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## STRATEGIC AND PROJECT ANALYSIS IN THE MANAGEMENT SYSTEM OF TOURISM ENTERPRISES

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### СТРАТЕГІЧНИЙ ТА ПРОЄКТНИЙ АНАЛІЗ У СИСТЕМІ УПРАВЛІННЯ ТУРИСТИЧНИМИ ПІДПРИЄМСТВАМИ

Traditional approaches to strategic and project analysis are increasingly proving to be insufficiently effective for adequate management and flexible development. In this context, the integration of chaos theory and the consideration of the butterfly effect — which suggests that even minor changes in initial operating conditions can have large-scale consequences for the entire system of a tourism enterprise's development — are becoming particularly relevant. The article aims to identify the features of the transformation of strategic and project analysis within the management system of tourism enterprises through the integration of the principles of chaotic dynamics. This approach makes it possible to account for the nonlinearity, dynamism, sensitivity to initial conditions, and adaptive nature of management systems under conditions of high turbulence and uncertainty in the external environment. As a result of the conducted research, it was established that under conditions of an unstable, turbulent, and highly unpredictable external environment, strategic and project analysis in the management of tourism enterprises requires a fundamental rethinking. The application of chaos theory principles, particularly the concept of the butterfly effect, allows for the adaptation of analytical tools to modern challenges and the development of a hybrid approach focused on adaptability, flexibility, and the systemic resilience of tourism enterprises. It has been proven that within the hybrid model, strategic analysis transforms from a traditional assessment of the internal and external environment into a dynamic process: identifying critical bifurcation points where abrupt shifts in the development trajectory may occur; developing scenarios sensitive to initial conditions; forecasting the consequences of minor changes in the environment; and determining adaptive vectors and zones of risk/

growth to ensure strategic resilience. It has also been proven that project analysis transforms. Its main focuses shift toward: managing short-term initiatives as potential sources of systemic change (the butterfly effect); applying scenario modeling and continuous risk monitoring; designing flexible, reconfigurable structures; and accounting for the nonlinear interactions between resources, objectives, impacts, and the environment. Thus, the hybrid approach to strategic and project analysis makes it possible to account for the realities of a chaotic economy, the multiplicity of influences, and the nonlinear dynamics of the managerial environment.

Традиційні підходи до стратегічного та проектного аналізу дедалі частіше виявляються недостатньо ефективними для забезпечення адекватного управління й гнучкого розвитку. У цьому контексті особливої актуальності набуває інтеграція положень теорії хаосу, зокрема врахування ефекту метелика, який передбачає, що навіть незначні зміни в початкових умовах функціонування можуть призвести до масштабних наслідків для всієї системи розвитку туристичного підприємства. Метою статті є визначення особливостей трансформації стратегічного та проектного аналізу в системі управління туристичними підприємствами шляхом інтеграції принципів хаотичної динаміки, що дозволяє враховувати нелінійність, динамічність, чутливість до початкових умов та адаптивну природу управлінських систем за високої турбулентності та невизначеності зовнішнього середовища. У результаті проведеного дослідження встановлено, що в умовах нестабільного, турбулентного та важкопрогнозованого зовнішнього середовища стратегічний і проектний аналіз в управлінні туристичними підприємствами потребують радикального переосмислення. Застосування положень теорії хаосу, зокрема поняття ефекту метелика, дає змогу адаптувати аналітичні інструменти до сучасних викликів і сформувати гібридний підхід, орієнтований на адаптивність, гнучкість та системну життєздатність туристичних підприємств. Доведено, що стратегічний аналіз у межах такої гібридної моделі трансформується з традиційного оцінювання внутрішнього та зовнішнього середовища у динамічний процес, який охоплює: виявлення критичних точок біфуркації, де можливий різкий злам траєкторії розвитку; формування сценаріїв, чутливих до початкових умов; прогнозування наслідків малих змін у середовищі; визначення адаптаційних векторів та зон ризику/росту для забезпечення стратегічної стійкості. Також обґрунтовано, що проектний аналіз зазнає аналогічної трансформації, адаптуючись до умов високої мінливості та невизначеності зовнішнього середовища. Його ключові акценти зміщуються на: управління короткостроковими ініціативами як джерелами можливих системних змін (ефект метелика); застосування сценарного моделювання та постійного моніторингу ризиків; проектування гнучких, реконфігурованих структур; врахування нелінійної взаємодії між ресурсами, цілями, впливами та середовищем. Таким чином, гібридний підхід до стратегічного та проектного аналізу дозволяє враховувати реалії хаотичної економіки, множинності впливів та нелінійної динаміки управлінського середовища.

