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# Mechanisms to provide a promising digital investment environment to enhance digital leadership development, with reference to the Algerian experience

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**Abstract**--The rapid advancement of technology in our time is significantly contributing to the digital transformation that enhances the use of information technology across various economic and social fields, leading to sustainable growth. This transformation supports the building of an information society, encourages community interaction, opens new horizons for technological cooperation, and attracts investments that enhance digital entrepreneurship and contribute to improving the economic situation. This study is conducted to identify the most important mechanisms that would create a promising digital investment environment to enhance the development of digital leadership, with reference to the Algerian experience. The success of implementing the digital entrepreneurship policy depends on providing a set of necessary requirements through an integrated and comprehensive strategic program that re-engineers traditional processes and transactions. Digital transformation is not solely dependent on technology. It requires effective leadership, careful planning, and adequate resources. To foster innovation and promote digital entrepreneurship, we need to invest in technology. We also need to create a supportive legal and regulatory environment, offer incentives for investments, ensure cyber security, and upgrade ICT

infrastructure. These efforts are crucial for achieving national development goals and promoting economic growth.

**Keywords**---entrepreneurship, digital economy, innovation, information and communications technology.

## Introduction

In light of the fast-paced advancements in science and technology, the COVID-19 pandemic has accelerated the use of digital technologies, which have become a catalyst for change in all aspects of social and political life, specifically in the economic sector. The entrepreneurship industry has expanded in line with technology developments and relies heavily on modern technologies to facilitate and transform businesses from traditional to digital. This new form of business is called digital entrepreneurship. It is a significant contributor to economic growth, providing numerous solutions to economic, financial, and other challenges. Digital entrepreneurship offers the advantages of easy management, remote working, and increased job creation and innovation. However, the success of digital entrepreneurship relies on a supportive and stimulating environment created by a combination of environmental, individual, and organizational factors, which enable entrepreneurs and digital project owners to thrive.

To delve deeper into the subject, the following question is asked:

**Main question:** What are the foundations and prerequisites for establishing an inspiring atmosphere for digital leadership?

The above-mentioned issue raises the following questions:

1. What are the effective methods of creating a stimulating climate for digital leadership?
2. Are there any challenges that digital entrepreneurs encounter?

The following hypotheses are tentative answers to the above questions:

**Main hypothesis:** Creating an inspiring atmosphere for digital leadership requires a strong organizational culture, a clear vision, effective communication, continuous learning opportunities, and support for innovation. Prerequisites include competent digital-savvy leadership, investment in technology, fostering collaboration, and data-driven decision-making.

**Hypothesis 1:** Creating a stimulating climate for digital leadership involves fostering a culture of continuous learning, risk-taking, and technological adoption through structured training, clear policies, and leadership behaviors that reward innovation and flexibility.

**Hypothesis 2:** Digital entrepreneurs face challenges such as rapidly evolving technological landscapes, high competition in digital markets, difficulties in securing funding, and managing customer privacy and data security.

**Limitations of the study:** The study has certain limitations that are as follows:

**Objective boundaries:** This study focuses on identifying the mechanisms for creating a favorable digital environment to foster digital entrepreneurship in Algeria. It aims to gauge the readiness of the digital entrepreneurship environment in Algeria and identify ways to overcome the challenges that hinder the growth and expansion of entrepreneurial projects.

**Temporal and spatial limits:** The study is limited to assessing the digital readiness of the entrepreneurship environment in Algeria and its capacity to fully leverage the benefits of the digital economy in the year 2022.

**Study model:**

To answer the problem and achieve the objectives of the study, an illustrative model for the study was developed as shown in the following figure:

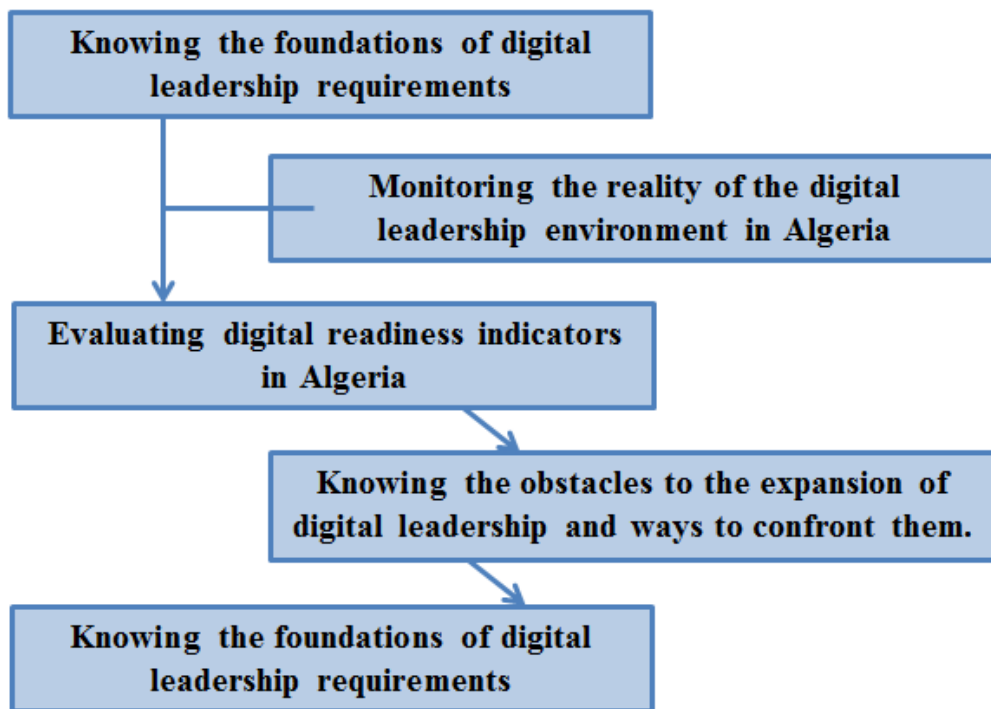


Figure (01): Study model  
Source: Prepared by the two researchers

**Study Objectives:**

The study aims to achieve the following objectives:

- Introducing digital leadership and its benefits.
- Observing the current situation of digital entrepreneurship in Algeria.
- Explaining the fundamental factors that can stimulate innovation and creation of digital leadership.

