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RESEARCH AND ANALYSIS ON THE INNOVATIVE ATTITUDE IN INDUSTRIAL ENTERPRISES IN THE CONDITIONS OF CRISIS

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Abstract: For the industrial enterprises, innovation policy is of crucial importance for the successful development of their activities and for increasing competitiveness. This leads to the need to create prerequisites for the implementation of effective innovative activities. For manufacturing enterprises operating in high-tech industries and activities, this is a mandatory condition for success, since the innovation process is characterized by strong dynamics and broad scope in the spectrum of technological discoveries. The purpose of this paper is to conduct a study and analysis of the investment attitudes of industrial enterprises in times of crisis. To achieve the goal, it is necessary to collect, summarize and analyze the information and derive general trends for industrial and machine-building enterprises and to draw recommendations for possible corrective actions. To achieve the goal, the comparative analysis method was used, comparing the collected data through the studied years, on the basis of which the author attempts to derive trends, conclusions and recommendations for the future activities of industrial enterprises. The limitations in the study are reduced to the fact that the author himself sets the boundaries of his research and chooses only engineering enterprises, since innovation management is a vast scientific territory, and the volume of a scientific paper is too short.

Keywords: innovation activity, innovation attitude; industrial enterprise.

INTRODUCTION

The role of innovation is significant and for many industrial enterprises it is even decisive for the successful development of their activities, as well as for increasing their competitiveness. This leads to the need to pay special attention in the process of company planning and to create all the necessary prerequisites for the implementation of effectively innovation activity. For manufacturing and machine-building enterprises operations in high-tech industries and activities, this is a prerequisites for success, since the innovation process is characterized by strong dynamics and broad coverage in the spectrum of technological discoveries.

The new corporate model, the expansion of cooperation between competitors, suppliers and consumers, the progress of informatics, the automation of production and management based on the widespread use of computing equipment and telecommunications, change traditional ideas about the boundaries of companies, destroy their closedness and reduce the effectiveness of those of them that are based on structures that ensure their encapsulation.

A number of factors such as the globalization of business, the formation of strategic alliances, networks of companies, information networks, etc. allow to create an optimal organization of processes in the industrial enterprise, in which each function and process is implemented at a global level, which is impossible to achieve in a separate enterprise - large, medium or small. As a result, higher production efficiency is achieved, an atmosphere of mutual trust and mutual responsibility arises. Partnerships are now less formal. Companies join forces to use specific market opportunities that do not exist for companies operating independently.

MATERIALS AND METHODS

The purpose of this paper is to conduct a study and analysis of the investment attitudes of industrial enterprises in times of crisis. To achieve the goal, it is necessary to:

1. Collect information, theoretical and empirical, which should be well systematized and summarized.
2. Analyze the collected information and derive general trends for industrial and machine-building enterprises.
3. Make recommendations for taking possible corrective actions regarding the innovation policy of the industrial enterprise and based on the conclusions, make plans and programs for future opportunities in this area.

To achieve the goal, the method of comparative analysis was used, comparing information from the conducted research and observations of the processes in industrial enterprises during the years of study, on the basis of which the Author tries to derive trends, conclusions and recommendations for the future activities of industrial enterprises.

The limitations of the study are reduced to the fact that the Author himself defines the boundaries of his research and selects only mechanical engineering enterprises, since innovation management is a vast scientific territory, and the volume of a scientific article is too short.

The aggressive business environment and increased competition have placed new demands on the development of industrial enterprises. The issue of adapting management structures to the new realities of globalizing business, of the functions of unification or division of enterprises, is on the agenda.

RESULTS

In this complex and rapidly changing business environment, every industrial enterprise must find its own path to development and success, building its own winning strategy, trusting its experience and sense, the innovation and creativity of the human capital it has. As we have already mentioned, modern industrial enterprises are decentralized, informal, with a minimum number of hierarchical levels. They build an organizational culture that encourages independent thinking, risk-taking and the acquisition of new knowledge.

