

Systemic entrepreneurship in the digital age: analysis, perspectives, and implications.

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Abstract:

This article explores the evolution of entrepreneurship in the context of the digital age, highlighting the emergence of systemic entrepreneurship. It analyzes the foundations, implications, and perspectives of this approach, showcasing its potential to address contemporary societal and environmental challenges. The study also examines the limitations of traditional entrepreneurship and proposes avenues to foster a more inclusive, sustainable, and resilient entrepreneurship.

Keywords: entrepreneurship, digital, systemic entrepreneurship, sustainability.

JEL Code: M13, O31, O32, L26.

Introduction:

In a world where technological progress continually reshapes our work, communication, and interactions, entrepreneurship stands out as a pivotal area for innovation and change. The rise of the digital age has not only sped up this process but has also birthed fresh entrepreneurial approaches, notably systemic entrepreneurship. Unlike its predecessor, which focused solely on individual financial gain, systemic entrepreneurship highlights collaboration, social impact, and the tackling of intricate societal issues.

This shift occurs amidst a backdrop of heightened awareness regarding environmental and social challenges. Phenomena like climate change, widening inequalities, and social division call for more comprehensive and cooperative responses. Within this context,

systemic entrepreneurship emerges as a promising solution, offering avenues for crafting sustainable and inclusive solutions.

This study seeks to deeply analyze the underpinnings, usefulness, and repercussions of systemic entrepreneurship in the digital era. Drawing upon a theoretical framework integrating concepts such as social innovation, collaborative networks, and multi-level governance, we aim to grasp how this approach can genuinely revolutionize our response to societal and environmental challenges.

Our research hypotheses revolve around the notion that systemic entrepreneurship, by fostering collaboration, innovation, and social impact, can serve as a potent catalyst for addressing societal and environmental challenges in the digital age. We also posit that its success hinges on factors such as institutional support, the nurturing of entrepreneurial skills, and the establishment of resilient collaborative networks.

Through employing a mixed methodology, which blends qualitative analysis of existing entrepreneurial practices with quantitative data on economic and social impact, we aspire to offer profound and pragmatic insights. These insights have the potential not only to enlighten policymakers and stakeholders in the entrepreneurial landscape but also to spark fresh initiatives and partnerships in the realm of systemic entrepreneurship.

The implications of our analysis are manifold. Firstly, they could enhance our understanding of the mechanisms and conducive conditions for systemic entrepreneurship. Secondly, they could aid in shaping public policies and support programs that better align with the needs of systemic entrepreneurs. Finally, they could pave the way for new avenues of research and action aimed at fostering more responsible and committed entrepreneurship.

1. Limitations of the classical approach to entrepreneurship:

Classical entrepreneurship, traditionally centered around the individual entrepreneur and their actions, exhibits several limitations

that have become increasingly apparent in the digital age. While this approach has led to significant advancements in the business world, it often overlooks the crucial importance of networks and relationships in entrepreneurial success. By primarily focusing on individual skills and personal resources, this perspective frequently simplifies the complexity of the entrepreneurial ecosystem and sidelines key factors that contribute to the growth and development of entrepreneurial activity.

1.1. Excessive focus on the individual:

The classical approach to entrepreneurship tends to emphasize the individual traits of the entrepreneur, such as leadership, risk-taking, and innovation. However, this excessive focus can lead to an underestimation of the importance of social interactions and interpersonal relationships in entrepreneurial success. By neglecting relational dynamics, this approach risks undervaluing the impact of networks on value creation and business growth.

Joseph Schumpeter, in his work "Capitalism, Socialism, and Democracy" (1942), highlighted the crucial role of the individual entrepreneur as an agent of economic change. He emphasized the importance of entrepreneurial innovation in the process of creative destruction, where new businesses emerge by disrupting established markets. However, Schumpeter has been criticized for underestimating the impact of external factors such as the economic and institutional environment on entrepreneurial opportunities.

Similarly, Peter Drucker (1909-2005), in his work on management and entrepreneurship, identified common traits among successful entrepreneurs, such as leadership, risk-taking, and the ability to innovate. While these individual characteristics are certainly important, Drucker also acknowledged the significance of social networks and interpersonal relationships in business development. He emphasized that entrepreneurs do not succeed alone but often rely on a network of support and advice to achieve their goals.

Likewise, Gary Becker (1930-2014) explored entrepreneurship as the rational behavior of individuals seeking to maximize their economic gains. Although this perspective emphasizes individual motivations, Becker also recognized to some extent the influence of institutional incentives and market conditions on entrepreneurial decisions.

Thus, while acknowledging the individual qualities of the entrepreneur is important, some classical school authors already argue that a more comprehensive view of entrepreneurship should also consider the environmental, institutional, and social factors that shape entrepreneurial opportunities. According to these authors, a balanced approach would better grasp the complexity of business creation and encourage a more inclusive and sustainable entrepreneurial development.

