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DETERMINATION OF THE IMPACT OF INNOVATIVE TECHNOLOGIES IN THE SYSTEM OF STRATEGIC MANAGEMENT OF CORPORATE SOCIAL RESPONSIBILITY

The object of research is the process of using innovative technologies in the system of strategic management of social responsibility of enterprises. The main problem solved during the research was the need for a more effective integration of the principles of social responsibility in the business strategy, which will help enterprises to adapt to the global challenges and demands of modern society. The study of new technological approaches in this area allowed to identify the most effective tools for increasing transparency, responsibility and sustainable development of companies. As a result of the conducted research, the content of the concept «innovative technologies in the system of strategic management of social responsibility of enterprises» was clarified, which is proposed to be understood as a modern approach to the integration of technological innovations into strategic management, aimed at improving the social indicators of the enterprise. These technologies are found to include a wide range of tools such as Big Data, Artificial Intelligence (AI), Internet of Things (IoT), Blockchain, and others that help businesses effectively implement and monitor social programs and initiatives. It is substantiated that the use of innovative digital technologies in the system of strategic management of social responsibility of enterprises opens wide opportunities and generates significant advantages. Namely, increasing transparency and openness; optimization of resources and costs; increasing internal efficiency; strengthening of reputation and brand; automation of enterprise processes; innovativeness and competitive advantages; stimulating innovation. A model for determining the relationship between the level of profitability of enterprises by type: large, medium, and small enterprises and by the number of employees and their labor costs is proposed, which allows to establish the required number of employees for each type of enterprise. This enables the enterprise to function effectively, reducing labor costs, but not reducing the positive impact on supporting the social sector of the population, creating jobs and remaining a socially responsible enterprise. The possibility of using the latest digital technologies in the social responsibility management of enterprises is summarized.

Keywords: social responsibility, strategic management, innovative technologies, information technologies, digitalization of strategic management.

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1. Introduction

In the conditions of the latest global transformations of business, the development of a system of strategic management of social responsibility of enterprises becomes critically important. Global economic, environmental and social challenges require enterprises not only to strive for profitability, but also for sustainable development and a positive impact on society. Climate change, growing social inequality, global pandemics and technological shifts are forcing businesses to rethink their management approaches. Integrating social responsibility into business strategy helps not only to reduce risks, but also to open up new opportunities for sustainable growth and innovation. Enterprises that actively implement

the principles of social responsibility are able to increase their reputation, attract more loyal customers and talented employees. In addition, such enterprises are becoming more attractive to investors, who increasingly focus on the principles of sustainable investment. Strategic management of the enterprise's social responsibility contributes to the creation of added value and strengthening of competitive advantages in the market. It also allows businesses to actively engage in solving global problems, contributing to a more sustainable and just future. Therefore, the development of a system of strategic management of social responsibility is an integral part of successful business in the modern world.

At the same time, the use of the latest innovative technologies becomes an urgent necessity in the system of strategic

management of social responsibility of enterprises. Such technologies as: blockchain, Big Data, artificial intelligence (AI), Internet of Things (IoT) and others provide new opportunities for increasing the efficiency and transparency of the social responsibility policy of enterprises. They enable businesses to better monitor and assess their environmental and social impacts, optimize resources and reduce operational costs by replacing labor with technology and automating business processes. The use of these technologies contributes to the creation of more sustainable supply chains and increases trust among stakeholders, including consumers, investors and employees of enterprises. This not only increases competitiveness, but also contributes to the long-term sustainability of enterprises.

Thus, a thorough study of the scientific issues of the development of innovative technologies in the system of strategic management of the social responsibility of enterprises will allow the formation of a more sustainable and competitive business model of the development of enterprises in the future.

The scientific problems of various aspects of the application of innovative approaches to ensure the strategic development of social responsibility at enterprises in the conditions of modern challenges was and remains at the center of scientific research of the world's leading scientists. At the same time, scientific approaches to certain issues show significant ambiguity.