The National Statistical Institute (NSI) uses the Eurostat definition of innovative organizations, according to which innovative organizations are those that provide the market with new or significantly improved innovative products (services or goods) and/or innovative processes, including methods for providing services or delivering goods. [NSI, 2025]

In 2004, the NSI conducted a survey of innovative firms in Bulgaria for the first time. According to this survey, the share of innovative firms was only 11.4% of the total number of operating enterprises, or ¼ of the share of innovative enterprises in the EU-15 in 2001. [OP, 2021]

The study also indicates that Bulgarian entrepreneurs generally have a low innovation culture. Low labor costs were a major competitive advantage of Bulgarian business organizations, but the change in the business environment requires them to reorient towards innovation and improve the efficiency of their internal company processes to preserve their specific advantages. This change will require the active involvement of the state and the non-governmental sector. According to data from a study conducted by Eurobarometer, Bulgaria is one of the countries in which a large part of the population accepts innovations with prejudices (28%) or completely rejects them (20%).

Figure 1 presents systematized information year by year on the share of innovative companies compared to the total number of operating enterprises in Bulgaria.

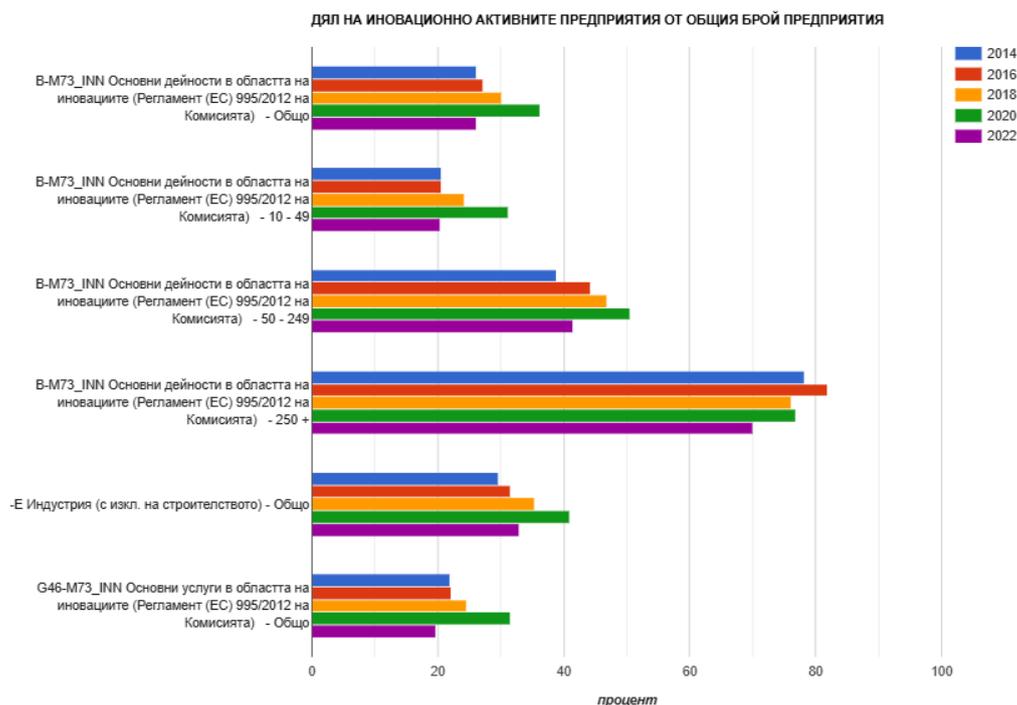


Figure 1. Share of innovatively active enterprises out of the total number of enterprises.

Source: NSI (<https://infostat.nsi.bg/>)

According to the monitoring of business trends in industry in May 2025, the overall business climate indicator decreased by 1.7 points compared to April (from 21.5% to 19.8%) as a result of the less favorable business climate in industry and retail trade. The studied trends show that the composite indicator “business climate in industry” decreased by 1.1 points (from 19.3% to 18.2%) (see Fig. 2), which is due to the reserved assessments of industrial entrepreneurs about the current business situation of industrial enterprises. At the same time, however, some optimism is observed in their forecasts for the business situation (see Fig. 3) and production activity in the coming months [1].



