

The Digitalization Impact on the Entrepreneurial Leadership in the 21st Century

Alexandra Ungureanu

Stefan cel Mare University of Suceava, Romania

alexandra.ungureanu2016@gmail.com

DOI: 10.26821/IJSRC.9.1.2021.9109

ABSTRACT

The digitalization of the entrepreneurial environment is a perpetual connection to data, along with an ample process of transformation, influencing the companies to endorse meticulous strategic planning to achieve development. The economic conditions of the 21st century, disclose ever-increasing economic globalization under the pressure of digitalization, affected by the constant emergence of new information and communication technologies. The paper presents an essential aspect of digitalization in the 21st century, the importance of leadership, and the role of entrepreneurs in the global entrepreneurial context. Using a methodology based on a critical research method, the results briefly describe the importance of digitalization global entrepreneurship, the importance of business leadership, and the advantages it has over economic growth. The aim of the article is to emphasize the connection between digitalization and progress, as well as the strategy to encourage leadership among entrepreneurs in today's competitive business environment. The globalization topic summarizes the evaluation of entrepreneurial opportunities and explains the objectives involved in global entrepreneurship. Transforming the entrepreneurial ecosystem through digitalization is an evolving result and inertia will keep it your business means making a change, and once you get moving, inertia will keep it operational. The digitalization of the business leads to an innovative environment, which allows observing the trends in the industry and the possibilities offered by new technologies.

Keywords: digital entrepreneurship, innovation, globalization

1. INTRODUCTION

The Digital Revolution is an opportunity for the entrepreneurial ecosystem to move to the next stage of development. Digital technologies, data, and analysis can be used as drivers of digital transformation in order to support and to increase the importance of this revolution which we are facing in real-time.

At the same time, the digital revolution is the target of digital transformation challenges. While technology giants will likely continue to grow, this revolution will bring increased opportunities for individuals. However, the leadership of the established organizations is right to worry about how technology disturbs the business environment because each change provokes chain reactions in the entrepreneurial environment everywhere [1].

The digital revolution has been built around innovation and creativity, which play a decisive role in globalizing entrepreneurship and sustaining this revolution. Innovation is more accessible today and is now being introduced at all levels of the company. If we look at the profound changes that have taken place over the last 10 years, the next 10 will bring even greater disturbances and changes. It is a continuous improvement process that ultimately aims at increasing people's well-being through economic development strategies.

In the 21st century, entrepreneurship plays a vital role in creating opportunities for individuals and in developing their capacity to cope with future challenges. Supportive entrepreneurship policies have been developed from understanding the benefits of learning culture through the practice and from entrepreneurship to companies across the world. In recent years, initiatives to promote entrepreneurship have proliferated - from business incubators to start-ups and to mentoring companies [2]. A trigger factor

of the digital revolution is the revolution of knowledge and adaptability to the new. In recent decades, the neoclassical economy has recognized only two factors of production: labor and capital. This is changing now. In the new economy, knowledge, and information replace capital and energy as primary assets of wealth creation, as the last two replaced land and labor 200 years ago. In addition, technological developments in the 21st century have transformed most of the creation of wealth from the physical form into knowledge-based. Technology and knowledge are key factors in production. With the increased mobility of information and the global workforce, knowledge and expertise can be instantly transmitted worldwide, and any advantage gained by a company can be eliminated through competitive upgrades overnight. The only comparative advantage a company will enjoy will be its innovation process by combining market know-how and technology with the creative talents of knowledge workers to resolve a steady stream of competitive issues and its ability to gain value from information in the knowledge-based economy and knowledge management in the new information society [3].

Research and production of knowledge must increasingly be a source of differentiation. Technology can improve the educational process - so talent and intellectual ability become more and more important to produce something unique in order to create wealth for the next generations.

2. ENTREPRENEURSHIP, INNOVATION, AND TECHNOLOGY: FUNDAMENTAL CONCEPTS

Although the economy has been traversed by a series of negative events in recent decades, entrepreneurship brought new ideas into the old world of economics. This has led to an interest in acquiring knowledge about this field. It is important to understand the principles that lead our economy to be able to understand how it influences life in all its fields. We could even say that at present, what unites us globally is the economy, not the politics of the governments.

