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MANAGEMENT SYSTEM OPTIMIZATION OF THE VOLGA
REGION ENTERPRISES IN THE DIGITAL ECONOMY

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Abstract

The digital economy in Russia is developing within the framework of the target program approved by the government of the Russian Federation in 2017. It provides to establish communication networks, digital platforms for working with various data, as well as an educational and research base in the country. The program is aimed at the interaction between the Federal center and the regions, but in fact, the territorial entities have a passive role. The regions are considered only as an information source for federal institutions and big business, as well as similar solvent consumers without their own interests of the decisions proposed by Federal Executive authorities and large federal business. This leads to the washout of regional and interregional business from the markets they occupy in favor of federal players. The relevant regulatory structure, developed together with Federal authorities, could resolve the issue. The active participation of the regions and their competent personnel policy could contribute to the retention of talented young professionals in the regions. Today, there are many promising projects that can be attributed to the digital economy program. One of the most common trend is the implementation of new technologies in the housing system, urban transport infrastructure, education, agriculture and tourism, as well as the management of industrial enterprises. Studies of large companies from different spheres of activity in the Volga region showed that their financial performance depends on the application of new techniques and technologies.

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1. Introduction

Traditionally, enterprises fit into a strict organizational model with a clear pyramidal and bureaucratic structure, where hierarchy plays a central role. However, modern socio-economic development requires permanent adaptation to changes and difficult to predict events. The world of work has undergone profound changes recently. Generally, the reason lies in the digitalization of enterprises, and more globally, in the digitalization of the entire economy and social relations. Under these conditions, the enterprise can hardly be in operation within the previous models. The competitive context requires innovation, flexibility, and reactivity.

The era when the efficiency of productivity was measured by the number of repetitive actions performed is over. Modern strategies for human resources development are based on competency growth. These are competencies that allow employees to become independent in their profession and achieve goals. There are new organizational models, and most of them offer a complete (or partial) change of labor organization and management system. Today, digital enterprise is associated with the concept of Industry 4.0, where the emphasis is primarily on changes in industrial production. A digital enterprise is an organization that achieves a high-order competitive advantage through the use of information technology in all areas of its business: manufacturing, business processes, marketing, and customer interaction. Through digital transformation, a traditional enterprise becomes a digital thinking enterprise, and the product it produces also becomes digital, with cultural change being the most difficult part of the transition to a digital enterprise. In this regard, it is advisable to change the mentality of both the company and each individual employee, from a simple executive to C-level managers. It is necessary to create a social and cultural atmosphere to realize the benefits of Industry 4.0. It is based on free social interaction at all management levels (democratic leadership style, possibility to express opinions, and active participation in processes) and readiness for change (constant professional growth, readiness to innovations, and commitment to change) (Grunig, 2009).

The current situation is characterized by:

- a digital consumer, that is to say, an active user of social, mobile, analytical and cloud technologies (SMAC),
- a digital enterprise that actively applies SMAC technology to optimize the cost of enterprise functions and to build enterprise interactions to increase productivity,
- resurgence of companies' digital operations with a real business restructuring, based on the use of robotics, artificial intelligence, and cognitive models.

2. Problem Statement

Developing processes of digitalization are driving profound transformations. Digitalization is not only an opportunity. It is a phenomenon that can't be ignored as its deficiency directly threaten company existence. Hospitality, transport, and trade are influenced by the digitalization. In addition, the digital revolution leads to changes within the company. Information becomes more accessible and is shared among employees through social networks on the Internet. Naturally, the older generation may experience

difficulties in using new technologies. The manager has a new task, that is to provide support in getting used to new technologies (Bredmar, 2017).

An integral part of modern management is corporate network. A corporate social network is a community of people working in the same organization and communicating with professional goals. The introduction of the corporate social network in the company aims to facilitate the communication process, and make it faster and the company's employees more cohesive. Only employees of the company have the right to access the network. However, if required, the network can be accessed by professional partners (consultants, suppliers, etc.). The purpose is to facilitate communication, especially between different departments (Arrifin, Kader Ali, & Atiqah Kamsan, 2019).

By itself, the network is similar to conventional social networks. There are personal pages and groups. The employees join, create their profile, and indicate their competencies and position. They can post on their profile wall and receive a variety of information from group administrators and other users in the news. Such networks fall under the EU data protection and privacy rules. Among other things, the corporate social network serves to:

- better information dissemination,
- optimal document flow,
- exchange of experience.

