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**MODERNIZATION OF REGIONAL INDUSTRY ON THE
THRESHOLD OF DIGITAL ECONOMY**

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Abstract

One of the members of the Russian Federation industry development on the threshold of digital economy is analyzed in this article, regional enterprises and territorial units development strategy is defined, theoretical basis of territorial units is outlined, functioning of the Chechen Republic industry enterprises is shown, which mainly remains to be affiliated public enterprises, as it was during the Soviet Union period. The article accented on the special role of regional economy in efficient managing economic transition insurance. Authors believe that is why the elaboration of new approaches to public management and regulation of economic, political and social processes in the Republic, formation of priorities and best strategies of sustainable development policies are the pressing scientific and practical challenge. It is impossible to set up an efficient industrial sector without compliance with the basic requirements of market economy and total investment climate improvement in the Republic, which is highly relevant in the formation of the States and, respectively, the Republican digital economy. The industry modernization requires organizational and economic mechanisms of its development resources. At the turn of the first and the second decades of the current century the world's economy begins the reindustrialization – the new phase of development, when the intellectual capital, arising from information and knowledge convergence, became the leading economical resource of the development, and it's existence – the main competitive advantage of enterprises, business groups and the whole society.

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1. Introduction

The relevance of this article connects with the fact that Russian industry is lag further behind the technological sphere, which is the threat to the sovereignty and the prospects of country's existence in future. The only way to overcome the backwardness is the intense modernization of Russian industrial enterprises on the basis of modern technical and economic solutions, which will lead the country to the development and application of latest NBIC-technologies. Under the anti-Russia politics of the USA and their dependent countries, the relevance of modernization and development of Russian industry has significantly increased. Russian economy faced the challenge to compete with world companies in the global markets just about two decades ago, so the productive system development issue directly related to formation and usage of knowledge (the cognitive integral part of the economy) is particularly acute. Preservation of national sovereignty and country development are impossible without re-industrialization of Russian economy.

2. Problem Statement

For the successful development of the industrial production systems the effective scheme of intellectual capital, knowledge and information management is needed (Borovikov, 2016). Formation and usage of knowledge and information became essential for the development of modern industry, especially on the threshold of country's digital economy establishment. The economy modernization makes "big data", formed along with their analyze technologies, turn into the main asset of the State, business and civil society. Absence of physical limits in digital sphere provides access to a date set to numeral members of global economic landscape (Digital economic development, 2017).

3. Research Questions

Modern Russia began to compete with world companies in the global markets just about two decades ago. The productive system development issue, which directly related to formation and usage of knowledge (the cognitive integral part of the economy), is particularly acute. Contemporary Russian industrial enterprises and business-groups also have numerous problems, which connect to the informational resources management:

- underdevelopment of methodological apparatus for the informational resources management within companies;

- lack of efficient instruments for cost evaluation and cost management of enterprise information within companies and business-groups;

- lack of knowledge in the sphere of organizational culture as a factor of information management in industry development;

- underdevelopment of a toolbox for informational resources of innovative production management and economic consolidation of enterprises- innovators.

All of the above appear to be the causes largely driving interrelated industrial development problems in the country and regions. To some extent, adopted in Russia Federal act "About industrial policy of Russian Federation" contributes to overcome these problems. Unfortunately, it's practical application reveals the lack of this act effectiveness, mainly in parts, related to the management of information,

knowledge and other intangible assets in industry. Analysis of available studies and research on the issue found that several authors have a range of common information management approaches to modernization of production in industry, its development management, which enhances its competitiveness.

However, the majority of Russian researches considers the issues of information management approaches to modernization of production in industry apart from organizational culture of enterprises peculiarities, disregarding the issues of information evaluation specify in terms of modernization and industry development management.

Insufficient attention had been paid to human capital development on enterprises, in business-groups, which upgrade their production system. Ways of information resources structure optimization on enterprises, during their development, have not been explored. (Borovkov, 2017).

4. Purpose of the Study

The strategic objective of the Chechen Republic industrial development – is to create an enabling environment for the industrial complexes development in the Republic, on the basis of Innovative industrial sectors modernisation, providing increasing economic efficiency, environmental security, resource conservation, and increasing competitiveness of the products manufactured. In particular, in the Socio-Economic Development Strategy of the Republic of Chechnya till 2025, adopted by the order of the Government of the Chechen Republic No.185-r on 20 June, 2012, strategic vision of the republic by the year 2025: “The Chechen Republic by the year 2025 will be the dynamically developing member of Russian Federation, with high rate of economic growth and quality of life, achieved through the harmony in people, economic and infrastructure development. Priority in socio-economic sphere in the republic would be for:

- high rate of quality of life (achieved through increase the level of income of the people);
- low unemployment rate (less than 5% according to ILO methodology);
- modern developed industrial infrastructure and high-quality institutional management system.

