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STADNYK Valentyna
Khmelnitskyi National University
https://orcid.org/000-0002-2095-3517
e-mail: stadnykvv@khmnu.edu.ua
YOKHNA Vitaliy
Khmelnitskyi National University
https://orcid.org/0009-0002-0109-7935
GEYDAROVA Olena
Khmelnitskyi National University
https://orcid.org/0000-0002-7253-893X
e-mail: heidarovaov@khmnu.edu.ua

STRUCTURE AND LOGISTICS DETERMINATION OF THE COMPETITIVE POTENTIAL OF AGRICULTURAL ENTERPRISES

In the conditions of high turbulence of modern agrarian markets, the development of the competitive potential of agricultural enterprises is of key importance in maintaining the export capacity of Ukrainian agribusiness. The article examines the structure of the competitive potential of agricultural enterprises, highlighting the role of each component in the formation of competitive advantages by the enterprise. It is substantiated that competitive potential is a complex system that includes resource, technological, innovation-digital, logistical, organizational-management, marketing and export-institutional components. Each structural component and its functional purpose are characterized. Based on the allocation of competitive advantages that an agricultural enterprise receives from the effective development of competitive potential, the dominant and integrative role of the logistics component of the competitive potential of agricultural enterprises in the implementation of the tasks of development and increasing their market opportunities in the conditions of the destruction of traditional markets is logically proven. Special attention is paid to digital tools for logistical support of production and sales activities of agricultural enterprises, including TMS, WMS, SCM systems, blockchain and traceability platforms, IoT and GIS/GPS monitoring technologies, Big Data analytical solutions and ERP modules. It is shown that their comprehensive implementation ensures the optimization of material flows, reduction of logistics costs, increase of transparency and quality of products, strengthening of adaptability to market changes and increase of operational stability of agricultural enterprises. It is proved that the digitalization of logistics is becoming a key factor in the formation of long-term competitive advantages and strengthening of positions in domestic and foreign agricultural markets. The results of the study confirm the need for strategic development of digital logistics infrastructure as a key element in increasing the competitiveness of agricultural business in the face of growing global challenges.

Keywords: market transformation, agribusiness, competitiveness, structural components of competitive potential, digital logistics tools, competitive advantages

СТАДНИК Валентина, ЙОХНА Віталій, ГЕЙДАРОВА Олена
Хмельницький національний університет

СТРУКТУРА ТА ЛОГІСТИЧНА ДЕТЕРМІНАЦІЯ КОНКУРЕНТНОГО ПОТЕНЦІАЛУ АГРОПІДПРИЄМСТВ

В умовах високої турбулентності сучасних аграрних ринків ключового значення у збереженні експортної спроможності агробізнесу України є розвиток конкурентного потенціалу агропідприємств. У статті досліджено структуру конкурентного потенціалу агропідприємств з виокремленням ролі кожної складової у формуванні підприємством конкурентних переваг. Обґрунтовано, що конкурентний потенціал є комплексною системою, яка включає ресурсну, технологічну, інноваційно-цифрову, логістичну, організаційно-управлінську, маркетингову та експортно-інституційну складові. Охарактеризовано кожну структурну компоненту та її функціональне призначення. На основі виділення конкурентних переваг, які отримує агропідприємство від ефективної розбудови конкурентного потенціалу логічно доведено домінуючу та інтеграційну роль логістичної складової конкурентного потенціалу агропідприємств у реалізації завдань розвитку й нарощування їх ринкових можливостей в умовах руйнування традиційних ринків. Особлива увага приділена цифровим інструментам логістичного забезпечення виробничо-збутової діяльності агропідприємств, серед яких системи TMS, WMS, SCM, платформи блокчейн і traceability, технології IoT та GIS/ GPS-моніторингу, аналітичні рішення Big Data й модулі ERP. Показано, що їх комплексне впровадження забезпечує оптимізацію матеріальних потоків, зниження логістичних витрат, підвищення прозорості та якості продукції, посилення адаптивності до ринкових змін і зростання операційної стійкості агропідприємств. Доведено, що цифровізація логістики стає ключовим чинником формування довгострокових конкурентних переваг та зміцнення позицій на внутрішніх і зовнішніх аграрних ринках. Результати дослідження підтверджують необхідність стратегічного розвитку цифрової логістичної інфраструктури як визначального елементу підвищення конкурентоспроможності аграрного бізнесу в умовах зростаючих глобальних викликів.