There are some advantages to use the corporate social network:

- The employee becomes more independent and more involved in the company affairs. Through universal access to information, staff members gain greater awareness and understanding of the situation. Thus, it is easier for them to take the initiative.

- The work becomes more meaningful. The vision of the situation as a whole allows employees to understand better their place in the company and the strategic objectives. In this case, any order has a visible meaning.

- Management hierarchy disappears. The manager now does not give orders, but accompanies his subordinates in order implementation. Management becomes common.

- The collective intelligence is stimulated. Facilitated transfer of information and knowledge leads to the formation of a true collective unity.

- Flexibility and innovation are encouraged. Thanks to the possibility to participate in discussions and generate ideas even from a geographical distance, innovative solutions are more likely to emerge.

- Corporate culture and solidarity develop. Communication transparency and accessibility between different services and persons of the enterprise lead to the sense of belonging and increase group cohesion.

On the other hand, the corporate social network may not give the expected result because of some facts:

- employee rejection of the network due to poor project management,
- non-participation of managers due to fear of losing control over subordinates,
- different levels of employees' knowledge of modern technology.

3. Research Questions

The paper presents the study results on innovative management methods in well-known international companies, distributed in groups according to the level of importance for foreign companies (trust in the team, involvement, comfort, flexibility, cooperation, and creativity), as well as the rating of the most effective industrial enterprises of the Volga region, taking into account the implementation of the new most effective management trends (Nikityuk, Grigorova, Timchuc, & Ogloblin, 2018). For each criterion, open source data were analyzed, in particular, company websites, media reports, specialized resources, annual reports of companies, and reports of state and supervisory agencies. The fundamental components of the management system in a digital enterprise are:

1. Flexibility, freedom and mobility. The trend of increasing number of connected devices can be observed over the past five years. For example, in 2016 this number was 6.4 billion, and by 2020 it is projected to grow to 20.8 billion. Not only managers but also employees became mobile, so there is a need to develop and implement new mobile applications with enhanced functionality. Today, the B2C market and the service industry are experiencing another wave of mobilization, which will lead to a new level of interaction between them and the consumer (Orekhova & Vodjanenko, 2019).

2. Cooperation and trust. The company selling shoes through the Internet Zappos (USA) has grown so quickly that people no longer know each other. The CEO, concerned about maintaining a friendly environment between the departments, authorized to develop an information application that sent a photo of one of the employees with three different names to the computer every morning. After selecting a name, an employee card with all personal information appeared. The CEO of HCL Technologies (India) instructed to develop the application "Feed Forward".

3. Involvement, responsibility and sociality, knowledge and people management. Marketing in the digital space is also being transformed towards greater detail and personalization of customers' offers. This requires an in-depth study of available information with the use of knowledge management technologies. This will inevitably lead to the spread of new management concepts, based on network management principles instead of command-and-control methods (Trofimov & Saakyan, 2018).

4. Creativity and innovation. The employees of the telecommunications company Orange (France) can freely express their ideas through the innovative system IdClic. Ideas are studied by voluntary experts (about 5,000 people). If the idea is not archived after examination, it becomes the object of evaluation of its economic feasibility, and calculations are carried out. Similar methods are used in IBM and Auchan (Mat-Zin, & Siti-Nabiha, 2019).

4. Purpose of the Study

Application of the selected innovative methods in the management system at the regional level on the example of some companies in the Volga region was the main purpose of the study. The list of strategically important enterprises in Russia, published by the Ministry of economic development of the Russian Federation in 2015, caused a great resonance. But last three years that have passed since then have made a lot of changes in the national economy. Therefore, there were a number of researches on the main regional enterprises in Russia, including the Volga region. The study compares some economic and

social indicators of the most important enterprises of the Volga Federal district. Its activities, on the one hand, contribute to the construction of the independent real economy in the whole country, and on the other hand, provide a decent standard of living directly in the presence regions. Strategically important enterprises in the Russian regions focus not only on the final profit, but also implement socially significant strategies and introduce new modern technological approaches that contribute to the development of their industry and the economy of the Russian regions, as a whole.