Figure 2. Business climate in industry
Source: NSI (<https://infostat.nsi.bg/>)

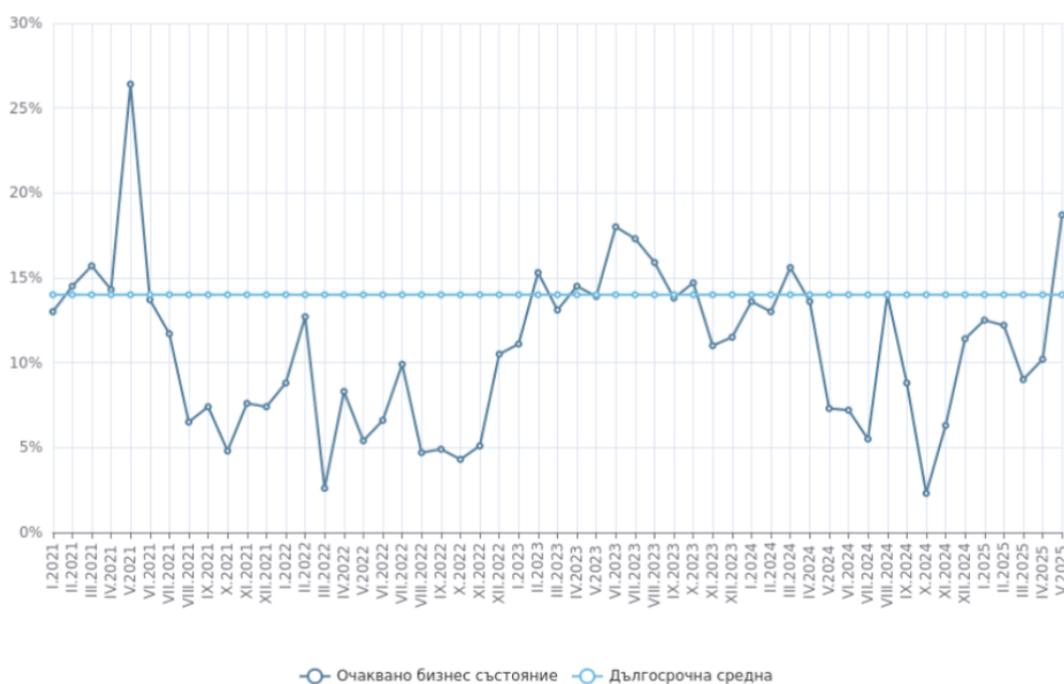


Figure 3. Expected business conditions in the industry over the next six months.
Source: NSI (<https://infostat.nsi.bg/>)

Figure 4 presents the share of employees in innovatively active enterprises compared to the number of employees in all enterprises. It is noteworthy that the total percentage of employees in innovatively active enterprises decreased by 7.1%, which coincides with the difficult conditions and consequences of the crisis caused by the Covid pandemic. The most serious decrease is in enterprises with up to 49 employees - 11%, and the least in enterprises with over 250 employees - almost 7%.