Ключові слова: трансформація ринків, агропідприємство, конкурентоспроможність, структурні елементи конкурентного потенціалу, цифрові інструменти логістики, конкурентні переваги

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PROBLEM STATEMENT

The current state of the Ukrainian economy is determined by the influence of a complex set of internal and external factors. This directly affects agricultural enterprises. Military aggression, geopolitical risks and global economic shifts, disruption of traditional logistics chains, digitalization of business, increasing consumer demands in foreign markets – all this requires business entities to adopt new approaches to working in the market. In conditions of instability and a high level of uncertainty, the ability of an enterprise not only to maintain its market presence, but also to flexibly adapt to changes, relying on its competitive potential and developing it in directions that best allow for the realization of new market opportunities, is becoming increasingly important.

Modern research emphasizes that the competitive potential of an enterprise is a systemic phenomenon capable of providing long-term market advantages through the effective combination of material, technological, organizational, logistical and digital resources. In agribusiness, it is formed under the influence of many interrelated factors, among which an important place is occupied by increasing requirements for product quality. In turn, this requires the transformation of the logistics component of the competitive potential of agricultural enterprises – it must ensure compliance with the parameters of maintaining the proper level of quality of agricultural products in logistics operations, while ensuring the efficiency of supply chains. Under these conditions, the logistics component becomes an integrating element of competitive potential, determining the enterprise's access to resources, markets, partners and institutions important for sustainable business development.

ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

A lot of research is currently devoted to the development of the competitive potential of agricultural enterprises in Ukraine. Content analysis of their main conclusions and recommendations shows that the competitive potential of an enterprise is considered by scientists mostly in the context of the competitiveness of the enterprise. This is emphasized by such scientists as V. Zakusylo and N. Havlovska with co-authors [1], V. Gapon and I. Kramar [2], N. Karachyna and L. Pertsata [3], Yu. Kravchik, Margasova and E. Shevchenko [4], Ya. Lisun and A. Rudy [5], O. Nyzhnyk [6], O.Ipatov [7] and others [8-10]. This is emphasized even in the very definition of this definition – as "a set of resources, capabilities and competencies that ensure its ability to effectively operate and sustainable development in competitive conditions" [7]. At the same time, scientists specify resource capabilities and competencies taking into account industry specifics or their own research issues. In particular, studying the etymology of this term and its structural content, N. Karachyna and L. Pertsata include in the composition of the competitive potential of an enterprise "the set of available natural, material, labour, financial and intangible resources and capabilities of objects and/or business entities that allow them to obtain competitive advantages over other market participants" [3]. They emphasize that the enterprise independently decides which resources to attribute to a particular group of elements that are components of the competitive potential on the basis of identifying, systematizing and analysing all the constituent elements [3]. Ya. Lisun and A. Rudy emphasize that the competitive potential of an enterprise is "a complex concept, since it reflects the interaction of all the elements of which it consists (production, financial, marketing, personnel, innovation, environmental" [5]. O. Ipatov, studying the issue of investing in the development of the competitive potential of agricultural enterprises, includes production resources, financial capabilities, innovative potential, personnel and managerial competencies. At the same time, specifying the areas in which changes are necessary to strengthen the ability of an agricultural enterprise to form competitive advantages, he additionally points out the need to develop logistics and digital marketing technologies [7]. Such a position, in our opinion, most closely corresponds to the modern vision of the areas of development of the market and competitive potential of agricultural enterprises that have encountered problems with the sale of grown products in traditional markets and are looking for new market opportunities for themselves. Moreover, modern information technologies have significantly expanded the instrumental support for managing these processes. At the same time, it is important to ensure the strategic orientation and complexity of the relevant management decisions, which requires their proper methodological justification. This determined the goal and objectives of this study.

