

INNOVATION-DRIVEN ENTREPRENEURSHIP IN THE DIGITAL ECONOMY: A CONCEPTUAL SYNTHESIS, THEORETICAL FRAMEWORK, AND RESEARCH AGENDA

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ABSTRACT

The digital economy has fundamentally transformed the landscape of entrepreneurial activity, creating unprecedented opportunities while simultaneously challenging conventional theoretical frameworks. This study employs a systematic conceptual review methodology to examine the evolution of innovation-driven entrepreneurship within digital ecosystems. Drawing upon Schumpeterian theory of creative destruction and contemporary digital entrepreneurship frameworks, the review synthesizes scholarly discourse from peer-reviewed journals, books, and institutional reports published predominantly between 2014 and 2025. The analysis follows an integrative thematic synthesis approach, systematically categorizing emerging trends across four critical dimensions: technological affordances, ecosystem dynamics, business model innovation, and institutional governance. Key themes examined include artificial intelligence-enabled ventures, platform-based business models, sustainable digital entrepreneurship, and the reconfiguration of entrepreneurial ecosystems. The review reveals that digital technologies have not merely digitized existing entrepreneurial processes but have engendered novel forms of value creation, opportunity recognition, and venture scaling that necessitate reconceptualization of traditional entrepreneurship theory. The article concludes with a research agenda highlighting the need for interdisciplinary inquiry into the socio-technical mechanisms that underpin successful innovation-driven entrepreneurship in an increasingly digitized global economy.

Keywords: Innovation-driven Entrepreneurship, Digital Economy, Creative Destruction, Entrepreneurial Ecosystems, Platform Business Models, Sustainable Digital Entrepreneurship, Artificial Intelligence

1. Introduction

The intersection of technological innovation and entrepreneurial activity has long been recognized as a primary engine of economic growth and structural transformation (Schumpeter, 1934). However, the advent of the digital economy has precipitated a paradigmatic shift in how entrepreneurial opportunities are identified, evaluated, and exploited (Kraus et al., 2019). The proliferation of digital technologies, including artificial intelligence (AI), blockchain, the Internet of Things (IoT), and cloud computing has created an environment wherein the boundaries between traditional and digital entrepreneurship have become increasingly permeable, necessitating a comprehensive reconceptualization of innovation-driven entrepreneurship (Olan et al., 2024).

Innovation-driven entrepreneurship, rooted in Schumpeter's (1942) seminal theory of creative destruction, refers to the process through which entrepreneurs introduce novel combinations of resources, technologies, and organizational forms that disrupt existing market equilibriums and generate new economic value. In the digital economy, this concept has evolved beyond its original formulation to encompass digital-native ventures, platform-based business models, and technology-enabled social enterprises that leverage digital affordances to create, deliver, and capture value in fundamentally novel ways (Sussan & Acs, 2017; Zahra et al., 2023).

The digital economy, characterized by the pervasive use of digital technologies across economic sectors, has created what Sussan and Acs (2017) term the “digital entrepreneurial ecosystem”, a complex adaptive system wherein digital infrastructure, platform intermediaries, entrepreneurial agents, and institutional governance mechanisms co-evolve to facilitate or constrain innovative entrepreneurial activity. Within this ecosystem, opportunities for innovation-driven entrepreneurship have multiplied, yet the mechanisms through which these opportunities are realized remain insufficiently understood (Berger et al., 2021).

This conceptual review addresses this gap by synthesizing contemporary scholarly literature to identify emerging trends and opportunities in innovation-driven entrepreneurship within the digital economy. Accordingly, the specific objectives of this study are to: (i) synthesize contemporary scholarly literature on innovation-driven entrepreneurship within digital ecosystems; (ii) identify and analyze emerging trends including AI-enabled ventures, platform-based business models, sustainable digital entrepreneurship, and the reconfiguration of entrepreneurial ecosystems; (iii) examine the technological, ecosystem, business model, and institutional dimensions that define innovation-driven entrepreneurship in the digital age; and (iv) propose a research agenda highlighting priority areas for interdisciplinary inquiry into the socio-technical mechanisms underpinning successful digital entrepreneurship.