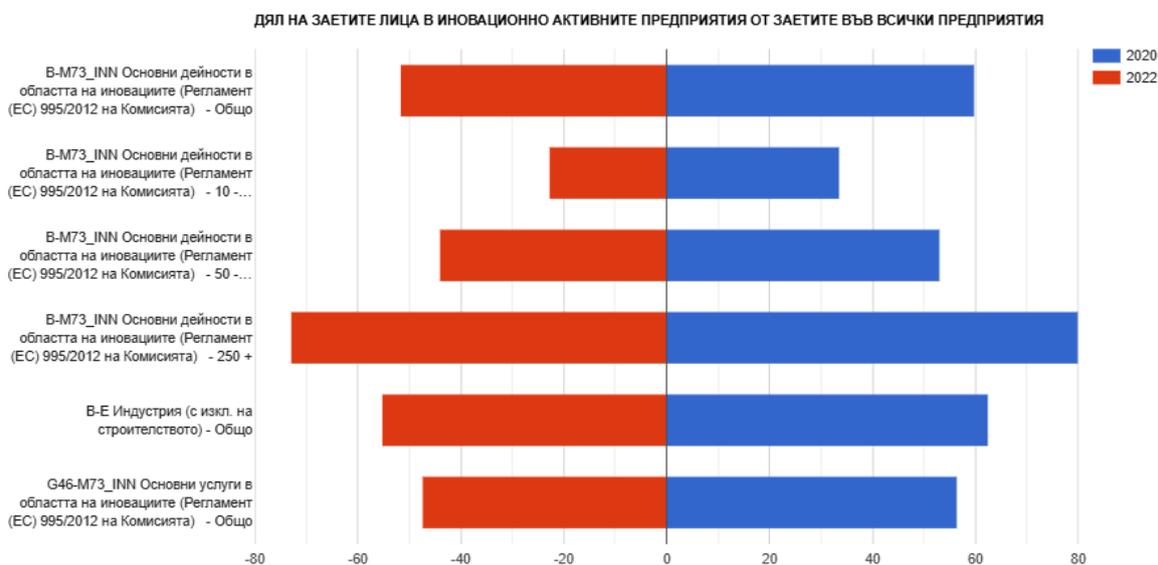


Fig. 4. Share of employees in innovatively active enterprises out of those employed in all enterprises

Source: NSI (<https://infostat.nsi.bg/>)

Figure 5 compares the share of turnover of innovatively active enterprises in the turnover of all enterprises at the beginning (2020) and at the end of the period of the crisis and the Covid pandemic (2022). The total percentage of the share of turnover of innovatively active enterprises decreased by 6.5% compared to the turnover of all enterprises. This decrease was greatest in enterprises with a staff of up to 49 workers – 12.6%, and the smallest – 3.7% in enterprises with a staff of over 250 employees.

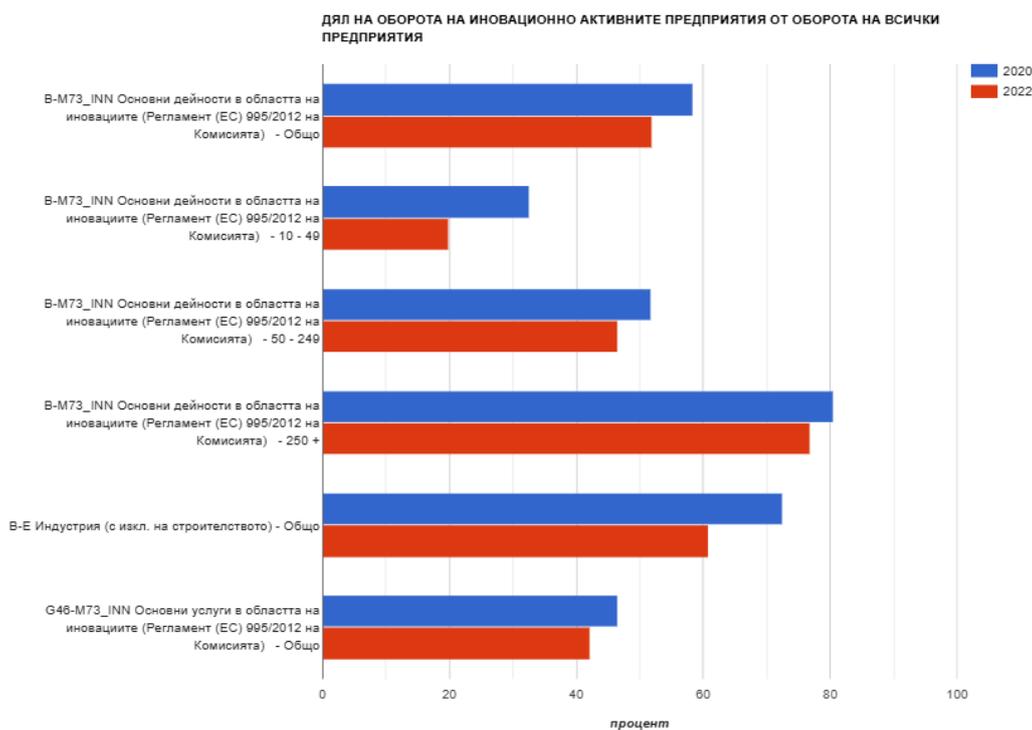


Figure 5. Share of turnover of innovatively active enterprises in the turnover of all enterprises.