Thus, in the scientific paper [1] problematic issues of integrating social responsibility of business into the strategy of enterprise management were highlighted. The author provides a typology of directions for improving the relationship between social responsibility and strategic management. Recommended tools of social responsibility are presented. At the same time, the author of the work [2] considers innovative strategies of social responsibility of business and built an innovative model of sustainable development of the company, based on which the relationship between the innovative concept of social responsibility, sustainable development of the company and corporate sustainability was investigated. Innovative management methods in the socially oriented system of the enterprise were at the center of scientific research of the author of the work [3], the problems that the enterprise may face when implementing innovative management methods in the socially oriented system, as well as measures to avoid or prevent them, were identified. This study made it possible to better understand the advantages and potential of innovative management methods in a socially oriented system of enterprises. The work [4] defines the essence and structure of organizational support for strategic management of corporate social responsibility. A model of the organizational and management structure for the implementation of strategic management of corporate social responsibility is proposed, which involves the introduction of a new unit at the functional level – the department of corporate social responsibility. The authors of the work [5] investigate social responsibility as a component of business development strategy at Ukrainian enterprises.

In the scientific publication [3] it is clearly defined that the organization should be concerned not only with profit. It should also be concerned with the social interests and welfare of the surrounding community. To ensure the continued protection of the welfare of society, the government pays more attention to corporate social responsibility in the business sector [6]. At the same time, [7] considered how social responsibility and strategy can and should be combined

in business organizations. In [8] it is proposed to form an integrative perspective of strategic corporate responsibility.

Such ambiguity of approaches requires further in-depth research to create a balanced and justified methodology. As a result, the study of this problem is key to the development of effective strategies for managing the social responsibility of enterprises in the modern world of innovative digital technologies.

The aim of research is to determine the impact of innovative technologies in the system of strategic management of social responsibility of enterprises to ensure their sustainable competitive positions in modern market conditions.

2. Materials and Methods

The need to apply a strategic approach to the formation of corporate social responsibility at the enterprise is becoming more and more relevant in the modern business environment. Society and interested parties expect from enterprises not only economic results, but also an active contribution to solving social and environmental problems [9]. A strategic approach to social responsibility allows enterprises to systematically integrate social and environmental aspects into their business strategy, which contributes to long-term success and sustainable development [10, 11].

This approach helps reduce the risks associated with reputational losses and regulatory requirements, thereby ensuring the stability and competitiveness of the enterprise. In addition, strategically oriented social responsibility increases the involvement of employees, their loyalty and productivity, which positively affects the internal climate of the enterprise. It also helps to strengthen relations with customers and partners, as it demonstrates the responsibility and reliability of the enterprise [12, 13].

However, the different understanding of corporate social responsibility by the top management of companies, the inconsistency of actions and the lack of mechanisms for purposeful management of socially responsible behavior create an unstable platform for the further development of enterprises. Social responsibility is often defined only by certain criteria, such as timely payment of taxes, regular dividend payments, provision of a social package, as well as certain charitable events and promotions [7]. However, as shown by various studies in the field of social responsibility, society expects companies to conduct business responsibly in general, ensure social development of society, create jobs and working conditions, and not just pay taxes.

Among the main stages of development and implementation of the strategy of social responsibility, the following are distinguished:

Stage 1. Analytical work (analysis of the internal and external environment of the enterprise). At this stage, it is necessary to carry out a diagnosis of the company's activities and the existing portfolio of assets, possible directions of investment of funds, as well as an analysis of the development of the external and internal operating environment. These works make it possible to determine the position of the investigated enterprise in the «industry and market coordinate system», to identify its strengths and weaknesses, and to indicate possible directions for the development of socially responsible behavior.

Stage 2. Determination of strategic development alternatives (formulation of scenarios for the development of social responsibility at the enterprise). Taking into account the

results of the strategic analysis, the mission of the enterprise is determined, as well as medium-term and long-term goals, on the basis of which alternative target programs are developed, which provide for interconnected blocks of activities to achieve the set goals, thus defining a specific development strategy.

Stage 3. Evaluation and selection of the optimal strategy for the development of social responsibility of the enterprise. The formed probable scenarios of the enterprise's development must be analyzed according to the proposed criteria by which the effectiveness of each block of social programs (scenarios) of the enterprise is evaluated.

Stage 4. Official documentation of the chosen strategy and appointment of persons responsible for its implementation and achievement of the developed performance indicators.

Stage 5. Implementation of measures included in target programs of corporate social responsibility approved by the company's strategy.

Stage 6. Compilation of intermediate results of each stage of strategy implementation and assessment of the results of the implementation of target programs, making the necessary adjustments taking into account changes in the external and internal environment of the enterprise.

The development of a social responsibility strategy should involve the implementation of activities along two main vectors:

- 1) internal (implementation of social activity at the micro level within the enterprise);
- 2) external (implementation of social responsibility strategy activities at the macro level in interaction with the external environment).

