

THE ROLE OF THE DIGITAL COMPETENCE OF EMPLOYEES IN THE MARKETING MANAGEMENT OF AGRICULTURAL ENTERPRISES

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Abstract. *The article reveals the role of the digital competence of employees in the marketing management of agricultural enterprises. It has been noted that marketing management is one of the novel approaches to managing an agricultural enterprise. It has been found that the successful all-levels marketing management of agricultural enterprises essentially depends on the holistic development of employees, so it is crucial to devote attention to professional knowledge of specialists, their ability to respond swiftly to market demands, ability to communicate, assume responsibility for performance results, as well as be engaged in life-long learning. It has been noted that cutting-edge technologies and equipment demand from employees to be digitally competent.*

The essence of digital competence has been revealed. The key components of the application of digital competence by agricultural commodity producers, which are crucial when looking for buyers and suppliers, or studying the market, have been considered. Since the state-of-the-art digital technologies require an Internet connection, the possibility of the rural population of Ukraine to have access to the Internet has been analyzed. It has been noted that the formation and development of the digital competence of employees constitutes an integral part of marketing management in agricultural enterprises thus improving the knowledge and skills of personnel when making managerial decisions, and providing competitive strengths and justification of enterprise development strategy.

Keywords: *marketing, marketing management, digital competence, marketing research, agricultural enterprise.*

Introduction. A dynamic environment provides every enterprise with both huge opportunities and threats due to the rising levels of uncertainty and risks. To ensure the successful operation of agricultural enterprises under such conditions it is necessary to find brand new approaches to manage their activities, and marketing management is one of these approaches.

In today's world, information technologies are rapidly developing, various devices are constantly appearing, and the number of Internet users is growing. Most specializations and professions - and especially marketing management - require understanding and application of information and digital technologies. It is crucial for employees to be digitally competent because it involves mastering the knowledge and skills necessary for effective and safe existence in a volatile digital space, including the ability to receive, process, use the relevant information, and be perfect in modern digital technologies.

Analysis of recent research and publications. Ukrainian and foreign scientists such as L. Balabanova, O. Bilovodska, A. Voichak, I. Komarnytskyi, F. Kotler, V. Kutsenko, M. Porter, V. Rossokha and others devoted much attention to the issues of marketing management in their papers. Many scientists in various fields, including M. Vedernikov, L. Dovhan, V. Kuibida, S. Leiko, A. Oleshko, A. Synychenko, L. Fedulova and others, studied the issue of digital competence of employees. Scientific researches are crucial for theory and practice, but the issue of the formation and development of digital competence of employees as a key component of successful marketing management in agricultural enterprises requires further study.

The purpose of the research is to reveal the role of the digital competence of specialists in the marketing management of agricultural enterprises of Ukraine.

Materials and methods. In the course of the research, a dialectic method and generally scientific methods such as analysis, synthesis, comparison and generalization were used for collecting, analyzing, information assessing and conclusions making.

Results of research and discussion. Marketing management is one of the novel approaches to managing an agricultural enterprise. It involves achieving the target, constant growth of the enterprise, maintaining and mastering new competitive strengths, taking on the market and successful functioning in unstable conditions.

Having summarized the scientific opinions [2, 4, 7, 12, 14, 22] on the essence of marketing management, it is possible to say that it is the management of all functions and structural units with the help of marketing. Bilovodska O.A. [4] emphasizes that marketing management is a change of thinking - making all managerial decisions taking into account market requirements, the constant ability to change market requirements meaning that the organization should take into account both internal capabilities and external conditions. We agree with the statement of Raiko D.V. and Lebedeva L.E. [22] that marketing management is a brand new approach, firstly, to the strategic management of the organization, which is based on the market orientation in a highly competitive environment.

