

Information policy of the enterprise as a factor of ensuring competitiveness (6)

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Abstract

In the article determined that the development of objects of entrepreneurial activity can take place only on condition of equal access to external and internal resources of development. Access to resources, as well as increasing work competitiveness, is defined as the possibility of forming an enterprise environment and its independent actions. The basis of such an environment is the formation of an information-type policy that allows fully determining the opportunities for attracting development resources, as well as improving the financial stability of the enterprise in the external market. The subject of the study is the process of the information policy of the enterprise formation, as well as the factors of its formation as a separate formative value for determining whether the enterprise is competitive. The novelty of the research is the process of formation and presentation in the various information and social and economic processes of the enterprise's information policy. The direction of further research is the integrative functions of ensuring the development of accounting and transformation of information policy into the enterprise's capital.

Keywords: large business, infrastructure, enterprise, development, competition, information policy.

1. Introduction

At the present stage of the development of society, an important place is occupied by information technologies that contribute to the formation of a new economic space. Internet-networks received the status of unified unlimited database for the whole world. The process of transferring and receiving any information acquired an instantaneous nature. These changes introduce adjustments, both into economic concepts and categories. Automation has led to the fact that a large number of important information about the activities of enterprises stored on electronic media and processed in a computing environment. Timeliness of obtaining information can directly affect profit, but the question whether information is a resource remains uncertain. At the same

time, the information has its value. It should be taken into account that the receipt and processing of information have their value and require investment of funds, which updates such concepts as information revenues and expenditures. The difference between them should form a new indicator, namely, the financial result of information activities.

Countries are gradually moving to international standards of information accounting. Lately, many significant changes to national standards were made, and even more are planned. In the context of these changes, it would be advisable to take into account those that occur in connection with the informatization of the world economy. For example, calculation and reflection of indicators of information activity. Such changes in the standardization of information policy will lead to the transformation of the methodology for compiling the competitiveness of enterprises. These questions determined the relevance of this study. The purpose of the study is to identify current trends in information policy, highlight the concepts of "information activity", "information costs", "information incomes", proposals for mapping these concepts in enterprises' reports.

2. Materials and methods

In modern conditions of global informatization of a society many scientists pay more attention to research of information economy. This concept arose in the early 20th century, some scholars call this form of economy as post-industrial. The founder of post-industrialism is the American scientist D. Bell, who developed the integral theory of the post-industrial society (Lopes & Oliveira, 2015). The researcher and founder of the information economic theory is G. Akerlof (Holubjaková & Bohdalová, 2018). He proposed to consider the behavioral macroeconomics from the point of view of the information paradigm. The works of Workman, S., & Shafran, J. S. (Workman & Shafran, 2015) are devoted to informatization and reindustrialization of the economy and society. Informatization as a resource for the development of modern society is considered in the work (Niemimaa & Laaksonen, 2015). Research of information globalization can also be identified among domestic scientists (Bicchi, 2014). The changes introduced by the informatization of all spheres of the economy are considered in works (Walster, 2017). When studying the concept of information as a resource, we relied on works (Kim & Oh, 2017), which proves the materiality of information. However, the concept of information activity and the methodology of its accounting are still insufficiently investigated. For example, scientific controversy still continues around the definition of the "information policy" concept and its display in the reports of enterprises.

All enterprises operate in a certain environment. It is the environment that primarily provides the efficiency of the enterprise, significantly affects all aspects of its existence. Considering the structure of the environment, Niemimaa, E., Niemimaa, M. discover its elements, which, from the point of view of influence on the enterprise, are also factors (Niemimaa & Niemimaa, 2017). According to (Mărcuț, 2017), the enterprise environment is divided into such groups of element-factors:

- the external environment consists of a macro environment and a micro environment;
- the internal environment.

Macro environment is formed from factors of indirect action. These are factors that are not directly related to the enterprise, but form a favorable or unfavorable environment for its economic activities (de Sardan, 2015). The micro environment is the factors that directly affect the enterprise, that is, have direct contacts with it (Cram et al., 2017). The internal environment is the factors that interact within the enterprise, affect its internal state and determine the effectiveness of the activity.

