KAPITEL 2 / *CHAPTER 2* [2]
METHODS OF HARMONIOUS DEVELOPMENT OF AN ENTERPRISE IN THE DIGITAL ECONOMY

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Introduction

Modern reality is characterized by continuous technological innovations, which require businesses to constantly update and adapt their methodological approaches to development. In particular, rapid changes in the technological landscape create both new opportunities and significant challenges for harmonizing business development, where adaptation to new technologies is crucial to achieving a balance between the economic, environmental, and social development of each enterprise. This implies the formation of a clear vision regarding a set of scientifically grounded approaches, principles, tools, and models aimed at ensuring a business entity's responsible attitude toward the environment, its social responsibility toward employees, customers, and the community, as well as long-term stability.

Thus, within the scope of the research, the author examined the fundamental methodological principles of enterprise development as a set of specialized approaches, principles, tools, and models that will contribute to its harmonization.

The focus of the research is not on the components that merely contribute to achieving the maximum Hicks-Lindahl income (which can be generated provided that at least the total capital, through which this income is realized, is preserved [2]) but on the components that ensure sustainable progress toward a business that equally benefits the economy, society, and the environment.

The author emphasizes that he aims to identify the systemic conditions under which a business's activities positively impact the economy, society, and the environment, specifically supporting the core ideas of synergy and balancing interests.

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2.1. A set of specialized approaches and tools for identifying the components of harmonious enterprise development

The concept of sustainable development introduced in 1987 with the publication of the report "Our Common Future" (the Brundtland Report). Since then, researchers have focused on studying the "sustainable development" (or "sustainability") of enterprises as a process aimed at simultaneously improving the economic, social, and environmental aspects of their operations [2]. At the same time, since 2020, the concept of "harmonious development" has been actively used in this field [4]. Both terms—"harmonious development" and "sustainable development" (or "sustainability") —in the context of entrepreneurship are elements of strategies aimed at achieving a balance between the economic, social, and environmental aspects of business activities [7-8]. Although they may seem synonymous, certain nuances differentiate these concepts (see Figure 1).

Sustainable development (sustainability)		**Harmonious development**	
The nuances that distinguish the term	Features of the formation of nuance	The nuances that distinguish the term	Features of the formation of nuance
Focus on future generations	It highlights the importance of meeting the needs of the present generation without compromising the ability of future generations to meet their own needs	Focus on the integration of various aspects of activities	Harmonious development emphasizes the need to integrate all aspects of a business's operations into a unified system, where each element complements the others
Fundamental aspects of manifestation	Balance of the three components of development—economic, environmental, and social*	Fundamental aspects of manifestation	Balance between short-term and long-term goals—economic, environmental, and social**
Global context of manifestation	Issues related to sustainable conditions have a transboundary nature.	Local aspect of manifestation	Issues related to the specifics and characteristics of the functioning of a particular economic entity

Figure 1. - Characteristics of the features of the formation and manifestation of the terms "harmonious development" and "sustainable development"

Note
*Balancing economic growth, social justice, and environmental sustainability.
** Finding a balance between meeting the short-term needs of the enterprise and achieving long-term goals.
Source: formulated by the author based on [2; 5-7]

Although both terms are related to the balanced development idea, they have somewhat different emphases. Sustainable development focuses more on global issues and long-term perspectives, while harmonious development emphasizes internal harmony and various aspects of a business's operations integration.

So, the harmonious development of an enterprise is a process aimed at continuously balancing the economic, social, and environmental aspects of its operations. It means that the enterprise not only strives for profit but also constantly adjusts its impact on [2; 7]:

- The economy, through measures to optimize the overall use of limited resources and the implementation of eco-friendly technologies (resource-, energy-, and material-saving technologies, including the extraction and processing of raw materials, the creation of environmentally acceptable products, and the minimization, recycling, and disposal of waste).

- Society, through measures focused on people and achieving stability in social and cultural systems, including fair distribution of benefits and minimizing social tensions at the local level.

- Ecology, through measures that ensure the integrity of biological and physical natural systems.

