

Entrepreneurship in the Digital Age: A Theoretical Review of Strategy, Sustainability, and Innovation

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Abstract

Background: For decades, entrepreneurship has been regarded as a key driver of economic growth and innovation. However, today's environment, affected by the dual forces of the digital transformation and sustainability imperative, offers new and complex opportunities and challenges for new ventures. The aim of this theoretical review is to try to capture and conceptualize the associated evolution in the nature of entrepreneurship in this new paradigm, rather than traditional models of entrepreneurship and use of general theories.

Review: This study employs a descriptive and analytical approach that involves an extensive survey of the foundational, classic and contemporary literature in entrepreneurship, strategic management and innovation studies. Specifically, we discuss the transition away from the classical Schumpeterian and utility-maximising perspectives to a paradigm characterised by strategic agility, digital literacy, and an acute awareness of Environmental, Social, and Governance (ESG) imperatives. The review situates an assessment of the traditional "strategise and implement" models alongside the more contemporary and adaptive methods of "effectuation" and "lean start-up" methods. Additionally, we investigate the importance of the entrepreneurial ecosystem, including access to alternative financing, institutional barriers, and the importance of building strong digital and social capital, particularly as it relates to emerging economies.

Discussion: The synthesis suggests that successful 21st-century entrepreneurship requires more than merely taking advantage of opportunities in the market; it also requires co-creating value in a fast-moving, interconnected, and socially responsible

ecosystem. A significant theoretical tension exists, however, between lean, rapid experimentation, and the long-term, stakeholder perspective of sustainable entrepreneurship. This discussion reveals that today's entrepreneurs must learn to embrace this paradox, striking a balance between immediate responsiveness and long-term resilience and responsible practice.

Conclusion: Today's entrepreneur must be "ambidextrous" in a new way: managing digital innovation as well as societal and sustainable impact, simultaneously and in a meaningful way. The findings of this study suggest that, in the current climate, an effective entrepreneurial strategy is an adaptive, ecosystem-focused, and purpose-oriented one. The study forwards a more integrated research agenda that bridges digital innovation, sustainable business models, and entrepreneurial strategy research, and ultimately offers a new lens to understand and steward the next generation of practice-based futures.

Keywords: Entrepreneurship, Digital Transformation, Sustainable Entrepreneurship, Entrepreneurial Ecosystem, Innovation, Lean Start-up, Effectuation, ESG, Venture Capital.

1. Introduction

For multiple decades, entrepreneurship and the associated establishment of small firms has captivated the business establishment as well as society. Entrepreneurs are seen to be the creators of modern economies: they create jobs, they drive wealth generation, and they develop innovations that transform industries (Beaver & Jennings, 2000). Entrepreneurs are seen as the bearers of "creative destruction," (Schumpeter, 1934) where entrepreneurs are seen to be creators of destruction by resource recombination through the creation of new products, services or markets. This notion, when applied in the context of new business activity, has been instrumental in building notions of competition and economic uncertainty and dynamism (Wong, Ho, & Autio, 2005).

The dawn of the 21st century represents a shift in all of this. The omnipresence of technology and a global awareness of sustainability are changing the landscape for entrepreneurs. Entrepreneurship today is no longer simply about the factors of production; it's about understanding the complexities of a digital ecosystem and responding to social demand for more responsible business practices (Ahlstrom, 2010). As new societal demands, regulations, and business models emerge, our definition of successful entrepreneurship is also evolving from narrow financial measures to encompass a "triple bottom line" of economic, social, and environmental value creation (Elkington, 1997). This is not just philosophical; we are observing the evolution of modern

entrepreneurs adjusting to these changes as a strategic imperative due to shifting consumer behaviors and tastes, legality and regulation, and new business models using technology. This theoretical review will assess and integrate these forces to design a framework for understanding entrepreneurship today.

This study is significant because it takes the initiative to combine three important, yet frequently isolated, streams of management literature: entrepreneurship, digital strategy, and sustainability. This review outlines an integrated theoretical framework that makes some interesting contributions. Firstly, for scholars, it helps to organize a field that is often fragmented, and points to fruitful directions for future research, particularly at the intersection of the three domains of entrepreneurship, digital strategy, and sustainability. Secondly, for practitioners and aspiring entrepreneurs, especially in developing economies such as those in the Middle East, it provides a strategic map for navigating an ambiguous and dynamically changing marketplace. Today, it is more important than ever to learn how to engage with digital tools, build sustainable business models, and establish a thriving ecosystem as this is not just an opportunity, but a prerequisite for long-term survival and performance (Bruton, Ketchen, & Ireland, 2013). Thirdly, for policymakers, this review also calls for the development of supportive institutional environments for sustainable firms, including support for innovative, sustainable, inclusive entrepreneurial activity as opposed to just any entrepreneurial activity.