In the most basic concept, an entrepreneur is a person who, after identifying a business opportunity, creates and manages a company with the intention of gaining a certain economic benefit.

Although entrepreneurship has been analyzed from the perspective of several social disciplines such as economic history, psychology, sociology, or anthropology, it is a field of study that has always been difficult to place in the mainstream of economic theory. For these disciplines, the entrepreneur was an invisible figure. At the same time, their impact on

international politics has gone unnoticed, despite having played an important role to understand if we want to fully understand the political, economic, and social changes of the last decade.

Three economists who represent the main intellectual traditions (the German, Austrian and American schools) have provided the best-known ideas for defining entrepreneurship. Schumpeter is recognized for the role of innovation in the economic system and creative destruction, that is, the process of industrial mutation that definitively revives the internal economic structure, destroying the old concept and creating a new one at all times; risk factors and uncertainty, launched by Knight and the entrepreneur as an alert, capable of identifying opportunities through spontaneous learning by Kirzner [4].

Undoubtedly, in the study of entrepreneurship, Schumpeter's theories are the theoretical reference work. Entrepreneurship is the ability and willingness of individuals, on their own or in teams, within and outside existing organizations, to perceive and create new economic opportunities (new products, new production methods, new organizational schemes and new product combinations) and to present their ideas on the market, in the face of uncertainty and other obstacles. Schumpeter argues that economic development through innovation does not lead to capital buildup, but to new combinations undertaken by an entrepreneur [5]. He distinguished between five different types of new combinations:

1. Introducing a new product
2. Introduction of a new production method
3. Identifying a new market
4. Identification of a new source of raw materials or semi-finished supplies
5. A new organizational structure.

Expanding this concept, Philip Auerswald defined entrepreneurship as an inherent imbalance phenomenon that takes place in a world characterized by uncertainty, asymmetric information, indivisibility and non-zero trading costs. At the same time, it recalls the social and economic friction generated by entrepreneurs and warns that political leaders need to think frankly if encouraging entrepreneurs to challenge the status quo is a price they are willing to pay for the benefits of entrepreneurship.

Our entrepreneurial profile of the 21st century is therefore that of a person who can perceive, create and capture extraordinary value. Educated and informed, connected, networked, open and global vision; a creative native, innovative, digital; inspired by the opportunity. Wishing to transform and improve their

environment, to share and collaborate for prosperity, to compete without the will to dominate and not exclusively for their own benefit, but also through social entrepreneurship towards objectives such as sustainable economic and social development for their immediate environment, region, country or world [6]. But perhaps the most important attribute of an entrepreneur is that it manifests itself as a disturbing factor in the business environment that has the vision to detect and not to replicate a new product, service or process and with the ability to bring it to the market; capable of working in multidisciplinary teams to solve increasingly complex problems. Thus, entrepreneurs need not be inventors or experts in complex technology or in an innovative programming language. It just has to show the ability to turn visions into reality through a continuous and fast learning process.

3. THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE POST-INDUSTRIAL DIGITAL AGE

The information society or digital era, the digital revolution, the technological revolution or the online revolution, the third or the fourth industrial revolution, the post-industrial era - all are concepts associated with the impact of new information and communication technologies on our society in politics and social terms, the place in which we focus or in which time: the evolution in electronics and automation in the first half of the 20th century, the exponential growth of data processing and storage capacity, the development, expansion and universalization of the Internet, and the creation of new digital platforms linking billions of people or, more recently, of progress in the field of artificial intelligence [7].

The drastic reduction of costs and time to create, process, transmit and search for information is the key factor. Information is a source of power, now more accessible than ever and for anyone, due to this low cost, resulting in a diffusion of state power to social or private actors. Philip Auerwald argues that "... now, after four centuries of advances in the field of science, innovation and the organization of society, the technological frontier finally arrives at the heart of the human community. Never before did many people have the opportunity to create value for society and for themselves today. The new communication and collaboration technologies allow the whole population to connect and create on an unimaginable scale [8]."

