Role of Digital Economy in Creating Innovative Environment

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Abstract. The topicality of the research topic lies in the fact that digital technologies nowadays are actively tapping into all spheres of activity, influencing the processes taking place in the economy. The development of the digital economy is characterized by large-scale use of the latest information technologies and databases, which contributes to the formation of the country's innovative potential, providing the necessary conditions and infrastructure for the mainstreaming of high-tech enterprises. Due to the fact that the digital economy is closely related to ensuring the country's competitiveness, increased attention from the state is required to introduce the possibilities of using information technologies in practical activities related to financing priority investment projects and justifying their effectiveness. The role of the development of the digital economy, the conditions for the formation of the innovation environment have been considered in the article, the importance of the availability of information in assessing the feasibility of investing in innovation has been substantiated. A practical example of an erroneous analysis of the effectiveness of innovative projects in the face of the inaccessibility of reliable information and the significant impact of subjective assessments has been given.

Key words: digital economy, innovative potential, investment potential, information technology, investment performance assessment, assessments compatibility index.

I. INTRODUCTION

In this article, the digital economy is understood as the type of economy management based on the use of a large amount of data that ensures the innovative development of enterprises, the industry, and the country as a whole. Digital technologies create the conditions for cooperation and coordination of economic agents for the sake of solving common problems [2]. The development strategy of the information society of the Russian Federation for 2017-2030 involves an orientation of state regulation on the introduction of innovations. In connection with these trends, the country's economic development directly depends on modern innovative reality. The creation of an innovative environment is ensured by wide access to information resources. The practice of applying information technology is involved in the creation of new products.

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The acceleration of innovation is facilitated by the implementation of successful investment projects that meet the requirements of priority directions for the development of the state. Information technology and the principles of the digital economy accelerate the growth processes of the country's economy and the welfare of the population.

Despite significant state support, most large high-tech and science-driven enterprises encounter difficulties in implementing innovative projects, which is associated with their long-term nature, significant investment, a high degree of uncertainty of the outcome, the presence of specific risks and a large amount of factors that need to be taken into account when planning financing of an investment program. Thus, the absence of the widespread availability of necessary data on the implementation of similar projects, statistical information, possible risks, and new technologies complicates the process of an objective assessment of the enterprises' capabilities to create and introduce innovations [1].

A positive outcome of innovation is achieved due to the synergistic effect of the use of accumulated digital data and technologies that allow working with them. The greatest value for the development of the digital economy lies in scientific developments, patents and other arrays of information and knowledge that are available for innovation. Due to the fact that innovation is characterized by a high degree of uncertainty, the development of technological support for collecting data, which are the basis for obtaining new knowledge, is of great importance. Thus, countries that have high-tech data transmission channels have an advantage in the innovation environment, which ensures their sustainable development.

II. LITERATURE REVIEW

To justify investment decisions, there are many methods and models for assessing the effectiveness of enterprise projects, however, not all of them are applicable in the analysis of the feasibility of introducing innovations [1,3]. Orthodox methods for assessing investment performance are based on the use of accurate initial project data, which in future periods will undergo minor changes throughout the implementation life cycle, which may affect the results of the initial financing plan within acceptable limits [4,5,6]. Fluctuations and deviations from the investment plan should be taken into account when assessing the level of possible risks and inflation [7,8,9]. The advantages of traditional methods of evaluating investment projects are their applicability in the conditions of certainty, which allows giving reliable results [10, 11]. In the case of innovative projects, these methods are used at the intermediate stages of investment in order to verify the feasibility of further implementation of the program when receiving new introductory information about projects [11].

The limitations of this study include the specifics of production, financing, and control of industry enterprises. **The research prospects** are the development of a set of economic and mathematical models for the formation, buildup and implementation of the investment, innovative potential of industrial enterprises in contemporary and predicted socio-economic conditions of economic globalization.

III. MATERIALS AND METHODS

The most applicable and promising methods for assessing innovation are those that are based on a comparison of alternative indicators [3]:
 - determination of an individual discount rate;
 - expert assessment method;
 - sensitivity analysis of performance criteria;
 - scenario approaches;
 - building a tree of objectives.

The above methods also involve assessing the risks of investing in fairly predictable conditions, however, for each innovative project, an individual set of internal and external factors is formed that can significantly impact performance.