3. Results and discussion

3.1. The concept of information environment

We systematized the impact factors on the enterprise that were proposed (Barrett et al., 2016) as Table 1.

Table 1. Elements-factors of influence on the enterprise (compiled by the author)

Macro environment factors	Micro environment factors	Internal environment factors
- the state of the country's economy; - political and legal relations; - effectiveness of state regulation of the economy; - STP level; - level of social development; - the state of culture, value orientations in society; - the effectiveness of trade unions, parties and public organizations; - demography; - natural conditions, ecology; - the international situation; - extraordinary circumstances that the leaders could not prevent (force majeure)	- competitors and the competitive environment as a whole; - buyers; - suppliers; - partners; - local bodies of trade unions, parties, public organizations; - local authorities and the like	- production potential; - human resources and management potential; - product competitiveness and competitive potential; - organization of marketing and sales; - financial state; - production efficiency; - strategy, mission and goals; - organizational structure and culture; - organization of production and labor; - motivational mechanisms; - ecological compatibility of production; - social effectiveness; - the image of the enterprise, etc.

All of the factors listed above affect the enterprise, incl. through the information movement. Hence the need to study the concept of "information environment". The information environment is a set of technical and software tools for storing, processing and transmitting information, as well as political, economic and cultural conditions for the implementation of information processes (Galbács, 2015). According to the authors of the work (Gust et al., 2017), the information environment is viewed from the point of view of the information stored and circulating in it, and it usually acts as an object of engineering. However, we believe that this concept is broader than purely technical. We agree with the opinion that the information environment of the functioning and development of the enterprise is divided into the internal information space and external (Cockcroft, & Rekker, 2016).

The internal activity of a modern enterprise directly depends on the information component. Financial, accounting, even production data are recorded in information systems. In most progressive enterprises, information is processed using information technology. But, as we noted above, information is more than using computer programs. And it is the use of information in all its manifestations that influences the adoption of managerial decisions. Accordingly, the adopted managerial decisions provide new lines of business and form information policy (Weinbaum, 2014).

However, an enterprise cannot exist only in an internal environment. Its activities are influenced by external factors: competition, inflation, fluctuations in the exchange rate, political instability, and the like. All these factors come in the form of information. The speed of the corresponding reaction to this information depends on the effectiveness of the company's future operations (Roy et al., 2016). At the same time, the external environment not only affects the enterprise, but also requires interaction (Figure 1).

We distinguish 4 types of interaction, but taking into account the factors from Table. 1, in the future, in a deeper study, there can be much more of them:

- interaction with society;
- interaction with the state;
- interaction with the market;
- interaction with media and information space.

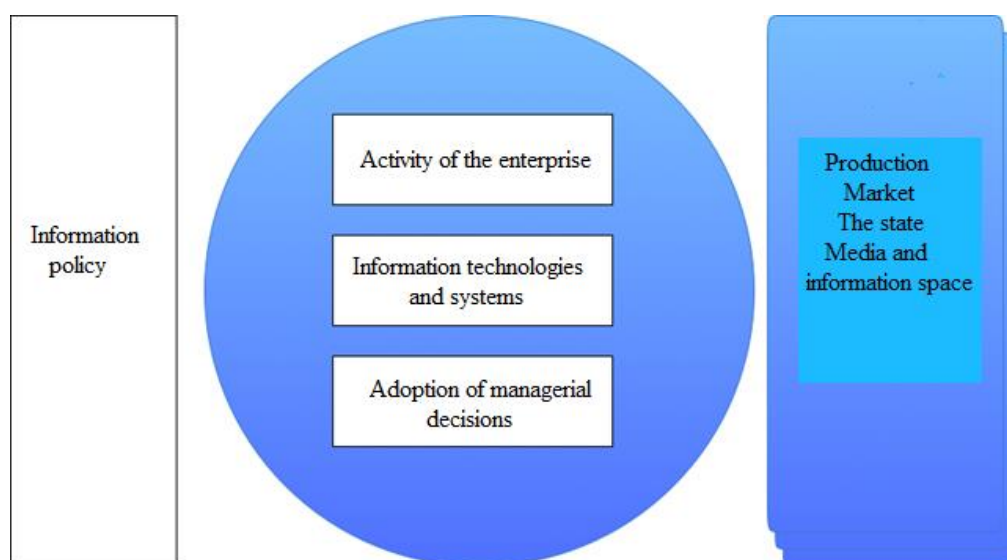


Figure 1. Interrelation of internal and external information environments of the enterprise (compiled by the author)