The new digital economy is characterized by the Internet, bandwidth, technology, and mobile or hardware applications. Continuous progress in these spheres, marked by higher investment in education,

research, and development, science, and technology, will accelerate and intensify this transformation. Opening up, reducing communication and transaction costs, or a regulatory framework tailored to the current economic situation, leads to greater transparency, efficiency, and business competitiveness. The rapid progress of technology and its impact on people have also generated discussions on topics such as unemployment, inequality, and economic progress.

The impact of the digital world on the dynamics and patterns of globalization produces changes in the chain. Although trade was previously dominated by the conventional flow of goods, services, and finance, the flow of data and information generated by the digitization of the economy and the creation of new digital platforms gain a greater share. This transformation takes place in two dimensions [9]:

- Several emerging and developing countries are gradually joining this process, which has ceased to be a one-way phenomenon;
- Excluding more advanced economies, although the latter has a larger share, players are no longer exclusively governments or large multinational companies, but rather any entrepreneur or individual has the tools and platforms to see and access the world market.

According to the Global McKinsey Institute, only between 2005 and 2014, it was estimated that the transnational bandwidth ranged from 4.7 to 213 terabytes per second. In 2014, the impact of data flows on GDP globally exceeded the flow of goods and, paradoxically, it is estimated that their impact may be more decisive for the growth of economies in peripheral countries of the global data network than those of the central positions [10]. This is a window of opportunity for economic growth and development in these countries if these economies are adapted to requirements and challenges. Technology, entrepreneurship, and human capital are concepts whose weights should grow in the mix of components or instruments of national state power.

Governments should encourage people's efforts, their innovative capacity, and their willingness to learn, in a positive approach, thus helping to develop entrepreneurship creativity.

4. ENTREPRENEURIAL ECO-SYSTEM

To facilitate and accelerate the creation of new start-ups, it is important to have an environment where ideas can be transformed into a business. The term ecosystem, adopted from biological or evolutionary models, was introduced for the first time in an article

published in the Harvard Business Review, where the author argued that innovative businesses cannot develop in a vacuum but need a favorable environment for cooperators and competition. In a subsequent publication, he emphasized that firms compete in efficiency and effectiveness, but also in continuous innovation [11]. Because problems that need to be solved are more and more complex, only companies cannot change the world itself, but they need to look for partners and collaborators to continue being competitive, a strategy called "distributed creativity," which means that businesses can and it should open to potential contributors and creative participants around the world [12].

A favorable framework or specific act of support for the creation of start-ups or fast-growing enterprises, such as, for example, the creation of specific funding lines, is not enough. A more systematic approach is needed. Equally important, if not more, is the productive and cooperative interaction that occurs between different actors through networks - entrepreneurs, business angels, mentors, incubators, universities or research centers. Also, people who connect with businesses and exert influence are needed, although there is no reason why they should be entrepreneurs.

The creation of such a dynamic and open ecosystem promotes the creation, development and growth of newly established companies or businesses. From the existing literature we conclude that an entrepreneurial ecosystem is a set of interconnected entrepreneurial actors, both potential and existing, entrepreneurial organizations, venture capital, business angels, banks; with the specific indicators: business birth rate, high-growth firms, blockbuster entrepreneurship levels, serial entrepreneurship levels, enterprise drop-out mentality, and entrepreneurial ambition levels that formally and informally collaborate on connectivity, mediation and governance performance in the entrepreneurial environment.

The creation of industrial clusters is a policy that encourages the formation of entrepreneurial ecosystems and the development of an appropriate workforce. When a group of people with industries and institutions, such as universities around certain industries, intersect, then synergies that develop from all these different facets can turn into a whole greater than the sum of its parts.

Technological infrastructures and parks, however, are not enough. Reducing Internet-related communication costs and new digital platforms enable entrepreneurs to work and collaborate virtually with the rest of the

actors in other parts of the world, allowing access to better and real-time information. Rapid technological and scientific advances and the development of new business models raise the importance of being aware of events up to the critical level [13]. Therefore, the analysis of entrepreneurship through network-based approaches is inevitable. In order to be successful, entrepreneurs must be interconnected through information sharing networks.

