Mediterranean Smart Cities Conference (MSCC 2024)
2-4 May, 2024, Martil, Morocco

Title: "Digital Entrepreneurship: An Essential Leverage to Shaping the Smart Cities of the Future"

Abstract— **Because they employ information and communication technologies (ICT) to address every issue related to urban development, smart cities have seen unprecedented growth. Smart cities' primary goal is to offer creative solutions across a wide range of industries, including big data, mobility, security, transportation, and the environment. Regarding the concept, essential components, and limitations of a smart city, experts cannot agree. There are other words that are comparable to "smart cities," as the concept is utilized globally under various names and in various circumstances. The presence of digital entrepreneurship is intended to ensure the long-term viability and sustainability of the intelligent city.**

Keywords—Smart cities, Digital enterpreneurship, Economy growth, digital economy

I. INTRODUCTION

Smart cities are emerging as urban innovation laboratories, integrating digital technologies to improve citizens' daily lives. Indeed, the cities of the 21st century face complex challenges, ranging from managing population growth to the need to create sustainable and resilient urban environments. In Morocco, digital entrepreneurship is a key driver of the transition to smart cities, redefining the way citizens interact with their urban environment. This article explores the positive impact of digital entrepreneurship on the development of smart cities in Morocco, highlighting the innovative initiatives that shape the country's urban future.

II. DIGITAL ENTERPRENEURSHIP : A GENERAL VIEW ON THE CONCEPT

Digital entrepreneurship has gained momentum thanks to digital, which is a rapidly evolving phenomenon. According to the OECD, "the digital economy has the potential to improve productivity, income and social well-being. It creates employment opportunities in new markets and increases employment in some existing professions." It has become a very important concept since it will contribute to the success of the entrepreneur, the development of the country and its economy. Some authors associate digital entrepreneurship with the creation and training of enterprises offering exclusively digital goods and services (Mankevich and Holmström, 2016; Guthrie, 2014; Quinones et al., 2013; Balachandran et al. 2013). While other authors are of the view that digital entrepreneurship may involve the digitization of part or all of the entrepreneurial process (Yaghoubi et al, 2012; Jelonek, 2015; Hull et al., 2007). In other words, products and services can be both digital and physical. We can say that digital entrepreneurship is a form of entrepreneurial that consists of seizing opportunities exclusively on the Internet, through new digital technologies, for the creation of business wholly or partially electronic and that, regardless of the nature of the product or service offered, as it brings a purely digital added value for the consumer

III. OVERVIEW ON THE TERM OF SMART CITIES

By digging and searching for the term "Smart City", it turned out that it was not the initial term addressed by scientific researchers. Indeed, the advent of the worldwide Internet in the late 1990s as well as the crucial evolution of ICT infrastructure have promoted the use of the term "Digital City" by researchers (A.Cocchia,2014). As we mentioned earlier, the concept of "Smart City" has several analogous terms which we have tried to define, briefly, the most recurring in the scientific literature in particular: Digital City, Virtual City, Information City, U-City and Intelligent City. The term "Digital City" is identical to "Virtual City" with a common approach that is based on the creation of virtual communities using ICT for the simple vocation that lies in socializing the inhabitants; democratizing local governments and correcting the lack of public spaces through virtual spaces. Thanks to all these changes, most cities have been able to develop websites for easy and fast access to smart services (city guides, transport information, sharing government forms and policy information, employment opportunities, etc.). Who says "Digital City", also says the city of information that appeared in the late 1980s to refer to the digital environments where information is collected from local communities for dissemination to the public via web portals (Nam & Pardo,2011). Then, the digital city evolved into the U-city or "Ubiquitous City" which are the fields of

experimentation for telecom operators and equipment manufacturers. They are designed in a logic of mutuality of communication and information sharing infrastructures."(Definition of the Smart Grids site).

Several definitions have been used to the term "smart city'':

- A city is called smart when it integrates ICT and innovation systems to combine the creativity of talented residents, and institutions that value learning and innovation as well as digital innovation spaces that facilitate innovation and knowledge management (Komninos,2006). The Intelligent City thus represents a crossroads between the knowledge society and the Digital City.
- "A smart city is a well defined geographic area governed by a well defined pool of subjects able to state the rules and policies for the city government and development. High technologies, such as ICT, logistics, energy production, and so on, cooperate to create benefits for citizens in terms of well-being, inclusion and participation, environmental quality, and intelligent development."
- (Harrison,et al., 2010) defines the "Smart City" as "an instrumented, interconnected and intelligent city". "Instrumented" refers to the ability to capture and integrate real-world data in real time through the use of sensors, meters, devices, personal devices and other similar sensors. "Interconnected" means the integration of this data into a computer platform that enables communication between the different services of the city. "Intelligent" refers to the inclusion of complex weeds of analysis, modeling, optimization and visualization to make better operational decisions.

