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INFORMATION SUPPORT FOR BUSINESS ACTIVITIES ON THE BASIS OF A SYSTEMATIC APPROACH

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Abstract

The study presents a solution to the urgent research problem related to improving information support for the regulation of business activities. Theoretical aspects of its development were studied, and it was found that modern information technologies are the source and cause of the necessary transformations, both in society and in business. Scientists have argued that the process of organising information support includes a continuous analysis of basic information for business activities from both internal and external sources in the market environment. The structure and content of the systematic approach were adapted to organise the information support for the regulation of business activities. Using this approach, the information support system is captured as part of a single management system capable of ensuring the interaction of the managerial link of the business entity with external sources of information support. Further, a systematic approach is applied in conducting the functions of the regulatory process, that is, planning, organising, accounting, analysing, controlling, as well as implementing the interaction of structural elements. We conducted quality diagnostics of the parameters of information support for business entities. Based on the results of the survey, the necessary parameters were selected, and the coefficient of the quality of the information support for the regulation of business activities was determined. We offer recommendation based on the quality coefficients of information support for these business entities.

Keywords: business activities, systematic approach, information support, information, development

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ОРГАНИЗАЦИЯ ИНФОРМАЦИОННОГО ОБЕСПЕЧЕНИЯ ПРЕДПРИНИМАТЕЛЬСКОЙ ДЕЯТЕЛЬНОСТИ НА ОСНОВЕ СИСТЕМНОГО ПОДХОДА

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Аннотация

проведенном исследовании представлено решение актуальной научной задачи, касающейся совершенствования информационного обеспечения регулирования предпринимательской деятельности. Были изучены теоретические аспекты ее развития и установлено, что применение современных информационных технологий является источником и причиной необходимых преобразований как в обществе, так и в предпринимательской деятельности. С точки зрения научного подхода было аргументировано, что процесс организации информационного обеспечения включает в себя непрерывный анализ основной информации для осуществления предпринимательской деятельности как из внутренних, так и внешних источников рыночной среды. Были адаптированы структура и содержание системного подхода, применительно к организации информационного обеспечения регулирования предпринимательской деятельности. При исследовании такого подхода оно, с одной стороны, становится частью единой системы управления, способной обеспечивать взаимодействие управляющего звена субъекта предпринимательства с внешними источниками информационного обеспечения. С другой стороны, системный подход используют для осуществления функций процесса регулирования: планирования, организации, учета, анализа, контроля, а также реализации взаимодействия структурных элементов. Проведена диагностика качества источников информационного обеспечения субъектов предпринимательства на основе параметризации ее качественных характеристик. По результатам анкетирования выделены необходимые параметры и определен коэффициент качества информационного обеспечения регулирования предпринимательской деятельности.

Ключевые слова: предпринимательская деятельность, системный подход, информационное обеспечение, информация, развитие.

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Экономика инженерных решений как часть устойчивого развития

1. Introduction

The regulation of business activities cannot be achieved without proper information support, especially in the context of ongoing digital transformation. Modern realities are characterised by the dynamism and volatility of such processes. They are accompanied by the rapid advancement of information and communication technologies that form the development vector of business activities at the regional level.

The complexity and multidimensionality of regulated areas of business activities are largely related to information support. However, not enough attention has been paid to it, despite its particular importance in the context of digital transformation. Its qualitative formation is the main prerequisite for its regulation and further integrated regional development. This problem's solution should also be considered from the standpoint of improving methodological grounds of information support for the regulation of business activities and effective interaction of all its subjects in implementing the system approach. The key objective of the study is to adapt the structural elements and content of the systematic approach in relation to the organisational component of information support for business activities implemented at the regional level.

2. Literature Review

The development of information technologies is one of the main tasks in the formation of modern society as a whole and of individual spheres of management. The increasing introduction of digital technologies into various economic and social processes of the state will allow subjects of information support to be integrated into the single information space. According to D. Tapscott (1999), the information society is characterised by such features as a focus on knowledge as the basis for creating wealth and generating income; digital form of objects' representation, primarily documents, which predetermines transition to information and digital technologies; and virtual representation of the physical world through the virtualisation of various data formats.

The analysis of the specialised literature (Tyukavkin, 2012; Shekhovtsov, 2005; Khairullina, 2019) dealing with the information society suggests that it is a qualitatively new type of society that is being formed as a result of the global social revolution and the active development of information and communication technologies. In relation to our study, understanding the reasons for the decrease in the efficiency and expediency of organising information flows in the form of a traditional paper workflow and exceptionally strict administrative and command hierarchy in the formation period of the information society is extremely important for the further development of business activities.

It is obvious that modern information technologies, which appear to be a tool for restructuring the processes and directions of modern enterprise functioning, are the cause and source of the necessary transformations, both in society as a whole and in business activities in particular. However, in our opinion, this trend is typical for business activities at all stages directly or indirectly related to information technology (from the moment of accumulating information to introducing digitalised systems of document management).

The analysis of research papers on the studied problems (Burgonov and Kruglov, 2020; Gaisina, 2021; Ermakova, 2012) shows that, scientifically, the problem of regulating business activities is unresolved within a single subject area (information support in the context of digitalisation of the economy in our case), thereby predetermining the relevance of the topic. The problem reflects the need to study theoretical foundations of the business activities regulation, research of the current state of its information support, and improvement of methodological and organisational foundations of information support for the regulation of business activities.