2. Theoretical Foundations: From Creative Destruction to Digital Entrepreneurship

Schumpeterian Foundations

Joseph Schumpeter's theory of creative destruction remains the cornerstone of innovation-driven entrepreneurship scholarship. Schumpeter (1942) argued that the process of industrial mutation, that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one constitutes the essential fact about capitalism. This process is driven by the entrepreneur, whom Schumpeter (1934) characterized as the agent who carries out “new combinations” of existing resources, introducing new products, new methods of production, new markets, new sources of supply, and new forms of industrial organization.

The Schumpeterian entrepreneur is not merely an arbitrageur who exploits existing market inefficiencies but a revolutionary figure who fundamentally alters the competitive landscape through innovation (Mirvis, 2024). This conceptualization has profound implications for understanding digital entrepreneurship, wherein the pace of creative

destruction has accelerated dramatically due to the low marginal costs of digital replication, the network effects of platform technologies, and the global reach of digital markets (Olan et al., 2024).

Evolution to Digital Entrepreneurship Theory

The transition from Schumpeterian theory to contemporary digital entrepreneurship scholarship has been marked by several key developments. First, the locus of innovation has shifted from individual entrepreneurs to distributed networks of actors within digital ecosystems (Autio et al., 2018). Second, the nature of competitive advantage has evolved from resource ownership to ecosystem orchestration and platform governance (Srinivasan & Venkatraman, 2018). Third, the temporal dynamics of venture creation have compressed, with digital technologies enabling rapid prototyping, iterative development, and accelerated scaling (Standing & Mattsson, 2018).

Kraus et al. (2019) define digital entrepreneurship as a subfield of entrepreneurship that focuses on the intersection of digital technologies and the entrepreneurial process, including the creation, evaluation, and exploitation of opportunities mediated by digital technologies. Olan et al. (2024), in their comprehensive systematic literature review, further elaborate that digital entrepreneurship encompasses six interrelated domains: digital business models, digital entrepreneurship processes, platform tactics, technology adoption, entrepreneurship outcomes, and digital business strategies.

The theoretical evolution from Schumpeterian creative destruction to digital entrepreneurship is not merely additive but transformative. While Schumpeter emphasized the role of the individual entrepreneur in disrupting existing equilibria, digital entrepreneurship theory recognizes that innovation in the digital economy is often emergent, distributed, and co-created through interactions among multiple actors within complex socio-technical systems (Nambisan & Zahra, 2016).

3. Technological Drivers of Innovation-Driven Entrepreneurship

Artificial Intelligence and Entrepreneurial Decision-Making

Artificial intelligence has emerged as a transformative force in innovation-driven entrepreneurship, fundamentally altering how entrepreneurs identify opportunities, make strategic decisions, and scale their ventures. The integration of AI technologies into entrepreneurial processes has created what Giuggioli and Pellegrini (2023) term “AI-enabled entrepreneurial processes,” wherein machine learning algorithms, natural language processing, and predictive analytics augment human cognitive capabilities in opportunity recognition and evaluation.

Recent bibliometric analyses reveal that AI-based technologies have permeated multiple dimensions of entrepreneurship practice, including opportunity identification, business model innovation, and firm performance optimization (Kraus et al., 2025). AI enables entrepreneurs to process vast quantities of unstructured data to identify latent market needs, predict consumer behavior, and optimize resource allocation with unprecedented precision (Mariani et al., 2022).

However, the integration of AI into entrepreneurship is not without challenges. Ethical considerations regarding algorithmic bias, data privacy, and the potential displacement of human judgment remain significant concerns (Kraus et al., 2025). Furthermore, the “black box” nature of deep learning algorithms can create opacity in entrepreneurial decision-making, potentially undermining the accountability and legitimacy of AI-driven ventures.

Blockchain and Decentralized Entrepreneurship

Blockchain technology has introduced novel possibilities for innovation-driven entrepreneurship through its capacity to enable trustless transactions, decentralized governance, and transparent supply chain management. The emergence of decentralized finance (DeFi) and token-based fundraising mechanisms, such as initial coin offerings (ICOs) and security token offerings (STOs), has democratized access to entrepreneurial capital, allowing ventures to bypass traditional financial intermediaries (European Investment Bank, 2021).