- Identifying the challenges faced by digital entrepreneurs and suggest various support mechanisms.

### **Significance of the Study:**

The study is important due to the increasing global interest in digital entrepreneurship and its potential for sustainable development in all areas of life. It is to provide guidance on how to enhance its development and clarify the opportunities and challenges it poses in a sophisticated and complex investment environment.

### **Study Approach:**

To achieve the goals of this study and solve the research problem, we will use the descriptive and analytical method to identify the theoretical foundations of digital leadership. We will collect data and information from various sources and analyze them to reach our results. The study is divided into four main sections, with an introduction and a comprehensive conclusion.

The first section will focus on the basic features of digital leadership, including its concept, principles, importance, and goals. The second section will cover the essential skills required for digital entrepreneurs to succeed. The third section will examine the current state of the digital entrepreneurship environment in Algeria. The fourth section will discuss the most important foundations and requirements for establishing digital entrepreneurship, as well as ways to overcome the obstacles it faces.

### **Former Studies:**

The following are summaries of three studies conducted by Maha Khalil Shehadeh, Hamza Ghandour Ratiba Taibi, and Mushira Muhammad Al-Ashry, respectively, all related to digital entrepreneurship.

- Maha Khalil Shehadeh's study, titled "Digital Transformation and Digital Entrepreneurship," aimed to define digital transformation and its importance in the emergence of digital entrepreneurship. The study identified the advantages and challenges of digital entrepreneurship and researched the relationship between digital transformation and achieving sustainable development goals. The study concluded that digital transformation is crucial for government and businesses, and digital entrepreneurship is among the most important mechanisms for driving sustainable development.

- Hamza Ghandour Ratiba Taibi's study, titled "Digital Entrepreneurship and Its Role in Achieving the Competitiveness of Economic Institutions: An Analytical Study," aimed to define digital entrepreneurship as a new concept within institutions and highlight its role in achieving economic and social growth, as well as competitiveness among institutions. The study concluded that transitioning to digital entrepreneurship has become necessary for institutions because of its significant role in their work and competitiveness, as well as their ability to continue and survive.

- Mushira Muhammad Al-Ashry's study, titled "The Digital Economy, Its Role, and Activating Entrepreneurship Policies within Egyptian Society: A Case Study for

Digital Entrepreneurs," aimed to identify the extent of the digital economy's impact on digital entrepreneurs. The study used a descriptive approach and selected a deliberate sample of digital entrepreneurs who used Facebook, Instagram, and Telegram applications. The study concluded that the digital economy and information technology helped entrepreneurs define and discover their goals and perceptions of work, allowing them to appear in a creative, renewed, and invested manner. This, in turn, pushes them to enter competitions of challenge, excellence, creativity, and innovation, despite facing some challenges.

**The first axis:** Conceptual framing of digital leadership

The rapid growth of the digital age has given rise to the importance of digital entrepreneurship, which is considered an update to the traditional entrepreneurship system. This sector has become one of the most important in the present and future. In this topic, we will focus on digital leadership, its concept, advantages, and goals.

**The concept of digital leadership:**

Definition of an entrepreneur: According to the Global Entrepreneurship Observatory, it is any attempt by an individual or group of individuals to start new enterprises, build new projects like free businesses or new institutions, or grow an already-existing economic activity (Al-Zahraa and Alali, 2021, p. 465). Also, Magda recognized her as:

“A sophisticated production method that relies on innovation, risk-taking, technology, and creativity. In order to create a new facility or unique invention that would provide a valuable product for him and others, an individual or group of enterprising people must take on an economic risk.” (Al-Subou', 2020, p. 41).

**Definition of Digital entrepreneurship:**

Digital entrepreneurship is “the term used to describe the process of identifying potential business opportunities and taking advantage of them by either regrouping existing resources or creating new resources to develop new products and services. It involves using digital technologies in innovative ways to market and distribute products and services, as well as to follow up on them. This can include using digital platforms to increase revenues, reduce costs, create new opportunities, and gain a competitive advantage.” (Shehadeh, 2022, p. 44)

The European Commission has defined digital entrepreneurship as “the process of developing new digital technologies, or using existing ones in new ways, to create new projects or transform existing ones. This can benefit various fields, including providing goods and services, education, health, and trade.” (Al-Shammari, 2019).

There are several reasons why transitioning to digital leadership is becoming increasingly popular. One of the most significant is that digital leadership can eliminate or greatly reduce the need for office work. This means that people can

work from anywhere and at any time, saving time and increasing productivity. Additionally, digital entrepreneurship can help save a lot of money compared to traditional entrepreneurship and also allows businesses to hire people from different parts of the world at lower costs (Center, 2022).

**Cheaper Media Opportunities:** Digital entrepreneurs can enjoy cost-effective advertising through large marketing platforms like Facebook. These platforms offer a higher reach to the target audience compared to traditional advertising, which can be more expensive and provide less reach.

**Advantages of Digital Entrepreneurship:** Digital entrepreneurship has several advantages, with increasing productivity being one of the most significant. By utilizing modern technology, digital leadership enhances productivity and operational efficiency in companies and institutions, reducing the time it takes to complete tasks.

**Expanding the Scope:** Digital entrepreneurship enables rapid and effective access to new markets and customers via social media, digital marketing, and e-commerce.

**Faster and More Effective Communication:** Digital entrepreneurship offers the advantage of faster communication and interaction through email, text messages, smart applications, and Internet communication.

**Enhancing International Cooperation and Global Integration:** Digital entrepreneurship provides promising opportunities for international cooperation and global integration. Emerging companies can access new markets and expand their work scope faster and more efficiently through digital technology. It also fosters the exchange of knowledge and experiences and promotes the development and innovation of products and services between companies and research institutions worldwide.