Marketing management is one of the novel approaches to managing an agricultural enterprise. It involves achieving the target, constant growth of the enterprise, maintaining and mastering new competitive strengths, taking on the market and successful functioning in unstable conditions. To introduce marketing management, it is necessary to not only change the tools, techniques and methods of management but also fundamentally reorganize the existing management system, review the internal relationships between functional units and ensure a kind of interaction between them.

The successful all-levels marketing management of agricultural enterprise essentially depends on the holistic development of employees, so it is crucial to devote attention to professional knowledge of specialists, their ability to respond swiftly to market demands, ability to communicate, assume responsibility for performance results, as well as be engaged in life-long learning. The cutting-edge technologies and equipment demand from employees to be digitally competent.

Domestic and foreign scientific sources [3, 6, 15, 16, 18, 24, 27, 31] define the term 'competence' in more than one way. Competence is often understood as a

quality, a trait of a person making it possible for that person (or even giving the right) to overcome certain issues, make decisions and judgments in a particular field. This quality is based on knowledge, awareness, and experience of social and professional activities [6]. Ana B. Mirete stated that competence is the ability to select and mobilize knowledge, skills and attitudes to respond successfully to a given professional situation [31]. The National Framework of Qualifications, approved by the Resolution of the Cabinet of Ministers of Ukraine as of November 23, 2011 No 1341, defines ‘competence as a dynamic combination of knowledge, skills, abilities, ways of thinking, views, values, other personal traits determining a person’s ability to successfully socialize, work and/or study’ [20].

On 17 January 2018, an updated version of the key competences for life-long learning was approved - Recommendation 2018/0008 (NLE) of the European Parliament and the Council (EU): Literacy competence; Languages competence; Mathematical competence and competence in science, technology and engineering; Digital competence; Personal, social and learning competence; Civic competence; Entrepreneurship competence; Cultural awareness and expression competence [11; 29]. Following the Recommendations, ‘digital competence includes the confident, critical and responsible use and interaction with digital technologies for learning, work and social life. It includes information literacy and data literacy, communication and collaboration, digital content creation (including programming), security (including digital well-being and cybersecurity competencies), and problem-solving’ [11; 29].

The digital competence of employees is crucial for marketing management, in particular when looking for buyers and suppliers or studying the market. The above can be done using information resources of global networks, optimization tools, automated information systems of an enterprise, tooling and applications for statistical and econometric analysis, free software, Internet services, and mobile apps. The components of the application of digital competence by agricultural commodity producers are given in Fig. 1.

