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**TECHNOLOGY MANAGEMENT STRATEGIES OF AGRICULTURAL ENTERPRISES: SECURITY ASPECT
СТРАТЕГІЇ ТЕХНОЛОГІЧНОГО МЕНЕДЖМЕНТУ ПІДПРИЄМСТВ АГРОПРОДОВОЛЬЧОЇ СФЕРИ:
БЕЗПЕКОВИЙ АСПЕКТ**

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технологічного менеджменту підприємств
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The article substantiates the conceptual foundations for implementing measures to ensure security in implementing the technological management strategy in agricultural enterprises under modern dynamic conditions. It has been researched that an essential prerequisite for guaranteeing the effectiveness of the technological management strategy in agricultural enterprises is identifying and leveling threats to its provision and implementation. Hence, the prevention and mitigation of the consequences of the dangers is the primary condition for ensuring the security of an enterprise. A threat to the safety of an economic entity in the agricultural sector under current conditions is an actual or potential possibility of manifestation of the destructive impact of various factors in its development, which leads to certain losses and negative consequences. It is determined that the goal of technological management is to ensure the technical development of an enterprise in the agricultural sector, i.e., a purposeful, continuous process of changes in the technological revolutions of the enterprise's economic activity, which determine the development of resources, and together makes it possible to ensure the technological competitiveness and sustainability of an enterprise in today's dynamic business environment. Attention is focused on the need to implement the main practical measures to ensure the security of the implementation of the technological management strategy in an agricultural enterprise, which would include the development of a strategic plan to strengthen the protection of business entities, the creation of a separate structural unit responsible for ensuring the security of the enterprise, the development of a mechanism for monitoring and assessing the state of external and internal markets and the formation of recommendations for possible ways to increase the level of competitiveness.
Keywords: management, enterprise, security, threat, strategy, technological management.

У статті обґрунтовано концептуальні засади реалізації заходів щодо гарантування безпеки під час впровадження стратегії технологічного менеджменту підприємств агропродовольчої сфери за сучасних динамічних умов. Встановлено, що важливою передумовою забезпечення результативності стратегії технологічного менеджменту підприємства агропродовольчої сфери є ідентифікація та нівелювання загроз її забезпеченню та реалізації. Отже, запобігання та нівелювання наслідків загроз становить головну умову гарантування безпеки підприємства. Загроза безпеки суб'єкта господарювання агропродовольчої сфери за сучасних умов – реальна чи потенційна можливість прояву деструктивного впливу різних чинників з його розвитку, що призводить до певних збитків і негативних наслідків. Визначено, що кінцевою метою технологічного менеджменту є забезпечення технологічного розвитку підприємства агропродовольчої сфери, тобто цілеспрямованого, безперервного процесу змін у технологічних процесах його господарської діяльності, які обумовлюють розвиток ресурсів, що сукупно дає можливість забезпечити технологічну

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конкурентоспроможність і стійкість суб'єкта господарювання за сучасних динамічних бізнес-умов. Акцентовано увагу на необхідності реалізації основних практичних заходів щодо гарантування безпеки реалізації стратегії технологічного менеджменту підприємства агропродовольчої сфери, які б включали розроблення стратегічного плану посилення безпеки суб'єктів підприємницької діяльності, створення окремого структурного підрозділу, відповідального за гарантування безпеки суб'єкта підприємницької діяльності, розроблення механізму відслідковування та оцінювання стану зовнішнього та внутрішнього ринків і формування рекомендацій для можливих шляхів підвищення рівня конкурентоздатності господарства, фінансове забезпечення ризикового капіталу для підтримки інноваційної діяльності та прогнозування життєвого циклу суб'єкта агропродовольчої сфери.

***Ключові слова:** менеджмент, підприємство, безпека, загроза, стратегія, технологічний менеджмент.*

Introduction

Ensuring the effectiveness of the agricultural enterprises management, increasing the competitiveness of their products, the national economy is not possible without the transition of the country to the path of innovative development, active adaptation, generation of knowledge, and ensuring its effective transformation into science-intensive technology, new creative types of products, goods, services.