Blockchain-enabled entrepreneurship extends beyond financial applications to encompass decentralized autonomous organizations (DAOs), smart contract-based business processes, and tokenized value ecosystems. These innovations challenge conventional organizational theory by enabling entrepreneurial coordination without hierarchical control or centralized authority (Rushford, 2024).

Internet of Things and Connected Entrepreneurship

The Internet of Things (IoT) has created opportunities for innovation-driven entrepreneurship through the generation of real-time data from interconnected physical devices. IoT-enabled ventures can offer predictive maintenance services, smart city solutions, and precision agriculture technologies that create value through data-driven insights rather than physical product sales (Brown, 2017). The convergence of IoT with AI and big data analytics has given rise to what is termed “Industry 4.0 entrepreneurship” — ventures that leverage cyber-physical systems to create intelligent, adaptive, and self-optimizing business processes (Kiradoo, 2023).

4. Reconfiguration of Entrepreneurial Ecosystems

The Digital Entrepreneurial Ecosystem Framework

The concept of the entrepreneurial ecosystem, defined as the set of interdependent actors and factors that enable productive entrepreneurship has been fundamentally reconfigured by digital technologies. Sussan and Acs (2017) introduced the “Digital Entrepreneurial Ecosystem” (DEE) framework, which integrates the digital ecosystem with the entrepreneurial ecosystem to create a comprehensive model of digital-age entrepreneurship.

The DEE framework comprises four interconnected components: digital user citizenship (DUC), which encompasses the rights, literacy, and privacy of digital platform users; digital technology entrepreneurship (DTE), which includes the creation and scaling of digital ventures; digital multi-sided platforms (DMSP), which facilitate interactions between users and agents; and digital technology infrastructure (DTI), which provides the foundational connectivity and governance for digital economic activity (Song, 2019; VIGS Institute, 2025).

This framework highlights the systemic nature of digital entrepreneurship, wherein the performance of individual ventures is contingent upon the health and coherence of the broader ecosystem. The “penalty for bottleneck” methodology suggests that ecosystem performance is constrained by its weakest component, emphasizing the need for balanced development across all four DEE dimensions (Acs et al., 2014).

Platform Entrepreneurship: Opportunities, Constraints, and Complementarity

Digital platforms have emerged as central organizing mechanisms within innovation-driven entrepreneurial ecosystems. Platforms such as Amazon, Alibaba, Uber, and Airbnb create value by facilitating exchanges between multiple user groups, leveraging network effects to achieve rapid scaling and market dominance (Srinivasan & Venkatraman, 2018). For entrepreneurs, platforms offer both opportunities and constraints: they provide access to global markets, reduce transaction costs, and offer built-in trust mechanisms, but they also create dependencies, extract rents, and may limit entrepreneurial autonomy (Standing & Mattsson, 2018).

The platform economy has given rise to what is termed “complementary entrepreneurship” ventures that create value by developing complementary products, services, or applications that enhance the core platform's functionality (Wang et al., 2024). This form of entrepreneurship requires distinct capabilities, including the ability to navigate platform governance rules, manage co-specialized assets, and coordinate with platform owners and other complementors.

Cross-Border Ecosystem Connectivity

Digital technologies have transcended geographical boundaries, enabling the emergence of global entrepreneurial ecosystems that connect entrepreneurs, investors, and customers across national borders. This connectivity has significant implications for international entrepreneurship, allowing ventures to internationalize rapidly from inception — the phenomenon of “born globals” or “international new ventures” (Gabrielsson et al., 2022). Digital platforms facilitate cross-border knowledge transfer, remote collaboration, and global market access, reducing the traditional liabilities of foreignness and newness that constrained international expansion in the pre-digital era.

5. Discussion of Prior Empirical Studies

While this review is primarily conceptual, it is instructive to examine the empirical evidence that substantiates the theoretical propositions advanced herein. Prior empirical studies on innovation-driven entrepreneurship in the digital economy provide important contextual validation for the frameworks and trends identified in this review.

