

Technology for Ensuring Economic Security of an Enterprise



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Abstract: *The measures are taken by the enterprise management in order to reduce the risks of damage, ensure the efficient use of available resources, and ensure its stable functioning are necessary conditions for the sustainable development of production. The purpose of the research is to assess the existing system of ensuring economic security of the enterprise (ESE) of mechanical engineering on the example of a separate business unit and determine directions to increase its effectiveness. The object of research is the business units of GAZ Group (PJSC "GAZ"), which are part of the management perimeter of the Automobile Components Division of GAZ Group. The subject of research is the system of economic security, and methods of controlling at the industrial enterprise. Research methods — method of comparisons and analogies, method of economic analysis.*

A practical significance of the work lies in the possibility of using the research results to improve controlling as a tool for effective management of industrial division development enterprise.

These studies allow to draw conclusions about the efficiency of technologies used to ensure the economic security of the enterprise on the example of a separate business unit of GAZ Group.

Keywords : *economic security of the enterprise, technologies of controlling, economic effect of economic security measures*

I. INTRODUCTION

The definition of "economic security of Russia" is a category that is reflected in domestic legislation, such as: The Constitution of the Russian Federation of 12 December 1993; the Decree of 12 May 2009 No. 537 of the President of the Russian Federation "On the strategy of national security of the Russian Federation until 2020"; the Decree of the President of the Russian Federation of 26 April 2006 No. 608 "On the State Strategy for Economic Security of the Russian Federation", et al.

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Regulatory regulation of economic and national security is carried out at the following levels: a country, a separate territory, a subject of economic activity — an industrial enterprise. Let's dwell on the issue of ensuring the economic security of the enterprise.

The economic security of the enterprise (ESE) is a state of effective, stable functioning of the enterprise. *ESE Level* - Assessment of the state of use of resources within ESE.

The functional components of ESE are the main directions that differ significantly from each other in their content but are inextricably linked and create in the general ESE system.

To ensure the electronic business environment, available resources are used, which are understood as business factors used by owners and managers to achieve business goals. Among them: a) resource of capital; b) resource of personnel; c) resource of information and technology; d) resource of machinery and equipment; e) resource of rights - includes in the broad sense of the word a set of all the rights and opportunities of their implementation provided by the current Russian legislation. First of all, the rights to use land, natural resources, the right to use information, patents, licences, quotas, etc. It is also the right to protect the economic interests of the enterprise and personnel, to choose legal means and means of protection.

Awareness and perception of ESE as a holistic interconnected system of measures to protect their own economic interests implies also their complex functional and sectoral implementation according to the above-mentioned directions.

At the same time, the core and content of all work is the formation and constant maintenance of the *economic and legal environment* of enterprise security. From this standpoint, security is a continuous cyclical process.

The main components of the ESE are: a) financial; b) personnel; c) technical and technological; d) legal; e) environmental; e) information; g) power.

Methods of ensuring economic security are a set of measures and a system of organization of their implementation and control. The above methods form a holistic and complex economic and *legal mechanism* for ensuring ESE. Strategic, current and operational (situational) planning of measures to ensure economic security is the basis of maintaining the ESE at a high level.

II. THEORETICAL AND METHODOLOGICAL APPROACHES

Methodological bases of the research include: 1. Tracking insider activities; 2. Preventive measures to counteract insider at the enterprise; 3. Improvement of the system of control of insider leaks. In the course of the study the method of comparisons and analogies, economic analysis were used.

III. RESULTS OF THE STUDY

Let's dwell on the directions of economic security of a separate business unit of the enterprise, including the financial and information component, as well as the personnel element of the system. The financial element of economic security of a business unit of an enterprise is reflected in Table 1.

Table 1 — ESE financial element

Issues on the agenda	Case studies of a single business unit	Solutions
1. Identified risks and violations of the amount of expenses in the field of procurement	Analysis of pricing for purchased products at each new contract conclusion	In order to minimize the expenditure of funds in a business unit, the tender process is monitored. The total amount of avoided damage for 2018 year amounted to 23 786,6 thousand rubles.
2. Measures taken by management to reduce the risks of damage	The risks of damage are associated with the conclusion and execution of contracts with counterparties (suppliers, contractors), conditionally divided into: — the risks of non-performance by counterparties of the obligations assumed — are expressed in the underdelivery of products, non-provision of services and non-performance of works, when under the terms of the contract the products are paid for, forming receivables. — risks of improper performance of contractual obligations by counterparties: overestimation of work performed, use of cheap materials instead of expensive materials; supply of goods with low quality characteristics under the guise and price of high quality	In order to avoid the threat of receivables, at the conclusion of supply contracts, 100% prepayment by counterparties is provided. In order to reduce economic risks, attention is paid to: — failure to comply with the regulations; — the procedure of execution of contracts; — terms of tenders; — availability of alternative choice of suppliers; — information (a questionnaire, a copy of the balance sheet, copies of the certificate of registration, licenses, etc.).