*Key words: adaptability; flexibility; systemic resilience; tourism enterprise; butterfly effect; strategy; project.*

*Ключові слова: адаптивність; гнучкість; системна життєздатність; туристичне підприємство; ефекту метелика; стратегія; проект.*

## PROBLEM STATEMENT

In today's highly dynamic external environment, tourism enterprises face constant challenges driven by fluctuations in demand, geopolitical risks, climate change, technological breakthroughs, and aggressive competition.

Traditional approaches to strategic and project analysis are increasingly proving insufficiently effective for management and flexible development due to the nonlinearity and interdependence of processes. In this context, the integration of chaos theory and consideration of the possibility of the butterfly effect—which suggests that even minor changes in the initial operating conditions can have large-scale consequences for the entire development system of a tourism enterprise—becomes particularly relevant.

We emphasize that a tourism enterprise is an open system in which numerous internal and external elements interact. In such an environment, it is important not only to plan but also to

anticipate nonlinear relationships and identify critical moments after which the system changes its state (bifurcation points).

Chaos theory allows us to view management from a different perspective: not as a linear process of achieving goals, but as a complex adaptive system that responds to environmental impulses and evolves under the influence of even minimal external interventions.

## ANALYSIS OF RESEARCH AND PUBLICATIONS

The issues of classical strategic and project analysis in the management systems of enterprises across various economic sectors have been studied in the works of Bannikov V., Lobunets T., Buriak I., Maslyhan O., Shevchuk L., Lysiuk T., Roiko L., and Biletskyi Yu.

Among the main focuses of their research are the following issues: limitations of traditional

strategic planning models in unstable external environments; inefficiency of the linear project cycle under high economic turbulence; risks of excessive formalization of management decisions that fail to account for the variability of influencing factors; lack of adaptive mechanisms in strategic management, which reduces the competitiveness of enterprises; challenges in implementing a comprehensive approach to project effectiveness evaluation, especially in the small and medium business sector; and neglect of synergy and systemic interaction between projects, leading to a loss of strategic coherence.

Special mention should be made of the contributions of researchers I. L. Sazonets and O. M. Sazonets highlighted the systemic problem of the gap between strategic goals and tactical implementation due to the limited effectiveness of classical analytical tools in a dynamic and unpredictable external environment.

Despite some fragmentation, these scientific studies are valuable as they have laid the methodological foundation for the development of hybrid approaches to strategic and project analysis, which are particularly relevant for the management systems of tourism enterprises. These approaches focus on accounting for the nonlinearity, complexity, and dynamics of the modern business environment, including phenomena described within the framework of chaos theory.

### FORMULATION OF THE ARTICLE'S OBJECTIVES

The article aims to identify the features of the transformation of strategic and project analysis within the management system of tourism enterprises through the integration of the principles of chaotic dynamics. This integration enables accounting for nonlinearity, dynamism, sensitivity to initial conditions, and the adaptive nature of management systems under conditions of high turbulence and uncertainty in the external environment. Special attention is given to the content of adaptive strategies and flexible project portfolios, which allow tourism enterprises not only to survive but also to thrive in unpredictable conditions.

