Artículo de investigación

Concept of organization and functioning of integrated electronic infosphere of reporting on R & D works' results

Концепция организации и функционирования интегрированной электронной инфосферы отчётности по результатам научно-исследовательских работ

Concepto de la organización y funcionamiento de la infoesfera electrónica integrada de la información sobre los resultados de los trabajos de I + D

Conceito de organização e funcionamento do sistema integrado de informação eletrónica sobre os resultados do trabalho de P & D Conceito de organização e funcionamento da infosfera electrónica integrada de informação sobre os resultados do trabalho de I & D

Recibido: 28 de mayo del 2019 Aceptado: 29 de junio del 2019

Written by:
Oleg N. Dmitriev[24]
https://orcid.org/0000-0003-4514-7519
https://www.scopus.com/authid/detail.uri?origin=AuthorProfile&authorId=57202382529&zone=
Sergey V. Novikov[25]
https://orcid.org/0000-0001-6921-1760
https://www.scopus.com/authid/detail.uri?authorId=57192318711

Abstract

This article addresses the problem of fragmentation and inaccessibility of research results at various hierarchical levels: in world community, state, industries, corporations, enterprises, *etc*. in terms of information donors and recipients. It shows the negative consequences of the current information and management situation due to inaccessibility, distortion and incoherence of relevant information, the goal of rationalizing the use of cumulatively accumulated knowledge resources and the components of the formed methodology of rational synergetic integration of local specialized infospheres. This document presents the transition to the global electronic market of results of the performed research and introduction of procedures of mutual ordering of results of research. Furthermore, in the results it proposes to enter a unified description of knowledge. Also, it proposes to position the results of research as objects of intellectual property in order to fix the property rights in relation to them and to evaluate the value characteristics. In addition, the article shows the applicability of a single Infosphere for the examination of the proposed research projects

Аннотация

Выделена проблема разрозненности и труднодоступности результатов научно-исследовательских работ на различных иерархических уровнях: на уровнях мирового сообщества, государства, отраслей, корпораций, предприятий и т.д. в части информационных доноров и реципиентов. Показаны негативные последствия сложившейся информационно-управленческой ситуации, обусловленные недоступностью, искажённостью и несвязанностью соответствующих сведений. Декларирована цель рационализации использования кумулятивно накапливаемых ресурсов знаний. Предложено использование компонент формируемой методологии рациональной синергетической интеграции локальных специализированных инфосфер. Обоснован переход к глобальному электронному рынку результатов выполненных НИР и введение процедур взаимной упорядоченности результатов НИР. Для результатов НИР предложено вводить унифицированное описание знаний. В рамках него - позиционировать результаты НИР как

[24] PhD in Engineering, Full-doctor (Economics), Professor of management, Moscow Aviation Institute (National Research University), Professor of Department of management and marketing of high-tech industries, 125993 Volokolamskoe highway 4, Moscow, Russia, olegdmitriev@yandex.ru
elibrary.ru: https://elibrary.ru/author_profile.asp?id=3295
[25] PhD in Economics, Associate Professor, Institute of Engineering Economics and Humanities, Moscow Aviation Institute (National Research University), 125993 Volokolamskoe highway 4, Moscow, Russia, ncsrm@mail.ru
elibrary.ru: https://elibrary.ru/author_profile.asp?id=807011

in terms of their relevance and resource intensity. The paper reasons the expediency of the subsequent distribution of the formulated provisions in the field of scientific publications as a whole (including scientific publications on the rights of printed works of all kinds) and the final transition to the knowledge base of civilization. Additionally, it introduces a scheme of information of an open contractual alliance, identifies the most problematic project tasks and gives a list of conceived but not implemented similar projects.

Keywords: concept, design, infosphere, result, R & D.

объекты интеллектуальной собственности, фиксировать права собственности в отношении них и оценивать стоимостные характеристики. Показана применимость единой инфосферы для проведения экспертиз проектов предлагаемых НИР в части их актуальности и ресурсоёмкости. Аргументирована целесообразность последующего распространения сформулированных положений на область научных изданий в целом (в том числе, включая научные публикации на правах печатных работ всех видов) и конечный переход к базе знаний цивилизации. Введена схема информационного открытого договорного альянса. Выделены наиболее проблемные проектные задачи. Приведён перечень задуманных, но не реализованных сходственных проектов.