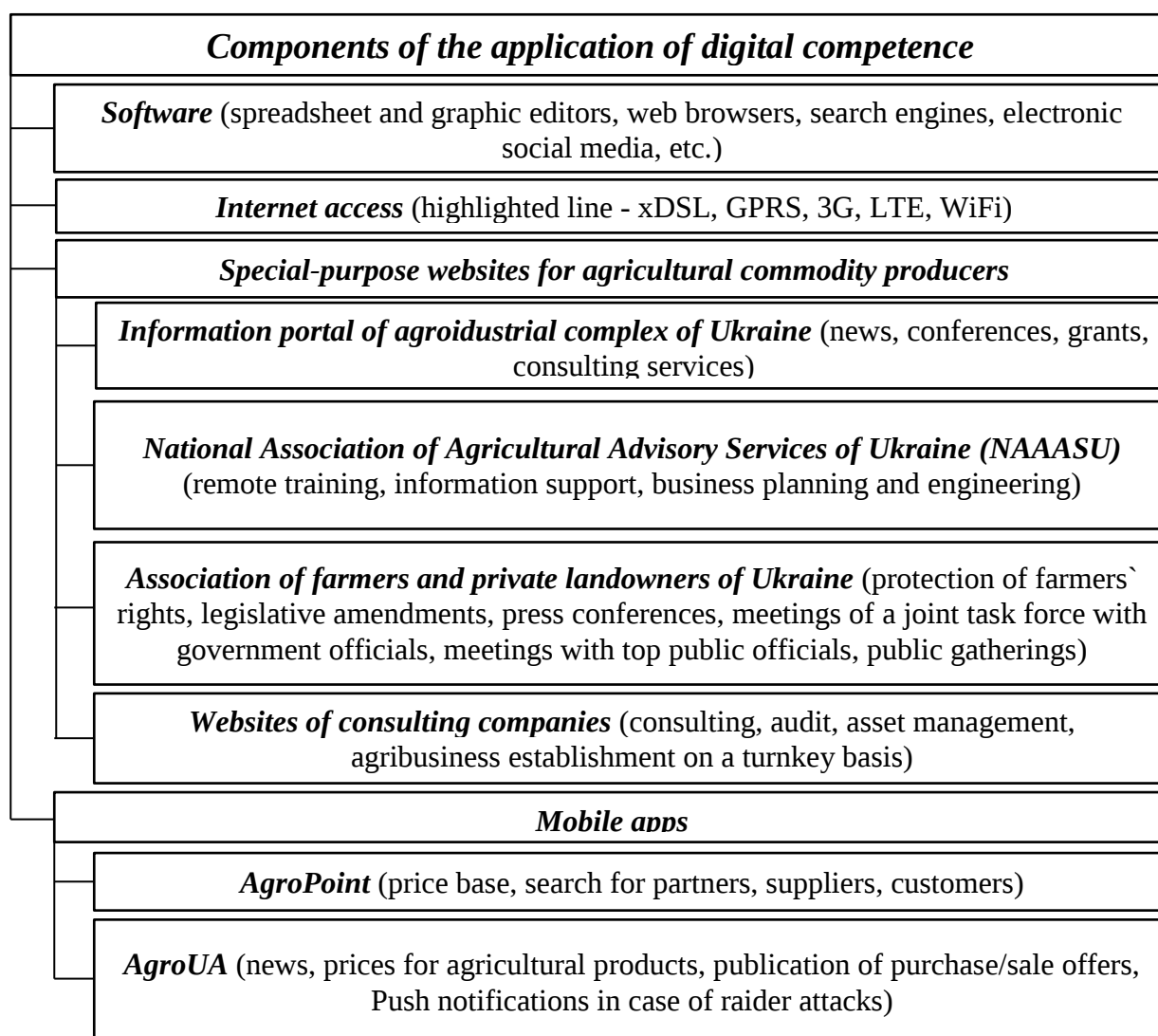


Fig. 1. Components of the application of digital competence by agricultural commodity producers

Today, the ability to work with general and special-purpose software for solving a wide range of marketing issues, which involves the use of text, spreadsheet, and graphic editors (WordPad, MS Word, OpenOffice, MS Excel, Adobe Photoshop, MS Picture Manager, MS PowerPoint), Web browsers (Google Chrome, Safari, Internet Explorer and Edge, Mozilla Firefox, Opera), search engines (Google, Yahoo, Bing, Baidu), electronic social media (Facebook, Instagram, Twitter), cloud storage (Dropbox, Google Drive, OneDrive, iCloud), database management systems, network applications, etc. shows that the employee is digitally competent. Large agricultural enterprises will benefit from the use of a professional program called Marketing Analytic. This is a full-featured system designed to solve issues arising in the course

of marketing activity recording (including sales record), marketing analysis, including the processing of marketing research results (external and internal factors), as well as in the course of developing strategic and operational marketing plans, which assists in construction and control of marketing budgets (sales and business expenses budget) [30]. Computer literacy is the basis of the digital competence of a specialist, a key component of his/her competitiveness in the modern labor market.

In order for an agricultural enterprise to use marketing management tools through modern services and websites, an employee should have an appropriate level of digital competence. For instance, Google Alerts detects the selected products online, including agricultural products, and sends emails with the found options. Google Trends is one of the most promising services for marketing research as it shows what people are searching for right now, determines the number of users searching for a particular product, illustrates the current demand.