For business entities in the agricultural sector, the issue of development, borrowing, acquisition, and implementation of new technologies is becoming urgent since its solution makes it possible to ensure a decrease in the cost of production (goods, works, services) due to the minimization of all types of losses, increase in labor productivity, increase in product competitiveness, increasing the efficiency of management, improving the quality of enterprise management, etc. Achievement of the defined goal is impossible without introducing innovative and technological development management both at the macro level and at the level of individual economic entities, without mastering managers of agricultural enterprises' theory and practice of technological surveillance. An essential prerequisite for guaranteeing the effectiveness of the technical management strategy in a farming enterprise is identifying and leveling threats to its functioning. Therefore, preventing and mitigating the consequences of threats is the primary condition for ensuring the enterprise's security. A threat to the safety of an enterprise under current conditions is an actual or potential possibility in the manifestation of the various factors' destructive influence its development, which leads to certain losses and negative consequences. Under current conditions, there is no doubt about the need to master this problem.

The most recognized studies, which emphasize the importance of technology management and determine the features of its implementation in the activities of business entities, are the studies of V. Vasylenko, V. Shmatko [1], V. Khurana [8], O. Kyrychenko [2], L. Ligonenko [4], I. Milko [5], N. Rud [6] and others.

Goal formulation

The article aims to substantiate the conceptual framework for implementing measures to ensure the security of technological management strategy implementation in agricultural enterprises in the current dynamic conditions of the business environment.

Presentation of the main research material

The transformations of the external environment that are taking place actualize the problem of rethinking the paradigm in ensuring the safety of technological management strategy implementation in agricultural enterprises. Under the conditions of constant growth and the negative influence of internal and external factors, the problems related to developing enterprises in the farming sector are urgent. The state of war, the aggravation of crises, and other issues in the activities of agricultural enterprises require the implementation of leading experience and the formation of conceptual foundations for ensuring the security of economic entities to accelerate the effectiveness of technological management.

Technological management is one of the functional types of control which meaningfully interconnected with many other types; first, strategic management, economic management, innovation management, competitiveness management, management of changes, management of knowledge, management of intellectual property etc. That is why there is a need to analyze the specifics of ensuring its effectiveness, guaranteeing the safety of strategy implementation, leveling possible external and internal threats, etc., which determines the relevance of this research.

Scientists note [3, p. 7], that the transformation of the national economy and the innovative development of entrepreneurship are interrelated and necessary. Crisis phenomena in such an economy are an inevitable, natural stage of the country's evolution. However, a timely government response brings the economy out of imbalance, thereby providing innovative ways of development.

Technological management involves the active development, creation, and implementation of innovations, the result of new and improvement of existing technologies, as well as the decision to abandon outdated technologies, accordingly, thus, ensuring the technological renewal of production,

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which, in turn, will provide the high competitiveness of the company's products on the market, its practical implementation and profitability and dynamic technological and economic development of the enterprise in the future.

To solve the goals and tasks of technological management, it is necessary to form a specific external environment with state support, innovative technological development of the enterprise, the implementation of the appropriate creative, investment, and technical policy of the state, as well as the formation of a favorable scientific and investment environment.

At the level of each enterprise in the agricultural sector, technological management requires the formation, adoption, and phased implementation of the technical development strategy of the enterprise, with the development of an appropriate management system to achieve all the set goals and tasks of technological development at the strategic, tactical, and operational level in the enterprise. Accordingly, three primary levels of technical management are distinguished in the enterprise: strategic, tactical, and operational [6]. All these levels are integrated into a single technological management system.

Most experts consider technology management in the context of achieving the company's strategic goals, i.e., they call the strategic approach to technology management a priority. Accordingly, the management of technological development at the enterprise level becomes one of the objects in strategic management and one of the priority management activities. In particular, in the study of V. Khuran [8,] attention is focused on the importance of creating a strategic technology management system (STMS) in enterprises, which requires the adoption of a systemic approach in the organization, emphasizes the importance of systematic technology management on a long-term basis, throughout the entire life cycle of technologies.

