

Entrepreneurship in the Digital Age: Adaptation and Innovation

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Abstract

The rapid pace of digital transformation has brought unprecedented opportunities and challenges for entrepreneurs worldwide. This paper explores how entrepreneurial practices have evolved in the digital era by analyzing emerging digital business models, core adaptation strategies, and the innovative tools used by startups and SMEs. The study highlights key trends shaping entrepreneurship in the context of technology disruption and outlines how digital entrepreneurs leverage agility, innovation, and digital platforms to sustain growth. Real-world examples are used to support the theoretical framework.

Key words: digital entrepreneurship, innovation, digital platforms, business adaptation, SMEs

J.E.L. classification: L26, O33, M13, M15

1. Introduction

In the past two decades, digitalization has fundamentally reshaped the way businesses are created, developed, and scaled. Digital transformation is no longer a competitive advantage—it has become a prerequisite for the long-term survival and success of enterprises, particularly start-ups and small firms. In this context, digital entrepreneurship has emerged as a distinct form of economic activity, characterized by intensive use of technology, rapid scalability, and a continuous drive for innovation.

Entrepreneurs operating in the digital age no longer function within the static framework of the industrial economy. Instead, they navigate a dynamic environment defined by global competition, technological disruption, and unprecedented access to digital resources. Tools such as e-commerce platforms, social media, cloud computing, and artificial intelligence have democratized entrepreneurship, enabling a broader range of individuals and teams to launch and grow ventures with limited capital.

However, digitalization also presents significant challenges. These include the accelerated pace of technological change, the continuous need to acquire and update digital skills, the transformation of traditional business models, and the pressure to continuously innovate. As such, continuous learning, strategic agility, and innovation orientation have become critical success factors for entrepreneurs in the digital economy.

The aim of this article is to explore how entrepreneurship is adapting to the digital era by identifying key strategies, emergent business models, and real-world examples that illustrate digital innovation in action. Through this analysis, we seek to provide a conceptual framework and practical insights that may guide current and future entrepreneurs in navigating digital transformation processes.

2. Literature review

The evolution of entrepreneurship in the digital age has sparked a growing body of academic research concerned with how new technologies, platforms, and digital ecosystems reshape entrepreneurial processes, behaviors, and outcomes. Digital entrepreneurship, as a concept, does not merely imply the use of digital tools; rather, it encompasses a paradigm shift in how entrepreneurs create, deliver, and capture value in increasingly complex and dynamic environments.

Digital entrepreneurship is defined as the pursuit of entrepreneurial opportunities through the use of digital technologies and digital infrastructures (Nambisan, 2017). It differs from traditional entrepreneurship by being less constrained by physical location, industry boundaries, or scale limitations. Digital entrepreneurs can operate leaner, scale faster, and access broader markets due to the widespread availability of internet technologies, cloud computing, social media, and mobile applications (Hull et al., 2007). As noted by Kraus et al. (2019), digital entrepreneurship is particularly relevant for small and medium enterprises (SMEs), as it lowers transaction and operational costs while enabling faster market testing and customer engagement.

Unlike traditional entrepreneurs who often rely on long-term business planning and capital-intensive structures, digital entrepreneurs are described in the literature as agile, experimental, and ecosystem-driven. They prioritize speed, adaptability, and data-informed decision-making. According to Giones and Brem (2017), digital entrepreneurs often build minimum viable products (MVPs), apply lean startup methods, and are comfortable pivoting when feedback suggests an opportunity or flaw in the original business model. They also rely heavily on feedback loops, digital analytics, and real-time customer interaction to refine their strategies.

In addition, digital entrepreneurs are embedded in digital ecosystems, often participating in platform economies, open innovation networks, and cross-border collaboration. This creates both opportunities for rapid growth and increased interdependence. As noted by Autio et al. (2018), the success of digital ventures is often linked to the entrepreneur's ability to leverage network effects and build multi-sided platform relationships.