Having analyzed the information sources of websites of state institutions of Ukraine (ministries, departments, state regional administrations), it can be noted that one of the important websites that contains a lot of useful information for the development of agricultural enterprises is 'Information portal of agro industrial complex of Ukraine' [10]. There you can find the recent news in the agricultural sector of Ukraine's economy, the dates of conferences, the existing grants and how to get them, and other consulting services. For 2020 Ukraine prepared a number of options to support agricultural commodity producers, including financial injection for the development of farms; financial injection on condition of repayment (interest-free loans) through the Ukrainian State Fund for Support of Farmers; government support through surcharges in favor of insured persons - members/heads of family farms; government support for the development of animal husbandry and agricultural products processing; financial injection for the development of horticulture, viticulture and hop growing; partial reimbursement of the cost of agricultural machinery and domestically produced equipment; affordable loans 5, 7, 9% [10].

In addition to the websites of state institutions, agricultural enterprises of Ukraine may find information on the websites of agricultural associations and

independent public associations. For instance, on the website of the National Association of Agricultural Advisory Services of Ukraine (NAAASU) you may find information on remote training and receive information support on innovational economic technologies, agricultural production, business planning and innovation engineering, development of marketing strategies, and diversification of core activities [8]. On the website of the Association of Farmers and Private Landowners of Ukraine, you may find up-to-date information on the protection of farmers' rights, legislative amendments, press conferences, applications to the Verkhovna Rada of Ukraine, the Cabinet of Ministers of Ukraine, executive authorities, local governments, meetings of a joint task force with government officials, meetings with top public officials, public gatherings, farmers' campaigns [1].

It should be emphasized that agricultural enterprises may find information and receive consulting services from private consulting companies that sell machinery, equipment, agrochemicals and other agricultural products. For instance, Agro Consulting Group is a full-cycle agricultural producer (grain and oilseeds - corn, soybeans, wheat, sunflower), which audits and manages agricultural assets [13]. There are also consulting companies offering turnkey services for agribusiness in Ukraine. For instance, Agricultural Consulting Service carries out technical audits of agribusiness, agricultural projects, and farms on a turnkey basis, as well as provides consulting services [28]. However, these organizations are focused on the promotion of a specific (own) product or cooperation with large enterprises in certain product industries. Advisory Services provide a much wider range of services, focusing on the application of developments of various domestic and foreign producers. They help agricultural commodity producers access the achievements of science and best practices.

These days a person can hardly be imagined without a mobile phone with mobile apps installed on it. Mobile apps are one of the sources of information on the Internet that becomes increasingly popular among agricultural commodity producers. Every year mobile devices strengthen their presence in the agricultural sector. For instance, according to Statista as of 2019, the number of sold smartphones in the

world is 15 times higher than the number of sold PC [19]. But most farmers tend to use mobile phones for communication and social media, rather than for improving their skills by searching for mobile apps, better services, and websites.

Depending on the method of application in the agricultural enterprise, mobile apps can be divided into programs for internal needs and for external communications. Internal apps are used on both employees' devices and enterprise devices. Agricultural mobile apps for external use are usually designed for searching business partners, markets, suppliers of raw materials, seeds, plant protection products, fertilizers, customers, etc. For instance, the mobile app AgroPoint is designed for searching agribusiness partners; it helps the user understand what kind of services they need, find partners, suppliers and customers in the agricultural sphere anywhere in the country with a single click [23]. The mobile app PROD was designed for farmers from the USAID project 'Agriculture and Rural Development Support'. This is a user-friendly app to work with the price base for vegetables and fruits throughout Ukraine. The user finds only current prices for fruits and vegetables and there is no need to visit many non-target sites. Everything is put together in one place. You can see the price of the product and find the most affordable one in a few clicks. In this app you can place your own offers for the sale of vegetables and fruits, directly communicate with the author of the offer (without intermediaries) to make a deal, receive detailed information about the cost and characteristics of the product, etc. [32]

