DOI https://doi.org/10.51647/kelm.2021.7.1.21

WDRAŻANIE TECHNOLOGII INFORMATYCZNYCH W DZIAŁALNOŚCI SPRZEDAŻOWEJ PRZEDSIĘBIORSTW ROLNYCH: ZAŁOŻENIA I PERSPEKTYWY ROZWOJU

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Adnotacja. W warunkach światowego kryzysu gospodarczego spowodowanego ograniczeniami kwarantanny ze względu na rozprzestrzenianie się COVID-19 rządy stoją w obliczu poważnych zagrożeń dla bezpieczeństwa żywnościowego, zaostrzonych przez zmiany klimatu. Celem tego artykułu jest zbadanie procesu wprowadzania technologii informatycznych w relacje, które powstają między dostawcami produktów rolnych za pomocą elektronicznych kanałów (technologii informacyjnych) promocji produktów rolnych. Autorzy wskazują na wzrost roli cyfryzacji w działaniach sprzedażowych przedsiębiorstw rolnych oraz znaczenie wykorzystania kanałów elektronicznych do promocji produktów rolnych. Uzasadnione jest, że aby wybrać optymalny kanał, należy wziąć pod uwagę wpływ różnych czynników wpływających na rentowność sprzedaży producenta rolnego. Wybór elektronicznego kanału dystrybucji (lub środków informacyjnych) zależy od wielkości produkcji określonego producenta. W przypadku dużych przedsiębiorstw najlepszą opcją jest połączenie kanałów promocji, takich jak elektroniczna giełda towarów i sklep internetowy, a w przypadku małych przedsiębiorstw rolniczych (na przykład gospodarstw rolnych) o ograniczonej produkcji – własna strona internetowa i platforma handlu elektronicznego. Aby zmniejszyć liczbę struktur mediacyjnych i zwiększyć zyski przedsiębiorstw rolnych, zaleca się stosowanie cyfrowych kanałów sprzedaży.

Słowa kluczowe: technologia informacyjna, działalność sprzedażowa, przedsiębiorstwa rolnicze, e-commerce, platforma elektroniczna, sklep internetowy.

INTRODUCTION OF INFORMATION TECHNOLOGY IN THE MARKETING ACTIVITIES OF AGRICULTURAL ENTERPRISES: PREREQUISITES AND DEVELOPMENT PROSPECTS

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Abstract. In the context of the global economic crisis caused by quarantine restrictions due to the spread of COVID-19, governments face serious threats to food security, which is exacerbated by climate change. The purpose of this article is to study the process of introduction of information technology in the relationship that arises between suppliers of agricultural products through electronic channels (information technology) for the promotion of agricultural products. The authors point to the growing role of digitalization in the marketing activities of agricultural enterprises and the importance of using electronic channels to promote agricultural products. It is substantiated that in order to choose the optimal channel it is necessary to take into account the influence of various factors that affect the profitability of sales of agricultural producers. The choice of electronic sales channel (or media) depends on the volume of production of a particular manufacturer. For large enterprises, the best option is a combination of promotion channels such as an electronic commodity exchange and an online store, and for small agricultural enterprises (such as farms) with limited production – their own website and e-trading platform. To reduce the number of intermediary structures and increase the profits of agricultural enterprises, it is advisable to use digital sales channels.

Key words: information technologies, sales activities, agricultural enterprises, e-commerce, electronic platform, online store.

ЗАПРОВАДЖЕННЯ ІНФОРМАЦІЙНИХ ТЕХНОЛОГІЙ У ЗБУТОВІЙ ДІЯЛЬНОСТІ АГРАРНИХ ПІДПРИЄМСТВ: ПЕРЕДУМОВИ ТА ПЕРСПЕКТИВИ РОЗВИТКУ

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Анотація. В умовах світової економічної кризи, спричиненої карантинними обмеженнями через поширення COVID-19, уряди стикаються із серйозними загрозами продовольчій безпеці, що посилюється зміною клімату. Метою статті є вивчення процесу запровадження інформаційних технологій у взаємовідносини, що виникають між постачальниками сільськогосподарської продукції за допомогою електронних каналів (інформаційних технологій) просування сільськогосподарської продукції. Автори вказують на зростання ролі діджиталізації в збутовій діяльності аграрних підприємств і важливість використання електронних каналів для просування сільськогосподарської продукції. Обґрунтовано, що для вибору оптимального каналу необхідно враховувати вплив різних факторів, які позначаються на рентабельності продажів сільськогосподарського виробника. Вибір електронного каналу збуту (або інформаційних засобів) залежить від обсягів виробництва певного виробника. Для великих підприємств найкращим варіантом є комбінація таких каналів просування, як електронна біржа товарів та інтернет-магазин, а для невеликих аграрних підприємств (наприклад, фермерських господарств) з обмеженим обсягом виробництва – власний вебсайт та електронна торгова платформа. Для зменшення кількості посередницьких структур і збільшення прибутку аграрних підприємств доцільно використовувати цифрові канали збуту.

Ключові слова: інформаційні технології, збутова діяльність, аграрні підприємства, електронна комерція, електронна платформа, інтернет-магазин.