Thus, a comprehensive set of specialized approaches to harmonious enterprise development involves the use of various measures that allow for the achievement of a threefold goal interpreted through the lens of maximizing economic, social, and environmental effects. This is emphasized in the recommendations of the Global Sustainable Tourism Council (GSTC), the United Nations Environment Programme, the recommendations of the International Center for Tropical Agriculture, and the System of Environmental-Economic Accounting (SEEA) proposed by the Statistical Division of the UN Secretariat (1993). In this context [2-3; 7]:

1. The economic effect is expressed through the achievement of targeted results in business operations in the form of monetary benefits or cost reductions. Aspects that can measure the targeted economic effect include:

- Absolute values (Ea) expressed through the increase in the value of the

enterprise's assets; cost savings in production, sales, and management; and an increase in profit (or the difference between income and expenses);

- Relative values (Ev) are expressed through the improvement of financial indicators such as overall profitability and its individual types (profitability of production, return on assets, return on sales, return on equity, cost profitability, operating profitability, etc.).

2. The social effect is expressed through the achievement of targeted results in social activities in the form of improved quality of life for employees, local communities, and society as a whole. Aspects that can measure the targeted social effect include:

- Absolute values (Sa) expressed through the increase in the value of human capital (due to the enterprise's expenses on training and developing its personnel, costs for creating favorable working conditions, and providing social guarantees), labor costs that ensure fair income distribution (through decent wages and reduced social inequality), and expenses aimed at improving the living standards of the population (through investments in social infrastructure development and ensuring access to quality goods and services), etc;

- Relative values (Sv) are expressed through the increase in the income levels of employees and residents, the unemployment rate, and the accessibility of social services, as well as quality goods and services.

3. The ecological effect is expressed through the achievement of targeted results in environmental activities in the form of reduced negative impacts on the environment and the conservation of natural resources. Aspects that can measure the targeted ecological effect include:

- Absolute values (Eka) expressed through environmental damages from the emissions of pollutants into the air, water, and soil; the cost of consuming non-renewable natural resources (energy, water, raw materials); and the cost of waste that has been recycled or reused;

- Relative values (Ek) expressed through the ecological efficiency indicator (the ratio of emissions to production volume), the share of renewable energy sources in the

overall energy balance of the enterprise, and the area of green spaces on the premises of the enterprise and surrounding areas, etc.

Noted that most researchers prefer to calculate absolute values of effects due to their monetary expression, provided that issues of accurate interpretation and calculation are resolved. It requires assessment methods development to include the specifics of different types of effects (in particular, the author suggests referring to market value methods). For example, when calculating the absolute value of the ecological effect (Eka), one should refer to the formula [2-3]:

$$Eka=Rp–V, \quad (1);$$

where: Eka — net annual effect from the enterprise's environmental activities; Rp — total environmental income (obtained from reducing fines and payments for environmental pollution, savings from minimizing the consumption of non-renewable natural resources, and recycled waste [3]); V — environmental costs (incurred as a result of implementing new environmental technologies and solutions, salary payments to employees involved in environmental issues, costs for certification, environmental audits, etc.).

In this case, Rp, V elements, and value effect are determined based on market prices.

Thus, each of effects (economic, social, and ecological) is important and necessary for achieving harmonious development. At the same time, there are several approaches to harmonious enterprise development, under which such effects can be classified as [7-8]:

1. Irreplaceable. In particular, it is assumed that none of the effects can be completely substituted for another. For example, it is impossible to achieve a high level of social well-being if economic indicators are ignored or if harm is caused to the environment.

2. Partially replaceable. In particular, an increase in one effect may lead to a decrease in another, but in the long term, such a situation is unsustainable. For example,

a short-term increase in economic effect at the expense of ecological costs may result in negative environmental consequences and economic effect reduction in the future.

3. Completely replaceable. In particular, it is believed that, theoretically, one can achieve maximum economic effect by completely ignoring social and ecological aspects. Conversely, one could focus solely on social well-being, even if this leads to economic losses. The prioritization of effects should be determined by management based on the economic, ecological, or social condition of the enterprise.