4.1 Digital entrepreneurship as the appliance of economic development

There is a relationship of interdependence between entrepreneurs, the digital economy, entrepreneurial ecosystems, economic growth, economic development and technology. These concepts cannot be isolated from each other because they can no longer determine their individual impact in today's digital entrepreneurial environment.

The latest Global Entrepreneurship Index (2017) finds a positive correlation (0.62) between high-impact productive entrepreneurship and wealth - although this is not always the case with countries with natural resources - and a strong correlation (0.79) between entrepreneurship and digital technology. It estimates that a 10% increase in each country's global entrepreneurial index (GEI) would have a \$ 22 trillion impact on world GDP (GEI, 2018).

The industrial revolution we are experiencing is digital. The digital economy joins the conventional economy and is spreading rapidly across the planet. New technological advances - artificial intelligence, robotics, cloud computing, network technology, or the Internet of Things (IoT) associated with 3D printing offer an unprecedented horizon of possibilities for human beings. Digitizing the economy is the fundamental mechanism of innovation, competitiveness and growth in today's world, which in turn requires a process of adaptation and transformation.

Digital business, according to the most accepted definition, covers all new and existing companies that have been transformed or converted and that create economic and social value through digital technologies. Digital businesses are characterized by a high intensity in the use of new technologies, especially social solutions, high data, mobile phone technology and cloud technology, to improve business operations to invest new business models or partners [14].

Digital entrepreneurship is based on five pillars:

1. Knowledge base and ICT market

2. A friendly digital business environment
3. Access to finance
4. Digital skills and e-leadership
5. Entrepreneurial culture.

However, paradoxically, this transformation has two facets. On the one hand, the knowledge society will require hundreds of thousands of new jobs that will fundamentally go to young people looking for a job. Many of them will participate in what is called the gig economy. On the other hand, it is recognized that automation will eliminate jobs without clear alternatives to replace them, and that inequality could increase in the short term. The key to meeting these challenges and thus to talking about global prosperity is not so important in creating jobs requiring digital skills. This is to broaden the opportunities offered by digital disruption in a prosperous economy: an entrepreneurial economy backed by strong real growth that leads to progress and prosperity and redistribution of wealth.

The goal should be to increase the capacity of an economy or to expand the border of production possibilities - the possible combinations of productive factors and / or technologies in which maximum production levels are reached. It is not enough to improve static efficiency, increase productive or technological factors within economic boundaries, or maximize resource utilization at a given time.

The entrepreneur in Schumpeter's vision creates new combinations of economic activities that will generate these new opportunities, not society. The key elements of border expansion are a high rate of innovation made possible by technological change; a large number of new entrepreneurs and businesses introduce technology in an economic form and a dynamic environment that supports new ideas, innovation and entrepreneurs. The involvement of this triad of technology, entrepreneurs and the environment is binary: if all three combine, the frontiers are removed; if not, no. But nowadays, this triad exists and the borders have begun to be non-existent [15]. Small and large companies competing for new inventions, risk-taking entrepreneurs, company birth rates, change and creativity are what defines the economic growth that characterizes the current period. Thanks to new information and communication technologies, the results quickly achieved, the intensity and magnitude with which all agents interact and the information they can instantly and simultaneously access can be more decisive than those obtained in previous industrial revolutions.

4.2 The Role of the Entrepreneurship Leader in

the 21st Century

The main role in the process of building entrepreneurial architecture is that of an entrepreneurial leader. The entrepreneurial leader establishes structures, including systems and processes, creates an organizational culture, and facilitates the development and implementation of the strategy. The role of an owner or a manager does not automatically imply a managerial entrepreneur in an organization. For an entrepreneur to be a leader, it must be voluntarily and conscientiously accepted by staff. As an authority, leadership is also attained by outstanding behaviors and outcomes. There is no universal driving style. On the contrary, when playing a leading role, an entrepreneur has to develop specific relationships with each subordinate, adjusting the style to specific circumstances and personal traits. Therefore, the failure of an entrepreneur as a leader usually demonstrates a lack of variety in leadership styles or a lack of will to adapt their leadership style to personal circumstances and traits. Therefore, a continuous adaptation of a leadership style is vital as the organization grows and employs new people.