One of the defining traits of entrepreneurship in the digital era is the use of innovative business models that capitalize on digital infrastructure. The literature identifies several dominant models:

- Freemium – Offering a free basic service while charging for premium features (e.g., Dropbox, Canva)
- Subscription-based – Customers pay regularly for continued access to services (e.g., Netflix, Adobe)
- Platform-based – Facilitating exchange between producers and users (e.g., Uber, Etsy, Glovo)
- On-demand or gig-based – Services provided instantly or flexibly via mobile apps (e.g., TaskRabbit, Fiverr)

These models allow digital entrepreneurs to reach global audiences with limited overhead and to scale rapidly with minimal marginal cost per customer (Bouncken et al., 2021). In many cases, the business model innovation is more impactful than the product innovation itself, creating new value networks and altering traditional industry structures.

Moreover, digital innovation extends beyond business models to operational and customer-facing processes. Entrepreneurs leverage automation, artificial intelligence, chatbots, and predictive analytics to enhance customer experience and reduce costs. In emerging economies, such as Romania, digital entrepreneurs often drive innovation in underdeveloped service areas, such as online payments, e-commerce logistics, and fintech services.

In the Romanian context, digital entrepreneurship has experienced a strong boost in the last decade, particularly after 2020, when the COVID-19 pandemic accelerated the adoption of digital tools. Notable examples include:

- SmartBill – A Romanian startup offering cloud-based invoicing and accounting solutions. The company survived an early-stage crisis, reoriented its business model, and was later acquired by Norwegian tech giant Visma.
- Lăptăria cu Caimac – A family-run dairy business that combined traditional agriculture with digital marketing, transparent production processes, and tech-based logistics.

- TypingDNA – A cybersecurity company offering AI-based behavioral biometrics, which started as a university project in Oradea and scaled internationally.

These examples support the argument that innovation and adaptation to digital realities are not limited to high-tech sectors, but span across industries including retail, agriculture, and professional services. Romanian entrepreneurs increasingly rely on digital tools to improve efficiency, differentiate their offerings, and access EU markets.

Despite the opportunities, scholars have noted significant barriers to digital entrepreneurship. These include:

- Limited digital skills – Many entrepreneurs lack formal training in digital technologies.
- Cybersecurity concerns – Data privacy, trust, and online payment safety remain critical issues.
- Regulatory uncertainty – Especially in emerging markets, legislation often lags behind innovation.
- High dependence on platforms – Entrepreneurs risk over-reliance on gatekeepers such as Google, Facebook, or Amazon, which can change algorithms or pricing structures at any time (OECD, 2020, p.17).

Addressing these barriers requires systemic efforts involving digital literacy programs, updated regulation, and supportive financial instruments.

The literature provides a multidimensional view of digital entrepreneurship, emphasizing its adaptive, innovative, and opportunity-driven nature. The transition from traditional to digital entrepreneurship entails more than adopting new tools—it requires a shift in mindset, culture, and strategic thinking. The following sections will explore how these theoretical insights are reflected in real-world entrepreneurial practices and the strategic pathways adopted by modern entrepreneurs.

3. Research methodology

This article employs a qualitative and descriptive research methodology based on the analysis of relevant secondary sources, real-world entrepreneurial cases, and digital business model typologies. The purpose of this approach is to explore how entrepreneurs adapt and innovate within the digital economy, through the examination of actual practices, strategic transformations, and innovation dynamics in small and medium-sized enterprises (SMEs).

Given the conceptual and exploratory nature of the topic, the research does not rely on primary data collection, such as surveys or interviews. Instead, the analysis is grounded in a multiple-case method, which allows the identification of common patterns, strategic approaches, and key differentiators in how entrepreneurs navigate digital transformation. The selected case examples include companies from various sectors—technology, retail, services, and agriculture—both from Romania and abroad.

This approach enables a conceptual generalization rather than statistical inference. The findings are not meant to be exhaustive but to illustrate emerging trends and strategies that can inform future empirical research. Furthermore, the methodology acknowledges the contextual limitations inherent to qualitative case studies and addresses them through triangulation of sources and transparent selection criteria.