FORMULATION OF THE OBJECTIVES OF THE ARTICLE

The objectives of the study are to structure the competitive potential of agricultural enterprises according to its main components, determine their role in the formation of competitive advantages by the enterprise, substantiate the contribution of the logistical component of the competitive potential of agricultural enterprises to the implementation of the tasks of development and expansion of their market opportunities in the conditions of geopolitical transformations and the destruction of traditional markets, and formulate recommendations for its improvement using the tools of the latest digital technologies.

PRESENTATION OF THE MAIN RESEARCH MATERIAL

The competitive potential of an enterprise is the basis of its competitiveness and sustainable growth. This statement is an important conclusion of the theory of competition, on the basis of which the directions of development of competitive advantages are formed and measures and tools for their implementation are determined. The activation of scientific research in the field of development of the competitive potential of agricultural enterprises can be explained by the fact that before the start of the full-scale invasion in Ukraine, a relatively clear distribution of

agricultural market participants was formed, engaged in the production of agricultural products of a limited range (grains or oilseeds). This product was subject to initial preparation for sale at elevators, which ensured its bringing to the required quality parameters (which were fixed by the relevant futures agreements) and was shipped on a large scale to the markets of other countries. The requirements for the quality of agricultural products on the world market are clearly defined and differentiated by category, and the export potential of such products was so significant that agricultural companies actually had no problems with sales, so there was practically no competition in its classical sense between domestic participants in this market segment. At the same time, the protracted war in Ukraine disrupted the dispositions of domestic exporters of agricultural products on foreign markets due to the destruction of traditional logistics chains, which caused a significant increase in the cost of transporting basic types of products, and energy problems affected not only production costs, but also those related to warehousing and storage of finished products in elevators. All these are positions on which competitive struggle is conducted in the markets. And a significant part of them concerns the sphere of marketing and logistics, which gives grounds to consider them through the prism of strategic management and in the context of developing the competitive potential of agricultural enterprises. And not only taking into account the development of logistical capabilities of large agricultural producers, but also from the point of view of integrating the efforts of small and medium-sized entrepreneurs, who can unite to increase their chances of staying on the market during a crisis – achieving synergy in various forms of organizational and structural cooperation [9; 11].

Solving this problem requires a preliminary definition of the essence of the competitive potential of an agricultural enterprise. We propose to consider it as a set of interconnected elements, each of which forms a separate vector of competitiveness, and together they determine the possibilities of an agricultural enterprise to adapt to market conditions, achieve strategic goals and ensure effective functioning and sustainable development in the planned future. Given the specifics of agricultural production, this potential has a multi-component structure. Based on the generalization of modern theoretical approaches, we have identified seven key elements of the competitive potential of an agricultural enterprise, which make up its structure and determine the directions of formation of competitive advantages (Table 1).

Table 1

Structure and characteristics of the components of the competitive potential of an agricultural enterprise

Element of Competitive Potential	Content and Key Characteristics	Role in Forming Competitive Advantages
1. Resource Potential	Land resources, machinery, equipment, production infrastructure, material stocks, financial resources, personnel	Forms the basis of production capacity; influences production volumes, quality and cost; ensures the financial ability of the enterprise to grow; forms the intellectual foundation of development
2. Organizational and Managerial Potential	Management structure, managerial competencies, corporate culture, motivation system, decision-making processes	Determines the efficiency of converting resources into results; ensures coherence and quality of managerial decisions
3. Technological Potential	Modern agricultural technologies, precision farming systems, automation, robotics, post-harvest processing	Ensures productivity, quality and efficiency of production processes; reduces resource consumption
4. Marketing Potential	Market analysis, demand formation, branding, distribution channels, pricing policy, communications, customer relationship management	Enables the enterprise to develop a market-oriented strategy; helps occupy favorable market niches and increase customer loyalty
5. Innovation and Digital Potential	ERP, SCM, CRM, GIS, IoT, drones, monitoring systems, data analytics, innovative technological solutions	Enhances enterprise adaptability; ensures the use of modern management and forecasting tools
6. Logistics Potential	Transport logistics, warehouse infrastructure, WMS, TMS, SCM, traceability technologies, IoT, blockchain, post-harvest handling systems	Ensures quality, speed and resilience of supply processes; minimizes costs; creates added value and provides access to premium markets
7. Export and Institutional Potential	Compliance with standards (HACCP, GlobalG.A.P.), product traceability, foreign economic relations, partnerships, logistics corridors	Enables access to international markets and premium prices; ensures partner trust and contractual stability