In modern conditions, it is also necessary to take into account the features inherent in the projects under consideration in the context of the digital economy, namely:
- a high level of investment in R&D and project development;
- unpredictability and many different scenarios for the development of the project;
- a high degree of uncertainty of significant parameters of innovative projects;
- the use of expensive resources and new technologies.

Thus, in order to carry out an assessment of innovative projects, which will correspond to a sufficient level of reliability, it is necessary to use a set of methods taking into account the specifics of the digital economy, including various types of criteria and assessments. The complex of methods should be focused on its applicability in the analysis of various types of projects, including social, technological, product, etc.

To apply the aggregate of methods in the analysis of the effectiveness of innovative projects, it is necessary to create conditions for the technological support of the innovation environment [4]:
- development of information technology infrastructure covering all spheres of society. This infrastructure should provide equal access to data throughout the country, and also be subject to continuous updating due to the rapid obsolescence of information technology, which is the main obstacle to innovative development in the transition to a digital economy.
- expanding access to information about new technologies, products, projects, knowledge. Innovation must be based on accumulated intellectual potential.

It can be noted that the digital economy is based on the following:
- a base of suppliers and buyers of physical goods and services;
- the sector of software developers;
- infrastructure in the form of a legislative base, employees training system, channels of transmission and storage of all types of data.

For the further development and popularization of the digital economy, it is necessary to improve the following: artificial intelligence, manufacturing technologies, industrial Internet, wireless communications, Bigdata (various tools, as well as methods for processing and storing large amounts of data). Financing of ongoing projects, adapted to modern conditions and in demand among enterprises and citizens is interesting for the state. The strategy of the state development program should in this case be aimed at total digitalization and export of innovative technologies [5].

To select innovative projects to be implemented, enterprise management should focus on the following approaches:
- the formulation of clear objectives of the project, consistent with the development strategy of the enterprise;
- development of both general project selection criteria and specific target indicators for each type of innovation;
- selection of a system of methods for selecting innovative projects;
- the formation of a professional group of experts, which includes not only stockholders but also independent entities of economic activity;
- direct analysis of the totality of potential for the implementation of projects and the formation of the investment portfolio of the enterprise [6].