The interaction of the enterprise with the society is reflected in the attitude of citizens towards the activity of this enterprise. This attitude does not necessarily depend on the release of socially useful products or services. For example, the enterprise can be engaged in charity, improve the external territory, deal with the ecology of the region and the like. Information about such activities can be spread in the society and increase the popularity rating of the enterprise.

The interaction of the enterprise with the state at the level of increasing the country's GDP, popularizing domestic products, increasing investment attractiveness for foreign investors, and other such factors may increase state support for the enterprise, incl. in the global information space.

Interaction of the enterprise with the market is a relationship with business partners, competitors, logistics and the like. Each successful enterprise collects information about its partners and competitors, which in turn also collect information about the enterprise (Koshley et al., 2017).

The interaction of the enterprise with the media and information space is expressed in the dissemination of information about the enterprise in the mass media. In our opinion, the important factor of such interaction is not the distribution of the ordered advertising, but the quotation from independent sources. For example, the discussion of products in social networks can be more effective than the expensive, but annoying advertising on television.

From the above types of information interaction, we can identify the criteria by which you can determine the information activity of the enterprise. These criteria are reflected in Table. 2.

Table 2. Criteria of the information policy of the enterprise (compiled by the author)

Type of criterion	Characteristics	Forms of determination
Interaction with the society	Public importance of the enterprise	Social surveys, questionnaires, expert assessments
Interaction with the state	State importance of the enterprise	State statistics, conclusions of state commissions, state acts
Interaction with the market	The importance of the enterprise in the market	Demand for products (services), evaluation of competitors, expert estimates
Interaction with media and information space	The importance of the enterprise in the media and information space	The number of publications and video materials, citation indices, indices of business activity in the network, and so on.

In our opinion, it is very important to use all these criteria. So, for example, a successful advertising campaign on television can be leveled by negative reviews in social networks. Therefore, for effective operation, modern enterprises must take an active information position. For

external users (customers, clients, partners, investors), information activity can show how much the enterprise is known, how stable it works in the market and how the information space reacts to its activities.

In connection with the foregoing, we believe that in the existing operational, financial and investment activities in the reporting of enterprises, it is necessary to add indicators of information activities. Information activity is a set of actions aimed at satisfying the information needs of citizens, legal entities and the state. We believe that information activities are a set of actions aimed at satisfying the information needs and interests of all users.

3.2. The problem of preventing unauthorized access, dissemination and use of information

It is necessary to separately highlight the problem of security, that is, preventing unauthorized access, dissemination and use of information. It should be noted that in the English translation, information work and information activity sound the same – "information activity". However, we separate these concepts. In our opinion, information activity is a qualitative indicator that characterizes the extent to which the information of an enterprise is disseminated in the external information space. Since statistical reporting is confidential by law, and information activity indicators should be accessible to users, we suggest that they be reflected in the company's financial statements. It can be either separate graphs in already existing forms of reporting, or a new form of notes to the main forms.

To display information activity in the financial statements, activity indices will need to be translated into the corresponding monetary indicators. Enterprises that profit from information activities receive a high index of information activity, and those that have a loss, receive a low index, respectively. It is also worth noting that the financial results report, along with the company's balance sheet, is the most requested document among external users of information. Consequently, the information activity indicators of the enterprise will be open and accessible to all interested parties.