Table 2 - ESE information element

Issues on the agenda	Case studies of a single business unit	Solutions
1. Analysis of the Information Security Policy of Business Units of the Enterprise	In the structure of the business unit: - a mechanism of interaction between IT and ESE units has been developed, allowing to solve current issues; - documents related to IT infrastructure are developed with the participation of ESE	In a business unit: - put into effect a single list of information constituting a trade secret; - confidentiality agreements have been concluded with employees of enterprises admitted to trade secrets; - register of information resources is maintained, their owners are appointed; an authorization system of access to information resources, including; identification, authentication of users; control of access to the system; - prohibited the movement of information carriers through the checkpoints without material permissions in accordance; the entry and use of personal information carriers are prohibited.
2. Results of implementation of the Information Security Policy	- standardization of software; - establishment of a working group on information security; - regulation of the process of using removable storage media in the corporate network	The level of information security has increased, and installation processes, as well as software purchases have been standardized

In the stated direction, the management of a business unit undertakes a set of anti-crisis measures, such as:

- monitoring the regulatory framework in the selection of counterparties and implementation of their contractual obligations;
- control over the execution of contracts (including tenders);
- checking performance of works according to concluded contracts: control of completeness of volume and quality of performed works, correspondence of funds actually spent by the contractor organization and material costs according to the act of performed work (rendered services);
- planning of KPI directions of financial and economic activity of a business unit, taking into account economic risks;
- intensification of work on the exchange of information and crisis management schemes between individual business units of the Division.

The information element of economic security of the business unit of the enterprise is reflected in table 2.

In the declared direction, the management of the business unit takes a set of measures, such as:

- creation of working groups on information security (IS) from among managers and specialists of ESE and IT departments.
- introduction in the process of monitoring the information security check settings of active network equipment (firewalls, routers, managed commutators), and corporate servers.
- improvement of the material and technical base of the business unit.

The personnel element of economic security of the business unit of the enterprise is reflected in table 3.

Table 3 — ESE personnel element

Issues on the agenda	Case studies of a single business unit	Solutions
Identified risks and violations	<ul style="list-style-type: none"> - risk of hiring under fixed-term employment contracts of persons involved in the theft of inventory items, violators of territorial and property control, with criminal, administrative responsibility, fired both on the initiative of the employer and their own free will; - increase the risk of aspiration to the ownership of enterprises of criminal targeting individuals - risk of damage to the company as a result of leakage of information constituting a trade secret, the carriers of which are employees fired during optimization of the company's staff. - risks related to the suppression of interests of the company and personal business of management and its affiliates - risks of evasion of liability of persons who have committed unlawful acts against the enterprise (fired by agreement of the parties, without criminal prosecution, and without compensation for material damage). - risk of poor quality of legal support 	<ul style="list-style-type: none"> - activities are carried out to study top managers of business unit - in case of detection of the facts of violation, the service of the ESE initiates an office investigation, informs the head of the structural unit division in the area of responsibility of which violation is detected. - the structural schemes of the legal entities included in the Division and the newly created structural units are analyzed to prevent duplication and the performance of unusual functions, or unreasonably high status of units and posts. - all candidates for employment are tested. In case of revealing negative information regarding the candidate for employment (criminal prosecution, administrative liability, violation of territorial and property control), a letter is sent to the Human Resources, and recommended to refuse this applicant

In the declared direction, the management of the business unit takes a set of measures, such as:

- assessment of personnel on the issue of criminal prosecution for mercenary crimes or involved in theft, but to date for various reasons not fired;
- exclusion of employment of persons in respect of whom the security service has made recommendations on the inexpediency of their employment;
- active application of control methods for hired and working personnel: questioning, psychological testing, targeted interviews with persons in the place of residence of candidates and in previous places of study or work, inquiry through medical institutions, graphological analysis, polishing using polygraph, "lie detector", etc.
- creation of a unified database of persons involved in the theft of inventory, fired both on the initiative of the employer and on their own will.

In particular, the assessment of the level of ESE for all functional components on the basis of statistical methods of processing information, as opposed to the economic security of a country, region or industry is very difficult, since most aspects of this problem are extremely difficult to mathematical formalize, and some of them do not lend themselves at all. However, the importance of this problem for the efficient functioning of the

enterprise is very large, so the level of ESE is determined mainly by expert means. At the same time, the opinion of experts on private functional components (financial, informational, etc.) is taken into account. Based on them, cumulative criteria are derived, then they are ranked and the individual level of ESE is determined.