When creating a system of criteria for evaluating innovative projects, attention should be paid to such requirements as: compliance with objectives, available information, eliminating the ambiguity of interpretation and subjectivity of the assessment. These requirements are based on the use of reliable data, which once again proves the importance of the development of the digital economy for the formation and strengthening of the country's innovative potential. It is important to note that when evaluating the effectiveness of innovative projects, one should take into account not only quantitative indicators but also qualitative ones, which makes the process of finding the necessary information even more challenging [10]. Currently, the hierarchy analysis method based on the construction of comparison matrices, the elements of which represent the relationship of the compared criteria for each project, is the most applicable method for selecting projects in the investment program of an enterprise. Based on the constructed matrices, integrated indicators are calculated for each project under consideration, which are the criteria for their inclusion in the investment program. The sequence of calculation of the integral indicator is presented in Figure 1.
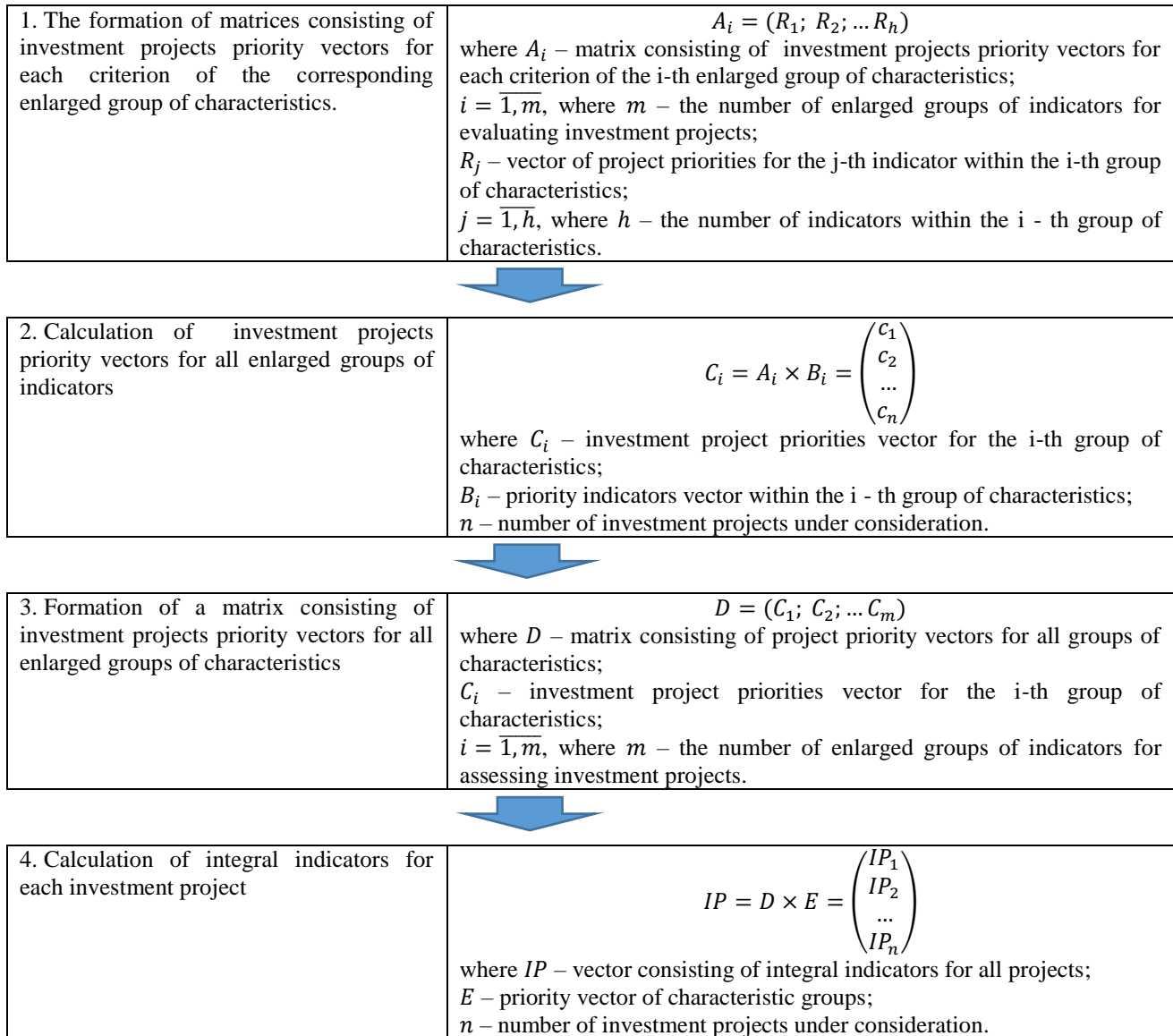
1. The formation of matrices consisting of investment projects priority vectors for each criterion of the corresponding enlarged group of characteristics.	$A_i = (R_1; R_2; \dots R_h)$ where A_i – matrix consisting of investment projects priority vectors for each criterion of the i-th enlarged group of characteristics; $i = \overline{1, m}$, where m – the number of enlarged groups of indicators for evaluating investment projects; R_j – vector of project priorities for the j-th indicator within the i-th group of characteristics; $j = \overline{1, h}$, where h – the number of indicators within the i - th group of characteristics.
2. Calculation of investment projects priority vectors for all enlarged groups of indicators	$C_i = A_i \times B_i = \begin{pmatrix} c_1 \\ c_2 \\ \dots \\ c_n \end{pmatrix}$ where C_i – investment project priorities vector for the i-th group of characteristics; B_i – priority indicators vector within the i - th group of characteristics; n – number of investment projects under consideration.
3. Formation of a matrix consisting of investment projects priority vectors for all enlarged groups of characteristics	$D = (C_1; C_2; \dots C_m)$ where D – matrix consisting of project priority vectors for all groups of characteristics; C_i – investment project priorities vector for the i-th group of characteristics; $i = \overline{1, m}$, where m – the number of enlarged groups of indicators for assessing investment projects.
4. Calculation of integral indicators for each investment project	$IP = D \times E = \begin{pmatrix} IP_1 \\ IP_2 \\ \dots \\ IP_n \end{pmatrix}$ where IP – vector consisting of integral indicators for all projects; E – priority vector of characteristic groups; n – number of investment projects under consideration.

