

Transformation of Resource Allocation Processes Based on Digital Technologies

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Abstract: The article seeks to reveal the features of the transformation of the processes of resource provision of enterprises. In fact, a mechanism for providing resources based on digital technologies for the implementation of enterprise development programs has been developed. New approaches to the interaction of enterprises for creating digital models of development process management are formulated. A system of interaction between enterprises in the digital economy is proposed, which makes it possible to make decisions when allocating resources effectively. Among the main problems identified is the low efficiency of the methodological mechanism for resource allocation. Based on the outcomes, it can be concluded that the creation of digital technology is becoming one of the main advantages of the mutual linking of sources of the resource base at all levels of management.

Keywords: Resource substitution, resource potential, transformation, digital economy, modeling, resource quality, security control.

INTRODUCTION

The transformation of resource allocation processes is associated with the assignment of resource sources to specific consumers (Zhiltsova & Sukhodoeva, 2011). It is necessary to regulate resource flows between business units and the resource market. Here, there may be deviations from consumer requests due to the novelty of the resource, since the level of intelligence of employees allows you to create substitutes for resources and becomes a source of compensation and formation of the potential of the enterprise's resources. Administrative control is required over both the

development and implementation of funds. Consequently, not only the resource substitution plan but also the control over the provision of quality resources become elements of regulation. The human resources potential of the resource support system allows implementing digital development programs. The execution time of business plans is dramatically reduced if digital technologies are used.

Regulation of the resource base of the enterprise should be carried out on the basis of transformation of processes of the interrelation of resources of the region as a whole and sources of their formation (Zhiltsova & Sukhodoeva, 2011). Thus, industry organizations in the Nizhny Novgorod region use different sources of resources when producing products. Natural resources are also used in the metallurgical and fuel industries, for the production of building materials, and in

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agriculture. At machine-building enterprises, the main resource is metal, and at sewing enterprises, textiles are mainly used. The range of these resources is very large and depends on the type of product. Their sources are both the Nizhny Novgorod region itself and internal sources of adjacent areas. In some areas, the accommodation was of high quality. Thus, the shipbuilding industry is interconnected with waterways, and defence enterprises are combined with highly professional personnel potential in large cities (Strategy of socio-economic development of the Nizhny Novgorod region until 2035, 2018).

The role of the region's resource potential in the development of enterprises is not only to provide them with raw materials but also to eliminate the shortage of quality resources (Belyakova & Fokina, 2019). However, the organization itself is responsible for quality indicators. According to these conditions, not only the structure and volume of resources are determined, but also the potential demand in the subsequent period is predicted. Resource substitution and their supply on the market are taken into account when developing digital enterprise development programs. The creation of quality resources is aimed at import-substituting resources and the development of domestic industries (Dovbiy & Amirova, 2013). When developing digital development programs, it is advisable to transform the level of availability and significance of rare resources.

LITERATURE REVIEW

When forming the strategy for socio-economic development in the Nizhny Novgorod region until 2035, the first stage of its implementation provides for the "transformation of the regional management system" in 2019-2020 as one of the three priorities (Strategy of socio-economic development of the Nizhny Novgorod region until 2035, 2018).

Regional differentiation by the level of development does not allow us to standardize the resource potential of the territory. This is due to the heterogeneity of the resource potential of the regions and the structure of the resources themselves. The current stage of the development of digital technologies in the production system increases the differentiation of the resource base distribution. This is noted by Dovbiy I. P. and Amirova O. A., who notes that in the digital economy, resource provision becomes effective only if it is used correctly. When technological structures change, development in the regions undergoes transformations:

from subsidized development to coordinated development (Dovbiy & Amirova, 2013).

Decree of the President of the Russian Federation No. 204 of May 7, 2018 "On national goals and strategic objectives for the development of the Russian Federation for the period up to 2024" reflects that the use of the advantages of digital technologies in the transformation of management processes is the result of the use of high-quality resources (On national goals and strategic development objectives of the Russian Federation for the period up to 2024, 2018). There are extraordinary reasons that contribute to this process, which allow one to achieve the desired results. So, Gartovannaya O. V. believes that at present, the main attention of economists is given to the resource provision of enterprises and industries in general, as well as the transformation of this process. In this paper, the authors identify a comprehensive system of resource support for enterprises (Gartovannaya & Dzhaginova, 2015).

The main reasons for the need to transform the processes of resource provision researchers call such as:

- increased market competition in the resource field;
- modifying the shortcomings of the resources themselves;
- regional adaptability to new resource markets (Sukhodoeva *et al.*, 2018);
- providing resources to regions with different development programs and different mentalities of managers;
- regulation of resource allocation is being strengthened due to reduced public investment;
- increasing the actual inequality of subjects in relations with the highest level of management;
- global trends in the development of the resource market have a positive impact on regional resource trends;
- resource concentration occurs in leading regions with special advantages of resource potential (Sukhodoeva, 2015).

