Digital Arabia Network
Smart City and Citizen Participation
Memorandum
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Executive Summary

For the past few years, smart cities have been a subject that symbolizes, both for citizens and public administrations, futuristic urban landscapes, interconnectivity, sensors - all sorts of boxes that ought to be checked to become a "smart" city. But, technology is not a panacea for the challenges cities are facing today. Smartness does not come with a universal definition.

More elaborate definitions point to ideas such as frugality or increased quality of life, but tend to forget or to minimize the role of citizens as producers (as opposed to beneficiaries) of this intelligence. Sectors specific to the smart city fail to consider citizen participation as a lever for better services. Barcelona's digital strategy and other cited examples below, embody a new approach to smart cities - one that puts the city's ecosystem as the main driving force of its renewal.

This memorandum aims to gather and expand on the following core recommendations for the design of innovative and citizen-centric public services:

1. Leave behind the preconceived imaginary of smart cities.
2. Define your own « smartness ».
3. Find a public innovation model that best suits the dynamics of your sectors.
4. Trust your citizens and local ecosystem.
5. Create a strategy based on principles of privacy and ethics.
6. Create infrastructures based on open data and open source.
7. Measure your impact based on indicators and standards established with the city's ecosystem.
8. Be experimental and iterate with your citizens until innovation is scaled up.

The Smart City concept is a broad theme that represents as many aspirations as there are challenges in its understanding and application. Each city must develop its digital strategy with the efficiency of its public services, the quality of life of its citizens and the frugality of its innovations in mind. To do this, cities would have to move away from a preconceived vision of the smart city, blind spending of money and a race to the latest innovation, and instead work towards implementing a citizen-focused action plan.

8 recommendations to implement a Smart City model based on citizen participation

1/ Leave behind the preconceived imaginary of smart cities

For the past few years, *smart cities* have been a subject that symbolizes, both for citizens and public administrations, a new era for cities. Said new era would give priority to more efficient public services, better adapted to citizens' needs and this, with the help of a wave of technological advances. However, this umbrella concept of *smart city* is too often lost in the vagueness of its definition and seems wrongly portrayed by the marketed and preconceived ideas too often applied to this concept.

What are these preconceived ideas? Smart cities equal the massive mobilisation of technology, a city-wide inter-connectivity and hyper-connectivity and an unequalled quantity of data collected for a better design of public services. What is the risk of understanding smart cities solely based on these ideas? Local administrations and other public institutions run the risk of embracing a technosolutionist approach to *smart cities* which often leads to leaving behind citizens' actual needs.

2/ Define your own « smartness »

It appears that even the most mature public bodies, such as the Commission Nationale de l'Informatique et des Libertés (CNIL) in France, contribute to this techno-centric approach by defining the smartness of a city by its capacity to "improve the quality of life of city dwellers by making the city more adaptive and efficient, using new technologies that rely on an ecosystem of objects and services"[1].

Not taking a critical approach to « using new technologies » and seeing these as the main route to better and more productive public services tends to contribute to a maximalist approach of smart cities - one that places a bigger priority on cost-minimization and city-level competitivity rather than citizens' actual needs.

Although this latter approach does lead to important notions such as frugality or increased quality of life, the role of citizens as producers (as opposed to beneficiaries) of this *smartness* is left aside.

If we go in the direction of the maximalist approach, focusing namely on a city's adaptability, efficiency, and quality of life through innovation, then why not include the end-users - the citizens - in the process of co-constructing a city's service or product innovations?

In order to draw a citizen-centric innovation strategy, cities have to reverse the trend inherent to technolutionism and blind public procurement and ask the question: what are our citizens'

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[1] Commision Nationale des l'Information et des Libertés (CNIL), "Smart City".
https://www.cnil.fr/fr/definition/smart-city

real problems and how, eventually and only eventually, can technology be used to better address these problems? How can we design city-wide technologies to transform public services on the basis of ethical principles, personal data protection and social impact? It then becomes clear that *smartness* can only be defined according to the dynamics of one's own city or country rather than a universal technological pattern or ideal.