In our opinion, the most optimal approach to harmonious enterprise development is to regard each of the aforementioned effects as irreplaceable. It is due to the general practice of economic management, within which prioritizing one effect at the expense of another leads to direct or indirect losses. For instance, if an enterprise decides to boost profits by cutting costs on environmental protection, they will be subject to fines and face backlash from consumers and partners, resulting in a decrease in profits.

2.2. A set of principles for the harmonious development of an enterprise and their translation into specific actions.

Harmonious development involves finding an optimal balance between these effects [1]. It means that the management of the enterprise should aim to achieve the maximum cumulative effect through synergy among the economic, social, and ecological aspects of its operations. The outlined provisions allow for a clear specification of the principles of harmonious enterprise development in content [3; 7-8]:

1. The principle of integration of ecological, social, and economic aspects of the enterprise's activities into its strategic planning. In this context, ecological and social objectives should be an integral part of the overall enterprise strategy rather than an addition to it.

2. The principle of systematism in management should be established through the implementation of management systems such as quality management (ISO 9001),

environmental management (ISO 14001), social responsibility (SA8000), and other similar standards.

3. The principle of setting specific, measurable, achievable, relevant, and time-bound goals for harmonization (SMART goals), which will allow for tracking progress in achieving harmonious development objectives.

4. The principle of regular monitoring and evaluation of development harmonization, through the use of monetary calculations of effects as indicators of progress in achieving objectives.

5. The principle of dialogue with stakeholders, through the active involvement of employees, customers, partners, local communities, and other interested parties in the development and implementation of a sustainable development strategy.

6. The principle of cooperation and partnership, through collaboration with other companies, government organizations, and community associations to address common issues.

It should be noted that aligning all the outlined principles and translating them into specific actions, which are means to achieve harmonious enterprise development, is a task of immense complexity, as all three elements of sustainable development must be considered in a balanced manner. For example, the implementation of a waste management system based on the principles of a circular economy should be translated into specific actions when viewed through the lens of the three elements of harmonious development (see Table 1).

To implement a waste management system based on the principles of a circular economy, it is necessary to [1; 7-8]:

1. Conduct a detailed analysis of the types and quantities of waste generated by the enterprise, determine their composition, and assess the potential for recycling.

2. Create a detailed plan for implementing the waste management system, which, in accordance with the data in Table 1, includes the following measures:

- Sorting waste by type.
- Installing containers for collecting different types of waste.
- Establishing contracts with companies that handle waste recycling.

Table 1. - Implementation of a waste management system based on the principles of a circular economy in terms of specific actions

Element 1: Environmental aspect	Element 2: Social aspect	Element 3: Economic aspect
Reducing the amount of waste sent to landfills, conserving natural resources, and minimizing negative environmental impact.	Creating new jobs, enhancing workplace safety, and improving the living conditions of employees.	Reducing waste disposal costs, generating additional revenue from the sale of secondary raw materials, and increasing the competitiveness of products
Indicator — monetary environmental effect.	Indicator — monetary social effect.	Indicator — monetary economic effect

Source: formulated by the author based on [1; 3; 5; 7]

- Training personnel on sorting and waste management practices.
- Monitoring and controlling the effectiveness of the system.

3. Acquiring the necessary equipment for sorting, storing, and recycling waste.

4. Organization training and seminars to raise employee awareness about the importance of environmental protection and their role in waste management system implementation.

5. Informing local communities about the measures taken by the company and involving them in the waste disposal process.

This example demonstrates how a specific action can contribute to the principles of harmonious business development implementation. It is important to emphasize that the choice of action depends on the enterprise's activity specifics, size, industry, and other factors.

2.3. Behavioral models harmonious development of an enterprise.

Achieving harmonious business development involves carrying out its activities through the lens of interconnected economic, environmental, and social effects, the unified achievement of which contributes to capital preservation (including physical, natural, and human capital) [7]. It should be noted that, in theory, the effective

combination of balanced economic, social, and environmental aspects does not result in a constant synergetic effect. It is a relationship that evolves. Moreover, if the overall effect exceeds the sum of its components, this phenomenon is referred to as the triple effect.

