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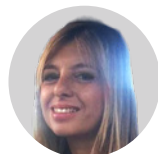
# Digital Government and Smart Cities – Developments in Argentina

Research Paper

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Cyberspace has become an integral part of modern society, which impacts every facet of our life from the electrical grids that power millions of homes to the transportation and telecommunication networks that mobilize and connect people.



Universidad Siglo21 is a private university located in Corboda, Argentina.



Universidad Tecnológica Nacional is a public university in Córdoba, Argentina.

## ABSTRACT

There is a growing awareness of the importance of regional economies – generally, a city and its hinterland – in supporting economic regeneration and expansion. A Social Ecosystem Model (SEM) has been developed that seeks to comprehend the holistic dynamics of working, living, and learning within an economically defined space.<sup>1</sup> There is an important role for organizations such as the G20 in promoting the wider adoption of a local model as a means of promoting economic regeneration, expansion, and social justice.

There are two parallel developments that need to be considered when examining the “smart city” digital government and smart government. These are convincingly demonstrated by developments in cities such as Buenos Aries and Córdoba in Argentina. A smart city is a technologically modern urban area that uses different types of electronic methods and sensors to collect specific data. City application systems use data to make better decisions by storing different infrastructure and city processes. Examples include Milton Keynes, London and other cities around the world.<sup>2</sup> Therefore, digitalization empowers citizens and makes the city smart.

Our discussion will focus on recommendations to strengthen digital innovation in government processes, the role of education and training in promoting an inclusive economy, and social and educational growth. This would imply generating actions to align the training of competencies with the Sustainable Development Goals (SDG) of both governments and citizens. These actions would make it possible to fulfil the potential of telecom-

## »A Social Ecosystem Model (SEM) has been developed that seeks to comprehend the holistic dynamics of working, living, and learning.«

munications and intelligent information systems. Therefore, ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection and job opportunities, while tackling climate change and environmental protection.<sup>3</sup>

Global cities and city regions provide a crucial context for the exploration and development of the social ecosystem model. We argue that cities such as London, Guangzhou, Shanghai, Tokyo, and New York can be understood as “supernova cities,” with a mono-center and convergent travel to work patterns.<sup>4</sup>

Looking towards Latin America, Buenos Aires – officially the Autonomous City of Buenos Aires – the capital and primary city of Argentina, is well advanced in becoming a smart city. By 2020 it had digitalized 50% of its procedures or government service transactions. This is expected to rise to 90% in 2023. Administrative and repetitive processes have been reduced or simplified by digital means. The opening of its systems gives greater

visibility to young entrepreneurs, academic opportunities, and start-up companies who are thus able to train new talent and more easily access their markets. In the central region of Argentina, in relative isolation, the distinctive region of Córdoba has shown that territories are ecosystems for the generation of knowledge and social empowerment, capable of creating social and economic value, where local and regional governments, and their basic public services, play a fundamental role as guarantors of citizens’ access to health, water, sanitation, education, employment or housing.<sup>5</sup> Despite the effects of the pandemic and the resulting economic crisis, Córdoba has created a modern and innovative state with a technological platform that allows access to different procedures and citizens’ web services. More than 1,100,000 digital citizens are registered in a digital platform (CiDi or Digital Citizen platform in Córdoba Province)<sup>6</sup> and since the current management of the city of Córdoba came to power, almost 100 procedures have been digitalized, allowing the services to be brought closer to the residents of the city (VeDi or digital neighbor platform in the Córdoba capital city).<sup>7</sup>

Córdoba has developed several strategies with the aspiration of becoming a smart city through digital transformation, circular economy and innovative mechanisms to position the city globally. According to an Argentine national survey, Córdoba ranks first in the category of “Provision of Online Services.”<sup>8</sup> The new regime has prioritized the construction of a smart city and the modernization of the state-region with the aim of improving its citizens’ quality of life. It has determined to implement an open innovation strategy,

with GovTech facilitating both public and social innovation services. GovTech is a whole of government approach to public sector modernization.

Moreover, under this framework the city of Córdoba has received technical assistance from CAF Development Bank of Latin America and two venture capital funds (ALAYA Capital Partners and Dux Capital) to launch the “Córdoba Smart City” (CCI Fund / Fondo CCI). This is the first GovTech-targeted fund in Latin America.

The fund pursues strategic objectives:

- Promotes the modernization of the public sector and its innovation capacity
- Contributes to the development of Córdoba as a smart city
- Supports the growth of startups with GovTech and smart city solutions, and
- Transforms the city of Córdoba into a regional innovation hub<sup>9</sup>

In addition, the government of Córdoba considers young entrepreneurs to be fundamental actors in achieving structural transformations on the road to sustainable development. High school and university students as well as young professionals have participated in workshops for the exchange and discussion of the main concepts of the Open Government paradigm and the Sustainable Development Goals (SDGs).<sup>10</sup> One of the important topics discussed was Open Government. Open Government strategies and initiatives are based on the principles of transparency, integrity, accountability and stakeholder participation, according to the OECD.<sup>11</sup>

A Further example is the activity of Universidad Siglo 21, a private university with headquarters in Córdoba.<sup>12</sup> It has a strong social commitment to the training of professionals. It is committed to contributing to the SDGs and presents a yearly sustainability report.<sup>13</sup>

Another example is the Universidad Tecnológica Nacional<sup>14</sup> at Córdoba which has been rapidly changing their curriculum for engineering education to accommodate to the skills and requirements of young entrepreneurs and demands of the labor market.