Internal social programs relate to personnel development, health care and creation of safe working conditions, solve the issue of socially acceptable restructuring of the enterprise and increase of corporate efficiency. External social programs are aimed at the development of the local community, maintaining honest business and environmental activities, as well as strengthening the reputation and image of the enterprise [4, 14].

The process of digitization significantly affects the transformation of the strategic approach to the management of social responsibility of enterprises. The implementation of digital innovation technologies allows enterprises to collect and analyze large volumes of data about their social impacts, which ensures more accurate planning and monitoring of further social development programs. In addition, digital platforms simplify communication with employees, customers and partners, allowing more effective implementation and promotion of socially responsible initiatives [15].

Automation of processes and the use of artificial intelligence (AI) help to optimize resources and reduce costs, while increasing the effectiveness of activities in the field of corporate social responsibility. Technologies such as blockchain ensure the reliability and authenticity of data, which strengthens the company's reputation. Therefore, digitalization becomes a key factor in the development of modern corporate social responsibility management strategies, contributing to their adaptation to new challenges and opportunities.

The use of innovative technologies in the system of strategic management of social responsibility of enterprises opens up wide opportunities and generates significant advantages, including:

- *increasing transparency and openness*, which allows the enterprise to collect, analyze and publish data about

its social and environmental initiatives in real time. This helps to increase the level of transparency in the company's activities before interested parties;

- *effective risk management*, which allows to automate the processes of monitoring and analysis of risks related to social responsibility. This helps to prevent potential problems and ensure a quick response to challenges;
- *optimization of resources and costs*, which allows enterprises to allocate resources more efficiently, reduce costs and increase labor productivity, while reducing dependence on the workforce;
- *increasing internal efficiency*, which simplifies the internal management of projects and initiatives in the field of social responsibility, ensuring better coordination and communication between the company's departments;
- *strengthening reputation and brand*, which allows businesses to create more authentic and evidence-based stories about their social responsibility, which contributes to a positive image and attracting customers and investors;
- *innovativeness and competitive advantages*, which allows for faster adaptation to changing market conditions and consumer requirements, obtaining competitive advantages;
- *stimulation of innovations*, which contributes to the creation of new, more effective and sustainable enterprise management strategies.

Therefore, innovative technologies in the system of strategic management of social responsibility of enterprises contribute to the integration of technological innovations aimed at improving the social indicators of the enterprise.

Possibilities of using innovative technologies in the strategic management of social responsibility of enterprises are shown in Fig. 1.

The proposed possibilities of using modern innovative technologies in the strategic management of the social responsibility of the enterprise allow to increase transparency and openness in the implementation of social programs. And also adapt to the changing conditions of the external environment and demonstrate their commitment to achieve sustainable development and contribute to a positive impact on society and the environment.

Evaluating the effectiveness of strategic management of social responsibility includes various indicators that reflect the effectiveness and impact of the company's social programs on stakeholders and society in general. Some key indicators for evaluating processes in this direction include:

1. *Stakeholder satisfaction*. Evaluation of the satisfaction of consumers, employees, investors and other interested parties with social responsibility programs.
2. *Environmental indicators*. Measuring the level of emission reduction, optimizing the use of resources, implementing green technologies and renewable energy.
3. *Ethical standards and corporate culture*. Assessment of the company's compliance with ethical standards of management and culture, including openness, transparency and responsible corporate behavior.
4. *Cost effectiveness*. Measuring the impact of social programs on the company's financial results, labor costs, reducing energy costs, waste and other operating costs.
5. *Innovativeness and technological modernization*. Evaluation of the implementation of innovative technologies in social programs that contribute to the improvement of development efficiency.

Possibilities of using innovative technologies in the strategic management of social responsibility of enterprises		
→	Big Data	Analysis and prediction of trends in consumer behavior to establish precise social initiatives. Identification of key issues to implement appropriate fixes
→	Artificial Intelligence (AI)	Automation of internal processes. Using forecasting systems to assess the impact of decisions on social and environmental indicators
→	Blockchain	Ensuring traceability of supply chains and socially responsible production
→	Internet of Things (IoT)	Monitoring of environmental indicators and resource consumption for their optimization. Improving monitoring of working conditions and ensuring worker safety. Environmental impact analysis through data collection
→	Virtual Reality (VR)	Training and education of personnel on issues of social responsibility in immersive virtual environments. Visualization of social initiatives to promote and increase stakeholder interest
→	Augmented Reality (AR)	Application for interactive training of employees on the impact of the enterprise on the local environment and communities. Use for creating interactive materials and visualization of social projects
→	Cloud technologies	Providing access to social responsibility data from any device and remote collaboration to improve communication efficiency
→	Cyber security	Protecting data about social responsibility from cyber attacks and ensuring the confidentiality of stakeholder data

Fig. 1. Possibilities of using innovative technologies in the strategic management of social responsibility of enterprises

These indicators allow enterprises to systematically assess and report on their activities in the field of social responsibility, taking into account the impact on various aspects of business and society.

