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FEASIBILITY AND METHODS OF DESIGNING DIGITAL PLATFORMS FOR FARMING

Summary. Typically and often, farms in the country face several problems in selling their products (which they produce or grow), which significantly affects their business. Here are the main ones: seasonality of production; the need for a large number of intermediate links (in many cases, farmers' products go through several stages before reaching the final consumer (wholesalers, retailers, other intermediaries); imperfect marketing infrastructure (farmers often have limited access to markets, which is why they cannot sell their products effectively); low product prices; problems with product quality and safety (without proper standards and certifications, farmers may face problems selling their products in large markets); logistics and transportation (transporting products over long distances can cause significant product losses); market risks and uncertainty (agricultural markets are subject to significant fluctuations, which makes farmers vulnerable to changes in demand or prices for their products); youth and brain drain (the problem of insufficient numbers of young workers willing to work in agriculture).

All of these problems can significantly affect the efficiency of farms and create difficulties for their development.

Note: A farm is an enterprise that carries out agricultural activities based on the use of land and other natural resources for the production of agricultural products. It can vary in size and is usually focused on the production of products for its own consumption and/or sale.

Keywords: digital portal, design methods, farming, agriculture, digital portal/website.

Statement of the problem. Developing a portal/website for farms is an important step in improving customer interaction, optimizing business processes, and expanding sales markets.

Let's analyze the most relevant areas for developing a farm portal/website:

1. Intuitive interface. The digital portal should be easy to use, with a clear and convenient navigation menu that allows you to quickly find the information you need. It is important that even people with minimal Internet knowledge can use the digital portal without problems.

2. Information about goods and services. Creating pages for each type of product produced on the farm with detailed descriptions, prices, and photos will help potential customers understand exactly what they can buy and also browse the available options.

3. Integration with online sales. The ability to purchase products directly through a digital portal. This could be an online store or a pre-order platform. This requires convenient payment and delivery features.

4. Mobile adaptation. A digital portal should be optimized for mobile devices, as many users access portals/sites via smartphones and tablets. The mobile version should be fast and functional.

5. Farm information. An "About Us" page with the farm's history, values, and mission. This helps to build a connection with customers and show that the farm is a reliable partner.

6. Blog and news. Maintaining a blog or news section that publishes farm news, farming tips, seasonal articles, and recipes using your produce helps attract additional audiences and build authority in the industry.

7. Feedback system. A form for contacting the administration, phone numbers, chat for online consultations. It is important to quickly answer questions and provide necessary information to customers.

8. Integration with social networks. The ability to connect to social networks (Facebook, Instagram, TikTok, etc.) to promote products, publish news, photos and videos from the farm's work process. This allows you to attract new customers and maintain contact with regular ones.

9. Delivery map and product availability. Indication on the page of which regions are served, where to buy products (if not online sales), or where to pick up orders. This is convenient for customers looking for farm products in their area.

10. Environmental and certification. If the farm is certified according to organic or ecological production standards, it is important to indicate this on the portal. This creates additional trust in the products and gives customers confidence in their quality and safety.

These elements will help not only increase the effectiveness of the farm's digital portal, but also create a positive image and trust among potential customers.

That is why, based on the above, the relevance of this topic of work is determined, which in turn implies that to solve it, it is necessary to consider the feasibility and analyze the methods of designing digital platforms for farms.

Analysis of recent research. Recent research and practices in the field of designing digital platforms/websites for farms indicate the integration of modern technologies, focus on user needs, and implementation of digital solutions to improve the efficiency of the agricultural sector.

The main areas include:

1. Integration of digital technologies into agriculture. Digital farm platforms/websites increasingly incorporate elements of digital agriculture, which combine computer and electronic devices to improve production and management. This includes the use of automated management systems, modern software, and data analytics to optimize agricultural processes.

2. Development of portals/web applications for the agricultural sector. Research highlights the importance of creating portals/web applications that allow farmers to track energy consumption, analyze costs, and optimize resource use. Such applications contribute to increasing energy efficiency and climate resilience of farms.

3. SEO optimization and promotion of portals/sites. To ensure visibility and attract the target audience, it is important to conduct an SEO audit, analyze competitors, and develop strategies for promoting farm portals/sites. This includes collecting semantic core, keyword clustering, and improving the internal structure of the site.

4. Using modern technologies in web development. Using technologies such as WordPress, Laravel, and React.js allows you to create fast, user-friendly, and responsive farm portals/sites. This provides ease of content management and improves user interaction.

