

FACTSHEET

INTEGRATED
INFRASTRUCTURES

Smart Multifunctional Tower

PART OF SMART SOLUTION 5: SMART LIGHTING, LAMPPOSTS
AND TRAFFIC POSTS AS HUBS FOR COMMUNICATIONS



- SmartTowers integrate technology into urban furniture to provide new functionalities like wireless connectivity or sensors, in addition to traditional services like street-lighting.
- Smart Towers offer hyperconnected spaces to support the growing demand for large mobile connectivity in the city.
- This represents a good solution for telecom Neutral Host Operators. Traditional lighting poles are converted into innovative small telecom sites in the city.

Barcelona

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What is the solution?

Digital society and technology have change the daily life of citizens. Cities have to face the growing demand of mobile connectivity due to the large increase of personal smart devices, IoT services or massive broadband mobile connections at anytime and anyplace. Quick access to any information has been become a must-have, and not only for citizens. City managers also need access to real time, updated and accurate information about what is happening in the city in order to take the most convenient decisions. For this, a wide network of sensors and actuators should be deployed around the city to monitor and control the city. In addition, small micro-sites have to be deployed in the city to support hyper-connected spaces and massive mobile connectivity.

The Smart Towers solution transforms traditional urban furniture, like street lighting poles, into new small multi-functional urban sites, to resolve the connectivity trends in the city.

Furthermore, the solution opens a new paradigm for business models in the city, related to neutral host operators and the use of shared infrastructures.

How does it work?

Smart Towers solution offers hyper-connected spaces in the city by transforming urban furniture, mainly lamp-posts. On the one hand, the solution brings together lighting lamps with sensors for monitoring the city, as well as antennas and access points that provide wireless connectivity services for mobile networks. On the other hand, Smart Towers are linked to the Fiber Optic Backbone network in order to grant wide broadband wireless connectivity services.

Since many factors are involved in the replacement of the current street furniture in a big city like Barcelona (multiple stakeholders involved, aesthetic criteria, urban services providers, etc), different Smart Tower approaches have been considered in the GrowSmarter project.

Smart Towers could be either deployed following a new lighting pole design or by adding a plug-in set that provides new functionalities to the traditional lighting poles. Having these two options facilitates the selection of the most suitable type of SmartTower which can then be made according to the functional requirements of the equipment and its final location (street, park, shopping center, etc).



Business models

The Smart Tower solution facilitates the deployment of hyper-connected spaces in the city, while optimizing and rationalizing the use of urban space. The solution integrates different services into the same urban furniture: connectivity, sensing, lighting, information displaying, etc. The solution rationalizes the use of the public space and organizes the deployment of access points for wireless communications and IoT devices in the city.

The Business Model is based on managing the use of shared infrastructure: a neutral host operator that offers “Connectivity as a Service” to other access operators like Mobile Network operators, WiFi operators, or IoT service providers.

Expected Impact

The solution transforms traditional furniture to provide more services related to IoT, wireless connectivity, and real time digital information.

Improving quality of life

Smart Towers offer new services that enhance daily life of citizens. For example, hyper-connected spaces resolve the wireless connectivity demand; while environmental sensors hosted into Smart Towers provides real time information about the status of the city, helping city managers to take the most suitable decisions.

Reducing environmental impact

Smart Towers rationalizes the use of the public space and organizes the deployment of access points for wireless communications and IoT devices in the city.

Promoting sustainable economic development

On the one hand, Smart Tower solution opens a new paradigm for business model in the city, related to neutral host operators and the use of shared infrastructures. The deployment of dense access networks becomes feasible for mobile operators if they can contract “Connectivity as a Service”. On the other hand, the marketplace of IoT services allows collaboration and co-creation of new services for the city and its citizens.

Potential for replication

The Smart Tower solution can be easily replicated in other European cities. The add-on option chosen by Barcelona Municipality can be fitted in any other lamppost around the world. The solution can be easily adapted to include the required IoT devices and access points.

Regarding the provision of wide broadband wireless connectivity services, the backbone network linked to Smart Towers should offer high capacity to every Smart Tower.