The primary objective of the study is to develop an integrated theoretical framework that examines entrepreneurship within the digitally and sustainability-driven era. More specifically, this study will:

- Review and synthesize the evolution of entrepreneurial theory from classical to contemporary perspectives.
- Analyze the impact of digital transformation on entrepreneurial strategies and business models.
- Examine the integration of sustainability and ESG principles into the entrepreneurial process.
- Explore the critical components of the modern entrepreneurial ecosystem, including finance and institutional support.
- Provide a conceptual model that integrates these elements and suggests directions for future research.

The central problem confronting the study of modern entrepreneurship is the lack of an integrated theoretical framework that adequately captures the simultaneous pressures and opportunities of digitalization and sustainability. While there is extensive literature

on each of these topics individually, their interplay within the entrepreneurial context remains undertheorized. The overarching research question is:

- **How have digital transformation and the sustainability imperative reshaped the theory and practice of entrepreneurship?**

This primary question gives rise to the following sub-questions:

- a. How do modern entrepreneurial methodologies (e.g., lean start-up, effectuation) align with or conflict with the principles of sustainable, long-term value creation?
- b. What new strategic capabilities are required for entrepreneurs to succeed in a digitally-driven and socially conscious market?
- c. How does the entrepreneurial ecosystem need to evolve to support the growth of innovative and sustainable ventures, particularly in emerging economies?

This review proposes a conceptual model where modern entrepreneurship is the dependent phenomenon, shaped by three core independent variables: **(1) The Entrepreneurial Mindset & Strategy** (shifting from prediction to adaptation), **(2) The Digital Toolkit** (technologies enabling new models), and **(3) The Sustainable & Institutional Context** (the ecosystem of finance, regulations, and societal expectations). The interaction between these variables determines the nature and success of contemporary entrepreneurial ventures.

2. Theoretical Framework

The traditional Western notion of entrepreneurship tends to emphasize the individual utility maximization of the economic agents involved (Hassan & Hippler, 2014). Success is judged primarily in terms of financial gains, with any possibility of benefits accruing to communities as an incidental by-product instead of a primary motivation. In these narratives, the entrepreneur is seen as a rational actor with a motivation in the form of profit, which is bounded only by secular law and ethical conventions (Beaver & Jennings, 2000). This concept of entrepreneurship as an isolated profit maximization activity is increasingly challenged in favor of a more holistic view of the entrepreneurial mission as showcased by a growing body of literature on sustainable entrepreneurship and social entrepreneurship, where the ventures of the entrepreneurs are purposely designed to address social and environmental problems while remaining financially sustainable (Zahra, Sapienza, & Davidsson, 2006). The principles of sustainable and social entrepreneurship can also reflect concepts of Islamic entrepreneurship where being in business is not divorced from one's ethical obligations to the community, and where the

utility of being an entrepreneur can not only be defined in terms of financial wealth but on fulfilling a greater service to a larger purpose (Hassan & Hippler, 2014; Campante & Yanagizawa-Drott, 2013)

This change in philosophy is a powerful element. First, it expands opportunities for entrepreneurship to also tackle wicked problems: climate change, poverty, etc. (Bruton, Ketchen, & Ireland, 2013). Second, it changes the definition of success to be a blended value of social value and environmental returns as they are considered alongside risk-adjusted financial returns. Third, it changes the entrepreneurial process by requiring more stakeholder engagement and a longer timeframe than previously thought possible. The purpose-driven economy has significantly altered our perception of entrepreneurship to suggest that, rather than being stagnant or slowing growth, it is a total redefinition of what growth and success mean (Kayed & Hassan, 2011). In a small, entrepreneurial firm, the management process differs substantially from a large organization and is described as "special and frequently unique" (Beaver & Jennings, 2000). Whereas large organizations are perceived as having a predictive strategic process, strategy is an adaptation process given limited resources, which proves to be a temporary competitive advantage at best.

The potential course of the firm is often made with personal preferences and instinct, an "entrepreneurial mode" of strategy (Wheelen & Hunger, 1998). The implications for flexibility, speed, and decisiveness for the firm that can provide a genuine and sustainable advantage over larger organizations (Jennings & Beaver, 1997). There is also latent risk with a loose and informal approach. As Porter (1987, p123) stated "Entrepreneurship is unlikely to succeed when it proceeds without the guiding hand of strategy." Further, that concentration of power by an individual, can lead to abuse of entrepreneurial power, where biases become impediments to growth overall (Beaver & Jennings, 1996). The challenge is potentially navigating from an informal to formal style, which can consist of many such organizational "crises" once growth starts to occur (Greiner, 1972). No entrepreneur works in isolation, and the success of a venture related to the surrounding entrepreneurial ecosystem of the venture, comprised of imitation actors and factors, finance, policies, education, and culture (Ahlstrom, Bruton, & Yeh, 2007). Two key aspects are the institutional framework and the financial element

The institutional environment establishes the "rules of the game" that influence entrepreneurial activity at an individual level either in a positive or restrained manner (Baumol, 1990; Scott, 2014). The institutional environment comprises both formal institutions (e.g. property rights, regulations) and informal institutions (e.g. social trust). In many settings, entrepreneurs rely on informal networks (social capital) to address the shortcomings of weak formal institutions (Peng, 2006; Allen, Qian, & Qian, 2005). Even

with informal institutions, the "ease of doing business" is still a significant consideration for a potential entrepreneur (World Bank, 2012).