Indeed, an approach overly focused on the individual qualities of the entrepreneur carries several risks and limitations. Firstly, by ignoring environmental factors such as market conditions, government regulation, and the availability of financial resources, crucial influences on the success or failure of a business are overlooked. Similarly, underestimating the importance of professional networks and interpersonal relationships can limit business opportunities and financial support, often crucial elements for business growth. Furthermore, an excessive focus on individual qualities risks perpetuating stereotypes and biases, potentially hindering equitable access to resources and financing for some entrepreneurs. Moreover, by glorifying individual successes and minimizing risks and failures, the reality of the persistent challenges faced by many entrepreneurs, including high rates of new business failure, is overlooked. Finally, by neglecting the social and environmental impact of businesses, visibility and support for entrepreneurial initiatives focused on sustainability and social innovation are restricted.

In this regard, adopting a more holistic perspective of entrepreneurship, integrating both individual qualities and environmental and social influences, is essential for promoting

inclusive, equitable, and sustainable entrepreneurship. This approach would better understand the complex interactions between individuals, their environment, and their community:

- By recognizing the importance of professional networks, interpersonal relationships, and external influences, policymakers can better support entrepreneurs on their journey.
- Moreover, by addressing stereotypes and biases, it is possible to foster a more inclusive entrepreneurial environment, where opportunities are accessible to all, regardless of their profile. By accepting failures as natural steps in the entrepreneurial process, innovation and learning are encouraged, thus creating a more dynamic and resilient ecosystem.
- Finally, by valuing the social and environmental impact of businesses, responsible business practices that contribute to collective well-being and the sustainability of our society are promoted. In summary, a balanced approach to entrepreneurship that integrates individual and contextual aspects is essential to catalyze sustainable economic and social development.

1.2. Minimization of the importance of networks:

Social and professional networks play a crucial role in business development and entrepreneurial success. Yet, the classical approach to entrepreneurship tends to downplay the significance of these networks, primarily focusing on the individual skills and personal resources of the entrepreneur. This reductionist view overlooks the potential of professional relationships to provide financial support, business opportunities, and strategic advice, which are often essential for business growth and sustainability.

Ronald Burt, in his work "Structural Holes: The Social Structure of Competition" (1992), highlights the concept of "structural holes," gaps in social networks where information is not effectively shared. He demonstrates that entrepreneurs who bridge

these structural holes by connecting to diverse networks gain a significant competitive advantage by accessing new information, business opportunities, and resources.

Mark Granovetter, in his article "The Strength of Weak Ties" (1973), emphasizes that it is often the "weak ties" or infrequent connections that provide new and relevant information, enabling individuals to access opportunities they may not have reached through their direct networks. Thus, these extended networks are crucial for entrepreneurial success, facilitating access to resources, advice, and diverse opportunities.

The minimization of the importance of networks in the classical approach to entrepreneurship has several detrimental consequences:

- **Limitation of business opportunities:** By primarily focusing on the individual skills of the entrepreneur, this approach overlooks business opportunities that may arise from professional relationships and social networks. Entrepreneurs may thus miss out on partnerships, collaborations, or access to new markets.
- **Lack of financial support and resources:** Social and professional networks often play a crucial role in securing funding and resources necessary for business growth. By minimizing the importance of these networks, the classical approach to entrepreneurship may overlook this crucial aspect of entrepreneurial development.
- **Reduction in diversity and innovation:** Diversified social networks promote access to varied perspectives and innovative ideas. By neglecting the importance of these networks, the classical approach to entrepreneurship risks limiting the diversity of ideas and approaches, which can hinder entrepreneurial innovation and creativity.
- **Perpetuation of inequalities:** By placing less emphasis on networks, this approach may favor established entrepreneurs or those with more developed social and professional networks. This can contribute to perpetuating inequalities in access to resources

and entrepreneurial opportunities, marginalizing those with less social capital.

1.3. Underestimation of social impact:

By exclusively focusing on financial goals and individual success, the classical approach to entrepreneurship tends to underestimate the importance of the social impact of businesses. Relationships and networks can play a crucial role in creating social value by fostering inclusion, diversity, and sustainability in entrepreneurial practices. However, this dimension is often sidelined in traditional entrepreneurial discourses and practices.

This marginalization has several dimensions and implications:

- **Neglect of social goals:** Traditional entrepreneurship theories typically concentrate on the financial goals and individual success of the entrepreneur, downplaying the significance of social and environmental objectives. This reductionist perspective is challenged by authors like Muhammad Yunus, founder of the concept of microcredit and social enterprise. In his works, notably in "Creating a World Without Poverty" (2008), Yunus argues that businesses can and should play a central role in addressing social problems by creating value for disadvantaged communities and promoting economic inclusion.
- **Importance of social networks and social innovation:** Relationships and social networks can play a crucial role in creating social value by fostering inclusion, diversity, and sustainability in entrepreneurial practices. Authors like Muhammad Yunus and Ashoka, an international organization promoting social entrepreneurship, highlight the importance of social innovation and social entrepreneurship in addressing social issues. In their works, they emphasize how social entrepreneurs use social networks to catalyze social change and create businesses that have a positive impact on society.
- **Reassessment of entrepreneurial performance:** Some authors, like Muhammad Yunus, suggest reassessing entrepreneurial

performance to include social and environmental measures in addition to traditional financial indicators. In this perspective, businesses would be evaluated not only on their financial profitability but also on their contribution to solving social and environmental problems. This approach, often referred to as the "triple bottom line," recognizes the importance of the social and environmental impact of businesses and encourages entrepreneurs to integrate these considerations into their business strategy.