We agree with the researcher's opinion that technological management is a system of principles and methods of a complex acceptance and implementation of management solutions aimed at effectively using available technological resources and insurance of technological development enterprises [4].

As the expert notes [5], technological management aims to use skills, methods, and management mechanisms to develop and implement new technologies and more effectively use existing technologies and technical and technological capabilities.

According to researchers [1; 2; 7], for business entities in the agricultural sector, the introduction of modern technologies in management concentrates efforts on ensuring: the development and production of new innovative (radically new or conditionally new types of products); entry into new sales markets; significant expansion of existing markets; strengthening, strengthening of the enterprise's market position; increase in product competitiveness; optimization of business processes; improving the quality of the organizational structure and more effective use of its personnel resources; growth of personnel and intellectual potential; maximum effective use of material and financial resources; growth of income and profitability; attraction of new investment resources; scaling of the enterprise's activities with the possibility of further implementation of innovations and the opening of new production facilities; diversification, etc.

Technological management aims to solve the systemic problems of managing an agricultural enterprise with the help of new information and digital technologies in the use of all available resources to increase its efficiency and create additional value.

The formation of a modern, effective management system for an agricultural enterprise requires the following actions [2; 3; 4]: implementation of comprehensive diagnostics of the external and internal environment in the enterprise and factors that have a direct impact on the enterprise; determination of strategic goals and objectives of the business entity and strategic vision of its future development; formation of a model for the new management technologies introduction; ensuring the actual implementation of new management technologies in the enterprise and its functional divisions; creation of an effective system of vertical and horizontal management relationships; introduction of modern mechanisms of integration and interaction, including integrated information systems; development and integration of these products into system operations; determining and ensuring the implementation of mechanisms and tools for monitoring the activity of the management system and its employees, and units for the adequate performance of actions, operations, and functions; development and implementation of business management processes at the functional and operational levels (if necessary); ensuring systematized control over the systematic and optimal use of personnel, technical, material, and financial resources; implementation of actions to optimize the use of all available resources.

Based on research [8] regarding the disclosure of the content of the strategic technology management system, it is possible to distinguish the following stages (Fig. 1). This approach does not reveal the elements of technological management as a system. However, it emphasizes the process, characterizing individual stages of work and actions that should be carried out in the enterprise.

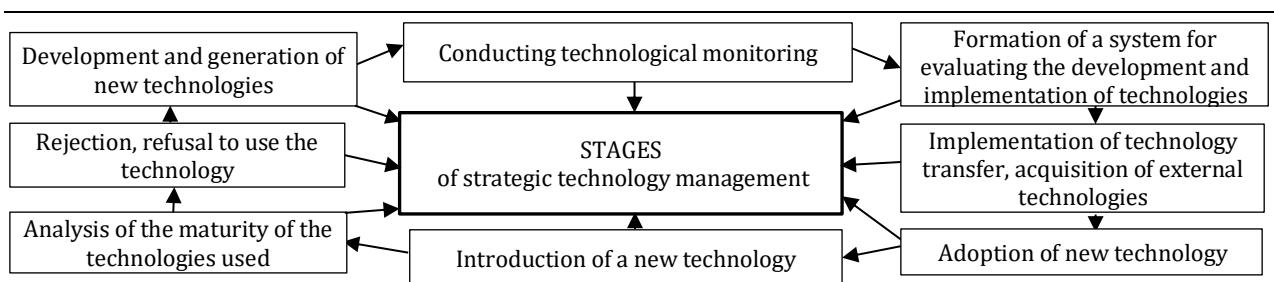


Fig. 1. Stages of strategic technology management [8]

Arguing the expediency of implementing technological management, researchers draw attention to the fact that, at present, the technical factor is recognized as a priority from the point of view of achieving sustainable competitive advantages, increasing the added value and value of the enterprise; under current economic conditions, its importance has a steady tendency to grow.