**Table 1. Classical focus of strategic and project analysis as components of the management system of tourism enterprises**

| Component of the management system | Focus of the management system component                                                                         |                                                                                                                                                                                                                                                                                                                                               | A general example combining the concepts:                                                                                                                                      |
|------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                    | General                                                                                                          | Specific                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                |
| Strategic analysis in tourism      | Comprehensive assessment of the internal and external environment of the enterprise to form strategic decisions. | Analysis of the tourism services market, competitive environment, and demand trends;<br>SWOT analysis of the enterprise (strengths, weaknesses, opportunities, threats);<br>Definition of strategic goals and development directions;<br>Formation of future development scenarios (taking into account environmental instability and chaos). | Determining the feasibility of developing a new direction—such as green tourism or digital travel platforms—considering trends, competition, and changes in consumer behavior. |
| Project analysis in tourism        | Evaluation of the effectiveness of specific projects.                                                            | Defining project goals and key parameters (cost, timeline, resources);<br>Risk analysis;<br>Evaluation of economic feasibility (investment attractiveness, NPV, IRR);<br>Implementation management, monitoring, and adjustment.                                                                                                               | Development of a new tourism product for foreign tourists, taking into account logistics, seasonality, local infrastructure, and risks of geopolitical instability.            |

Source: compiled based on [1; 4; 7].

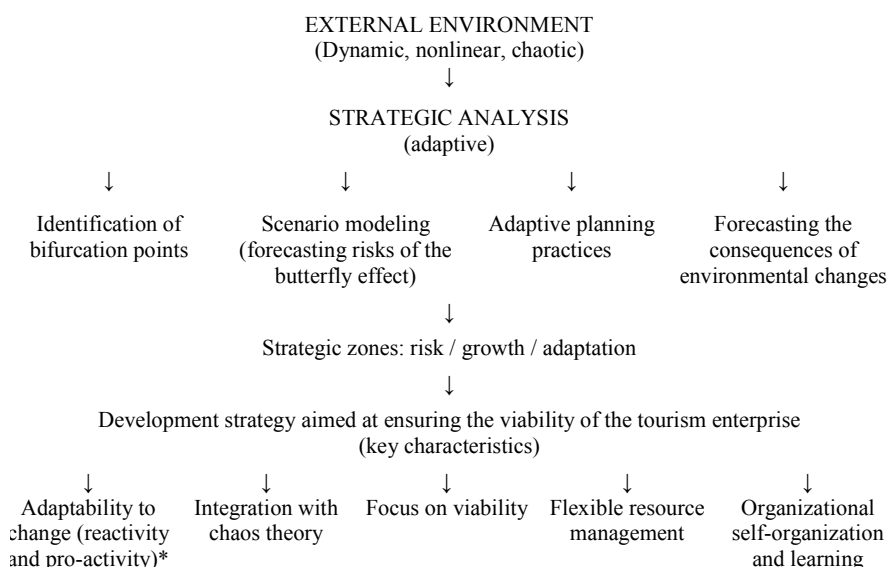
### THE PAPER MAIN BODY

Within the scope of the study, strategic and project analysis are considered as complementary analytical approaches that enable the management system of tourism enterprises to function effectively, adapt to environmental changes, and achieve long-term, including project-related, goals.

At the same time, the classical focus of strategic and project analysis as components of the management system of tourism enterprises is evident, as shown in Table 1.

We agree with I. L. Sazonets and O. M. Sazonets [6] state that classically, both types of analysis are closely connected, namely: strategic analysis determines the direction in which the enterprise is moving; project analysis shows how to implement this strategy through specific initiatives. At the same time, it should be noted that both tools operate within the management system to ensure the sustainability, adaptability, and purposeful development of the tourism enterprise, even under conditions of uncertainty and turbulence in the external environment [7].

Under the integration with chaos theory (i.e., in the hybrid variant [1]), strategic and project analysis perform a synergistic function of stabilizing the management system, not through complete control, but through the ability to anticipate possible nonlinear development scenarios,



**Figure 1. Formalized model of strategic analysis in the management system of tourism enterprises (hybrid approach)**

Source: compiled based on [3—4; 8].

manage bifurcation points (breaks), and maintain a balance between order and unpredictability.

