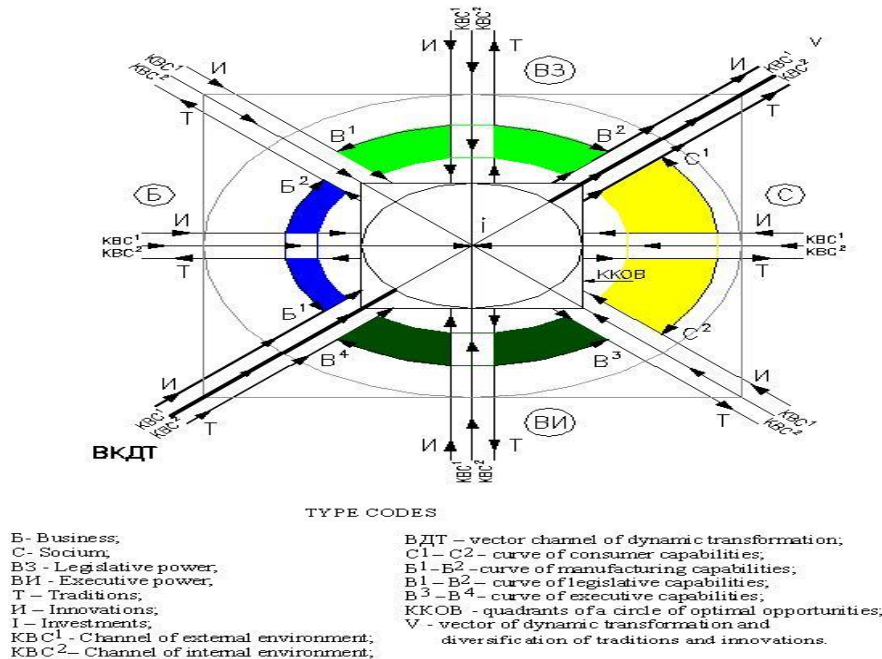
THE DECOMPOSITION OF DYNAMIC TRANSFORMATION OF INSTITUTIONS

The second version of the decomposition of a national economic system, shown in Figure 2, is related to such of its characteristic features as open (innovation) and closed (traditional) spheres of diversification of institutions, the regulator of which is a dynamic pattern of transformation and diversification of traditions, innovations, institutions and investments in the quadrants of a circle of the optimum opportunities in the spherical subsystems of business, power and socium.

Three internal spherical interacting subsystems - Business (Б), Power - the legislative and executive (ВЗ, ВИ) and Socium (С) with two institutional environments: traditional and innovative are pointed out and analyzed in this variant of the decomposition of a national economic system. Institutional traditions and institutional innovations interact as system benefits. Traditions here act as a genetic resource of innovations in spherical subsystems of business, power and socium, as well as their breeding grounds. The latter is governed by the law of reproduction of a stabilizing tradition, which accumulates the centrifugal forces of traditional institutional flows of a national economic system in terms of quadrants of a circle of optimum opportunities (КОВ) and through internal environment channels (КВС^2) regulates their dynamic

transformation and diversification according to institutional innovations. Diversification of the latter with traditions and their transformation is governed by the law of renewal, which accumulates centripetal forces of institutional innovations in the quadrants of the same circle of optimum opportunities, and, in combination with investments, provides the enrichment of institutional traditions of a national economic system and through external environment channels (KBC^1) adapts new social cultures.

Figure 2
THE MODEL OF DYNAMIC TRANSFORMATION OF TRADITIONS, INNOVATIONS, INSTITUTIONS AND INVESTMENTS IN SPHERICAL SUBSYSTEMS OF BUSINESS, POWER AND SOCIUM

TYPE CODES

Б- Business;
С- Socium;
ВЗ - Legislative power;
ВИ - Executive power;
Т – Traditions;
И – Innovations;
I – Investments;
KBC^1 - Channel of external environment;
KBC^2 – Channel of internal environment;

ВДТ – vector channel of dynamic transformation;
$C^1 - C^2$ – curve of consumer capabilities;
$Б^1 - Б^2$ – curve of manufacturing capabilities;
$B^1 - B^2$ – curve of legislative capabilities;
$B^3 - B^4$ – curve of executive capabilities;
ККОВ - quadrants of a circle of optimal opportunities;
V - vector of dynamic transformation and diversification of traditions and innovations.

A national economic system as an open, innovative sphere of the institutions exchanges matter and energy with the environment, does not hinder the exchange of world institutions, allows the update of its elements – business, power and socium subsystems, and provides the exchange of their models in the process of dynamic transformation and diversification of traditional and innovative institutions. In other words, in a national economic system there always exist, operate and develop innovative institutions, the regulator of which is the innovation law of its renewal. But on the other hand, as a shear of the cultural layer in a given civilization, any national economic system is focused primarily on the reproduction of this very type of civilization. From this perspective, it appears to be a closed subsystem of traditional institutions. Opportunities for innovative institutions "grown" in one national economic system, in other systems are limited and can hardly prevent the destruction of ethnic institutions and integrity of the civilization. The role of a natural restrainer is played by institutions - fractals, that is, by moral principles, dominant values and traditions that support the stability of a society and protect it from the loss of its identity and ability to reproduce it (to be self-sufficient). Control over the institutions in this sphere is taken by the law of stabilizing tradition of a national economic system. (Nureyev, 2008)

Thus, the analysis of decomposition of the second variant of a national economic system shows that it presents a contradictory unity of traditional and innovative institutions that by interacting, transforming and diversifying appear to be the source of its development.

DECOMPOSITION OF INSTITUTIONAL CONTRADICTIONS

The third option of the decomposition of a national economic system is the study of institutional structure of contradictions in subjects of its innovative sphere. Most strikingly these contradictions can be traced in both integrating and disintegrating innovative activity subjects of the institutions, functioning in the Russian economy. To the first group of the institutions refer institutions of partnership and cooperation. Thus, for R&D organizations of fundamental character the immediate goal is to achieve an innovative idea; for other R&D organizations, focused on applied subject matters, it is the embodiment of the new idea into particular innovations; for entrepreneurs - to get innovative profits. The institutions of innovative activity of innovation partnership and cooperation serve as a means of ensuring the implementation of these goals. Their innovative activity helps to achieve these purposes. It is just in this communication that synergistic functions of these institutions, their integrating character are manifested. Among the main reasons, stipulating the activity of such a tendency, can be stated: first - the multiplicity of actors in an innovation process on the functional stages of its implementation; second - the diversity, not single ordinal character and reciprocity of goals and means of the actors, carrying out an innovative process, and third - , the realization of goals common to all actors in innovative relations leads to the result, which cannot be just reduced to the sum of isolated results. The result of all this is an increase of mass consumer costs, reduction of the cost of their units and achievement of socially significant, synergistic effect – the growth of total intellectual capital, which brings together the subjects of innovative economic relations and ensures the homogeneity of institutions. (Postaliuk, 2006)

Weak points of market forms of partnership and cooperation in the Russian economy and its regions reduces the effectiveness of their work. This state of affairs was particularly notably traced in the period when Russia was joining the WTO. Thus, despite the fact, Russia is among the leaders in terms of investment in research and nano-technology, the efficiency of these spending, according to Neo-Analytics, does not correspond to the position of real leaders in this field of the world market. The largest number of nano-products in the structure of world nano-product market is held by the USA – 46%, European countries – 28%, Asia – 20 %. Russia is among the other countries that occupy 6 % of the world nano-market.

To the second group of institutional contradictions, that disintegrate actors in innovative sphere of the Russian economy, can be referred the contradictions of interests and can be presented in five subgroups: the contradictions in the interests of actors of innovative relationships that define a particular type of innovative activity and its regulatory institutions; the contradictions of a psychological nature arising in the process of conversion of traditions into innovations, which are manifested in the clash of different institutions; the contradictions of innovative relationships with other elements of the economic system in which they arise, operate and develop; the contradictions on different levels of implementation of an innovative process: international, national, regional, local, on the level of business and household; the contradictions of innovative economic cycle structure, consisting of phases, of the implementation of which is based on principles and activity institutions that are considerably distinct from each other. This group also includes contradictions between the need for innovative development and

consequences negative for Russian economic system.

The group of institutional contradictions, disintegrating the actors in innovative sphere of the Russian economy, has had a negative impact on their activity. Results, that were achieved by us and Gaidar Economic Policy Institute after carrying out a research survey of enterprises in various sectors of Russian economy at the micro level show that there is a considerable reduction of investments into Russia' economy. Half of the surveyed companies intend to keep investment policy at the level of 2011 – 2012. There are some companies, which are going to increase the investment program. But they are 10 % less than those, who plan to reduce it.

THE DECOMPOSITION OF DISSIPATIVE PHENOMENA

These poly furcation states of actors of innovative relations in the Russian Economy are responsible for the fourth variant of the decomposition of a national economic system, which is connected with the study of dissipative phenomena in interaction, transformation and diversification of its traditions, innovations, investments and institutions that are acting in the forms of dissipative costs, dissipative transformations, diversifications and other dissipative processes in institutional structures of the economic system. Their ups and downs, strong and weak points depend on many exogenous and endogenous factors. The level of dissipation of an economic phenomenon depends on the phases of an innovation cycle. The greatest degree of their growth is observed at the phases of putting the innovation into practice, at the phase of its commercialization and distribution, at the phases of renovation, transformation and diversification of traditions, innovations and institutions.

THE DECOMPOSITION OF SOCIAL CONSEQUENCES OF TRANSFORMATION

It should be noted that defining the functional role of interaction of traditions, innovations and institutions in a national economy one should take into consideration the fact that it has a mixed systemic poly furcation consequences. Dynamic transformation of traditions, innovations and institutions creates and at the same time destroys the national economy. On the one hand, under its influence a lot of positive creative, technical and technological, structural, organizational, managerial, social, economic, institutional and other systemic changes occur at all stages, levels and in all areas of business, power and socium. These changes strengthen the national economy, its traditional relations as fundamental innovations, establish and develop basic institutions of post-industrial information economy, in which, under the impact of innovations, the integration of different scientific fields into one productive force takes place. These positive results of the interaction of traditions, innovations and institutions are multiplied by competitive environment, intensifying systemic effects, including synergistic ones, and innovative potentials of economic entities, consolidating them into one unique transformation resource of the entire national economic system, providing the innovatization of the latter.