Source: NSI (<https://infostat.nsi.bg/>)

Stimulating product innovation, the search for new markets, approaches and technologies always leads to increased competitiveness and is part of the success of every industrial enterprise. Chart 6 presents the share of enterprises that have implemented new or improved products that can be defined as new to the market, out of the total number of enterprises. In 2020, there was a trend of increasing enterprises that implemented new or improved products by about 2.5%, but unfortunately it could not be maintained during the Covid crisis and even the decline is much more serious than the positive trend and the values are far below the levels of 2018. The most noticeable decline is in enterprises with more than 250 employees - 6.7%, and the smallest in enterprises with up to 49 employees - 4.2%.

The share of turnover generated by new or improved products, new to the market, in the total turnover of enterprises is a very clear indicator of the complex business environment during the Covid pandemic and the crisis that has begun in Ukraine. Its values are shown in Chart 7. The decline in 2022 is serious and worrying, since for enterprises with more than 250 employees the decrease is 2.4% from 3.8 to 1.4%. It is unpleasant to note the fact that in all three groups of industrial enterprises, divided according to the indicator "number of employees", the regression is so serious that the levels of its values correspond to the values before 2012.

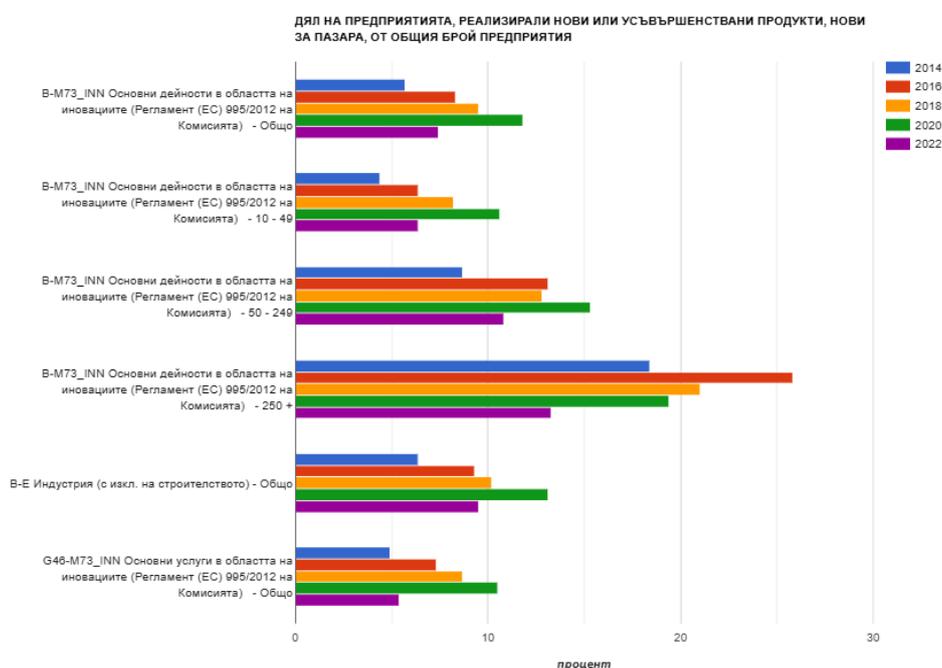


Figure 6. Share of enterprises that have implemented new or improved products, new to the market, out of the total number of enterprises.