3. Methods and Materials

The systematic approach offers a methodological basis for studying the processes of management and regulation of business entities' activities. It is used as one of the main directions of scientific knowledge, as it is the basis for the study and organisation of management processes. On the one hand, the systematic approach considers the business entity as a set of interrelated elements; on the other hand, the business entity is an element of a more complex system, such as the state economy. We assessed the quality of information support for 12 business entities in the Oryol region based on the results of a survey. We assessed the reliability of respondents' opinions regarding the quality of information support by measuring Kendall's concordance coefficient and found a sufficient level of consistency of respondents' opinions on the parameters of the quality of information support for the regulation of business activities allocated for the study.

4. Results and Discussion

Reliable and timely information data and well-established information support regulating business activities are able to establish effective interactions of all elements of the management system, both within the business entity and with the external environment. The concept of 'information' is essential in the definition of information support. There is a continuous process of information flow exchange in the process of regulating the activities of business entities.

In this case, information data moves both vertically, that is, from managers to subordinates, and horizontally, that is, between employees of the same level. First, let us consider the definition of the *information*. The word *information* comes from the Latin *informatio*, which means familiarisation, clarification, and presentation. A definition analysis of the concept of information (Epinina et al., 2020; Kurcheeva and Kurchenko, 2008; Vinogradova et al., 2020) leads to the conclusion that a single interpretation of the term is not available. The concept is associated with different belief systems in computer science, physics, mathematics, cybernetics, biology, economics, and other sciences. We propose the following definition for information related to the activities of business entities: information is data from external and internal sources related to economic, financial, personnel, production, and other business processes occurring in the activities of the business entity, whose quality affects the results of its activities.

On the one hand, information is one of the main elements of the management process (Makarova, 2021); on the other hand, it is the basis for assessing the effectiveness of business entities (Korobov et al., 2021). In relation to the process of regulating the activities of the business entity, we propose that the information support of business entities should be interpreted as a set of necessary ways and methods of searching, collecting, processing, storing, transmitting, and issuing information, as well as creating conditions for using information from external and internal sources necessary for making management decisions. Information support plays an important role in regulating the activities of business entities. The controlling body, management of the business entity, or partner business entities receive adequate, timely, reliable, objective, transparent, accurate, complete, understandable, and useful information on the business entity's activities based on internal and external information data made accessible by the information support.

Business entities come into contact with a large number of information indicators necessary to justify and make managerial decisions in the course of their activities. Leading scientists (Khmeleva et al., 2021; Kravchenko et al., 2021; Rodionov et al., 2021) engaged in the study of information support of the managerial process distinguish the following criteria for information indicators:

- by sources of occurrence: external and internal;

- by processing stage: primary and secondary;

- by managerial functions: accounting, planning, regulatory and reference, factual, control, and analytical.

Other classification criteria are rarely studied, including information stability, openness, and degrees of significance, printing methods, media types, reliability, and final results (Kayl et al., 2021; Israfilov et al., 2020). The process of regulating the activities of a business entity has a continuous and systematic impact on the functioning of its structural parts to ensure the unity of work and achieve the necessary production results. It consists of interrelated functions of planning, organising, accounting, analysing, controlling, and regulating. These functions are general and reflect the overall management processes required to manage a business entity, regardless of the type of activity. Let us take a closer look at each of them.

Planning is the process of forming the business entity, solving organisational issues, and determining goals and ways to achieve. Planning entails assessment of future directions for the development of the business entity, namely, establishing dynamics of economic phenomena, forming forecasts of possible areas of activity, and envisaging final results (Ogorodnikova et al., 2019). The organising process includes creating the structure of the business entity, providing it with everything necessary for normal functioning (equipment, personnel, funds, etc.), and distributing tasks, powers, and responsibilities between personnel to achieve the set goals (Burlakov et al., 2021). Accounting includes collecting, processing, and generalising data on all operations and processes occurring in the activities of the business entity (Kudryavtsev et al., 2021). Analysis defines and characterises key parameters that form financial performance, level of profit and loss, and any changes in accounting, statistical data, and other indicators that affect the performance of the business entity (Bulyga and Safonova, 2021). Control and regulation encompass assessing performance, providing information on them, and developing corrective actions that are aimed at ensuring that the goal is achieved, and the plans of the enterprise are implemented (Nikiforova and Tolmachev, 2020).

Specific managerial functions include processes of managerial influences aimed at individual structural divisions of the business entity (e.g. product quality management, supply department management, etc.). The systematic approach is characterised by studying information support as part of a single system for regulating the activities of the business entity, on the one hand, and as a single process consisting of its own interconnected subsystems, on the other hand.

As part of the single system of regulating activities of the business entity, information support is characterised by the interaction of the business entity control link with external sources of information support. These include data characterising the general economic situation in the state (macroeconomic and sectoral development, stock and money market conditions, etc.), regulatory information (laws, bylaws of the government and ministries and departments regulating the activities of business entities), and data characterising the activities of competitors and counterparties (e.g. publications of reporting materials on the activities of business entities in the press, open ratings of the main indicators of insurance and financial companies, publications of forecasts and studies of business activity, market conditions, foreign economic activity).