Specifically, in the hybrid model, strategic analysis assumes a distinct role driven by the necessity of operating in a chaotic and unstable reality. Its focus shifts to [5—6; 8]:

1. Identifying critical development points (bifurcation points) where the tourism enterprise can radically change its operational trajectory under the influence of external or internal impulses;

2. Developing adaptive planning practices to replace rigid and linear long-term plans, taking into account a high level of unpredictability;

3. Modeling development scenarios sensitive to initial conditions (the butterfly effect), which allows for consideration of the likelihood of disproportionate impacts of small changes on the future state of the system;

4. Forecasting the consequences of minimal changes in the environment for the overall management system, including possible cascade effects and phase transitions.

Thus, the focus of strategic analysis shifts: from the traditional comprehensive assessment of the internal and external environment to identifying strategic risk zones, areas of potential growth, and adaptive vectors necessary to ensure the enterprise's viability amid systemic disruptions, turbulence, or nonlinear market dynamics.

According to the content of the formalized model of strategic analysis based on the hybrid approach (see Fig. 1), it is evident that the outcome of its application should be the formation of a development strategy for the tourism enterprise

that functions as an adaptive, nonlinear, and dynamic management concept, with key characteristics such as:

- adaptability to change;
- integration with chaos

theory;

- focus on viability;

— flexible resource management;

— organizational self-organization and learning.

This development strategy adapts to the market's evolution, considering bifurcation points and various potential development scenarios, rather than following rigid long-term plans.

This strategy considers sensitivity to initial conditions

and the potential of the butterfly effect, enabling timely responses to minimal changes that can lead to systemic shifts. The main aim is to foster growth while preserving integrity, resilience, and competitiveness in the face of ongoing risks, disruptions, shocks, or crises.

The mentioned development strategy is aimed at the rational and flexible use of limited resources (finances, personnel, time [2]) with the possibility of their rapid redistribution and the creation of a unique management culture based on quick feedback, continuous staff learning, and digital transformation of processes.

Within the framework of the hybrid approach, project analysis not only becomes more complex but fundamentally transforms its nature, moving away from the linear interpretation of a project as a set of ordered actions.

Under such conditions, each project is viewed as a living, adaptive system functioning amid high variability, uncertainty, and interdependence of elements. In this context, the focus of project analysis shifts to [1; 5; 8]:

— Evaluating short-term initiatives as potential points of influence capable of triggering large-scale systemic shifts — the so-called "butterfly effect" at the operational level.

— Continuous risk management amid changing factors, implementing scenario modeling focused on unpredictable or rare events (black swans, phase shifts).

— Developing flexible and reconfigurable project structures that can quickly adapt to new conditions, change configurations in real time, and avoid functional paralysis under external pressure.

— Managing nonlinear connections between resources, intermediate goals, outcomes, and external influences requires rethinking standard planning and monitoring models.

Thus, the focus of project analysis transforms from the traditional evaluation of individual project effectiveness to the dynamic and flexible management of a portfolio of agile initiatives that respond to environmental signals and ensure the enterprise's project plasticity.

According to the formalized model of project analysis under the hybrid approach (see Fig. 2), a project initiative ceases to be a closed object with a fixed life cycle. Instead, a portfolio of project initiatives is formed, functioning as a dynamic system of strategic adaptation-flexible both in the choice of means to achieve goals and in the ability to transform the goals themselves according to changes in the environment, new contexts, and risks.

Such a portfolio is not simply a collection of individual projects. It functions as an interconnected, dynamic system that is constantly rebalanced according to current conditions, risks, bifurcation points, and signals from the external environment.