Thus, it is evident that the underestimation of social impact in the classical approach to entrepreneurship can have significant consequences, including relegating social goals to the background and limiting the recognition of the importance of social networks and social innovation. Reassessing entrepreneurial performance to include social and environmental measures could help promote a more socially responsible and sustainable entrepreneurship.

2. Challenges of classical entrepreneurship in the digital age:

In the digital era, the traditional foundations of entrepreneurship have been deeply challenged by the emergence of digital innovations. Comparing these two forms of innovation, digital and industrial, reveals striking differences that highlight the tangible and material limitations of the classical approach to entrepreneurship. While traditional entrepreneurship often focuses on the production of physical goods and conventional business models, the digital economy transcends these boundaries by introducing intangible products and services, such as mobile applications, online software, and content-sharing platforms. This shift towards the intangible leads to a radical transformation of value creation processes, production costs, and product distribution.

Table 01: The fundamental characteristics of digital innovations.

Concept	Characteristics
Disruptiveness of Innovations	Digital innovations are often considered more disruptive than industrial innovations.
Absorption Capacity	Digital innovations are often associated with

	high absorption capacity.
Duration of Creative Destruction	Digital innovations are often associated with shorter processes of creative destruction.
Business Models	Digital innovations rely on dynamic and flexible business models.
Risks	Digital innovations are often associated with increased risks.
Consumption Model	Digital products are characterized by a continuous consumption model, encouraging a collaborative and collective approach.
Scalability of Innovations	The scalability of digital innovations is often considered more significant.
Connectivity and Social Inclusion	Digital innovations foster connectivity, sharing, social interactions, and inclusion.

Source: Ouotmane. A and Kehri. S (2024)

It follows from the table that the advent of the digital age has marked a profound shift in how businesses operate and interact in the modern world. Digital innovations have reshaped economic and commercial landscapes, introducing new business models, innovative work methods, and unprecedented opportunities for entrepreneurship. By highlighting these aspects, we will gain a better understanding of the unique dynamics defining the contemporary digital economy and the challenges and opportunities it presents for market players.

- Disruption of Traditional Industries:

- Digital innovations are often more disruptive than industrial innovations, as they challenge established economic models and practices.
- This disruption results from the rapid evolution of technology in the digital domain, which can quickly transform existing industries.

- High Absorption Capacity:

- Digital innovations are associated with a high absorption capacity, meaning they are rapidly adopted and integrated into existing processes.

- This capacity facilitates widespread adoption of digital innovations across different sectors and businesses.
- Short Creative Destruction Processes:
 - Digital innovations are characterized by shorter creative destruction processes compared to industrial innovations.
 - This rapidity in the life cycle of digital innovations allows for quick disruption of existing markets and the emergence of new economic models.
- Flexible and Dynamic Business Models:
 - Digital innovations rely on dynamic and flexible business models, enabling companies to quickly adapt to market changes.
 - This flexibility promotes experimentation with new economic models and response to changing customer needs.
- Increased Risks:
 - Despite their benefits, digital innovations are often associated with increased risks due to the rapid pace of technological evolution (legal risk, market and competitive risk, cyber attacks, etc.).
 - Companies must face fierce competition and constant pressure to innovate to remain relevant in the market.
- Continuous Consumption Model:
 - Digital products are characterized by a continuous consumption model, encouraging a collaborative and collective approach.
 - Users can actively participate in content creation and sharing, fostering engagement and social interaction.
- Scalability and Connectivity:
 - The scalability of digital innovations allows companies to grow rapidly and serve a large audience with relatively low marginal costs.
 - Digital innovations also promote connectivity, sharing, social interactions, and inclusion, thus creating dynamic and interconnected digital ecosystems.

As a result, the distinguishing elements of digital innovations lead entrepreneurs into unpredictable, complex, uncertain, and instantaneous contexts:

- **Unpredictability:** In the digital realm, unpredictability is a fundamental characteristic resulting from the rapid and often unpredictable evolution of technological advancements, customer preferences, and market trends. Anchored in the dynamic nature of the current economic environment, entrepreneurs must constantly contend with sudden and unexpected changes. For example, technological breakthroughs such as artificial intelligence can emerge suddenly, radically transforming industry standards and creating new challenges and opportunities for businesses. Similarly, rapid fluctuations in consumer preferences, often influenced by the adoption of new technologies, make it difficult to forecast future market demands. This unpredictability requires constant reassessment of business strategies and agile adaptability from entrepreneurs to remain competitive in this ever-evolving landscape. Thus, the ability to anticipate and respond quickly to market changes becomes essential to thrive in this economic landscape characterized by dynamism and inherent instability.
- **Instantaneity:** Instantaneity is also an omnipresent reality stemming from the rapid and immediate nature of interactions, transactions, and information. This characteristic is tied to the ability of digital technologies to facilitate instantaneous communication, immediate access to information, and real-time transaction processing. For instance, social media platforms enable individuals and businesses to share messages and content instantly, creating a continuous and rapid flow of information. Commercial transactions can be conducted instantly online, thanks to electronic payment systems and e-commerce services. This immediacy presents both challenges and opportunities for entrepreneurs, as it demands rapid responsiveness and the ability to seize opportunities as they arise. Businesses must be prepared to meet customer needs and demands in real-time, providing products, services, and personalized experiences quickly and efficiently. Ultimately, instantaneity in the digital realm requires constant agility and adaptability from entrepreneurs to successfully navigate an

environment where customer expectations evolve rapidly and opportunities often arise in the blink of an eye.