Thus, external sources of information support for the activities of business entities include all the outside information that helps to organise, control, analyse, and compare the activities of any business entity. The influence and amount of information from external sources of information support do not depend on the business entity.

Internal sources of information support include any information related to the activities of the business entity used in the internal environment of that entity. These sources include regulatory and reference information (job descriptions, workflow instructions, etc.; factual information of an accounting nature, that is, accounting, financial, and statistical (invoices, receipts, delivery notes, reports on sales and expenses, reports to tax, statistical, and other regulatory authorities); staffing information (on the number of staff, vacancies, etc.); and information on technical equipment. The structure of information support for business regulation is shown in Figure 1.

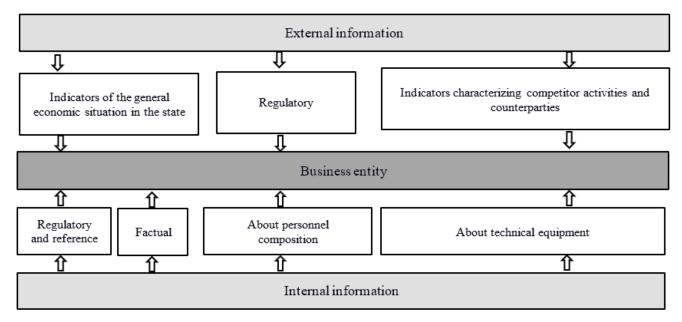


Figure 1. Structure of information support for regulating business activities Source: compiled by the authors

Based on the discussion above, we can conclude that information support plays a significant role in the process of regulating the activities of business entities. A clearly organised process of information support determines the results of the activities of business entities, the timeliness of managerial decision-making, and the ability to promptly react to any deviations in the process of conducting financial and economic activities. The concepts and essence of the systematic approach should be considered in understanding the need to use the systematic approach in organising the information support for regulating the activities of business entities. Many scientists have used the concepts of the system and systematic approach in various studies, research areas, and activities; hence, there is a variety of definitions of the term 'system'.

The various definitions of the system concept share certain commonalities: the totality and interaction of certain elements, which can be combined, for example, common tasks, functions, or properties. According to the Business Dictionary, "the systematic approach is a direction in the methodology of research, which is based on the consideration of a complex object as an integral set of elements in the totality of relations and connections between them". Voskoboynikov (2013) identified the following principles of the systematic approach: integrity, hierarchical structure, structuring, multiplicity, and consistency (Voskoboinikov, 2013). Integrity is the consideration of a system as a single whole, on the one hand, and as a subsystem for higher levels, on the other. In the information support of the activities of business entities, here, integrity acts as a unity of two subsystems: 1) information of the external and internal environment necessary for management and 2) information from subdivisions of the business entity necessary for higher management levels.

A hierarchical structure is the presence of two or more elements arranged based on the principle of subordination of the lower-level elements to the elements of the higher level. All subdivisions transmit the necessary information to subdivisions of higher levels to which they are subordinate, and vice versa. Structuring is the analysis of system elements and their correlation within the boundaries of one organisational structure. For example, factual data obtained from accounting (accounting, financial, statistical reporting) and personnel departments, reports on the technical condition, and other information are necessary to analyse and determine the performance results of the business entity. Multiplicity is the use of a variety of different models describing individual elements of the system and the whole system, that is, economic, mathematical, etc. Consistency is the presence of all system features in the object of study. Information support is necessary to regulate the activities of both the business entity as a whole

and individual structural divisions in order to ensure continuous and full-fledged work.

Let us consider the varieties of the systematic approach in more detail.

1. The systematic element approach answers the question of what (what components) the system is formed from. The structure of the information support for the regulation of business activities includes external information, which is represented by indicators of the general economic and political situation in the state, regulatory information and indicators characterising the activities of competitors, partners, and contractors, and internal information, which includes regulatory reference and factographic reference.

2. The systematic structural approach reveals the internal organisation of the system and the ways in which its constituent components are interconnected. All the constituent elements of information support are interrelated. Thus, a direct impact on the activities of the business entity is exerted by regulatory information that controls its functioning, namely, laws, by-laws, and instructions adopted by legislative and executive authorities.

Data characterising the activities of contractors, partners, and competitors are no less important. This includes all kinds of information from open sources, that is, magazines, statistics, ratings, materials of conferences, exhibitions, articles in journals, etc. The general situation in the state, such as economic, political, financial, and demographic factors, also has an indirect impact. All external information received by the business entity is processed, analysed, and distributed by structural levels and used within the entity. Regulatory and reference information is an important component in the activities of business entities; they are registration papers, internal personnel instructions, contracts, internal regulations, technical instructions, summary cost rates, reference books of various features, consumption rates of materials, raw materials, labour cost standards, etc. Factual information is characterised by accounting, financial, statistical, personnel, technical reports, etc. According to current legislation, the business entity submits reports to the relevant departments within established time limits. The results of factual reporting are reflected in statistical data characterising the state of both an individual business entity and the industry as a whole.

