



The Design Journal

An International Journal for All Aspects of Design

ISSN: 1460-6925 (Print) 1756-3062 (Online) Journal homepage: <http://www.tandfonline.com/loi/rfdj20>

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To cite this article: Lola Merino Sanjuán, Marina Puyuelo Cazorla & Mónica Val Fiel (2017) Design for the Smart Cities. Investigation about citizen's needs and products to improve public places, The Design Journal, 20:sup1, S4748-S4750, DOI: [10.1080/14606925.2017.1352979](https://doi.org/10.1080/14606925.2017.1352979)

To link to this article: <http://dx.doi.org/10.1080/14606925.2017.1352979>



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Published online: 06 Sep 2017.



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Design for the Smart Cities. Investigation about citizen's needs and products to improve public places

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Abstract: The concept of Smart City refers to a developed city, which incorporates the required infrastructures and available technology to increase its economic and environmental sustainability as well as the quality of life for its inhabitants. In the framework of Smart Cities, multiple developments can be integrated in accordance with the new needs and the integration of communication technologies, which provide new services and knowledge for citizens.

This study presents a local investigation about citizen's needs and products to improve public places in the city of Valencia. The aim of this research is to explore on the citizen's relation with the multiple services and the potential benefits of the smart city. The first results reveal that is a priority for design, to work on the urban elements which show citizens these technology's contributions, to the care and welfare of the environment and also, to the common goods in which they operate.

Keywords: Smart City, Shared Artefacts, Product Design, Smart products, Technology Design

1. Introduction

The Smart City is an emerging concept with a broad and diffuse scope, whose limits have yet to be defined, and where many initiatives are in the project phase. One of its main and essential feature is the implementation of Information and Communications Technologies (ICTs) in multiple existing products and services and also, the connectivity of objects (Vidal, 2015).

Public spaces have been transformed into more interesting and entertaining sites where many topics are shared and where everything is recorded (Verweij, 2006, p.67-73).

2. The Research: Materials and Methods

Ethnographic methods were used; walking and visiting the city to get information about what already exists, the potential lack of aspects or things which could be improved, and observe where most people spend their time outside. This part lead us to a particular scenario: the Turia Park, a riverbed that was transformed into an urban park in the nineties.

Due to its location, length, conditions and characteristics of the trail, the Turia garden also responds to the trends of the Smart Cities and Smart Mobility, which prioritizes public transport and "soft" transport services such as cycling. Other areas that indicate these trends, such as the Healthy City, the Sustainable City, Identity and Tourism, Cities on a human scale and participation, Sustainable lighting and the City as a gym (Casado, Revert, Sales, & Veral, 2015, p.3-4).

In order to get information from the users we made a short public survey. The aim of this interview was verifying which existing facilities were highly valued, and what the interviewees found to be lacking in an urban environment very frequented by multiple users. It was performed 3 times per week at different times of the day, in September 2015 and, again in May 2016. People were chosen randomly, trying to cover different user profiles such as residents and visitors. We interviewed a range of 25-30 people from different groups: citizens, young athletes, elderly people and tourists.

3. Results and Design Proposals

Through the 150 interviews, we found what was missing and what people would like to have at the city of Valencia. People pointed out the lack of signs, they ask for more areas in the shade to rest and stay. While young people would like to have Wi-Fi zones outdoors to recharge or use devices comfortably, elderly citizens would like screens which display events or beautiful things that can be seen in the city, music for dancing or practicing gym. Some of the features required for services and products were that they had more lighting at night (which makes people feel unsafe and scared), eco materials and low consumption were also highly appreciated.

These suggestions and the new requirements and trends, that characterize the Smart City concept, set the basis for the conceptual design of a new element for public use. This urban element had to integrate the principles of the Smart City, linking technology in a pleasant way with usability and nature, a product that gives satisfaction to the citizens and invites them to use it.

References

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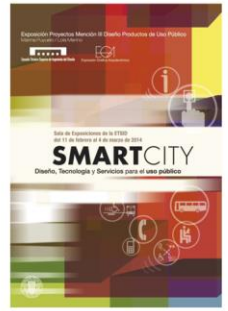


Figure 1: The results of a previous research on this topic were shown in an exhibition at the University in 2014.

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Figure 2: The old Turia riverbed is a big urban park that allows for different leisure activities healthy and participative. In this longitudinal space, natural elements play a key role in connecting leisure, mobility (walking or cycling) and a variety of uses (recreational, sportive, cultural, touristic).

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- [1] N. Vidal, "The smart city: smart cities of the future", Barcelona: Editorial UOC, D.L. 2015.
- [2] L. Verweij, "Public Spaces More Public or Private than Ever?", *Experimenta*, vol. 55, pp. 67-73, April 2006.
- [3] M.G. Casado, C. Revert, V. Sales, and S. Veral, "Smart Cities Trends: Trends in smart cities and opportunities for sectors habitat", *ITC y ADIMA*, pp.3-4, March 2015.

Figure 3: Examples of different design projects: *Indurain*, a bench that provides electric power to charge electronic devices and Wi-Fi connectivity obtained by pedaling. Author: Anne Baraja. *POS-t* Interactive booth. Author: Hector Ruiz. *Hortus*, music board touchscreen, notice board and adjustable telescope. Authors: C. Darmody, P. van Nerum, J. Zwinkels and E. Bal.



DESIGN FOR NEXT