Source: NSI (<https://infostat.nsi.bg/>)

The most positive and lasting trend can be defined as the increase in the share of enterprises with innovation cooperation out of the total number of innovation-active enterprises. The impact of the Covid crisis is almost imperceptible and the values for enterprises with 50 to 249 employees have increased by 9.2%. And the smallest increase of 7% is for industrial enterprises with more than 250 employees.

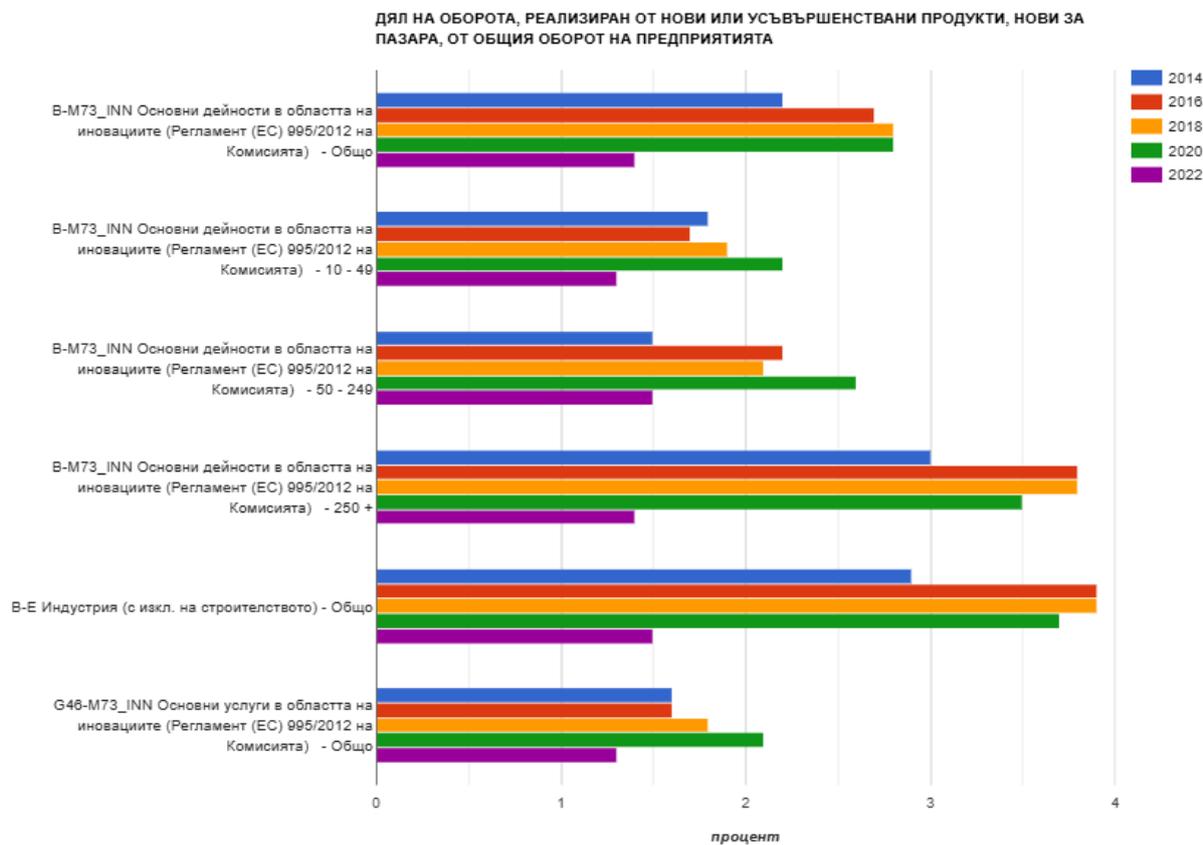


Figure 7. Share of turnover generated by new or improved products, new to the market, out of the total turnover of enterprises.

