

# URBAN INNOVATION IN THE FIELD OF DIGITAL PLATFORMS

## /// BACKGROUND: WHY TAKE ACTION ON «DIGITAL PLATFORMS» ?

Today's digital tools make it possible to share data in ways that enhance the quality and effectiveness of services to individuals and optimise the impact of network use on the environment.

*« A platform is a service that acts as an intermediary, enabling access to information, content, services or goods published or provided by third-parties. More than a technical interface, it organises and prioritises content, before presenting and contextualising it for the end-user. In some cases, in addition to that shared characteristic comes an ecosystem dimension that plays out as a series of relationships between converging services. »*

The French National Council on Digital Affairs

Digital platforms thus enable efficient processing in that they interconnect the information and issues in urbanisation with the aim of economic, environmental AND societal optimisation («better quality-of-living in the city»). In France, discussion focuses on buildings, neighbourhood islands, smart cities, and «smart grids», all of which enable communication between digital platforms and objects connected up with the various local matrices.

## /// WHAT ARE THE MAIN AREAS FOR INNOVATION WHEN IT COMES TO DIGITAL PLATFORMS?

► Three main objectives can be singled out when it comes to digital platforms in sustainable cities:

- **Connected.** "Smart" is now indissociable from connected objects, personal data and virtual reality and augmented reality, proceeding from the ATAWADC (Any Time, Any Where, Any Device, Any Cloud) rationale.
- **Collaborative and OPEN SOURCE.** "Smart" implies serving residents (where housing is concerned), users (for tertiary buildings, infrastructures, etc.) and citizens (for cities, but above all, interacting directly with residents/users/citizens, both as a group and as individuals). This aspect brings into focus the question of sharing and trust.
- **Environnemental,** meaning the buildings, infrastructures and cities, which are now to become "smart", with the aim of keeping their impact on the environment to a minimum and thus optimising the way they consume, produce and discharge waste into the urban systems (water/energy/waste/mobility). Energy autonomy could even be listed as the ultimate objective.

### ► The number 1 area for application: energy

Buildings account for a very large percentage of cities' total consumption. It is vital that they be equipped to communicate, not only with the grid, but also amongst themselves, for resource-sharing purposes. It is thus a vital necessity that they be made interoperable. The Grid will expect buildings to be able to announce their generation volumes, load forecast, relief capacity, flexibility, storage capacity,

etc. The Grid will also expect buildings to be able to agree to requests from the outside. Energy management will gradually turn into well-tuned information sharing between grid and building. This will be all the more beneficial if done at the level of the neighbourhood, or even, ultimately, the city.

#### ► **Feeding into the service ecosystem**

Beyond energy management, buildings also need to be opened up to a service ecosystem, in particular through applications and platforms available in the Cloud. The urban community's players need to be able to recover information from buildings in order to develop software solutions that will be as many service vectors for all construction stakeholders: users, operators, service providers, municipalities, etc. We will be moving beyond the level of energy to reach all aspects of urban management: water, mobility, local resources, and ultimately anything that can be exchanged in cities. For this purpose, the urban environment needs to be interconnected and open in order to enable access to data for all authorised stakeholders, both inside and outside the scope.

#### ► **Access to reliable data: the strategic question around data**

In the confluence of new constraints (climate-related, demographic, economic, etc.) and opportunities (in particular arising from digital) lies an invitation to rethink the place of each player and what those players offer, on larger scales and over longer time scales, with the aim of building a more integrated approach and thereby optimising investments and the way the urban system works, for the ultimate benefit of the residents and users. With the development of digital platforms, all of the players and operators who make up the city, networks and buildings are converging to enable true interoperability between the solutions offered and taking care to ensure that they can be spread on a large scale. The simulations required upstream for this to happen are premised on one condition: access to data, which in turn, raises the question of data quality. Data confidentiality and security are central to the challenges surrounding smart buildings. The role of the trusted third-party responsible for safeguarding that security is set to be fully revamped, with the emergence of solutions such as the "blockchain", which makes it possible to record information on every "transaction", then store the collected data in a database that is concurrently public (thus transparent), fraud-proof and fully-secured. Digital platforms consequently tie in with the following fundamental challenges: interoperability of equipment, web services and API, access to data, data security, big data, crowdsourcing, , cognitive analytics, the Internet of things, machine learning (itself the fruit of artificial intelligence), etc.

#### ► **From Smart Buildings to the Smart City and value creation**

When intelligence was injected into the networks, it profoundly changed the way value is created in the system. The said system, currently understood as a chain extending from production to consumer use, is gaining depth through the numerous interactions it hosts. Consumers, who traditionally only took advantage of the flows available (energy, resources, etc.) will now also be able to produce, injecting what they have into the distribution networks. These new forms of interaction are vectors of complexity in the effort to balance supply and demand within the urban system. Only information and communications technologies can help overcome that complexity.

There are benefits and positive externalities to be derived from this change, for all the players in the electrical system, including the municipality. Multiple investment opportunities are also emerging for IT and telecommunications sector players. Smart power grids are changing traditional business and professions, and call upon players who do not usually work in the field of energy.

### /// **WHAT ACTION IS BEING TAKEN IN FRANCE TO SUPPORT THIS INNOVATION?**

► **Access to data:** France is committing to this issue through such efforts as Etalab, which is coordinating the implementation of the government's open data policy under the authority of the Prime Minister, and led by Henri Verdier. Etalab operates under the Secretariat General for the Modernisation of Public Action, directed by Laure de La Bretèche.

► **Smart Grids or Smart Cities:** mining data to optimise urban grids...

► **Digital models:** tools connected with the two aforementioned projects and which enable better decision-making assistance, and could become "smart grid" tools... Two simulators have been developed with the support of the Ministry of Foreign Affairs in Astana (Kazakhstan) [<http://www.developpementdurable.eiffage.com/fr/preparer-l-avenir/astainable-demonstrateur-numerique-de-ville-durable-a-la-francaise#1446456627>] and Santiago de Chile [[du\\_chili.html](http://du_chili.html)]

► **Connected cities (the digital revolution):** it is in this area that the data-convergence and data-mining opportunities much-touted by software companies will materialise, thereby enabling cities to enter a new era, in particular from the functional standpoint, e.g., dimension, use, forecasting needs, etc.