Barcelona as a Smart City
Lessons learned from the evolution of
the concept and the influence in the
city attractiveness

April 2014 VIII Conferência Anual do Turismo Madeira



Objectives

1

To describe the concept of Smart City and its relation with Tourism strategy

2

To understand Barcelona's strategy to become one of the world references

3

To summarise some key success factors on the development of a Smart City strategy

Smart city: the development of the concept

70% of the world population will live in urban areas by 2050. By 2015 there will be 26 megacities with more than 10M inhabitants



A city that has developed features (walls, moats, portcullises, etc.) to protect its **people** and **profit**

Concentration of the population in cities

Economic *efficiency* focus given the the scarcity of resources

Development of **technology**, connectivity, innovation

Sustainability focus given demographic growth and climate change



A city developed with **efficiency**, **functionality** and **sustainability** in mind

Source: "Smart Cities" PwC, Ctecno, PwC analysis

What is a smart city? Still work in progress...but with some common concepts

Quality of life

Efficiency

The smart city concept
means the **development of** cities with a higher
 quality of life. It has
 become a broad concept
 integrating many
 of the interacting areas of a
 city: from mobility, energy
 and environment to
 governance

A type of city that is **more** liveable, functional, competitive and modern through the use of new technologies, the promotion of innovation and knowledge management, bringing together 6 key fields of performance: the economy, mobility, the environment, citizenship, quality of life and, management

Smart City Expo World Congress Committee of Digital and Knowledge-based Cities **Competitiveness**

Technology

Sustainability

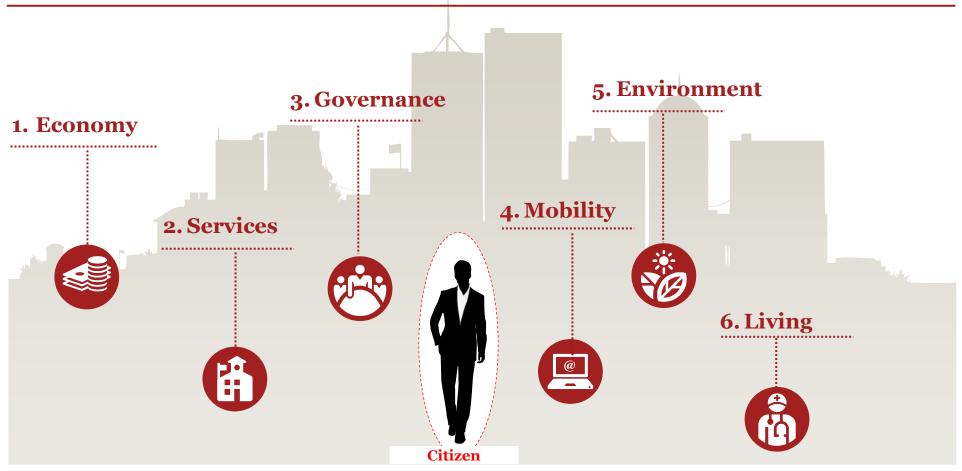
Smart city is a term
that brings together all
the initiatives aimed
at improving the
quality of life, the
sustainability and the
efficient management
of services, innovating
with technology in
materials, resources
and models

smart cities should be regarded as systems of people interacting with and using flows of energy, materials, services and financing to catalyse sustainable economic development, resilience, and high quality of life; these flows and interactions become smart through making strategic use of information and communication infrastructure and services in a process of transparent urban planning and management that is responsive to the social and economic needs of society

Cercle Tecnològic de Catalunya European Innovation Partnership on Smart Cities and Communities

"A city that uses new technologies to make it more efficient, functional, competitive, modern and liveable for citizens"

Key dimensions



Source: Committee of Digital and Knowledge based cities, Ctecno

Smart City + Tourism -> Smart Destination

The 'Smart Destination' concept includes:

- ✓ **Touristic planning** of the territory
- ✓ Applying **sustainability** to the touristic value chain
- ✓ Including **technology** in the tourist experience and service delivery
- ✓ Managing effectively and efficiently the resources based on existing capacities
- **✓ Being able to respond** to the needs and behaviours of tourists







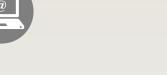




7. Tourism







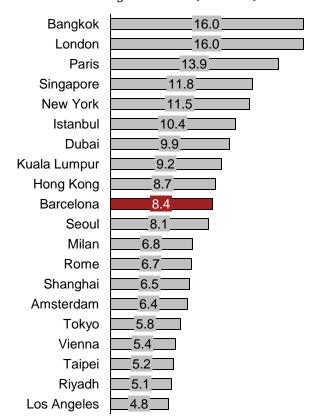


Source: Committee of Digital and Knowledge based cities, ALS, PwC Analysis

Barcelona: a worldwide known example of successful destination among top capital cities

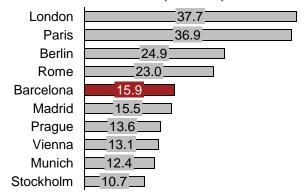
Top 20 global destinations 2013

Global Top 20 destination cities by international overnight visitors (millions)



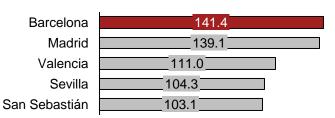
Top 10 European destinations 2013

Top 10 European cities by overnight stays volumes (millions)



Top 5 Spanish destinations 2012

Top 5 Spanish cities by touristic success indicator¹ (medium=100)



Awards



European Capital of Innovation 2014 (iCapital)



First city to receive Biosphere Worldclass Destination certificate for responsible tourism



Fourth European Smart City 2013



IDC Smart Cities Index Ranking



Fifth destination in the world - Travellers choice Tripadvisor awards 2013



Best Spanish port in terms of cruises – Excellence award 2013

1) Index composed by various tourism indicators, such as hotel offering quality, flights routes and frequency, etc.

Source: Global Destination Cities Index; Top European destinations by European Cities Marketing; Ranking of Exceltur top 20 successful touristic destinations in Spain

Barcelona's process to become a successful destination has been fuelled by several factors...



Underlying characteristics of the city, which facilitate its evolution into a smart city and destination (i.e. the starting position of the city)

Projects and policies put in place by the various city stakeholders which act in the right direction for a future evolution into a smart city





















Wide cultural offering High touristic capacity thanks in part to the 1992 Games

Modern infrastructure: port of Barcelona, El Prat airport, AVE, ...

Wide offering of air connections High adoption of ICT and mobile solutions

Creation of Consorcio Turisme of Barcelona

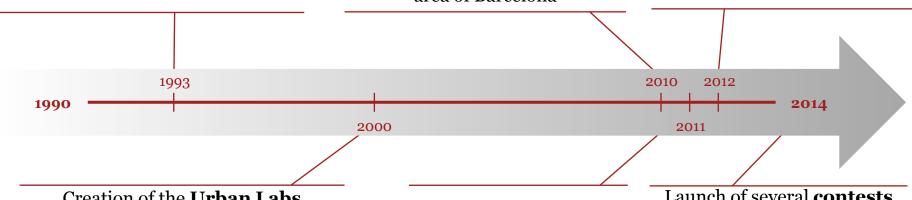
Mobile World Capital Creation of Gerencia de Habitat Urbano Promotion of publicprivate collaborati

Creation of the LIVE platform

...in a long journey that started some time ago

Foundation of the **consortium**"Turisme de Barcelona", a
public-private consortium of the
Chamber of Commerce and the City
Council

Creation of LIVE, a publicprivate platform that aims to support and promote the development of electric mobility in the city and the metropolitan area of Barcelona Partnership agreement between the City Council of Barcelona and CISCO to develop initiatives with the objective to become a global reference model in terms of sustainable urban development



Creation of the **Urban Labs**(Barcelona 22@ and Smart Street
Sant Cugat): areas of the city aimed at
the realization of proofs of concept
and urban solutions techniques to
accelerate the implementation of
Smart City projects