The founders of the mobile app AgroUA promote their product as a platform for information support of agribusiness. The app can be used in more than one way; you may find news and current prices for agricultural products or place commercial and informational offers. Thanks to the AgroUA mobile app, you will stay informed about the agricultural life of the country and aware of recent events and innovative technologies. You can make your presence known to all market participants, be published in catalogs, advertise yourself and your products, and announce events or innovations. You can also announce tenders, place purchase/sale offers, communicate in the forum, follow offers and vacancies in the market, be employed, share

experiences, follow tenders of agricultural holdings, read news, visit all agricultural Facebook groups, visit all popular agricultural sites, use guides to some agricultural events, and lots of other opportunities [17].

External agricultural mobile apps have such a useful feature as Push notification enabling quick sending of information simultaneously to all users. This message is popped up on the screens of mobile devices making it possible to cover all subscribers. Push notification is a powerful channel for transmitting information to the target audience. This service is used in the AGROSHCHIT project to help farmers in case of raider attacks – the ‘raider attack’ button [17]. In order for agricultural enterprises to use modern mobile apps, employees should have an appropriate level of digital competence.

The cutting-edge digital technologies may be used through the Internet connection, as it is the main source of unlimited opportunities for knowledge, skills, and abilities. However, today most agricultural workers do not have a high-quality high-speed Internet connection. According to a study by the Ministry of Digital Transformation of Ukraine, 82% of the population of Ukraine has access to high-speed 4G Internet, but if you look at the number of settlements that have Internet access, they are only 57% of the total number of settlements in the country. The agency emphasized that more than 10 thousand settlements of Ukraine, most of which are villages, still do not have access to a high-quality mobile Internet [5].

However, if we compare 2019 to 2014, the number of rural people with access to the Internet almost doubled. The number of rural people using the Internet at work remained the same, however, the number of those who use the Internet at home and anywhere via mobile phone has increased (from 18.6% in 2013 to 55.5% in 2019), IT experts forecast that the number of connected smartphones will quadruple by 2025. At the same time, in 2019, almost half of rural households got Internet access at home. Most of them use Internet access for entertainment and communication 36-61.3%, 24.5% for study, and only 1.7% for interaction with public authorities and 13.3% for banking services (Table 1).

1. Distribution of rural population depending on the purpose of use of the Internet, %

	2014	2015	2016	2017	2018	2019	Error 2019 to 2014
Distribution of population depending on the place of use of the Internet (in % to population that claimed they used the Internet)							
At home	74,1	78,9	84,2	83,8	83,8	79,2	5,1
At work	11,0	11,0	9,6	9,6	9,7	10,6	-0,4
At the place of study	10,9	10,1	7,6	7,7	7,1	7,5	-3,4
Anywhere from the mobile phone	17,2	20,2	20,8	32,8	46,7	55,5	38,3
Other places (at friends or acquaintances place)	18,6	16,2	14,3	14,3	12,2	8,5	-10,1
Distribution of population depending on the purpose of use of the Internet (in % to population that claimed they used the Internet)							
sending (receiving) e-mail	11,8	18,5	16,9	15,1	12,9	17,7	5,9
interaction with public authorities	1	1,6	1,3	1,5	1,5	1,7	0,7
training and education	35,9	33,8	31,7	29,5	26,2	24,5	-11,4
reading/downloading newspapers and magazines online	24,3	24,7	24,1	23	26,6	17,2	-7,1
downloading movies, images, music; watching TV, etc.	59,8	56,4	60,7	63,7	63,8	61,3	1,5
playing or downloading video or computer games	41,9	38,9	39,3	41,5	38,6	36	-5,9
downloading software	3,2	3,8	2,9	3,3	2,7	3,3	0,1
telephone conversations via the Internet	31,1	36,8	38	41,6	43,8	39,5	8,4
communication (hobby)	51,9	50,4	52,1	49,6	47,3	55,5	3,6
banking services	2,9	3,9	6,5	6,6	8,9	13,3	10,4
search for information	26,6	28,4	28,6	28,6	28,9	30,6	4
order (purchase) of goods	7,9	11,9	13,4	16	16,4	15,8	7,9
obtaining information on goods and services not mentioned above	16,2	17,5	16,8	21,3	20	18,4	2,2
number of households (thousands)	4798,8	4948,7	4924	4900,1	4873,6	4844,2	45,4
Part of households that have Internet access at home,%	22,2	27,2	30,6	38,6	40,6	44,1	21,9