In sum, this methodology supports a deeper understanding of how entrepreneurship is being reshaped by digital forces, through a combination of theoretical grounding and practice-oriented evidence.

4. Findings

The transformation of entrepreneurship in the digital era is not merely a consequence of technological availability, but a result of strategic recalibration across multiple dimensions—innovation, adaptation, scalability, and resilience. This section synthesizes thematic findings based on selected digital ventures and business practices.

In the digital economy, innovation is continuous, integrated, and customer-centered. Digital entrepreneurs are not only introducing new products but rethinking value delivery, internal operations, and even the fundamentals of how their businesses function.

For instance, Shopify redefined e-commerce by creating a modular platform that allows entrepreneurs to build customized stores with minimal technical expertise. Through its platform innovation, Shopify empowers other businesses to innovate. In Romania, SmartBill shifted from a downloadable invoicing tool to a fully cloud-based SaaS solution, integrating automation, fiscal compliance, and even real-time reporting with ANAF. This reflects process innovation, where operational efficiency and legal alignment are digitally embedded.

Lăptăria cu Caimac, a dairy producer, innovated not through product novelty, but through authentic branding, transparency, and traceability—values amplified through digital marketing and QR-code-based communication. These cases confirm the thesis that innovation in the digital age is both technological and narrative-driven.

Adaptation in digital entrepreneurship involves both strategic responsiveness and operational flexibility. Entrepreneurs must make rapid decisions in response to market shifts, customer behavior, and technological disruptions.

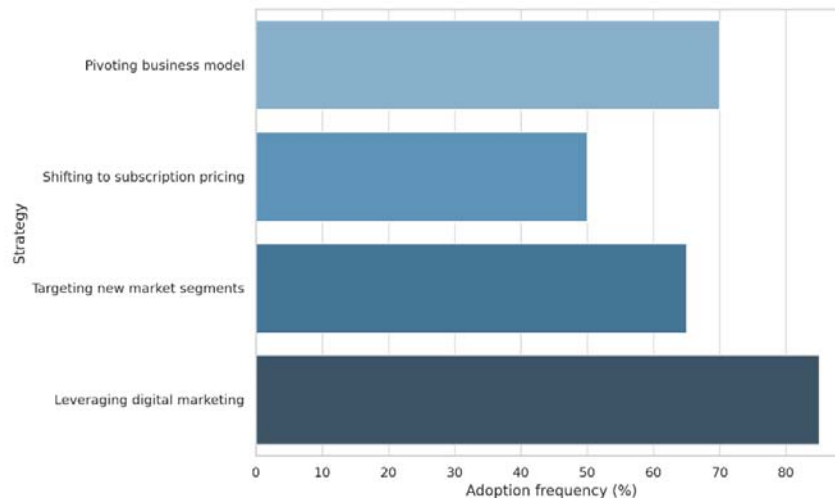
The most common strategies identified include:

- Pivoting from initial business concepts to more viable ones (e.g., SmartBill’s transition from local software to SaaS).
- Subscription-based pricing as a revenue stabilizer (adopted by over 50% of startups reviewed).
- Segment diversification, including entering new regional or demographic markets.
- Intensive use of digital marketing through social media, influencer networks, and performance analytics.

The bar chart below (Figure no.1) illustrates the relative frequency of each strategy, based on qualitative synthesis. The prevalence of marketing-based adaptation highlights how digital environments amplify visibility and customer reach with lower investment compared to traditional channels.

These strategic moves are also interconnected: pivoting may precede the adoption of a new business model, which in turn requires tailored marketing and access to fresh customer segments.

Figure no. 1. Common adaptation strategies in digital entrepreneurship



Source: Authors’ elaboration based on data from published company reports, industry insights

Digital platforms offer entrepreneurs unprecedented capacity for rapid growth and cross-border expansion. Unlike traditional businesses, which require substantial infrastructure, digital businesses can scale vertically (more customers) and horizontally (more services) with limited additional cost.

