

Implementation of Digital Technologies into Projects in Area of Creative Industries

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Abstract—The article considers theoretical and methodological aspects related to the creative economy, namely, projects in the area of the creative industries, their characteristics and nature. The authors have explored and explained the positive influence of implementation of digital technologies into such projects, while noting that implementation of digital technologies contributes to increase of sales markets, integration of products or services into multiple facets of people, and spreading of partnership and outsourcing relations beyond a region or state. The article also identifies the main groups of parameters of the external and internal environment related to implementation of digital technologies among the variety of parameters characteristic of projects in the area of the creative industries; an original approach to assessing such parameters, taking into account their quantitative and qualitative characteristics, has been presented, which allows the managers to calculate the applicability, efficiency, and feasibility of implementing digital technologies into the project execution in the area of the creative industries. The relevance of this study is confirmed by a necessity to find new opportunities for development of the economy of the Russian Federation.

Keywords—digital economy, creative cluster, project parameters, project management in the creative economy, digitalization of the creative industries.

I. INTRODUCTION

There is a tendency of increased attention to the economic activity of the creative clusters in Russia, which is due to the transition from the “resource economy” to the “knowledge economy”. [1] Creative entrepreneurship plays an important part in the socio-economic system of regions and entire states and forms the so-called “new space” for development of business and new areas of activity. [2]

The concept of the creative economy was first adopted by J. Howkins in his book “The Creative Economy: How People Make Money from Ideas” in the beginning of 2000s. In accordance to his concept, the creative economy includes 15 main sectors, among which you can see the industries that produce a creative product (cinema, music), industries related to design, advertising, crafts, software development and others. [3]

These industries produce creative products expressed in patents, copyrights, and trademarks. The concept of

development of the creative clusters quickly gained popularity, amid economic priorities shifting from trade in goods to trade in ideas. [4] This theory was further developed by R. Florida, who, in turn, has singled out a new postindustrial class – the creative one.

However, it is important to note that these terms are frequently used in Russia: “the cultural industry” and “the creative industry”, which are thought to be almost interchangeable. Nevertheless, the “cultural industry” includes objects of cultural heritage or creative products, while the concept of “creative industry” includes applied creative practices, innovations, and profit and jobs generating process through creation of intellectual property.

The theory of the creative industries, its development and evaluation are being paid great attention in various countries of the world nowadays; support and promotion programs are being developed and newer types of the industries are appearing. [5] Such countries as the UK, Germany, Sweden, Australia and China are actively involved with development of this sector.

The expansion programs in those countries provide for financial support, easy credit terms (for entrepreneurs in the sector), as well as business consulting. Among the mentioned countries, the experience of the UK deserves attention, where specialized agencies acting as intermediaries between the creative industries clusters and the city authorities have been created.

There are many ways creative initiatives can be implemented to be later transformed into successful commercial enterprises. One of the ways to conduct activities in this sector might be through implementation of projects. A project is an event limited in time and resources, with a specified aim and a precise plan to attain it. [6,7] A number of characteristics shall be noted in relation to such projects: sociocultural factors influence the outcome of the project; the outcome of the project is difficult to predict; a product or service is likely to be entertaining in nature, thus being not essential goods. In addition to these characteristics, it should also be noted that a single concept of the creative industry has not yet developed either at the theoretical level or at the level of legislative acts or socio-cultural policy in Russia nowadays, which indicates the stage of formation of this sector in Russia.

According to the data of the state statistics bodies and of the scientists of the Higher School of Economics, the number of the Internet users with a fixed broadband connection grew

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1.8 times compared to 2011 and amounted to 30.9 million in 2017; the number of the mobile Internet users grew 1.7 times and amounted to 117.4 million. In 2010–2017, the proportion of households having access to the Internet increased 1.6 times - up to 76.3%. The data above show promotion of digital technologies across the population. Many processes in life are now regulated by the Internet technologies and digital space. In response to such a rapid increase in the number of Internet users, the structure of many business processes is changing. [8]

Digitalization of economic processes has a huge influence on project activities in the area of the creative clusters, resulting from the characteristic aspects of such activity based on intellectual and creative products rather than production of material values. [9]

Thus, implementation of digital technologies in the activities of the creative industries can increase sales markets, integrate products or services into multiple facets of people, and spread partnership and outsourcing relations beyond a region or even state. Consequently, digitalization of projects in the area of the creative industries is an important process and a priority for the subjects of the creative economy at present.