5. Creation of a digital farm passport. Using aerial photography data to create a detailed digital farm passport allows you to obtain statistical information about the territory, which contributes to better management and planning of agricultural processes.

Overall, recent studies highlight the trend towards integrating digital solutions into farm portals/websites, which contributes to increasing the efficiency, transparency, and competitiveness of the agricultural sector.

Here are some Ukrainian and foreign scientists who have dealt with the creation of portals/sites or digital platforms for farms:

A) Ukrainian scientists: Oleksandr Zaitsev (a specialist in the field of information technology, who is engaged in the development of digital platforms/sites for agricultural enterprises, in particular for agricultural management); Vitaliy Honcharenko (Ukrainian scientist in the field of computer

science, author of research on the use of Internet technologies to support farms and agricultural enterprises); Iryna Plahotniuk (a researcher who is engaged in the development of portals/sites for agribusiness, as well as the use of online platforms to increase the efficiency of agricultural activities); Yuriy Prokopenko (a scientist working on the integration of web development technologies to create platforms for agribusiness, which may include opportunities for selling products, online consultations).

B) Foreign scientists: David E. Goodwin (American scientist and information technology expert, developing digital platforms/websites for agricultural enterprises); Eric J. von Cramon-Taubadel (professor of agricultural sciences, researching the integration of digital technologies into agriculture, in particular the creation of websites and platforms for farm management); Michael C. O'Keeffe (scientist, developing digital technologies and websites for the agricultural sector, including tools for online sales of agricultural products and business management); Jeffrey D. Sachs (actively researching the role of digital platforms and Internet technologies for the development of rural areas and agricultural enterprises); Klaus G. Bielefeld (German researcher, working on the integration of Internet technologies into agriculture, including the creation of portals/websites for farms to facilitate access to markets, as well as to improve efficiency and interaction with customers).

These scientists and their research help develop and improve digital tools for farmers and agrarians, including portals/websites and online platforms for efficient business operations.

Also the following scientists are actively involved in the issues of scientific research in this area: Molchanov V.P. [1,2], Pasichnik V.V. [3], Lubko D.V. [4], Kompaneets M.O. [5], Zadorozhna N.T. [6], Kuznecova T.V. [6], Demian Conrad [7], Rob van Leijsen [7], Christoph Grünberger [8], Elizabeth Castro [9], Douglas Van Duyne [10], Julius Wiedemann [11].

Formulation of the purpose of the article. The purpose of this article is to conduct a feasibility analysis and develop and describe methods for designing digital platforms for farms.

The main part. Developing a digital portal for farming is an important component for promoting and developing a business.

Let's develop a step-by-step methodology that will help you create such a digital portal/site:

Stage 1. Planning and analysis.

− Portal purpose. Determine the main purpose of your portal/site: will it be an online store for selling products, or an informative site for getting to know your services?

− Audience. Determine who will be the primary users of the portal/site. This could be customers, partners, or investors.

− Basic features. Think about what features you need (order form, contact form, map, product gallery, farm information).

− Competitors. Review your competitors' portals/sites. This will help you understand what features are popular in your niche.

Stage 2. Creating a portal/site structure (portal map).

Create a portal map that includes the main sections:

− Home page. Brief information about the farm, its products and uniqueness.

− About us. Learn more about the farm, its history, mission, and goals.

− Products/Services. A list of products or services with descriptions, prices, and photos.

− Gallery. Photos of the farm, the work process, your products.

− Contacts. Address, phone, e-mail, feedback form.

− Blog/News. A place for publishing news about farming, seasonal offers, etc.

Stage 3. Choosing a domain and hosting.

− Domain. Choose a short and memorable domain that reflects the name of your farm or activity (for example, "fermer-xyz.com").

– Hosting. Choose a reliable hosting provider to ensure stable operation of the portal/site. You can choose hosting with WordPress support or other specialized solutions.

Stage 4. Portal/site design.

– Template or custom design. You can choose a ready-made template or order a custom design from a web designer.

– Ease of use. Pay attention to navigation on the portal/site, it should be simple and understandable for visitors.

– Mobile version. Make sure that the portal/site is adapted for mobile devices. This is very important, since many users access sites from smartphones.

Stage 5. Portal/website development.

– CMS (content management system). If you don't have any programming experience, choose a simple CMS like WordPress. It allows you to easily edit content and add new pages.

– Programming. If you need a portal/site with unique features (e.g., a store, an interactive map), you may need a programmer to write custom code.

– Adding content. Add text, photos, videos that describe your farm and products in detail.

Stage 6. SEO optimization.

– Keywords. Use keywords that people search for online to find farms or products. For example, "fresh vegetables delivery" or "organic products."