Figure 1. Stages of calculating the integral indicator of an innovative project.

The method of analyzing hierarchies has been sufficiently studied and it is based on the construction of a balanced system of key project indicators, which consists of qualitative and quantitative characteristics. Thus, the primary stage of collecting initial data on projects is crucial, and the outcome of evaluating the effectiveness and implementation of the investment program of an enterprise depends on the quality of the initial information [9].

In the formation of matrices based on quantitative indicators, there is no doubt about the reliability of the study, since the calculated values of the criteria are used, however, the uncertainty associated with innovative projects contributes to the formation of risks associated with inaccurate forecasts of income, investments and other indicators. Quality indicators are assessed using expert analysis.

Since the quality of decisions obtained on the basis of expert analysis depends on the degree of comprehensive knowledge of the involved specialists, selection of experts is an important step in assessing the quality characteristics of innovative projects. To carry out this stage, an analytical group is created, which, using the documentation method and mutual assessment, selects qualified experts. In the documentary method, characteristics that are confirmed by relevant documents are evaluated, for example, level of education, work experience, availability of scientific articles and studies. The method of mutual evaluation is necessary for the quantitative assessment of the state of the general comprehensive knowledge of experts. Thus, the tasks of the analytical group are the following:

1. Assessment of the comprehensive knowledge of candidates. It is carried out on the basis of communication with specific specialists and collective discussion of potential experts. As a result, the weight of each candidate is determined by assigning a rating from 0 to 1.

2. Selection of assessment criteria for the documentation method

3. Determination of abnormal weights of all assessment criteria. It is based on a collective discussion by an analytical group.

4. Carrying out calculations and compiling a final rating of candidates.

5. Formation of a group of experts in accordance with the rating.

The rating of each expert is determined by the formula:

$$R_i = \sum_j R_{ij} / \sum_i \sum_j R_{ij} \qquad (1)$$

where R_i – rating of the i-th candidate or its normalized weight;

R_{ij} – weight of the i –th candidate according to j – th criterion.

$$R_{ij} = r_i \times s_j$$

where r_i – assessment of the i –the candidate, obtained using the mutual assessment method;

s_j – not normalized weights of the assessment criteria.

The expert group includes the candidates with the highest normalized weights.

When working with an already formed group of experts, two approaches are used:

1. Work with software that requires specific knowledge from the experts.

2. Work with data presented on paper, which is the most time-consuming and costly for the analytical group.

To organize the work of the expert group, options are being prepared for comparing the criteria that make up the system of hierarchies of indicators for investment projects, as well as the form of tables to fill in the results of the analysis. In addition, the analytical group should prepare explanatory materials with the rules for filling out evaluation tables according to the criteria being compared. Experts, in accordance with a nine-point rating scale, compare the qualitative characteristics of the hierarchical system of indicators of investment projects by building fuzzy relationships. Each pair of compared characteristics receives two ratings depending on the relativity of comparisons with each other. The specialist solves the question of which of the elements in this pair has an advantage over the other and to what extent this superiority is manifested. The expert's task is to determine the contribution of each indicator characterizing the investment project in the achievement of the enterprise's goal. The quantitative criteria of the hierarchical system of indicators are compared on the basis of the calculated ratio of their values. In the expert analysis, it is recommended to avoid intermediate assessments by a nine-point scale.

The main stages of the work of the expert group:

1. Construction by each expert of comparison matrices for all provided characteristics of investment projects.

2. Verification by the analytic group of matrices for consistency.

3. Conversation with an expert and re-filling of the source evaluation tables in case of inconsistency of the comparison matrices.

4. Calculation of integral indicators for investment projects of a high-tech enterprise.

5. Calculation of the value of the compatibility index. If the value of this index is less than 1.1 for all experts, then the opinions are considered consistent, and the results of the assessment are reliable for use in further work.

To calculate the compatibility index, it is necessary to build a generalized assessment of the group ranking of the investment projects of the enterprise under consideration. The geometric mean of the integrated priority vectors obtained by different experts is determined:

$$\rho_i = \sqrt[\kappa]{\prod_j \rho_{ij}}$$

where ρ_i – geometric mean estimate of the i-th investment project;

ρ_{ij} – evaluation of the i-th project received by the j-th expert;

K – number of experts.