The specificity of regions is not immediately obvious: various modifications of enterprises are

available in industries, but the distribution of this heterogeneity over time is not constant (Smirnova, 2018). This is the result of the fact that (Suhodoev *et al.*, 2017):

- there is no methodological base for optimizing the resource potential;
- resource potential volume meters are not defined;
- there is no administrative structure of the region for the development of resource potential and the use of available resources;
- the structure of the resource potential required for the development of an individual enterprise and the region as a whole has not been developed.

Such authors as S. M. Nikonorov, S. V. Solovyova, and K. S. Sitkina in the digital economy provide for the sustainable development of regions not only the transformation of resource provision processes but also macroeconomic trends. It is especially considered necessary to use digital transformation for the development of the Volga macro-region, where the transformation of existing economic models is envisaged. An experiment is made of the relationship between, on the one hand, the balance of interests between digital and economic factors of improving management in the cities of the Volga region, and, on the other hand, the balance of needs of individuals and legal entities. This paper presents research on both theoretical and methodological issues of transformation and socio-economic directions for achieving sustainable development of Volga region cities based on digital technologies (Nikonorov *et al.*, 2020).

The creation of new resources has more technological objectives: development of new types, mastering their unique properties and satisfaction of new needs of the market. To achieve development goals, there is a need to expand the resource market and gain consumer confidence in new resources (Zhiltsova & Sukhodoeva, 2011; Orekhova, 2017). Building the potential of intellectual resources is simplified by using a system of its reproducibility. It includes a system of relationships about the development and creation of innovative resources. The intellectual abilities of individuals allow us to provide new developments to organizations that are ready to produce new resources using improved substitutes. Therefore, intellectual resource allows you to determine

the relationship between innovation and uniqueness of the reserve fund sources in the resource market.

These sources are located both in their own regions and in external organizations. Suppliers of reserves that have large volumes of reserves are determined by incoming information. The technology of studying the sources of funds provides an assessment of alternative mechanisms for creating nano-resources: to produce or buy. Specialization of reserve funds is combined with market research and ends with the conclusion of contracts for their supply. Currently, there are objective prerequisites for the formation of a new digital mechanism for effective management of the region's resource base.

On the basis of the study of national and international experience, it is necessary to create a new model of territorial management of the use of resource sources, which creates optimal prerequisites for the long-term use of resource potential (Sukhodoeva & Coe, 2014).

To optimize the use of various sources of resources, qualitatively new organizational structures of enterprises are required. The main prerequisites for such structures are:

- changes in the production and technical apparatus of organizations based on nanotechnologies;
- transformation of the structural policy of resource provision both at the enterprise level and in the region as a whole;
- creating a most-favoured-nation regime for using your own resources;
- changing the set of potential resource needs based on targeted regional development programs;
- the combination of potential resource requirements with the actual capabilities of their security;
- modification of actual resource requirements in the direction of replacing them with analogues and substitutes.

METHODOLOGICAL FRAMEWORK OF THE STUDY

The methodological base of the work consists of general scientific research methods, such as analytical

methods, sociological and experimental, logical and statistical analysis, system and simulation modeling. A digital model of the resource provision process is proposed, where the delegation of authority is prescribed not only from the top down but also from the bottom up. Thus, there is a need for a new approach to the formation and regulation of the resource potential of individual enterprises, cities and districts. Consequently, the digital mechanism for creating a reserve fund of resources becomes objective, transparent and modern for its reform and transformation (Table 1).

Under the resource transformation of the management process, it is advisable to understand the socio-economic management mechanism, which is a complex set of relationships and relationships about the distribution of raw materials sources and the formation of resource potential. This mechanism arises between subjects and requires new organizational forms of their interaction, as well as the corresponding production processes that are formed under the influence of the development of digital technology.

This model allows you to make decisions at all levels of management based on existing reserve funds, as well as modern methods of their use (Belyakova and Fokina 2019). At the top level of management, possible sources of growth in the potential of resource assets are evaluated with lower costs for their reproduction, i.e. ensuring the quantity, quality and price of one-of-a-kind resources. A forecast of the resource potential and the direction of its development is made. Next, the resource market is regulated with a mechanism for replacing it with analogues. Alternative sources are selected, and a hierarchy of strategic partners is created. The information lower level of management models the actual resource demand of both administrative bodies and specific enterprises. The options for providing resources are evaluated: those that are actually produced or those that are attracted from the outside. Any digital technology is developed

