

PEDTR 2019**18th International Scientific Conference “Problems of Enterprise Development:
Theory and Practice”****INDUSTRIAL CULTURE AS ECONOMIC SECURITY FACTOR
OF INDUSTRIAL ENTERPRISES IN DIGITALIZATION PROCESS**

A. A. Chudaeva (a)*, I. A. Svetkina (b), A. S. Zotova (c)

*Corresponding author

- (a) Samara State University of Economics, 443090, Soviet Army Str., 141, Samara, Russia, chudaeva@inbox.ru
(b) Samara State University of Economics, 443090, Soviet Army Str., 141, Samara, Russia, svetkinairina@yandex.ru
(c) Samara State University of Economics, 443090, Soviet Army Str., 141, Samara, Russia, azotova@mail.ru

Abstract

The economic security system (ESS) of an industrial enterprise includes structural blocks that diversify its activities. The number of such “architectural characteristics” is constantly expanding under the influence of both the external (digitalization is a reference point) and the internal environment (the tasks of sustainable development of an industrial enterprise). Today, the information necessary for the user about any industrial enterprise can be collected from open sources: the enterprise’s website, the website of the industry ministry, financial and non-financial reporting data, publications on the company's achievements in various media, specialized websites (e-disclosure.ru, rusprofile.ru, etc.). Studying the open financial and non-financial information presented in the annual reports of Russian public joint-stock companies (PJSC) for the last three years allows us to form an opinion on certain blocks that we consider as part of the ESS. We decided to analyze the information on material, organizational and spiritual values, united in the block “industrial culture of an industrial enterprise” (ICP), based on the information provided by PJSC to users in different sources. We determined that certain information about the ICP is included in the corporate governance section. From the content (structure) of the annual reporting, we can conclude that each PJSC decides on the structure and completeness of information disclosure concerning the “corporate governance” section independently. In our opinion, the ICP block in terms of digitalization takes on additional parameters and is the foundation for public business diplomacy in the external environment.

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1. Introduction

Traditionally, the ICP is characterized by a set of indicators that describe the organization and the production process administration for compliance with the requirements of regulatory legal acts on labor, leisure, safety, ecology, ergonomics, sanitary conditions, etc. It is important to note that at present, the ICP is influenced by such factors as economic stability and the strategic location of the enterprise, the volume of research carried out by the enterprise, favorable business conditions, intellectual property protection, the priority of digital technologies, infrastructure, and highly qualified specialists (Hemerling, Kilmann, Danoesastro, Stutts, & Ahern, 2018). Digital transformation modernizes the ICP and completes it with such elements as: digital culture, the general level of digital maturity, digital technologies, digital management, digital capabilities, digital investments (Analytical center of Russian Federation Government, 2019). Such completion (refinement) requires a developed methodology, understanding of processes and performance discipline on the part of all employees of the enterprise.

International cooperation of enterprises with partners at the professional business and diplomatic level ensures, in the opinion of Marushin (2018), «information exchange on business risk issues that may arise in the public space during the implementation of business projects; effective PR campaigns to promote Russian business abroad; inclusion of Russian business in global public communications» (p. 124).

Like any major transformation, the digital transformation of industrial culture maintains the reputation of the enterprise in domestic and foreign industry markets, develops the general strategy of the company, within the framework of which it can provide for access to international markets and the formation under this task of such an instrument for implementing the foreign economic interests of the enterprise as business diplomacy. For example, such large industrial enterprises as PJSC KAMAZ and PJSC Severstal (KAMAZ PJSC, 2019; Severstal PJSC, 2019).at the level of business diplomacy focus on the macroeconomic aspects of developing and upholding a national position in solving problems caused by the integration of the country's economy into the world economy, and on microeconomic aspects related to the support of individual industries and specific business entities.