5. Research Methods

A strategically important enterprise is an enterprise that presents an indispensable element of the economic mechanism and, at the same time, acts as a guarantor of the regional socio-economic stability and a leader for the local infrastructure development (Hadhri, Arvanitis, & M'henni, 2016). The rating of strategically important enterprises took place in several stages. At the first stage, the list of the enterprises was defined, relying on data of public authorities, profile non-profit organizations, and statistics on the regional enterprises. This did not include companies engaged in trade. The authors focused only on enterprises in the production and mining sectors, as well as providing services in the transport industry. About 25 companies that had the best economic indicators, as well as those included in the list of strategically important enterprises of the Ministry of economic development of the Russian Federation were selected. At the second stage, a list of criteria for analysis was determined:

- sales volume of products / services,
- benefit from phase-out of imports,
- uniqueness and competitiveness of products / services,
- export share,
- labor market impact,
- social responsibility,
- significance for the home territory,
- contribution to the development of social complex and infrastructure,
- implementation of the company's environmental protection strategy.

At the third stage, formal requests were made to enterprises to obtain more up-to-date information on a number of criteria (Idigova, Tagaev, Tasueva, Israilov, & Magomadov, 2018).

At the fourth stage, after collecting expert assessments, the following indicators were identified:

- benefit from phase-out of imports,
- product uniqueness,
- social responsibility of the enterprise,
- significance of the enterprise for the presence territory,
- contribution to regional infrastructure development,
- compliance with environmental obligations.

At the fifth, final stage, all data and estimates were collected and processed. Since all indicators according to the criteria have different dimensions, we used the method of linear scaling, which allowed us to bring all indicators to a single system of measurement.

6. Findings

One of the key economic indicators of the company showing the size of assets and equity is the balance sheet. In fact, it is the size of the company expressed in a number (in rubles). To obtain the estimates, we relied on data from open sources on the size of the company's net profit (for 2017-2018) and the dynamics of the company's profit (the difference between the profit in the post-crisis 2016 and 2017, compared to the previous two years), as well as the total amount of claims against the company in arbitration courts over the past three years. Integration into the state economy is also an important criterion. This group included assessment of benefit from phase-out of imports, uniqueness and competitiveness of products / services. The ownership structure of the company was also of interest to the study (Table 01).

Table 01. The most effective companies in the Volga region in 2017-2018

No	Company	Main profile	Home City	Balance sheet	Profit (2017-2018)	Ownership structure
1	Tatneft	Oil production	Almetyevsk, Republic of Tatarstan	751.1 billion rubles	100 billion rubles	26.1 % by the state and 27.1 % of foreign companies
2	KAMAZ	Automobile production	Naberezhnye Chelny, Republic of Tatarstan	148.2 billion rubles	3 billion rubles	49.9 % by the state and 15 % of foreign companies
3	Bashneft	Oil production	Ufa, Republic of Bashkortostan	591.8 billion rubles	129.3 billion	53.9 % by the state and 4.5% of foreign company
4	ODK-UMPO engineering	Engineering	Ufa, Republic of Bashkortostan	85.8 billion	12.5 billion rubles	62 % by the state
5	Kazan helicopter plant Kazan	Production of helicopters	Kazan, Republic of Tatarstan	69.6 billion rubles	0.1 billion rubles	88 % by state

Source: authors based on (Federal State Statistics Service, 2018).

7. Conclusion

Digital transformation is initiated by the influence of external factors. The main is a positive customer experience, that is to say, customers and partners have a high level of expectations for access to information about the company, its products and services. To ensure this level, it is necessary to use technologies that can aggregate and process data and then provide them to partners and customers, because financial performance depends on the implementation of new techniques and technologies. Thus, nowadays, digital technologies have already been introduced or continue to be actively implemented to

receive the greatest benefits from the digital transformation of the company in such industries as banks, retail and high-tech industry. Hotel business and telecommunications should think about the introduction of new methods in management and the change of business models. Insurance companies, which are concerned about risk reduction, are in the lagging rank. The housing and utilities sector and the energy complex are pulled back by their problematic infrastructure. But in the overall picture of digital maturity, the slowest digitalization in management occurs in the areas of industrial production and consumer manufacturing, including enterprises of the military-industrial complex during production of civil products, because they have not yet built a model of digital transformation. However, among the most effective industrial enterprises of the Volga region, there are only those that have already begun to introduce innovative approaches to management and support their commercial success and reliability. In exchange, it allows them to benefit and conduct reasonable social policy.

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