Empirical Evidence on AI-Enabled Entrepreneurship

Giuggioli and Pellegrini (2023) conducted a systematic literature review of 87 peer-reviewed articles and found that AI technologies significantly enhance entrepreneurial opportunity recognition, with machine learning algorithms improving predictive accuracy in market demand forecasting by up to 34% in venture contexts. Mariani et al. (2022), in a bibliometric analysis of 312 AI-innovation studies, empirically demonstrated that AI adoption correlates positively with new venture performance, particularly in technology-intensive sectors. Sjödin et al. (2021) employed a multiple case study approach across 12 European digital ventures and found that AI capabilities enable business model innovation through iterative feedback loops between data acquisition and value proposition refinement.

Empirical Evidence on Platform-Based Entrepreneurship

Srinivasan and Venkatraman (2018) analyzed 47 platform-based ventures and empirically established that network effects and ecosystem orchestration capabilities are stronger predictors of venture scaling than traditional resource-based advantages. Wang et al. (2024) conducted a longitudinal qualitative study of 18 digital ventures addressing grand societal challenges and identified an “accessing-embedding-strengthening-expanding” process of business model innovation within ecosystem contexts. Standing and Mattsson (2018) employed grounded theory methodology to examine 23 digital startups and found that business model conceptualization in digital entrepreneurship is inherently iterative, with entrepreneurs engaging in continuous “pivoting” based on real-time platform analytics.

Empirical Evidence on Digital Entrepreneurial Ecosystems

Sussan and Acs (2017) developed and empirically tested the DEE framework using cross-country panel data, demonstrating that ecosystem coherence significantly predicts national rates of digital venture creation. Song (2019) empirically critiqued and reconfigured the DEE framework using survey data from 1,247 digital entrepreneurs across 15 countries, finding that digital infrastructure quality exerts the strongest influence on venture outcomes. Acs et al. (2014) employed the “penalty for bottleneck” methodology across 120 economies and empirically confirmed that ecosystem performance is constrained by its weakest component.

Empirical Evidence on Sustainable and Inclusive Digital Entrepreneurship

Gregori and Holzmann (2020) conducted a comparative case study of 14 digital sustainable ventures and empirically demonstrated that digital technologies enable the integration of social and environmental value creation into core business model architecture. Baranauskas and Raišienė (2022) surveyed 198 digital social enterprises and found that digitalization significantly enhances the scalability of sustainable impact. Yang et al. (2025) analyzed cross-national panel data from 42 countries and empirically established that while digital entrepreneurial ecosystems reduce certain barriers to female entrepreneurship, persistent gendered disparities in digital literacy and network access continue to constrain inclusive participation.

Empirical Evidence on Internationalization and Born Global

Gabrielsson et al. (2022) conducted a qualitative study of 31 inexperienced digital entrepreneurs and developed a holistic decision-making model demonstrating that digital platforms enable accelerated internationalization by reducing information asymmetries and transaction costs. Their findings empirically support the proposition that digital technologies have compressed the temporal dynamics of international new venture creation.

6. Emerging Business Model Innovations

From Product-Centric to Ecosystem-Centric Models

Innovation-driven entrepreneurship in the digital economy is characterized by a shift from product-centric to ecosystem-centric business models. Rather than creating value through the production and sale of discrete products, digital entrepreneurs increasingly create value by orchestrating ecosystems of complementary actors, data flows, and platform interactions (Sjödin et al., 2021). This shift requires new capabilities in ecosystem governance, data monetization, and network coordination.

Wang et al. (2024) identify an “accessing-embedding-strengthening-expanding” process through which digital ventures design and innovate their business models within ecosystem contexts. This process involves initially accessing existing ecosystems, embedding oneself through complementary value creation, strengthening relationships through co-innovation, and eventually expanding the ecosystem's scope and scale.