3. The systematic functional approach defines the functions of the system and its constituent components. The functions of information support depend on the roles and activities of the structural subdivisions of the business entity. For example, the planning department provides information related to the planned performance indicators, the technical department provides information on the technical conditions of capacities and equipment, and the accounting department gives information on financial status, etc.

4. The systematic communication approach reveals the system's interaction with other systems, both horizontally and vertically. This is one of the most important aspects of information support. An important function of communication between all structural units of the business entity is carried out in the process of transmitting, processing, and distributing information data to various structural units. The result of the activity depends on how correctly the communication 'works' and how fast the barriers between its participants disappear.

5. The systematic integrative approach includes the mechanisms and factors of system preservation, modernisation, and development.

6. The system historical approach answers the questions of how and in what way a system arose, what stages it went through its evolution, and what its historical prospects are. Information support data are processed and stored in the archive. It is always possible to analyse the correctness of any collected information with the help of archival information, to find errors, and to correct them for the future. The effectiveness of information support is determined in the cohesive interaction of all structural units.

Thus, the systematic approach to the organisation of information support comes from considering

the business entity as an integral system existing in the general business system. However, the business entity as an integral system consists of its own subsystems, such as areas, departments, and employees, the workings of which are reflected on the business entity as a whole.

The definitions of these quality parameters of information support require further research to improve the effectiveness of using information support data in the process of regulating business activities. Their characteristics are presented in Table 1.

for regulating business activities					
QUALITY OPTIONS					
<i>P1:</i> Functionality - the ability of information data to meet the needs, user-specified information					
Accuracy - the ability to pro- Ability to interact with other information data Reliability - the ability					

Table 1. Characteristics of the quality parameters of information support

P1: Functionality - the abi	lity of information data to m	eet the needs, user-specified in	formation			
<i>Accuracy</i> - the ability to pr vide the required results	o- <i>Ability to interact</i> with o	Ability to interact with other information data				
P2: Reliability - the ability of the time and place of the		keep the exact values of all inf	ormation data, regardless			
<i>Completeness</i> - completeness of information	e- <i>Performance</i> regardless flows	<i>Performance</i> regardless of failures in information flows				
P3: Performance - the abi	lity of information support to	achieve the required performation	ance			
<i>Time efficiency</i> - the ability to provide the necessary data in the allotted time						
P4: Ease of use - the ability of information support to provide user-friendly information, regardless of its form (written, electronic, visual, etc.), time and place of access to information data						
<i>Clarity</i> - the expression of <i>Ease of use</i> - the ability to provide information data in user-friendly formats, regardless of the volume and form of data						
P5: Ease of maintenance - the ability to organise the update of information support in such a way that users of information receive all the necessary data, regardless of forms, types of information, time and location (work sites, local and corporate networks)						
<i>Analysability</i> - the ability to analyse the informa- tion provided	<i>Convenience of making</i> <i>changes</i> - the ability to organise information sup- port at minimal cost (time, money) for making chang- es	Sustainability - the ability of information data remain complete and accurat regardless of changes	the ability to verify in-			
P6 : Mobility - the ability of information support to remain operational when transferring any information from one place to another						
one place to unother						

Source: compiled by the authors

A survey of 12 business entities of various forms of ownership and types of activity in the Oryol region was carried out to assess the quality of information support for regulating business activities. The entities include:

- Large business entities - GRINN Corporation JSC, Kerama Marazzi LLC, Znamensky SGC LLC, Miratorg-Orel LLC

- Medium-sized business entities - Orelregionstroy LLC, New Technologies LLC, Avto-Trans LLC,

Impulse LLC

- Small business representatives - Monolith LLC, OSK LLC, Master LLC, Palmira Grad, LLC

The respondents included heads of large, medium, and small business entities, heads of their structural divisions, lawyers, accountants, personnel officers, and individual entrepreneurs (95 people in total). They answered 30 questions and assessed internal sources of the information support of business entities on a 100-point scale. The results of the survey were summarised according to the established parameters of the quality of the information support of business management, and the coefficient of information support quality (Q) was assessed for each business entity participant (Table 2).

Name of business entity	QUAL	QUALITY OPTIONS					Information
-	P1	P2	P3	P4	P5	P6	support quality factors (Q)
JSC Corporation GRINN	90	90	85	90	85	80	0.87
LLC Kerama Maratsci	90	90	90	90	80	85	0.88
LLC Znamensky SGC	85	85	85	90	85	80	0.85
LLC Miratorg-Orel	75	70	85	70	75	75	0.75
LLC Orelregionstroy	50	50	50	45	40	35	0.45
LLC New Technologies	65	65	60	50	45	45	0.55
LLC Auto-Trans	90	90	90	80	70	70	0.82
LLC Impulse	50	40	45	25	25	25	0.35
LLC Monolit	85	75	80	50	50	50	0.65
LLC OSK	90	75	75	55	45	50	0.65
LLC Master	35	25	25	25	20	25	0.26
LLC Palmira Grad	45	30	40	25	20	15	0.29

Table 2. Assessment of the quality parameters of information support for business activities management (on the materials of the Oryol region)

Source: assessed by the authors

Respondents assessed the quality parameters of the information support of their business entities on a 100-point scale:

- Below 50% is low quality; it is necessary to revise the document management policy and interaction with internal and external sources of information.