Analysis of approaches to determining the essence of the functioning and development of the enterprise, identifying the main features and properties inherent in these processes, and the interrelationships of functioning and development within the framework of the enterprise's activities allowed us to justify the definition of development as a set of processes of radical changes at the enterprise, that transformational character, bring it to a qualitatively new level and are aimed at achieving strategic goals. It is proposed to understand the totality of the processes of gradual qualitative and quantitative changes at the enterprise that are of an adaptive nature, support its integrity and stability in interaction with the external environment, as the functioning in the work. In work (Nakade & Yokozawa, 2016), the interrelation and interdependence of these processes is substantiated, it is determined that the stages of functioning and development alternate with a certain periodicity, while the information policy processes can acquire various forms and characteristics.

Using the theory of the life cycle and taking into account the features of the processes of functioning and development in modern conditions made it possible to propose an information policy model that, firstly, includes the succession of stages in the enterprise's life cycle (creation and formation, growth, stability, decline, liquidation). Secondly, it is possible to distinguish the stages of functioning and development of the enterprise, the transition states, noting the features and variants of the transition from one stage to the other at the points of bifurcation at each stage (Figure 2).

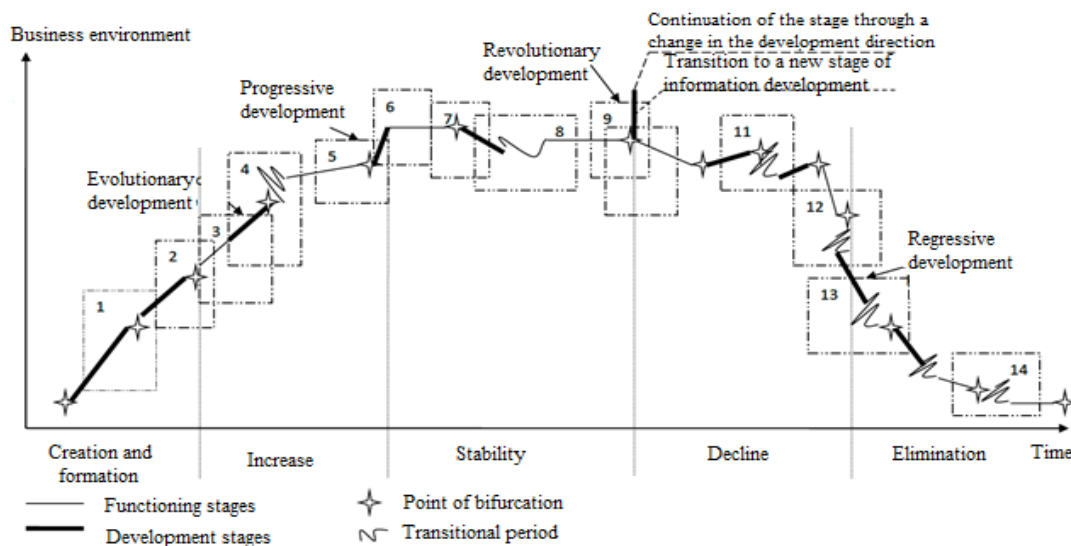


Figure 2. Model of functioning and development of the enterprise:

1. Development – point of bifurcation – development.
2. Development – point of bifurcation – functioning.
3. Functioning – evolutionary development.
4. Development – point of bifurcation – transitional state – functioning.
8. Development – transitional state – functioning.
9. Functioning – point of bifurcation – revolutionary development.
10. Functioning – point of bifurcation – functioning.
11. Development – point of bifurcation – transitional state – development.
12. Investment development in foreign markets
13. Recourse due to impossibility to fulfill obligations
14. Liquidation and termination process

One of the conditions for supporting the functioning and development of the enterprise is the availability of up-to-date and complete information on the state and changes in environmental factors and internal resources.

The generalization of theoretical developments in the formation of the information environment, taking into account the specifics of the information policy processes at various stages of the enterprise's life cycle, made it possible to formulate the following definition of information: analytically processed data on changes in the external and internal environment, the use of which determines the achievement of the enterprise's objectives, and also to determine the essence of the information environment as a totality of spheres and conditions for the formation and use of relevant information that affects information policy. In order to streamline the company's information processes, information support is also defined – as a process of connecting information environment monitoring, storing and processing, using information to meet information needs in the process of forming and achieving the objectives of the operation and development of the enterprise".

