KAPITEL 5 / *CHAPTER 5* [5]
FEATURES OF MODELING COMPANY DEVELOPMENT SCENARIOS BASED ON CHANGES IN STRATEGIC MANAGEMENT

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Introduction.

In today's dynamic market conditions of changing business environments, companies face a high level of uncertainty, so traditional forecasting methods often prove insufficient for flexible planning of the future. Under such conditions, it is advisable to use scenario planning - an approach that allows you to model different scenarios and prepare for them in advance [1, 2]. Scenario planning is part of strategic planning and consists in describing several scenarios of future development that take into account key risks and market uncertainty. As a result, managers can not only see alternative prospects, but also check the stability of the chosen strategy to various possible scenarios [2, 3], this approach contributes to building an adaptive development strategy for the company, capable of effectively responding to changes in the external environment.

Classical models and strategies of the big world are focused on the predicted future, and it is important not to be able to intrude on new challenges, risks, threats and extreme earthquakes. Increasingly, at the extreme edges, the need for adaptive strategies is realized, or else, getting stuck in a theoretical situation, and the application of the use itself, taking into account the insignificance of the mind.

5.1. The concept of scenario planning and strategic management.

Scenario planning is defined as a flexible process of describing possible future scenarios, this is a part of strategic management that involves the use of tools and methods to handle future uncertainty [1]. Scenarios in this context are specific ideas

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about the future that encourage reflection on the consequences of various events and help formulate action plans [4], that is, the purpose of scenario planning is not simply to predict one future, but to prepare for several possible scenarios [1, 3]. Scenarios allow you to «test» a company's strategies for their sustainability – how well the chosen strategy will be able to achieve goals under different circumstances [3]. In situations of significant strategic change (crisis, war, pandemic), scenario modeling is especially valuable - companies that use scenario planning adapt to the new environment [1, 2].

Scenarios are usually classified according to the planning objectives. Forecast scenarios assess possible future conditions based on current trends, exploratory scenarios consider alternative developments of key factors, and standard scenarios indicate the desired future state and determine the ways to achieve these goals. The above classification determines the choice of scenario building methods. For example, intuitive thinking involves creatively building future stories, checking their consistency and checking the consistency of key factors, while prospective (French school) usually begins with defining strategic goals (standard scenarios) and listing current circumstances. Another approach is represented by probabilistic modified trends. This approach is based on statistical data and trend analysis while simultaneously determining the probabilities of each scenario [4].

There are also special methods, such as morphological analysis, which systematically cover the space of all possible combinations of variables, ensuring the consistency and completeness of the developed scenarios [5]. Different approaches are united by the idea of taking into account internal and external factors (constant reassessment of the «rules of the game») to create strategic flexibility and stimulate thinking, thus experts note that the focus of scenario planning lies at the heart of strategy. That is, scenarios force the company to constantly rethink goals, strategies and resources under unpredictable future circumstances [3, 4].

The scenario creation process consists of several main steps. The first stage is (1) identifying risk factors and their importance, (2) selecting key risks that significantly affect the achievement of strategic goals, (3) formulating baseline scenarios and checking their internal consistency, (4) assessing the feasibility of implementing each

scenario, and (5) conducting scenario analysis to assess the different impact of scenarios on achieving goals [6].

Table 1 - Comparison of scenario modeling approaches

Approach	Key Characteristics	Benefits and Features of Use
Intuitive Logic	Creative generation of scenarios based on expert opinions and stories of the future	Suitable for complex, qualitative assessments; provides space for "thinking outside the box"; however, the results depend on expert opinion and can be subjective
Prospect	A normative approach that begins with a description of the desired future and the reverse definition of the paths to it	Provides orientation on strategic goals and the definition of specific steps; requires detailed structured work (matrices, impact analysis) and significant resources
Probabilistic-trend	Relies on quantitative analysis of data and statistical trends, assigning probabilities to scenarios	Well suited when reliable data is available; allows estimating the probability of future events; however, may underestimate unpredictable shifts
Morphological analysis	Systematic construction of all possible combinations of parameters of future situations with subsequent cutting off of logically incompatible ones	Provides a structured and comprehensive overview of all options; ensures consistency of scenarios through compatibility analysis; however, complex with a large number of parameters and resource-intensive

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For example, let's consider the construction for a practical case.