It also has several benefits such as creating job opportunities in new markets, as well as increasing job opportunities in some existing professions. Furthermore, it enables entrepreneurs to start and grow their businesses using the Internet and other digital platforms. Digital leadership plays a crucial role in achieving various economic and social objectives for society and the economy as a whole. This importance is emphasized by the Ministry of Communications and Information Technology in their report (2021, page 04).

### **Economic objectives:**

The following is a set of goals intended to promote the growth and success of emerging digital companies in the economy. These goals include:

- \* Increasing the participation rate of digital companies in the non-oil GDP, creating new job opportunities, and contributing to the development of the digital economy.
- \* Improving and enhancing the competitiveness of research, development, and digital innovation outputs for both the government and private sectors.

Article London Premier Center is a leading UK training provider based in London specializing in international courses. Available at: <https://ar.llcentre.com/10/15/2022> (accessed 07/20/2023).

Digital Entrepreneurship Issues of Entrepreneur Magazine April 20, 2023 Article available online: <https://www.rowadaamal.com> Date of access: 07/20/2023

To help achieve these objectives, private sector partners will provide financing solutions for emerging digital companies. Moreover, digital entrepreneurs and project owners will have easier access to market data, which will allow them to better understand the market demand and ensure that their products are compatible with market needs. Finally, the project aims to raise levels of entrepreneurship in the local market to attract foreign investments

### **Social objectives:**

The following is a list of social objectives that aim to increase community awareness of the importance of digital leadership and to leverage modern technical applications to serve business development:

- Developing digital talent to keep up with the fast-paced age of technology by encouraging and providing necessary skills for emerging digital entrepreneurs.
- Enhancing the culture of innovation and digital entrepreneurship, and enriching the digital community with entrepreneurial ideas and projects.

### **Axe 02: Essential skills for successful digital entrepreneurs**

A successful digital entrepreneur relies on innovation, technology, collaboration, communication, analysis, and the ability to adapt to rapid changes in the market and technology. What are the skills that distinguish a digital entrepreneur? What are the factors affecting their performance? What are the most important strategies for success? This is what we will review in this topic.

**First: Definition of digital entrepreneur:** A digital entrepreneur is a person, who owns and manages their project, has an entrepreneurial spirit, and can recognize and discover opportunities. They are also willing to take risks and possess technical capabilities and skills that assist them in carrying out various business operations via the internet. According to Al-Barashidiya (2021), “a digital entrepreneur is someone who is capable of identifying and capitalizing on opportunities while also having the necessary skills, resources, and determination to operate their project. They also have the ability to find innovative solutions that meet their customers' needs and requirements through electronic platforms or networks. Daoud (2022, p. 444) defines a digital entrepreneur as “an individual who can identify and bear the consequences of opportunities.” They are determined to start their project, secure the necessary resources and capabilities to operate it, and have technical skills that enable them to implement various commercial operations via the internet.

**Second: Characteristics of successful digital entrepreneurs:** We can summarize the most important characteristics that characterize a successful digital entrepreneur as follows (Sultan and Mahmoud, 2022, pages 389-390):

- The desire to start work: It is one of the most important factors, and the other factors are useless without the presence of the desire factor.
- Ethics: The entrepreneur must have the ethics to be unique and constantly improve work.
- Knowledge and skill: He must have good knowledge in his field of work and possess leadership skills, as these are considered essential for the success of digital businesses.
- Intelligence and refusal to give up: He must be smart in his dealings and patient to be able to continue despite obstacles.
- Working within a team: To be able to work within a team as an essential player.
- Self-confidence and calculated risks: among the most important factors for an entrepreneur's success in his work.
- Experience: increases the chances of success at work and increases the workforce.
- Communication: The greater the entrepreneur's connection with work, the better for the success of the entrepreneurial project.

The following are the key features required for a successful online business (Marketing and Digital Media Forum, 2022):

- Global vision: the ability to envision how to expand the online business globally and reach a wider audience.
- Technological competence: the proficiency to manage digital tools and platforms on which the new project is built and use this knowledge to develop growth strategies.
- Adaptability: the ability to keep up with continuous technological advancements and new additions to the internet arena smartly.
- Openness: the willingness to remain open to new ideas and management as technology evolves.
- Analytical skills: the capability to understand the business, focus on the goal, conduct market research, and provide added value.
- Leadership skills: which can be categorized into three main types: technological skills (writing, communication ability, environmental control, business management, technology, technology), business management skills (goal setting and planning, decision making, human relations, marketing, finance, accounting), and personal entrepreneurial skills (commitment and control, risk-taking, creativity, ability to limit and persevere) (Amer, 2017, p. 27).

### **Third: Obstacles to the success of digital entrepreneurs:**

There are many challenges facing entrepreneurs from the beginning of the early stages of entrepreneurial projects until reaching the period of operation and integration into the market. Among the factors that affect digital entrepreneurs are:

• **Personal factors:**

Obstacles to achievement include accepting risk, tolerating ambiguity, innovation, internal self-control, impulsiveness to work, self-willingness to work long hours, and optimism.

• **Obstacles related to education:**

Individuals face in their approach to entrepreneurship, and these obstacles are represented in the lack of interest in spreading the culture of entrepreneurship in educational institutions, the lack of training programs complementary to university education, and the lack of encouragement for continuing education, in addition to deficiencies in education based on creativity, innovation, analysis, and connection.

- The large gap between the approved teaching curricula and the requirements of the labor market, and the absence of support and interest in entrepreneurs, in addition to the marginalization of competencies instead of encouraging them and providing the requirements for establishing their projects. (Dhaif, Qahiri, and Al-Dhaif, 2020, p. 35).
- Lack of ideas: The entrepreneur must know the field in which he is involved, discover trends that match his abilities and skills, exploit his ideas, and turn them into successful businesses (Sultan and Murqa', 2022, p. 10).