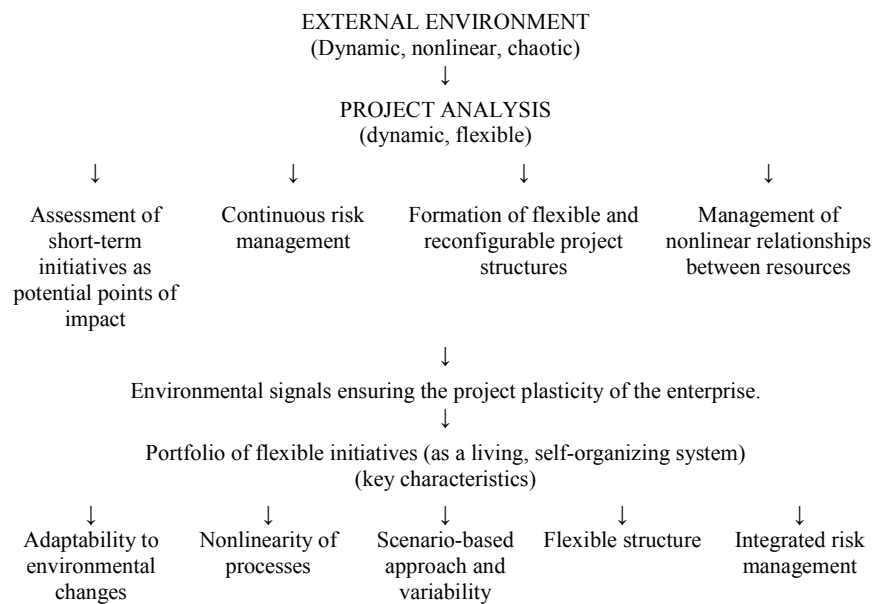
Projects within this portfolio are evaluated not in isolation, but taking into account their impact on the overall system, to ensure a quick and effective response to turbulence, external challenges, or unexpected opportunities.

The interaction between projects is neither linear nor mechanically predictable — it generates synergistic, blocking, or amplifying effects that can fundamentally change the behavior of the entire system. For example, a single project of minor scale can initiate large-scale systemic changes, acting as a trigger for the butterfly effect across the entire portfolio [8].

In this context, the hybrid approach to project analysis involves forming a portfolio not through a rigid linear program, but based on several development scenarios adapted to conditions of high uncertainty.

Scenario modeling helps predict possible changes and choose the best options.

The key function of this approach is the creation of a flexible management mechanism that ensures:



**Figure 2. Formalized model of project analysis in the management system of tourism enterprises (hybrid approach)**

Source: compiled based on [1; 5; 8].

— the dynamic addition, reformatting, or phasing out of individual projects without compromising the integrity of the overall system;

— integrated risk management should focus on portfolio architecture, where interconnected risks can have cumulative or compensatory effects.

## CONCLUSIONS

As a result of the conducted research, it was found that in an unstable, turbulent, and highly unpredictable external environment, strategic and project analysis in the management of tourism enterprises requires a fundamental rethinking. The application of chaos theory — particularly concepts such as the butterfly effect, sensitivity to initial conditions, and bifurcation points — enables the adaptation of analytical tools to modern challenges by forming a hybrid approach focused on flexibility, adaptability, and ensuring the systemic viability of enterprises.

За результатами дослідження сформульовано такі ключові висновки:

1. Strategic analysis within the hybrid model is transformed from a traditional assessment of the internal and external environment into a dynamic process: identifying critical bifurcation points where a sharp shift in the development trajectory is possible; developing scenarios sensitive to initial conditions; forecasting the consequences of minor changes in the environment; and determining adaptive vectors and zones of risk/growth to ensure strategic resilience. As a result, tourism enterprises develop a strategy that exhibits the characteristics of a nonlinear, adaptive, self-orga-

nizing system capable of learning, flexible resource management, and rapid response to environmental disruptions.

2. Project analysis also transforms. Its primary focus shifts to: managing short-term initiatives as potential sources of systemic change (the butterfly effect); applying scenario modeling and continuous risk monitoring; designing flexible, reconfigurable structures; and accounting for the nonlinear interactions between resources, goals, impacts, and the environment. Within the hybrid approach, the portfolio of project initiatives in a tourism enterprise is shaped as a dynamic system of strategic adaptation.

Thus, the hybrid approach to strategic and project analysis makes it possible to account for the realities of a chaotic economy, multiple influencing factors, and the nonlinear dynamics of the management environment. This creates the foundation for developing adaptive, resilient tourism enterprises capable not only of surviving under conditions of uncertainty but also of achieving sustainable development while maintaining competitive advantages.

The prospects for further research lie in developing methodological foundations and tools for implementing hybrid strategic-project management in the practical operations of tourism enterprises.

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