- 51–80% is average quality; it is advisable to make some changes in the processes of document management and the interaction of external and internal sources of information.

- 81–100% is of high quality.

Table 2 shows the quality of the information support of business entities, as characterised by the values of the quality coefficient of the information support (Q). As shown in the table,

1. Orelregionstroy LLC, Impulse LLC, Master LLC, and Palmira Grad LLC were below 0.50, indicating low-quality information support. It is necessary to revise the document management policy and interact with external and internal sources of information.

2. Miratorg-Orel LLC, New Technologies LLC, OSK LLC, and Monolith LLC ranged from 0.51 to 0.80, indicating average quality information support. It is advisable to make some changes in the interaction of external and internal sources of information and the interconnection of information flows.

3. GRINN Corporation JSC, Kerama Marazzi LLC, and Znamensky SGC LLC, and Auto-Trans LLC ranged from 0.81 to 1.00, indicating high quality information support. It is advisable to maintain an

established interaction of external and internal information sources.

The concordance coefficient (*W*) proposed by Kendall, and reflecting the correlation degree of respondents' opinions, was applied to establish the research reliability. The value of the concordance coefficient can vary from 0 (in the absence of consistency) to 1 (in full consistency). The research results would acquire practical value if $0.8 \ge W \ge 0.6$, which indicates a high degree of respondents' consistency.

The concordance coefficient was assessed by integrating the experts' ranking weights of the information support indicators of the business activities management (Table 3) and the assessment of the consistency of their opinions (Table 4).

Table 3. Results of the respondents' assessment of the ranking weight of the information support indicators of the business activities management

Quality options	ns Weight of ranks				
	1-low	2-below average	3-above average	4-high	
P1	0	3	3	7	
P2	0	2	4	8	
P3	3	6	3	0	
P4	0	2	5	5	
P5	1	7	4	0	
P6	2	8	2	0	

Source: assessed by the authors

Table 4. Assessment of the consistency of expert opinions for the study of indicators of information support for business activities

Quality op- tions	Sum of ranks	Arithmetic mean rank	Deviation	Deviation square
P1	44	33	11	121
P2	49	33	16	256
P3	23	33	-10	100
P4	37	33	4	16
P5	25	33	-8	64
P6	26	33	-7	49
Total	204	-	-	606

Source: assessed by the authors

The concordance coefficient is described by Formula 1:

$$W = \frac{12R}{m^2(k^3 - k)}$$
 (1)

where $R = \sum_{i=1}^{k} (R_i - \overline{R})^2$

The calculated concordance coefficient of 0.8 indicates that we obtained a sufficient level of consistency of expert opinions regarding the indicators allocated for the research in the analysis of the information support for regulating the activities of 12 business entities in the Oryol region. An assessment of the quality of the information support for each business entity was carried out based on the results of the survey representing 12 business entities in the Oryol region. A sufficient level of consistency of respondents' opinions on the parameters of the information support quality of regulating business activities under study was established as a result. Thus, the process of regulating business entity activities implies a continuous and systematic impact on the functioning of its structural parts in order to ensure operational integrity and achieve the necessary results. The systematic approach should be applied to all interrelated functions of the managerial process, namely, planning, organising, accounting, analysing, controlling, and regulating. The role of information support in the process is to obtain complete, reliable, and timely information, both from external and internal sources, and to make it available for its intended purpose.

The system approach makes it possible to analyse the information support data not of a single subsystem of the business entity but of all its subsystems in the aggregate. Unreliable or untimely information received by the business entity can affect the operational results not only of one of its closed subsystems but of the entire entity. The systematic approach allows for focusing on separate directions and on the business entity activities as a whole, considering all its interconnected structural parts. This, in turn, makes it possible to properly organise the information support process and respond in a timely manner to any changes in this process that can lead to errors in regulating business entity activities.

Management faces a number of problems in the course of organising information support for business activities, which can significantly affect management effectiveness. These problems include a low level of regulatory and reference information, legal documentation, and internal standards of business entities; depersonalisation of information when forming primary documents, caused by a low level of organisation of regulatory support; the inability to search and obtain the necessary documents, as well as difficulty of obtaining information on information requests; inefficient workflow organisation, which leads to the appearance of duplicated or conflicting documents; and violation of deadlines when preparing documents.

Thus, information support is one of the most important elements of the system for regulating business entities' activities. Business entity management should carefully approach the implementation of the information support process when forming an organisational management structure. The implementation of the systematic approach in organising the information support of the management of business activities, on the one hand, allows us to consider it as part of a single management system, ensuring the interaction of the management link of the business entity with external sources of the information support. On the other hand, the systematic approach is used for implementing the functions of the management process (planning, organising, accounting, analysing, controlling, and regulating), as well as for implementing the interaction of structural elements of the information support of business management. Organising information support on the basis of a systematic approach makes it possible to effectively use information data in the process of regulating business entity activities.

Development directions of the information support for regulating business activities based on the systematic approach, which were taken into account when conducting the presented study, include forming legal conditions to ensure the transparency of business activities; disseminating information on business activities in the media and on the internet particularly; improving the protection of intellectual property in the course of business activities; improving requirements for business activities; ensuring the consistency of terminology in information legislation; and creating such terminology for business activities.