**Fourth: Success strategies for digital entrepreneurs:** For a digital entrepreneur to become successful, many strategies enable him to do so, perhaps the most important of which are the following: (Foster Capital, 2023)

- **Building a strong team:** Because the success of a digital entrepreneur lies in the success of his team, it is therefore important to find people suitable for the appropriate jobs with high competencies and skills.
- **Be creative:** Digital innovation is a way to think outside the norm, so it is important to be creative and come up with new ideas.
- **Be persistent:** No matter how difficult the odds are, you must persevere. If you do not like hard work, you will not be successful.

E-marketing article, Marketing and Digital Media Forum, November 17, 2022, available on the website: <https://tawasulform.org>, date of access: July 20th, 2023.

What is a digital entrepreneur? A business incubator that helps startups from around the world. It helps entrepreneurs start and develop small projects May 13, 2023 Online article available on the website: <https://Fostercapital.com> Date of access: July 20th, 2023.

- **Be passionate:** It is important to have a passion for what you do, whether it comes to creating new digital products or services or developing new marketing strategies to achieve your goals.
- **Maintain your focus:** The digital entrepreneur must be focused on his goals and ambitions because if he loses them, he is doomed to failure.

**The third axis: Monitoring the reality of the digital leadership environment in Algeria:**

To assess the digital entrepreneurship environment in Algeria, we will analyze some indicators of network readiness in Algeria as presented in the latest global information and communication technology report for 2022. We will evaluate Algeria's performance based on its digital readiness and the extent of its ability to benefit from the digital economy as per the Arab Digital Economy Index report. These indicators include infrastructure, innovation, markets, business, institutional and government structures, workforce, digital skills, digital government services, knowledge and technology, financial markets, and sustainable development.

According to the Global Information Technology Report 2022 by the World Economic Forum, Algeria ranked 115th out of 132 countries worldwide and ranked at the bottom of the rankings for the indicators of readiness for the ICT sector. It ranked 99th in the political and regulatory structure index, 102nd in the ICT Infrastructure Index, 125th in the Algerian Financial Development Index, and 82nd in the Scientific Research Index, after ranking 74th in 2021. It ranked 120th in the Business Environment Development Index and 199th in innovation and digital skills.

In the Arab Digital Economy Index for 2022, Algeria ranked 12th out of 22 Arab countries and was classified as one of the digitally promising countries, alongside Jordan, Morocco, Tunisia, Egypt, and Lebanon. With a score of 46.55%, it has taken a step towards digital transformation and is considered a country that attracts investment. However, it scored lower than the Arab countries in the top five, including the Emirates, Saudi Arabia, Qatar, Bahrain, and Oman. The sub-indicators achieved by Algeria are listed below in the Arab Economic Index Report for 2022.

**First: The indicator of the political and organizational structure in Algeria**

These institutions provide stability, create a regulatory environment, and establish governance. The main role of governments is to establish a solid institutional framework that promotes entrepreneurship, economic growth, and the rule of law. This framework should also improve the quality of life and livelihood of citizens, which in turn will attract investment and enhance innovation and creativity in economic sectors, particularly in the information and communications technology sector (Digital Economy Index, Al-Arabi, 2022).

We present the results of this indicator in the following table:

Table 01: Political and organizational structure index in Algeria according to the Arab Economic Index report for the year 2022

Year	2023	
	Value	Ranking
Enterprise Index		
Infrastructure	44.60	/
Regulatory environment	49.85	/
Ease of doing business	55.19	/
Index value	50.15	12

Source: Prepared by the two researchers based on the Arab Digital Economy Index Report for Arab Countries for the year 2022

The results of the table above show that Algeria has achieved weak to moderate results in the ICT infrastructure sector, where it ranked 8th and the index value reached (42.33%). As for the access of information technology services to individuals, the rate was (60.20%). It is an average percentage. As for logistics services, the index value was (18.60%), which is a small percentage that reflects the weak logistical performance in Algeria.

### Third: Education and skills index (labor force) in Algeria

We present its results in the following table:

Table 03: Education and skills index in Algeria according to the Arab Economic Index for the year 2022

Year	2022	
	value	ranking
Education and skills index		
Current workforce	<b>53.00</b>	/
Current workforce skills	<b>48.00</b>	/
Future workforce	<b>65.20</b>	/
Future workforce skills	<b>50.70</b>	/
Workforce diversity	<b>72.41</b>	/
The total index value	<b>57.86</b>	<b>9</b>

**Source:** Prepared by the two researchers based on the Arab Digital Economy Index Report for Arab Countries for the year 2022

The table above displays the digital readiness of citizens, with Algeria ranking 9th and scoring an average percentage of 57.86%. To improve this score, Algeria has recognized the importance of implementing e-learning initiatives, promoting innovative projects, and facilitating digital transformation across various sectors.

### Fourth: Digital Government Index

The digital government pillar measures how well government institutions can use information and communication technology to provide public services and focus on individual development. The digital transformation process requires cooperation between the government, private sector companies, and civil society.

This pillar helps measure the current infrastructure and human capital level in countries. The digital readiness of a country is crucial for government officials, policymakers, researchers, civil society representatives, and the private sector to understand the challenges and opportunities to enhance public goods and services (Arab Digital Economy Index, 2022).

We present its results in the following table:

Table 04: Digital Government Index in Algeria according to the Arab Economy Index for the year 2022

Year	2022	
	value	ranking
Digital Government Index		
Communications Infrastructure Index	57.87	/
Digital Government Services Index	27.65	/
Human capital index	69.66	/
Total index value	51.73	11

Source: Prepared by the two researchers based on the Arab Digital Economy Index Report for Arab Countries for the year 2022

The table above displays the index of digital services provided by the government, which shows a value of 27.05%. This indicates that the Algerian government lags behind in its use of information and communication technology, resulting in weak electronic performance. This delay in adopting e-government programs has caused Algeria to fall behind other Arab and non-Arab countries that have made significant progress in this field. However, Algeria has taken extensive measures, including reforms in the banking and financial system, to keep up with digital developments and strengthen institutional frameworks. As a result, the communications infrastructure index has reached a value of 57.89%.