Source: NSI (<https://infostat.nsi.bg/>)

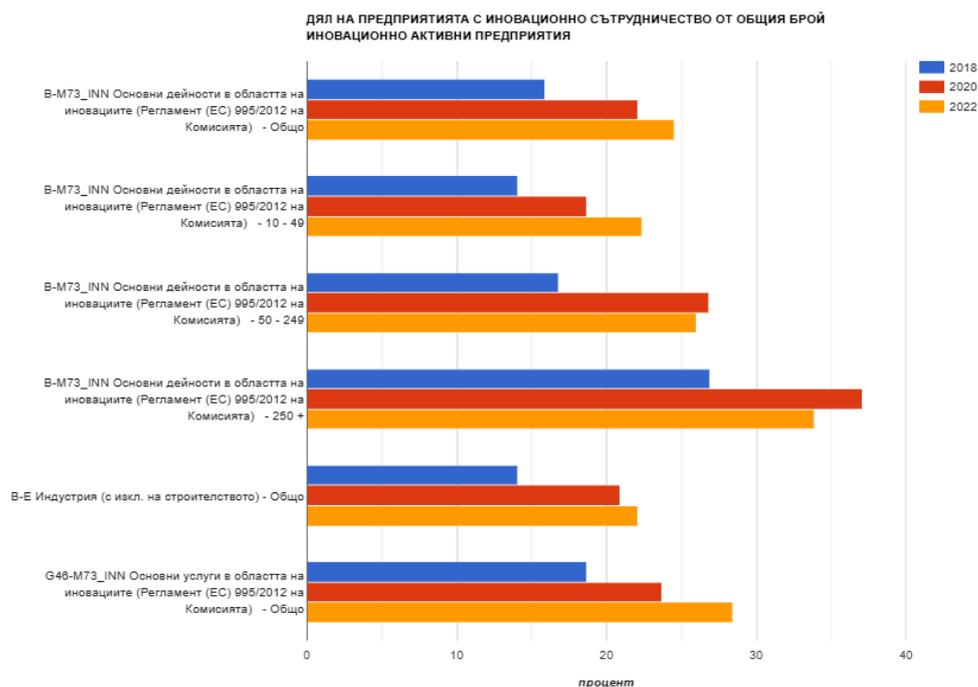


Figure 8. Share of enterprises with innovation cooperation out of the total number of innovation-active enterprises.

Source: NSI (<https://infostat.nsi.bg/>)

Change in innovative industrial enterprises comes to bringing new and better job opportunities, not just because enterprises need to change. They prefer to create their future themselves rather than wait for the future to come and provoke a reaction. In modern industrial enterprises, change is a continuous process, carried out in a flexible way. In practice, the state of the present pushes them forward and stimulated by their strategy and vision, they face the future.

As a result of the research conducted on the topic and summarizing the existing knowledge to date regarding innovation policy in industrial enterprises, some main trends and specific characteristics of innovative industrial organizations can be identified [Zlateva-Petkova, 2019], such as:

✓ The future belongs to innovative industrial organizations, to those industrial enterprises that seek change, development and new technological discoveries and solutions. These organizations are tolerant of failures and value differences. Their communication is open, and the style of communication imposed between employees requires a high degree of trust and respect for other people's opinions.

✓ Innovative industrial enterprises build their vision by focusing on their long-term goals and results. They do not allow the past and history to limit their capabilities and shape their future with the help of the creativity and talent of their people. These manufacturing enterprises have the ability to learn from experience and use the accumulated knowledge without burdening them and predetermining how to create their vision for the future.

✓ Innovative industrial enterprises learn from their most demanding customers. By understanding consumer requirements and how products are used, these organizations drive innovation in their products and increase their competitiveness. They are constantly engaged in the search for new markets, new products, new technologies.

✓ Innovative industrial enterprises focus on content. Traditional organizations follow rules and established norms. Organizations oriented to results are always creative in finding the right solutions and actions. Creativity and innovation are the hallmarks of innovative industrial enterprises and create an advantage when they turn ideas into work and results, rather than when they follow uniform work rules and formal work processes.

✓ Creativity is encouraged in every way in innovative industrial enterprises. It is embedded in every action, decision or product. Creative employees stand out as an example, and managers are always ready to support new ideas and give the necessary recognition to the creative temperament.