– Meta tags. Fill in meta tags for each page to make it easier for search engines to index your portal/site.

– Images. Optimize images to load quickly and add alternative texts (alt tags) for images.

Stage 7. Testing.

– Testing on different devices. Check how the portal/site looks on computers, smartphones, and tablets. It should be convenient and fast.

– Functionality testing. Check the operation of all forms (e.g. order forms), buttons, interactive elements.

– Loading speed. Use tools to test the loading speed of your portal/site (e.g. Google PageSpeed Insights). It should open quickly to avoid losing visitors.

Stage 8. Launching the portal/site.

– After testing and correcting all errors, you can launch the portal/site on the Internet.

– Announce the launch on your social networks to draw attention to the new resource.

– Install tools to monitor traffic (e.g. Google Analytics).

Stage 9. Support and updates.

– Content updates. Regularly update the portal, add new photos, blog posts, information about new products or services.

– Security. Check the portal for vulnerabilities and update the software to avoid security issues.

– SEO. Continue working on SEO, adding new keywords and improving content to improve search engine rankings.

Stage 10. Marketing and promotion.

– Social networks. Promote the portal via Facebook, Instagram, YouTube to attract more customers.

– Advertising campaigns. Launch Google Ads or social media advertising campaigns to promote the portal/site.

– Email newsletter. Create an email newsletter for customers to inform them about new products, discounts, and promotions.

This is a basic step-by-step methodology for creating a farm portal. With this plan, your portal will become an effective tool for growing your business.

An example of the home page of a digital portal of a farm is shown in Figure 1-2.

Fig. 1. Example of the main page of a digital portal farming (Ukrainian interface)

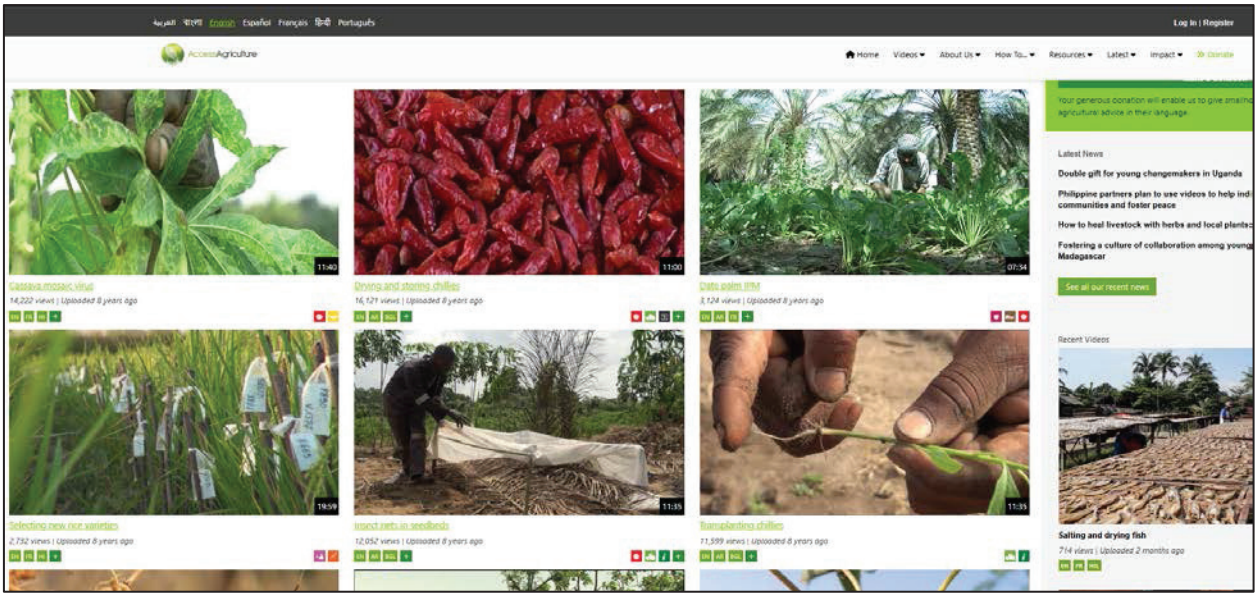

Fig. 2. Example of the main page of a digital portal farming (English interface)

Let's make some preliminary important conclusions and recommendations on the topic of the importance of creating digital platforms (sites) for farms. Namely:

1. Improving access to markets. The creation of digital platforms allows farmers to significantly expand their markets by being able to sell their products directly over the internet. This reduces dependence on intermediaries and allows farmers to receive better prices for their products.