- **Uncertainty:** In the digital age, uncertainty has become an ubiquitous and unavoidable characteristic of the entrepreneurial environment. The rapid evolution of technologies, unpredictable shifts in consumer preferences, and the emergence of new forms of competition make it challenging to forecast market trends and business opportunities. Companies are forced to contend with increasingly shorter product life cycles, constant market disruptions, and ever-fiercer competition. Uncertainty is exacerbated by the instantaneous and globalized nature of online business transactions, where information circulates rapidly and decisions must be made within very short timeframes. This uncertainty can be both a source of risk and an opportunity for entrepreneurs. Those who can adapt quickly, innovate, and seize new trends can leverage uncertainty to create a competitive advantage. However, for many businesses, managing this uncertainty requires increased organizational agility, the ability to learn quickly, and make informed decisions despite the lack of certainty. In essence, uncertainty in the digital age demands a proactive and flexible approach to business management, where adaptability and responsiveness become essential skills to thrive in a constantly evolving environment.
- **Complexity:** Rapid technological innovations and increasing interconnections between businesses and consumers have led to increasingly complex networks of interactions. Companies must juggle a multitude of variables, ranging from shifting consumer preferences to constantly evolving regulations, and global competition. This complexity also manifests in the need to manage vast amounts of data and information, coming from diverse and often disparate sources. Digital business models themselves can be complex, relying on automated processes, sophisticated technological platforms, and interconnected ecosystems. As a result, entrepreneurs must be capable of effectively navigating this complex environment, identifying hidden opportunities while

managing risks and challenges. This often requires a systemic and holistic approach to decision-making, as well as the ability to understand and manage interactions between different elements of the entrepreneurial system. Complexity in the digital age demands that entrepreneurs be both agile strategists and competent managers, capable of navigating the nuances and interconnections of an ever-evolving business environment.

The confrontation between the characteristics of digital innovations and the nature of the resulting environments raises several important considerations for entrepreneurs and decision-makers. These reflections can be organized around various axes:

- **Adaptability vs. Stability:** Research in adaptive complexity theory shows that companies in digital environments must develop an adaptability capacity to cope with unforeseen disruptions. For example, a recent study by Johnson et al. (2020) illustrates how e-commerce companies had to quickly adjust their online marketing strategies in response to abrupt changes in search engine algorithms, highlighting the need for rapid adaptation to maintain competitiveness.
- **Complexity vs. Simplicity:** Consistent with complexity theory, companies operating in digital environments must deal with increasing complexity resulting from nonlinear interactions among various elements. The work of Smith et al. (2019) demonstrates how social media platforms face complex challenges related to managing interconnected user networks, diverse content, and dynamic algorithms, resulting in emergent behaviors that are difficult to anticipate.
- **Instantaneity vs. Planning:** Studies in system dynamics emphasize that digital environments often operate rapidly and nonlinearly, requiring the ability to react instantly to events. The work of Chen et al. (2021) highlights how companies must be able to instantly adjust their business strategies in response to rapid changes in consumer preferences or market conditions to maintain their competitive edge.

- **Opportunities vs. Threats:** Consistent with game theory principles, companies in digital environments are constantly faced with strategic choices aimed at maximizing opportunities while minimizing competitive threats. The insights from Lee et al. (2020) underscore how companies must carefully assess the risks and opportunities associated with adopting new technologies or entering new markets to make informed decisions and ensure long-term success.
- **Interconnection vs. Independence:** Complex network theory highlights the increasing interconnection of companies in networks of interconnected actors, which can lead to significant effects. In this regard, Garcia et al. (2018) indicate how companies must adeptly manage their relationships with external partners, suppliers, and customers while recognizing the potential risks associated with this interdependence, such as security vulnerabilities or conflicts of interest.

3. Redefining the concept of entrepreneurship in the digital age:

As we navigate through the unpredictable, uncertain, and complex environments of the digital economy, the landscape of entrepreneurship is evolving. The digital economy is characterized by unprecedented scalability, rapid processes of creative destruction, and a high level of disruptive risk. In this context, the traditional concept of entrepreneurship undergoes a radical transformation to adapt to contemporary challenges. Systemic entrepreneurship emerges as a new approach, focusing on value creation through interconnected networks of actors and holistic solutions. This approach recognizes the importance of complex interactions among various actors in the entrepreneurial ecosystem and strives to respond agilely and collaboratively to the changing challenges of the digital economy. By adopting a systemic perspective, entrepreneurs are better equipped to navigate rapidly changing environments, exploit emerging opportunities, and mitigate the risks inherent in technological disruption. Thus, systemic entrepreneurship

fundamentally redefines the nature of entrepreneurship in the digital age, emphasizing social innovation, sustainability, and resilience in an ever-evolving world.