These points achievement involves maximum focus on the crucial branches of the regional economy development. It is particularly relevant under digital economy establishment in the country and in the region specifically. The program of digital economy development by the year 2035 was adopted in Russia in 2017. The President of Russia compared this global program to the electrification of the whole country in the beginning of XX century.

5. Research Methods

Nowadays the shift of information transfer from analogue to digital is widespread in many spheres: industry, economy, agriculture, medicine. Clearly, for every sphere this shift means the improvement in the efficiency of the economy in the end.

In industry it leads to digitization of both vertical processes within firms and horizontal linkage between producing company and customers, contractors, partners, transport companies and other. Digital industry establishment should be understood as consolidation of all market demands, allocation of work, identification of partners, data exchange, and monitoring the status of implementation from a single location. According to experts, world’s digital industry establishment will bring 30 trillion dollars in the coming decade. Digital establishment in all spheres will be estimated in 100 trillion dollars. On the base of

digital industry establishment the supplier of industrial equipment and programme decisions for “smart factories” will flourish. Experts estimate that by 2020 the world technology market for digital industry will be amount to over 700 billion dollars, by 2025 – to 3 trillion dollars at the cost of new products and services. Modern companies are on the road towards the digital age already and revise, according to it, their corporate strategies, industrial and investment plans. (Manturov, 2018).

Such an approach rise unavoidable tasks to the industrial sector of the Chechen Republic:

- modernization and optimization of industry, enhance the competitiveness of products through encouraging the technical re-equipment;
- formation of the highly effective structure of industry in the region, knowledge-intensive technologies adoption;
- stimulate innovation activity in regional industry, covering the innovation implementation processes, resulting in industrial innovations in the form of new technologies, machinery, materials, which are the base of scientific and technological progress on enterprises;
- investments are the one of the main factor of development among industry subjects, it means long-term investment in creation of new or improving or modernisation of existing productive apparatus in order to obtain profit. Benefit from international investment is an objective need arising from the system of country economic engagement in international labour division and capital transfers into the sectors, available for enterprises.
- employment, income growth, quality of life improvement and social sphere development in the Republic.

Today the economy of the Chechen Republic is a merely complicated complex of sectors; the most significant of them is industry – main material production sector. It is believed that the pace of industry development influenced on technological and economical level of all sectors development – both material and non-material production.

It is known, till 1991 industry was the main sector of the Chechen Republic economy. Two thirds of gross regional product were made up by industry. There were about 190 industrial enterprises, their products were exported in a large number of foreign countries.

Efficiently functioning oil and petrochemicals industry were the basis of regional industry complex, there were also chemical and machine-building enterprises, woodworking plants, light and food industry enterprises. Petroleum engineering of the Chechen Republic became the progenitor of many prospective oil production methods, school of successfully introducing new plant and technology. Oil-refining industry oh the Chechen Republic had leading positions during the USSR period. The region is the oldest hydrocarbons deposit. Today there is a downward dynamics on levels of oil production, as the key product, and of natural gas extraction. Today the key sectors of the Chechen Republic modern industry are extractive industries (mainly, oil-producing), manufacturing, agriculture, construction, electricity, gas, water power generation and distribution (Reshiev, 2013).

6. Findings

We'll look at the gross regional product dynamics of Chechen Republic over the period from 2007 to 2015 years.

Table 01. The dynamic of the gross regional product of the Chechen Republic from 2007 to 2015.

Indicators	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gross regional product, million RUR	46782	65624	64090	69676	86 623	102 289	122 403	148942	160503

The value of the indicator has been increased in 5.5 times. But the share of real economy sector in gross regional product of the Chechen Republic is low. The major part of the gross regional product of 2015 relates to the constructing different objects in the Republic in that year and maintaining of the State apparatus and security agencies functioning. Constructing – 18%, wholesale and retail trade – 16.9%, public administration and military security – 16.6%, agriculture – 7.7%, manufacturing – 2.7%, mineral production – 1.4% contributes to the gross regional product. The share of GDP from hotels and restaurants is bigger, then the share from whole manufacturing (3.5%) (Idigova, Hadjieva, & Dudaev, 2017).

