

**Smart city: how does sharing data contribute to improving the way we experience our day-to-day lives in the city?**



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## **Collectively deriving value from the data of the urban ecosystem: A prerequisite for the success of Smart Cities projects.**

For several decades, the use of digital technologies has been seen as a key ingredient in the development of cities. This vision has gradually crystallised into the concept of the *Smart City*, a city whose digital infrastructure enables us to make better use of collective intelligence to improve the functioning of the city and the well-being of its population.

Today, *Smart Cities* projects are multiplying worldwide. These projects usually begin with a phase of deploying digital infrastructure (sensors, mobile applications, connected objects, data processing centres, interfaces for visualising and sharing the information collected, etc.), followed by a phase of developing uses in the form of public digital services (websites, mobile services, urban displays, specialised information centres, etc.). One of the most complete examples of this approach is that of Santander in Spain, but there are many others across the world<sup>1</sup>.

One example is the city of Bordeaux in France, where digitalisation began in the mid-1990's and which today presents itself a digital city, for which digital resources are “a major force for economic, social, and environmental performance, [...] an essential tool for the development of the city”<sup>2</sup>.

*Smart City* projects have the distinction of being combined initiatives between public services, private companies, research organisations (public or private), and the city's users. They often still have an experimental dimension, and the results observed so far should be thought of as intermediate ones representing progress – or pitfalls – on which it is necessary to rely – or which it is necessary to resolve – in order to help our cities meet the challenges of the 21<sup>st</sup> century.

Among the challenges that now face *Smart Cities* is that of the governance of the data that is collected and used by their digital services.

**The ability of players in the urban ecosystem to collectively derive value from at least some of the data that they produce or use as part of their activities is, in practice, an essential prerequisite for the emergence and development of new, more appropriate services and for better leveraging the collective intelligence thus gathered.**

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<sup>1</sup> More than 1,000 Smart Cities initiatives exist in Europe as part of the Smart Cities Global Initiative programme, including more than 360 in Italy, more than 260 in Spain, and more than 80 in France. Source: <http://eu-smartcities.eu/blog/innovative-smart-cities-global-initiative>

<sup>2</sup> <http://www.bordeaux.fr>

## **Deriving value from personal and cultural data is at the core of Smart Cities projects.**

*Smart City* programmes are often still presented first and foremost as initiatives for investing in digital infrastructure, where the returns that are expected – and often achieved – are primarily related to the performance of municipal services (reducing spending on energy, roads, etc.), transport (improving traffic flow, managing parking places, real-time information about travellers), improving the environment and the health of citizens (detecting and reversing sources of air and water pollution, facilitating booking and circulation of bicycles and electric vehicles), etc.

But ultimately these technical improvements are intended to make the city more enjoyable for its users and to encourage people to become more involved in the business and the organisation of the city.

**Beyond infrastructure, it is therefore the entirety of urban services, including cultural services and ultimately the very culture itself of the city, that are modernised by a *Smart City* project.**

Professor Carlo Ratti, architect, engineer, and director of the MIT Senseable City Lab, has been teaching these concepts around the world for many years: the massive adoption of digital uses directly influences city architecture at the same time that it transforms our habits, our preferences and our behaviour as citizens. Several years ago, Carlo Ratti showed how personal data produced by the use of mobile phones makes it possible to literally “take the pulse” of a city and its population<sup>3</sup>, for example by the ability to visualise over time how its inhabitants react to public events on a local or global scale.

Our personal data, observed in a specific context such as a performance or a sports or political event, becomes *de facto* cultural data with high added value for anyone looking to better understand how cities, their architecture, and their services in general are adapted to or need to be better adapted to our habits, preferences, and needs.

The Internet giants have shown over the last twenty years how to derive value from personal data on a global scale. In recent years, they have also shown how to derive value from this data on a local scale, by progressively specialising their services for local uses on the scale of a city, a neighbourhood, and public places. The irresistible success of the digital dragons seems to be leading them inexorably toward eventually controlling the rules of the game for the practical use of personal data.

**Are local ecosystems doomed to allowing the digital giants to be the only ones who will determine the use and derivation of value from these ecosystems’ own data, and will they have to be content with a role as users<sup>4</sup> of “glocal” Internet services<sup>5</sup>, or can they organise and implement the collection of and derivation of value from local cultural and personal data on their own behalf, by placing this question at the heart of the *Smart Cities* programmes?**

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<sup>3</sup>See [www.ted.com/talks/carlo\\_ratti\\_architecture\\_that\\_senses\\_and\\_responds](http://www.ted.com/talks/carlo_ratti_architecture_that_senses_and_responds), 2011

<sup>4</sup> Or at best as regulators

<sup>5</sup> Contraction of “Global” and “Local”

***By deriving value from the personal data collected through their Internet platforms, digital leaders become key influencers of the local cultural offer. How can the urban ecosystem participate, if not in the invention, then at least in the use of these new tools that are destined to become the standards for observing and driving urban development?***

The success of services such as TripAdvisor (advice and booking for airline tickets, hotels, restaurants, entertainment, local cultural activities, and so on), Airbnb (person-to-person accommodation), Uber (person-to-person taxis) and others shows that in a few years' time, private players will be able to capture a significant share of cities' "customers" and act as key influencers for the economy and the organisation of services that directly or indirectly affect local cultural development.

These digital players, who are able to understand the preferences and centres of interest of "users" around the world, have a significant and growing influence on the way in which transport, accommodation, and food services are used and delivered, and their influence will gradually spread to the most popular local cultural services (for example, historic buildings popular with tourists). Eventually, it may extend to the full range of urban activities and services, and therefore to the very culture of cities.

In recent years, a small number of digital leaders and the vast majority of their enthusiastic users have been constructing, before our very eyes, the new rules of the game<sup>6</sup> for the running and transformation of cities. But, although digital leaders are blazing this new trail, they are not necessarily those who are best placed to collect or to equitably derive value from the full range of the data used throughout the cultural value chains.

Telecom operators, transport companies, hotels, food services, the full range of municipal services, and the providers of cultural services are logically the best positioned to capture the data for uses that concern their own services.

**In a *Smart City* project, if every player shared at least some of their data with all of the players in the programme, wouldn't this voluntary sharing – controlled by each of them at their own level<sup>7</sup> – create a sufficiently rich and precise set of data to enable everyone to develop new services that are at least as good as services that are sometimes designed exclusively based on user contributions?**

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<sup>6</sup> Rules of the game that may consist of, for example, following those who "suggest" the data

<sup>7</sup> Including citizens/consumers and public authorities

***How can the ecosystem of a Smart City organise the collection and use of local data to enable a derivation of value that is both attractive to everyone and respectful of each player's interests?***

- Are infrastructure companies/organisations (transport, tourism, hotels, food services, communication) and cultural services ready to open up and share at least some of their data to provide better services to the residents of and visitors to the cities?
- What administrative and governance role can or should cities play in initiating/promoting/organising such a movement?
- How far can/should the public authorities go in promoting openness and data sharing?
- How can the ecosystem of a Smart City work with digital players to design a derivation of value from personal cultural data that is both attractive and equitable?
- Faced with the vision, agility, and ability to execute of certain players who already operating on a global scale, is the Smart City – as a unifying project for collectively deriving value from the data of the urban ecosystem – already an outdated concept?