#### **Fifth: Innovation Index in Algeria:**

We present its results in detail in the following table:

Table 05: Innovation Index in Algeria according to the Arab Economy Index for the year 2022

Year	2022	
	value	ranking
Innovation Index		
The future direction of the state	51.52	/
Multilateral cooperation	66.67	/
Published scientific papers	73.70	/
Patents per million population	0.50	/
Spending on research and development as a percentage of output	11.63	/
Entrepreneurship culture	57.24	/
Total index value	43.54	12

Source: Prepared by the two researchers based on the Arab Digital Economy Index Report for Arab Countries for the year 2022

The table above indicates that the innovation index in Algeria is weak when compared to developed countries. This is mainly due to the low patent index value of 0.50%, as innovation is an essential element of the digital economy that can lead to permanent development in various fields. Therefore, it is crucial to increase spending on scientific research and development, encourage initiatives, and prioritize the contribution of the private sector in this regard.

There are several reasons why the innovation index is weak in Algeria, including the failure of innovation policies assigned to institutes, universities, scientific research centers, and institutions affiliated with the Ministry of Higher Education and Scientific Research. These entities have not been able to provide modern innovations and contribute to innovative solutions.

### **Sixth: Knowledge and Technology Index in Algeria**

Algeria is ranked 12th in the index, with a value of only 14.05%. See the table below for more details.

Table 06: Knowledge and Technology Index in Algeria according to the Arab Digital Economy Index for the year 2022

<b>Year</b>	<b>2022</b>	
	value	ranking
Knowledge and technology index		
Quality certificate (ISO 1009)	3.34	/
Program spending as a percentage of GDP	0.10	/
Exports of information technology services as a proportion of total trade volume	3.42	/
Developing new business models using information technology	49.34	/
Total index value	14.05	12

Source: Prepared by the two researchers based on the Arab Digital Economy Index Report for Arab Countries for the year 2022

The table above displays the following results:

- The rate of quality certification achieved by Algeria is only 3.34%, which is quite low compared to other Arab countries like Tunisia (23.06%), Bahrain, and Lebanon (15.88%).
- There is a lack of information, communication technology, and spending on programs for providing services and products. This indicates that Algerian organizations and the government are not making optimal use of modern technology for decision-making. This delay can be mainly attributed to the Algerian government's slow adoption of electronic government orientation.

### **Seventh: Market forces index in Algeria**

We present its results in detail in the following table:

Table 07: Market forces index in Algeria according to the Arab Economic Index for the year 2022

Year	2022	
Market forces index	value	ranking
Ease of obtaining loans	10.00	/
The ability to protect small investors	20.00	/
Increase competition at the local level	55.00	/
Total index value	28.33	12

Source: Prepared by the two researchers based on the Arab Digital Economy Index Report for Arab Countries for the year 2022

Algeria has a poor performance in a certain indicator, with a value of 28.33, ranking 12th among Arab countries. This is due to several complications in providing financial and credit services, as well as bureaucracy and unclear regulations. Additionally, Algeria has weak competition in the local market and limited access to global markets.

The index of ease of obtaining loans is only 10%, while the ability to protect investors is 20%. Local competition is also weak, with a score of only 0.55%. These issues can be attributed to a heavy reliance on oil revenues, neglect of other productive sectors, low contribution from the private sector, and poor infrastructure, among other factors.

#### **Eighth: Index of financial market development in Algeria**

We present its results in the following table:

Table 08: Index of financial market development in Algeria, according to the Arab Digital Economy Index for the year 2022

Year	2022	
Money market development index	value	ranking
Ratio of domestic credit to the private sector to gross product	24.30	/
Financing small and medium enterprises	69.09	/
Availability of financing funds	67.31	/
Market value	0.20	/
Bank safety	59.70	/
Non-performing loans out of total loans	76.20	/
Time required to start a business (number of days)	82.90	/
The cost of starting a business	94.10	/
Total index value	59.23	12

**Source:** Prepared by the two researchers based on the Arab Digital Economy Index Report for Arab Countries for the year 2022

The table above shows that the Capital Market Development Index has reached 50.23% and ranked 12th in the Arab world. However, this percentage is considered average and does not meet the required level. To achieve the goals of the digital economy, the Algerian government needs to strengthen and diversify

the financial markets. This can be done by ensuring fair availability of capital, achieving transparency and encouraging private sector investments. Additionally, financing from banks should be provided to support private sector investments.

#### **Ninth: Sustainable Development Index in Algeria**

We present its results in detail in the following table:

Table 09: of the Sustainable Development Index in Algeria according to the Arab Digital Economy Index for the year 2022

<b>Year</b>	<b>2022</b>	
	value	ranking
Sustainable development goals index	96.93	/
Poverty eradication	56.56	/
Total elimination of hunger	75.57	/
Good health and well-being	91.21	/
Good education	62.20	/
Decent work and economic growth	45.40	/
Industry, innovation and infrastructure	74.10	/
Corporate contract in order to achieve goals	71.71	7
Total index value		

Source: Prepared by the two researchers based on the Arab Digital Economy Index Report for Arab Countries for the year 2022

The table above indicates that Algeria's Capital Market Development Index reached 50.23%, ranking it 12th in the Arab world. However, this percentage is an average and falls short of the desired level. To achieve the goals of the digital economy, the Algerian government must focus on strengthening and diversifying their financial markets. They can achieve this by ensuring availability of capital, promoting transparency, and encouraging private sector investment through financing from banks.