Source:[9]

Today more than 80% of the population in Europe has access to the Internet. The reason why EU countries managed to achieve continuous coverage is the use of

low-frequency bands (800-900 MHz) with technological neutrality. The Cabinet of Ministers of Ukraine has provided a background for the introduction of this technology in Ukraine. On October 29, 2019, the Cabinet of Ministers of Ukraine and mobile operators ensuring frequencies in the 900 MHz band, signed a memorandum, which will provide 90% of the territory of Ukraine with high-speed 4G Internet. According to Mykhailo Fedorov, the Vice Prime Minister and Minister of Digital Transformation of Ukraine: 'One of the main tasks is providing 90% of Ukrainian settlements, including the most remote ones, with high-quality high-speed Internet by 2022.' [26]

Conclusions and prospects. Based on the results of the study it is possible to conclude that the changes brought by the introduction and development of digital technologies in all areas of agricultural enterprises face a number of obstacles that can be overcome with the help of appropriate digital competencies.

Formation and development of digital competence of employees constitutes an integral part of marketing management in agricultural enterprises thus improving knowledge and skills of personnel when making managerial decisions, and providing competitive strengths and justification of enterprise development strategy.

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РОЛЬ ЦИФРОВОЇ КОМПЕТЕНТНОСТІ ПРАЦІВНИКІВ У МАРКЕТИНГОВОМУ МЕНЕДЖМЕНТІ СІЛЬСЬКОГОСПОДАРСЬКИХ ПІДПРИЄМСТВ

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***Анотація.** У статті розкрито роль цифрової компетентності працівників у маркетинговому менеджменті сільськогосподарських підприємств. Відмічено, що маркетинговий менеджмент є одним з інноваційних підходів щодо управління сільськогосподарським підприємством. Встановлено, що ефективність маркетингового менеджменту на всіх рівнях управління сільськогосподарським підприємством у великій мірі залежить від всебічного розвитку працівників, тому важливе значення слід приділяти не тільки професійним знанням фахівців зі спеціальності, а і їхній здатності оперативно реагувати на вимоги ринку, вміти спілкуватися, брати відповідальність за результати діяльності, а також безперервно займатися самоосвітою. Зазначено, що постійна поява нових технологій, обладнання вимагає від працівників відповідної цифрової компетентності.*

Розкрито сутність цифрової компетентності. Розглянуто основні складові використання цифрової компетентності сільськогосподарськими товаровиробниками, які необхідні під час пошуку покупців, постачальників, вивчення кон'юнктури ринку. Зважаючи на те, що використання сучасних цифрових технологій неможливе без підключення до інтернет-мережі, проаналізовано можливість доступу до інтернет-мережі сільського населення України. Відмічено, що формування й розвиток цифрової компетентності працівників є невід'ємною складовою маркетингового менеджменту в сільськогосподарських підприємствах, що сприяє підвищенню рівня знань і навичок персоналу при прийнятті управлінських рішень, забезпечує формування конкурентних переваг та обґрунтування стратегії розвитку підприємства.

***Ключові слова:** маркетинг, маркетинговий менеджмент, цифрова компетентність, маркетингові дослідження, сільськогосподарське підприємство.*