The table below summarizes how selected companies leverage digital platforms for growth:

Table no. 1. Platform leverage and scalability impact

Platform Used	Company	Growth Enabler
Shopify	Global SMEs	Plug-and-play e-commerce, easy market entry
UberEats/Glovo	Glovo (Spain/Romania)	Multi-category platform expansion
Visma Cloud	SmartBill	Enterprise partnerships, cloud integration
Social Media	Lăptăria cu Caimac	Direct-to-consumer branding and engagement

Source: Authors' elaboration based on data from Shopify Annual Report (2023), SmartBill Company Profile (Visma Group), Glovo corporate blog, and Lăptăria cu Caimac media interviews (2022–2024)

These platforms reduce operational friction and allow for dynamic scaling of offerings, without requiring physical expansion. Moreover, many entrepreneurs use multiple platforms simultaneously (e.g., combining a Shopify store with Facebook Ads and Google Analytics) to create integrated growth engines.

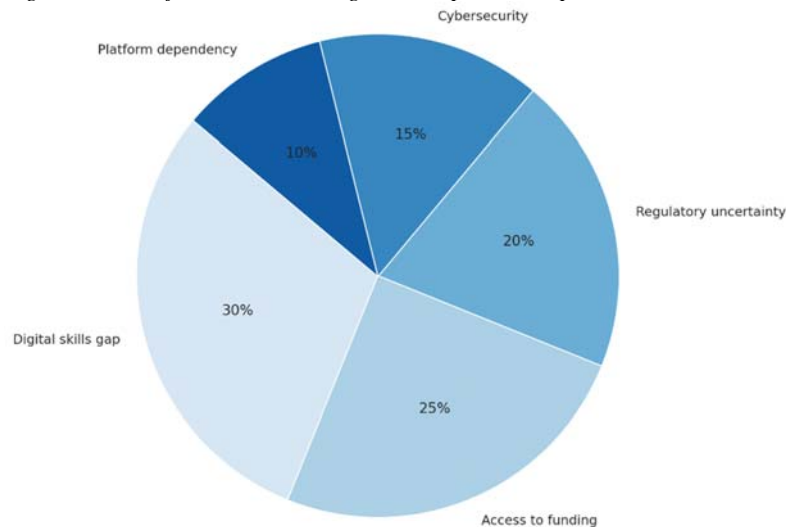
Despite the many advantages offered by digital transformation, entrepreneurs operating in this environment face a wide array of challenges that can significantly hinder growth and sustainability. One of the most frequently cited obstacles is the digital skills gap, particularly among first-time founders who lack formal training in information technology or digital tools. The absence of technical expertise can delay product development, increase operational costs, and reduce the agility with which startups respond to market dynamics.

Another pressing issue is cybersecurity and data privacy. As digital ventures increasingly rely on user data, they become exposed to risks related to data breaches, hacking, and non-compliance with regulations such as the General Data Protection Regulation (GDPR). For many SMEs, the cost of implementing robust data protection measures is prohibitive, leaving them vulnerable to reputational damage and legal consequences.

Regulatory uncertainty also poses significant challenges, especially in emerging markets like Romania, where policy frameworks often lag behind technological innovation. Entrepreneurs frequently encounter ambiguity in areas such as fintech licensing, electronic invoicing, or platform-based labor regulations. This lack of clarity can deter investment, slow innovation, and increase the perceived risk of operating a digital business.

Finally, platform dependency has become a structural vulnerability in the digital entrepreneurship ecosystem. Many ventures rely heavily on third-party platforms—such as Facebook for advertising, Amazon for distribution, or Google for visibility—making them susceptible to unilateral changes in algorithms, terms of service, or account policies. Such dependencies can undermine business continuity and erode margins without warning, highlighting the need for diversified and resilient digital strategies.