Ключевые слова: инфосфера, концепция, научно-исследовательская работа, проектирование, результат.

Resumo

Este artigo aborda o problema da fragmentação e inacessibilidade dos resultados da investigação a vários níveis hierárquicos: a nível global, a nível estatal, nas indústrias, nas empresas, *etc*., em termos de doadores e receptores de informação. O documento mostra as conseqüências negativas da situação atual da informação e sua gestão devido a sua inacessibilidade, sua distorção, sua incoerência e o objetivo de racionalizar o uso de recursos de conhecimento acumulados e os componentes da metodologia formada de integração sinérgica racional de esferas locais especializadas. Este documento apresenta a transição para um mercado electrónico global para os resultados da investigação realizada e a introdução de procedimentos para a gestão mútua dos resultados da investigação. Além disso, propõe nos resultados a introdução de uma descrição unificada dos conhecimentos. Propõe igualmente posicionar os resultados da investigação como objectos de propriedade intelectual, a fim de estabelecer direitos em relação aos mesmos e avaliar as características do valor. Além disso, o artigo mostra a aplicabilidade de uma única infosfera para o exame dos projectos de investigação propostos em termos da sua relevância e intensidade de recursos. O documento explica a conveniência da posterior distribuição das disposições formuladas no campo das publicações científicas como um todo (incluindo as relativas aos direitos das obras impressas de qualquer tipo) e a transição final para a base de conhecimento da civilização. Além disso, introduz um sistema de informação de uma aliança contratual aberta, identifica as tarefas de projecto mais problemáticas e fornece uma lista de projectos semelhantes concebidos mas não executados.

Palavras-chave: conceito, design, infosfera, resultado, trabalho de P & D.

Resumen

Este artículo aborda el problema de la fragmentación e inaccesibilidad de los resultados de las investigaciones en varios niveles jerárquicos: a nivel mundial, a nivel estatal, en las industrias, en las empresas, *etc*., en términos de donantes y receptores de información. El documento muestra las consecuencias negativas de la situación actual de la información y su gestión debido a su inaccesibilidad, su distorsión, su incoherencia y al objetivo de racionalizar el uso de los recursos acumulados de conocimientos y los componentes de la metodología formada de integración sinérgica racional de las esferas locales especializadas. Este documento presenta la transición al mercado electrónico global de los resultados de la investigación realizada y la introducción de procedimientos de ordenamiento mutuo de los resultados de las investigaciones. Además, en los resultados propone introducir una descripción unificada de los conocimientos. Asimismo, propone posicionar los resultados de las investigaciones como objetos de

propiedad intelectual para fijar los derechos en relación a ellos y evaluar las características de valor. Además, el artículo muestra la aplicabilidad de una sola infoesfera para el examen de los proyectos de investigación propuestos en términos de su relevancia e intensidad de recursos. El documento explica la conveniencia de la posterior distribución de las disposiciones formuladas en el ámbito de las publicaciones científicas en su conjunto (incluyendo aquellas sobre los derechos de las obras impresas de cualquier tipo) y la transición final a la base de conocimientos de la civilización. Además, introduce un esquema de información de una alianza contractual abierta, identifica las tareas más problemáticas de los proyectos y proporciona una lista de proyectos similares concebidos, pero no implementados.

Palabras clave: concepto, diseño, infosfera, resultado, trabajo de I + D.

Introduction

One of the currently existing major problem of progress is that there is clearly a very long, deep and largely invisible, but in all respects extremely dangerous crisis of underdevelopment, archaism, primitiveness of the administrative sphere in many, or perhaps almost all countries. This phenomenon you can find in modern Russia.

A long time ago, the whole world objectively observed a very strict relationship between the levels of development and performance of the economy and the entire national society with the quality and breadth of knowledge, including management and information technologies, especially intellectual part of them.