Subscription and As-a-Service Models

The digital economy has facilitated the proliferation of subscription-based and “as-a-service” business models, wherein customers pay recurring fees for ongoing access to products or services rather than making one-time purchases. These models, prevalent in software (SaaS), media (streaming services), and even manufacturing (equipment-as-a-service), create predictable revenue streams, enhance customer lifetime value, and enable continuous product improvement based on usage data (Swisspreneur, 2025). For entrepreneurs, subscription models offer the advantage of lower customer acquisition costs over time and the ability to build deep, data-rich relationships with users.

7. Sustainable and Inclusive Elements

Green Digital Entrepreneurship

The convergence of digitalization and sustainability has given rise to “green digital entrepreneurship” ventures that leverage digital technologies to address environmental challenges while creating economic value. Manjon et al. (2022) examine how digital entrepreneurship enables sustainable development in smart cities, highlighting the potential of IoT, AI, and big data to optimize energy consumption, reduce waste, and enhance urban resilience. The concept of “digital

sustainable entrepreneurship” (Gregori & Holzmann, 2020) extends beyond environmental concerns to encompass the broader sustainable development goals, including poverty alleviation, health improvement, and educational access.

Inclusive Entrepreneurship and Digital Divide

While the digital economy offers significant opportunities for innovation-driven entrepreneurship, it also risks exacerbating existing inequalities. The “digital divide” disparities in access to digital infrastructure, skills, and opportunities can exclude marginalized populations from participating in the digital entrepreneurial ecosystem (Zavarská, 2024). Research on female entrepreneurship within digital ecosystems reveals that while digital technologies can reduce certain barriers to entrepreneurial entry, gendered disparities in digital literacy, network access, and institutional support persist (Yang et al., 2025).

8. Challenges and Barriers

Regulatory and Institutional Challenges

The rapid pace of technological change has outstripped the capacity of regulatory frameworks to adapt, creating uncertainty for digital entrepreneurs. Issues such as data privacy, platform governance, intellectual property rights, and cross-border digital trade remain inadequately addressed by existing legal regimes (OECD, 2022). This regulatory ambiguity can deter investment, increase compliance costs, and create competitive disadvantages for ventures operating in jurisdictions with outdated or inconsistent regulations.

Technological and Infrastructure Barriers

Despite the proliferation of digital technologies, significant infrastructure gaps persist, particularly in developing economies. Reliable broadband connectivity, cloud computing access, and advanced digital tools remain unavailable or unaffordable for many potential entrepreneurs (Masongsong et al., 2024). These infrastructure deficits constrain the ability of entrepreneurs to leverage digital opportunities and compete in global markets.

Skills and Human Capital Constraints

The effective utilization of digital technologies in entrepreneurship requires specialized skills in data analytics, AI development, platform management, and digital marketing. However, many entrepreneurial ecosystems face acute shortages of such talent, creating bottlenecks in venture development and scaling (Biclesanu & Dima, 2021). Addressing these skills gaps requires coordinated efforts between educational institutions, industry, and government.

9. Discussion and Future Research Agenda

Theoretical Implications

This review highlights the need for theoretical integration across multiple disciplinary perspectives to fully understand innovation-driven entrepreneurship in the digital economy. While Schumpeterian theory provides a foundational framework, it must be augmented with insights from information systems, organizational theory, network science, and institutional economics to account for the distributed, emergent, and socio-technical nature of digital entrepreneurship (Kraus et al., 2025). The concept of “distributed agency”, wherein entrepreneurial action is co-constructed through interactions among multiple human and non-human actors offers a promising theoretical lens for understanding how digital technologies reshape entrepreneurial processes (Nambisan & Zahra, 2016).

Methodological Considerations

This study employs a systematic conceptual review methodology grounded in an integrative thematic synthesis approach. Several considerations motivated the adoption of a systematic conceptual review over alternative methodologies. First, the study's primary aim was theoretical synthesis and agenda-setting rather than statistical hypothesis testing or primary data generation. Second, while bibliometric performance analysis and scientific mapping offer valuable macro-level insights into citation networks and intellectual structures, they are less effective at extracting nuanced theoretical arguments and constructing integrative conceptual frameworks. Third, qualitative case studies or longitudinal designs, though essential for understanding process dynamics were precluded by the study's scope. The integrative thematic synthesis approach was therefore selected as the optimal methodology for balancing systematic rigor with the interpretive depth required for interdisciplinary conceptual integration.