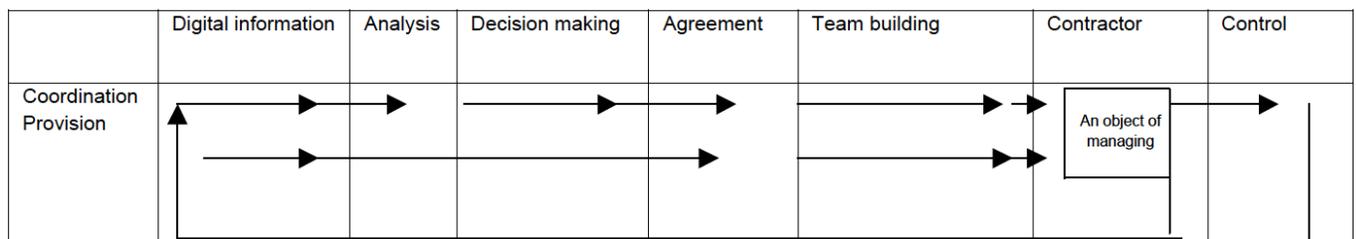
and implemented with qualified personnel and financial resources (Sukhodoeva et al., 2018).

The development of a new mechanism for transforming resource management is based on the theory of interregional differentiation, which allows us to justify the powers at the regional level in the distribution of resources, reveal contradictions between levels, and justify their distribution not only by regions but also by enterprises (Sukhodoev & Sukhodoev, 2013). The effectiveness of new digital technologies is shown when making long-term plans. This is manifested in the relationship between the sources of the resource base at all territorial levels and is possible if there is a single methodological mechanism for resource allocation. It defines methods and models for the activities of distribution authorities and their interaction regarding the allocation of resources.

Resource support begins with the study of a special group of digital technology tools necessary for the development of an individual enterprise and their entire set in a specific territory (region as a whole). Optimization of the potential of digital tools is required in terms of identifying the negative consequences of their use. Monitoring uses standard indicators for statistical accounting of indicators of potential resource development. The resource potential of the enterprise itself can be increased by reducing resource costs, reducing resource intensity and saving secondary raw materials.

The intellectual potential of personnel can develop ideas of resource substitutes and be an impulse for the formation of the resource potential of organizations as a whole (Roganova et al., 2018). Administrative control is required over both the development and implementation of funds. Consequently, not only the resource substitution plan but also the security control become elements of regulating the movement and use of resources. The possibilities of resource provision based on digital technologies make it possible to

Table 1: Digital Model of the Resource Provision Process



implement innovative programs of the digital economy. The execution time of the company's business plans is sharply reduced.

RESULTS AND DISCUSSION

The use of a digital model of the resource provision process is an integral part of the implementation of national programs. Orekhova (2017) in her research, notes that in the current conditions of resource constraints that occur in the Russian economy, it is necessary to determine priorities and those factors that affect the operation of enterprises. Transformation of the processes of resource provision of enterprises becomes the leading direction in creating mechanisms for sustainable development of the enterprise. This study has led to systematization of approaches that give different interpretations of the nature of resources. In the course of the author's fundamental understanding of the existing resource problem, a resource support system is proposed, which has in its structure both the resources of the enterprise and the resources of the digital network (Orekhova, 2017).

As part of the implementation of the national project "Digital economy", various components of the considered system, such as information infrastructure and digital public administration, also take place in certainly developed megacities. Continuing this research topic, O. O. Smirnova concludes that "in the current industry programs, the regional section is usually not sufficiently represented. The absence of specific proposals for the development of territories in

these documents makes it difficult to develop high-quality synchronized plans and strategies for the socio-economic development of the subjects of the Russian Federation" (Smirnova, 2018).

Transformation of processes the provision of new resources is to create separate digital operations (Strategy of socio-economic development of the Nizhny Novgorod region until 2035, 2018). Regulation of resource flows between enterprise divisions, and the resource market is required (Figure 1). There may be deviations from consumer requests due to the innovation of the resource.

Coordination of the resource base of the enterprise should be carried out in relation to the resources of the region as a whole and the sources of their formation (Belyakova & Fokina, 2019). The role of the region's resource potential in the development of enterprises is not only to provide them with raw materials but also to eliminate the shortage of quality resources. However, the organization itself is responsible for quality indicators. According to these conditions, not only the structure and volume of resources are determined, but also the potential demand in the subsequent period is predicted. Resource substitution and their supply on the market are taken into account when developing enterprise development programs.