One of the directions of the social responsibility of enterprises is the creation of jobs and the provision of proper working conditions and the level of remuneration, which in the final case should ensure the appropriate level of profitability of enterprises. According to [16], it is possible to analyze the number of enterprises by type: large, medium, small enterprises; number of employees by types of enterprises; salary expenses; the level of profitability by type of enterprises for 2010–2022 in Ukraine, which is shown in Table 1.

In order to determine the expediency of using innovative technologies (automation of processes) or labor force (salaried employees), it is possible to build a mathematical model based on regression analysis. This model will provide an opportunity to determine the optimal number of employees by type of enterprise (large, medium, small) and their labor costs with the level of profitability that the enterprise receives. For this, it is possible to use the linear regression formulas:

$$f_i(x_i, y_i, u_i) = A + A_1 \cdot x_i + A_2 \cdot y_i + A_3 \cdot u_i,$$

where A, A_1, A_2, A_3 – unknown regression coefficients; f_i – level of profitability, respectively (f_1 – large enterprise; f_2 – medium enterprise; f_3 – small enterprise); x_i – number of enterprises by type: large (x_1), medium (x_2), small enterprises (x_3); y_i – number of employees by types of enterprises: large (y_1), medium (y_2), small enterprises (y_3); u_i – labor costs: large (u_1), medium (u_2), small enterprises (u_3).

Table 1

Indicators for assessing the level of social responsibility of enterprises

Indicators	Years												
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1. Types of enterprises (thousand units):													
– large (x_1);	0.58	0.65	0.69	0.65	0.49	0.42	0.38	0.39	0.44	0.51	0.51	0.61	0.49
– average (x_2);	20.9	20.7	20.2	18.8	15.9	15.2	14.8	14.9	16.0	17.7	17.6	17.5	14.7
– small (x_3);	357.2	354.2	344.0	373.8	324.6	327.8	29.1	32.2	33.9	36.2	35.5	35.2	24.6
2. The number of employees at enterprises by types of enterprises (persons):													
– large (y_1);	2.4	2.4	2.5	2.4	1.9	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.4
– average (y_2);	3.4	3.3	3.1	3.0	2.7	2.6	2.6	2.6	2.7	3.0	3.1	2.9	2.6
– small (y_3);	2.0	2.0	1.9	1.9	1.6	1.7	1.5	1.6	1.6	1.6	1.6	1.7	1.4
3. Labor costs (billion UAH):													
– large (u_1);	86.6	105.1	123.7	128.1	113.7	121.9	143.6	177.09	233.2	284.5	299.1	358.8	303.4
– average (u_2);	79.3	90.1	108.1	105.4	107.6	126.8	159.5	212.5	267.3	340.9	383.7	457.9	417.4
– small (u_3);	27.7	37.0	43.0	44.5	40.1	46.9	57.6	83.07	101.03	121.4	137.1	148.7	140.3
4. The level of profitability of the operational activities of enterprises (%):													
– large (f_1);	3.9	6.2	5.2	5.0	0.7	4.0	8.8	11.2	9.1	10.3	8.3	17.1	5.2
– average (f_2);	5.0	6.0	5.0	3.2	–3.6	0	6.9	7.3	7.0	10.0	5.4	7.6	2.4
– small (f_3);	1.8	4.2	4.1	2.2	–17.9	–4.2	5.2	6.5	8.3	10.7	3.9	15.0	1.2

Note: the buy/sell rate of USD at the time of calculation was in 2010 – 7.96/7.98 UAH; in 2011 – 8.01/8.05 UAH; in 2012 – 8.03/8.07 UAH; in 2013 – 8.23/8.29 UAH; in 2014 – 11.0/11.5 UAH; in 2015 – 24.4/25.4 UAH; in 2016 – 25.7/26.1 UAH; 2017 – 26.6/26.8 UAH; in 2018 – 27.2/28.05 UAH; in 2019 – 23.7/24.6 UAH; in 2020 – 27.8/28.1 UAH; in 2021 – 27.12/27.5 UAH; in 2022 – 39.4/40.4 UAH