2. Problem Statement

Digitalization as an in-depth and dynamic process that fundamentally changes both the external and internal environment of an industrial enterprise, entails the adaptation of the ICP, without which it is impossible to follow modern production trends. For example, the requirements for the implementation of lean manufacturing tools (National program passport "Labor productivity and Employment support" (signed by the Board of the Council of strategic development and national projects) (dated 24 December 2018 г. N 16)) involve changes not only organizational, but also value (psychological, professional). This means that each employee of the enterprise is personally faced with the need to transform work processes and develop new competencies in the context of Industry 4.0.

We believe that industrial culture (IC) is part of the economic security system (ESS) of the enterprise. The imbalance of the components included in the structure of the ICP, leads to significant threats (internal, external). Consequently, the level of ICP directly and indirectly affects such indicators as: performance, productivity, profit, profitability, environmental friendliness, energy intensity, socio-

psychological indicators (satisfaction with labor activity, relative stability of the enterprise, teamwork). Diagnostics and constant monitoring of the ICP state make it possible to identify the extent to which certain block components affect the efficiency of an industrial enterprise.

3. Research Questions

In the framework of this study, the following questions must be answered:

- What are the components of the industrial culture of an industrial enterprise (ICP) in a digital environment?
- What are the functions of the ICP in the economic security system?
- How to determine the direct and indirect impact of the ICP on the economic security system in the context of the development (expansion) of digitalization?

4. Purpose of the Study

The purpose of this study is to analyze the importance of the unit “industrial culture of an industrial enterprise” for the economic security system in the context of digitalization. The assessment of the impact of the ICP on ESS will be carried out using the concept of evaluating the economic efficiency of investment projects. The project aimed at increasing the level of ICP, involves the analysis of threats and costs of its implementation.

5. Research Methods

The authors used such research methods as analysis, synthesis, description and comparison. Their application is determined by the theoretical nature of the study which included the following stages: formulation of the problem, analysis of information on this topic, comparison and description of different scientific views on the studied issues, synthesis of different approaches to the problem.

6. Findings

ICP is formed from a wide and multifaceted complex of components, based on the principles of scientific, systematic, adequate, professionalism, openness, self-organization, collectivism. Being a powerful strategic tool, it regulates the autonomy of the enterprise, determines the psychological climate of the entire team and the degree of formalization of relations.

The main criteria for assessing the level of production culture are traditionally: defect-free production; lack of equipment downtime, serviceability of technological equipment, equipment and tools; rational placement of materials, tools, devices in the workplace; fulfillment of schedules of scheduled preventive repairs of production equipment, ventilation systems; compliance with the Internal Rules (lack of absenteeism and lateness); the availability and proper use of personal protective equipment; compliance with safety requirements when working with electric and pneumatic tools; compliance with safety requirements when working with harmful and flammable substances and materials; compliance with safety requirements during transportation, warehousing of finished products and finished products; order at

workplaces, the condition of passages, driveways, passages and the territory adjacent to the production; the availability of primary fire-fighting equipment; the presence of medical kits; provision of sanitary facilities and devices (showers, walk-in closets, washbasins, etc.); compliance with the procedure for separate collection and temporary storage and delivery of production waste. To determine the degree of impact of the ICP on the ESS of the enterprise, we determined the components and identified examples of potential threats for each component of the IC (Table 01).