The current level of development of the Russian economy, for example, can be assessed in a variety of ways and get a fairly wide range of estimates. On this occasion there are many acute and endless discussions. However, we will have to admit that even undeniable successes are largely accidental successes, manifestation of the favored fate that made natural raw materials scarce and, accordingly, expensive and highly profitable product. Sometimes the successes were connected with the personal activity.

Many of our economic woes are not because of us, but mostly because of our economic successes.

Declaratively, many countries have entered the post-industrial era long time ago. This statement we may use speaking about Russia. However, the information fragmentation of human civilization is largely preserved. The inhabitants of the Earth did not form a single civilization of knowledge, and in many cases settled on the primitives of natural information economy, not rising even to the level of early information feudalism.

Many countries have a significant amount of scientific, research and development works (R & D). In some cases, up to 30-40% of the economies of the most developed countries are related to the production of knowledge, although sometimes of a rather peculiar applied and fundamental utility. For example, if we consider some of the grant projects of the most famous funds, we can find a grotesque theme. In particular, the authors had to observe the large-scale financing of phantasmagoric studies such as “Sexual and age structure of the families of merchants of the Nizhny Novgorod agglomeration in the first half of the XVIII century”. Of course, Russian figures at the level of about 2-5% against this background look extremely depressing, especially since the bulk of R & D in modern domestic conditions is carried out within the framework of the state order. So, according to some media reports, only in the US grant funding for research is not less than $ 300 billion per.

However, information in the form of knowledge is the most valuable information resource. First, it is not available to the majority of stakeholders (the question of its payment is a special question), and, secondly, the results of research are not linked to some more or less traced system, they have the character of randomly stored or even scattered and poorly preserved resources. As a result, there are phenomena of contact inaccessibility of information, its loss, distortion (intentional and unintentional) and re-receipt, formation of pseudoscience, erroneous knowledge and anti-knowledge, including widespread hoaxes. A typical example for some countries, including Russia, is the so-called loss of technological knowledge. A striking example is the information problems of the resumption of US space missions to the moon. It is known how the world has changed as a result of leaks of knowledge in the 1940s regarding the intelligent filling of technologies for the creation of nuclear warheads. At present, the problem is understood at the planetary level. It is enough, for example, to recall the well-known regime of limited proliferation of space-rocket and missile technologies, including those affecting

knowledges, not only devices, components and finished products.

As a result, unsustainable costs, lost benefits, loss, *etc*. are generated. In addition, knowledge unacceptably weak transform into marketable products. According to some expert estimates, less than 1% of the knowledge (fundamental and applied) obtained in the course of research is involved as production resources, including in the industry of knowledge production. Therefore, both demand and supply in the market of modern knowledge are extremely primitive. Knowledge donors do not know the products of other donors and the needs of knowledge customers. Recipients of knowledge, in turn, are not sufficiently aware of each other and have vague ideas about the proposals of information donors.

It should be recognized that the realization of this problem began a long time ago. In particular, the most far-sighted sought to gain access to knowledge. Knowledge determined and will determine the potential of societies. Therefore, we can only associate with N. M. Rothschild, who said that "the one who owns the information, owns the world."

However, many objective and subjective factors reduced integration and system-forming processes in the field of knowledge.

So, efforts in developing concepts of establishing a single information programs mainly concerned local areas, for example, community information of local grocery specialization or field of activity was formed. Such examples include the infosphere (information spheres) of industries and corporate groups, stock exchanges, *etc*. By the way, the actual intellectual knowledge did not often appear there.

In view of the above, there are good reasons to believe that the problem of active and scientifically sound integration of research results and their submission to the global infosphere as commodity knowledge is overdue or, rather, now even overripe.

Theoretical basis

In the field of formation of various kinds of integrated Infosphere by the forerunners of the author's research, we made very significant efforts, which in some cases led to positive results.

It is necessary to mention classical fundamental constructions in the field of the concept of information as a measure of non-determinism (Shannon, 2002). At the same time, it should be noted that we can see in the past, and now in the relevant profile studies, a conceptual error of mixing stochastic and uncertain interpretations of entropy. It is actually introduced as a measure of stochasticity, not as a measure of uncertainty.

There are a lot of works in relation to the formation of databases (Shpak, 2007).