Source: generated using [1; 3; 5; 7; 11; 12; 13].

As shown in the table, each of the identified elements of competitive potential contributes to the formation of competitive advantages, while their interconnectedness enables the achievement of a synergy effect. The most diverse in terms of the range of tasks it covers is the resource potential, as it includes material and technical, financial, and human resources. The material and technical component of resource potential comprises the land resources, machinery and equipment, natural resources, and financial assets available to the enterprise. Soil quality, machinery performance, and the availability of infrastructure facilities (warehouses, dryers, elevators) create the foundation that determines the initial production capacity of an agricultural enterprise, its cost structure, and the level of production costs. Financial resources ensure the enterprise's financial sustainability and flexibility, its ability to attract investments and loans for implementing innovative projects – all of which are crucial prerequisites for maintaining competitive advantages in the processes of business development and scaling. Human resources are characterized by employee qualifications, readiness to adopt innovations, and ability to work with modern digital and logistics systems, which is particularly important for the digital transformation of the agricultural sector.

At the same time, it is reasonable to agree with the view expressed by Kaur et al. (2022) that the technological potential should be distinguished from the material and technical potential. It encompasses modern agricultural technologies, precision farming systems, automated solutions, and post-harvest processing technologies; therefore, intangible resources play an essential role within it [12]. These resources constitute the technological basis for managerial decision-making, which determines production efficiency, labor productivity, and the ability to meet high quality standards.

Equally justified is the distinction of the innovation and digital component of competitive potential, as emphasized by Kravchyk, Margasova, and Shevchenko (2025). This component is formed through the introduction of digital management platforms (ERP, CRM, SCM), analytical systems, IoT sensors, drones, GIS systems, forecasting technologies, and automation tools for managerial processes [4]. Digitalization ensures transparency, soundness of decisions, and greater responsiveness to market changes, which is crucial for agricultural enterprises seeking to modify their production structure, increase diversification, or develop processing capacities.

The organizational and managerial component also requires separate identification. It encompasses the management structure, managerial competencies in planning, organizing, and coordinating activities, corporate culture, motivation systems, and decision-making mechanisms. The quality of management determines the effectiveness of all other components of competitive potential.

At the same time, among the broad set of managerial functions, two perform a particularly critical role in building competitive advantages for agricultural enterprises – marketing and logistics. Marketing potential reflects the enterprise's ability to research the market, analyse consumer behavior, build distribution channels, develop its brand, and ensure effective communication. It outlines the capacity of the enterprise to occupy target segments and shape value propositions. Today, the marketing function acts as a dominant element of managerial decision-making across all types of enterprises, regardless of their field of activity [11].

Under current conditions, it is also important for agricultural enterprises to develop their export and institutional potential. This component includes compliance with international standards (HACCP, GlobalG.A.P.), the ability to maintain effective logistics relationships and partnerships. It determines the enterprise's capacity to enter foreign markets and obtain premium prices, while forming the institutional foundation for building its logistics potential.