Statement of the problem. The transition to sustainable food systems requires the joint efforts of a wide range of stakeholders and organizations involved in supply chains. Agricultural markets play an important role in these systems to ensure that agricultural products benefit consumers considering merchandise characteristics. Market-based approaches have proven effective in global economic systems; they are designed to manage the reorganization of food supply chains; they can contain useful innovative ways to be both adapted and used in Ukraine.

Analysis of recent research and publications. Reports of international organizations on agricultural production give a modern perspective on the development of the world market of agricultural products. Monthly reviews from the US Department of Agriculture and the USDA are supplemented by a detailed assessment of grain production, as well as quarterly and food-side supply and demand conditions (Ignatieva et al., 2018; Kovalenko et al., 2016; Yaremchuk, 2020). It is possible to analyze the domestic market for agricultural products considering the above-mentioned data. The Food and Agriculture Organization of the United Nations (FAO) and the French National Research Institute for Agriculture, Food and Environment (INRA) presented the research results on innovative approaches allowing markets to stimulate the transition to sustainable agriculture which can be introduced in Ukraine (Aleskerova et al., 2019; Loconto et al., 2016). The approaches are based on the experience of small farmers who use sustainable methods. Innovations were supported by institutions that manage the stable development of agriculture and exchange at the agricultural market. Hryhorii Kaletnik and Svitlana Lutkovska (Kaletnik et al., 2020; Pronko et al., 2020) research innovative strategy for sustainable development and establish that its development requires the identification and gradual improvement of attractive value offers; development and continuous improvement of business models; drawing up and implementing an action plan; forming the focus of all stakeholders on achieving strategic goals. Nataliia Yaremchuk (Ignatieva et al., 2018; Kovalenko et al., 2016; Yaremchuk, 2020) indicates the available potential for expanding productivity horizons. According to scholar, the unwillingness to produce value-added products in the country deprives the economy of significant financial infusions. Attention is also focused on the problem of reducing the profitability of grain production and its irrational distribution. It is considered that the reason for this situation (Kaletnik, 2009; Kaletnik, 2018) is the increasing influence of grain traders on prices.

Ukrainian scholars Malik and Shpykuliak (Shpykuliyak et al., 2019) research the development of agricultural cooperation and integration processes in the agricultural sector of Ukraine, they investigate the theoretical and methodological foundations of cooperation and determine the structural dynamics of changes in cooperation and development of integration processes, methodological links with management efficiency and offer conceptual cooperation and integration relations in the agricultural sector.

Anatolii Mazur and Kateryna Mazur (Mazur et al., 2020; Pryshliak, 2019) also determine the need to cover agriculture with cooperatives. However, determining the prospects of enterprises in accordance with the institutional structure of their positioning requires the establishment of indicators of organizational and institutional structure of entities, indicators of development and efficiency, as defined by Shpykuliak and Malik (Shpykuliak et al., 2019). The research results allowed the authors to identify areas of state support for the agricultural sector of Ukraine and justify the need to implement a positive world experience.

The goals of the article (task statement) formulation. Information and communication technologies are expected to improve the availability of information and the efficiency of agricultural product management, expand consumer reach and increase profitability (Ignatieva et al., 2018; Kovalenko et al., 2016; Yaremchuk, 2020). Digital economy development plans include addressing e-commerce, including the creation of an e-commerce platform and logistics infrastructure for e-commerce (Lutsyak et al., 2019; Furman, 2020; Furman, Hontaruk, 2019). Electronic loans and modern payment systems are also important for digitalization in agriculture, as lenders try to provide their customers with more appropriate services in terms of price and quality (Malik et al., 2019; Furman, Pronko, 2019).

The purpose of this article is to research the process of introduction of information technologies in the relationship between suppliers of agricultural products through electronic channels (information technology) for the promotion of agricultural products among agricultural enterprises, wholesale suppliers of agricultural products, owners of warehouses for storage of agricultural products and other potential buyers.

The main research material. E-commerce of crops is represented by the possibility of selling on trading exchanges, on electronic trading platforms, as well as with the sale of products in online stores. The main marketing problems for agricultural enterprises are low purchase prices and price differences, the urgent task is to find the optimal channel for the promotion of agricultural products.

First of all, we need to define e-commerce forms. The economic category commodity exchange has both broad and narrow definitions. The Agricultural Commodity Exchange is an organized market for the sale of goods, where they are traded mainly in the form of contracts for their supply. The sale of agricultural goods on the commodity exchange is carried out at prices set by agreement between the participants in the exchange transaction, i.e., it is actually a free sale.

Exchange trades are held daily in the form of e-commerce. Electronic applications of sellers and buyers are downloaded into the exchange information trading systems during the preparation of the trading session. Prices for the goods are set by the seller. At each exchange, the average prices that were developed during the day of exchange are recorded primarily for reference; stock quotes are set that reflect market conditions. Stock quotes are calculated for each product separately.