Table 01. The components of industrial culture of an industrial enterprise

Title of the ICP component	The level of component in ICP	Examples of potential ESS threats might be caused by the component
Technological discipline	external	Violation of the integrity, sequence and immutability of technological processes. Loss of property
Management technologies	internal	Outdated regulatory system, reduced manageability Low organizational culture
Information technologies	internal	Leakage of confidential information and disclosure of trade secrets
Performance discipline	internal	Failure to fulfill production tasks (norms, plans)
Quality system	internal	Low-quality output, marriage Lack of certificates for products (work, services)
Staff educational level	external	Low level of special education for workers
Staff professional qualification	external	Low professional level of employees Inconsistency of professional competencies of employees with the requirements for positions
Production technological support, ergonomics	external	Lack of innovation Low level of labor safety Low production efficiency
Culture and esthetic of working premises	external	Unfavorable leisure conditions Irrational organization of the working environment
Suitable wages	internal	Untimely payroll Increased labor intensity exceeding the established level
Digitalization readiness, digital culture	external	Lack of innovation, investment Physical and moral deterioration of equipment Misunderstanding by employees of changes in the production process (Industry 4.0) Sabotage of orders
Ecological culture	external	Environmental Compliance Environmental damage
Social package	external /external	Lack of a medical center Failure to fulfill stated obligations
Personal culture	personal / core	Negligent, careless attitude to the material assets of the enterprise Deliberate and unlawful acts

Source: authors.

The list of components of the ICP, given in the table, may vary depending on the characteristics of the economic entity. Detailed identification of the components depends on the effectiveness of the ESS and

on the level of specialists involved in the study of ICs in their enterprise. ICP in the economic security system performs certain functions, the characteristics of which are reflected in Table 02.

Table 02. ICP functions in the economic security system

Function	Short description
Guarding	A package of regulatory and management documents defining obstacles and restrictions in order to counter threats to the external environment, certification of safety levels (fire, environmental, industrial, etc.)
Integrating Informative	Corporate culture, focused on the formation of the personnel of the enterprise a sense of belonging to a particular team, enterprise, increasing disability, etc.
Regulative, norms setting	The system of rules and norms of behavior that defines the format of communications within the team, which allows to reduce the likelihood of conflict situations and is a guarantee of the continuous operation of the enterprise
Adaptive Value-based	Effective relationships and participation in collective events as a way to form a single value-normative system with the aim of uniting employees, overcoming conflict situations
Orienting	Monitoring the activities of the enterprise in accordance with the adopted Development Strategy
Motivating	The format of "corporate culture". Creation of a system of incentives and motivation for employees of the enterprise, the formation of team consciousness, the formation of trusting relationships,
Brand making	Translation into the external environment of a positive climate, a subculture formed at the enterprise (prestige, stability, sustainability)
Quality management	High level job performance
Customer-focusing	Legal, economic and moral responsibility to buyers, customers, customers, consumers
Partner relationship regulation	Legal, economic and moral responsibility to partners, suppliers, contractors, creditors
Social responsibility	Participation in social events, charity

Source: authors.

You can also apply the ranking of components and functions by importance, but this process is individual for each enterprise depending on its characteristics (industry, organizational form, scale, location, etc.). To make effective decisions in the field of ICP, it is necessary to determine its current state. We propose, within the framework of the ESS activity, to perform multidirectional diagnostics in order to analyze the manifestations of a particular function of the ICP, determine the significance of each component (high, medium, low). We recommend that you use a phased analytical approach in the main areas of functions and components: the external environment, marketing, management, strategy, production, personnel, competitive environment, management documentation governing the ICP (the list of directions is expanding in accordance with the scale of the enterprise). For example, in 2018, KAMAZ PJSC confidently entered a new phase of development - digitalization, the annual report for 2018 provides information on strengthening and developing the ICP (Table 03) (KAMAZ PJSC, 2019).

Table 03. Development of IPC of KAMAZ PJSC

Priorities in development and strengthening of corporate culture	ICP priorities	Related activities
<ul style="list-style-type: none"> - increase the speed of change - improving the quality of inter functional interaction - creation of a new “digital” ecosystem - development of "digital" competencies, - nurturing “digital talents” 	<ul style="list-style-type: none"> - the first wave of the program “Acceleration of digital transformation projects of KAMAZ PJSC” was implemented - a list of measures to transform the corporate culture of KAMAZ PJSC was determined - a program with the Star Trek gamification elements was implemented for the personnel reserve of the Company, the aim of which was to develop managerial competencies - A management competency model is integrated into the process of evaluating and training managers 	<ul style="list-style-type: none"> - the transition from the annual measurement of “Engagement” to pulse surveys - development of new corporate values of the Company - approval of measures for the transformation of corporate culture

Source: authors based on (KAMAZ PJSC, 2019).