Classification of external and internal factors on the basis of the resource approach, the definition of the information essence and the basic requirements put forward to it, made it possible to determine the structure of the information policy environment, which consists of the internal information space represented by the spheres of technical and technological and human resources, financial resources and resources of financial results, goals and strategy, as well as the overall external information space, which is represented by economic, political, legal, social and cultural, demographic, international and scientific and technological spheres, and external environment, which includes the market, resource, financial, legal, regional and regional political spheres.

3.3. The information environment formation

The study of the specifics of the information policy environment formation and modern approaches to their assessment made it possible to substantiate a methodical approach to determining the stage of the functioning and development of an enterprise on the basis of an assessment of its information environment. It provides for a quantitative assessment of the internal information environment with taxonomic analysis and a qualitative assessment of the strategic direction of the enterprise's activity using the expert method. To summarize the assessment, it is suggested to use the index of the internal information environment and the index of the strategic orientation of the enterprise's activity, which are calculated as averages (geometric and arithmetical respectively) according to formulas (1) and (2) respectively:

$$I_{BC} = \sqrt[4]{D_{TP} \times D_{JP} \times D_{P\Phi C} \times D_{P\Phi P}} \quad (1)$$

where I_{BC} – is the index of the internal environment;

D_{TP} – is a composite indicator of the use of technical and technological resources;

D_{JP} – is a composite indicator of the use of human resources;

$D_{P\Phi C}$ – is a composite indicator of the use of resources and financial condition;

$D_{P\Phi P}$ – is the summary indicator of use of resources of a financial result;

$$I_{CC} = \frac{\sum_{n=1}^8 I_n}{8} \quad (2)$$

where I_{CC} – is the index of the strategic direction of the enterprise; $I_1, \dots, I_n$ – indicators of strategic focus on the results of questionnaires: the company's activities are aimed at achieving strategic goals (I_1); transformation processes take place at the enterprise, which is manifested in a qualitative change in the composition, structure and mode of functioning (I_2); the dominant factors that determine the operation of an enterprise are external factors of direct and indirect impact (I_3); the enterprise is in a transitional state (I_4); the enterprise tries to change the way of functioning on the basis of changing the goals and directions of development (I_5); there are significant changes in the environment that affect its activities (I_6); there are significant quantitative and qualitative changes in the internal environment of the enterprise (I_7); the company's active reaction to changes in the external environment, which manifests itself in the preparation for changes and the reverse effect on the external environment (I_8).

In order to interpret the economic essence of the index of the internal environment in work based on the use of the Harrington scale, it is proposed to distinguish the following levels: very high, high, medium, low, very low, and for the index of strategic orientation – high, medium, low.

Table 3. Matrix for determining the stage of information policy based on an assessment of its information environment

Level of the internal environment	very high	1,0–0,8	Transitional state	Evolutionary development	Revolutionary development
	high	0,8–0,63	Stable functioning	Progressive development	Evolutionary development
	medium	0,63–0,37	Normal functioning	Stable functioning	Evolutionary development

	low	0,37–0,2	Unstable functioning	Transitional state	Transitional state
	very low	0,2–0,0	Regressive development	Transitional state	Progressive development
Level / Interval			0,63–1,0	0,37–0,63	0,00–0,37
			Low	Medium	High
			Strategic orientation of the enterprise		

For the purposes of the study, it is essential to compare the values of the indices of the internal information space and the strategic focus, which makes it possible to determine the stage of the enterprise's activity. A matrix (Table 3), which allows not only to establish an unambiguous interpretation of the stage of the enterprise's life cycle as such, which refers to "functioning" or "development", but also to determine the form, direction and characteristics of processes for each of these stages, was constructed for this purpose.

