

Web platform to support entrepreneurs: Technological and educational remedies for training the digital skills of beneficiaries

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Abstract: *The situation of micro/small/medium entrepreneurs in the Republic of Moldova, local producers of craft products and services, is marked by a series of difficulties that are close to the problematic situation of representatives of the same guilds in other countries in the region. In this context, the authors propose the development of a modular platform designed to digitalize micro, small, and medium-sized businesses, with the aim of supporting the development of digital skills among local entrepreneurs. The platform is designed to be accessible, specifically tailored for users with limited digital skills. It is expected that this platform will offer integrated solutions for managing online businesses at the level of payment processing and logistics assurance, thus helping entrepreneurs overcome financial and technical constraints. From a scientific point of view, the work is at the intersection of the fields of software product development but also of educational sciences, through its components related to digital education, adult education, and entrepreneurial education from the perspective of the concept of lifelong learning. This work constitutes a conceptual proposal for a web-based platform and includes elements derived from a design study of a software product designed by the authors.*

Keywords: Platform for entrepreneurs, Digital skills, Adult education, Digital marketing.

1. Introduction

The digitalization process is today a determining factor of social and economic development. Access to infrastructure and/or digital technologies has ceased to be an advantage reserved only for large companies but has become a competitiveness tool that represents a fundamental condition for the survival and (Moagi, Thomas & Mara, 2023) growth of any enterprise on the modern market. However, the degree of digital integration differs significantly from one category of economic actors to another. Large and medium-sized enterprises have sufficient financial resources and human capital to develop and maintain their own digital infrastructure. In contrast, small enterprises (type I.I. or S.R.L. with low capital) have limited access to modern digital infrastructure and face difficulties in promoting their products and/or services, which affects both their survival and business expansion. This situation also considerably reduces their possibilities to

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penetrate the large market, whether national or international. In this context, we consider it important that the voice of local entrepreneurs with small, below-average, and even average turnovers be supported to be heard on the domestic market, but not only by state representatives interested in the country's economic rise and/or the digitalization of the socio-economic space, such as the Ministry of Economic Development and Digitalization (MDED) and/or the Electronic Government Agency (AGE) of the Republic of Moldova, as well as by their current and future clients.

Hence, the research problem lies in identifying and analyzing the relevant aspects that should inform the design and development of a software product intended for entrepreneurs in the Republic of Moldova, addressing both the functional requirements of the application and the gaps in the digital skills of its potential users.

The research methodology aims to analyze not only the digitalization policies relevant to the given socio-economic sector, but also the practical realities and potential for integrating future beneficiaries—those for whom the software product is designed—into a social and economic context characterized by continuous digitalization. Particular attention is devoted to the digital skills of local entrepreneurs, which are currently at a modest level, while the potential for their improvement is constrained by several factors that are identified and analyzed in this paper. The arguments concerning the conceptual profile of the software product, as well as the modules intended to support the development and training of users' digital skills, are structured according to the two main directions of the research. These directions are reflected both in the title and throughout the paper, with the reviewed scientific literature aligned with the scientific dimensions addressed in the study.

A viable solution in this context would involve developing a centralized digital platform to facilitate the integration of local entrepreneurs into the digital economy, which could be described as a digital ecosystem that supports entrepreneurship. This platform would be coupled with policies focused on the training and development of digital and technological skills necessary for its implementation by users—economic agents.

The integration of training and development facilities for digital skills, as well as those of the masses, corresponds to the philosophy of lifelong learning, reflected in European (Burlacu, 2019; Wilson-Menzfeld et al., 2023; Eurydice.eacea.ec.europa.eu, 2025; Zheng & Liang, 2025) and national (MEC of the Republic of Moldova) strategic documents, but also in the works of researchers from around the world (Bolboceanu, 2015; Wain, 2016; Xhensila, 2024). Based on these connections, we envision the platform's architecture offering efficient tools to promote businesses, local products, and drive subsequent sales. The platform should include functionalities that facilitate the interaction between key stakeholders—entrepreneurs and consumers of their products.

2. Current situation regarding the research problem in the Republic of Moldova

2.1. Fragmentation, intermediation, and lack of digital capabilities

The market for local products, as well as for craft services, is traditionally deeply fragmented, both in the Republic of Moldova and in other countries in the region (Dumitrascu, 2017). Most micro-enterprises (Individual Enterprise (I.E), Authorized Natural Person (ANP), Small Limited Liability Company (SLLC)) operate with minimal digital infrastructure. To increase their visibility, small and medium-sized entrepreneurs make use of tools and applications such as the social media pages; blogs lacking interactivity; static websites that are not updated.