✓ The organizational structure in innovative industrial enterprises is built on a team principle. Creativity is defined as an individual quality, but there are creative teams that have several creative individuals with power or influence within the team.

✓ Innovative industrial enterprises practice open communication and avoid formal procedures and processes. Information flows freely at all levels of the organization. This allows the expression of the individual personality, reduces the influence or ignores traditional structures, minimizes bureaucracy, accelerates informal group interactions and supports the access of project teams to people and organizational resources.

✓ Innovative industrial enterprises have a more special attitude towards conflicts. They do not perceive them as a negative phenomenon, since there are disagreements between ideas, not between people. Moreover, innovative industrial enterprises prefer intelligent disagreement to passive agreement, since the former implies a deeper understanding of the problems than the latter.

✓ Relationships in innovative industrial enterprises are extremely important, since they determine their creative power, not structure. The focus in these manufacturing enterprises is on acquaintance and informal relations, since on this basis the main part of the work is done.

✓ In order to see different aspects of the same problems or solutions, innovative industrial enterprises use individuality and diversity.

✓ Innovative industrial enterprises are lenient on workplace fun. They believe that when there is creativity in organizations, people are engaged, animated, empathetic, and empowered to think. Creativity requires activity, as it is an active process in itself.

✓ In innovative industrial enterprises, imagination and curiosity are encouraged and rewarded. Working smarter is valued more than working harder and completely under instructions and commands.

✓ Innovative industrial enterprises do not trust traditional and universal solutions.

✓ Innovative industrial enterprises avoid punishment because when people are afraid, they tend to close in on themselves and start doing safe things, not showing initiative and creativity, but doing exactly what is assigned to them. Creativity cannot manifest itself because it requires freedom, not fear of mistakes and punishment. For this reason, innovative industrial enterprises do not have a negative attitude towards mistakes, which are perceived as a reasonable risk and part of the creative process. This is so, since not all creative ideas and initiatives can be implemented and successful. The negative reaction in such cases, however, becomes a bureaucratic brake on organizational growth, since in a moment of fear of administrative punishment, people do not show their creative abilities and talents.

CONCLUSIONS AND RECOMMENDATIONS

Innovations are a major factor in improving the activities of industrial enterprises in a number of areas [Zlateva-Petkova, 2019]:

- Ensuring a more complete compliance of the products offered by industrial enterprises with the needs of customers. An indisputable fact is the growing importance of new products due to the constantly and rapidly changing requirements and needs of customers. In turn, the products themselves also have the property and ability to modify and confirm the emergence of new needs and requirements of consumers.

- Offering products with the necessary and guaranteed quality. One of the ways to improve quality is precisely the modification of existing ones and the creation of new products that meet the requirements and expectations of consumers to the maximum extent.

- Commercialization of the created new and improved technologies. In practice, this means the sale of intellectual property that industrial enterprises have patented after the scientific developments and technological innovations. It is carried out in the form of the sale of licenses for the use of the relevant patents.

- Cost savings. In many cases, among the reasons for seeking innovation is cost reduction. Depending on innovation, it is very often observed that the creation of new original products and new technologies, as well as the improvement of existing ones, lead to a significant reduction in production costs, which in turn leads to a reduction in the price of the final product. The attractive and affordable price of the offered products or services contributes to the competitiveness of the business organization in the relevant market.

- Full use of the technological potential of industrial enterprises. The development of new products and technologies contributes to the commitment, improvement of qualifications and maintenance of motivation of personnel engaged in scientific research and development activities on the one hand, as well as to the acceleration of the return on investment in this activity.

- Full use of the production capacity of the industrial enterprise. A competitive product, regardless of whether it is newly created or modified, always leads to an increase in sales, which in turn is a prerequisite for a fuller load on production capacities in an effort to produce the necessary quantities.

Thus, innovations, including the development and adoption of new products and technologies, are a major factor in improving and developing the activities of industrial enterprises and increasing their competitiveness. Moreover, they are a prerequisite for establishing a connection between the current sales and profits of industrial enterprises and the growth of their potential, sales and profits in the future.

LITERATURE

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