In stimulating the workforce to achieve the organizational goals, it is necessary for the entrepreneur to pay constant attention to the individual motivation of the employees. Many entrepreneurs make a common mistake by an inaccurate hypothesis that everyone is equally motivated and does not do much to motivate the human capital of their organizations. Apart from that, many entrepreneurs mistakenly assume that the motivation at the beginning of the professional career of employees remains at the same level in later stages of employment. Being a concrete activity that involves direct and constant activity with people, leadership requires special skills, requiring from a contractor a certain style of leadership, communication skills, technical knowledge, and a range of entrepreneurial traits.

By building an entrepreneurial architecture, the entrepreneurial leader creates incentives for systematically seeking business opportunities and innovation at all levels of large companies, starting at the corporate level, business divisions and business units, business functions and project team, company. Entrepreneurial architecture encourages the development of the entrepreneurial management style, namely the shift from traditional management to entrepreneurship. Among other things, this means shifting from control and sanctions to encouraging the search for new business opportunities; from focusing on efficiency and effectiveness to emphasizing the

importance of value factors; the transition from contractual relations to general relationships within and around an organization; the transition from training to learning; from fostering uniformity and compliance to the empowered vision and quiz status quo. In addition, the transition from traditional management to entrepreneurial management involves a completely different attitude to risk, uncertainty, and ambiguity. Instead of ensuring certainty, risk avoidance, and ambiguity, the style of entrepreneurial management tolerates uncertainty and ambiguity, while employees are empowered to take risks [16].

The official control of creative action is minimized as it emphasizes and tracks failure while penalizing failure is absolutely avoided. Entrepreneurial management style is confirmed by the primacy and leadership of the creative and innovative approach to a daily business routine; develops formal systems that will allow for finding superior solutions and time and secure resources for research and experimental work.

Entrepreneurial architecture focuses on employees, developing a sense of belonging to an organization and job security. The main contributors are common objectives and generally accepted strategies by staff [17]. Due to their ability to manage relationships in their environment, entrepreneurial organizations successfully exchange knowledge with other organizations, thus enhancing flexibility and adaptability by creating different network structures from global provider networks and distribution to small business groups from a certain geographic region.

4.3 Corporate Entrepreneurship in the context of Economic Development

The entrepreneurial process includes all the functions and activities related to perceiving business opportunities and creating startups in order to identify new opportunities that generate value and profit. Based on this approach, entrepreneurship is often associated with starting a new business. Even though this characterization can be justified by the fact that starting a new business is the most obvious and widespread entrepreneurial activity, limiting entrepreneurship to starting a business is a major simplification of the phenomenon, although the functions and activities of new start-up businesses, from the perception of business opportunities, their assessment, the provision of the necessary resources and the implementation process - are undoubtedly important, being just a part of the whole entrepreneurial process that defines the assumptions for capitalizing on the identified business

opportunities. Therefore, comparing the entrepreneurial spirit with the start-up process is a significant simplification in understanding the entrepreneurial phenomenon.

A more comprehensive approach to the full understanding of the essence and the economic function of entrepreneurship implies a broader examination of the entrepreneurial process that besides the activities preceding the launch of a company implies taking into account all activities after the start-up, start-up and management of a company in its various phases of development, eventually ending when entrepreneurs leave the company. This approach has some limitations, as it refers mainly to the activities of small businesses, while ignoring large organizations [18].

The explanation of the approach is the paradox of many companies that are successful in entrepreneurial behavior, but lose those characteristics with growth and development, becoming bureaucratic, conservative, and avoiding risk-taking. The lack of entrepreneurial spirit, is the bureaucracy of an organization, is one of the conclusions of numerous theoretical and empirical studies on the growth cycles of the company, conceptualized in the company's growth phases or the life cycle of the company.