It is important to note that none of the solutions mentioned above include transactional functionalities tailored to the needs of small and medium-sized entrepreneurs. Additionally, many local producers lack the digital skills required to use these tools effectively, with some having no digital skills at all.

The most small and medium-sized businesses, managed by local producers, are completely absent in the virtual environment and, respectively, operate in the complete absence of an online storefront. In the absence of a comprehensive digital infrastructure (including store, payments, logistics, customer support, and performance marketing), entrepreneurs are entirely dependent on intermediaries—such as re-cuts, physical markets, and online marketplaces—that operate on a high-commission basis.

This unfavorable situation imposes on local producers a subordination to re-cuts, compresses margins, reduces, sometimes to zero, control over the brand and makes it difficult to scale the business. The problems listed are common for representatives of micro / small / medium entrepreneurship, a typical portrait of which we encounter not only at the local level (see Table 1), but also regionally and / or nationally.

Among the common problems of the three examples, which are representative of small and medium-sized local producers, are the following:

- The producer/company is not present online.
- Delivery is either not provided or is done through courier services.
- Logistics negotiations are carried out separately with each courier/courier company, which has a negative and often unpredictable impact on costs.
- A high volume of repetitive questions, errors in address handling, long response times, and a low conversion rate.
- Intermediation through specialized stores imposes price premiums, which make the product inaccessible to the general public.
- The average level of digital skills (DS) trained per company is very low.

- The owner/company does not have the financial potential to reduce digital illiteracy and/or to hire skilled specialists to increase the visibility of their business in the online environment, which has a direct impact on sales.

Table 1. Representative examples of local producers placed outside the digital environment

Example 1.	Example 2.	Example 3.
Rural beekeeper	Artisanal dairy workshop	Local carpentry services
A beekeeper with 150 bee colonies traditionally sells at seasonal fairs and through recommendations. The product is well-received and highly anticipated within the community. The online presence is restricted to a single social media page. In the absence of a shopping cart and integrated payments, orders are placed through messages. Delivery is carried out ad hoc, generating unpredictable logistics costs.	A local laboratory produced premium assortments (ripened cheeses, natural yogurts, etc.). The product has traction in the community, but the lack of an eCommerce storefront and online visible labeling/traceability standards limits entry into HoReCa networks.	A carpenter and a freight driver find their customers through recommendations. Demand is seasonal and volatile, and the absence of a verified profile, with reviews and a calendar, reduces customer trust but also the ability to plan.

Examples given illustrate the main causes of the precarious condition of the situation of entrepreneurs in the transition to digital environments: (a.) the initial cost and complexity of building a transactional online presence; (b.) the deficit of applied digital skills (e-Commerce, copywriting (Constantinescu, Caescu, Botezatu, & Mateescu, 2021; Muhamad Adnan et al., 2023), production of photographic and video materials, production and configuration of advertising, SEO activity, and data protection of the actors involved); and (c.) the lack of an integrated payment and logistics framework adapted to small and variable volumes of purchases/sales.

2.2. The needs for training of entrepreneurs (micro/small/medium)

Local micro- and macro-entrepreneurs are at a disadvantage in terms of using information technologies in their businesses for many reasons, although the most frequently stated reason reported by representatives of the micro- and/or small entrepreneurial environment remains the lack of budget or the reduced budget for hiring personnel specialized in interacting with the online environment. Among the most frequent difficulties encountered by representatives of the business and entrepreneurial environment are:

- **Problematic areas in training digital skills:**
 - Lack of experience in setting up an online store (structure, categories, product variations, policies, and management restrictions);
 - Difficulties in producing/processing/listing multimedia content;
 - Ignorance of data related to the operational flow (information on stocks, orders, returns, simplified invoicing, etc.) but also the lack of capacity to digitally process said data;
 - Reduced or minimal use of the potential of digital promotions to increase sales (newsletters, ads, promotional codes) and the impossibility of measuring conversions;
 - Insecurity in the digital environment, especially regarding the protection of personal data of the actors involved;
 - The impossibility of processing online payments;
 - Legal and fiscal illiteracy, or the presence of ambiguities in the application of legal and fiscal norms.
- **Repetitive financial constraints:**
 - Very low monthly budgets for the purchase of digital services, visible in the lack of one's own website to promote one's own production and/or the impossibility of ensuring the maintenance of the website if it exists;
 - The impossibility of integrating online payments and/or the lack of or inability to conclude logistics contracts in digital format;
 - Small and volatile volume of orders that do not justify the fixed costs for software subscriptions and/or the hosting of digital tools customized to the needs of the enterprise.