1. Identifying risk factors - collecting information about the company's external environment (economic, political, technological) and internal resources, identifying potentially critical events.

2. Selecting key risks - studying less important factors and focusing on 2-4 most important factors that can radically change the course of events.

3. Formulating a scenario - describing alternative versions of the future (from the most likely «baseline» to extremes), examining them for logical consistency.

4. Probabilistic assessment - assessing the likelihood of each scenario occurring

to set priorities.

5. Gap analysis - comparing the results of each scenario with the company's goals to identify potential «gaps» in the strategy.

In addition, practical methods often involve creating visual aids, such as scenario matrices, to conveniently present the results. It is also important to involve experts and stakeholders to generate ideas and improve the scenarios.

In general, the choice of approach depends on the specifics, resources and tasks of the company. Intuitive methods and morphological analysis are widely used to build qualitative scenarios, while probabilistic approaches are useful when a numerical assessment of the probability of events is required. Standard scenarios are used when there is a clear strategic vision and target state. All of them are united by an emphasis on adaptability, that is, so that the company using scenario planning is ready to quickly switch between alternative strategies, responding to changes in the environment [2, 3].

The presence of developed dynamic capabilities allows for an effective response to crises, for example, to quickly reorient production or develop new markets. The advantage of the theory of dynamic capabilities is its ability to explain the mechanisms of organizational transformation, its limitations are that the concept is very abstract and difficult to quickly quantify; practical implementation requires specification, development of methods and training of personnel. Thus, the combination of strategic thinking, scenario planning, adaptive management, risk management and the development of dynamic capabilities forms a common theoretical basis for the strategic management system in conditions of instability. These approaches complement each other. Strategic thinking defines a general vector, scenarios – specific hypotheses of development, adaptive management – learning mechanisms, and risk management and dynamic capabilities – systems for assessing and redirecting resources. At the same time, it is important to take into account their limitations. No theory provides a universal management strategy for a company, therefore an effective strategy involves the integration of several approaches taking into account the specifics of the company.

5.2. Scenario-based approaches in companies.

The practice of using a scenario-based approach demonstrates the diversity of industry models that take into account the specifics of the external environment. Individual examples can provide more understanding and meaningful content of this model of strategizing in crisis conditions, and successful examples can be found in various areas.

For example, in the oil and gas industry. Heinonen S. et al. demonstrate transformative socio-ecological scenarios – «Radical Startups», «New Consciousness», and apply game-based analysis (CLA) methods to test them in a global context of 2050 [7]. This demonstrates a deep systemic approach to developing sustainable business models. The study demonstrates the implementation of scenarios in the context of energy transformations, using gamified analysis (CLA) and involving multi-stakeholder groups, which allows ensuring the strategic sustainability of enterprises in conditions of deep uncertainty. In addition, effective examples of strategizing existed much earlier. In the oil and gas industry, companies such as Shell systematically use scenario planning to take into account regulatory changes, political risks, and energy transformations. Wack P. found that scenarios helped Shell develop a flexible strategy during energy crises, allowing it to adapt faster than its competitors [8].

There are also effective practical examples in the agricultural sector, scenario planning is also being actively used to transform agri-food systems. The Foresight4Food report (2025) highlights the importance of collective intelligence and the integration of SDGs into the scenario modeling process, which opens up opportunities for agricultural companies to increase their adaptability to climate and market changes, to forecast changes in demand, climate conditions, and food security policies [9].

Piirainen K. et al. proposed a systematic framework for assessing the quality of scenario planning, which allows to improve the effectiveness of scenario implementation and to verify their relevance and impact. The research also emphasizes

the importance of combining the foresight approach with the Sustainable Development Goals (SDGs) and offers an open platform for interdisciplinary collaboration [10-11].

Ukrainian companies are just beginning to integrate this approach. The episodic use of scenarios in crisis situations (pandemic, full-scale war) has demonstrated the importance of scenario thinking as a factor of adaptability. However, for the effective use of the scenario approach, systemic implementation is necessary - through institutionalization, staff training and the use of digital tools. According to existing research, Ukrainian enterprises have the potential to use scenarios, but organizational barriers remain a deterrent.