To determine the parameters of the multivariate model, the assumptions about the normal nature of the errors and the absence of heteroskedasticity were made. In this case, the evaluation parameters can be obtained using the matrix equation for each type of enterprise:

– A_1 for large enterprises (x_1):

$$A_1 = \begin{bmatrix} n & \sum_{i=1}^n x_{1i} & \sum_{i=1}^n y_{1i} & \sum_{i=1}^n u_{1i} \\ \sum_{i=1}^n x_{1i} & \sum_{i=1}^n (x_{1i})^2 & \sum_{i=1}^n (x_{1i} \cdot y_{1i}) & \sum_{i=1}^n (x_{1i} \cdot u_{1i}) \\ \sum_{i=1}^n y_{1i} & \sum_{i=1}^n (x_{1i} \cdot y_{1i}) & \sum_{i=1}^n (y_{1i})^2 & \sum_{i=1}^n (y_{1i} \cdot u_{1i}) \\ \sum_{i=1}^n u_{1i} & \sum_{i=1}^n (x_{1i} \cdot u_{1i}) & \sum_{i=1}^n (y_{1i} \cdot u_{1i}) & \sum_{i=1}^n (u_{1i})^2 \end{bmatrix}^{-1} \times \begin{bmatrix} \sum_{i=1}^n f_{1i} \\ \sum_{i=1}^n (x_{1i} \cdot f_{1i}) \\ \sum_{i=1}^n (y_{1i} \cdot f_{1i}) \\ \sum_{i=1}^n (u_{1i} \cdot f_{1i}) \end{bmatrix}; \quad (1)$$

– A_2 for medium enterprises (x_2):

$$A_2 = \begin{bmatrix} n & \sum_{i=1}^n x_{2i} & \sum_{i=1}^n y_{2i} & \sum_{i=1}^n u_{2i} \\ \sum_{i=1}^n x_{2i} & \sum_{i=1}^n (x_{2i})^2 & \sum_{i=1}^n (x_{2i} \cdot y_{2i}) & \sum_{i=1}^n (x_{2i} \cdot u_{2i}) \\ \sum_{i=1}^n y_{2i} & \sum_{i=1}^n (x_{2i} \cdot y_{2i}) & \sum_{i=1}^n (y_{2i})^2 & \sum_{i=1}^n (y_{2i} \cdot u_{2i}) \\ \sum_{i=1}^n u_{2i} & \sum_{i=1}^n (x_{2i} \cdot u_{2i}) & \sum_{i=1}^n (y_{2i} \cdot u_{2i}) & \sum_{i=1}^n (u_{2i})^2 \end{bmatrix}^{-1} \times \begin{bmatrix} \sum_{i=1}^n f_{2i} \\ \sum_{i=1}^n (x_{2i} \cdot f_{2i}) \\ \sum_{i=1}^n (y_{2i} \cdot f_{2i}) \\ \sum_{i=1}^n (u_{2i} \cdot f_{2i}) \end{bmatrix}; \quad (2)$$

– A_3 for small enterprises (x_3):

$$A_3 = \begin{bmatrix} n & \sum_{i=1}^n x_{3i} & \sum_{i=1}^n y_{3i} & \sum_{i=1}^n u_{3i} \\ \sum_{i=1}^n x_{3i} & \sum_{i=1}^n (x_{3i})^2 & \sum_{i=1}^n (x_{3i} \cdot y_{3i}) & \sum_{i=1}^n (x_{3i} \cdot u_{3i}) \\ \sum_{i=1}^n y_{3i} & \sum_{i=1}^n (x_{3i} \cdot y_{3i}) & \sum_{i=1}^n (y_{3i})^2 & \sum_{i=1}^n (y_{3i} \cdot u_{3i}) \\ \sum_{i=1}^n u_{3i} & \sum_{i=1}^n (x_{3i} \cdot u_{3i}) & \sum_{i=1}^n (y_{3i} \cdot u_{3i}) & \sum_{i=1}^n (u_{3i})^2 \end{bmatrix}^{-1} \times \begin{bmatrix} \sum_{i=1}^n f_{3i} \\ \sum_{i=1}^n (x_{3i} \cdot f_{3i}) \\ \sum_{i=1}^n (y_{3i} \cdot f_{3i}) \\ \sum_{i=1}^n (u_{3i} \cdot f_{3i}) \end{bmatrix}; \quad (3)$$