3. Solution directions: integrated services platform able to develop digital skills

3.1. Solution architecture

The solution proposed by the authors is a modular platform designed with the intention of reducing entry and operating costs for small and medium-sized entrepreneurs. From a systemic perspective, the platform will be developed based on a layered architecture as follows (see Figure 1).

Presentation Layer (Front-End Web & Mobile PWA): interfaces adapted for users with low digital literacy (wizards, guided texts, clear iconography, mini-tutorials). PWA allows operation on budget phones without installation from the app store.

Application Layer (Domain Services): modules for product/service catalog, shopping cart, orders, dynamic prices, promotions, verified profiles, reviews, disputes, messaging, and calendars for providers.

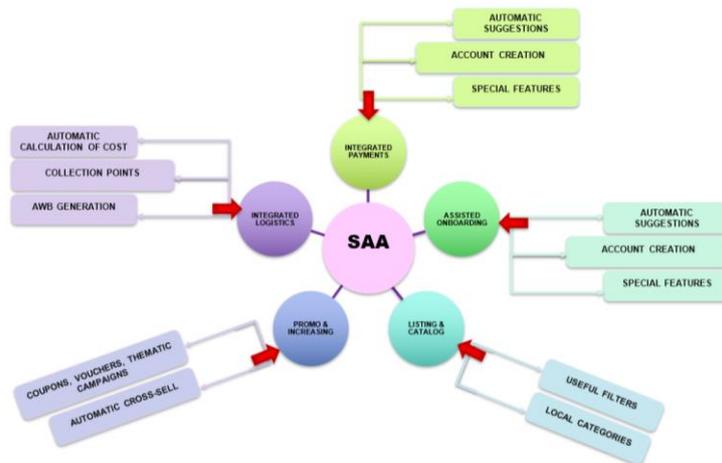


Figure 1. Key functional modules of the user-centric platform

Integration Layer (Gateway API): connectors with payment processors (card/transfer), couriers (auto-tagging, AWB, tracking), email/SMS, and business analysis tools, as well as WEB analytics; secure data exchange (OAuth2/JWT), auditing, and rate limiting.

Data Layer: focused on operational data (OLTP), media file storage (images/tags), and a mini-DWH (reports, KPIs, logistic cart, conversions). Governance measures: retention policies, backup, and encryption at rest and in transit.

Admin/Compliance Layer: content moderation panel, KYC, complaint management, return/warranty policies, legal templates (GDPR, terms, simplified billing), and authority reports.

The author's platform is based on several key objectives, namely:

- The conceptualized platform is designed to be built on key functional modules. This approach mirrors previous work focused on the modular flexibility of architectural solutions for systems accessible to taxpayers in the Republic of Moldova, including entrepreneurs (Burlacu & Bolocan, 2025).
- The platform's modular design is centered around the entrepreneur's needs. The latter, being designed according to the representation given in Figure 1, is currently in the development stage.
- The platform will be distinguished by its accessibility and interface adapted to users with modest digital skills, relatively easy to obtain through a series of training sessions, where
 - the training sessions will be structured based on the digital skills level (DSL) of the learners (Burlacu, 2020);

- DSL will be reported, tested / trained / assessed, based on the specifics of the EdTech component / components integrated into the platform (Burlacu, 2023), or on the indirect presence of the EdTech components, provided to be implemented by the possible interaction scenarios of the learners/users/beneficiaries with the given digital product.

The design of the platform interface will be developed based on the following criteria:

- Interface with suggestive and explicit language, equipped with icons, contrast adaptability, and the possibility of increasing the font;
- The voice assistant will operate in optional mode, allowing users to activate it as needed;
- The presence of video tutorials (Khomysyak, 2024) regarding familiarization with the platform and the set of tools included here, including those that support the training/development of digital skills necessary for interaction with the platform, but not only;
- Mobile-first optimization, which involves adapting the platform content to small and / or medium screens of a wide range of mobile devices, even those with slow connections;
- The localization of the contextual content reflected within the platform is tailored to the market of potential beneficiaries and users and delivered in Romanian and Russian.