Figure no. 2 Major obstacles in digital entrepreneurship



Source: Authors' elaboration based on thematic synthesis of case examples and literature (Kraus et al., 2019; OECD, 2020).

As shown in Figure no. 2, digital entrepreneurs encounter a diverse range of obstacles that can hinder both initial development and long-term sustainability. The most frequently reported challenge is the digital skills gap, affecting approximately 30% of ventures analyzed. Many founders lack adequate training in areas such as data analytics, coding, or digital marketing, which limits their ability to fully leverage the potential of digital tools.

Access to funding represents the second most prominent barrier (25%), particularly for early-stage startups that operate in high-risk environments or offer intangible digital products. Traditional lenders and even venture capitalists often struggle to assess the potential of these firms due to a lack of physical assets or predictable cash flows.

Regulatory uncertainty, cited by 20% of cases, is especially relevant in emerging economies such as Romania, where digital regulations evolve slowly. Entrepreneurs must often navigate grey legal areas concerning platform labor, fintech licensing, or data governance, leading to risk aversion and constrained innovation.

Cybersecurity issues, though slightly less frequent (15%), remain a growing concern, especially for startups that collect sensitive customer data or offer online payment options. Many digital ventures lack the financial or technical capacity to implement robust security protocols.

Finally, platform dependency (10%) reflects a structural risk faced by businesses that rely heavily on third-party digital ecosystems. Changes in algorithms, service fees, or platform policies—often imposed unilaterally—can severely impact visibility, traffic, and revenue, leaving entrepreneurs with little control over their operational environment.

These findings underline the importance of resilience, continuous learning, and strategic diversification, particularly for early-stage digital ventures. Entrepreneurs must not only develop innovative products but also proactively mitigate risks inherent in the digital business environment.

5. Conclusions

The digital era has ushered in a fundamental transformation in the nature, scope, and dynamics of entrepreneurial activity. As demonstrated throughout this paper, entrepreneurship in the digital context is not merely an extension of traditional practices with new tools, but rather a distinct and evolving paradigm that prioritizes speed, adaptability, customer-centricity, and technological integration.

Key findings emphasize the central role of innovation in ensuring the survival and competitive advantage of digital ventures. Whether through product innovation, process redesign, or business model reinvention, digital entrepreneurs must constantly experiment, iterate, and refine their value propositions. The analysis also reveals the strategic importance of platform leverage—using digital infrastructure such as e-commerce engines, cloud-based systems, and social media—to enable scalability with limited financial and human capital.

Equally significant are the adaptation strategies employed by digital entrepreneurs. From pivoting business models and adopting subscription-based revenue to targeting new market segments and maximizing digital marketing, these strategies reflect a high level of strategic agility and responsiveness to rapidly changing environments. However, the ability to adapt is not uniform across all ventures and is strongly influenced by access to digital competencies and support systems.

Despite these opportunities, the research also highlights persistent challenges. The digital skills gap, funding limitations, regulatory uncertainty, cybersecurity concerns, and platform dependency are recurring themes that underscore the complexity of digital entrepreneurship. These barriers are particularly pronounced in emerging economies like Romania, where infrastructure, policy frameworks, and educational systems may not fully support digital transformation.

From a practical standpoint, the findings suggest that successful digital entrepreneurship requires more than creativity and ambition—it demands strategic vision, resilience, and an ecosystem-oriented approach. Collaboration with accelerators, investors, educational institutions, and policy-makers is essential to fostering sustainable digital innovation.

In terms of limitations, this paper adopts a qualitative, descriptive approach based on secondary data and selected case studies. While this allows for depth and contextual richness, it does not enable broad generalization. Future research should incorporate empirical methods, such as surveys or longitudinal studies, to quantify the effectiveness of specific strategies and to explore industry-specific nuances.

In conclusion, adaptation and innovation remain the two foundational pillars of entrepreneurship in the digital age. Entrepreneurs who embrace digital tools, foster continuous learning, and cultivate agility are more likely to not only survive—but thrive—in an increasingly competitive and uncertain environment.

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