Recommendation: Farmers should actively use e-commerce platforms and integrate their websites with online platforms for selling their products. This will improve communication with end consumers and optimize sales channels.

2. Facilitating interaction with customers and partners. Digital farm portals/websites are important channels for communication with customers, suppliers, and other partners. This allows not only to conduct transactions, but also to receive feedback, which is important for business development.

Recommendation: It is recommended to include feedback features, chatbots, and inquiry forms on the portal/site to ensure effective communication and increase customer satisfaction.

3. Business process automation. Digital platforms allow you to automate many business processes, such as ordering, product accounting, production planning, and reporting. This reduces the burden on staff and reduces the likelihood of human error.

Recommendation: Farms should invest in developing or integrating software to automate on-site processes such as inventory accounting, sales management, and financial management.

4. Improving marketing and promotion. A portal/website is a powerful tool for promoting farm products through SEO (search engine optimization) and social media. It allows you to increase your business's visibility on the internet and attract new customers.

Recommendation: It is worth optimizing the portal/site for search engines and using social networks to promote products. Regularly updating content and promotions will help attract the attention of new buyers.

5. Improving management processes. Web platforms allow farms to track and analyze data on production, costs, income, and other important indicators. This helps to effectively plan activities and make informed management decisions.

Recommendation: It is advisable for farmers to integrate analytical tools on their websites to monitor and manage key business indicators (KPIs) in order to quickly respond to changes and improve efficiency.

6. Improving interaction with authorities and financial institutions. Digital platforms facilitate farmers' access to government support programs, grants, and subsidies, as they make it easy to register, apply, and receive important information about new initiatives.

Recommendation: Farmers should create special sections on their websites with information about available government programs and opportunities for financial support. This will provide convenient access to information and facilitate the process of participating in government initiatives.

7. Ensuring transparency and trust. Digital platforms create conditions for transparency in the work of farms, in particular regarding the quality of products, their origin and production conditions. This increases trust on the part of consumers, as they can verify all the necessary information directly on the portal/website.

Recommendation: It is advisable for farmers to provide detailed information on their portals/sites about the production process, product certification, and also publish customer reviews to increase trust in the business.

8. Creating a platform for innovation and development. Portals/websites can also serve as a platform for the implementation of innovative technologies such as data management systems, animal health monitoring, precision agriculture, etc. This gives farmers the opportunity to remain competitive in the market and implement the latest agricultural technologies.

Recommendation: It is worth creating integrations with the latest agricultural technologies, such as drones, sensor systems for monitoring, and using the site as a platform for informing customers about new technologies and innovations in the agricultural sector.

Conclusions. Digital platforms (websites) for farms are an essential tool for the development of modern agribusiness. They help facilitate access to markets, optimize business processes, improve

communication with customers and partners, and promote innovation in agriculture. Investing in the development and implementation of digital platforms is a strategically important step for the sustainable development of farms.

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ДОЦІЛЬНІСТЬ ТА МЕТОДИ ПРОЄКТУВАННЯ ЦИФРОВИХ ПЛАТФОРМ ДЛЯ ФЕРМЕРСЬКИХ ГОСПОДАРСТВ

Анотація

Зазвичай та часто фермерські господарства країни стикаються з кількома проблемами під час реалізації своєї продукції (яку виробляють або вирощують), що суттєво впливає на їхній бізнес. Ось основні з цих проблем: сезонність виробництва; необхідність у великій кількості проміжних ланок (у багатьох випадках продукти фермерів проходять через кілька етапів перед тим, як потрапити до кінцевого споживача (оптові торговці, рітейлери, інші посередники)); недосконала інфраструктура збуту (фермери часто мають обмежений доступ до ринків збуту, через що не можуть ефективно продавати свою продукцію); низька ціна на продукцію; проблеми з якістю та безпекою продукції (без належних стандартів та сертифікацій фермери можуть стикатися з проблемами під час продажу продукції на великих ринках); логістика і транспортування (транспортування продукції на великі відстані може спричиняти значні втрати продукції); ризики та невизначеність ринку (ринки сільськогосподарської продукції схильні до значних коливань, що робить фермерів уразливими до змін у попиті або в цінах на їхню продукцію); молодь та відтік кадрів (проблема недостатньої кількості молодих працівників, які б мали бажання працювати в сільському господарстві).

Усі ці проблеми можуть суттєво впливати на ефективність діяльності фермерських господарств і створювати труднощі для їх розвитку.

Ключові слова: цифровий портал, методи проєктування, фермерське господарство, сільське господарство, цифровий портал/сайт.