There are general schematics that can be filled with individual content. In particular, *the analysis* of the ESE level is based on a comparison of the resulting cumulative ESE criterion with the previous values, trends of individual functional components (their specific weight) and their impact on the aggregate criterion are determined. This functional analysis will allow to identify the reserves and shortcomings of each component and make appropriate changes in the system of the ESE.

Analysis technology should be carried out in the following sequence.

1. Determination of the structure of negative impacts for each functional component of the ESE. Separation of objective and subjective negative impacts.
2. Formation of the list of measures that were taken by the enterprise at the time of the assessment to eliminate the impact of negative consequences. Such lists should be formed for each functional component and negative impact within each component.
3. Evaluation of the effectiveness of measures taken in terms of neutralization of specific negative effects for each of the functional components of system.
4. Identification of reasons for insufficient effectiveness of measures taken to eliminate already existing negative impacts and prevent possible ones, as well as identification of those responsible for low efficiency implementation of the measures taken.
5. Defining the list of expected negative impacts. This list includes those negative impacts that have not been addressed to date and whose impact will continue in the future, as well as those that may occur.
6. Development of recommendations on elimination of existing negative impacts and prevention of possible ones.
7. Estimation of the cost of each of proposed measures to eliminate negative impacts and identification of the performers responsible for the implementation.

The implementation of the ESE technology in the reporting period allowed to obtain a total economic effect (Table 4).

Table 4 — Results of work on the main indicators of activity (ensuring economic security of the enterprise) for the period under study

Initial data	by business unit	Total by division
Economic effect of measures for economic security (thousand rubles)	5326.7	328546.2
including due to:		
- scheduled inspections	156	1386
- identified shortcomings	102	1021
- elimination of shortcomings	102	1021
Number of measures taken (administrative responsibility, court decisions)	18	356
Number of detected violations in the direction of protection against economic threats	28	298

Table 4 - the results of the protection on the main indicators of KPI for the study period

Key indicators	The normative value of the KPI	Actual KPI value
Compliance of the results of the electronic security service with the costs of its maintenance	324%	425 %
Creation of preservation conditions of inventory	96%	97%
Resource provision of organizational measures against economic threats	92%	98%
Not exceeding the planned level of expenditure per Division	96%	97%

IV. CONCLUSION

For adequate assessment of the impact of each functional component of an ESE on the overall safety level, the following main problems need to be investigated and resolved:

- (a) determine the basic essence of the functional component of ESE. It should be understood as the set of processes taking place in the enterprise with all their characteristics and relationships that make up a single related group in terms of their functional role in ensuring ESE.
- b) identify the most important factors affecting the state of each functional component;
- c) identify the main processes affecting the provision of a specific functional component;
- d) establish economic indicators reflecting the level of provision of each functional component;
- e) identify measures to ensure the highest possible level of a specific functional component.

REFERENCES

1. Garina E.P. Designing conditions of effective organization of technological process and productive maintenance of equipment at industry enterprises // Vestnik NGIEI. 2017. № 1 (68). P. 91-101
2. Garin AP Economics of enterprise (in organization): Teaching and Methodological Manual / Minin University. Nizhny Novgorod, 2019. 34 p.
3. Kuznetsov V.P., Andriashina N.S. Innovative activity of industrial enterprises: problems and prospects // News of the Penza State Pedagogical University named after V.G.Belinsky. 2012. №28. P. 408-410
4. Mizikovskiy I.E. Harmonization of indicators of internal control // Audit statements. 2011. №12. P.62-66
5. Shpilevskaya E.V. Economic security of the country: Threats and ways of its provision // International Research Journal. 2016. № 5-1 (47). P. 188-193
6. Shushkin M.A. Formation of an integrated approach to ensuring competitiveness of a diversified company // Vestnik of Kazan Technological University. 2008. №6. P. 259-262
7. Garina E.P., Kuznetsov V.P., Garin A.P., Andryashina N.S., Romanovskaya E.V. (2020) Controlling as an Instrument of Industrial Enterprise Management in the Conditions of Modern Economic Activity. In: Popkova E., Sergi B. (eds) Digital Economy: Complexity and Variety vs. Rationality. ISC 2019. Lecture Notes in Networks and Systems, vol 87. Springer, Cham
8. Mizikovskiy I.E., Garina E.P., Garin A.P., Andryashina N.S., Kozlova E.P. (2019) The Method of Ensuring the Coherence of Results of Measures in Terms of the Cost of Production (Works, Services) and Changes in the Norms of Costs. In: Popkova E. (eds) Ubiquitous Computing and the Internet of Things: Prerequisites for the Development of ICT. Studies in Computational Intelligence, vol 826. Springer, Cham

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