On the other hand, the interactions of traditions, innovations and institutions somehow destroy fractal qualities of the national economic system. They account for the change of the types of economic imbalances, in the result of which breaches in traditions of already existing system and communication structure occur. This happens, particularly, in the periods of dynamic transformations and diversifications of ownership in the forms of its nationalization or privatization, due to the appearance of new objects, actors, and procedural forms of innovative relations in a national economic system. These "constructive destructions" (J. Shumpeter) of

innovations are accompanied by serious systemic changes in the structure of business, power and socium institutions, in the forms of their interaction, transformation and diversification that causes the growth of dissipative and other types of expenses, complicates the functioning of the national economic system, and sometimes even leads to its destruction. In this regard, there is a constant objective necessity for the elaboration of mechanisms of institutional support for stimulation and protection of creative properties of these processes, particularly innovative ones, prevention and easing their destructive systemic effects.
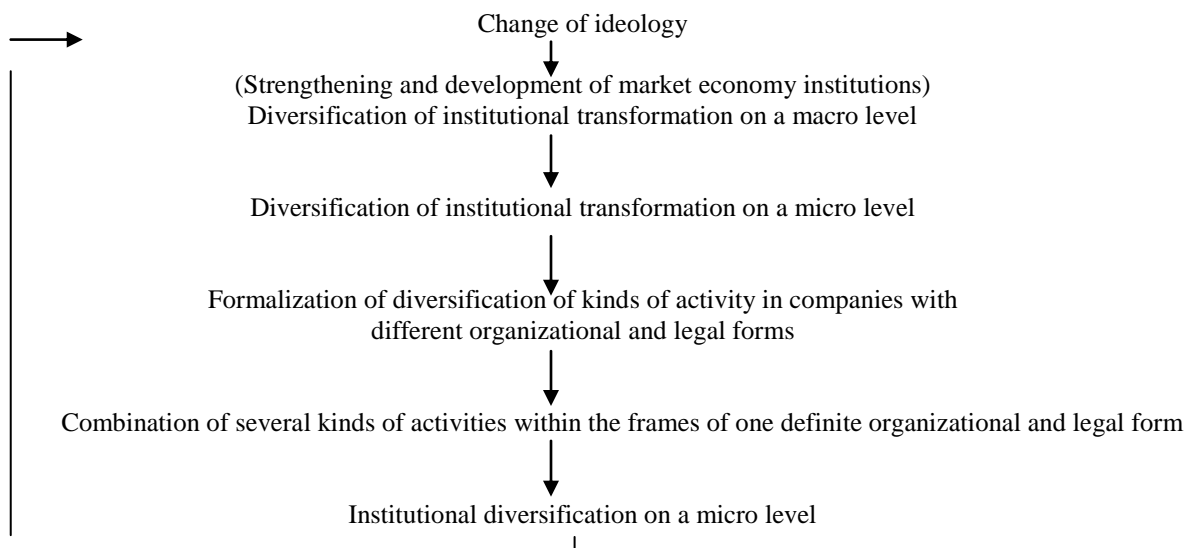
CONCLUSION

Variable-based decomposition analysis of traditional and innovative development of national economic systems and forms of its institutional support makes it possible to reveal specific features of the processes that occur in the real and financial sectors of economy, first of all in the sphere of its material production. The sphere of material production in Russia is undertaking a particularly difficult period. The destruction of old institutions that are to govern production activities and the lack of new effective institutions had the most negative impact on material production of the economy. Those Russian industrial enterprises that have survived are under the pressure of tough world competition. Many of them need serious support, including an institutional one.

The success of this support depends on the fact how effectively will these enterprises adapt to the new diversified institutional environment of the Russian economy, which has evolved and still continues to evolve.

The algorithm of these changes is shown in Figure 3.

Figure 3
THE ALGORITHM OF INSTITUTIONAL DIVERSIFICATION OF RUSSIAN ECONOMY

Change of ideology

↓

(Strengthening and development of market economy institutions)
Diversification of institutional transformation on a macro level

↓

Diversification of institutional transformation on a micro level

↓

Formalization of diversification of kinds of activity in companies with different organizational and legal forms

↓

Combination of several kinds of activities within the frames of one definite organizational and legal form

↓

Institutional diversification on a micro level

Privatization resulted in the fact that many state enterprises became privately owned, that legislation acquired the form of joint stock companies of various types - public, private, limited liability, etc. Market environment, regulations and traditions, innovations and investment, worked out by the "ideology of the market" dictate the need for rapid adaptation in a competitive

environment. Enterprises are merged, absorbed, carry out geographical diversification, which often happens beyond the national economy. As a result, such institutional diversification, when the economic system at the same time belongs to different institutional fields of national economies, takes place. This is especially true for multinational corporations, which extend their activities all over the world. At the same time the economic system has two alternatives: either to align their overseas subsidiaries in accordance with the parent field, or accept institutional pluralism. It should also be noted that in the case of expansion of economic activities in other countries or regions with very different laws, a certain level of institutional diversification does not yield to elimination due to obvious reasons (though some transnational corporations are able to exert some pressure on law-making bodies of various states). Consequently, only non-formal institutions which actually constitute a corporate culture, succumb to direct influence and control.

Institutional diversification, as well as traditional and innovative diversification of economic systems development, is of a controversial character. On the one hand, when adhering to a strategy of internationalization, there is a possibility to a flexible adaptation to the peculiarities of the economy of another country, but on the other hand, the level of management complexity and coordination of the activities of the economic system that has a strong institutional diversification, increases greatly. These additional managerial expenses are added to "traditional" expenses spent on the management of a diversified economic system, which reduces the efficiency of the economic system.

One may ask the logical question whether there is always an institutional diversification in any kind of diversification, not even having a geographical expansion as its basis. A positive answer to this question is explained by the fact that with the help of diversification of their economic activities in other areas, the economic system is faced with various institutions, groups of businesses entities that belong to different institutional fields. For example, codes of business conduct in one sector of economy, represented by a set of enterprises, will differ from those in other sectors of the economy. It should also be noted that any TNC is characterized by a high degree of trust among business partners, whereas the market of banking and insurance services is marked by a rather low degree of confidence. Besides, the rules, governing certain activities, differ from similar regulations, governing other activities. The transition to a market economy model has led to a variety of changes in the institutional sphere: new institutions appear; old institutions vanish or change their forms. We believe that the dominant role in the transformation of institutions in Russia is played by the change in ideology, which in its turn gives rise to new institutions. The transformation of institutions causes a variety of ways of economic activities, types of specialized or diversified production, which in its turn take a variety of legal forms. There is a diversification of micro business systems - there are concerns, conglomerates, corporations, alliances, cartels, syndicates, vertically integrated companies. Moreover, the degree of institutional diversification depends on many factors. Diversification of economic system activity generates the diversification of institutional fields, owned by the company. If diversification is based on mergers / acquisitions, then this degree will be more than if diversification is based on organic growth. This is due to the fact that the absorbed company has already formed its own corporate culture, traditions, customs, standards or codes of professional conduct. Joining the structure of a new company in this case, will be more painful, and the greater the difference in institutional environment, the less effective it may be the diversification, which is being carried out. In the case of organic growth, the company itself creates a corporate culture of the new company, which minimizes the difference between the institutions. However,

even in this case it will not be possible to avoid institutional differences between the two firms.

The reason for this is that (as it is shown in fig. 4) each type activity in a definite national economic system is governed by certain "tough" institutions (laws, regulations, state standards), which can be applied only to those activities. Conventionally, a set of tough institutions that regulate the activity of a diversified company can be divided into general and specific institutes. The generally tough institutions apply their laws to all types of activities, which are compatible within the frames of the company; specific "tough" institutions carry out control over only one type of activity.

Figure 4
INSTITUTIONAL DIVERSIFICATION IN THE FRAMES OF A MICRO BUSINESS DIVERSIFIED SYSTEM
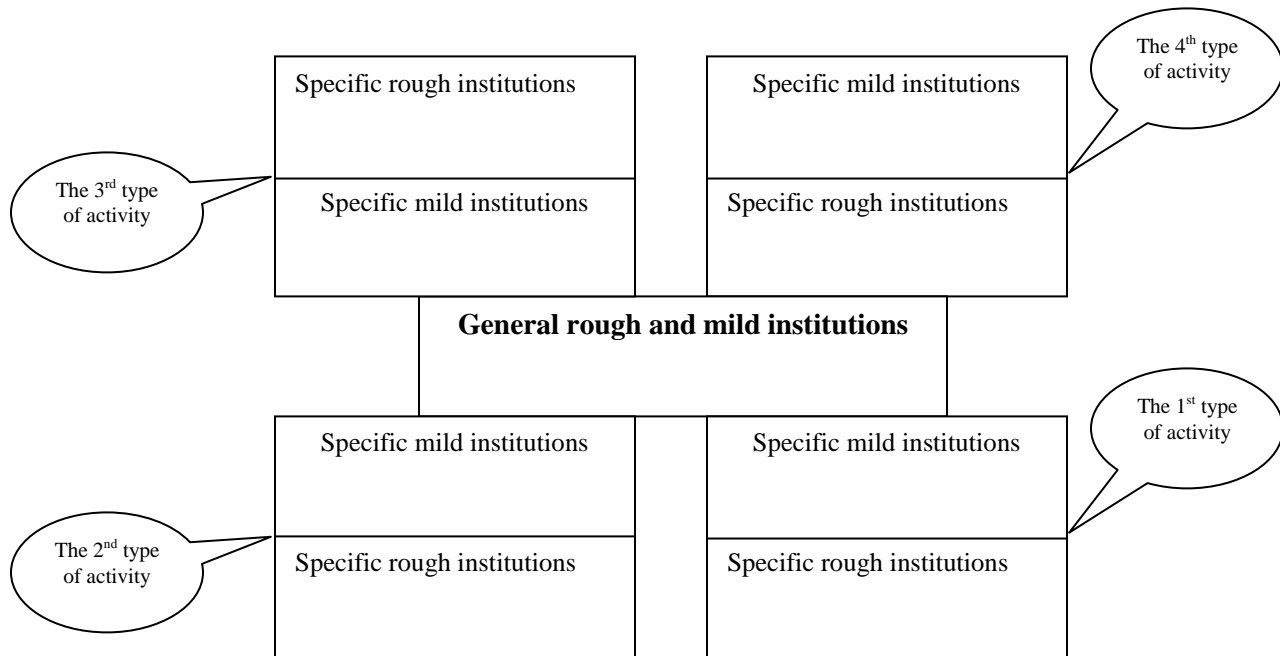
Thus, the variable-based decomposition analysis of forms of institutional support for traditional and innovative development of national economic systems has shown that in Russian national economy general and specific laws and rules of transformation and diversification of its traditional and innovative institutions of business systems are presented and realized at all its levels. The initial impulse for these processes was given by the transformation of forms of ownership and formation of market ideology, which correspondingly caused a change in all institutions of the society. As a consequence, this led to the transformation and diversification of economic system as a whole, which resulted in the appearance of enterprises with various organizational and legal forms. Institutional reforms in Russian economy, their efficiency and substantive content, express the need for further major changes in almost all its branches and local entities. We believe that the focus of these reforms should be shifted towards the creation of favorable conditions for the formation of optimum traditional and innovative institutional structures and prospects of the national economic system development at all levels and in all spheres.

ACKNOWLEDGEMENTS

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THE INNOVATIZATION OF MANAGEMENT INSTITUTIONS IN THE RUSSIAN ECONOMY

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ABSTRACT

The study innovatization planning institutions in the system of economic management is a fundamentally new holistic approach to the study of the dynamic interaction of business, government and society in that part of the national institutional matrix in which managerial institutional traps may occur. Their appearance is connected with the use of alternative institutions and losses that turn out on this basis, following an inefficient norm. The effective innovatization of planning institutions in the system of economic management takes place only in case planning periodic institutions are dynamically substituted by adaptive target (continuous) planning institutions that will provide protection from institutional traps in this area of interaction of business, government and society (Postalyuk, 2004). Concerning the article demonstrates the necessity for innovatization of planning institutions in the system of management of the Russian economy; provides a definition and characteristic features of adaptive target (continuous) planning as an alternative to periodic planning, as an interacting system of institutions that affects the efficiency of management of the Russian economy, as an institutional form of the struggle with losses, which arise from the positive and negative factors of management.