Considering the outlined features and the specificity of forming the triple effect, behavioral models aimed at achieving the harmonious development an enterprise should be developed using correlation-regression analysis methods [1]. Such analysis allows for the representation of the triple effect and each of its balanced components as a system of interconnected variables described by mathematical functions of various natures.

On one hand, building such models has nuances and limitations (see Table 2); however, these can be addressed through procedures such as checking components for multicollinearity, systematically transforming variables (via logarithmization, standardization, or creating new variables), selecting alternative functional dependencies, using heteroscedastic data, robust standard errors, and checking data for autocorrelation using the Durbin-Watson or Breusch-Godfrey tests.

Thus, a mathematical function of harmonious business development is formed for the triple effect, in which the effect itself is the dependent variable while the components of harmonious development (economic, social, and environmental indicators) serve as groups of independent variables. An example of the conditional structure of such a function:

$$\text{Triple Effect (TE)} = f(E, S, Eco). \quad (2);$$

where: E - a set of economic indicators (profit, profitability, sales volume); S - a set of social indicators (employee satisfaction, number of social projects); Eco - a set of environmental indicators (pollutant emissions, resource consumption).

Thus, we obtain a general equation that broadly describes the harmonious development of a company through the essence of synergy and the contribution of each component to the formation of the triple effect, as well as predicting how changes in

Table 2. - Core nuances and limitations of correlation-regression models aimed at achieving the enterprise harmonious development

Nuances and limitations of the models		The direction of the effects of the nuances and limitations of the models
Direction	Features of formation	
Choice of functional dependence	It is not always obvious which functional dependence (linear, polynomial, exponential, etc.) best describes the relationships between the variables [1] .	The choice of an incorrect function may lead to distorted results
Multicollinearity	If the independent variables are strongly correlated with each other, it can complicate the interpretation of the results of the regression analysis [2]	Complication in the interpretation of regression analysis results
Heteroscedasticity	If the variance of the model's residuals is not constant, standard hypothesis testing procedures may be incorrect [3.]	Incorrectness of standard hypothesis testing procedures
Autocorrelation	If the model's residuals are correlated with each other, the estimates of the regression coefficients may be inefficient [4]	Inefficiency of regression coefficient estimates

Note

1. In the presence of a functional dependence between variables that is nonlinear, variable transformation methods (such as logarithmization or squaring) or nonlinear regression models (such as polynomial or exponential models) may be applied.
2. In the presence of multicollinearity, methods for its elimination can be applied, such as excluding one of the variables, combining variables, or using principal component analysis.
3. In the presence of heteroscedasticity, heteroscedasticity-consistent standard errors or variable transformation may be applied.
4. In the presence of autocorrelation, correction methods should be employed, such as the Cochrane-Orcutt model or the generalized least squares method.

Source: formulated by the author based on [2-3; 7-8]

one component will affect the others. Of course, the structure outlined by us is conditional, and the actual form of the function will be more detailed and depend on the specific characteristics of the company and the chosen indicators. In particular, an example of a detailed form of the function is presented below:

$$\text{Triple Effect (TE)} = \alpha_0 + \alpha_1\text{Profit} + \alpha_2\text{Profitability} + \alpha_3\text{Employee Satisfaction} + \alpha_4\text{Number of Social Projects} + \alpha_5\text{Pollutant\_Emissions} + \alpha_6\text{Resource Consumption} + \varepsilon, \quad (3);$$

where: α_0 is the intercept; α_1- α_6 are the regression coefficients that reflect the

impact of the corresponding variables on the triple effect; ε is the random error.

Such a model allows for the evaluation of the overall impact of each group of indicators and the contribution of individual indicators to the formation of the triple effect according to the algorithm outlined in Table 3.

Table 3 - Algorithm for forming an equation that broadly describes the enterprise harmonious development

Stages of equation forming	Specificity of equation forming (description of mathematical operations at each stage)	Result of formation
Formulation of hypotheses	Based on theoretical knowledge and analysis of the company's activities, hypotheses are formulated about the relationships between economic, social, and environmental indicators.	The adequacy of the constructed model is assessed using statistical criteria (coefficient of determination, standard error of estimate, significance tests for regression coefficients)
Selection of indicators for the equation (independent variables)	Specific indicators are selected that most comprehensively characterize each component of the triad effect. In doing so, it is necessary to consider the availability of data, their relevance, and the possibility of quantitative measurement.	
Data collection	Data is collected based on the selected indicators over a specific period.	
Model construction	Based on the collected data, a mathematical model is constructed. The choice of model type depends on the nature of the relationships between the variables and can be linear, nonlinear, or even include interactions between the variables.	