Entrepreneurship is often linked to start-ups and new business activities, while its importance in obtaining and maintaining the competitive advantage of large organizations is largely ignored. These views are clearly contradictory to the fact that many important innovations, especially resource-intensive technologies, have emerged in large companies and not in small businesses.

5. THE IMPACT OF ARTIFICIAL INTELLIGENCE ON ENTREPRENEURSHIP

In recent years, artificial intelligence has undergone significant changes, particularly due to the advances in IT implementation of neural networks capable of real learning. Providing massive amounts of data, Big data, and cloud processing capabilities, given the computing power and amount of data needed to develop artificial intelligence. It is a subject that will be discussed from now on more and more often. The first area in which artificial intelligence has begun to use is the economy, and it is now widely used in a wide range of activities and fields such as finance, e-commerce, entrepreneurship, or medicine.

Artificial Intelligence is a more complex notion known in the world of science. Several attempts have been made to develop artificial intelligence in the industrial

and economic world since the 1980s. However, the promises of its development have given birth to the limit of computerized power. However, artificial intelligence is now firmly anchored in reality. It integrates so far many industrial and economic applications and continues to grow. Artificial intelligence is not a sector in itself but occurs transversely in several areas. It is especially present in robotics but is not limited to this sector.

Digital transformation improves business models and changes entrepreneurial culture. It affects the functioning, organization, and governance of entrepreneurial development methods. Thus, large companies at the end of the digital transition see a new turning point, that of smart transition [19]. In the same way as the digital that has had a transversal impact, this transition will involve all the functions of the company. Artificial intelligence will be a revolution in systems architecture and value creation. It's already a break in the construction of computer systems, and more specifically in hardware: processing based on extremely intense memory, complex and innovative architectures. The computational power associated with the execution of learning algorithms really requires the transition from sequential architectures to parallel and distributed architectures [20].

This transformation requires the implementation of an adapted strategy and governance. These are the big companies with the state that will have to give the impetus to create a specific sector dedicated to artificial intelligence and to create spin-offs. Most

6. CONCLUSIONS

The digital revolution changes the course of the global business environment, making changes not only in systems and processes but also in business models and methods. Companies everywhere must take advantage of this new situation in order to remain competitive in the context of global competition.

Digital entrepreneurship is largely understood as setting up start-ups and transforming existing businesses by developing new digital technologies. Digital entrepreneurship has been considered a pillar of growth, job creation, and innovation by many countries, including the Member States of the European Union. A nation's digital entrepreneurial capacity depends largely on digital entrepreneurial behavior, culture and strategies, and an innovation ecosystem where governments, industry, businesses, educational institutions, and NGOs work together.

We are witnessing a mix of global initiatives aimed at stimulating the acceleration of digital entrepreneurial

investors in artificial intelligence are really the main players in the digital domain. This factor has to be considered and positioned on this market to avoid sharing between companies that can use artificial intelligence and those that cannot.

Integrating artificial intelligence into the economy leads to a significant increase in productivity. As a technical innovation, it is a contribution both to internal processes such as management, logistics, or customer service and to their productions, whether they are consumer goods or services.

Non-inclusion of these technologies would represent a risk of major loss of competitiveness. Three risks, however, should be taken into account in terms of economic dependence, sovereignty, and possible consolidation of inequalities. In the current configuration of the digital economy, the risk that companies are only consumers of solutions developed abroad is important. The development of artificial intelligence could then greatly enhance the platforming and value-capturing effects that are already characteristic of the digital economy: indeed, this development requires means in terms of data and computing capabilities, which few actors have [21]. In addition, as these technologies can be used as decision support tools or even as decision-making tools, it is necessary to retain the ability to determine their meaning and content. Finally, the diffusion of these technologies can have an important effect on increasing territorial and social inequalities, especially due to the concentration of value in certain places.

activity. Therefore, a holistic and integrated approach is needed, with digital entrepreneurship being a new concept, and research in this area is at the beginning.

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