3.2. The training entrepreneurs' digital skills through the platform

Entrepreneurs, whether they are just starting or managing businesses of varying sizes, from micro and small to medium-sized ones, often face considerable challenges in terms of adopting and integrating digital technologies into their daily business activities. These obstacles are much more evident in the case of small and medium-sized enterprises (SMEs), which are at a disadvantage compared to large players in the same area of activity, especially due to financial constraints and lack of resources.

Although the specific problems are multiple, the most frequently cited by entrepreneurial representatives are (A.) limited budgets for hiring specialized personnel and (B.) the lack of an appropriate digital infrastructure that would facilitate their efficient interaction with the online environment. In addition to the difficulties listed above, local entrepreneurs also face a significant deficiency in training digital skills within their teams.

The gaps of small and medium-sized enterprises (SMEs) in terms of digital skills are lack of knowledge in the use of basic technologies, lack of knowledge of the setup and management aspects of complex online platforms capable of supporting the online visibility of businesses, difficulties in producing, processing, and listing multimedia content capable of improving the digital marketing strategy of the business, lack of a clear vision of operational data, etc.

Based on the above, in the chapter on digital skills, the platform will allow its beneficiaries, its entrepreneurial users, to train and develop them according to the model presented upper (see Figure 2). In this context, the solution we propose, being intended to address these difficulties, is an integrated, unitary platform that offers modular services aimed not only at reducing operating costs but also at continuously developing the digital skills of local entrepreneurs.

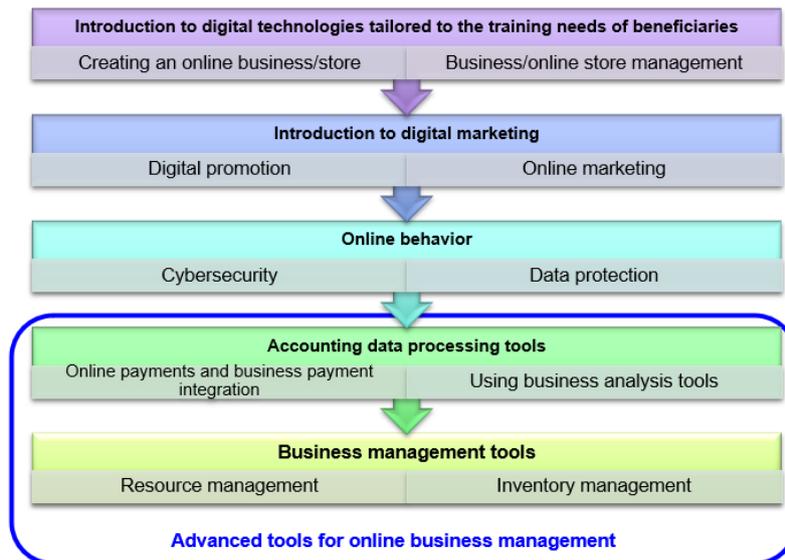


Figure 2. The modular content of training courses for entrepreneurs delivered through the authors' platform

The proposed platform is designed as an accessible tool that will significantly contribute to increasing the level of digital literacy of its beneficiaries and direct users so as to enable successful navigation of the challenges in the online environment. Starting from the idea of supporting the training and development of digital skills of entrepreneurs, the solution will include a modular plan for continuous training, with the aim of improving the level of knowledge and digital skills of those interested.

4. Conclusions

The proposed platform is not just a listing channel but a market infrastructure that simultaneously compensates for the two identified structural deficits: (A.) the lack or insufficiency of digital skills among micro/small/medium entrepreneurs in the Republic of Moldova necessary for their promotion and, as a consequence, for the growth of their businesses, but also (B.) the existing financial barrier by implementing a pay-as-you-grow model, based on the integration of payments and ensuring business logistics. The introduction of these facilities will be shown in the reduction of fixed costs for the respective additional necessary services (payment of personnel, including, as the case may be, an accountant,

communication manager, marketer responsible for online promotion, graphic designer/videographer, logistics team, etc.). Compared to the current status quo, the solution we propose is an entry offer into e-Commerce for micro/small/medium entrepreneurs, where such an entry path will be accompanied by a reduced risk compared to a substantially shorter time from the day of online launch but also continuous support for learning, growth, and adaptation to the digital environment.

Future work would include additional publications on later stages of development of the proposed software product, with a focus on empirical evaluation by experts and / or users. This may involve usability testing at the module level and/or assessment of the platform as a whole. The present paper is primarily design-oriented and does not address evaluative or substantive aspects. The authors are involved both in the conceptual design and in the development of the platform. The given platform is currently under development as part of a research project within the Data Science master's program at the Technical University of Moldova.

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