Source: formulated by the author based on [1; 3; 8]

For the equilibrium components of the enterprise's harmonious development, the function of its economic, environmental, or social development serves as dependent variables, while the other components are independent. An example of the conditional structure of each such function**:**

Economic development:

$$E = f1(I, M, T), \quad (3);$$

where: I – investments, M – marketing expenses, T – technological level.

Environmental development:

$$Eко = f2(B, C, P), \quad (4);$$

where: B – emissions of pollutants, C – resource consumption, R – production waste.

Social development:

$$S=f3(ZP,SP,SI), \quad (5);$$

where: ZP – employee salaries, SP – social projects, SI – volume of social investments.

Thus, we obtain a conditional system of interconnected equations that describes the harmonious development of the enterprise through the content of interrelated dependencies, which allows us to:

1. Identify the core factors that influence each component of harmonious development and form the triadic effect.

2. Assess the strength and direction of relationships between different indicators.

3. Forecast changes in the enterprise harmonious development with changes in the values of independent variables.

4. Optimize the enterprise's strategies by identifying the effective directions for implementing harmonization measures.

The actual form of the function will depend on the specific characteristics of the enterprise and the chosen indicators.

The algorithm for forming such an equation is similar to that presented in Table 3. It is important to note that constructing such models is the first step. For effective management of an enterprise's harmonious development, it is necessary to update the models and their use for decision-making.

2.4. General features of identifying the components of harmonious development of an enterprise

Identifying the components of the harmonious development of an enterprise is an important step towards creating an effective model that will not only allow for the assessment and improvement of its sustainability but also establish a clear vision of a comprehensive approach to corporate social responsibility. Various tools can be used for this, including [2-3; 8]:

- Analysis of trends in the changes of independent variables allows for the identification of bottlenecks, determining the potential for decreasing or increasing their impact on the environment, the efficiency of resource use, labor resources, and the economy.

- Comprehensive assessment of the dynamics of the components of enterprise harmonious development for identifying critical periods in its life cycle.

- Assessment of the social, environmental, and economic activities of the enterprise through the lens of interaction with stakeholders to identify strengths and weaknesses.

- Assessment of the impact of the enterprise's activities on the local environment, which allows for comparison of environmental, social, and economic effectiveness across different enterprises and identifies areas for improvement.

- Assessment of the overall sustainability of the enterprise, which allows for the evaluation of each component of harmonious development and identifies potential for growth.

The choice of specific directions for identifying harmonious development depends on the research objectives, enterprise size, the industry of activity, and data availability.

Combining various identification directions allows for a more comprehensive and objective picture of the state of enterprise harmonious development.

Summary and conclusions.

The transition to a digital economy highlights the need for businesses to strike a balance between economic efficiency, social responsibility, and environmental sustainability.

The study highlights the importance of developing a clear vision for a comprehensive approach to the harmonious development of an enterprise. It is noted that its significance for a modern business is based on:

1. Creating a competitive advantage. So, enterprises demonstrate a high level of harmonization between economic, social, and environmental impacts and typically enjoy a positive image among consumers, investors, and employees. The harmonization of development enables a company to stand out from competitors, especially in a highly competitive environment.

2. Risk reduction. Adhering to the principles of harmonious development helps prevent crises related to environmental issues, labor law violations, or other negative events.

3. Achieving balanced development. The harmonization of economic, social, and environmental aspects of a company's operations contributes to its stability and prosperity in the long term, especially in the context of digital transformation.

4. Responsibility to society. The harmonization of development contributes to the creation of a more equitable and sustainable world.

5. Meeting consumer needs. Modern consumers are increasingly focused on corporate social responsibility and prefer products and services that are produced ethically and responsibly.