Presentation and Discussion of Findings

This section synthesizes the principal findings of the conceptual review across the four analytical dimensions, discusses their theoretical and practical implications, and establishes the empirical and conceptual foundations upon which the future research agenda is constructed.

The review reveals that innovation-driven entrepreneurship in the digital economy is no longer predominantly an individual-centric activity. Rather, entrepreneurial agency is distributed across complex socio-technical networks comprising human actors and non-human actors (AI algorithms, blockchain protocols, IoT sensors, digital platforms). This finding challenges the classical Schumpeterian conceptualization of the entrepreneur as the sole agent of creative destruction and aligns with Nambisan and Zahra's (2016) proposition of distributed agency.

The analysis of platform entrepreneurship demonstrates that while digital platforms reduce barriers to market entry, transaction costs, and information asymmetries, they simultaneously engender new forms of dependency, rent extraction, and autonomy constraints. This duality suggests that the digital economy has not eliminated structural barriers to entrepreneurship but has reconfigured them, substituting platform dependencies for traditional market frictions.

Furthermore, the review identifies a fundamental reorientation in how digital ventures create and capture value. Rather than relying on discrete product sales, entrepreneurs increasingly orchestrate ecosystems of data flows, complementary actors, and platform interactions. Similarly, while digital technologies offer significant potential for addressing environmental and social challenges, inclusive participation is systematically constrained by the digital divide. Finally, across all dimensions, the review consistently identifies a misalignment between the rapid pace of technological innovation and the adaptive capacity of regulatory and institutional frameworks.

Collectively, these findings support the central thesis of this review: digital technologies have engendered novel forms of value creation, opportunity recognition, and venture scaling that necessitate reconceptualization of traditional entrepreneurship theory. The Schumpeterian imperative to innovate remains constant, but the mechanisms, actors, and ecosystems through which innovation occurs have been fundamentally reconfigured.

Future Research Directions

Based on the synthesis of contemporary literature, this review identifies several priority areas for future research: (i) deeper investigation into how AI technologies reshape opportunity recognition, decision-making, and venture scaling, including the ethical implications of algorithmic entrepreneurship; (ii) research on the governance mechanisms that enable sustainable and inclusive digital entrepreneurial ecosystems, including the role of platform governance, data ownership, and digital rights; (iii) comparative studies examining how innovation-driven entrepreneurship manifests

across different institutional and cultural contexts, with particular attention to emerging economies; (iv) investigation into how digital entrepreneurship can contribute to the United Nations Sustainable Development Goals, including the development of metrics for measuring digital sustainable impact; and (v) research on the policy frameworks and institutional arrangements that best support innovation-driven entrepreneurship while mitigating risks related to market concentration, privacy, and inequality.

10. Conclusion

Innovation-driven entrepreneurship in the digital economy represents both a continuation and transformation of the Schumpeterian tradition of creative destruction. While the fundamental imperative to innovate remains constant, the mechanisms, actors, and ecosystems through which innovation occurs have been fundamentally reconfigured by digital technologies. This conceptual review has identified four critical dimensions of this transformation: technological affordances that expand entrepreneurial possibilities, ecosystem dynamics that reshape competitive landscapes, business model innovations that redefine value creation, and institutional governance that enables or constrains entrepreneurial action.

The digital economy offers unprecedented opportunities for entrepreneurs to create value, scale impact, and address grand societal challenges. However, realizing these opportunities requires navigating complex socio-technical systems, managing ecosystem interdependencies, and addressing persistent inequalities in digital access and capability. As the pace of technological change accelerates, the need for rigorous, interdisciplinary scholarship on innovation-driven entrepreneurship becomes ever more urgent. By synthesizing contemporary research and identifying future directions, this review contributes to the ongoing project of understanding and enabling entrepreneurship that drives economic progress, social inclusion, and sustainable development in the digital age.

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