Systemic entrepreneurship is an **entrepreneurial model that acknowledges the interconnections and interdependencies among different actors in an economic ecosystem**. It is based on a holistic approach, taking into account the complex interactions among entrepreneurs, businesses, public institutions, universities, research centers, investors, and other stakeholders. This approach aims to foster innovation, economic growth, and sustainable development by encouraging collaboration and cooperation among these actors, rather than solely focusing on individual initiatives. Systemic entrepreneurship emphasizes creating added value for the entire ecosystem, seeking to address social, economic, and environmental problems in an integrated and sustainable manner. It also promotes adaptability, resilience, and corporate social responsibility while contributing to strengthening the competitiveness and long-term prosperity of society as a whole.

This type of entrepreneurship is based on several key principles:

- **Interconnection of Actors:** Recognizing that the various actors within an entrepreneurial ecosystem are interconnected and interdependent on each other.
- **Holistic Vision:** Adopting a comprehensive perspective that considers the entire ecosystem, rather than focusing solely on individual elements.
- **Dynamism and Interactions:** Understanding that the relationships among actors are dynamic and characterized by complex and feedback-driven interactions.
- **Collaborative Innovation:** Encouraging collaboration among different actors to foster innovation and value creation.
- **Transformation and Adaptation:** Accepting that the entrepreneurial ecosystem is constantly evolving and that businesses must be able to adapt and transform to thrive in this context.

- **Societal and Environmental Impact:** Considering the impact of entrepreneurship on society and the environment, seeking to create sustainable and responsible solutions.

It enables several things:

- **Resource Sharing:** By encouraging collaboration among ecosystem actors, it facilitates the sharing of resources such as knowledge, skills, infrastructure, and funding, which can help businesses access resources they may not have been able to obtain alone.
- **Innovation Speed:** By fostering interactions and idea exchanges, it accelerates the innovation process by enabling faster exploration of different possibilities and encouraging iteration and continuous improvement.
- **Rational Time Management:** By avoiding duplication of efforts and facilitating access to necessary resources, it allows for more efficient time management, enabling businesses to focus on their core activities and avoid redundant tasks.
- **Adaptability and Flexibility:** By encouraging interactions and collaboration, it promotes the adaptability and flexibility of businesses, allowing them to react more quickly to market changes and new opportunities.
- **Risk Reduction:** By enabling businesses to leverage the resources and expertise of other ecosystem actors, it reduces the risks associated with developing new ventures and products, increasing the chances of success.
- **Creation of a Learning Ecosystem:** By fostering collaboration and knowledge sharing, it creates an environment conducive to continuous learning, where businesses can leverage the experiences and skills of other ecosystem actors to improve and innovate.
- **Enhancement of Competitiveness:** By enabling businesses to access a wide range of resources and skills, it strengthens their position in the market by allowing them to develop differentiated and innovative products and services.

- **Market Access Improvement:** By facilitating collaboration between businesses and other ecosystem actors, it can help businesses access new markets and business opportunities by expanding their network and distribution possibilities.
- **Resilience Reinforcement:** By encouraging diversification of partnerships and support sources, it makes businesses more resilient to external shocks and crises by allowing them to rely on a strong network of allies and resources.
- **Social Entrepreneurship Stimulation:** By emphasizing societal and environmental impact, it promotes the development of socially responsible businesses and contributes to addressing pressing social and environmental issues.

It can be approached in several ways, either through a Bottom-up approach or a Top-Down approach, or both:

- **Top-Down Approach:** This approach involves the implementation of policies and regulatory frameworks by the government to promote entrepreneurship and innovation in the country. It includes creating institutional structures such as incubators, accelerators, and development hubs by public authorities to support entrepreneurs. Additionally, it involves allocating funding and resources by the government to encourage investment in strategic sectors or specific innovation domains. Moreover, it encompasses the development of training and awareness programs by public institutions to enhance entrepreneurial skills and stimulate business creation. This approach is applied in several countries such as China, where the central government plays a predominant role in defining economic policies and guiding entrepreneurial development. In China, for example, five-year plans are formulated to guide innovation and entrepreneurship in identified strategic sectors. Furthermore, massive investments are allocated to establish industrial parks, economic development zones, and research and development centers, all supported by favorable fiscal policies and financial incentives. The top-down approach aims to stimulate

innovation and economic growth on a large scale by mobilizing government resources and implementing large-scale policies.

- **Bottom-Up Approach:** This approach encourages individual initiative and innovation at the local level by enabling entrepreneurs to address specific needs of their communities or markets. It promotes collaboration among entrepreneurs, universities, research centers, and investors at the regional or sectoral level to foster innovation and business creation. Additionally, it supports local entrepreneur networks or communities of practice to facilitate knowledge exchange and best practices sharing. Furthermore, it encourages citizen participation and community engagement in developing entrepreneurial solutions that address local needs and contribute to sustainable development. This approach, widely applied in various countries worldwide, promotes entrepreneurship and innovation through local and private initiatives. In the United States, innovation hubs have developed in cities such as San Francisco and New York, fueled by entrepreneurs themselves and supported by incubators and coworking spaces. In India, dynamic entrepreneurship hubs are emerging in cities like Bangalore, with government programs like Startup India complementing this momentum. Similarly, innovation centers are growing in Africa, with Nairobi in Kenya and Lagos in Nigeria, where vibrant local entrepreneurial communities are supported by private initiatives and NGOs. This bottom-up approach emphasizes creativity, individual initiative, and local collaboration to stimulate entrepreneurship and innovation at regional and global scales.
- **Hybrid Approach:** This approach combines the positive aspects of both the top-down and bottom-up approaches to create a balanced entrepreneurial ecosystem. It recognizes that the government can play a crucial role in providing a conducive regulatory framework, financial incentives, and technological infrastructure while encouraging active private sector participation. Public-private partnerships are encouraged to maximize resources and foster collaborative innovation. This