3/ Find a public innovation model that best suits the dynamics of your sectors

For instance, in the past 4 years, French decision-makers have been hearing about at least three innovation sectors dedicated to government or citizen technologies: GovTech, CivicTech and PolTech.
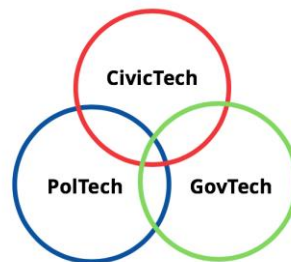
According to the sponsors of the model above, GovTech is synonymous with any type of innovative solution dedicated to or produced by public institutions, while CivicTech is understood as the set of tools deployed by civil society for greater citizen engagement, and finally, PolTech groups together technologies intended for all types of political action (campaigns, surveys, etc.).

Other actors, however, approach the concept of GovTech in a much broader way. They consider GovTech as representing all technological innovations that aim to remodel public services at city or state-level across all sectors.

In other words, in this second approach, GovTech would be an umbrella term containing all technologies applied to health (HealthTech), law (LegalTech), medicine (MedTech), finance (FinTech), mobility (MobilityTech) and finally democracy and civic engagement (CivicTech). Public.io, a GovTech accelerator in the United Kingdom, suggests the following definition: "GovTech is the use and purchase of innovative technological solutions by a public player in order to improve either its internal organisation or the services it provides"[2].

If we follow this definition, the GovTech market in France would represent "a public market potential [...] of around €14.5 billion in 2019"[3], with EdTech and the "smart city" sector (which the report defines as "the energy field alone") accounting for more than a third of the market (as illustrated by the chart below).

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[2] Public.io, "GovTech en France : état des lieux et perspectives" (2019), p.6.
shorturl.at/BM159
[3] ibid, p.24.
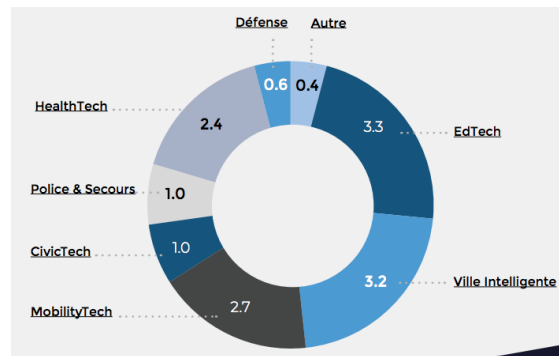
Source: [Report on GovTech in France, Public.io](link) (in billion €)

[public.io](link)'s model seems to imply that CivicTech, i.e. digital technology for citizen engagement, is seen as another « market opportunity » among many and would be excluded from the design of other services offered by the city. In this sense, the "smart city" sector (a sector that would benefit from a clearer definition here) or the mobility sector would develop only through the "use and purchase of innovative technological solutions" rather than through ongoing citizen feedback - which would help define the actual needs of these sectors.

Therefore, in order to draw a pragmatic smart city action plan, cities must find the model that best suits their public innovation sectors. In other words, cities should map the sectors that face the most challenges in terms of service delivery (mobility, energy...), and conceive a public innovation model that best represents its sectors' dynamics. In that sense, understanding its public innovation model represents an important step towards knowing how to implement a smart city strategy and where to include citizen feedbacks and actions.

4/ Trust your citizens and local ecosystem

Simone Beth Noveck, director of the [GovLab](link) (a research centre at New York University dedicated to improving the quality of life through new methods of governance), proposes in her book, *Smart Citizens, Smarter State*[4], the concept of "expert citizens".

According to the researcher, citizens' daily experience of public services is a fundamental source of information for the design of public services. As mentioned in her book, "the man who wears the shoe knows best that it pinches and where it pinches, even if the expert shoemaker is the best judge of how the trouble is to be remedied"[5]. In this quote, she presents an important nuance between expertise and professionalism. Administrations are essential to understanding and converting the information collected from a group of local *experts* (citizens, researchers, NGOs) into *professional* frameworks. It is in a scheme like this one that CivicTech take all their meaning in that they become accessible and transparent platforms for collecting such information and monitoring.