#### **Ninth: Sustainable Development Index in Algeria**

We present its results in detail in the following table:

Table 10: of the Sustainable Development Index in Algeria according to the Arab Digital Economy Index for the year 2022

<b>Year</b>	<b>2022</b>	
	value	ranking
Sustainable development goals index	96.93	/
Poverty eradication	56.56	/
Total elimination of hunger	75.57	/
Good health and well-being	91.21	/
Good education	62.20	/
Decent work and economic growth	45.40	/
Industry, innovation and infrastructure	74.10	/
Corporate contract in order to achieve goals	<b>71.71</b>	<b>7</b>
Total index value		

Source: Prepared by the two researchers based on the Arab Digital Economy Index Report for Arab Countries for the year 2022

Algeria has made commendable progress in achieving the sustainable development goals, with a percentage of 74.71%. It is ranked 7th in the Arab world. The country has achieved positive results in the areas of combating poverty, providing healthcare, education, and employment. This is a result of the government's efforts, including providing free education and healthcare, and allocating a substantial budget towards education and healthcare facilities.

#### **Fourth axis: The environment conducive to the success of digital leadership**

The success of digital entrepreneurship is closely linked to the provision of essential human, financial, organizational and technical requirements. These requirements help to improve the digital entrepreneurship ecosystem, which aims to enhance the culture of innovation, develop local digital capabilities in the field of entrepreneurship, and boost the adoption of emerging technology applications. Furthermore, the ecosystem supports entrepreneurs by transforming their entrepreneurial ideas and projects into implementable digital business models while overcoming any obstacles that may arise. In this topic, we will discuss the factors that contribute to the success of digital leadership, the challenges that limit its effectiveness, and the most important mechanisms for developing digital leadership.

#### **First: The components of digital leadership success**

The success factors of digital leadership depend on fulfilling the following requirements outlined by Ghandour and Taibi (2022, p. 1127):

- **Digital elements:** This includes the flexibility and productivity of digital platforms, social media, big data sources, and information products. Digital infrastructure and ambition towards digital transformation, as well as making digital qualified decisions for institutions, are also important.

- **Dynamic requirements:** This refers to individuals' acceptance of digital business entrepreneurship and their digital business affinity, along with their digital inclinations. One way to achieve this is by acquiring knowledge of digital business, having a good understanding of the market and its strategy, and the ability to compete and lead.

- **Creating a digital work model:** This involves dividing tasks among employees, distributing rewards, and validating and evaluating digital models.

Additionally, Al-Tayeb (2023) highlights the importance of the following elements.

- **Digital products:** innovative and attractive digital products and services must be provided to customers that can be marketed and made profitable.
- **Digital marketing:** using social media, digital public relations, and e-marketing to increase awareness of products and raise the level of sales.

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5 Muhammad Al-Tayeb, Digital Entrepreneurship 2023, online article, June 13, 2023, available at: <https://1888jobs.com>, date of access (07/20/2023)

- **Digital technology:** includes the use of digital technologies and the provision of software solutions for business management, data analysis, and business process improvement.

- **Digital experience:** It is necessary to rely on a distinctive and profitable digital experience for customers when providing products and digital business services.
- **Digital payment:** It requires providing safe and convenient digital payment options for customers.
- **Digital analytics:** It consists of using graphical analyses and big data to analyze and improve business performance and make appropriate strategic decisions.
- **Adaptability:** It requires the ability to adapt to rapid changes in technology and speed and develop new strategies to meet customer needs and achieve success in digital business.
- **Digital security:** It is necessary to provide strong protection systems for customers, important data for customers and employees, and reduce the risks of potential hacking.
- **Communication:** It requires good communication between all team members, customers, partners, and users to ensure the workflow and the achievement of the desired goals.
- **User satisfaction:** Taking into account the needs and desires of customers when developing digital business products and services.
- **Provides a social and economic environment for digital business development:** By this, we mean the combined efforts of team members, partners, suppliers, and users, working to achieve common goals, maintaining sustainability, and improving business operations.

**Second: Indicators for measuring digital leadership performance:** Many standards enable us to measure digital leadership performance, the most important of which are the following: (Al-Abadi and Al-Shennawi Al-Jabri, 2022, pages 296-297)

- **Digital knowledge:** It means taking into account the skills and patents in the digital world and exploiting them in optimal ways, to achieve value creation and discover digital opportunities for entrepreneurial work in discovering and how digital knowledge affects the discovery of digital entrepreneurs, even if it is by chance.
- **Digital Business:** It represents the digital systems that are used by digitally leading companies and how to compare those companies in terms of success, growth, and decline in the digital market based on the type of digital system used by them, in addition to the availability of the environment with incubating digital markets.
- **Digital Finance:** Here the basic elements of digital finance are explained, which are important criteria in the field of entrepreneurship and are represented by the cost of tax compliance, the total tax rate, the availability of investment capital, and the ease of raising funds through local stocks and markets, in addition to ascertaining the most important sources of funding for digital projects.
- **Digital leadership:** Here, reference is made to the digital and electronic skills that people possess and the ability to adapt them to the basic principles of leadership, in addition to the education and training systems adopted in the organization and the number of digital devices in it.

- **Electronic entrepreneurial culture:** Electronic entrepreneurial culture refers to the percentage of community members who are willing to work independently within society, and this is based on the customs, traditions, and general culture of the community.

### **Third: Barriers impeding the advancement of entrepreneurial skills and digital leadership growth:**

Many factors impede the growth and establishment of digital enterprises, such as those listed below (Shehadeh, 2022, p. 52):

**Infrastructure:** Since it makes it possible for digital entrepreneurs to offer their goods and services, information and communications technology is regarded as the cornerstone of digital leadership. Nonetheless, many nations—especially emerging ones—face difficulties while trying to enhance their infrastructure.

**Cultural and social issues:** We refer to the low level of societal acceptance of digital leadership, which can be attributed to several factors. - A lack of knowledge, a fear of novelty, and a lack of trust in electronic commerce.

**Problems with intellectual property rights:** Since many digital entrepreneurs can grow and spread swiftly across borders or are born internationally on the Internet or in computational computing, these capitals are frequently intellectual capital, which raises concerns about the protection of intellectual property (Arqoub, 2023, Page 76).