Key Words: *Innovatization, Institutions, Adaptive Target (Continuous) Planning and Periodic Planning, Management, Monitoring, Regulation, Negative and Positive Factors and Losses.*

INTRODUCTION

Objective

The aim of the study was to justify the need for innovatization of planning institutions in the management of the Russian economy; give the definitions and characteristics of adaptive target planning as an innovative alternative to the traditional periodic planning, as an interacting system of institutions that affects the management efficiency of the Russian economy, as an institutional form of struggle with losses arising from the positive and negative factors of management.

Methodology and Results

With this aim in mind, a holistic approach and the method of structural logic decomposition has been applied to the study of innovatization of planning institutions in the management of the Russian economy, which made it possible to give a definition and

characteristics of adaptive target planning as an innovative alternative to the traditional periodic planning, as an interactive system of institutions that influences the effectiveness of management of the Russian economy and as an institutional form of struggle with losses arising from the positive and negative factors of management.

Originality

The originality of the study is that innovatization of planning institutions is presented as a process of accumulation, preservation, use and development of the innovative capacity of institutions in the system of interaction of business, government and society in the management of the Russian economy. The authors justify the need to substitute traditional institutions of periodic planning by innovative institutions of adaptive target planning. It is proved that this substitution improves the efficiency of institutional forms of struggle with losses arising from the positive and negative factors of management of the Russian economy.

THE THEORETICAL PRESENTATION OF THE PROBLEM

The study innovatization planning institutions in the system of economic management is a fundamentally new holistic approach to the study of the dynamic interaction of business, government and society in that part of the national institutional matrix in which managerial institutional traps may occur. Their appearance is connected with the use of alternative institutions and losses that turn out on this basis, following an inefficient norm.

Theoretical and methodological basis for this study is the thesis that the effective innovatization of planning institutions in the system of economic management takes place only in case planning periodic institutions are dynamically substituted by adaptive target (continuous) planning institutions that will provide protection from institutional traps in this area of interaction of business, government and society. (Postalyuk, 2004)

In a pair of terms "periodic planning - adaptive target planning", the periodic planning for a long time was the only object of study in economic science in the management of social and economic objects, and of an enterprise or an economy of the country, in particular. At that, basically, in the centre of attention was its ideal form, which in Western management was given the name "formal planning". Adaptive target planning as an alternative to periodic planning actually existed in the form of some "vague" image, which was based on the observed draw backs and weak points of formal planning. In this case, the term "adaptive target planning" has been used, although on a small scale, and it was understood as: 1) operational planning, representing not correction, but specification of the periodic composed plans of different levels (for example, planning with the help of a rather "a rolling wave" method); 2) the same periodic planning, but with the adjustment of the plan within the plan period according to certain dates (for example, a 5-year plan with the adjustment of the 5-year plan when planning for the next year). Only in recent years the term "adaptive target planning (or its variants)" has started to be used in the meaning of planning norms, when speaking about planning, which is an alternative to periodic planning. In this meaning the term "the continuous process of development strategy", for example, is given in the article 'From the traditional strategic planning to a continuous process of development strategy" of 'Franklin & Grant" Company (2005). It should also be noted here that the lack of research on the sphere of continuous planning from the point of view of the present study are: the focus on planning at the levels of management of business

consolidated the companies and what follow; the lack of a clear definition of "continuous planning"; the insufficient analysis of losses from periodic planning.

Continuous (or adaptive target) planning is also characterized as an activity to ensure taking a timely decision or measures. (Http: //www.franklin-grant.ru/ru/news2/data/news_06/2005_10/2005100) In fact, this same characteristic feature of continuous planning is reflected in such of its result for a company as "continuous timely improvement and upgrading. (Lebedev, 2013) In this case the fuzziness of the definition of continuous panning lies in ambiguity of interpretation of the term "good timing".

Continuous planning is also defined as an activity that responds to actions taken by market forces of competitors. This causality is mentioned in the article "From the traditional strategic planning to a continuous process of development strategy" of "Franklin & Grant" company (2005). "The nature of behavior of markets and competitors in the modern world is creating new threats and opportunities, which have not been taken into account by traditional strategic planning. When these threats and opportunities arise, leaders can not and should not wait for the next planning cycle". (Budovich, 2011) In his article "Budgeting: Why is continuous planning so important for permanent success" (2005) S. Abogest characterizes continuous planning as an activity, which results in "the implementation of changes in accordance with the requirements of market forces". (Http: //www.franklin-grant.ru/ru/news2/data/news_06/2005_10/2005100)In this case, the vagueness of the definition of continuous planning is due to unclear interpretation of the actions of market forces and competitors, which continuous planning directly responds to.

And only recently attempts have been made to give an adequate general definition for continuous planning, referring to the management of the economy at all levels. For example, in the work of K. Lebedev "The analysis of economic activity of the constituent entity of the federation as an instrument of economic management" (2013) the author formulated general (i.e. related to the management of the national economy) concept of adequate current control as the management based on the detection of problem situations as they arise and taking decisions as soon as these problems are identified. (Zembatova, 1990) Characteristic features of this kind of control can be extended to that part of management as planning. In accordance with it adaptive target, or continuous, planning consists in taking decisions as soon as the above mentioned situations are revealed. In his article "Problems and perspectives of "Economic Analysis" as a science" (2103) K. Lebedev gave a general definition to continuous planning (in relation to the activities of a company management): "...Adequate management is based on continuous planning, consisting in the adjustment of a program plan (a program) of the company to new relevant problem situations in the company's activities" (Meskon, 2004). Hence, timely decisions or measures are those that are taken immediately after the detection of corresponding problem situations, and the actions of market forces, or competitors which call for a quick response, are defined as those of their actions that form problem situations (set separately for each controlled object).

As a result, the concept of continuous planning as an effective norm, opposite to periodic planning (for simplicity we will call norms, meaning functions themselves) is formed in present day science.

THE PLANNING AND ITS TYPES

The planning is getting ready, compiling (correction) of the plan of a controlled entity (a company, a firm, an entity, an object, a field industry, a sector of the Federation, the economy of the country, etc.). During the planned period main purposes (mission, strategic goals) may be changed, or even the overall plan may be clarified. The planning is one of the traditionally outlined management functions in a series of "planning, organization, motivation, coordination, control". The adjustment of the plan of a controlled object without affecting its main objectives is an element of regulation, including controlling (in this case - corrective) feedback. The regulation, together with the monitoring of external and internal environment of the controlled object, forms management function called "control".

An adequate type of planning (in this respect) is continuous planning. Continuous planning is an adjustment of the general plan after relevant factors of its functioning (i.e. factors that require adjustment) have been identified. By the factors of functioning of the controlled object we understand phenomena in the environment of the object (external factors) and in the processes of the object itself (internal factors), to which the subject of management should respond directly by decision-making processes to ensure its most efficient functioning. The identification of factors is carried out in the course of monitoring of external and internal environment of the controlled object.

An efficient typical norm of the monitoring process is continuous monitoring, i.e. monitoring, which takes place continuously (or with allowed recurrence). Such monitoring can be defined as the monitoring, which consists in identifying factors, which arise and affect the management. It is clear that continuous monitoring is impossible without constant monitoring of the sphere of activities of the company. The continuous monitoring together with the continuous planning and controlling effect on a social and economic entity forms an adequate ongoing management process of the latter.

A specific norm, connected with continuous planning is the regulatory institution, i.e. the activity that ensures taking correcting decisions or the decisions, which provide advancing towards the targets of planning and implementation of appropriate control impact on the object. This impact should not lead to deterioration (lower efficiency) of activities of the controlled object, even if such regulation is possible, because there is no goal to achieve the main objectives at any costs. The regulation, which causes a corresponding deterioration, is impossible, if the main goals of functioning of the controlled object exhaust the criteria of its efficiency. For example, if profit making and return on invested capital are the main goals of the company, and at the same time at the same time they act as exhaustive criteria for the efficiency of the company's activity, then the regulation, leading to a deterioration of its actions, is impossible. Accordingly, in circumstances when main goals do not exhaust the criteria for the efficiency of the controlled object, the regulation of negative impact is quite possible. Thus, continuous planning should go together with an effective norm of choosing main goals, providing the efficiency of the controlled object's activity.

Periodic planning as an option, opposite to continuous planning, consists in adjusting of the plan in specifically targeted dates, for example, once a year before the beginning of the next calendar year. The norm (ineffective) of monitoring that goes together with periodic scheduling is periodic monitoring carried out immediately before the adjustment of the plan. It should be born in mind that periodic planning can be also based on continuous monitoring of external and internal environment of functioning of the controlled object, i.e., at the effective rate of

monitoring.

FACTORS OF ADJUSTMENT OF THE PLANNING AND THEIR CONSEQUENCES

The periodic planning is almost impossible in a real present day. This is due to the fact that during the planning period (the period taken from one adjustment to another) factors necessarily arise, usually negative ones, which stimulate changes to be made to the object and correspondingly adjust the overall plan before the date of its official correction. These are the factors, which stipulate the termination of the company's activities. Thus, when suppliers raise prices on purchase materials due to rising market prices under otherwise equal conditions, the company will either agree with increased costs or will terminate its activity. In both cases, there is an automatic adjustment of its work plan, even if this correction is informal. Periodic planning turns out to be possible only in the environment of the company, where such factors do not originate. At least, it is possible to keep this type of planning in real life only during one planning period. With the shortening of the planned target date the duration of the period of the periodic planning as a method of the entity management increases. It becomes clear that periodic planning (quarterly or even annual) is possible in conditions when the environment of the entity's activity changes slowly. Such environment for an enterprise is the environment of command economy. In the theory of planning, the impossibility of periodic planning is associated with the lack of ability to take into account all the factors of the controlled object's activity during the planned period during the implementation of the planning. So, the outstanding Russian economist Nikolai Kondratyev, who denied the possibility of periodic planning, noted that "one must proceed from the fact that the work all look-ahead actions will be carried out in conditions of lack and incomplete knowledge of all factors" (Robbins, 2004).

Consequently, the periodic planning in real life for the most part exists in the form of ideology and a real periodic planning in the meaning of its inefficient norm is to be understood as a periodic planning, accompanied by a stimulated continuous planning. It should be noted that the periodic planning is associated with such (ineffective) norm, connected with the category of values, as the understanding of the plan as the law, i.e., as a norm, claiming mandatory performance. This leads to the situation when the stimulated continuous planning is associated with the development of inadequate measures. This planning was called "the struggle or battle for the plan". At the same time guaranteeing the main objectives may result in diminishing the efficiency of the controlled entity.