5. Conclusion

Given that information support is an important system element for regulating the activities of a business entity, its management should carefully approach the implementation of the information support process when forming the organisational managerial structure. Organising information support, particularly on the basis of the systematic approach, allows for the effective use of information data in the process of regulating business entity activities. This study adapted the structure and content of the systematic approach to organising the information support of the regulation of business activities. On the one hand, implementing such an approach will allow considering information support as part of the single management system; that is, it will ensure the interaction of the management link of the business

entity with external and internal sources of information. On the other hand, the systematic approach will ensure implementation and interconnection of such functions of the management process as planning, organising, accounting, analysing, controlling, and regulating, as well as implementing the interaction of structural elements of the information support for business regulation. We determined the main parameters of the quality of information support for regulating business activities, confirming a sufficient level of consistency of the respondents' opinions on the parameters.

References

- Bulyga, R.P., Safonova, I.V., 2021. Konceptual'nye podhody k obespecheniyu informacionnoj prozrachnosti malogo biznesa [Conceptual approaches to ensuring the information transparency of small businesses]. Self Management 4 (126), 15–18. Available at: https://www.elibrary.ru/item.asp?id=4639010 (in Russ.)
- Burgonov, O.V., Kruglov, D.V., 2020. Cifrovaya sreda predprinimatel'stva: perspektivy i vyzovy dlya razvitiya ekonomicheskih sistem [Digital business environment: Prospects and challenges for the development of economic systems]. Economics and Management 4 (174), 407-414. https://doi.org/10.35854/1998-1627-2020-4-407-414 (in Russ.)
- Burlakov, V.V., Dzyurdzya, O.A., Gudkova, O.E., Fedotova, G.V., Sokolov, A.A., 2021. Smart solutions for intellectual capital commercialized in industry 4.0. Lecture Notes in Networks and Systems 155, 1159–1166. https://doi. org/10.1007/978-3-030-59126-7_126
- Epinina, V.S., Kayl, I.I., Lamzin, R.M., Syrbu, A.N., Kvintyuk, Y.M., 2020. Cognitive modeling of the mechanism of partnership of business entities with public authorities. Lecture Notes in Networks and Systems 91, 104-116. https://doi. org/10.1007/978-3-030-32015-7_13
- Ermakova, N.S., 2012. Razvitie informacionnoj sostavlyayushchej infrastrukturnogo obespecheniya innovacionnogo predprinimatel'stva [Development of the information component of the infrastructure support of innovative entrepreneurship]. Regional Economics: Theory and Practice 12, 26–33. Available at: https://www.elibrary.ru/item.asp?id=17426768 (in Russ.)
- Gaisina, R.R., 2021. Osobennosti informacionnogo obespecheniya deyatel'nosti maloj organizacii [Features of information support for the activities of a small organisation]. Vestnik UGNTU. Science, Education, Economics. Series: Economics 4 (38), 125–131. https://doi.org/10.17122/2541-8904-2021-4-38-125-131 (in Russ.)
- Israfilov, N., Ablaev, I., Seisinbinova, A., Sakulyeva, T., 2020. Impact of supply chain management strategies on the performance indicators of small and medium-sized businesses. International Journal of Supply Chain Management 4, 544552. Available at: https://www.elibrary.ru/item.asp?id=45376881
- Kayl, I.I., Lamzin, R.M., Zudina, E.V., Epinina, V.S., Azmina, J.M., 2021. GR management as an innovative model of interaction between business entities and public authorities in the context of digital transformation. Socio-economic systems: Paradigms for the future. Springer International Publishing, 625–636. https://doi.org/10.1007/978-3-030-56433-9_65
- Khairullina, A.R., 2019. Informacionnoe obespechenie prinyatiya upravlencheskih reshenij v malom i srednem predprinimatel'stve v cifrovoj ekonomike [Information support for managerial decision-making in small and medium-sized businesses in the digital economy]. Vestnik UGNTU. Science, Education, Economics. Series: Economics 4 (30), 141-149. https://doi.org/10.17122/2541-8904-2019-4-30-141-149 (in Russ.)
- Khmeleva, G.A., Czegledy, T., 2021. Towards a new format of regional integration: Co-creation and application of technologies. Current Achievements, Challenges and Digital Chances of Knowledge Based Economy. Cham, 71–77. https:// doi.org/10.1007/978-3-030-47458-4_9
- Korobov, S.A., Moseyko, V.O., Marusinina, E.Y., Devyatkina, D.S., 2021. Foreign practice of application of smart technologies to support technological entrepreneurship: Prospects for application in Russia. Lecture Notes in Networks and Systems 155, 1642–1648. https://doi.org/10.1007/978-3-030-59126-7_179
- Kravchenko, V.I., Bondareva, L.V., Bykov, R.Y., Danilova, L.V., Myrna, O.V., 2021. Financial decentralization as a key factor in the socio-economic development of territorial entities. Universal Journal of Accounting and Finance 3, 477–486. https://doi.org/10.13189/ujaf.2021.090322
- Kudryavtseva, T., Skhvediani, A., Kulagina, N., Lysenko, A., Berawi, M.A., 2020. Developing methods to assess and monitor cluster structures: The case of digital clusters. International Journal of Technology 4, 667-676 https://doi. org/10.14716/ijtech.v11i4.4191
- Kurcheeva, G.I., Kurchenko, P.A., 2008. K voprosu ob informacionnom obespechenii predprinimatel'stva [On the issue of information support for entrepreneurship]. Vestnik Academii 2, 120-122. Available at: https://www.elibrary.ru/item. asp?id=21116148 (in Russ.)
- Makarova, V., 2021. Measuring corporate management in business maturity forecasting models. Periodicals of Engineering and Natural Sciences 4, 277–290. https://doi.org/10.21533/pen.v9i4.2309
- Nikiforova, E.V., Tolmachev, M.N., 2020. Podderzhka predprinimatel'skih iniciativ za rubezhom: opyt SSHA i Pol'shi [Support for entrepreneurial initiatives abroad: The experience of the USA and Poland]. Azimuth of scientific research: Economics and management. 3(32), 269–274. https://doi.org/10.26140/anie-2020-0903-0063 (in Russ.)
- Ogorodnikova, E.S., Plakhin, A.E., Kochergina, T.V., Mikhailovsky, P.V., Guseva, T.I., Selezneva, M.V., 2019. The effectiveness of state support for entrepreneurs in the markets of social services in rural areas. Espacios 25. Available at:

Sustain. Dev. Eng. Econ. 2022, 3, 1. https://doi.org/10.48554/SDEE.2022.3.1

https://www.elibrary.ru/item.asp?id=41647737

- Popova, A.V., Pozhodzhuk, T.B., Povar, P.O., Belianevych, O.A., Pozhodzhuk, R.V., 2021. Financial risk as a type of business risk. Estudios de Economía Aplicada 6. https://doi.org/10.25115/eea.v39i6.5172
- Rodionov, D., Zaytsev, A., Konnikov, E., Dmitriev, N., Dubolazova, Y., 2021. Modeling changes in the enterprise information capital in the digital economy. Journal of Open Innovation: Technology, Market, and Complexity 7, 166. https://doi.org/10.3390/joitmc7030166
- Rodionov, D.G., Konnikov, E.A., Konnikova, O.A., 2018. Approaches to ensuring the sustainability of industrial enterprises of different technological levels. Journal of Social Sciences Research 4, 277–282. https://doi.org/10.32861/jssr. spi3.277.282
- Shekhovtsov, A.O., 2005. Problemy informacionnogo obespecheniya malogo predprinimatel'stva v Rossijskoj Federacii [Problems of information support for small business in the Russian Federation]. Interindustry Information Service 2-3, 30-39. Available at: https://www.elibrary.ru/item.asp?id=9588816& (in Russ.)
- Tapscott, D., 1999. Elektronno-cifrovoe obshchestvo: plyusy i minusy setevogo intellekta [Electronic-digital society: Pros and cons of the era of networked intelligence]. In: S. Pisareva (Ed.), Refl-book, Moscow, p. 403. (in Russ.)
- Tyukavkin, N. M., 2012. Informatizaciya ekonomiki i informacionnoe obshchestvo [Informatization of the economy and the information society]. Bulletin of SamSU 10, 139-146. Available at: https://www.elibrary.ru/item.asp?id=18777612 (in Russ.)
- Vinogradova, M., Konstantinov, V., Prasolov, V., Lukyanova, A., Grebenkina, I., 2019. Level entrepreneurship-role in the digital economy, tendencies of improvement of the information support system. Journal of Entrepreneurship Education 5, 1528-2651-22-5-446. Available at: https://www.elibrary.ru/item.asp?id=43210982
- Voskoboinikov, A. E., 2013. Sistemnye issledovaniya: bazovye ponyatiya, principy i metodologiya [System research: Basic concepts, principles, and methodology]. Knowledge. Understanding. Skill 6, 47–58. Available at: https://www.elibrary.ru/item.asp?id=21303705 (in Russ.)