Picture 1 illustrates an International Engineering Workshop at the Universidad Tecnológica Nacional during March, 2019, supported by the British Council and UCL, where engineering students, academics, government authorities, and employers were able to talk about the need to match training and education to labor market information in the field of engineering in the regional ecosystem.

The challenges were to create sustainable, inclusive, educational, social and economic growth based on city regions. This differs from the exclusionary “elite” entrepreneurial/technological ecosystems of globalized centers such as Silicon Valley and the City of London, where talent is imported from around the world, and is



based much more on area-based collaborative networks of educators, employers, local government, civil society and local anchor institutions. Here, open digital technologies are used to communicate, facilitate skills development and encourage civic participation. (The Hamburg G20 Final Communiqué aimed to “bridge digital divides along multiple dimensions, including income, age, geography and gender,” and to “ensure that all our citizens are digitally connected by 2025”). This contrasts with the much-lauded “high skill ecosystems.”<sup>15</sup>

## »Global cities and city regions provide a crucial context for the exploration and development of the social ecosystem model.«

Of particular importance in the social ecosystem model are the spatial and place-based approaches to Vocational Education and Training (VET). New forms of partnership working are emerging, with technical and higher education bodies acting as anchor institutions for skills development within a smart, regional economy, supporting urban reform and renewal.<sup>16</sup>

While such elite ecosystems do link the worlds of work, living and learning, they

do so in a reversionary sense, creating detached elites by acting as talent magnets for graduates from elite universities, creating urban social displacement. They do not bridge the social divide, rarely interacting with a new underclass. Consequently, such systems are potentially unstable. The skills involved can be relocated on no more than a whim, with little legacy left to their urban host.

A social ecosystem is supported by socially designed digital technologies, as in the case of Buenos Aires and Córdoba. This involves a leading role for horizontal networks and local anchor institutions, involving a variety of social partners in the public realm and private sector.<sup>17</sup> The first stage of this model is the identification of a shared public mission, or narrative, and agreement on local leadership to help bring together the different social forces and their specialist functions within a defined geopolitical space. Education, anchor institutions and new, digitally supported networks will play a crucial role in defining the parameters and functions of such a social ecosystem as being place-based. VET anchor organizations can meet the needs of a wide range of learners and social partners by providing bridges and interactions between educational and work-based settings and facilitating ladders of progression for local citizens through partnership working and shared personnel with employers of all sizes. This creates a series of urban-focused developments that embrace the new local economy and high-skilled work; housing development, transport connectivity and sustainable living; integrated health and social care services; and connective digital developments. Life-long learning is at

the heart of these developments, because that provides the prospect of inclusive and sustainable growth, moving the emphasis from a formal, acquired qualification towards a continuous process of maintaining competence.<sup>18</sup>

We recommend that G20 policy makers work towards establishing a devolved Social Ecosystem Model (SEM) that seeks to promote inclusive economic, social and educational growth. This would involve the encouragement of global-narrative educational leaders to move their emphasis from skills supply (based on qualifications) to a greater emphasis on skills co-production between different social partners, including the entire local community, to map out future sustainable ways of working, living and learning in rapidly changing global city regions.

The notion of spatial digital connectivity is described in the concept of the “City as Platform,” in which the networked city sees citizens as co-designers, co-producers and co-learners. Cities can now utilize four connective assets – people, data, infrastructure and technology.<sup>19</sup>

Skills training for regional economic activity is crucial. As VET institutions increase in scale and become more multi-faceted, they come to support economically coherent regions, growing closer to employers, politicians and civic leaders.<sup>20</sup>

Equally important is for a regional skills system to involve a complex set of relationships between vocational and academic education providers and employers. These are embedded in a yet more complex regional economic system. Organizations within these systems need supply chains and skills networks which

may serve many similar organizations, and which are supported by a periphery of skills and capabilities that are crucial to their operational needs – a network of competence.

## »Particularly important in the social ecosystem model are the spatial and place-based approaches to vocational education and training.«

For a system to be successful, it must assess the replacement needs of public and other civic services, work with employers to assess future skills requirements, and collaborate in order to provide appropriate learning environments. Such institutions recruit staff from among those active in the local economy and this helps establish communities of practice that can maintain a high awareness of developing skills needs and employment patterns. These institutions must develop their vision through their understanding of the character of local economic activity, the interrelated nature of supply chains, and the professional and technical competencies necessary to support them. It is in this way that regional economic areas achieve their distinctive nature: a set of interrelated, networked competencies.

Finally, the deployment in smart cities of networks such as 5G and advanced technologies will support the enablement of critical applications such as the Internet of Things (IoT) and sophisticated traffic and proactive processes automation, among others. In addition, the optimization of the use of telecommunications resources will make it possible to manage highly efficient and automated systems, increase citizen traceability and the preservation of security and cybersecurity, and prioritize any issues such as natural disasters.

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