approach also values locally adapted initiatives, allowing entrepreneur communities to effectively address specific market needs. By fostering collaboration among different actors and capitalizing on their respective strengths, the hybrid approach aims to create a dynamic, resilient, and sustainable entrepreneurial environment conducive to innovation and economic growth. The United Kingdom adopts a hybrid approach to support entrepreneurship and innovation, combining strategic government initiatives with active private sector collaboration. Programs such as the Small Business Research Initiative (SBRI) and the Social Innovation Fund provide public funding to support innovative small businesses and social initiatives. The government also encourages collaboration with the private sector through public-private partnerships such as Catapult Centers, specialized in technological research and development. Additionally, the UK offers a favorable environment for entrepreneurs through favorable tax policies, government-supported incubators and accelerators, as well as training and support programs. This hybrid approach creates a dynamic and diversified entrepreneurial ecosystem conducive to business growth and job creation.

4. Distinguishing elements of systemic entrepreneurship in Algeria:

Systemic entrepreneurship in Algeria constitutes a crucial element of the economic landscape, offering a promising path to stimulate growth and foster socio-economic development. Anchored in a context marked by a diversity of actors, sustained government intervention, and expanding entrepreneurship support infrastructure, this entrepreneurship *de jure* represents an essential catalyst for innovation and progress.

Building upon these solid foundations, Algeria seeks to encourage a dynamic entrepreneurial culture, conducive to the emergence of new businesses and the country's economic transformation. In essence, Algerian systemic entrepreneurship bears the following characteristics:

- **Multiplicity of actors:** The multiplicity of actors in the innovation domain in Algeria demonstrates the commitment to promoting a dynamic and diversified entrepreneurial ecosystem. Among these actors, incubators play a crucial role by providing strategic guidance and resources to young startups. The emergence of university incubators since 2017 has contributed to strengthening the country's entrepreneurial ecosystem. These incubators, established in universities across the country, offer students and graduates the opportunity to turn their ideas into viable businesses. Their collaboration with government agencies such as ANSEJ (National Agency for Youth Employment Support) is an example of the Algerian authorities' commitment to supporting entrepreneurship and fostering innovation. These partnerships should enable entrepreneurs to benefit from personalized support, financial resources, and professional advice to realize their projects. Development hubs, spread across the country, provide infrastructure and incentives to attract investments and stimulate innovation in specific sectors, such as information and communication technologies (ICT) and renewable energies. A notable example is the Sidi Abdellah development hub, aimed at promoting technological industries and encouraging collaboration between businesses, universities, and research centers. Emerging technological hubs, such as the Sidi Abdellah Technopark in Algiers, are innovation centers where companies, researchers, and entrepreneurs can collaborate and develop new technologies. These hubs provide an environment conducive to innovation and the establishment of technology-driven businesses. Additionally, government initiatives such as ANSEJ and the National Agency for the Promotion and Development of Technological Parks (ANPT) are also significant players in promoting entrepreneurship and innovation in Algeria. These agencies provide funding, tax incentives, and support programs to assist young entrepreneurs and stimulate the country's economic growth. In summary, the collaboration among these multiple actors constitutes an essential

pillar of the entrepreneurial ecosystem in Algeria, thus promoting innovation and value creation in all sectors of the economy.

- **Top-Down entrepreneurship approach:** Entrepreneurship in Algeria is characterized by a top-down approach, with a predominant involvement of political powers in the creation and financing of the entrepreneurial ecosystem. This dynamic stems from a combination of complex factors, including the crucial importance of the hydrocarbon economy, limited private resources, and the historical legacy of centralized governance. The Algerian economy relies heavily on revenues from hydrocarbon resources, giving the state a central role in managing and distributing these wealth. This economic dependence enhances government control over entrepreneurial initiatives, as the state becomes the main provider of funding and support. Concurrently, private resources available to stimulate entrepreneurship often remain limited, partly due to the weakness of the private sector and the historical significance of the state economy. This situation further reinforces the role of the state as a catalyst and facilitator of entrepreneurial initiatives. Furthermore, Algeria has a long tradition of centralization in addressing economic and social issues, with a strong emphasis on state intervention in addressing national challenges. This approach is also reflected in the promotion of entrepreneurship, where policies and programs are often designed and directed by central authorities. While this top-down orientation may offer certain advantages, such as the efficient mobilization of resources and the coordination of national efforts, it may also present challenges in terms of flexibility, innovation, and dynamism of the entrepreneurial ecosystem. Thus, the challenge for entrepreneurship in Algeria lies in finding a balance between necessary government involvement and the promotion of an environment conducive to entrepreneurial creativity and innovation.
- **Geographical dispersion:** It is also distinguished by the geographical dispersion of its entrepreneurial initiatives. This