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[4] *See full description of the book here:* http://smarterstate.org/

[5] Noveck, Simone Beth, "The Technologies of Expertise". *Smart Citizens, Smarter State (2015).* p.102.

French Citizens' Assembly on Climate Change

Since October 4th, within the framework of the Citizen's Convention for the Climate, 150 randomly selected citizens have been meeting to find answers to the following question: how can we reduce greenhouse gas emissions by at least 40% by 2030, in a spirit of social justice?

The UK magazine *Involve* explains the process : "With a budget of €280,000, the sortition process was done by the polling company Harris Interactive. They randomly selected 255,000 phone numbers (85% mobile numbers, 15% landlines) and in August 2019, they started proceeding with phone calls to select 150 citizens representative of the diversity of the French population, based on" the gender, the age, the qualification, the socio-professional categories, the type of territory and the geographic area.

At the end of this 6-month process, citizens presented a list of 149 measures to face the climate crisis that President Macron promised to acknowledge and implement with "no-filter".

Although the process was designed on the basis of in-person sessions with the 150 citizens, a nationwide Decidim platform was deployed by Open Source Politics to welcome ideas from all citizens. All of these contributions are then treated through intermediary syntheses and distributed during the in-person sessions. Read about how this digital participatory process fed into the French Climate Assembly here.

Elected officials are already thinking of replicating these citizens' assemblies in other sectors and at the local level. For instance, Paula Forteza, deputy for the French of Overseas Territories, suggested a citizen convention dedicated to the co-creation of an ethical framework around new technologies.

5/ Create a strategy based on principles of privacy and ethics.

As illustrated with Barcelona's case below, a city or country-wide digital strategy must respond to its own privacy and ethics-related challenges. It should also reflect the "tactical and strategic use of digital tools for organisation, communication, and collective action."[6] Such notion of a critical use of digital tools is the core idea of the *technopolitics* movement - a movement that underlines the inherent political nature of technological development. According to such movement, data privacy and ethical principles can only be guaranteed by technological frameworks that are built around the respect of such principles.

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[6] Toret et al (2013)

The city of Barcelona's digital strategy

Since the inauguration of Ada Colau in 2016, the city of Barcelona has proposed several innovative approaches as part of its digital action plan. The main aim of this strategy was to counter the arrival of multinationals and the entrenchment of *surveillance capitalism* - a form of capitalism fuelled by the gold of the 21st century: data. This struggle has influenced the way the city has designed its services, integrating more principles such as personal data protection, social impact and ethics.

The team that put together this action plan, which includes Francesca Bria, Barcelona's Data Protection Officer, has also designed this digital strategy around its main lever: its ecosystem. According to her, the government and the startups, but also, and above all, the bottom-up innovators (community of makers) and citizens, have been essential to the realization of the various projects. In her own words, "it has become necessary to focus on empowering citizens through education, the future of work, basic income schemes and social inclusion" but also through platforms for contributions and debates such as Decidim, created in the framework of this action plan.

Bria defends it: public administrations do not need to wait for the next multinational company to impose its technology and data capture model. It is instead about co-creating technological alternatives (if a technological dimension is needed) with its local ecosystem.

Among the initiatives proposed by the city of Barcelona, the following stand out in particular:
- The maker districts: entire districts dedicated to the circular economy and new production methods.
- Whistleblower platforms to encourage citizens to identify actions and signs of corruption.
- Data commons: models that bring together data, storage and IT infrastructure with the services, tools and applications commonly used to manage, analyze and share data to create an interoperable resource.
- Decidim: an open source platform for participatory democracy that allows citizens and the entire city ecosystem to contribute to the city's digital strategy or any type of project that requires citizen input.

6/ Create infrastructures based on open data and open source

Open data is defined by Bastiaan van Loenen, Glenn Vancauwenberghe, Joep Crompvoets and Lorenzo Dalla Corte in Open Data Exposed as data "that has no barriers to reuse". Open data would therefore aim "to optimise access, sharing and use of data from a technical, legal,

financial and intellectual point of view"[7]. Open data would then contribute directly to the establishment of a virtuous model based on information sharing and the creation of collective intelligence at the city level.