The logistics component of competitive potential in domestic agricultural enterprises stands out due to its integrative role in the context of geopolitical transformations, linking production with the market. Logistics ensures efficient movement of material flows, timely deliveries, and operational resilience. Therefore, the development of logistics potential should be viewed as a strategic requirement of today, as it shapes the efficiency of material, information, and financial flows and has a decisive influence on the competitiveness of an agricultural enterprise.

Our position regarding the determining role of the logistics component of the competitive potential of agricultural enterprises should be supported by arguments. We believe that effective logistics provides:

- cost optimization and increased economic efficiency. In the cost structure of agricultural enterprises, the logistics component can account for up to 30–40%, covering transportation costs, storage, transhipment and post-harvest losses [14]. Optimization of logistics processes using digital management systems for routes, warehouses and fleets of equipment allows for a significant reduction in cost. This ensures an increase in product margins and a strengthening of the enterprise's market position;
- the necessary parameters of product quality and preservation. Agricultural products are sensitive to transportation and storage conditions, which directly affects their market properties and competitiveness in domestic and foreign markets. The use of digital control tools (IoT sensors, cold chain systems, automated WMS solutions) allows maintaining optimal conditions for logistics service, which significantly reduces losses and improves product quality. Thus, logistics forms consumer value, which is an important component of competitive potential;
- increasing the efficiency and reliability of supplies. In the agricultural sector, the time factor is critical: untimely deliveries can lead to crop losses, deterioration of quality, increased costs and reduced competitive advantages. Effective logistics ensures the consistency of production and sales processes, reduces time risks, ensures the continuity of the production and sales cycle and increases the speed of response to market changes. This is especially important for enterprises that are focused on export;
- transparency and traceability of agricultural products as a requirement of international markets. Traceability of products is becoming a mandatory condition for exports to the EU, Canada, the USA and other countries. Blockchain and IoT-based tools provide recording of information about the origin of products, conditions of their cultivation, transportation and storage, which increases the level of customer trust and creates new competitive opportunities [13; 15]. Agribusinesses that implement traceability technologies gain access to premium market segments, strengthening their competitive potential;
- increasing the resilience of an agribusiness to risks. The conditions of instability of transport infrastructure, military threats and climate risks make logistics a key element of operational resilience. Digital logistics models allow you to quickly restructure routes, manage risks in supply chains and reduce dependence on individual transport channels. This minimizes operational risks and ensures the stability of the activities of agribusinesses;
- creating added value and increasing market attractiveness Logistics today is not just transport; it is varietal separation, cleaning, drying, packaging, which significantly increase the final value of products. The presence

of a developed logistics infrastructure and appropriate digital solutions allows an agricultural enterprise to position its products in more expensive segments, compete in terms of quality and service, and form long-term contracts with processors and traders. The above arguments confirm our position that the logistics component is one of the key ones in shaping the competitive potential of an agricultural enterprise, since it is it that ensures the effective movement of resources, products, information, and finances between all participants in the agricultural value chain. This forms the long-term competitiveness of agribusiness, and the digitalization of logistics becomes one of the key areas of its strategic development. The most commonly used digital tools for logistical support of agricultural enterprises are systematized in Table 2 according to their functional purpose and impact on the competitive potential of agricultural enterprises.