However, the results of R & D are usually not limited to the values of some of the evaluated variables. Although there are exceptions. For example, the result of research in the form of a refined speed of light or gravitational constant is more than an important scientific result of research. Accordingly, in this sense, there is a deficit in the field of research on the formalized and unified representation of knowledge obtained as a result of research. It is clear that classical and rather simplified methods based on hypertext search for matches by keywords and indexing do not solve the problem. In the same search engines, the result of finding several tens of millions of mentions of the keyword does not promote anyone anywhere in particular in terms of obtaining knowledge or even the correct address of its location. The rule of frequency of links or transitions works very often with the output of the wrong resume. Having placed the texts of the reports in any classical database, it is impossible to mechanically link and compare them, in addition to which, with a huge number of reports, there is a known catastrophic problem of the "curse of dimension".

There are studies in the Common Information Spaces (Trofimov, 2017; Basha, 2016).

Quite a lot of research has been done in the field of signal representation as transmitted information (Sekar, 2012).

Attempts have been made to apply the apparatus of neural networks (Kohonen, 2001), but it turned out that the basic construction of this theoretical field does not sufficiently reflect the specifics of the situation, because we do not speak about obtaining collective experience of identifying recognition, for example, knowledge.

It should also mention developments in the formation of information alliances in the form of corporate or pseudo-corporate groups (Kanashchenkov, Dmitriev, Yekshembiyev, & Minaev, 2013; Dmitriev, & Novikov, 2017).

Attempts to form depositories of results of R & D in Russia have been and are being made repeatedly. However, they are limited to the compilation of working catalogs as a part of the reporting of budget funding, including even on paper, which are archived and then become inaccessible. In some cases, such materials in bureaucratic form are reflected on the websites of funds implementing grant projects. These materials are supplemented with file images of research reports in Word format or pdf-files. There are cases of placement of scanned materials, sometimes with unacceptably poor visualization.

Therefore, for the declared thematic conceptual constructions it was considered expedient to use a multidisciplinary theoretical complex, including the following theories and scientific directions:

- system analysis;
- information theory (computer science);
- general control theory;
- organization theory;
- theory of institutional and organizational design;
- graph and network theory;
- optimization theory, *etc*.

Thus, in theoretical terms, the study was carried out at the "junction of sciences".

Methodology

Methodologically, the set of information-related donors and recipients of the results of R & D was considered as an open set of subjects-operators of commodity-specialized information market, which should be transformed into an organization of active, combined donors and recipients of a special type of information, the results of R & D. At the same time they are subject to consideration in relation to such specific information objects as the results of research.

Structural interpretation of management methodology is presented, in particular, in (Kanashchenkov, Dmitriev, Yekshembiyev, & Minaev, 2013). Design allows interpretation as a local version of management.

In the methodology management operating there are:

- glossary and conceptual constructions;
- basic axiomatics;
- principles of organization and operation of the system subjected to methodological design;
- schematic execution of the operating mechanism in the sections of the environment, structure and functioning procedures. At the same time, as a rule, a system-technical representation of the optimal operation problem is introduced in terms of content formulation, formalization and solution technology (Dmitriev, 2005);
- procedures for a priori and a posteriori evaluation of the effectiveness of the proposed methodology.

Results

General idea.

Russian society will inevitably be fully integrated into the world community, although at different times and in different forms for different population.

This involvement can occur in the different ways.

One of the most likely way of such involvement, but fundamentally unacceptable for Russia is the mass emigration of the intellectual elite of the country along with the complete marginalization and desocialization of the remaining contingent of citizens who will be forced to engage mainly in unstable, unskilled, harmful and dangerous work of lower-level technical specialists in the field of mining and waste management.

The world community will inevitably turn into a post-industrial global civilization with a very relative state localization in the next decade. It should be noted that researchers or scientists have maximum mobility now, including as a result of opportunities within the distance employment. The critical value in these conditions will be intangible and not financial, but mainly human (ethical and intellectual) information resources. The standard of living and the integral competitive status of national communities will be determined mainly by the level of intellectual development of citizens and the availability of deep, comprehensive and timely information for them.