Next, a relationship matrix A is constructed, consisting of elements:

$$a_{ij} = \rho_i / \rho_j \qquad (2)$$

The resulting matrix is the basis for assessing the compatibility of the analysis results of each expert.

The next step in the calculation is the creation of B_k matrices for each expert. Matrix data consists of elements:

$$b_{ijk} = \rho_{ik} / \rho_{jk}$$

where k – expert's number;

ρ_{ik} – integral assessment of the i-th investment project by an expert under the number k.

The final step is to calculate the compatibility index:

$$\text{ИС}_{\text{овм}(k)} = \frac{e^T A \circ B_k^T e}{K^2}$$

$\text{ИС}_{\text{овм}(k)} < 1{,}1$ – condition for compatibility of the matrix of relations for the expert under number k.

where $\text{ИС}_{\text{овм}(k)}$ – index of matrices comparability for the k – th expert;

e – unit column vector;

e^T – unit line vector;

A and B_k – matrices based on expert ratings;

$A \circ B_k$ – Hadamard product of matrices, that is, a matrix consisting of products of the corresponding matrix elements A и B_k;

k – expert's number;

K – number of experts.

Operation $e^T A \circ B_k^T e$ means the summation of the values of the elements of columns and lines, that is, all elements of the matrix of the Hadamard product.

6. Discussion of the results of the analysis and re-examination in case of inconsistency of expert opinions.

The presence in the method of analysis of hierarchies of such a significant component as an expert assessment of qualitative indicators raises a natural doubt in the accuracy of the analysis. Uncertainty is formed on the basis that assessments are based on subjective judgments of experts, which vary over a wide range. Thus, as for any measurement method, it is necessary to investigate the consistency of judgments and prove their validity, as the result of a possible error may be incorrect conclusions.

In the process of paired assessments of quality indicators, fuzzy relationships are formed, which are subsequently used as input data for calculation. Each expert receives the analysis result in the form of a vector of priorities, on the basis of which the alternatives are ranked. Since there is a subjective factor, the vectors of priorities of different experts will vary. According to the degree of discrepancy between the results of the assessment, one can preliminarily judge the acceptability of the analysis.

The Kendall method has gained fame among the variety of approaches to determining the compatibility of the results of expert analysis, which consists in calculating the concordance coefficient. Calculation of this coefficient will only determine errors in the resulting ranking of alternatives. (3)

The method proposed by T. Saati for assessing expert judgments allows us to calculate the numerical value of violations of consistency [7].

From the course of matrix theory it is known that the consistency of a positive inverse symmetric matrix is estimated by calculating the assessment - λ^*_{max} of its maximum eigenvalue - λ_{max} and its comparison with the number of columns of the matrix - n. To assess deviations from consistency, the consistency index is used:

$$ИС = \frac{\lambda^*_{max} - n}{n - 1}$$

where ИС – the consistency index of the corresponding comparison matrix;

n - the number of project characteristics considered.

The consistency index shows the degree of deviation of the original matrix A_i from the consistent one. In the case of assessment of quantitative indicators, there is no doubt about the consistency of the matrix; when assessing the qualitative characteristics, an ideal case may arise when $\lambda_{max} = n$, but it is believed that if the consistency index does not exceed 0.10, then the degree of consistency is satisfactory. If consistency index exceeds the established maximum value, then a repeated comparative assessment of the indicators in the matrix is carried out after discussion with an expert.

The assessment of the largest eigenvalue is calculated by the formula:

$$\lambda^*_{max} = \frac{1}{n} \times \sum_{i=1}^{n} \frac{y_i}{x_i},$$

x_i - eigenvector of the comparison matrix, more precisely its components;

y_i – components of the vector obtained by multiplying the comparison matrix by an eigenvector.

IV. RESULTS

The consistency of assessments can be determined on the basis of the concept of a random index (RI), which is a consistency index determined by random generation on a scale from 1 to 9 of an inverse symmetric matrix. Using hundreds of random samples at Oakridge National Laboratory, average RIs were generated for matrices of the order of 1 to 15. The data are presented in Table 1.

Table 1

Matrix order	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RI	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.49	1.51	1.48	1.56	1.57	1.59

The consistency relationship (CR) is calculated using the selected random index for the matrix of the corresponding order.