– A is the generalized coefficient for all three parameters (x_i , y_i , u_i):

$$A = \begin{bmatrix} n & \sum_{i=1}^n X_i & \sum_{i=1}^n Y_i & \sum_{i=1}^n U_i \\ \sum_{i=1}^n X_i & \sum_{i=1}^n (X_i)^2 & \sum_{i=1}^n (X_i \cdot Y_i) & \sum_{i=1}^n (X_i \cdot U_i) \\ \sum_{i=1}^n Y_i & \sum_{i=1}^n (X_i \cdot Y_i) & \sum_{i=1}^n (Y_i)^2 & \sum_{i=1}^n (Y_i \cdot U_i) \\ \sum_{i=1}^n U_i & \sum_{i=1}^n (X_i \cdot U_i) & \sum_{i=1}^n (Y_i \cdot U_i) & \sum_{i=1}^n (U_i)^2 \end{bmatrix}^{-1} \times \begin{bmatrix} \sum_{i=1}^n F_i \\ \sum_{i=1}^n (X_i \cdot F_i) \\ \sum_{i=1}^n (Y_i \cdot F_i) \\ \sum_{i=1}^n (U_i \cdot F_i) \end{bmatrix}. \quad (4)$$

The given formulas (1)–(4) make it possible to determine the parameters of the multivariate model using matrix calculation technologies, which allows to reduce the complexity of the mathematical apparatus, as well as to automate and speed up the calculation processes in the case of using modern information systems of automated design. The resulting models make it possible to solve the problem of forecasting the profitability of enterprises at the national level, as well as to solve the inverse problem of optimizing the required number of employees and the amount of salary under the condition of a given level of profitability of enterprises.

3. Results and Discussion

This section is devoted to testing the proposed models of formulas (1)–(4). In order to achieve the appropriate level of profitability, it is necessary to determine the optimal number of employees, at a certain celery level, as a result of the calculations shown in the Tables 2–4.

Table 2

The relationship between the number of employees and the level of profitability for large enterprises (x_1)

Salary level (thousand UAH)	Number of employees (million people)	Rate of return (%)
10000	1.78	5
	1.96	from 5–10
	2.14	from 10–15
	2.22	from 15–20
15000	2.51	>25
	2.02	5
	2.21	from 5–10
	2.39	from 10–15
20000	2.57	from 15–20
	2.75	>25
	2.15	5
	2.33	from 5–10
>25000	2.51	from 10–15
	2.69	from 15–20
	2.87	>25
	2.22	5
	2.4	from 5–10
>25000	2.58	from 10–15
	2.76	from 15–20
	2.95	>25

Table 3

The relationship between the number of employees and the level of profitability for medium-sized enterprises (x_2)

Salary level (thousand UAH)	Number of employees (million people)	Rate of return (%)
10000	2.9	5
	3.4	from 5–10
	3.9	from 10–15
	4.5	from 15–20
	4.87	>25
15000	2.99	5
	3.48	from 5–10
	3.97	from 10–15
	4.46	from 15–20
	4.94	>25
20000	3.03	5
	3.52	from 5–10
	4.0	from 10–15
	4.49	from 15–20
	4.98	>25
>25000	3.05	5
	3.54	from 5–10
	4.03	from 10–15
	4.51	from 15–20
	5.0	>25

Table 4

The relationship between the number of employees and the level of profitability for small enterprises (x_3)

Salary level (thousand UAH)	Number of employees (million people)	Rate of return (%)
10000	1.78	5
	2.08	from 5–10
	2.38	from 10–15
	2.67	from 15–20
	2.97	>25
15000	2.01	5
	2.3	from 5–10
	2.59	from 10–15
	2.89	from 15–20
	3.18	>25
20000	2.12	5
	2.41	from 5–10
	2.7	from 10–15
	3.0	from 15–20
	3.29	>25
>25000	2.18	5
	2.47	from 5–10
	2.77	from 10–15
	3.06	from 15–20
	3.35	>25

As the calculations show, to ensure a minimum level of profitability of 5 %, at a salary level of 10,000 UAH, 1.78 million employees are needed. To ensure a level of profitability of more than 25 % for the same level of remuneration, 2.51 million employees are needed. This shows that increasing the level of profitability requires more employees, and this, in turn, increases labor costs. Therefore, in order to reduce labor costs, it is advisable to replace

the labor force with the use of innovative technologies, which will ensure automation of production and reduce the time for completing tasks, while increasing the efficiency of the enterprise.