Table 2

Digital Tools for Logistics Support of Agricultural Enterprises

Group of Tools	Functional Capabilities	Impact on the Competitive Potential of the Agricultural Enterprise
Digital logistics planning tools – ERP systems (SAP, Microsoft Dynamics), APS systems	Resource planning, production management, inventory accounting	Increased planning accuracy, cost reduction, optimization of resource use
Supply Chain Management systems – Oracle SCM, Blue Yonder	Synchronization of procurement, production, and sales	Reduced delays, improved coordination with partners, enhanced resilience to risks
Warehouse Management Systems (WMS, SAP EWM)	Control of material flows, automation of warehouse operations	Acceleration of warehouse processes, reduction of losses, improved inventory accuracy
Transport logistics systems (TMS, CargoPlan)	Routing, delivery monitoring, optimization of transportation costs	Lower transportation costs, increased reliability of deliveries
Geographic Information Systems (QGIS, ArcGIS)	Territorial analysis, optimization of logistics routes, field monitoring	Rational use of land and transport resources
Internet of Things (IoT) technologies – sensors for equipment and storage monitoring; telematics	Real-time data collection, temperature control, equipment condition monitoring	Reduction of downtime, improved storage and delivery quality
Blockchain traceability systems (IBM Food Trust, AgriChain)	Product origin identification, data security	Increased consumer trust, opportunities for premium pricing
Cloud platforms and Big Data analytics (Google Cloud, AWS, Power BI)	Data storage, demand forecasting, logistics performance analytics	Decision-making optimization, higher forecasting accuracy
Mobile applications for logistics management (FieldView, AgroApp)	Transport and order management, driver communication	Faster interaction, reduced human errors
Drones and digital monitoring tools (DJI Agras, Skydio)	Field monitoring, cargo condition assessment, inventory operations	Lower control and audit costs, faster access to operational information
Automated machinery management systems (Precision Farming) – Trimble, John Deere Operations Center	Autopilot, load control, machinery route planning	Increased productivity, savings in fuel and time

Source: compiled by the author based on various digital logistics solutions using [4; 10; 13-17].

Therefore, in the conditions of a dynamic market, climate risks, military challenges and growing quality requirements, logistics should be filled with modern digital technologies that increase the flexibility of logistical and sales processes and ensure their efficiency. Thus, logistics is transformed from an auxiliary function into a strategic factor in the competitiveness of agricultural enterprises, strengthening their ability to be proactive and expanding the horizons of their market opportunities.

CONCLUSIONS FROM THIS STUDY AND PROSPECTS FOR FURTHER EXPLORATION IN THIS DIRECTION

The conducted study allowed us to establish that the competitive potential of agricultural enterprises is a multidimensional system that covers a significant list of resource, technological, organizational, innovation-digital, financial, marketing, personnel and institutional factors. A special role among them is played by the logistical potential, which performs an integration function and ensures the coordinated interaction of all elements of the production and sales system of an agricultural enterprise. It is the logistics component that determines the level of operational efficiency, access to markets, the degree of safety and quality of products, as well as the ability of the enterprise to quickly respond to external risks and market changes.

The rapid digitalization of logistics processes deserves special attention. Today, agricultural enterprises have access to a wide range of digital logistics support tools – transport management systems (TMS), warehouse infrastructure (WMS), supply chains (SCM), blockchain and traceability platforms, IoT technologies, GPS/GIS monitoring, Big Data analytical platforms, ERP logistics modules, mobile applications for equipment management, agricultural monitoring systems, automatic route planning platforms and integrated cloud solutions. The comprehensive use of these tools ensures a reduction in logistics costs, reduced product losses, increased transparency, forecasting accuracy, the effectiveness of management decisions and the quality of the final product.

The digitalization of logistics directly affects the formation of competitive advantages of agricultural enterprises, as it allows: to ensure product traceability at all stages of the production and logistics cycle; to increase the speed and reliability of supply; to respond adaptively to market fluctuations and external risks; to integrate into

international supply chains and meet global standards; to form innovative business models focused on the client and operational excellence. This gives grounds to argue that the development of the competitive potential of agricultural enterprises is impossible without comprehensive improvement of the logistics infrastructure and active implementation of digital solutions. Summarizing the results, it should be emphasized that the competitive potential of an agricultural enterprise in the XXI century is determined not only by the availability of resources and technologies, but primarily by the level of digital maturity and the scale of implementation of modern logistics tools. It is the digital logistics infrastructure that becomes the key driver for the formation of long-term competitive advantages, strengthening market positions and ensuring sustainable development of agricultural business in the face of global challenges and increased competition. At the same time, modern marketing tools and technologies are no less important in increasing the competitive potential for the development of market opportunities of agricultural enterprises. The next stage of our research should be devoted to assessing the quality of instrumental support for the marketing component of the competitive and market potential of agricultural enterprises.

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