The Chechen Republic industrial capacity reconstruction in the post-war period was held within the two federal programmes: “Restore the economy and the social infrastructure of the Chechen Republic (on 2002 and following years)”, “Economic and social development of the Chechen Republic on 2008-2012 years”. The bulk of the funds were on social infrastructure, State governance, and law and order reconstruction. A minority of the funds – about 5% – were on industry reconstruction. However, much has been done in industrial reconstruction and equipment with basic communication field.

The best dynamics in basic funds commissioning was seen in 2012 and 2013. They had almost doubled over the period 2010-2015 (Table 02).

Table 02. The enterprises core funds quantity and conditions of the Chechen Republic)

Indicators	2010	2011	2012	2013	2014	2015
Core funds rates at the end of the year, million RUR.	221138	301776	332596	405275	414687	426937
Core funds commissioning, million RUR.	36220	39326	54639	41761	22059	21929
Core funds wear condition (at the end of the year), %	61.4	57.2	54.1	52.5	48.4	49.7
Proportion of worn-out core Funds (end of the year)	44.4	40.5	36.9	34.0	32.1	30.6

Indicators such as core funds wear degree and proportion of worn-out core funds in the Chechen Republic are lower than the average in the country. However, the profitability of industry in the region is low. It can be easily explained by the fact that during the implementation of Federal programs state unitary enterprises were sometimes equipped with obsolete equipment, or were not fully equipped. These enterprises production can’t compete on the market based on price or quality, so these industries has loss-making activities, or has no activity at all.

The majority of the Republic’s enterprises are not cost-effective. The indicator “Asset profitability of enterprises” of the Chechen Republic in 2014 on mineral industries was 0.9%, on manufacturing – 0.3%, electricity, gas, water power generation and distribution – minus 15.8 % (Ministry of Industry and Energy of the Chechen Republic, 2016).

Industrial enterprises of the Chechen Republic in 2016 were mainly State affiliated enterprises (as it was during the Soviet Period).

In 2016 21 enterprises, 6 of them had no economic activity, were belonged to the Ministry of Industry and Energy of the Chechen Republic. In 2016 the value of output were 2347.2 million RUR, including the open joint-stock company “Chechenauto” 2214.8 million RUR cost, other 16 enterprises manufactured altogether products only 132.9 million RUR cost. The summed profit of eight affiliated enterprises was 464.0 thousand RUR in the year. The summed deficit of three affiliated enterprises was 7.5 million RUR (Ministry of Industry and Energy of the Chechen Republic, 2016).

According to the JSC “Chechenauto” accountant's report, retained earnings (uncovered loss) for 2015 year was minus 3041. thousands RUR. (JSC “Chechenauto”, 2018).

As at 1 January 2017 the Ministry of Agriculture “affiliates 3 public institutions and 155 state unitary enterprises, among them: agriculture – 123, service – 20, industry – 12”. Over 2016 year 6 affiliated enterprises manufactured products 266.2 million RUR cost (Ministry of Agriculture of the Chechen Republic, 2017).

The Ministry of Construction and Housing and Communal Services of the Chechen Republic affiliates 6 enterprises, manufacturing industrial products. The manufactured over the period from January to October 2016 products cost was 1724.1 million RUR, including 1575.5 1 million RUR from SUE “Chechencement”. These data are shown in the Table 03. (The Ministry of Construction and Housing and Communal Services of the Chechen Republic, 2016).

Table 03. Indicators of economic activity of enterprises affiliated The Ministry of Construction and Housing and Communal Services of the Chechen Republic.

Name of the organization	Number of employees, person	Volume of supplied products, services, thousand RUR	Accounts receivable at 01.11.2016, thousand RUR	Accounts payable at 01.11.2016, thousand RUR.	Profit (– loss), thousand RUR
SUE “Grozny reinforced concrete structures plant”	75	42 124.0	10 766.0	14 577.0	99.0
SUE “Argunskiyi concrete products plant”	15	0.0	0.0	4 539.0	0.0
SUE “Chechencement”	715	1 575 540.0	190 822.1	1 028 501.3	no data
SUE “Chechenkarierupravlenie”	43	46 900.0	78 764.0	21 530.0	0.0
SUE “Chechengrajdanproect”	29	466.0	6 048.0	5 496.0	0.0
SUE “Grozny brick factory”	286	59 107.9	31 247.1	67 045.5	436.8
Total	1 163.0	1 724 137.9	317 647.1	1 141 688.6	535.0

(Ministry of Construction and Housing and Communal Services of the Chechen Republic, 2016)

There is an industrial potential growth of the Republic, but it is very slow and inconsistent.