Currently, the Russian infosphere is an area of operation primarily with surface, incomplete, deformed, fragmented and inaccessible information. Previously existing sources of knowledge and information communications do not meet the requirements of modern realities and

do not provide access to the necessary information. There are insurmountable linguistic, cost, technical, conceptual and psychological obstacles to the acquisition of knowledge used in production, domestic and spiritual spheres. Anti-scientific and pseudoscientific views are widespread and actively disseminated. Middle and high school degraded without having opportunities and intentions for the formation of progressive and gerontological perspective of the teaching staff, as well as not having enough technical educational base. There is a massive depontentialisation and profanation of learning both from the trainers and from trainees. The level of initial preparation of students at the end of high school looks not so bad.

However, in the last decade there is an active development of information communications.

In particular, there is an active and massive spread of electronic communications (Internet communications, mobile networks and diversification of operators in the field of multi-service activities, including through the channels of space satellites). There is an integration of telecom operators, which are simultaneously operators of access to information, providing complex access to all types of information content (text, voice and video versions of content). A prototype of a global information network has emerged, bringing together educational institutions, the corporate sector and individual consumers. There was a hierarchy of centers for collecting, processing, storing and providing information in the state, municipal, consumer, outsourcing and microstructural information spaces. There was not enough loaded and potentially developed wired and wireless networks of operators with a wide, almost total coverage of the territory of Russia, having powerful computer centers in the capital and in the regions. However, the network circulates information of very limited and often questionable scientific and applied applicability.

In Russia, there are still quite numerous academic and industry Scientific & Research Institutes (S & RI), which, however, have undergone significant degradation in terms of personnel and the base of R & D. The universities are the producers of R & D works' results too. This kind of producers was also significantly subjected to long-term resource depletion in all areas. Respectively, most of Russian universities are not able to carry out serious research, because the contingent of teachers mainly consists of persons of extremely old age and persons who do not have experience in the research area. Characteristic and symptomatic is the phenomenon that there is almost no new non-state or state research institutes, including within the framework of the formed holdings. Different kind of centers for the study of "something" are not real research institutes. Even some Experimental Design Bureaus (EDB) was involved in forming a holding company with enormous challenges, often actually contrary to the views of the administration of corporations.

In these circumstances, the idea of import substitution in terms of the production of R & D works' results looks more than fantastic. The idea of "self-reliance" in the scientific sphere looks more than utopian at the existing levels of state financing, physical deterioration and moral obsolescence of the material and technical base, the primitiveness of the computing and communication base, the mental prestige discrimination of engineers and technicians. The conscious opposition between naturalization of specialization and integration appears to be unskilled propaganda for a return to past economic patterns. There is no secret that a significant number of promising Russian scientists, who managed to form themselves in an unknown way, go into internal and external emigration, including choosing employment not in their specialty. Under the existing imbalances remigration of these professionals seems completely unviable.

For this reason, a prerequisite for the preservation of the Russian economy at least as an industrial, even if not post-industrial, is optimized integration into the world information space, including in terms of operating on the market of R & D as donors and recipients.

Inventory of "deposits" of reporting on R & D over the past few decades with the fixation of authorship among the world scientific community can be a significant help. In this sense, it seems productive thoughtful "opening safes and shaking off dust in the cabinets." There is no doubt that these archives will not solve information imbalances, but can be a useful support resource.

One of the sources of knowledge were R & D reports. However, their content, quality of staff and available now in Russia is quite negligible, the dominant part of the sources is not officially digital. The Internet environment, being essentially a free information space, is overly extensive and not selective, and often implements a deviant potential.

Accordingly, it is mandatory to radically and urgently change the current catastrophic situation and the formation of the national infosphere by the results of R & D on completely different principles and with the help of new, progressive means. An important anti-crisis, progress-making event is the creation of an Integrated Electronic Infosphere of Reporting on the Results of R & D works (Report-infosphere) as an electronic platform for the integration of collection, storage and access to high-quality research information in the interests primarily of Russian citizens. This Report-infosphere can become a physical base of the progressive information community in Russia, including the economic community, as well as a link with the international scientific community.