Skills concerns range from the capacity to recognize the necessary skill and apply it to the ability to recognize emerging technology, which presents business prospects and introduces it as a new project, business models, or labor and communication skills, in addition to technical and electronic leadership skills. For entrepreneurs, obtaining these talents is a significant problem, though.

**Cybercrimes and cyberattacks:** Just like any other organization, digital leadership has risks and difficulties when it comes to cybersecurity and the threat of cybercrimes and cyberattacks.

Financial financing is one of the biggest challenges that entrepreneurs face when trying to turn their ideas into reality or expand their businesses. This is due to several reasons outlined by Mahmoud (2023):

- Limited private sector confidence in youth entrepreneurial projects.
- The inability of business incubators to support and accommodate various entrepreneurial projects.
- Sponsors prioritizing profit goals over financing emerging companies, which are often seen as risky due to unstable political and economic conditions.
- Inadequate legislation and regulations governing entrepreneurial work and the failure to develop laws that support and encourage entrepreneurs.
- Weak government policies that fail to stimulate youth entrepreneurial sectors and limited official procedures supporting them, such as tax deductions and simplified licensing and registration processes.
- Technology challenges: Technology is the basis of creativity and excellence, but the rapid change in the development of technology poses a challenge facing entrepreneurs and puts them in a race against time.

Fourth: Ways to support the development of digital entrepreneurship and the development of entrepreneurial skills: Digital entrepreneurship is a modern entrepreneurial method that aims to develop the digital economy and can achieve positive results at all economic, social, and political levels, but this method requires the provision of appropriate infrastructure, including all aspects for establishing entrepreneurial projects and It is important to point out in this aspect the need to pay attention to the following aspects: (Ministry of Communications and Information Technology, 2021, pages 11-12)

- Developing the investment readiness of startup companies: It contributes to raising the rate of readiness of startup companies and increasing their opportunities to obtain investment or financing that helps them grow and expand digital leadership through:

- Increasing their access to financing and investment.
- Introducing financing products and available financing opportunities and stimulating entrepreneurs' and investors' understanding of the digital transaction environment.
- Increasing the level of investment awareness and mechanisms for obtaining appropriate investment for a digital startup company and preparing it for more digital investments.
- Adopting specialized training curricula to introduce the requirements of the investment environment in local and international emerging companies, for example, how to prepare financial statements, how to prepare a feasibility study, and present ideas and innovation, etc.

- **The regulatory environment for entrepreneurship:** through:

Abdel Rahman Mahmoud's article, Challenges facing entrepreneurship and opportunities available during 2023 in Media Sustainability, January 23, 2023, online article available on the website: <https://ijnet.org> Access date: (07/20/2023)

- Legislation and systems should be developed to support digital business growth and increase the contribution of emerging digital companies to the economy.
- Activating the role of cities and technical free zones because of their role in supporting and enabling entrepreneurship, stimulating research and development, and attracting technical investment.
- Awareness of the importance of digital entrepreneurship.
- Facilitating and activating the role of the digital community and enabling individuals to reach entrepreneurial communities to exchange knowledge and experiences, by developing programs to enhance the culture of digital leadership, creativity and innovation among community members. In addition to enriching the digital community with ideas for entrepreneurial projects, supporting the growth of its commercial awareness, and introducing it to the importance of digital leadership for the individual and society as a whole.
- In addition to participating in pioneering forums and seminars to exchange international experience, enhance the culture of digital entrepreneurship, and pay attention to developing local digital capabilities and skills by providing specialized and intensive training programs in the field of digital entrepreneurship in modern digital methods and emerging technologies.

- **Digital accelerators and incubators:** This means:
  - \_ Developing the digital entrepreneurship system according to international best practices and attracting and developing the best digital entrepreneurship platforms to accelerate digital business and provide the best means of support and services, to grow emerging digital companies capable of creating promising investment opportunities and creating new job opportunities and thus enhancing the growth of the national economy.
  - \_ Providing an attractive environment for emerging digital companies by implementing local digital business incubators and accelerators and attracting international experts to develop pioneering digital business models.
  
- Supporting the digital skills of local entrepreneurial talents through:
  - \_ Developing intensive training programs and camps specialized in the field of leadership and emerging technologies.
  - \_ Working to develop a platform that connects financial and local technical talent for entrepreneurs.
  - \_ Increasing the proportion of individual investors in the digital entrepreneurship environment. Ensuring the development of training programs and workshops centered on the investment environment in local and international start-up companies.
  
- **Government support:** Government support has two basic roles to improve and facilitate business activities, which are (Heikal, 2022, page 439):
  - \_ **Providing a strong digital infrastructure and supportive policies:** The digital infrastructure plays an important role in facilitating and promoting entrepreneurship, and the Internet includes the provision of protection and electronic security factors, personal computers, and telephone lines.
  - \_ **Institutional support for digital business development:** through establishing digital business institutions, increasing investment in the field of information and communications technology infrastructure, enhancing the use of e-commerce applications to influence global markets, and increasing the ability to improve innovation, business organization, and commercial projects.
  
- **The role of universities:** University centers are considered an essential element for innovation, training entrepreneurs, and enabling them to link knowledge and technology with sustainable development.

## Conclusion

Digital leadership is a process that heavily relies on digital technology to grow, build and develop businesses. It aims to bring together human efforts in a way that enables them to utilize their capabilities and modern techniques to achieve specific goals with minimum time, effort and cost. It is considered one of the most important factors that contribute to the progress and growth of the digital economy, as well as stimulate creativity and innovation. However, to achieve this, it is necessary to provide many requirements to advance digital entrepreneurship,

improve its digital services and products, and contribute to its sustainability and development to keep up with the evolving needs of the time and future updates.