It should be noted that technology management manages technological development in an enterprise in the agricultural sector.

Technological strategy is aimed at predicting global changes in the economic situation and finding large-scale solutions to strengthen market positions and stable development of enterprises.

There are various approaches to classifying the company's technological development strategy. In particular, the economist B. Twist counts among the main varieties: offensive, defensive, licensing, intermediate, creation of a new market, and robbery [9, p. 48]. At the same time, O. Vasylenko classified strategies according to the conditions of external and internal situations of the organization - offensive, defensive, avant-garde, and imitative [1, p. 419].

However, in general, defensive strategies of technological development are characterized by a concentration on a particular market or its segment, a narrow market orientation or the protection of one's market share, a focus on preserving strategic positions, striving to stay among innovators and offensive strategies of technological development are characterized by the constant expansion of activities, development of new products, search competitive advantages. A general description of the types of technological development strategies is presented in the table. 1.

Table 1. A general description of types of strategies for the technological development of enterprises in the agro-food sector

Characteristic	Technological policy of the enterprise	Technological potential	Type of technology	Strategic position of the enterprise	Risk level	
Strategies of technological development	Protective	Passive, adaptive, innovative activity aimed at maintaining competitive positions	Technological activity aimed at increasing the technological potential and improving indicators of economic activity	Minor modifications in such areas of technological activity as management and socio-psychological work with personnel	Insignificant market share, little competition	Technological activity of the enterprise in conditions of a low level of risk
	Offensive	Active technological activity aimed at achieving technical and market leadership	In the presence of high resource, scientific and technical capabilities, technological activity is aimed at the effective use of the available technological potential	Radical innovations using own scientific developments, modernization, and reorganization	Stable position on the market, existence of monopoly or oligopoly	Technological activity in conditions of increased risk

Strategy development includes analyzing and determining strategic guidelines in the market, which are adjusted and reflected in the form of various strategic programs and projects. The technological goal as a component of general strategic goals is the desired result of the organization's activities (specific executives and responsible managers) in the form of a particular (defined) innovation, which is implemented in a limited time frame with limited resources and is aimed at the qualitative (radical) development of the organization [6, p. 90].

The management of the technological development in the enterprise is not limited to the definition of the technical development strategy goals. However, it requires an assessment of the company's capabilities in terms of its implementation. Therefore, the choice and performance of the technological development strategy depend on the state of the technical potential, the formation of which can be carried out at the expense of the components and elements of the internal environment of the organization.

The set of resources (financial, material, informational, social) possessed by the organization forms its technological potential and characterizes the readiness for systematic technological development, affecting the structure and directions of the technical strategy. The resource set

determines the stages of the technological development of enterprises. Thus, the ultimate goal of technological management is to ensure the technical development of an agricultural enterprise, i.e., a targeted, continuous process of changes in the technological revolutions of the enterprise's economic activity, which determine the outcome of resources, and together make it possible to ensure the technological competitiveness and sustainability of the enterprise in today's dynamic business environment.

It is worth emphasizing the need to implement basic practical measures to ensure the safety of the technological management strategy implementation in an agricultural enterprise, which would include the development of a strategic plan for strengthening the security of business entities, the creation of a structural unit responsible for ensuring the safety of the enterprise, the growth of a monitoring and assessment mechanism external and internal markets and the formation of recommendations for possible ways to increase the level of competitiveness in the economy, financial provision of risk capital to support innovative activities and forecasting the life cycle of the subject of the agro-food sector.

Conclusions and prospects for further investigations

Under the current management conditions of agricultural enterprises, one of the common trends in ensuring their development is the introduction of technology management as a tool focused on using technological innovations to improve the effectiveness of functioning and provide growth in the long term. That is why the substantiation of the conceptual principles of technological management, its application in the direction of enterprises in the agro-food sector, and ensuring the reliability and safety of application is of a priority today.

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