The periodic planning is associated with such (inefficient) norm, connected with the category of values, as the understanding of possibility to take into account all the factors, which can affect the activities of a controlled object. In this connection the adjustment of the plan within the target period is regarded as a manifestation of unprofessional performance of its planners, including senior management members. This leads to the following negative consequences:

1. The actual adjustment of the plan within the target period is off-the-record;
2. The adjustment of the plan within the target period in response to positive factors often is not conducted;
3. The reaction to detected negative factors that will inevitably affect the controlled object in the future, is delayed in time with the hope that the factors will either disappear, or the moment of their possible negative impact will be delayed;

4. If the adjustment of the plan in response to negative factors still takes place, but it is connected with significant changes in major goals, then under various pretexts the upper executive management commissions it to subordinate (inferior) management in order to explain the failure of the struggle for the plan by the incompetence of the latter.

Such inefficient element of management as an annual periodic planning in its "pure" form is widely discussed in present day literature on management as a description of an annual ritual of strategic planning, a necessary part of which is an appropriate monitoring. It became widespread in contemporary Western companies. Meskon M., M. Albert and F. Hedouri write that "recent analyses of 500 companies from magazine "The Fortune"... revealed a number of facts about a strategic planning. It was found out that the strategic planning is characterized by the following characteristic features:

1. A little (in number) planning department (less than 6 people) of an enterprise is enlarged by the planning at lower levels.
2. The time of the planning function even in corporations of the largest size is shorter fewer than ten years.
3. Strategic plans are developed at meetings of upper executive management of the corporation held annually.
4. The annual strategic plan is combined with the annual financial plan.
5. In most organizations it is believed that the planning function can be improved.

The periodic planning can be associated with both efficient and inefficient regulation norms. Ineffective regulation norm associated with it is the regulation, connected with the prevention or compensation of the influence of negative factors on the object or its activities at any cost (not within the resources allocated for the regulation), i.e. the one, which results in a decrease in the efficiency of the company's activity. The inefficient norm can function in conditions of both an effective monitoring norm (continuous monitoring) and its alternative (periodic monitoring).The inefficient regulation norm that was analyzed is the same struggle for the plan, but differs from that one which is carried out during the planning process, by the fact its main objectives are not changed that in the course of it (due to the use of inefficient choice of main goals).

It may seem that modern enterprises operating under market conditions do not use such regulation norm as the struggle for the plan on the grounds that all performance criteria, first of all, profits and return on equity, as a rule, are included into the main goals of the company. Meanwhile, it is not always so. The fact that private costs of companies reflected in performance criteria do not always correspond with the public costs connected with their functioning. This is due to the fact that the companies are able to sharpen the exploitation of labor, at least until the next revision of labor contracts. At that, the struggle for the plan during the regulation is largely related to the cost of labor. In this regard, the companies have the opportunity to fight for the plan at the expense of the increase of the price of labor costs, which does not affect the indices of its efficiency.

LOSSES ON INEFFICIENT PLANNING INSTITUTIONS

Questions of losses on inefficient planning norms have not been properly developed in economic literature. This is due to the fact that the very concept of continuous planning has not yet become a recognized element of the theory of management. This is evidenced by the fact that this kind of planning in academic literature on management is not the subject of discussion.

However, economic literature of today can not but present criticism of the periodic planning. At the same the criticism of the losses traditionally distinguish them according to only one criterion, namely, the losses arising from the fact that positive factors are used not from the very beginning (but a result of decisions made in the period of getting the annual plan ready), and losses associated with delayed taking steps in reaction to negative factors. Thus, S. Robbins and M. Coulter in their book "The management" reviewed the criticism of formal planning, bringing the case against it to five positions:

1. The planning creates fixity (incompliance);
2. It prevents the development of formal plans for the conditions of dynamic environment;
3. Formal plans cannot replace intuition and creativity;
4. Formal planning focuses managers on the current competition, rather than on the success of the company in the future;
5. Formal planning leads to undue faith in eternal success.

Only two of these points concern direct influence of the periodic planning on the activities of the company. One of the reasons of losses is that "planning creates incompliance". Losses arise due to the fact that the response of the managers to negative changes in the environment is too late so the company incurs more considerable losses than possible. "If the manager – S. Robbins and M. Coulter write – are not able to have sufficient flexibility - sometimes up to the complete abandonment of the original plan - and go on doing everything that was scheduled to reach initial set of goals, it is very likely, that he will not be able to cope with the changing environment. Steady adherence to a well-defined direction without taking into account environmental changes often leads to dramatic consequences ". Another reason for losses is that "formal planning focuses its attention on the management of competition today, not on the success of the company in the future". What is meant here are the losses arising from the fact that positive factors are not used in the company's activity from the moment when it becomes possible? According to the authors, the reason "… often does not allow managers to consider their business as a target for creative changes and innovations". This study gives only two types of losses, one of which is referred to losses on positive factors and the other - on negative factors. Note that the losses on positive factors are losses on time and on negative factors – losses on the scale.

K. Lebedev in his work "Problems and perspectives of "Economic Analysis" as a science" (2013) identifies three types of losses on the positive and negative factors: "As a result of" fear to make adjustments to the plan, corresponding social and economic entities suffer huge losses due to non-use, delay and reduction in the use of positive factors, possibilities of an impact, the impacts of negative factors that take place earlier and in large scales". Thus, he points out the losses on time and on scale. However, he does not explain in what way the periodic planning is causes these corresponding losses.

The nature of losses caused by the periodic planning, exercised by the subject of management of the company from the use of positive factors, can be expressed in the following forms:

1. Losses arising from the fact that the positive factors are used not from the point when their use becomes possible, but only as a result of decisions taken in the period available for annual planning. This happens, firstly, when positive factors which do not require considerable effort by the managed object and additional investment, are used. For example, the rise in market prices for commodities of the enterprise. In this case, losses occur when the commodity prices are rising, for example, not at the

beginning of the year, when there was an increase in market prices, but only during the period of adjustment of the plan at the end of the year. Secondly, when such positive factors are used, which require considerable effort and additional investment, for example, the reduction of interest on loans, making investment project previously deferred more profitable, or appearance of more efficient equipment and technology?

2. The losses caused by inadequate use of positive factors, if the corresponding adjustment pf the plan still takes place within the planning period. In this situation such measures on the use of positive factors are developed that do not affect the main purpose of the controlled object. For example, if the goal is the physical volume of output, the growth in demand is only used in the form of higher prices and increased output is not taken into consideration. This is due to the fact that the plan is regarded as the law.

3. The losses that occur because the adjustment of the plan within the planning period in response to positive factors is delegated to subordinate management levels. In this situation, the losses are connected with the development of inadequate measures taken by the subordinate administration with less experience, knowledge, capabilities than higher management to counter the negative factors. Lower-level management tends to develop measures that lead to less significant deviations from the main goals than it is necessary, paying for that by a significant deterioration in activity of the controlled object.

4. The losses arising from the contingency of the periodic planning with periodic monitoring and occurrence of stimulated (enforced) continuous monitoring. With the help of the latter positive factors are detected only when there are deviations in the functioning of the controlled object, i.e. belatedly. This loss may be associated with a time delay in the use of positive factors, with the impossibility of their use (because of the delay), as well as with their use less efficient usage than it could be possible. It is not possible to eliminate these losses during the annual adjustment of the plan.

5. The loss caused by the fact that some positive factors at the time of the official adjustment of the plan is no longer possible to use. This situation turns up due to the disappearance of the positive factors (for example, the tender for the construction of nuclear power plants that was announced abroad had already been closed) or due to the fact that these opportunities have already been used by other entities (for example, close-out sales of state property, part of which presented interest to the company, had already been sold to other companies).

6. The losses caused by the fact that at the time of the adjustment of the plan positive factors, which are not being used but are still valid may be used less efficiently than if they were used immediately after they had become available.

7. The losses caused by the fact that in the course of an official adjustment of the plan, it is not possible to make corrections in the processes of using of positive factors, initiated as a result of informal adjustments that enable them to use as efficiently as possible. Note that the losses of 1 and 4 are the losses on time, 2, 3, 4, 6 and 7 – losses on scale, and 5 – loses on the existence of factors.

The nature of losses caused by the periodic planning, exercised by the subject of management of the company from the use of negative factors, can be expressed in the following forms:

1. The losses caused by the fact that the measures developed during the stimulated (enforced) adjustment of the plan are aimed at ensuring the achievement of the most important main objectives, which have been set out during the period of formal planning (in the form of the struggle for the plan). This is often associated with a significant decrease in the efficiency of the company's activity compared with the possible efficiency.

2. The losses due to the fact that regulatory measures are associated with a reduction in the efficiency of the entity if its main purposes do not cover all indicators of performance efficiency. It is a case similar to the previous one, but it works in conditions of inadequate norm of the choice of main goals.

3. The losses due to late detection of factors during the enforced adjustment of the plan in case of contingency of the periodic planning and the regulation in the form of the struggle for the plan with periodic monitoring. Generally, the longer the time from onset of the factor the higher is the cost of measures taken before it is detected.

4. The losses due to the fact that the development and adoption of measures in response to the early identification of factors delayed in the hope that the factors or disappear the moment they show the impact on the controlled object will be delayed until the official timing adjustment plan.

5. The losses due to the fact that it is impossible to prevent the impact of some negative factors on the controlled object at the time of the official adjustment of the plan due to their late detection. 1-3 of losses are losses on scale, 4 – losses on time, 5 – losses on the existence of factors.

The inefficiency of periodic planning is supported not only by the above given analysis of the losses caused by it, but by its real doom. Like any inefficient type of activity, the annual strategic planning and prior to it the periodic monitoring, which were initially implemented with the help of propaganda and artificially created fashion, turned into a perfunctory measure. As noted in the article "From the traditional strategic planning to a continuous process of strategy development "…. the process (the strategic planning – authors' note), which takes a huge amount of time resources and resulting in countless piles of working documents, as a rule, does not have any serious impact either on the process of taking a decision by top executive management of the company or the company's strategy as a whole". Basic elements of the periodic strategic planning, of course, also turned into perfunctory measures. Dzhenster P. and Hussey D. in their book "The analysis of strong and weak points of the company: the identification of strategic opportunities": "…the management in many companies simplified the problem of evaluation of its strong and weak points and equals it to an insignificant and formal annual ritual ..." The economic analysis in its traditional interpretation has experienced exactly the same fate as well.

CONCLUSION

In a pair of terms "periodic planning – continuous planning" in economic science the periodic planning has been traditionally developed for a long time, whereas continuous planning as an alternative to the periodic planning actually existed in the form of some "vague" image, which was based on the observed draw backs and weak points of the formal planning. The term "the continuous planning" itself was also used, but in another sense. Only in recent years the term "the continuous planning (or its variants)" has started to be used in the meaning of a planning norm, as an alternative to the periodic planning. It was given an adequate definition, as an activity consisting in the adjustment of the program plan of actions of a controlled object if and when corresponding problem situations arise in proportion to the occurrence of corresponding factors in its activities.

Thus, in the theory and practice of economy practice the continuous planning as an innovatization form of institutions of management in the Russian economy is an alternative to the periodic planning. This process creates a new institutional matrix, which provides better management of the Russian economy and greater efficiency in the struggle against losses arising from the positive and negative factors in management.