Список источников

- Burlakov, V.V., Dzyurdzya, O.A., Gudkova, O.E., Fedotova, G.V., Sokolov, A.A., 2021. Smart solutions for intellectual capital commercialized in industry 4.0. Lecture Notes in Networks and Systems 155, 1159–1166. https://doi. org/10.1007/978-3-030-59126-7_126
- Epinina, V.S., Kayl, I.I., Lamzin, R.M., Syrbu, A.N., Kvintyuk, Y.M., 2020. Cognitive modeling of the mechanism of partnership of business entities with public authorities. Lecture Notes in Networks and Systems 91, 104-116. https://doi. org/10.1007/978-3-030-32015-7_13
- Israfilov, N., Ablaev, I., Seisinbinova, A., Sakulyeva, T., 2020. Impact of supply chain management strategies on the performance indicators of small and medium-sized businesses. International Journal of Supply Chain Management 4, 544552. Available at: https://www.elibrary.ru/item.asp?id=45376881
- Kayl, I.I., Lamzin, R.M., Zudina, E.V., Epinina, V.S., Azmina, J.M., 2021. GR management as an innovative model of interaction between business entities and public authorities in the context of digital transformation. Socio-economic systems: Paradigms for the future. Springer International Publishing, 625–636. https://doi.org/10.1007/978-3-030-56433-9_65
- Khmeleva, G.A., Czegledy, T., 2021. Towards a new format of regional integration: Co-creation and application of technologies. Current Achievements, Challenges and Digital Chances of Knowledge Based Economy. Cham, 71–77. https:// doi.org/10.1007/978-3-030-47458-4_9
- Korobov, S.A., Moseyko, V.O., Marusinina, E.Y., Devyatkina, D.S., 2021. Foreign practice of application of smart technologies to support technological entrepreneurship: Prospects for application in Russia. Lecture Notes in Networks and Systems 155, 1642–1648. https://doi.org/10.1007/978-3-030-59126-7_179
- Kravchenko, V.I., Bondareva, L.V., Bykov, R.Y., Danilova, L.V., Myrna, O.V., 2021. Financial decentralization as a key factor in the socio-economic development of territorial entities. Universal Journal of Accounting and Finance 3, 477–486. https://doi.org/10.13189/ujaf.2021.090322
- Kudryavtseva, T., Skhvediani, A., Kulagina, N., Lysenko, A., Berawi, M.A., 2020. Developing methods to assess and monitor cluster structures: The case of digital clusters. International Journal of Technology 4, 667-676 https://doi. org/10.14716/ijtech.v11i4.4191
- Makarova, V., 2021. Measuring corporate management in business maturity forecasting models. Periodicals of Engineering and Natural Sciences 4, 277–290. https://doi.org/10.21533/pen.v9i4.2309
- Ogorodnikova, E.S., Plakhin, A.E., Kochergina, T.V., Mikhailovsky, P.V., Guseva, T.I., Selezneva, M.V., 2019. The effectiveness of state support for entrepreneurs in the markets of social services in rural areas. Espacios 25. Available at: https://www.elibrary.ru/item.asp?id=41647737
- Popova, A.V., Pozhodzhuk, T.B., Povar, P.O., Belianevych, O.A., Pozhodzhuk, R.V., 2021. Financial risk as a type of business risk. Estudios de Economía Aplicada 6. https://doi.org/10.25115/eea.v39i6.5172
- Rodionov, D., Zaytsev, A., Konnikov, E., Dmitriev, N., Dubolazova, Y., 2021. Modeling changes in the enterprise information capital in the digital economy. Journal of Open Innovation: Technology, Market, and Complexity 7, 166. https://doi.org/10.3390/joitmc7030166
- Rodionov, D.G., Konnikov, E.A., Konnikova, O.A., 2018. Approaches to ensuring the sustainability of industrial enterpris-

es of different technological levels. Journal of Social Sciences Research 4, 277–282. https://doi.org/10.32861/jssr. spi3.277.282

- Vinogradova, M., Konstantinov, V., Prasolov, V., Lukyanova, A., Grebenkina, I., 2019. Level entrepreneurship-role in the digital economy, tendencies of improvement of the information support system. Journal of Entrepreneurship Education 5, 1528-2651-22-5-446. Available at: https://www.elibrary.ru/item.asp?id=43210982
- Булыга, Р.П., Сафонова, И.В., 2021. Концептуальные подходы к обеспечению информационной прозрачности малого бизнеса. Самоуправление 4, 15-18.
- Бургонов О.В., Круглов Д.В., 2020. Цифровая среда предпринимательства: перспективы и вызовы для развития экономических систем. Экономика и управление 26(4), 407-414. https://doi.org/10.35854/1998-1627-2020-4-407-414
- Воскобойников, А.Э., 2013. Системные исследования: базовые понятия, принципы и методология. Информационный гуманитарный портал Знание. Понимание. Умение 6, 5-5.
- Гайсина, Р.Р., 2021. Особенности информационного обеспечения деятельности малой организации. Вестник УГНТУ. Наука, образование, экономика. Серия: Экономика 4 (38), 125-131.
- Ермакова, Н.С., 2012. Развитие информационной составляющей инфраструктурного обеспечения инновационного предпринимательства. Региональная экономика: теория и практика 12, 26-33.
- Курчеева, Г.И., Курченко, П.А., 2008. К вопросу об информационном обеспечении предпринимательства. Вестник Академии 2, 120-122.
- Никифорова, Е.В., Толмачев, М.Н., 2020. Поддержка предпринимательских инициатив за рубежом: опыт США и Польши. Азимут научных исследований: экономика и управление 9(3 (32)), 269-274.
- Тапскотт, Д., 1999. Электронно-цифровое общество: плюсы и минусы сетевого интеллекта. INT Пресс, Москва, 432 с.
- Тюкавкин, Н.М., 2012. Информатизация экономики и информационное общество. Вестник Самарского государственного университета 10, 139-146.
- Хайруллина, А.Р., 2019. Информационное обеспечение принятия управленческих решений в малом и среднем предпринимательстве в цифровой экономике. Вестник УГНТУ. Наука, образование, экономика. Серия: Экономика 4 (30), 141-149.
- Шеховцов, А.О., 2005. Проблемы информационного обеспечения малого предпринимательства в Российской Федерации. Межотраслевая информационная служба 2-3, 30-39.

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