Also, based on the materials of the annual report of PJSC Severstal (Severstal PSCJ, 2019) we noted that the fundamental success factor of Severstal at all levels is the ICP, which unites talented and motivated employees. The company's activities are based on employees whose dedicated work, whose skills and new ideas constantly move the company forward. It is such a culture that allows implementing a new growth strategy without risk for the core values - quality, teamwork and innovation (Table 04).

Table 04. Development of IPC of Severstal PJSC

Priorities	Key initiatives
<ul style="list-style-type: none"> - speed - solving any problems faster than competitors - high engagement - creating an attractive atmosphere in which people achieve better results faster - partnership - work with partners to achieve overall success - ESG - co-creating a sustainable environment - staff development 	<ul style="list-style-type: none"> - acceleration of investment projects - elimination of bureaucracy and barriers to decision-making to accelerate the investment process by half - Severstal Ventures - creating an additional information flow for the search and implementation of new technologies - Severstal Leadership Laboratory - training of 100 top managers in new behavioral skills, professional skills and meta-skills - Agile practice - creating a customer-oriented organization and developing collaboration between departments to accelerate market entry by four times (for example, SeverFarm) - a network of partners - the development of an ecosystem of partners inside and outside the Company to jointly create value for customers, more than 100 R&D partners around the world - comprehensive initiatives in the field of safety, environmental protection and social work

Source: authors based on (Severstal PSCJ, 2019).

As a result of the diagnostic process, a conclusion is drawn on the state of the ICP, which reflects the opinion on the quality of implementation of each IC function, weakening or strengthening the value of a particular component, changing the qualitative and quantitative characteristics of the unit, freezing or developing diagnostic objects. It should be noted that comparing the diagnostic results of the current period

relative to the previous period or with the reference value for the functions and components of the ICP is difficult due to the rapid obsolescence of technical and technological solutions in the digital economy, the absence of a generally accepted methodology for determining the potential of the IC level and the variability of the external and internal environment of the enterprise. Therefore, an ESS specialist who performed IC diagnostics should be distinguished by a deep professional judgment and knowledge of all the features of the economic entity.

Based on the conclusion, a map is made of the adjustment and improvement of the ICP in the context of digitalization, which provides information on which components and functions need to be adjusted, finalized, eliminated, improved, etc.

7. Conclusion

The development of a IC in the electronic system is a complex and controversial process. Detailed diagnostics and constant monitoring of the components of the production culture helps to identify and eliminate significant deficiencies. Our main recommendation for industrial enterprises is that you should not neglect such an important element as a IC. It must be thoroughly investigated, a map of measures to optimize the IC must be made, regularly calculate indicators that depend on the IC, and conduct a factor analysis of them. The effects of digital transformation are not immediately apparent, therefore, targets should include timelines that take into account not only the direct implementation of the strategy, but also the period for obtaining the result.

Thus, the industrial culture of an industrial enterprise, which includes: technological and performing disciplines, educational and professional level of personnel, technological preparation of production, a decent level of staff wages, the level of personal culture of employees, has a significant impact on the economic security of an industrial enterprise in the context of digitalization. The scientific approach to the transformation of ICs as a result leads to an increase in the investment attractiveness of the enterprise.

An assessment of the impact of the ICP on ESS can be carried out using the concept of evaluating the economic efficiency of investment projects. The project aimed at increasing the level of ICP, involves the costs of its implementation. And it has consequences that can be estimated in monetary terms. Comparing the project results with costs using the cash flow methodology and calculating the economic efficiency indicators will allow us to draw conclusions about the effectiveness of the decisions made.

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