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CONTENT ANALYSIS OF THE RISKS SPECIFIC TO THE REFINING INDUSTRY ENTERPRISES IN THE RUSSIAN FEDERATION

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ABSTRACT

The adverse events of global proportions do not cease to have an impact on the state of Russian economy. The economic model of modern Russia based on resource dependence, requires a careful attention of enterprise management to the identification and risk reduction in primary industry. This article discusses the main risks of Russian companies within refining industry. The identification of refining company risks was performed using the method of content analysis. The information basis of the study is presented by the annual accounts of RF oil refining industry enterprises. Thus, the list of "Top 10 risks" among oil refining enterprises was drawn up as the result of content analysis. They also studied the differences in risk exposures among public and private oil companies. Thus, it was revealed that public refineries are subject to the risks of fixed assets obsolescence by 85%, to the risks of litigation by 79%, to the risks of more stringent requirements for quality characteristics concerning a finished product by 72%. A different picture is observed for non-state refineries, 82% of which are subject to inflationary risks, 76% of which are subject to the risks of industrial accidents and emergencies, 72% are subject to the risk of public participation increase in the industry. The results of risk exposure study among public and private refineries also reflect in some degree the objective circumstances prevailing in the industry at present.

Key Words: *The Risks of Oil Refining Industry, The Content-Analysis of Risk Factors, State Refineries, Private Refineries.*

INTRODUCTION

One definition at the beginning of the XXI-st century is the period of economic "shocks". Corporate scandals associated with the bankruptcy of the Italian product company «Parmalat» and the US energy giant «Enron», a significant drop of oil prices, the financial crisis of 2008-2009 and other unfriendly changes preventing the world economic development, confirm the existence of serious gaps in risk management (http://www.kommersant.ru/doc/439714). The adverse events of global proportions do not cease to make an impact on the state of Russian economy. The economic model of modern Russia based on resource dependence, requires a careful attention of enterprise management to the identification and risk reduction in commodity industry. The oil refining industry is not an exception.

The study of Russian company risks in the field of refining is relevant for several reasons:

1. An unstable geopolitical situation, which makes a negative impact on the fluctuations of oil prices and requires the proactive measures from managers to minimize losses;
2. Constant changes in Russian Federation legislation increase the uncertainty of the government energy policy in relation to refining industry plants.

The purpose of research is the identification of the most significant risks specific to RF oil refining industry.

In order to achieve this goal it is necessary to identify a number of problems:

1. The disclosure of development tendencies in respect of the Russian oil refining industry;
2. The development of industrial risks classification;
3. The identification of industry risks on the basis of refinery annual report analysis by content analysis method;
4. The drawing up of the rating concerning 10 most relevant risks of refining industry;
5. The comparative analysis of risk exposure level in respect of state or private refineries.

The object of research is Russian refineries. The risky nature of enterprises operation within the specified sector serves as the object of study.

The methodical base of research was content analysis method. The information basis is presented by the annual accounts of RF oil refining industry enterprises.

MATERIALS AND METHODS

There are two main types of information for the industry state analysis in economic literature: various types of publications (annual reports, industry research) and the field data collected through interviews (Porter, 2005). In order to identify the main risks the oil refining industry; we used the method of content analysis for Russian refinery annual reports. In our opinion, the information obtained from external sources, in the form of newspaper and magazine articles, public interviews and speeches, is not homogeneous enough for the semantic content analysis. In its turn, the content analysis of refinery annual reports allows to point out the main industrial trends in the operation of companies

Step 1: Selection of Companies for Analysis

The rating of 32 refineries in Russia, compiled by the magazine "Expert" in 2012 was taken as the basis for annual report samples creation (http://expert.ru/ratings/vse-npz-rossii). During the search of the annual reports in 2014 the official sites of companies and the sites for information disclosure selected 12 refineries: "Achinsk Refinery", "Angarsk NHK", "Kuibyshevsky Refinery", "Saratov Refinery", "Syzran Refinery", "Moscow refinery", "SalavatNeftehim", "Taneko", "Khabarovsk Refinery", "Orsknefteorgsintez", "Yaroslavnefteorgsynthesis" and "Yaroslavsky Refinery named after Mendeleev" (http://www.e-disclosure.ru/). The remaining amount of companies is not included in the analysis for the following reasons. First of all, most companies have a legal organization form of a closed joint stock company, a limited liability company, and they do not publish their statements in public domain. Secondly, a number of companies publish their annual reports during the period prior to 2014, respectively. At the present time they are not relevant for analysis.

As we noted above, one of the risk level features concerning the refining industry enterprises is the form of an enterprise ownership. Therefore, during the drawing-up of information sampling for the content analysis we performed the distribution of organizations - research objects into the state and private refineries (see Table 1).

Table 1
RESULTING SELECTION OF RUSSIAN REFINERIES

State refineries		Private refineries	
Refinery name	Refinery owner	Refinery name	Refinery owner
"Achinsk Refinery"	OJSC «OC «Rosneft»	"Taneko"	PLC «Tatneft»
"Angarsk NHK"	OJSC «OC «Rosneft»	"Khabarovsk Refinery"	OJSC OC «Alyans»
"Kuibyshevsky Refinery"	OJSC «OC «Rosneft»	"Orsknefteorgsintez"	JSC «ForteInvest»
"Saratov Refinery"	OJSC «OC «Rosneft»	"Yaroslavnefteorgsynthesis"	OJS «OGC «Slavneft»
"Syzran Refinery"	OJSC «OC «Rosneft»	"Yaroslavsky Refinery named after Mendeleev"	
"Moscow refinery"	PLC «Gazprom neft»		
"SalavatNeftehim"	PLC «Gazprom neft»		

Stage 2: Code Book Drawing Up

In order to develop a risk classifier, we used the rating of "10 main risks and opportunities for oil and gas companies", drawn up by the audit and consulting company «Ernst & Young» (http://www.ey.com/RU/ru/Industries/Oil---Gas/Turn-risk-and-opportunities-into-results--oil-and-gas---The-top -10-risks). Besides, we used some elements from the theory of five competitive forces by Michael Porter to include the risks which may arise due to the threat of new player appearance at the market, substitute products, the market power of buyers, suppliers and the level of intra-industry competition (http://powerbranding.ru/biznes-analiz/porter-model/). According to the rating data analysis and M. Porter's competitive model the risk classification was drawn up, which is presented in detail in Appendix 1.

The creation of a classifier is performed on the basis of risk appearance scope. At that not only the nature of business subject activity was taken into account, but also the scope of this activity application.

Then the risk classifier became the basis of the code book for risk content analysis. At that, a separate paragraph of the code book were the types of refineries according to VIOC belonging - in order to identify the differences in the risky activities of public corporations and private companies of this economy sector.

A fragment of the code book created by the software product «QDA-Miner» of «Provalis Research» company for content analysis performance is shown on Fig. 1.

Step 3: Creation of Rules for Coder Operation

The authors of the study played the role of annual report coders. During the pilot coding of the first report, we identified some general conditions necessary to obtain the reliable results of content analysis:

1. If they describe risks in the coded documents which, according to the authors of the annual report, represent a minimal threat to the enterprise, then such risks were specified as non-essential ones by the coders and were excluded from the analysis. It should be noted that the failure to comply with this rule will result in the increase of quantitative research indicators, but not the result quality.

Figure 1
CODE BOOK, COMPILED IN «QDA-MINER» SOFTWARE
(HTTP://PROVALISRESEARCH.COM/PRODUCTS/QUALITATIVE-DATA-ANALYSIS-SOFTWARE/)

2.   It was decided to take the "words" and "topics" related to the description of oil refining industry risks as the unit of analysis and the number of words and phrases, which allow registering the frequency of risk category mentioning in texts as the unit of calculation. (http://psyfactor.org/lib/k-a2.htm)

RESULTS AND DISCUSSION

The analysis of annual reports allowed drawing up the rating of ten most relevant types of risk and five groups of risks for refineries.

It should be noted that in addition to the interpretation of the results we also calculated the coefficient of intercoding reliability, which is traditionally presented in the content analysis by Pearson's correlation coefficient (http://grachev62.narod.ru/Mr/Mr_09.html).

The calculation of Pearson's correlation coefficient was carried out according to the formula 1 (http://planetcalc.ru/527/).

$$R_{X,Y} = \frac{M[XY] - M[X]M[Y]}{\sqrt{\left(M[X^2] - (M[X])^2\right)}\sqrt{\left(M[Y^2] - (M[Y])^2\right)}},$$ (1)

Where X is the number of risk mentioning by the first encoder;
Y is the number risk mentioning by the second encoder.

Table 2 shows the figures concerning the number of references in respect of risk types. Total Pearson's correlation coefficient made 88%, indicating a high degree of inter-subjective coding reliability.

Table 2
THE NUMBER OF RISK TYPE REFERENCES BY THE FIRST AND THE SECOND ENCODER

X	Y
24	27
22	25
21	11
13	13
15	11
10	10
8	8
4	7
3	3
2	3

According to the results of the performed analysis, the first place in the rating of "Top 10" risks is occupied by the risk of oil and oil product price fluctuations (see Table 3).

Table 3
TOP-10 RISKS FOR THE COMPANIES OF RF REFINING SECTOR

Risk type	The number of risk type mentioning
Oil and oil product price fluctuations	12,11 %
The risks associated with the failure of borrowed capital return	11,05 %
Currency risks related to foreign economic activities	9,47 %
Ecological disasters	7,89 %
Industrial accidents, emergencies	5,26 %
Reduced demand from key consumers	4,21 %
Litigation risk	3,16 %
Stricter requirements to the qualitative characteristics of the finished product	2,11 %
Accidents at work	1,58 %
Changing of tax conditions	1,05 %

Let us illustrate this situation, citing the quotations from the annual reports of some refineries as the evidence:

1) "The main activity of OJSC "TANECO" is the processing of oil. The financial and economic activity of the Company is exposed to the risks traditionally inherent to the oil refining industry, among which are the industry risks associated with the changes of prices at the domestic and the world oil and oil product market" (JSC "TANECO").
2) "The main industrial risks that may affect an issuer's activity are: the fluctuations in oil prices, the changes of prices for raw materials and the supplies used by the Issuer in the production of products..." (JSC "Yaroslavl refinery named after Mendeleev").

The risks associated with the failure of loan capital return occupied the second place of the rating:

1) "The need for borrowings, as well as a possible increase of an interest rate at money market condition the existence of the risks associated with investments" (JSC "Angarsk petrochemical company").

2) "The risk of interest rate changing may affect the influence of the Company financial position, its liquidity and the results of operations, as the company uses boerrowings in its operations" (JSC "Yaroslavl refinery named after D.I. Mendeleev").

3) "Financial risks. The changes of interest rates concerning credits and loans may make a significant influence on the company "("Orsknefteorgsintez").