### **Study Results:**

Based on the findings of the study, we will present the most significant results as follows:

- The growth of digital entrepreneurship and the development of entrepreneurial skills require regulatory, technical, human and financial requirements. Focusing on these areas will enhance the effectiveness of the entrepreneurial digital community and introduce new ideas and projects into the digital community. This confirms the validity of the first hypothesis.
- Despite the Algerian government's efforts and reforms to develop the information and communications technology sector, the country is not reaching its full potential as a leader in various sectors. The legislative and regulatory environment related to the information and communications technology sector is weak, which affects the effectiveness of the business and innovation environment. This leads to slow and complex procedures for establishing entrepreneurial projects.
- Algeria lags behind most Arab countries in network readiness indicators for the general environment that supports the digital economy. The country scored low in the information and communications technology infrastructure and skills supporting this sector. The digital government services index also showed weakness due to the government's inadequate use of information and communications technology. However, Algeria scored positively in the good education index due to free education in all stages.
- According to the Global Information and Communications Technology Report, Algeria ranked very low in the world ranking of countries based on network readiness indicators.

In conclusion, the second hypothesis that Algeria provides a good environment that supports digital entrepreneurship was rejected based on the findings of the study.

- Digital leadership requires changing organizational culture, processes, approaches and tools used in traditional business and improving the use of digital technology to improve productivity and operational efficiency, reduce costs and increase revenues.
- Digital leadership has the potential to enhance productivity, income, and social well-being by creating job opportunities in new markets and increasing job opportunities in some existing professions.

Digital leadership aims to provide various benefits anywhere and anytime, leading to quality improvement, enhanced performance, speedy implementation, and reduced cost. However, there are several challenges that limit the effectiveness of digital leadership. The most crucial challenges include organizational obstacles and technical obstacles. Organizational obstacles can be attributed to the difficulty of keeping up with the rapid development of technology, the lack of necessary infrastructure for the growth of digital leadership, the absence of technology experts, and a weak interest in technology. Technical obstacles, on the other hand, are related to the lack of hardware and software. In the field of

entrepreneurship, there is also a lack of training courses, motivation for entrepreneurs, and financial resources necessary to establish entrepreneurial projects.

To achieve its desired goals, digital leadership requires an excellent, comprehensive environment that supports and facilitates development and change. It should also incorporate everything new and innovative in the information and communications technology sector. Furthermore, electronic leaders must deal efficiently and effectively with technology, have the ability to innovate and re-engineer organizational culture, create knowledge, and emphasize the role of the private sector alongside the government sector as a driving force for the success of entrepreneurial projects. This confirms the validity of the third hypothesis.

Based on the previous findings, we can suggest several recommendations, which are summarized as follows:

- The Algerian government should digitize the economy by introducing digital services and products across various sectors to reap the social and economic benefits.
  - Algeria needs to rethink its policies and strategies to advance its digital leadership sector. These policies should include new dimensions that address all economic, social, and environmental aspects, and leverage the benefits of digital technology.
  - Educate the community about adopting entrepreneurial thinking as an alternative to relying on government jobs. This will help create new job opportunities, reduce poverty, and raise the standard of living.
  - Raise the awareness of university students, develop their abilities related to creative thinking and pioneering work, and provide them with training that will enable them to perform their developmental role.
  - Include digital entrepreneurship education as a specialization within teaching curricula in universities and scientific colleges.
  - Support and motivate entrepreneurs during the initial stages of preparing their pioneering projects and provide the necessary financial resources.
  - Focus on providing the necessary technological infrastructure, especially in remote and isolated areas, to empower their residents. Having an infrastructure for data and communication technology enables the transition to the global economy.
- The need to set up centers for digital entrepreneurship and offer training spaces outfitted with all the latest technology, overseen by professionals with expertise in this domain.
  - Improving human resources' technological proficiency to work with contemporary technology tools and devices.
  - Assigning priority by the state to an investment climate that is reliant on originality, creativity, and scientific research.
  - Conducting continuous discussions with entrepreneurs to identify impediments and explore strategies to confront all issues.
  - Offering the technical capability required to enable digital leadership in all of its goods and services.

- Seeking an independent existence and not depending on employment in the public sector.
- Concentrate on developing the institutional, governmental, and legal frameworks, as well as the social milieu that supports entrepreneurial endeavors, as the essential building blocks for digital leadership.
- The infrastructure has to be updated to facilitate the usage of Arabic in digital material, create multilingual content, and improve digital inclusion, particularly in rural regions.
- Forming partnerships with global companies and academic institutions that specialize in digital business to develop professional competencies and strengthen capacities in knowledge economics. Hence, helping to develop a notable generation of digital business owners.
- Increasing security by establishing the required protocols for data security and thwarting online fraud.
- Stressing the need of staying up to date with technical advancements, outlining the administrative and security prerequisites for digital leadership, and recognizing and attempting to overcome the difficulties and roadblocks faced by digital entrepreneurs.

## Appendices:

**Appendix (01):** Algeria ranks #124 in the 2022 Global Information and Communication Technology Report's network readiness indicators.

Year	value		Ranking	
	2021	2022	2021	2022
Institutions	52.5	104	/	99
Research	29.8	74	/	82
Infrastructure	31.8	96	/	102
Financial market development	23.7	132	/	125
Evolution of the business environment	14.7	124	/	120
Knowledge and technology	8.1	125	/	118
Innovation outcomes	10.3	118	/	109
	-	115	16.7	115

**Source:** Soumitra Dutta, Global innovation index 2022

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**Appendix (02):** Algeria's rank compared to Arab countries according to the Arab Digital Economy Index report for the year 2022

countries	UAE	Bahrain	Qatar	Jordan	Oman	Morocco	Saudi Arabia	Tunisia	Kuwait	Lebanon	Egypt
Rank	1	2	3	4	5	6	7	8	9	10	11
value	85.69	74.14	71.92	70.39	66.45	65.60	65.40	63.15	62.51	53.31	50.82
Countries	Algeria	Djibouti	Moritania	United Qomor	Sudan	Iraq	Seria	Yaman	Lybia	Soumalia	Palestine
Rank	12	13	14	15	16	17	18	19	20	21	22
value	50.15	44.18	40.01	38.78	37.59	37.55	36.52	33.12	32.94	28.07	27.68

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