5.3. Recommendations for strategic management.

The practice of applying the scenario approach demonstrates the diversity of industry models that take into account the specifics of the external environment. The systematic implementation of the scenario approach requires adaptation to the specific sector and context of the company. Recommendations for strategic management should be based on best practices and analysis of modern research.

At first, it is important to take into account the industry specifics. For high-tech enterprises, it is recommended to use methods that take into account fast innovation cycles (intuitive logic models or morphological analysis). In agriculture or sustainable development – scenarios that focus on environmental sustainability and political trends. Secondly, it is advisable to create cross-functional teams of analysts, marketers and strategists. This contributes to the integration of scenario thinking at all levels of management. The experience shows that companies with such a structure respond faster to crisis signals and make informed strategic decisions. Thirdly, there should be a system for constantly updating scenarios. Changing technologies, consumer behavior and legislation change the parameters of all scenarios. According to Shoemaker P., scenarios should be living documents that are revised as new signals of change appear [12].

Therefore, strategic management in the 21st century requires new competencies

– analytical thinking, an interdisciplinary approach and a willingness to quickly adapt. Scenario thinking should not become a separate tool, but part of the strategic culture of the organization, its implementation can significantly strengthen the company's position in conditions of turbulence and change. In opinion, it is possible to highlight the following key opportunities for the strategic management system.

1. Integrate scenario planning into the company's strategic sessions, which will allow not only to form alternative development options, but also to strengthen team cohesion, increase the adaptability of decisions and identify critical environmental factors. In practice, constant work with scenarios improves strategic flexibility.

2. Ensure the interdisciplinary nature of teams that create strategic scenarios for the company's development. As indicated in studies, the involvement of representatives from different departments ensures greater realism and acceptability of scenarios in a real business environment.

3. Use digital platforms for scenario visualization and risk modeling, for example, open templates and platforms for collective scenario modeling in the agri-food sector are available on the portal https://foresight4food.net, which can be adapted for the business context.

4. Develop internal criteria for assessing the quality of scenario planning, because it is the orientation to systemic assessment that allows you to check not only the logical sequence of scenarios, but also their strategic relevance.

5. Link scenario planning to the Sustainable Development Goals (SDGs), as discussed in the SpringerOpen publication, which substantiates the importance of integrating foresight approaches with sustainable development indicators and forming an appropriate strategy for long-term sustainability.

6. Regularly update scenarios in accordance with external changes in the market environment, because scenario planning is not a one-time tool, but an ongoing process. Changes in technology, politics, climate, finance require a flexible approach to updating scenarios, which allows maintaining the relevance of the company's strategic decisions in any context [9-13].

Summary and conclusions.

Scenario modeling plays an important role in the strategic management of modern companies. It complements traditional planning methods, providing flexibility and readiness for unexpected changes. As a result, companies can not only better understand potential threats and opportunities, but also formulate alternative action plans. In particular, studies show that companies that practiced scenario planning in crisis situations and worked in conditions of uncertainty (pandemic, war, etc.) were able to adapt to new circumstances faster. Strategic management systems in conditions of crisis uncertainty are built around hybrid forecasting, adaptation and risk management tools. Its goal is not to provide perfect forecasting, but to provide the organization with flexibility and agility to survive and thrive in any environment.

Scenario planning is increasingly recognized as an effective tool for strategic management in conditions of uncertainty. Due to its ability to take into account alternative scenarios, it allows companies not only to adapt to changes, but also to form a proactive strategy taking into account possible risks. The use of various scenario modeling methods, such as intuitive logic or morphological analysis, allows combining quantitative and qualitative approaches. Updated recommendations for strategic management, based on the analysis of open research, indicate the growing role of digital tools, an interdisciplinary approach and the integration of sustainable development goals.

Prospects for further research lie in several directions: deepening empirical research on the impact of scenario modeling on the effectiveness of company strategies; research on the integration of artificial intelligence into the scenario formation process; development of methodological recommendations on scenario planning for small and medium-sized enterprises; analysis of the application of the scenario approach in the field of public administration and public policy. Thus, scenario planning is not only relevant, but also a strategically important element of modern management, which is worthy of research and development in the future.