Financing is a critical resource for newly launched ventures. Limited access to formal credit has led to the rise of alternative financing, particularly in emerging markets (The Economist, 2011). Although venture capital (VC) is a predominately Western model, VC has also been adapted in contexts such as China (Ahlstrom, Bruton, & Yeh, 2007). Other non-Western models include equity based Islamic finance such as *mudarabah* and *musharakah* (Hassan & Hippler, 2014; Ahmad, 2000), and new digital models such as crowdfunding. The availability and type of these mechanisms are significant determinants of a venture's potential (Cassar, 2004).

Although strategy and the ecosystem provide a location and a basis for the "what" and "where" decision, the "how" part of being an entrepreneur has clear methodologies to deal with uncertainty. The traditional model of "plan and execute" has been challenged by two contemporary frameworks: effectuation and lean start-up.

Effectuation is a theory created by Saras Sarasvathy (2008), to describe the logic at play with expert entrepreneurs. Rather than starting with a goal and backfilling resources (causal), expert entrepreneurs start with available means—who they are, what they know, whom they know—and imagine possible new ends. Expert entrepreneurs invent the future with stakeholders, and they explore and exploit opportunities framing and funding new ventures with affordable loss. The Lean Start-up methodology (Eric Ries) furthers this adaptive concept. Lean start-up takes the form of a "Build-Measure-Learn" cycle, where an entrepreneur builds a Minimum Viable Product (MVP), tests their assumptions with direct customers, measures what results from the planned action, and learns whether they will persevere with a refinement of their original idea or pivot entirely. Both effectuation and lean start-up emphasize learning and adapting over planning, providing a more nimble, adaptable way for entrepreneurs to build new ventures.

3. Discussion and Synthesis

This critique shows a fundamental shift in entrepreneurship. The current day entrepreneur sees him/herself as a strategic synthesizer, who is navigating conflicting objectives. One of the core tensions is the short-term, iterative logic behind approaches such as the lean start-up in contrast to the long-term, stakeholder perspective behind sustainable entrepreneurship.

In lean start-ups there is a significant emphasis on speed, which may be associated with the temptation to take short-cuts that ultimately undermine social and environmental principles. Sustainable ventures require patient capital and a plan for the future. To resolve this tension there is a need for a new kind of entrepreneurial ambidexterity—not merely market-based balance of exploitation and exploration (March, 1991) but rather the balanced pursuit of agile innovation and responsible impact. The modern-day successful entrepreneur must quickly iterate their business model and embed long-term sustainability into their strategy.

This synthesis suggests that the most resilient and successful ventures of the future will be the ones that are:

1. **Purpose-Driven:** They have a clear mission extending beyond profit (Zahra, Sapienza, & Davidsson, 2006).
2. **Digitally-Native:** They leverage technology as a core component of their business model.
3. **Ecosystem-Aware:** They actively build and leverage relationships with diverse stakeholders (Ahlstrom, Bruton, & Yeh, 2007).
4. **Adaptively Strategic:** They combine long-term vision with the flexibility of effectual and lean methodologies (Sarasvathy, 2008).

4. Conclusion and Recommendations for Future Research

This theoretical review provides an integrated context for current entrepreneurship. The discipline has moved beyond the singular sense of the profit-maximizing individual toward a reality where strategy, technology, and sustainability are closely connected. The successful entrepreneur of the 21st century is a strategic synthesizer, consciously engaging in the paradox of immediate action facing long-term responsibility. In light of this review, we intend to present the following questions for future exploration:

- **Collection of Empirical Data:** Emphasis is needed on empirical studies examining a firm's commitment to ESG principles, and the adoption of agile methodologies, and their impact on longer-term performance.
- **Exploration of AI:** Research needs to examine advanced technology, through generative AI, into the actual entrepreneurial process.
- **Contextual Considerations:** More comparative research is needed to learn how entrepreneurial ecosystems develop differently within contextually different institutional and cultural environments, especially research in developing economies (Peng, 2006).

- Interdisciplinary Approach: The research of entrepreneurship needs to broaden the scope by taking into account of both management and finance aspects, sociology, and ethics in the context of the study as a whole by pursuing a holistic understanding of this important human endeavor.

In light of these questions and directions, researchers will play a part in creating a more dynamic, innovative and sustainable global economy and a different breed of responsible and visionary entrepreneurs.

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