It is also necessary to pay attention to the rating according to the groups of risks in the group measuring and the measuring according to separate types of risks, as there are some differences. The resulting rating is represented by Fig. 2.
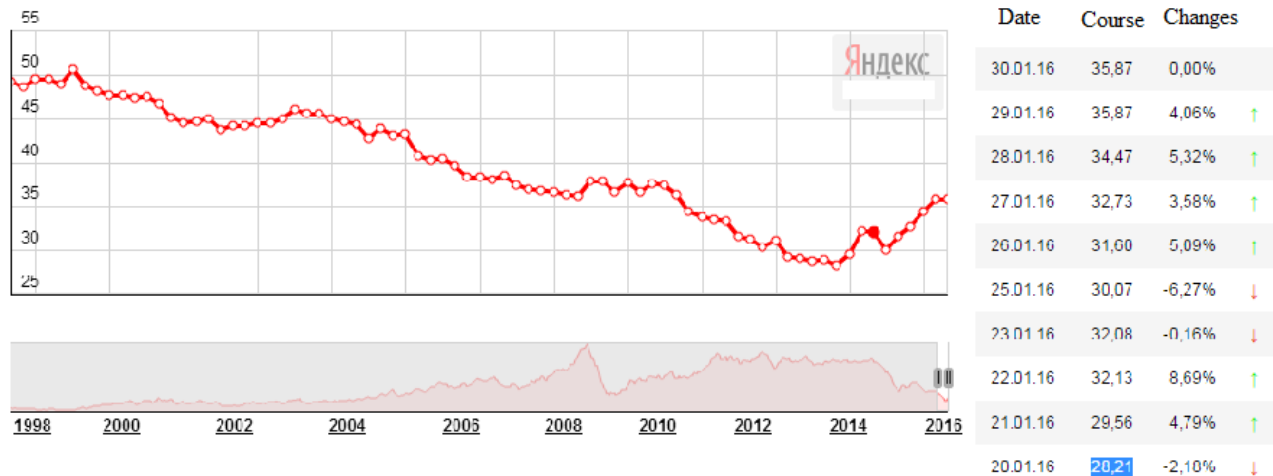
If in the first rating ("Top-10"), the second place belongs to the risk of debt capital non-repayment, the first place of the second rating (according to risk group) is occupied by the risks in the area of labor protection, safety procedures and environmental protection (LP, SP and EP). This situation requires a careful monitoring of refineries by supervisors, as there is the increase of probability concerning technical regulations, life-threatening emergency situations, and a significant harm to the environment.

Figure 2
TOP-5 RISK GROUPS FOR THE COMPANIES OF OIL REFINERY SECTOR
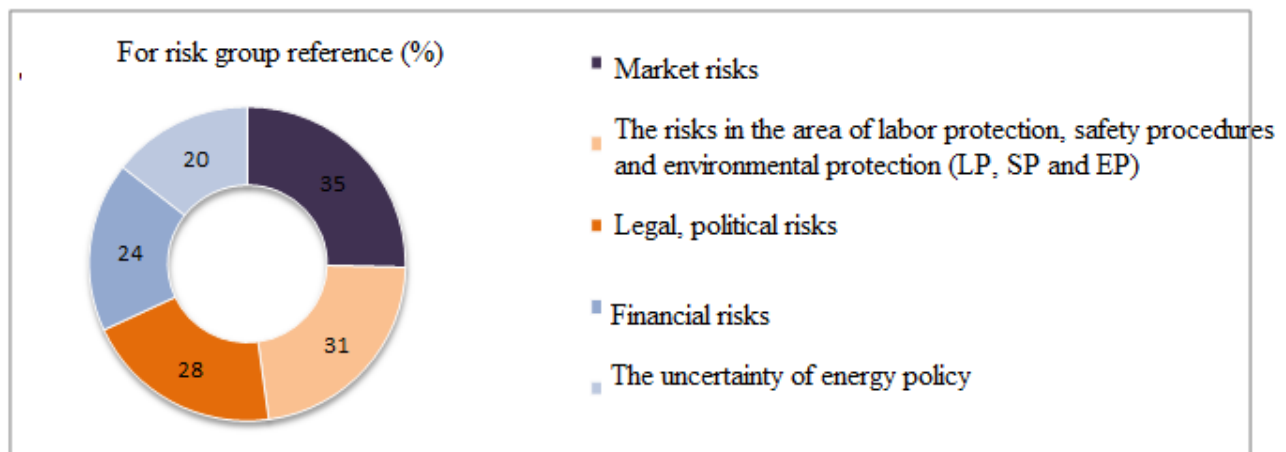
The presence of "Top-10" risks in leading positions that are associated with the fluctuations of oil and oil product prices and the inability of borrowed funds return, demonstrates the reflection of a real economic situation in the world by content analysis, influencing the refinery activity. Thus, considering the dynamics of «Brent» oil prices we see that oil prices fell to 28.21 dollars per barrel during the past three months (see Figure 3).

Figure 3
«BRENT» OIL PRICE DYNAMICS DURING THE LAST QUARTER IN US DOLLARS [15]

Date	Course	Changes	
30.01.16	35,87	0,00%	
29.01.16	35,87	4,06%	↑
28.01.16	34,47	5,32%	↑
27.01.16	32,73	3,58%	↑
26.01.16	31,60	5,09%	↑
25.01.16	30,07	-6,27%	↓
23.01.16	32,08	-0,16%	↓
22.01.16	32,13	8,69%	↑
21.01.16	29,56	4,79%	↑
20.01.16	20,21	-2,10%	↓

This state of affairs made a negative impact on Russian economy, strongly dependent on oil and on the level of refinery income.

Besides the risk ranking among domestic refineries, the comparative analysis of state and private refinery exposure degree to risks. The analysis results are shown in Table 4.

Risk exposure study was conducted to identify the joint representation of encoded risks and a refinery type.

Table 4
RISK EXPOSURE DEGREE AMONG STATE AND PRIVATE REFINERIES

Топ-5 types of risks	Jaccard's coefficient
State refineries	
1.The risk of fixed assets obsolescence	0,85
2. Litigation risk	0,79
3. The tightening of the requirements for finished product quality characteristics	0,72
4. Risks associated with the inability of borrowed capital return	0,68
5. The risks of electricity price increase	0,62
Private refineries	
1. Inflation risks	0,82
2. Industrial accidents, emergencies	0,76
3. Government involvement increase in the industry	0,72
4. Changes in tax terms	0,67
5. Policy instability in a country	0,6

In order to quantify the obtained outcomes Jaccard coefficient was used or, in other words, the similarity coefficient, which allow to reflect the interdependence of phenomena. Thus, it was revealed that state refineries are subject to the risks of fixed asset obsolescence by 85%, to litigation risks by 79%, to the risk of more stringent requirements to the qualitative characteristics of finished product by 72%.

A different picture is observed for private refineries, which are subject to inflationary risks by 82%, to the risk of industrial accidents and emergencies by 76%, to the risk of state participation increase in the industry by 72%.

Graphically, the relationship of risks and refinery type is shown on Fig. 4 as a network model.

The study results of risk exposure degree among public and private refineries also reflect the objective circumstances in some degree prevailing in the industry at present time. For example, most state refineries are owned by vertically integrated companies (OJSC "OC "Rosneft", PJSC "Gazprom Neft", etc.), whose factories were built during Soviet Union times and at the moment most of the equipment is subject to heavy wear which is evidenced by the threat of fixed asset obsolescence risk.

And independent refiners appeared during the post-Soviet period due to private investors and were equipped with more modern equipment, respectively. Antipinsky refinery built in 2004 is an example of such a project by the efforts of Tyumen businessmen and which had the production capacities of 8 million tons / year in 2014.

Figure 4
NETWORK MODEL OF RISK AND REFINERY OWNERSHIP TYPE INTERACTION
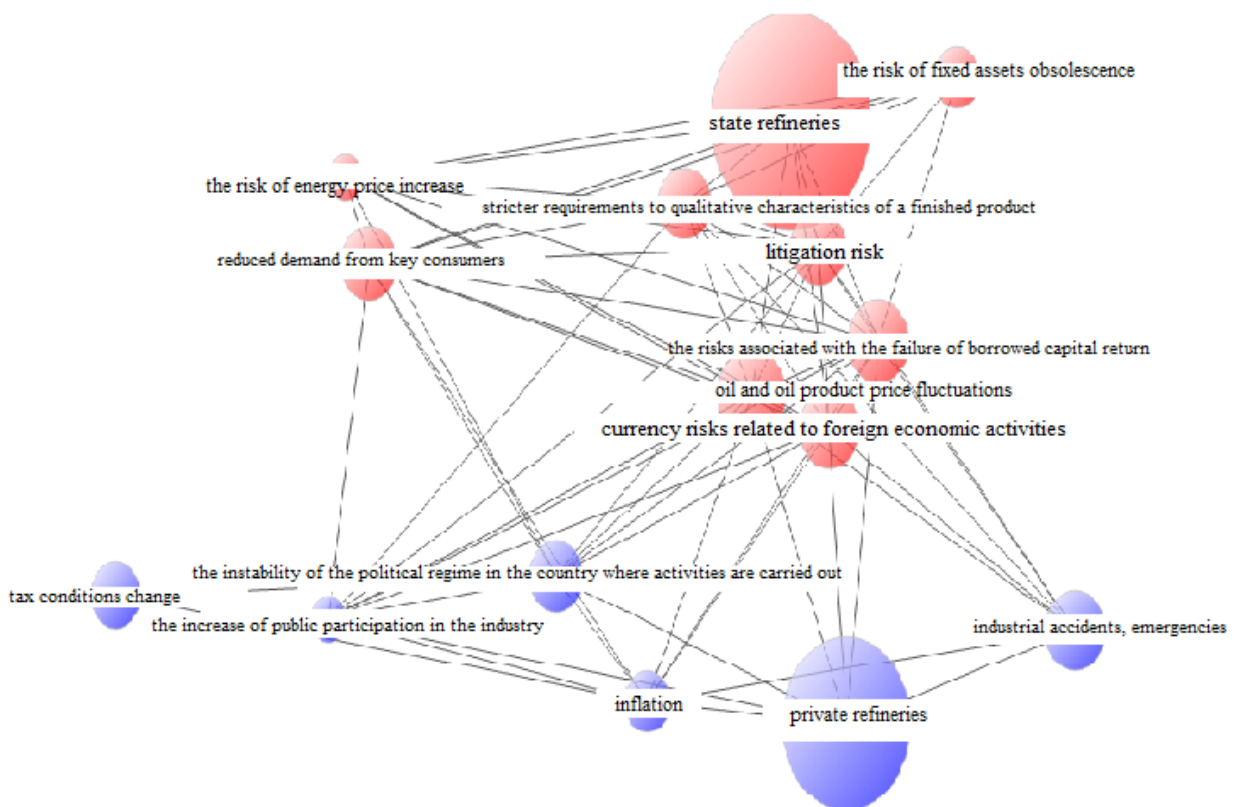
SUMMARY

Thus, the performed study using the method of content analysis allowed revealing the risky nature of RF oil refining sector. On the one hand, the application of this approach to the study of the industrial risks will provide the necessary information regarding the main trends of oil industry, as well as the characteristics of the market development in respect of public and private refineries. On the other hand, it should be noted that the limitations associated with the obtaining of annual report data from more companies and with the constant changes in

legislative, political and economic spheres do not disclose the modern risks factors of refinery operations. However, this study reflects the risky nature of RF oil refining industry in some extent.