Thus, the consistency condition for the matrix of paired comparisons can be described by the inequality:

$$ОС = ИС \,/\, СИ \leq 0,1$$

where CR – an indicator of the relationship of consistency of matrices of comparisons on investment projects of a high-tech enterprise;

CI – consistency index of the corresponding comparison matrix;

RI – random matrix index depending on the order of the comparison matrix.

After assessing the consistency of the resulting matrices, an analysis of the calculation results is performed. If there are several options for calculating priority vectors for making final decisions, it is advisable to consider a vector calculated on the basis of the most consistent matrix.

Presentation of the initial data in the form of a hierarchy allows you to get away from calculating complex dependencies between indicators, and the availability of data in the context of the development of the digital economy will minimize the risks of obtaining subjective and unreasonable assessments.

In the framework of this study, we consider an example of assessing the reliability of the results of an expert analysis of the qualitative indicators of innovative projects. Suppose that the task of a high-tech enterprise is to compile a ranking of the priority of innovative projects. As assumptions and simplification of calculations, we take the number of experts equal to three, and the number of projects under consideration - four.

Using expert analysis and compilation of comparison matrices based on the scoring of qualitative criteria for innovative projects by a group of specialists, taking into account their subjective opinions, priority vectors were calculated on the basis of a set of investment alternatives [8].

According to the considered algorithm for determining the compatibility of expert opinions, it is necessary to construct the geometric mean of the integrated priority vectors obtained by different specialists. The geometric mean is formed in the form of a vector calculated on the basis of a matrix composed of priority vectors of all experts. The calculation is presented in table 2.

Table 2

Project's number	First expert	Second expert	Third expert	$\prod_j \rho_{ij}$	Geographic mean of the experts' opinions $\bar{\rho_i} = \sqrt[3]{\prod_j \rho_{ij}}$
Project 1	3	2	1	6	1.82
Project 2	2	2	2	8	2
Project 3	1	2	3	6	1.82
Project 4	4	5	3	60	3.91

The relationship matrix - A is presented in table 3:

Table 3

Geographic mean of the experts' opinions $\bar{\rho_i} = \sqrt[3]{\prod_j \rho_{ij}}$	Matrix A with elements: $a_{ij} = \rho_i / \rho_j$
$\begin{pmatrix} 1,82 \\ 2 \\ 1,82 \\ 3,91 \end{pmatrix}$	$\begin{pmatrix} 1,82/1,82 & 1,82/2 & 1,82/1,82 & 1,82/3,91 \\ 2/1,82 & 2/2 & 2/1,82 & 2/3,91 \\ 1,82/1,82 & 1,82/2 & 1,82/1,82 & 1,82/3,91 \\ 3,91/1,82 & 3,91/2 & 3,91/1,82 & 3,91/3,91 \end{pmatrix}$ $\rightarrow \begin{pmatrix} 1 & 0,91 & 1 & 0,46 \\ 1,1 & 1 & 1,1 & 0,51 \\ 1 & 0,91 & 1 & 0,46 \\ 2,15 & 1,96 & 2,15 & 1 \end{pmatrix}$

The resulting matrix A will be the basis for comparing the opinions of experts, that is, assessing the compatibility of decisions made.

Similarly to constructing a comparison matrix for each expert, matrices - B_k are constructed. Table 4 presents the calculation results.

Table 4

Priorities vector of the j – the expert	B_k with the elements: ρ_{ik}/ρ_{jk}
1. $\begin{pmatrix} 3 \\ 2 \\ 1 \\ 4 \end{pmatrix}$	$\begin{pmatrix} 1 & 1,5 & 3 & 0,75 \\ 0,67 & 1 & 2 & 0,5 \\ 0,33 & 0,5 & 1 & 0,25 \\ 1,33 & 2 & 4 & 1 \end{pmatrix}$
2. $\begin{pmatrix} 2 \\ 2 \\ 2 \\ 5 \end{pmatrix}$	$\begin{pmatrix} 1 & 1 & 1 & 0,4 \\ 1 & 1 & 1 & 0,4 \\ 1 & 1 & 1 & 0,4 \\ 2,5 & 2,5 & 2,5 & 1 \end{pmatrix}$