Objectives and expected results of the project.

Creation, operation and development of Report-infosphere should be aimed at achieving the following goals:

- timely receipt, first of all, by citizens of Russia of full and reliable information of normative-legal, scientific, production, household and ethical content in ensuring acceptance and realization of deeply meaningful actions by them and improvement of quality of their life;
- developing the supply of information resources and further to the proceeds from the sale of the products;
- formation of the channel of non-emigration scheme of human resources export and scientists output to the world level of profitability from their employment;
- minimization of resource, including costs for obtaining the required information;
- activation of the introduction of the foundations of progressive law and order in the existence of Russian society;
- elimination of the preconditions of various kinds of unproductive conflicts and discord of national, racial, religious, social and other nature caused by information distortions;
- creation of prerequisites for activation of demand for services of information market operators and creation of economic basis of their innovative potential;
- formation of conditions for the formation and development of a civilized information market;
- creation of conditions for the development of fundamentally new activities created and implemented with the entry into the information space (telemedicine, distance education, *etc*.).

As a result of the implementation of this project, interested persons in Russia (first of all, proactive citizens, personnel of enterprises, state and municipal employees, public associations) should be able to obtain the full, timely, reliable and resource-intensive information they are interested in, including information on the processing of another one.

Conceptual principles.

The functioning and development of Report-infosphere should imply the following fundamental principles:

- legality or legitimacy, implying full compliance of its functioning with the current legislation and ethical principles;
- maximum accessibility, which implies the maximization of the coverage of the entire contingent of potential requesters;
- friendliness, implying the highest quality response to the request;
- priori consumerism, implying the presumption of rationality and usefulness of information for requesting it;
- confidentiality, which implies the exclusion of the collection of data on the authors of requests in addition to ensuring their uniqueness and the passage of censorship in the case of the introduction of such;
- virtuality, implying that all information is provided through the channels of operational electronic access (in the Internet-environment) in both directions;
- thrift, which means minimizing the resource consumption of request processing;
- integrator (serviceability, server), according to which Report-infosphere is, first of all, a communicator and an integrator of a distributed network of primary sources and recipients of information, an organizer of access to information and not only its repository. Accordingly, information sources are not objects of storage, but objects of access;
- integrated utility, according to which Report-infosphere is positioned in the institutional and organizational-economic aspect as an organization that has a source of benefit only a part of the benefits of donors and recipients of the results of R &

D works. Here we see some distant similarities with the Islamic scheme of doing business. Although in fact it is only one of the schemes of management with distributed financial and economic results. Of course, sources of state financial support and sponsorship are not excluded, but they should be background generators of income;

- moderation, according to which the materials with the access through Report-infosphere, are subject to censorship in terms of their availability or inaccessibility by the administration of Report-infosphere. However, they may not be modified or subject to partial exemptions. In the Report-infosphere announced material with inaccessible content and the mandatory motivation of its exemption from the free access can exist;
- improvement, according to which Report-infosphere should be permanently developed. Thus, in particular, at the beginning of the project it is proposed to develop Report-infosphere by queues (for example, speaking about the industry and the type of information reporting materials, which have an access to Report-infosphere).

Circuit design.

Now we consider the implementation of Report-infosphere.

As an organizational and economic scheme, it is proposed to form an information alliance with a contractual open membership (Kanashchenkov, Dmitriev, Yekshembiyev, & Minaev, 2013), where the members are potential and established information donors (R & D performers or owners of R & D works' results) and new owners are potential and established information recipients, users and managers of R & D results.

Organization that supports Report-infosphere, must ensure that maintenance contracts.

Implemented and unrealized similar projects.

Here we can use electronic platform type eBay.com and Amazon.com, but with more complex information objects with an extended set of features and difficult to access part of the preview.

Attempts to implement similar projects to some extent and form affected the authors, including in terms of formation:

- project of commercialization of the dissertation fund of the Higher Attestation Commission of USSR;
- applied software fund of the enterprises of the Soviet aviation industry;
- commercialization project of the foundation patents and inventions of the USSR;
- project of creation of the Russian national electronic library;
- project of formation of the Russian exchange of high technologies;
- a typical project for the formation of the intellectual potential of the corporate holding structure in high-tech industries of the Russian Federation.