Exchange trading plays an important role in the development of agricultural markets, as it increases market liquidity, ensures the regular functioning of the organized market and reduces sales time by concluding futures or option contracts for future delivery. The effectiveness of agricultural participation is determined by high market demand. Pricing is based on supply and demand for a particular product, and the final profit of the farmer is determined by market conditions because farmers must either hire a broker and pay him a fee or register their own brokerage and pay a member contribution to trade on exchanges. That's why, this type of sales is effective for large suppliers. Participants in stock trading are usually wholesale companies and large traders who have their own vehicles, warehouses and sufficient financial resources. All these resources make it possible to accumulate large quantities of products, for example, grain crops for resale, including sales on the stock exchanges of other countries (Iranian Commodity Exchange, Vietnam Commodity Exchange, Indian Commodity Exchange, etc.). The main problems of the trading business are the low financial capacity of wholesale companies and insufficient human resources. E-trading platforms are sites where customer organizations post purchase information and suppliers quote offers and enter into contracts. E-commerce is conducted by state and non-state companies in the form of an electronic auction. E-commerce on electronic trading platforms is very close to commodity exchanges. However, companies themselves trade on an electronic trading platform. Nowadays, lots of electronic trading platforms have been created in the world, some of them are for agricultural trade (horsepower.com; milk.com; globalfoodexchange.org; ecpg.net; sugeronline.com and others). The farmers, farmers' cooperatives, wholesalers and small wholesalers, producers of agricultural equipment and mineral fertilizers are their direct participants. There are many electronic trading platforms for the sale of agricultural products, for example, AgroServer, the grain business of the agricultural market. There are electronic platforms that sell agricultural products along with many other products (b2bcenter, 4Dealer, FBQ). They differ in the quality of technical support, interface, and applications. Platform accreditation and an electronic digital signature are required to participate in the trade. Electronic digital signature is convenient as a digital tool. However, the company must issue several digital keys to interact with any government regulator and to participate in public procurement. In our opinion, each specific agricultural enterprise as a legal entity should use one digital signature to interact with all government agencies, which will undoubtedly increase the effectiveness of such interaction.

Electronic trade auctions are an important form of public procurement. The application of sales channels such as electronic commodity exchanges and electronic trading platforms makes the market as transparent as possible, because information on prices and trading volumes is open. Risk insurance is carried out on the basis of public price indicators.

E-commerce channels such as Internet sites and own online stores are preferred for small farmers. An online store is an information portal that summarizes information on the sale of agricultural products from various suppliers, as well as the opportunity to advertise the purchase of agricultural products. An effective logistics system is required for the online store to work successfully. As the cost of delivery of goods in online trade, as a rule, is charged from the buyer, there may be a need for additional transport services.

The website is an information component within the marketing strategy of the agricultural producer; it is also a direct advertising of high-quality products. The advantage of direct sales of crops from your own website is

the ability to reduce and set a competitive selling price within the profitability of production due to the lack of intermediate surcharges, as well as the ability to sell and buy goods geographically remote from their location. Pricing will be determined by the planned profit of the seller minus the cost of creating and maintaining the site, including minus the cost of creating the necessary order system and the cost of registration in the rankings, search engines and more. It is difficult to find the optimal sales channel without reliable and complete information about the market and its prices. That's why, manufacturers prefer to work with representatives of farmer markets and online stores, which leads to a trade margin in the structure of the final price for the customer. If an enterprise wants to have a stable profit, it must maintain sales at a level that exceeds the break-even point, while maintaining a constant level of variable costs, when the total income of the organization fully covers its costs. It is advisable to use the parameter of profitability of sales as the ratio of profit to revenue to determine the degree of influence of the value of the electronic product on profit. The number of intermediaries in the market, transportation and logistics costs, the cost of supporting (implementing) IT technologies can be attributed to the factors that increase the cost of selling products through a particular electronic sales channel. Considering the last parameter, we should mention that to create and maintain your own site is the most expensive one because it is necessary to work with the end customer without intermediaries. The maximum number of intermediaries is typical for electronic commodity exchanges. Wholesale intermediaries and grain traders have a significant impact on sales through electronic commodity exchanges and electronic trading platforms.

The logistics infrastructure of the agricultural market does not meet the modern demands of agricultural producers in many regions. The advantage of selling products through your own website is personalization which can hardly be achieved in an online store. Taking into account the interests of individual buyers allow you to save on logistics costs. The ability to emphasize the benefits of products on your own website affects the selling price and provides an opportunity to sell products above average market prices. In conditions where there is no system of standardization of environmentally friendly products, manufacturers can post on their websites information about the specific consumer qualities of their products. Thus, the introduction of information technology in the sales activities of the enterprise helps to increase the level of profitability of sales.

Conclusions and prospects for further research. The research results indicate the growing role of digitalization in the marketing activities of agricultural enterprises and the importance of using electronic channels to promote agricultural products. It is necessary to take into account the influence of various factors on sales of the agricultural producers in order to choose the optimal channel. The choice of electronic sales channel (or media) depends on the volume of production of a particular manufacturer. Thus, the best option is a combination of promotion channels such as an electronic commodity exchange and an online store for large enterprises, their own website and e-trading platform and for small agricultural enterprises with limited production. Thus, it is advisable to use digital sales channel to reduce the number of intermediary structures and increase the profits of agricultural enterprises.

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