IV. IMPACT OF DIGITAL ENTERPRENEURSHIP ON SUSTAINABILITY AND VIABILITY OF THE INTELLIGENT CITY:

No one can deny the importance of Digital entrepreneurship in the development of the ecosystem of a country and in all areas. It is emerging as a central player in transforming Moroccan cities into intelligent and connected hubs [8][18][20]. By promoting innovation, digital inclusion and sustainable development, entrepreneurs in Morocco are helping to shape smart cities [3] that respond to the evolving needs of citizens while positioning the country at the forefront of the digital urban revolution.[4]

A. Catalyzing Technological Innovation :

Digital entrepreneurship plays a central role in catalysing technological innovation in smart cities [11]. Startups are emerging with innovative ideas, ranging from smart mobility applications to waste management platforms, transforming the way citizens interact with their urban environment[5][8]. Indeed, the emergence of a dynamic startup ecosystem in Morocco promotes the creation of innovative enterprises dedicated to smart technologies. Incubators and accelerators support these startups by providing them with resources, mentoring and funding opportunities, thus contributing to the continuous growth of digital entrepreneurship.[2][12][16]

B. Co-creation, Citizen Engagement and Improving Citizen Experience

Digital entrepreneurs redefine the citizen experience by introducing user-friendly applications and personalized services [9]. Urban service applications facilitate access to public transport, while citizen participation platforms strengthen community engagement in urban decision-making. Co-creation with citizens is crucial to the success of digital entrepreneurship initiatives [12]. How can entrepreneurs facilitate active citizen engagement in the process of designing and implementing digital solutions? How can we ensure that citizens are partners in developing their own urban experience? The very essence of digital entrepreneurship in smart cities lies in creating solutions that are relevant to citizens. Startups are emerging with applications that facilitate mobility, simplify access to urban services and promote citizen participation. However, alignment with the real needs of citizens requires a deep understanding of their diversity and expectations. Moroccan mobile apps are revolutionizing citizen experience. Solutions enable citizens to report problems quickly, participate in polls on urban projects, and access real-time information on local events, thereby enhancing community engagement and participation.[17][20][27]

C. Digital Inclusion, Access to Services and Equity:

Digital entrepreneurship has the power to promote digital inclusion by creating solutions that are accessible to all. Digital equity initiatives reach under-represented communities, thus reducing the digital divide and ensuring that the benefits of smart cities are extended to the entire population. Digital entrepreneurship contributes to bridging the digital divide in Morocco by developing solutions that are accessible to all segments of the population. Government applications offer online services, allowing citizens to access public information, pay bills, and interact with municipal services in a transparent manner.[21][24]

D. Cybersecurity :

Data mining is at the heart of digital entrepreneurship in smart cities. However, privacy is becoming crucial. Digital entrepreneurship in Morocco pays particular attention to cybersecurity and data protection. Companies are developing advanced solutions to ensure information security, thereby increasing citizens' confidence in the use of digital technologies. [2]

E. Connectivity and Smart Mobility:

Digital entrepreneurship in Morocco has introduced innovative solutions to improve connectivity and mobility in cities. Moroccan digital entrepreneurs are developing smart urban resource management solutions. Car rental applications, public transport booking platforms and intelligent navigation systems are emerging, thus facilitating citizens' travel while optimizing the use of transport infrastructure. Connected sensors monitor the consumption of water, electricity and other resources, enabling more efficient and sustainable use of urban infrastructure.

F. Challenges of Inclusion and Equity

Digital entrepreneurship initiatives can involuntarily increase social and economic disparities. Challenges of inclusion and equity arise when segments of the population have limited access to technology or when certain communities are neglected

[19]. How can we ensure that digital innovation benefits everyone, thus removing the digital divide and contributing to a more inclusive society?

V- EXAMPLES OF THE INVOLVMENT OF MOROCCAN'S SMART CITIES

Acordding to some resarchers in Academia, several cities in Morocco have begun to integrate smart technologies to improve the quality of life of citizens and optimize urban resource management (2022). Here are some examples of smart cities in Morocco:

Cities	Contributions
casablanca	• Intelligent Transportation Systems (ITS): Casabranca has implemented intelligent transportation systems, including mobile applications for real-time transport tracking, intelligent light management, and development of carpooling solutions. • Waste Management: Smart waste management initiatives have been launched, using sensors to monitor container filling levels, optimize collection routes and reduce costs.
Rabat	• Intelligent Lighting: Rabat has invested in intelligent lighting solutions to reduce energy consumption. Lamps equipped with sensors adapt to ambient brightness and can be controlled remotely. • Citizen Participation Platform: Rabat has developed a digital platform for citizens to report urban problems, participate in public consultations and monitor development projects.
Marrakech	• Intelligent Tourism: Marrakech uses intelligent technologies to manage tourism in a sustainable way. Mobile apps provide information on tourist attractions, travel tips, and encourage environmentally friendly practices. • Water Management: Intelligent water management solutions have been implemented to monitor and optimize the use of water resources.
Tangier	• Intelligent Port: Tangier, as a major port, has integrated intelligent technologies to optimize the management of cargo flows and port operations, thereby improving logistical efficiency. • Urban Connectivity: Efforts are being made to enhance urban connectiveness, including through the deployment of public Wi-Fi networks and the development of mobile applications to facilitate access to urban services. These examples illustrate how different Moroccan cities are gradually adopting smart city practices to meet contemporary urban challenges and offer better quality of life to their citizens. The initiatives cover a wide range of areas, from mobility to waste management to safety and citizen participation.
Fez	• Digitization of Public Services: Fez has undertaken initiatives to digitize public services, allowing citizens to access administrative information online, pay bills electronically, and simplify administrative procedures. • Urban Security: Intelligent surveillance systems have been deployed to enhance urban security, using connected cameras and data analysis to detect suspicious activities.

V. CONCLUSION :

In conclusion, digital entrepreneurship is a key player in building smart cities. By balancing technological

innovation with social responsibility, entrepreneurs contribute to shaping cities where technology truly improves citizens' lives while preserving their fundamental rights. Collaboration between startups, governments and civil society is becoming essential to realizing the full potential of the smart cities of the future. Digital entrepreneurship is emerging as a central player in transforming Moroccan cities into smart, connected hubs. By promoting innovation, digital inclusion and sustainable development, entrepreneurs in Morocco are helping to shape smart cities that respond to the evolving needs of citizens while positioning the country at the forefront of the digital urban revolution.

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