Resource substitution is aimed at import-substituting resources and the development of domestic industries (Zhiltsova & Sukhodoeva, 2011). When developing an enterprise development program,

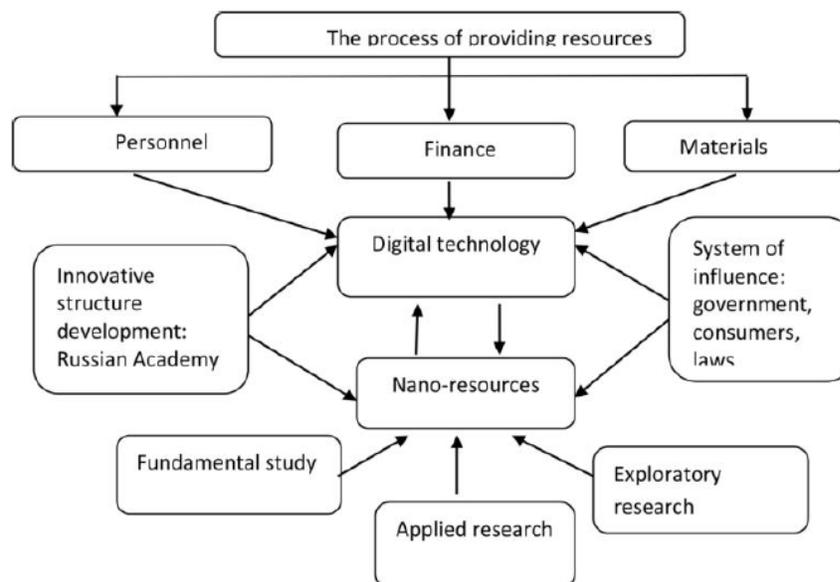


Figure 1: Mechanism of digital resource support technologies.

it is advisable to determine the level of availability and significance of rare resources. Regional differentiation by the level of development does not allow us to standardize the resource potential of the territory. This is due to the heterogeneity of the resource potential of the regions and the structure of the reserves themselves. The current stage of development of new digital technologies in the production system increases the differentiation of the resource base distribution. The following reasons are unusual:

- increased market competition in the resource field;
- the disadvantages of the resources themselves are being modified;
- the adaptability of enterprises to new resource markets is being transformed;
- provide resources for enterprises with different development programs and different mentalities of managers;
- regulation of resource allocation is being strengthened due to reduced public investment;
- the actual inequality of subjects in relations with the highest level of management is increasing;
- global trends in the development of the resource market have a positive impact on regional resource trends;
- resource concentration occurs in leading regions with special advantages of resource potential.

The specifics of enterprises have a time interval: there is a change not only in the organizational structures of management, but also tasks are set for the implementation of development programs for various territorial entities. The creation of new business model ranges is not constant and leads to heterogeneity of decisions made within even one industry. This is the result of:

- there is no methodological base for optimizing the resource potential;
- resource potential volume meters are not defined;
- there is no administrative structure for the development of resource potential and the use of available resources;

- the structure of the resource potential required for the development of an individual enterprise and the region as a whole has not been developed.

The use of digital tools depends on the scope of their distribution. Based on practice, two types are most often used, depending on the information distribution space: online and offline space. To attract potential customers, it becomes necessary to create an individual set of methods and management tools using digital technologies for each type of information space.

CONCLUSION

The transformation of resource allocation processes requires a combination of digital technologies. Coordination of the resource potential of enterprises using digital technologies has many channels in its arsenal. The main task of enterprises is to find channels that allow you to establish reliable two-way communication and the best resource supply system for the company.

1. In practice, digital technologies are often used for effective development of various communication channels for resource search. Digital technology includes tools for communication between consumers and resource providers, which are carried out through special digital channels, such as smartphones, computers, tablets, television, radio, and digital screens.
2. Digital technology is also implemented in offline channels in the form of links to electronic resources and QR codes. Digital resource technologies imply a personalized approach. There is a need to know the needs, preferences, and interests of potential customers in new types of resources.
3. Targeting technology is becoming the most widely used in recent years. Its messages are widely used by clients, for whom it is the main means of interaction. The audience of this tool is the largest and its costs are minimal. Target allows you to get an additional number of potential consumers and the greatest profit from the creation and sale of nano-resources. The most effective is the symbiosis of interaction between content and digital in such operations. It is advisable to determine the quality level of this interaction.

4. The creation of a digital resource coordination system provides for the uniqueness of the relationship between online and email in resource research. Only under these conditions can you distribute a customer-oriented initiative to promote new resources.
5. The system of transformation of resource provision processes using digital technologies becomes the basis of the concept of resource formation and distribution. It is based on optimal conditions for the activities of municipal and other administrative divisions together with the business structures of the region. The digital model of the economy is designed to ensure the development of high-tech industries with the use of high-quality resource potential of each enterprise.
6. The digital mechanism for managing resource sources is the main result of creating the competitiveness of both the resources themselves and investment in the quality level of products produced. Increasing manageability at the regional and enterprise levels leads to an increase in budget funds and agreement on the territorial distribution of resources.

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