Continuation of Table 4

Priorities vector of the j – the expert	B_k with elements: ρ_{ik}/ρ_{jk}
3. $\begin{pmatrix} 1 \\ 2 \\ 3 \\ 3 \end{pmatrix}$	$\begin{pmatrix} 1 & 0,5 & 0,33 & 0,33 \\ 2 & 1 & 0,67 & 0,67 \\ 3 & 1,5 & 1 & 1 \\ 3 & 1,5 & 1 & 1 \end{pmatrix}$

Hadamard product $(A°B_k)$ – the product of the corresponding matrix elements, and the $e^T A°B_k^T e$ expression is a summation of the elements of the Hadamard matrix.

Appropriate calculations to verify the compatibility of the results of the analysis of innovative projects by the first expert:

$$\begin{pmatrix} 1 & 1,5 & 3 & 0,75 \\ 0,67 & 1 & 2 & 0,5 \\ 0,33 & 0,5 & 1 & 0,25 \\ 1,33 & 2 & 4 & 1 \end{pmatrix} \times \begin{pmatrix} 1 & 0,91 & 1 & 0,46 \\ 1,1 & 1 & 1,1 & 0,51 \\ 1 & 0,91 & 1 & 0,46 \\ 2,15 & 1,96 & 2,15 & 1 \end{pmatrix}$$

$$= \begin{pmatrix} 1 & 1,36 & 3 & 0,35 \\ 0,73 & 1 & 2,2 & 0,26 \\ 0,33 & 0,45 & 1 & 0,12 \\ 2,87 & 3,91 & 8,62 & 1 \end{pmatrix}$$

Thus, $e^T A°B_k^T e$ = 28.21, and ИС$_{\text{овм}(k)}$= 3.13, which allows us to conclude that the analysis results of this particular expert are not compatible with the general opinion.

According to the results of the presented calculation example, we can conclude that in this case, additional verification of the assessments of the first expert is necessary, which consists in repeating all the stages of the analysis first. If there are more specialists in the expert group, an ambiguous situation may arise in which opinions are absolutely incompatible. The process of forming an investment program can run over, which in conditions of tight competition is a negative factor for the development of the enterprise.

It is possible to exclude such a situation if there is the availability of relevant data on innovative projects and their relevance for the domestic economy. Expert assessments in the conditions of a developed innovative infrastructure will provide a sufficient level of validity and compatibility, as they will be based on general information obtained from databases. The opportunities of the digital economy will accelerate the process of making managerial decisions regarding the formation of investment programs of the enterprise, will increase the reliability of the results of evaluations, which minimizes the risks of loss of profit when implementing inefficient innovative projects.

V.   DISCUSSION

The digital economy is aimed at creating conditions for the development of high-tech industries, eliminating the limitations of innovative activities in terms of the availability of necessary information, increasing the competitiveness of national products and strengthening its position in the global market. However, an increased concentration of resources in priority areas of development will allow us to occupy a leading position in the world market. Innovative development is the driving force for achieving competitive positions, therefore, the application of the capabilities of the digital economy in the process of creating an innovative environment will ensure a high level of domestic enterprises. The success of the implementation and implementation of innovations directly depends on the initial data used in assessing the effectiveness of investments, the general awareness of project managers, thus, having the ability to access data not available until now, accelerated scientific and technological progress in the country can be achieved due to the objective justification of the accepted managerial decisions. Despite the positive aspects of the development of the digital economy, there are risks in the growth of cybercrime arising from the weakening of information security; technological vulnerability in the initial stages of adaptation. The above risks require attention and elimination, however, there are more advantages for the development of an innovative environment in the digital economy.

VI.   CONCLUSION

Thus, the digital economy in modern conditions is the driving force behind the effective innovative development of the enterprise and the country as a whole. Successful formation of the information infrastructure requires not only state regulation, but also cooperation with high-tech enterprises, institutions, and other interested economic entities. Studying the issues of intensified implementation of information technologies in the work of enterprises, using and making publicly available data based on the experience of large companies, coordination and cooperation between participants in innovative activities will help achieve global goals of the state and take a higher competitive position. The study developed and tested a mechanism for selecting projects in the formation of investment programs, as well as a methodology for adjusting expert assessments in analyzing the effectiveness of projects in the digital economy.

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