Proceeding from the analysis of theoretical approaches to the organization of information support of the enterprise and the features of information exchange in the process of information policy formation, a sequence of formation of the information environment for the functioning and development of the enterprise was developed in the work, which contains the following stages:

- building the model of information flows;
- formation of information needs in accordance with the enterprise's stage of activity;
- formulation of the criteria for selecting information;
- selection of information sources;
- monitoring of external and internal information environment;
- checking the information collected for compliance with the established criteria;
- information process;
- assessment of the information space's formation of information policy;
- implementation of methodological recommendations on the formation of the information environment of information policy.

The proposed sequence of information environment formation covers all the necessary stages of qualitative satisfaction of information needs of the functioning and development of the enterprise. The use of such a sequence based on the system approach will allow optimizing the information exchange at the enterprise, which, in turn, will achieve the set goals, which depend on the stage of the information policy formation.

A list of indicators for assessing the formation of the information policy environment, which are grouped into the following groups is determined

- performance indicators (level of satisfaction of information needs;
- interrelation of the objectives of information provision with the objectives of information policy), indicators of the availability of resources (the level of automation; the state of use of the information infrastructure; the level of information literacy of information consumers; the availability of investments in the information environment and cost accounting), sufficiency indicators (a variety of information sources and methods of working with information; implementation of information support on the basis of the information flow model; the level of information compliance with the requirements to it; the level of timeliness of the receipt and use of information). Measurement of these indicators is carried out by experts on a nominal scale.

It is substantiated that it is expedient to evaluate the quality indicators of the formation of the information policy environment with the application of the approach to the estimation of non-metric values, which involves the evaluation of qualitative indicators using the nomination of features and transformation functions. The analysis of the interconnections of signs' formation of the information environment of enterprises made it possible to form the value of the transformation function (Table 4).

Obtained quantitative estimates in the proposed approach are combined into an integrated indicator of the formation of the information environment on the basis of the average geometric values of individual transformation functions, which is characterized by three levels determined mathematically as the product of the values for the indicator D (because it has the closest relationship with other indicators) and all the contingency coefficients by the same indicators: high with values in the range (0.374 – 0.673), medium (0.0748 – 0.374) and low (0.00 – 0.0748). The generalization of the results obtained in the work made it possible to develop methodological recommendations for the formation of an information environment of information policy that take into account the stage, the phase of information policy, and the level of the formation of the information environment.

Table 4. Fragment of the function of converting qualitative signs of the formation of the information environment into quantitative

Indicator	Nominal feature designation	Traits that signs achieve	Designation of the nomination	The value of the conversion function
Level of satisfaction of information needs	A	High	A1	0,69
		Medium	A2	0,38
		Low	A3	0,08
Interrelation of the objectives of information support with the objectives of information policy	B	Present	B1	0,64
		Absent	B0	0,07
Level of automation of information support	C	High	C1	0,67
		Medium	C2	0,37
		Low	C3	0,07
The state of using the information infrastructure	D	High	D1	0,90
		Medium	D2	0,50
		Low	D3	0,10

All recommendations were proposed to divide into four blocks:

- general recommendations that ensure the maintenance or improvement of the enterprise at various stages and phases of its operation and development;
- recommendations on effectiveness, aimed at organizing the formation and maintenance of an information environment in order to meet information needs;
- provision of resources, which implies the formation and use of all types of resources in the process of forming the information environment of information policy;
- sufficiency, which implies ensuring sufficient quantity and quality of information in the process of forming the information environment of the information policy.

4. Conclusions

We concluded that the information component is becoming increasingly important in all spheres of enterprise activity. However, until now information as a resource was not reflected in the accounting. In our opinion, information is a complementary resource that can take material and non-material forms, and also combine them. This resource should be allocated to a separate category of accounting and be reflected in the accounts. An additional consideration deserves information in the category of stocks (like finished products, goods and the like).

Thus, the reflection of the information policy of enterprises in accounting and reporting should be transformed in accordance with the changes that occur in the modern world of generalized informatization. It is necessary to take into account such new concepts as "information revenues" and "information costs". Special attention should be paid to the prospect of disclosure of the concept of information activity of the enterprise. The transformation of the modern economy into a new, informational one, requires changes in the methodology of information accounting and reporting, and deserves further research.

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