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Annex 1
PROPOSED RISK CLASSIFICATION IN THE CODE BOOK OF «QDA-MINER» SOFTWARE

Risk category	Risk description
Access to reserves	1.1 high oil prices; 1.2 The depletion of developed fields; 1.3 The growth of government involvement in the industry; 1.4 The competition from companies that supported by the state;
Technological risks	2.1 The risk of fixed asset obsolescence; 2.2 technological risks associated with the development and debugging of a new technology; 2.3 technology theft from rival manufacturers; 2.4 the inability to purchase foreign equipment due to growing geopolitical problems; 2.5 the inability of new competitive solutions timely development and release due to limited resources; 2.6 The emergence of failure because of a non-regulated technology.
The uncertainty of the energy policy	3.1 The difficulties in permit obtaining; 3.2 The creation of new supervisory bodies; 3.3 The increase of demands to corporate social responsibility; 3.4 The increase of requirements to qualitative characteristics of GE
Risks in the field of occupational health, safety procedure and environmental protection	4.1 industrial accidents, emergencies; 4.2 accidents at work; 4.3 ecological disasters
Staff risks	5.1 The shortage of highly qualified personnel with the necessary training; 5.2 high dependence on key employees
Market risks	6.1 high competition from Russian and foreign oil service companies; 6.2 the competition due to the lag of the refinery production capacity concerning the world's scientific and technological level; 6.3 the reduction of demand from key customers; 6.4 The pressure to reduce prices and margins of products sold due to increasing competition; 6.5 fluctuations in oil and oil product prices
The risks associated with suppliers and partners	7.1 limited, late deliveries of raw materials, due to negligence of suppliers; 7.2 poor quality of supplied raw material (oil); 7.3 high dependence on resource key suppliers
Legal, political risks:	8.1 Political regime instability in the country where operations are carried out; 8.2 The statutory limitations on the effects on the environment; 8.3 Taxation term change; 8.4 Litigation risk; 8.5 The failure of existing license prolongation
Financial risks	9.1 currency risks associated with the purchase of equipment and components abroad; 9.2 the risks associated with the inability of borrowed capital return; 9.3 investment activity decrease in the extracting sector; 9.4 the difficulty of additional investment attraction; 9.5 inflation
The risks associated with the increase of production costs	10.1 The risk of electricity price increase

INFORMATION DISCLOSURE INFLUENCE ABOUT FINANCIAL STATEMENT RISK ON STRATEGIC MANAGERIAL DECISION

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ABSTRACT

Uncertainty and risk always accompanies the process of enterprise management strategic solutions. Organizations are in the situation of uncertainty about the consequences of their decisions during the making of economic decisions, including the consideration of information contained in enterprise financial statements. Most decisions of economic agents are related with their desire to achieve the highest possible income. The concept of risk is significant in economy, because the persons, who make decisions, compare the risks with the expected income. The purpose of research is to determine the impact of information disclosure about the risks in financial statement on strategic planning. The method of Monte - Carlo (Monte-Carlo Simulation) was used in the article, which consists in a simulation experiment performance as the tool of future income prediction taking into account the evaluation of risks. The article demonstrated the procedure of a model development randomly. The result of its application determines the probability of the various variant plans embodiments.

Key Words*: Enterprise Management, Development Strategy, Information Disclosure, Risks, Financial Statement, Monte-Carlo Method*

INTRODUCTION

The risk in a certain degree accompanies any economic decisions in the field of entrepreneurship. During the taking of decisions about the investment in a particular asset, whether equipment or raw materials, an owner or a manager is in a situation of uncertainty regarding the results, to which these decisions will bring. Accordingly, the expected return on the investments is characterized by a certain distribution, which must be taken into account at the determination of an investment object value, regardless of asset types which are the investment objects.

In the context of risk consideration necessity to make strategic management decisions during the financial statement preparation the application of a fair, discounted value, net sale value, which represent the expected cash flows from the use of enterprise various assets attain a special relevance and, therefore, are characterized by some degree of certainty, reducing the information entropy (Miihkinen, 2012). Thus, risk should be taken into account in the international standards during the evaluation of assets in a balance sheet.

During the fair value calculation the indirect methods of risk consideration are applied, such as the use of an estimated interest rate, taking into account the risk premium and the method of guaranteed equivalents. The estimation according to fair value includes the following assumptions in terms of risk (Zimmermann, et al., 2015):

1. A risk is considered as the probability of an unwanted event, and not a positive or a negative deviation from the future revenue values;
2. Only the external risk factors are taken into account that condition the emergence of market risk;
3. According to I.F. Sherra's ideas, a risk is not an independent object of accounting and it is accounted in the value of assets;
4. The risk calculation is performed on the basis of the average market indicators used by market participants.

Thus, during the determination of asset fair price only the external risk factors are taken into account, such as the fluctuations in the average level of product prices (works, services), market conditions, the changes in bank interest rates and so forth. The variability of economic benefit value in the form of cash flow expected from the asset use is influenced not only by external but also by internal factors inherent to a particular enterprise (Garcia and Pargament, 2015). The use of the estimate based on the expected cash flows - the use value - allows considering internal factors. This type of assessment is used when there are indications of asset impairment. In the framework of international standards the use value is the estimation of expected cash flows from use of this asset or a group of assets, discounted at the rate that includes the assessments of money and risks temporal value specific to this asset (Di Clemente, 2015).

Thus, the risk is not an independent object of accounting. It is taken into account at asset value determination, in a discount rate or at the evaluation of cash flow distribution expected from the use of assets (the method of guaranteed equivalents) (Spicar, 2014).

In order to take strategic management decisions the analysis of information about potential risks is required, reflected not only in the value of an enterprise assets, but also in other financial risks, which were not evaluated (Kulikova et al., 2014). The financial risks are presented by market risk, credit risk and liquidity risk. Market risks associated with possible adverse consequences for an organization in the case of market parameter changes, such as prices and price indices (in respect of goods, works, services, securities, precious metals, etc.), interest rates and foreign exchange rates. An organization should analyze its sensitivity concerning each type of market risks to which it is exposed at the reporting date, and reflect the possible effect on profits (losses) and the equity of a corresponding variable change making an impact on the risk level.

Credit risks are associated with possible adverse consequences for a organization at the failure (improper performance) of obligations by a debtor. The information about the financial condition of a debtor, the timeliness of debt repayment, the interest on loan, etc. shall be disclosed according to credit risks.

Liquidity risk is associated with the organization possibilities of timely and full repayment of existing financial liabilities on a reporting date: the accounts payable to suppliers and contractors, the lender debts on received loans and borrowings (including also bonds and promissory notes), etc.

In its turn, it should be noted that the liquidity risk is inversely proportional to the profit. The most liquid assets do not bring any income or generate a very low income. Long-term investments and projects usually promise the greatest profits for which you have to pay by the diversion of money for a long term. The limitation of liquidity risk involves, first of all, the minimum acceptable value of highly liquid assets and, secondly, the maximum value of assets with low liquidity.

The country and regional risks are determined by the political and economic situation, the geographical features in a country and in a region in which an organization carries out regular activities and (or) registered as a taxpayer. These are the risks associated with possible military conflicts, the introduction of emergency state, strikes, an increased risk of natural disasters, possible disruptions in transport network or by its termination, etc.

The industry risks are associated with an industry-specific enterprise, the seasonality of works, the production cycle of financial and economic activity.

Legal risks are associated with the changes in foreign and customs regulation change and with tax law.

Reputational risk may lead to the number of organization customer's decrease as the result of negative perception about the quality of products sold by it, the performance of works and services; on the compliance with the terms of products, works and services performance; on the participation in price-fixing, etc.

In the context of organization interdependence increase within a market economy the allocation of risks in a single group of related parties seems to be reasonable due to the activities of an organization. In most cases this type of risk is related to the pricing of transactions between related parties.

Thus, the requirement that the disclosed information about risks was available for users is an essential one, since in the framework of the largest company activities risk management issues as the mechanism of functioning stability maintenance and the mechanism of an economic entity development are highly relevant.

However, Professor Gurov V.S. and Cheglakova S.G. note that every interested external information user about an economic entity activity must have certain skills which recognize the presence or the absence of a particular type of risk. Therefore it is very important to know the values of financial statement overall risk component in companies. These values can be the following ones:

1) A high concentration of assets in certain positions;
2) A sharp increase or decrease of reserve balances on accounts, cash and accounts receivable;
3) The slowing of current assets turnover;
4) The availability of loss and receivables, bad debts, etc.

The study showed that the definition of organization sensitivity to the changes of economic conditions, contributes to the development of an optimal development strategy and to the adoption of the most rational economic decisions. Thus, the proposed format of information provision allows not only to demonstrate a company exposure to some risks, but also to assess their impact on a company activity performance, which in its turn contributes to the formation of a complete picture about the financial prospects of the organization development.

Organizations that are subject to different types of risk, may disclose in detail the additional information about the impact of these risks on future economic income in the accounting (financial) statements. So, the enterprises engaged in the search for natural resources, are advised to disclose the information about the risks of income non receipt from search assetв which allow you to adjust a business development strategy.

METHODS

Monte - Carlo (Monte-Carlo Simulation) method can be used as a future income prediction tool taking into account the risk assessment, which consists in a simulation experiment performance. According to this method a model development occurs randomly. The result of this method application is determined by the probability of these values variations. The simulation modeling according to Monte Carlo (Monte-Carlo Simulation) method allows us to develop the mathematical model for the project with uncertain parameter values, and we can receive the distribution of future revenues knowing the probable distributions of parameters, and the relationship between parameter changes (correlation). In order to use Monte Carlo method, you must use a special mathematical apparatus. The block diagram shown on Figure 1 reflects the algorithm of the considered method.