II. RESEARCH METHODOLOGY

The article examines the parameters of projects in the field of creative industries related to implementation of digital technologies. To identify the parameters associated with digitalization, the authors applied the methods of logical analysis and tabular presentation of the information.

It should be noted that the parameters of the internal environment are mainly associated with quantitative economic indicators that demonstrate financial investments in and possible profit from the use of digital technologies. These parameters can be calculated using economic and mathematical methods applied in implementation of projects. Such calculation methods as NPV, IRR, NRR, MIRR, DPI and others can serve as examples of such calculations.

However, if the methods for calculating the parameters of the internal environment of a project in the area of the creative industries related to digitalization are known and quite understandable, it is necessary to apply methods evaluating the applicability of digital technologies based on the assessment of the development of such technologies while calculating the parameters of the external environment of a project. It is challenging to choose a method as the parameters of the external environment described by the authors of the article are, to a large extent, qualitative.

In order to make all the specific indicators comparable, their values should be standardized, which is achieved by applying normalization coefficients or by assigning a corresponding score by points. This allows us to compare the indicators and significantly simplifies the analysis of the assessment results. A method applicable in such circumstances might be the expert evaluation method.

The expert evaluation method is the opinion of one or a group of specialists based on their practical experience. This method does not require special forecasting tools. This method is simple, which is its advantage compared to other methods. However, subjectivity might interfere with the accuracy of the forecast when using this method.

We propose to assess the parameters of the external environment of a project in the area of the creative industries related to digitalization, namely the development of each parameter in the group within the framework of the expert evaluation method. The experts should be provided with a description of these parameters. Following that, they should conduct assessment according to the scale developed by the authors of the article.

In case the parameter is sufficiently developed (or the forecast result is satisfactory), the experts might assess it in the range from 75 to 100 points. In case the parameter is underdeveloped (or the forecast result is less satisfactory), the experts might assess it in the range from 40 to 74 points. In case the parameter is not developed (or the forecast result is unsatisfactory), the experts might assess it in the range from 0 to 39 points. After evaluating each of the parameters, it is necessary to calculate the average score of development of the parameters of the external environment of the project in the area of the creative industries related to digitalization. The authors of the article suggest to assess the parameters by the formula of the coefficient of development of the parameters of the external environment of a project in the area of the creative industries related to digitalization (K_{dpd}):

$$K_{dpd} = \frac{\sum_{f=1}^l a_f}{l} + \frac{\sum_{g=1}^m b_g}{m} + \frac{\sum_{h=1}^n c_h}{n} \quad (1)$$

where: l is the number of the parameters in the Infrastructure group; a_f is the score of each of the parameters in the Infrastructure group; m is the number of the parameters in the Market group; b_g is the score of each of the parameters in the Market group; n is the number of the parameters in the Technical group; c_h is the score of each of the parameters in the Technical group; s_x is the maximum score of each group of the parameters of the external environment of a project in the area of the creative industries related to digitalization.

The final value of the coefficient shows the project managers the availability and applicability of introducing digital technologies into the project in this region. The closer this coefficient is to 1, the easier it might be to implement digital technologies into the project. Therewith, on the basis of assessing the efficiency of the parameters of the internal environment, project managers can make decisions related to feasibility of implementing digital technologies into the project.

III. RESULTS

It can be affirmed that a project has a set of specific characteristics, quantitative and qualitative indicators of which can be considered as the parameters of such a project. There is a variety of research papers on certain aspects related to such parameters at present. [7,10] The authors of the article consider the parameters of a project in the area of the creative industries related to its digital component. It is feasible to divide such parameters into two groups: the first one includes the parameters of the external environment which are set and not controlled by project managers; the second group includes parameters of the internal environment formed during the project implementation and controlled by project managers. The nature of each group of parameters is shown in Table 1.