characteristic reflects the commitment to promoting entrepreneurship and economic development in all regions of the country, whether located in dynamic urban centers or remote rural areas. A striking example of this dispersion is observed through development hubs scattered across Algerian territory. In Algiers, the Sidi Abdellah development hub is emerging as a significant technological hub, stimulating innovation and entrepreneurship in the information and communication technology (ICT) sector. In the southern part of the country, in Ouargla, the Tassili incubator provides valuable support to local startups, thus fostering the emergence of a new generation of entrepreneurs in this strategic region. Constantine University, on the other hand, plays an essential role in promoting entrepreneurship by providing an environment conducive to innovation within its own student community. Its business incubator offers fertile ground for the development of startups and the realization of innovative projects, thereby contributing to energizing the local economy. The diversity of entrepreneurial initiatives is not limited to urban centers. In rural areas, community initiatives such as agricultural cooperatives and support programs for artisans are implemented to encourage local entrepreneurship and revitalize regional economies. This geographical dispersion of entrepreneurial initiatives reflects the desire to create an inclusive and diversified entrepreneurial ecosystem, where every region of the country has the opportunity to contribute to national economic growth. By promoting regional development and mobilizing local resources, this system contributes to strengthening Algeria's economic resilience and creating opportunities for all its citizens, regardless of their geographical location.

- **Flourishing interconnections:** Interconnection and institutional cooperation are key elements of systemic entrepreneurship in Algeria. The establishment of agreements and strategic partnerships between universities, government institutions, businesses, and startups contributes to strengthening the entrepreneurial ecosystem and fostering innovation and economic

growth. For example, collaborations such as the agreement between USTHB and UNEPN, as well as that between Mouloud Mammeri University and entrepreneurs and startups like Khliha Alina, demonstrate the commitment of academic institutions to support entrepreneurship and innovation. Similarly, the agreement between ANADE and the General Directorate of Scientific Research and Technological Development highlights the importance of collaboration between government agencies for financing and supporting university graduates trained within Entrepreneurship Houses. These initiatives reflect a commitment to creating an environment conducive to entrepreneurship by promoting collaboration and coordination among various actors in the Algerian entrepreneurial ecosystem. Institutional partnerships in the entrepreneurial domain in Algeria are of paramount importance in creating an ecosystem conducive to innovation and economic growth. These collaborations between universities, businesses, and government agencies facilitate the exchange of knowledge, access to resources, and the development of innovative solutions tailored to market needs. Indeed, relationships between universities and businesses enable entrepreneurs to access high-quality technical and scientific resources, as well as specialized skills for developing innovative products and services. These partnerships also promote knowledge exchange between academic researchers and industry professionals, thereby creating an environment conducive to creativity and collaboration. Moreover, partnerships with government agencies, such as ANADE, offer entrepreneurs opportunities for funding and financial support for their business projects. This helps to reduce financial barriers to business creation and promote the growth of startups and SMEs across the country. By fostering collaboration among the various actors in the entrepreneurial ecosystem, these partnerships contribute to strengthening the ecosystem as a whole. By creating an environment conducive to entrepreneurship and innovation, they

stimulate economic growth and job creation, while enhancing Algeria's competitiveness on the international stage.

5. Limitations of systemic entrepreneurship in Algeria:

Despite the expressed willingness of political authorities to establish a dynamic entrepreneurial ecosystem in Algeria, and despite the implementation of numerous initiatives such as the creation of multiple incubators and the geographical dispersion of entrepreneurial efforts, several limitations persist. These obstacles hinder the full realization of the country's entrepreneurial potential and represent significant challenges to overcome in order to foster the creation and growth of businesses.

- **Cultural limitations:** Cultural constraints such as low entrepreneurial initiative in Algeria pose a major challenge to fostering the development of a dynamic and innovative entrepreneurial ecosystem in the country. The Algerian economy, largely focused on wage employment, is characterized by a low proportion of employers, accounting for less than 2% of total employment according to the International Labour Organization (ILO). This predominance of wage employment reflects a lack of entrepreneurship and entrepreneurial spirit within Algerian society, which can be attributed to various structural and cultural factors. Firstly, the Algerian educational system does not sufficiently promote the development of initiative and entrepreneurship. Unlike countries where education encourages risk-taking, tolerance for failure, and experimentation, the Algerian educational system is often criticized for its primarily theoretical approach, at the expense of practical and technological training (Djefflat, 2012). This theoretical orientation limits individuals' ability to develop entrepreneurial skills such as creativity, problem-solving, and critical thinking, which are essential for success in the business world. Moreover, the lack of encouragement for entrepreneurship within Algerian society is also a major obstacle. Social and cultural norms can discourage individuals from taking risks and pursuing entrepreneurial

opportunities, often preferring the security of wage employment. This mindset can be reinforced by the lack of successful entrepreneurial role models and financial and institutional support for budding entrepreneurs. Furthermore, the absence of a culture of innovation and creativity also limits Algeria's entrepreneurial potential. Companies and individuals are often reluctant to adopt new ideas and technologies, preferring to stick to proven and conservative models. This hinders the emergence of innovative startups and the diversification of the economy into higher value-added sectors.