Figure 1
MONTE CARLO METHOD ALGORITHM
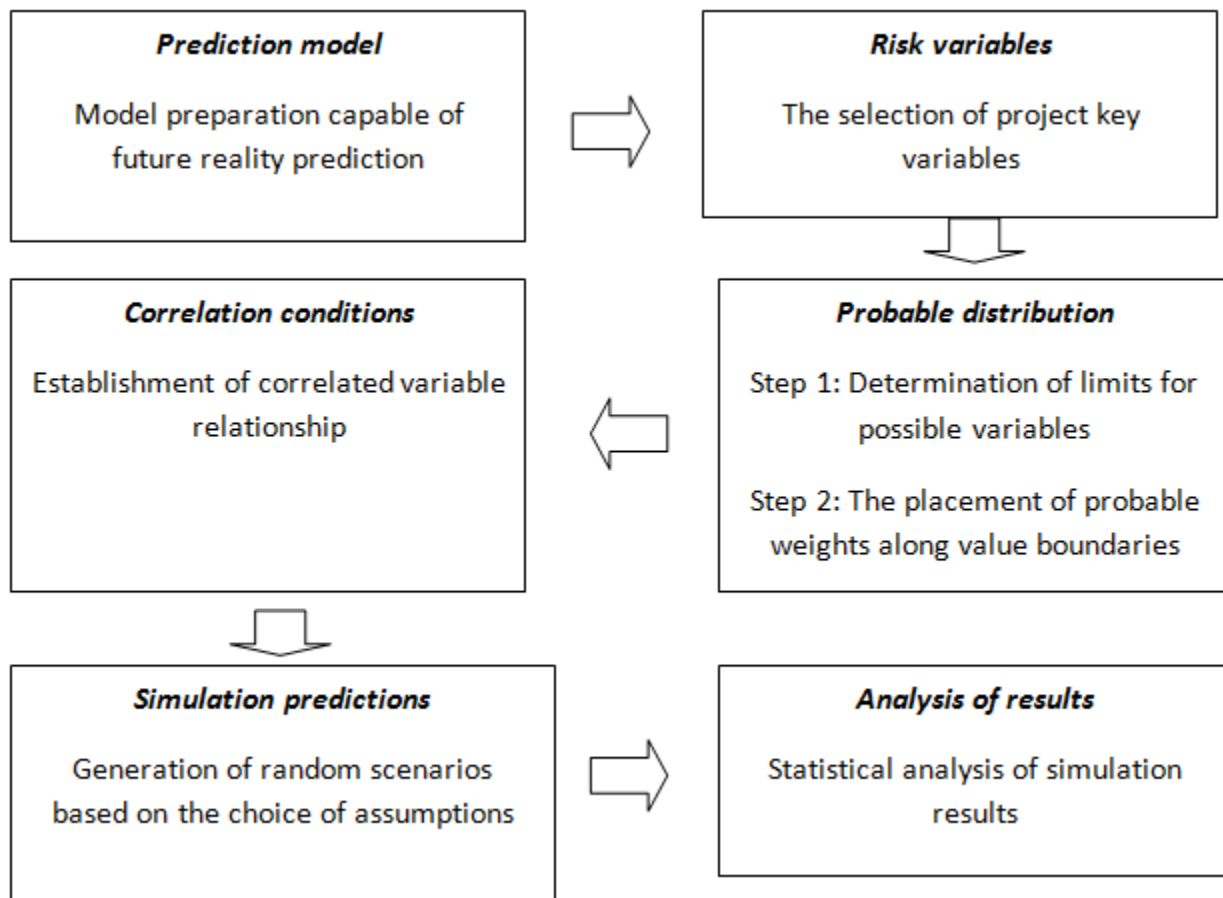
RESULTS

The use of this method was tested by us using the example of LLC "Tataneft-Severny". The information basis for the analysis performance are the data obtained in the framework of strategic management accounting, which provides the update and the information structure relevance support of OJSC "Tatneft", the planned change of "Tatneft-Severny" costs, the refinancing rate of the Russian Federation Central Bank, RF legislation.

The simulation analysis of the "net present value" at Motorinsky and Neznaykinsky deposits was performed on the basis of Monte - Carlo method using MS Excel functions. The main resulting indicator is the net present value, which is obtained according to the formula 1:

$$NPV = -I + \sum (CF_i/(1+r)^n) \qquad (1),$$

where: NPV – net present value of the project;

I – net initial investment into project;

CF_i – net cash flows from the project implementation;

r – discount rate;

n – project duration.

At that the generated flow of investment has the form of an annuity. The amount of investment flow can be determined according to the formula 2:

$$CF = [Q*(P-V)-F-A]*(1-T)+A, \qquad (2)$$

where: CF_i – net cash flows from the project implementation;

Q – production volume;

V- variable costs;

F – fixed costs;

A – amortization;

T – income tax.

The key variable parameters are the variable cost, production volume and price.

The analysis results are presented in Table 1 (for Motorinsky deposit) and in Table 2 (for Neznaykinsky deposit).

Table 1
IMITATION ANALYSIS RESULTS OF MONTE CARLO METHOD FOR MOTORINSKY DEPOSIT

	Variable expenses (V), thous.rub.	Amount (Q), rub./t.	Price (P), rub./t.	Investments (NCFt), thous.rub.	NPVt thous.rub.
1	2	3	4	5	6
Mean value	2241,15	1,70	11 328,1	9073,88	-15 297,59
Standard deviation	454,1	1,40	1 417,9	6470,27	721,20
Variation ratio	0,20	0,82	0,1	0,71	-0,05
Minimum	911,3	0,30	9 910,2	969,68	-16 200,92
Maximum	3571	3,10	12 746,0	17985,68	-14 304,24
Number of cases NPV<0					17
Amount of losses					-258441,8
Amount of income					0,0

The performed analysis showed that during the license term the investment project is inefficient one, the amount of loss makes 258 441.8 thousand rubles over 17 years. The average annual loss will be 15 297.59 thous. rub.

Table 2
IMITATION ANALYSIS RESULTS OF MONTE CARLO METHOD FOR NEZNAYKINSKY DEPOSIT

	Variable expenses (V), thous.rub.	Amount (Q), rub./t.	Price (P), rub./t.	Investments (NCFt), thous.rub.	NPVt thous.rub.
Mean value	6686,5	5,25	11 328,1	5379,08	-14 873,05
Standard deviation	813,05	3,85	1 417,9	8337,12	905,07
Variation ratio	0,12	0,73	0,1	1,55	-0,06
Minimum	1635,2	1,40	9 910,2	-8678,72	-16 399,16
Maximum	11737,8	9,10	12 746,0	15666,88	-13 756,21
Number of cases NPV<0					18
Amount of losses					-236720,2
Amount of income					0,0

The performed analysis showed that the investment project is inefficient one during the term of the license as well as at Motorinsky deposit. The total amount of loss makes 236 720,2 thous. rub. The annual loss makes 14 873,05 thous. rub. on the average.

One of the most important stages of simulation modeling result analysis is the study of the relationship between the net present value and revenue.

Figures 2 and 3 shows the distribution charts of income flow and discounted income during the license term for Motorinsky and Neznaykinsky deposits, respectively.

Figure 2
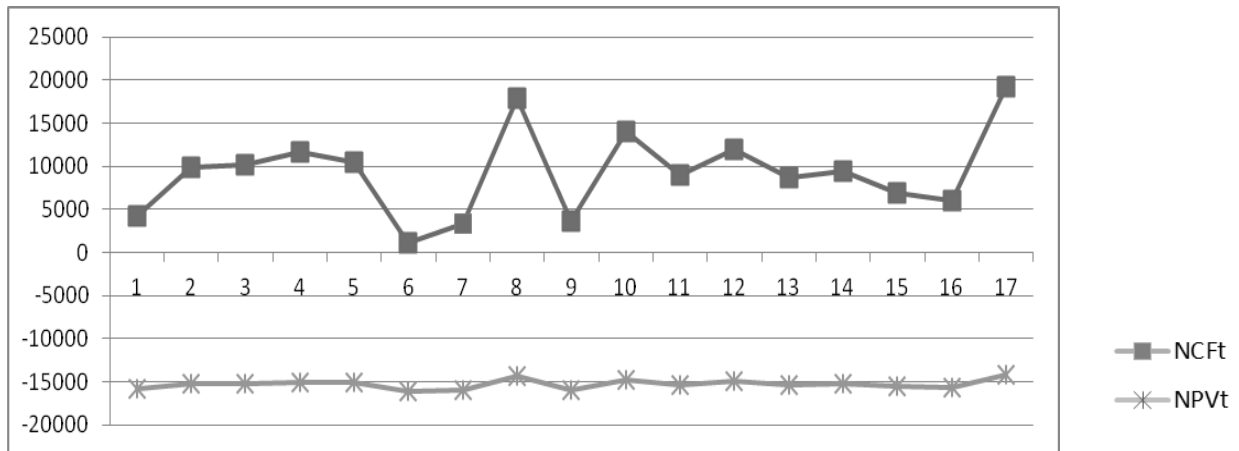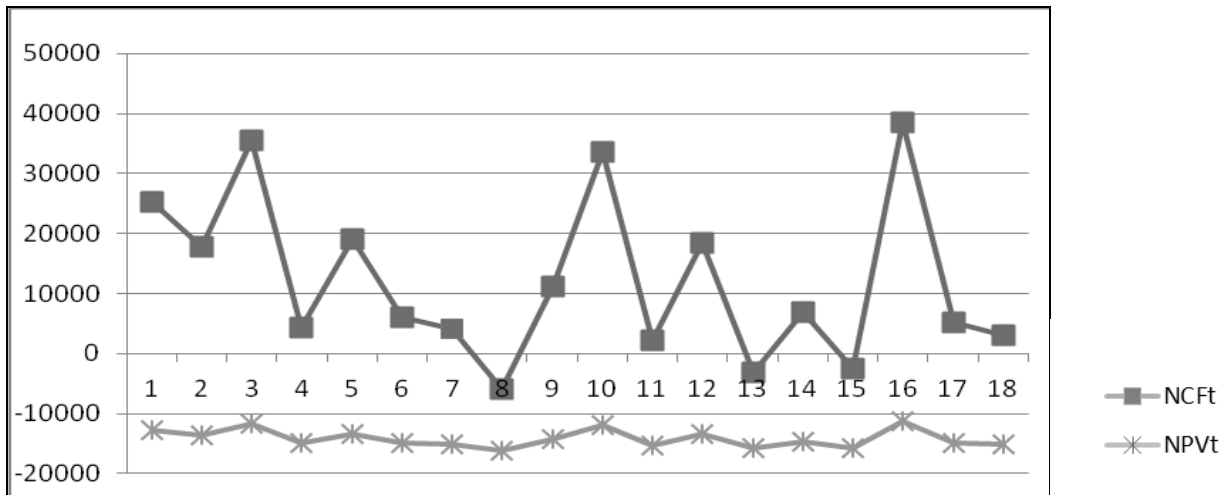**THE RELATION BETWEEN INCOME AND NET CASH INCOME FOR MOTORINSKY DEPOSIT**

Figure 3
THE RELATION BETWEEN INCOME AND NET CASH INCOME FOR NEZNAYKINSKY DEPOSIT

The performed study showed that the direction of oscillations between net present value and the cash flow of earnings match. There is a strong correlation, close to the functional one. In order to break even for Motorinsky field, you need to increase the level of oil sales prices by 78% or to increase the initial production rate of wells from the designed 5 t/day up to 35 t/day. In order to break even for Neznaykinsky field, you need to increase the level of oil sale prices by 18% or to increase the initial production rate of wells from the designed 5 t/d. to 8.5 t/d.

SUMMARY

Despite the conditionality of this method in general, it represents the feasibility indicator in order to perform the analysis for the reduction of losses. Monte Carlo method allows to improve the project results, as well as to increase net present value (NPV). To do this, each of the possible combinations (number of wells, the production rate per year, and the total production) performs the analysis according to Monte Carlo method, and then the combination is selected that maximizes a certain criteria. The method allows determining the best combination of these parameters.

Thus, it should be noted that the use of modern methods of prediction and the disclosure of obtained results in the accounting (financial) statements with the presentation of the planned measures for negative factor elimination will improve significantly the quality of reporting, aimed at the meeting of user information needs. At that it should be noted that the high degree of accounting information transparency cannot be achieved describing only the existence of risks in financial statements. Therefore, in order to improve the predictive quality of accounting information, it is advisable to rank the risks in terms of their impact on the economic security of business. For those risks that pose a threat to the continuity of an enterprise operation, it is necessary to disclose the consequences of their influence for the purpose of a fair analysis in respect of a company financial condition and the acceptance of some appropriate economic decisions.

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