

**Uraía Platform
Inspiring Practices Catalogue**

**Interview with Iñigo de la Serna,
Former Mayor of Santander and Minister of infrastructures and public
works, Spain**



1. What is Santander's vision regarding SMART technologies in municipal management and its potential impact on municipal finances?

A SMART city is not only about the use of technology. It also corresponds to a new vision of the city and the way that urban services are managed. A SMART city involves transversal management and the integration between different city departments. It means using innovation to offer more and better services to citizens. The technology allows us to collect information about the city, and this knowledge must be used to support better decision-making, to optimize the use of resources and to produce greater efficiency.

For a municipality, adapting to the socio-economic changes that technology brings to urban life is a great challenge. For instance, the collaborative economy shows us how today the citizen is not only a consumer of services, but also a potential producer. Cities must be co-constructed with citizens. Our role as local governments is to offer the necessary conditions for citizens, entrepreneurs and researchers to use the infrastructure and information that the municipality owns, and to use it to produce ecosystems of innovation that will contribute to build more competitive cities.

2. What are the main initiatives you have taken to build Santander as a smart city?

We started in 2009 with a project financed by the European Union called *SmartSantander*. It entailed in the installation of an Internet of Things network in the city centre, composed of 12 000 devices such as sensors, captors, actuators and cameras which is today one of the biggest in the world. Such devices measure a variety of parameters, including traffic intensity, air humidity, outdoor noise or pollution, among others. Subsequently, we have launched a myriad of initiatives and SMART solutions based on the

IoT infrastructure and the collected data. We have worked in four areas: the improvement of public services, the increase of transparency and citizen participation, the promotion of economic development and modernising our administration.

Some specific initiatives developed in Santander to improve services' efficiency are:

- In the field of mobility: A SMART parking project where sensors identify parking spaces and relay the information to drivers through a mobile app. We have also implemented a MobiWallet offering a centralised payment system based on NFC and smartphone technology and applied to different transportation modes to facilitate intermodal commuting.
- In the field of water: Sensors have been placed in public gardens to irrigate them only when needed, saving water and money to the city. The municipality is also working together with the water company to install SMART meters and sensor devices to reduce leakages and to monitor water quality and consumption. An app improves the residents' control over their consumption and facilitates communication with the provider.
- In the field of waste: We are installing sensors into garbage bins and GPS in collecting trucks for more efficient routes to reduce operational costs.
- Energy projects: A complete reform of the street lighting system is underway. Light bulbs will be replaced by LED technology and a remote management system will be implemented. The expectation is to cut energy costs by 80%. Another project will adapt 65 municipal buildings in order to reduce energy consumption by 25%.

Some other projects are aimed to increase transparency and citizen engagement, for example:

- Platforms for citizen participation. The app "The pulse of the city – el pulso de la ciudad" allows citizens to report hazards. In the past four years, the app has been downloaded 8.500 times and citizens have reported more than 7.029 hazards. Another online platform, the Santander City Brain, collects ideas to improve urban services and quality of life. Since its inception in 2013, it has already collected 1.357 ideas through 6 different public competitions.
- Smartphone applications to facilitate access to information. The SMART Santander Augmented Reality provides information regarding municipal activities and touristic sites using NFC and QR technologies. The app has been downloaded 25.000 times and tags are used more than 180.000 times per month.
- An open data portal, created in 2014, provides 90 datasets, including the data collected by the IoT infrastructure, on a wide range of topics (economy, transportation, safety, health, etc.). The municipality often organizes competitions and hackathons to encourage the use of this data by local entrepreneurs and to create SMART solutions and services for the city.

Regarding the modernization of the municipal administration, besides improving the IT infrastructure within each of the municipal departments, we have also increased the online services for the citizens. For instance, we are automating tax and fees collection, and centralizing their management in a single municipal department. The main project has been to build a SMART City Platform which will act as a "brain" and will integrate information from the different systems of city departments. It will start by integrating data information regarding transportation, waste, water and street lighting, and will slowly integrate information from all the 65 services of the municipality. The goal is to make better informed decisions for more efficient management. We hope, in the future, to reach a "predictive and reactive intelligence" able to establish predictive models and to react automatically. We could imagine the example of a street accident where the platform automatically will activate the traffic lights, alert the residents, increase lighting and change public transportation routes.

Finally, we have seen in SMART technologies an opportunity to promote local economic development and job creation. Santander aims at building an innovation ecosystem by encouraging research and providing

support to start-ups that use the IoT infrastructure. We offer fiscal incentives, co-working spaces, organize competitions and create innovation incubators.

3. What results have these initiatives produced?

Results are promising, although not easily quantifiable since many projects are still at an initial phase. The first impact of SMART technologies is the modernization of the municipality's management processes. Thanks to better integration between city departments and improved allocation of resources we have experienced increased efficiency in urban services. As an example, the sensors localized in the city gardens have enabled the municipality to save 25% of water per year. The different initiatives have also had a significant impact in the quality of life. The SMART parking project, for example, has led to a reduction of 80% in traffic congestion in the city centre. New communication channels such as mobile applications have increased transparency and citizen engagement. By betting on technological innovation, we expect to generate economic activity and to create new local businesses and jobs. Santander has built an international image as a "living lab", allowing the city to attract investments from companies that see in the city the opportunity to test their products in real size, and catalyse funding from international institutions. Since 2009, Santander has been involved in 16 European Union projects amounting to 66.7 million euro.

4. What were the main difficulties encountered when developing SMART city initiatives in Santander?

Building Santander as a smart city has not been an easy task. One of the main difficulties we have encountered was to convince both citizens and city employees of the utility of SMART city projects, as they tend to be very costly and not always have immediately visible impacts. Another difficulty we have encountered is to find the best way to use the data collected by the sensor devices, and to make it available and accessible to citizens, businesses and city departments. A very close collaboration with the University of Cantabria, the private sector and the European Union has been key to experiment our SMART solutions.

5. What advice would you give to other cities that wish to follow your experience?

I would give two main advices to other cities. First, plan and prepare, and second collaborate and dialogue. Before implementing SMART projects, it is crucial to define the strategic vision for the city and a precise action plan. Municipalities must be careful not to choose a project according to the private vendors' offer, but to choose the technology that corresponds to their city model. In Santander, we have three main plans: the Santander Strategic Plan 2010-2020; the 2012 Innovation Masterplan and the SMART City Plan adopted in 2015. Besides the city-wide strategic plan, it is important to take the necessary time to carry out detailed feasibility studies. In Santander, for example, thanks to funding from the European Investment Bank, we were able to carry out studies regarding street lighting and energy efficiency in buildings that were essential to inform the tender process.

In SMART city projects, collaboration is essential. The case of the *SmartSantander* project, counted with the participation of 25 companies and institutions from 10 different countries. One of our most important partnerships has been with the University of Cantabria, which brought technical knowledge and coordinated all the SMART initiatives; from the design of the technological devices to the creation of innovative services. Collaboration with the private sector is key to implement costly projects that need strong capital investment such as street lighting, waste and water management. Collaboration with the citizen is equally key to gather their inputs and knowledge. Collaboration with the national government and international institutions is necessary to access funding. Finally, there is the issue of collaboration

with other cities at national and international level. Santander has today more than 260 partners in the world and we are member of several network of cities such as the Spanish Network of SMART Cities (RECI).