Table 04. The extent of internal work and services and dispatched goods of own production, million RUR

Main activities	2005	2010	2011	2012	2013	2014	2015
Mineral extraction	...	4043	4405	4290	4910	5440	4900
Manufacturing	...	4713	1646	3065	4473	5662	6632
Electricity, gas, water power generation and distribution	...	4383	4485	5404	9865	12776	13532
Agriculture, all categories of farms	4552	10993	12897	13605	14706	15250	17704
Construsting	3420.2	23741.5	26846.7	29877.5	18972.6	25436.0	25828.1

(Rosstat, 2016)

According to data from the Russian statistics office, The Chechen Republic was lag behind the Republic of Dagestan in manufacturing in 4.7 times, behind the Stavropol Territory in 33.2 times (Chechenstat, 2017).

RIA “Raiting” provides these Chechen Republic development indexes in the first half of 2016 with respect to the first half of 2015: industrial production index was 100.2 % (51 place among 85 Russian regions), industrial production index in the sphere of “mineral extraction” – 74.1% (77 place), industrial production index in “manufacture” – 104.8% (24 place). (Russia Federation regions investment attractiveness rating, 2015).

The pace of industrialization in the Republic could be estimated by the development of the number of enterprises and their sectorial division. Total amount of enterprises and organizations rised from 2006 to 2016 in 32%, Table 05.

Table 05. Number of business entities of the Chechen Republic (at the end of the year, according State registration data, in 1990 – including the Ingush Republic)

Number of business entities of the Chechen Republic over the years											
1990	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1898	7886	8282	9010	10194	10108	10430	10289	9836	9656	9876	10397

(Rosstat, 2016)

The major part of Russian economists believes, Russian Federation has no recourses left to non-intensive development of the economy. So innovative activity is the only way for the industrial development, and on its basis – the development of the economy and social and economic development of the whole Russian society. Obviously, modern industry in Russia is influenced by many various circumstances of internal and external origin.

The last years stagnation in Russian economy had sharpen many disputes about the reasons of this situation. Several researchers (mainly “liberal values” in economy and society adherents) claims, negative socio-economic dynamics in Russia occurs as the result of anti-Russian policy of the USA and its disciples, the formal justification for this policy became seize of power in Ukraine by pro-America and Nazi forces in 2014 and consequences (Borovikov, 2016).

Those, who espouse the opposite, argue that sanctions haven’t largely affected domestic economy. They prove this with the trends analysis and demonstrate that the disinvestment processes, and outward investment from the vital sectors in the country, began in 2010-2012, and this fact causes the depression in Russian economy in general and primarily in industry (Borovikov, 2007).

7. Conclusion

To sum up, it should be noted that enterprises cooperation in the fields of electronics and machinery are vital, and the cooperation should not be primarily with Russian companies, but with foreign partners, as more advanced. World brands SAMSUNG, Apple, Philips, Sony, Xerox, Bosch, Indesit, and etc., are still willingly post their assembly industries in the low-cost labor countries or near the target market. The creation of favorable conditions for them in the Chechen Republic is no less urgent task, than oil and gas complex recovery, which was the flagship of Russian oil production for many years.

The value of these companies is not so much that they create high-paying jobs, but in influx of advanced management, valuable experience in resource conservation and science-based technologies. These companies-giants are the sort of drivers for the Republic's business environment development; provide transparency in internal management conditions, mutual compliance with treaty obligations, and integration of the Chechen Republic economy into world economic ties. In this regard, it is important to study and put into practice successful international collaboration experience, which Republic of Tatarstan, Kaluga region, Lipetsk region have Idigova, Hadjieva, & Dudaev, 2017).

Further expansion of production levels of Chechen enterprises connects with the implementation of medium-term and long-term programs of production capacity modernization, where the maximum resources would be directed towards producing base reformation and expansion, ensuring the transformation of industrial enterprises to sustainable and innovative development. It concerns technology environment, which was created with bio- and nano-technologies implementation, robotization, modern energy sector and 3D technologies.

Nowadays, digitization, automating, and intellectualization of producing are greatly progressed in order to transit to Cyber-Physical Systems, material and digital world's consolidation.

New technologies will require another, more advanced materials. Material researches, producers and creators of industrial automating will be an extreme demand, because not only the new sector in economy has already appeared, but the brand new human activity sphere is emerging.

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