The resulting assessment of the number of employees, the level of salary and profitability according to formulas (1)–(3) is shown in Fig. 2–4.

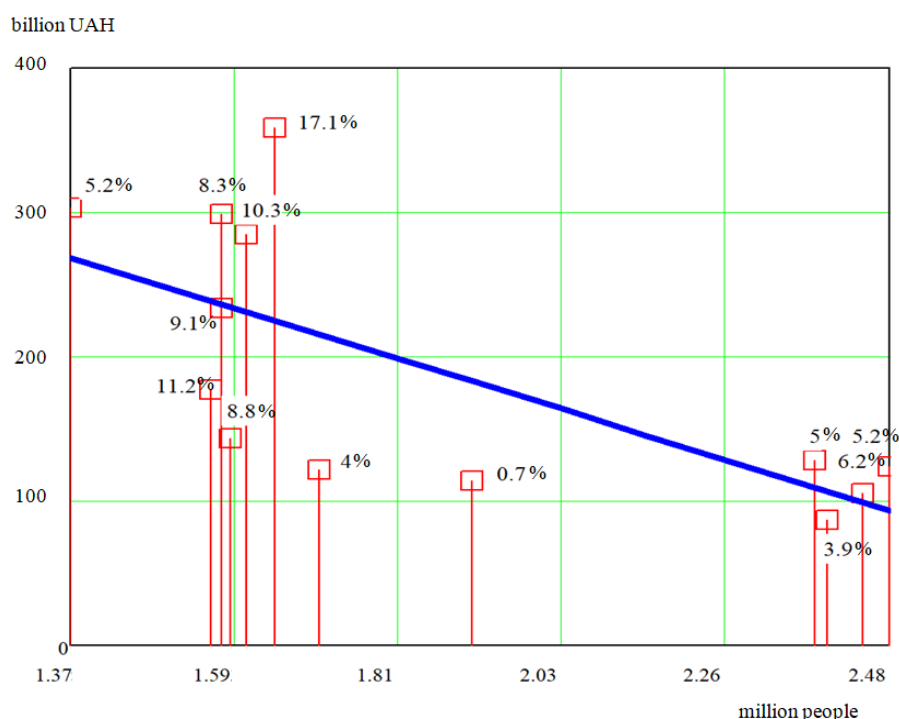


Fig. 2. The relationship between the number of employees, the level of salary and the profitability of large enterprises (x_1)

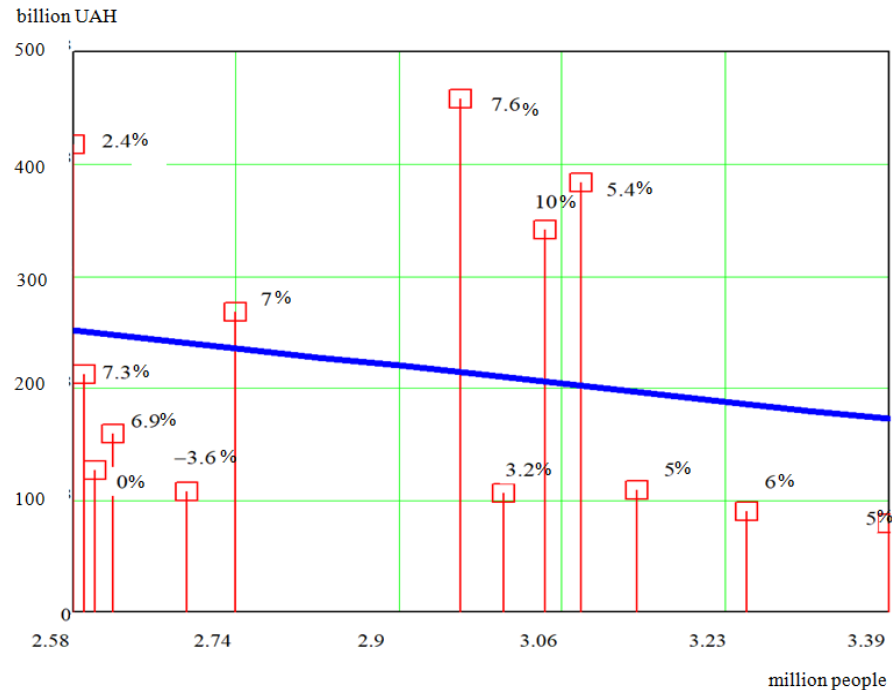


Fig. 3. The relationship between the number of employees, the level of salary and the profitability of medium-sized enterprises (x_2)