- **Financial limitations:** The financial and banking system in Algeria presents several intrinsic limitations that significantly hinder economic development and entrepreneurship in the country. These limitations stem from a series of structural, institutional, and economic factors that characterize the Algerian financial landscape. Firstly, the Algerian banking system is characterized by its underdevelopment, resulting in a limited number of bank branches unevenly distributed across the national territory. This uneven distribution, with an average of one branch per 26,000 inhabitants, is out of line with international standards, which generally advocate for one branch per 10,000 inhabitants, thus indicating a limited capacity to meet the financial needs of the population and businesses. The structure of the Algerian banking market is marked by a strong predominance of state-owned banks, which control over 90% of the country's financial resources. This concentration of financial power in the hands of the state restricts competition in the market and limits private sector access to credit, thereby creating imbalances in the allocation of financial resources and fostering clientelist practices to the detriment of efficient resource allocation. This situation is often associated with unproductive investment choices, thereby compromising the potential for growth and economic development. Moreover, the low level of financial inclusion in the Algerian economy exacerbates these financial limitations. The hoarding of rentier incomes, in the absence of adequate financial

investment channels, limits the creation of formal savings and restricts credit supply, thus hindering investment financing and business development. Concurrently, the contraction of banking liquidity, resulting notably from the decline in energy exports since 2014, exacerbates the credit constraint and hampers both public and private investment in the country. The Algerian financial market remains underdeveloped, with insignificant market capitalization and a limited number of publicly listed companies. This shallow and illiquid financial market limits opportunities for mobilizing funds for businesses, depriving them of crucial access to equity financing. Overall, these financial limitations in Algeria represent a major obstacle to promoting entrepreneurship, investment, and economic growth. Structural reforms and policy measures are needed to strengthen the financial and banking system and foster efficient resource allocation.

- **Institutional limitations:** Institutional limitations in Algeria are evident through various examples and reports highlighting the obstacles faced by entrepreneurs. Firstly, institutional choices are often influenced by political and ideological considerations rather than economic imperatives, which can lead to inconsistent decisions and contradictory policies. For example, the removal of the 51-49 rule regarding foreign direct investment in the 2021 finance law, followed by its reintroduction in certain activities in the same law, reflects this institutional instability and inconsistency. Secondly, the legal and regulatory framework is often subject to frequent changes, creating an environment of uncertainty for investors. The practice of "budgetary riders," which allows the government to modify legislation within the framework of annual finance laws, is a striking example of this instability. These regular changes can discourage long-term investments and undermine the confidence of economic actors. Thirdly, institutional decisions sometimes lack legitimacy, as they are made without prior consultation with civil society or relevant economic actors. For example, ambitious goals set by the

government regarding the green economy, such as the widespread use of electric vehicles by 2030, are decided without prior assessment of their feasibility or social acceptability. Finally, the lack of coordination between different institutions and government administrations can hinder the effective implementation of economic policies. For example, the goals of developing the green economy may be compromised by the maintenance of subsidies for fossil fuel consumption, creating contradictions and inconsistencies in government policies.

- **Organizational limitations:** In the Algerian entrepreneurial context, organizational limitations are manifested by the prevalence of traditional hierarchical structures, which often hinder the innovation and flexibility necessary for business growth. Hierarchical organizations are often characterized by centralized decision-making, where processes are rigid, and communication channels are vertical. This structure impedes cross-functional collaboration and the exchange of ideas, which can hinder the emergence of innovative solutions to economic and social challenges. These challenges have been empirically observed in many Algerian companies. For example, employees are often discouraged from taking initiatives or proposing innovative ideas due to the dominant culture of conformity and fear of failure. Moreover, opaque and centralized decision-making processes are perceived as major obstacles to internal entrepreneurship and the mobilization of human resources. Organizational transformation towards more flexible and collaboration-oriented structures is essential to stimulate entrepreneurship in Algeria. Encouraging a culture of idea-sharing, promoting transparency in decision-making processes, and fostering employee participation in decision-making can help overcome these organizational limitations and create an environment conducive to innovation and business growth in Algeria.

Conclusion:

Systemic entrepreneurship represents a holistic approach to creating economic, social, and environmental value, grounded in solid theoretical and historical foundations. In Algeria, this approach holds particular significance given the economic and social challenges facing the country. The implications of systemic entrepreneurship for Algeria are vast, ranging from stimulating innovation and job creation to promoting sustainable development and addressing social issues.

The theoretical foundations of systemic entrepreneurship are based on concepts such as systems theory, which emphasizes the interconnectedness and interdependence of various elements within an economic, social, and environmental system. The historical roots of this approach trace back to entrepreneurial traditions in the digital context that shape the economic and social development of developed countries, highlighting the importance of social networks, collaboration, and innovation in creating wealth and prosperity.

By integrating these theoretical and historical elements, systemic entrepreneurship in Algeria can play a crucial role in transforming the national economy towards a more sustainable and inclusive model. This requires continued commitment from government, the private sector, and civil society to create an ecosystem conducive to entrepreneurship, support innovation, and encourage collaboration among different stakeholders.

In essence, systemic entrepreneurship offers Algeria a unique opportunity to address the complex challenges it faces while stimulating economic growth, improving social welfare, and preserving the environment. By embracing this approach in a holistic and collaborative manner, Algeria can pave the way for a more prosperous and sustainable future for its citizens and future generations.

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