Related initiatives such as "data commons" or "data collaboratives", which the GovLab define as a situation "where private and public actors work together around their data"[8] are also representative of this model.

Open source, i.e. the opening up of a software's source code, is in the same way a possibility to pool the research and development done to implement and develop new technologies. Open source softwares are progressively integrated into the municipal systems of countries around the world. Why ? Aside from representing cost-saving opportunities, they also appear as a way to quickly implement and adapt these technologies to a city's own technological and democratic needs (see examples below).

In addition to the mutualisation of investment (money and R&D), the open source model has several other advantages: bringing more trust through a technology that defends transparency, guaranteeing less corruption due to the openness of the data centralised or adopting an agile model with product development that is done thanks to needs confirmed by users.

In today's economy, data and source codes openness is becoming increasingly expected. Economic and management models (holacracy, the 4.0 industry) themselves develop on the basis of collaboration and data sharing. Actors such as the Public Money Public Code Foundation put forward this argument.

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[7] *Open Data Exposed,* posted on October 31, 2018 by Stefaan Verhulst <https://thelivinglib.org/open-data-exposed/>
[8] "From open data to data collaboratives: panel reflects on the case for data stewardship" posted on March 11, 2019 by GovLab admin http://thegovlab.org/from-open-data-to-data-collaboratives-panel-reflects-on-the-case-for-data-stewardship/

Decidim : a tool for public consultation

Decidim is an open source software developed in 2016 by the City of Barcelona. Its original aim was to co-create the city's three-year municipal action plan with the citizens and local ecosystem. Today, as Decidim's website explains, the main objective is to "help citizens, organizations and public institutions self-organize democratically at every scale".

Put differently, the tool allows any type of organization - national and local institutions, companies, cooperatives or associations - to set up a wide variety of participatory processes: participatory budgeting, public consultation, call for ideas, participatory governance, voting, petition collection etc.

Much more than a simple open source tool, it is a digital common governed democratically by its multidisciplinary community (Metadecidim) composed of public institutions, companies, universities, associations, and citizens.

Four years after its creation, Decidim has now expanded beyond its original borders and integrated a large number of countries, cities and public institutions across the world (the City of Mexico, the French Senate, Italy, Senegal, Algeria, the City of Helsinki).

7/ Measure your impact based on indicators and standards established with the city's ecosystem.

In order to measure the impact of a city's new service or product, cities should set a list of standards, open to all. Creating a list of standards makes it possible to frame the deployment of this action plan in such a way that the final objectives of, for instance, a smart city based on data protection and ethical principles, are themselves guaranteed by the way in which this deployment is achieved.

In addition, it is important to co-create a list of impact indicators with citizens, reflecting the main areas of improvement (social justice, fluid mobility…). This could be done by organizing a local assembly with citizens and groups of experts that is aimed at designing this framework of indicators.

See example of Barcelona's list of open standards, [here](#).

8/ Be experimental and iterate with your citizens until innovation is scaled up.

When deploying a smart city strategy it is important to move away from an expansive implementation but instead experiment on a smaller scale (a district, a region…). Why ? Costs are lower, proximity with the local system is guaranteed and the feedbacks on the service or product are richer in quality. It is on the basis of these feedbacks that cities are able to become

agile and cost-effective, and thus, scale services that meet with citizens' actual needs at city-scale.

See example of Barcelona's maker districts, [here](#).

> **Conclusion**
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> The smart city is a very broad theme that represents as many aspirations as there are challenges in its understanding and application. Each city must develop its digital strategy (its "smart city" strategy, if it is necessary to name it as such) with the efficiency of its public services, the quality of life of its citizens and the frugality of its innovations in mind. To do this, we would have to move away from a preconceived vision of the smart city, blind spending of money and a race to the latest innovation, and instead move closer to a model of co-construction of public services with citizens, experimentation (initially on a small scale), analysis based on performance and impact indicators established with the city's ecosystem, and iteration until the service is scaled up.