TABLE I. PARAMETERS OF EXTERNAL AND INTERNAL ENVIRONMENT OF PROJECT IN AREA OF CREATIVE INDUSTRIES RELATED TO DIGITALIZATION (COMPILED BY THE AUTHORS)

Group of Parameters		Nature of Parameters in Group
<i>Parameters of External Environment of Project in Area of Creative Industries Related to Digitalization</i>		
Infrastructure		Availability of digital technologies in the region where the project is being implemented; support of digitalization by the federal, regional, municipal authorities
Market		Expected market share for creative goods or services, taking into account implementation of digital technologies; composition and solvency of consumers of creative goods or services
Technical		Safety of digital technologies in the state and region where the project is being implemented; development of digital technologies in the state and region where the project is being implemented
<i>Parameters of Internal Environment of Project in Area of Creative Industries Related to Digitalization</i>		
Economic		Investments in implementation of digital technologies; the cost of the products or services, taking into account implementation of digital technologies; cost-effectiveness of the project, taking into account implementation of digital technologies
Marketing		The price of advertising campaigns, taking into account implementation of digital technologies; the budget for the marketing research aimed at implementation of digital technologies
Parameters of Sales		Type of the sales channel for the creative products using digital technologies; profitability of the sales channel using digital technologies

These parameters have been highlighted in order to determine efficiency of implementation of digital technologies in projects in the area of the creative industries, as well as to assess the development of digital technologies to outline their possible implementation.

The authors of the article have analyzed projects in the field of creative industries in Russia (Saratov region). Further we will consider the indicators of one of the projects (a handmade goods store) introducing an online application for selling goods, as well as a digital platform for finding suppliers in the domestic and neighboring regions.

To assess the parameters of the internal environment, we will present the indicators characterizing the costs of implementing digital technologies:

- Investments for implementation of digital technologies: \$3919;
- Price of advertising campaigns: \$4193;
- Marketing research budget: \$1654;
- Initial cost of formation of a new sales channel: \$1516.

Performance indicators are shown in Table 2. It should be noted that not all the calculated parameters of the internal environment of the project are presented in this article, but only the parameters clearly demonstrating efficiency of implementation of digital technologies.

TABLE II. ASSESSMENT OF PARAMETERS OF PROJECT IN AREA OF CREATIVE INDUSTRIES RELATED TO DIGITALIZATION (CALCULATED BY THE AUTHORS)

Coefficient of Development of Parameters of External Environment of Project in Area of Creative Industries Related to Digitalization	Parameters of Internal Environment of Project in Area of Creative Industries	
	<i>before implementation of digital technologies</i>	<i>after implementation of digital technologies</i>
0.71	NPV: \$24193	NPV: \$39323
	IRR: 44%	IRR: 49%
	PP: 25 months	PP: 33 months

Thus, after calculating the parameters of the internal environment of the project, we can conclude that the effectiveness of implementation of digital technologies is of strategic importance, which is expressed in an increase in the net present value (calculated for a period of 5 years), internal rate of return with a decrease in the payback period.

As the result of processing expert opinions regarding the assessment of the parameters of the external environment of the project in the area of the creative industries related to digitalization, we have obtained an index characterizing development of digital technologies in the region where the project is being implemented. The reason why $K_{\text{onu}} = 0.71$ is low expert scores when assessing the Infrastructure group of parameters, namely, when assessing the support of the federal, regional, and municipal authorities. However, despite this, it can be concluded that implementation of digital technologies into the project analyzed in the article is a cost-effective solution, which is confirmed by the calculations of the net present value of the project.

IV. CONCLUSION

Nowadays, implementation of digital technologies into various business processes is an effective tool aimed at improving strategic indicators of economic efficiency when implementing projects in the area of the creative industries. However, high financial expenses and complexity of the process of implementing digital technologies mean that assessment of the degree of development of digital technologies in the circumstances in which the projects will function should be added to traditional methods for assessing economic efficiency of their implementation.

In this article, the authors suggest an approach to assessing the applicability of implementing digital technologies into projects in the area of the creative industries which integrates the parameters of groups of factors of the external (infrastructure, market, technology) and internal (marketing, sales, economic efficiency) environment. The technique developed by the authors allows us to formalize and aggregate both quantitative and qualitative parameters that are important for implementation of digital technologies into a project. The method proposed by the authors of the article has been tried out on an actual project in the area of creative industries. Application of the author's approach will allow us to make more grounded managerial decisions related to the use of digital technologies in the implementation of projects.

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