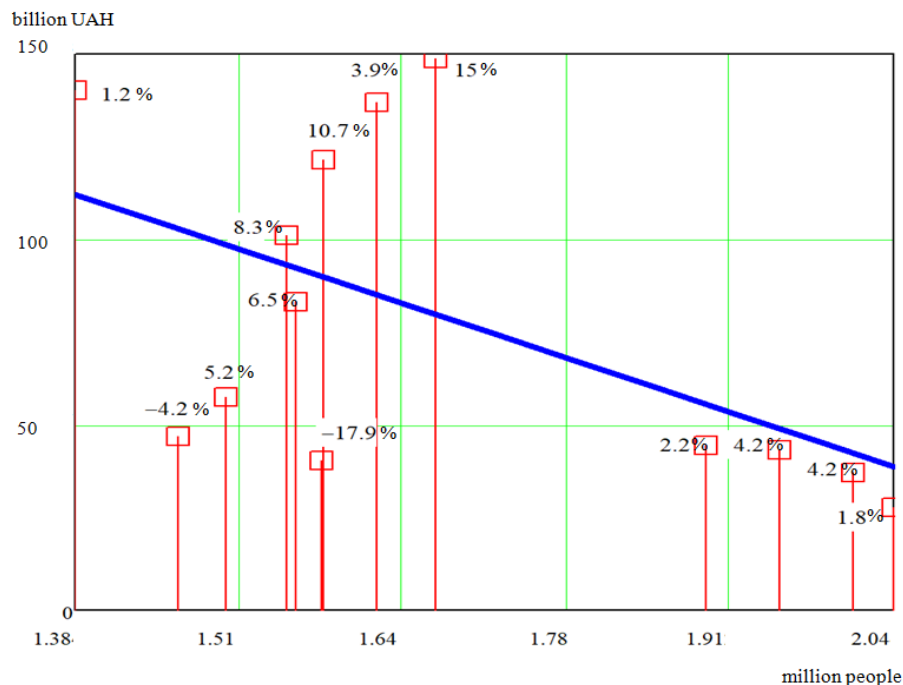


Fig. 4. The relationship between the number of employees, the level of salary and the profitability of small enterprises (x_3)

In general, the determination of the optimal number of employees allows the application of effective and well-studied methods and measures to increase the efficiency of the company's activities with the use of information technologies, with the aim of reducing the workforce and replacing it with automated processes. As already mentioned, the application of innovative technologies in the company's activities will increase its efficiency and reduce the influence of the human factor on the processes of the company's functioning. At the same time, it will not interfere with the level of social responsibility, because it will give an opportunity to determine the optimal need

for employees, so that they do not have to be reduced in the future, and at the same time ensure proper working conditions.

4. Conclusions

Innovative technologies significantly influence the development of the system of strategic management of social responsibility of enterprises, transforming it from a classical approach to a more dynamic and adaptive system. This allows for the collection, analysis and interpretation of large volumes of information on social responsibility and

facilitates the coordination of strategies for making informed decisions. Artificial intelligence (AI) and machine learning technologies help automate the processes of evaluating and predicting the effectiveness of social initiatives, ensuring a faster response to changes in consumer demands and legislative regulations. The use of blockchain technologies increases the transparency and authenticity of data about social projects, which contributes to increasing trust on the part of stakeholders and consumers. Technologies (VR/AR) are used to attract the attention of stakeholders regarding social issues and enterprise initiatives. In addition, these technologies provide interactive communication and involvement of participants in solving important social tasks. The use of cloud technologies facilitates flexibility and availability of data, which facilitates collaboration with stakeholders and increases the effectiveness of communication.

Thus, innovative technologies allow enterprises to respond more effectively to challenges in the field of social responsibility, contributing to the creation of sustainable and competitive business models. All this indicates the need for constant integration of innovative technologies in the strategic management of social responsibility in order to achieve a positive impact on society and preserve natural resources in the long term.

Conflict of interest

The authors declare that they have no conflict of interest in relation to this study, including financial, personal, authorship, or any other, that could affect the study and its results presented in this article.

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Data availability

Data will be provided upon reasonable request

Use of artificial intelligence

The authors confirm that they did not use artificial intelligence technologies when creating the presented work.

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