Main problem tasks of Report-infosphere implementation.

In the implementation of the above-mentioned project about the formation of the Report-infosphere we will have to solve some difficult and almost never solved problems:

- inventory of accumulated fund of research reports;
- assessment of physical safety and completeness of research reports;
- digitization of reports on research (not facsimile) including in the form of pdf/scans, which has long been technically mastered in the world, and full digitization with recognition and re-layout, allowing free editorial manipulation of images of reporting documents;
- identification of the copyright system, which in Russia is a completely neglected problem;
- solutions to the taxation of identified property;
- evaluation of the cost characteristics of research reports, and possibly decomposed according to the results;
- translation of report materials into foreign languages, at the initial stage at least into English;
- creation of a system to prevent illegal assignment of research results;
- introduction of a form for describing the results of research (the term "model" here would be incorrect) and the transfer of the reports in this form;
- development of technologies of interconnection in the system of research results based on the tools of artificial intelligence;

- optimization of the organization supporting Report-infosphere.

Conclusions

These considerations give rise to the following observations, conclusions and recommendations:

- significant intellectual, financial and economic potential is contained in the reports on research carried out by Soviet and Russian performers;
- in modern Russian conditions, this potential is used only a little bit;
- one of the biggest gaps in the Russian economy is the information gap. Russian subjects are unacceptably poorly integrated into the world scientific space;
- formation and functioning of a hierarchical Report-infosphere, which will operate the donors and the recipients of the results of reports on research work, both Russian and foreign;
- as the underlying scheme Report-the infosphere, is the scheme contractual information of the alliance's open-ended;
- the Report-infosphere is appropriate for all potentially interested persons. It shall not prejudice legitimate interests;
- in the formation of the Report-infosphere we will have to solve a number of new and difficult questions of fundamental, scientific and applied, technical, financial and economic nature.

References

Basha, N.V. (2016). United information space in the management of efficiency of research organizations (thesis). St. Petersburg: St. Petersburg State University of Economics.

Dmitriev, O.N. & Novikov, S.V. (2017). Conception of managing of fuzzy-institutional meso-level organizational separations in a context of product projects internationalization. European Research Studies Journal, 20(4), 277-289.

Dmitriev, O.N. & Novikov, S.V. (2018). Economic Assessment of Federal Scientific Programs. Russian Engineering Research, 38(4), 326-329.

Dmitriev, O.N. (2005). System analysis in management. The 5th edition. Moscow: Good Word Publishing House.

Kanashchenkov, A.A., Kanashchenkov, A.I. & Novikov, S.V. (2016). Problems of structural transformations of modern corporations and enterprises. Bulletin of the Moscow Aviation Institute, 23(2), 217-227.

Kanashchenkov, A.I., Dmitriev, O.N., Yekshembiyev, S. Kh. & Minaev, E.S. (2013). Strategic Corporate Management: Fundamental and Applied Problems. The 2nd Edition, Corrected and Amended. Moscow: Moscow Aviation Institute Publishing House and Good Word Publishing House.

Kohonen, T. (2001). Self-Organizing Maps. 3rd edition. Berlin - New York: Springer-Verlag.

Novikov, S.V. & Veas Iniesta, DS (2018). State regulation of the development of the connectivity of the Russian territory. Espacios, 39(45), 20.

Pinkovetskaia, I.S., Balynin, I., Arbeláez Campillo, D.F. & Rojas-Bahamón, M.J. (2019). Small business development in Russia: results of the assessment of sectoral structure and number of employees. Espacios, 40(7), 6.

Sekar, Ch.V. (2012). Communication systems. New Delhi: Oxford University Press.

Shannon, C. (2002). Works in Information Theory and Cybernetics. Moscow: Foreign Literature Publishing House.

Shpak, Yu.A. (2007). Designing Databases. Moscow, Russia: EKSMO Publishing House.

Trofimov, V.V. (2017). United information space of interaction of subjects of scientific and innovative activity (monograph). St.-Petersburg: Publishing house of St. Petersburg State Economic University.