Establishment of the
"Gerencia de Habitat
Urbano", that brings
together urbanism,
environment, technology
and urban services

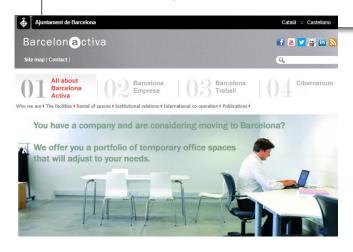
to encourage the participation of the citizens in the development of Barcelona as a Smart City and Smart destination

Some key elements on Barcelona's Smart City strategy

Economy



- •Creation of organisms and platforms, such as Barcelona Activa, to support the entrepreneurship in Barcelona (entrepreneurial activity rate of 5,5% in 2012, above the Spanish and European average)
- •Initiatives to promote the ICTs, such as the technological center Barcelona digital and its ICT cluster (Catalonia counts with 3,349 ICT companies, around the 70% located in Barcelona)









Some key elements on Barcelona's Smart City strategy

Government, Mobility



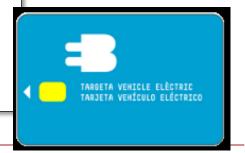
- •Website for procedures and council services (Virtual office of the City Council)
- "Open Data Multi-ayuntamiento", a common site for the data diffusion of each municipality





- Fiber optic installation in the whole city
- •Establishment of a public bicycle sharing system
- •Promotion of the electric car through the development of the necessary infrastructure (e.g. charging points) and the impulse of economic advantages (e.g. subsidies for the circulation tax)
- •Sensors to facilitate the parking search
- •Free public Wi-Fi (the biggest network in Spain and one of the biggest in Europe)
- •Free Wi-Fi service for the users of the three railway stations of the Generalitat in the Eixample district





Some key elements on Barcelona's Smart City strategy

Environment, Tourism

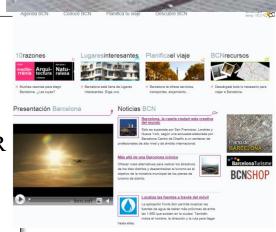


- •Intelligent traffic lights, with audio for blind people
- Optimized traffic control through sensors for flow control
- •Trash containers sensors that optimize the collection routes
- •IT equipment for safety
- •First electric bus in Spain
- "Manzanas autosuficientes" project: a new model for the construction and rehabilitation of buildings aimed at more energy autonomy and a more sustainable management

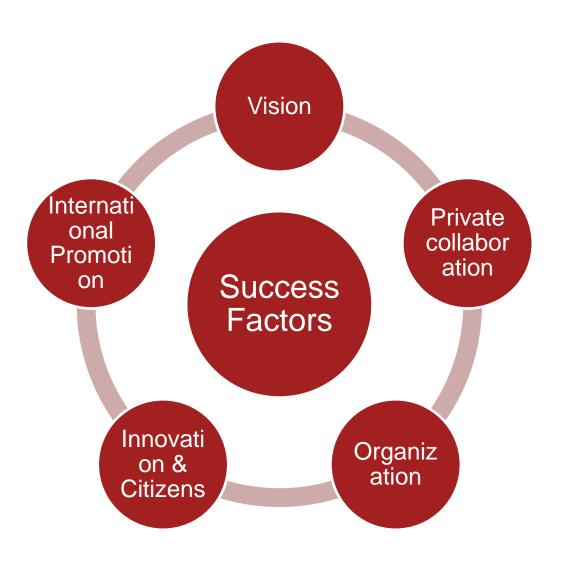




- •Touristic guides through apps (e.g. Official Guide to BCN, Barcelona Restaurants, official audioguides, iBarcelona-Smartour, etc)
- •Touristic buses with Wi-Fi
- •Underground transport system guides, such as Barcelona Metro AR and Barcelona Metro
- Augmented reality apps linked to the touristic buses
- Videomapping sessions in emblematic buildings



Some learnings from Barcelona's experience

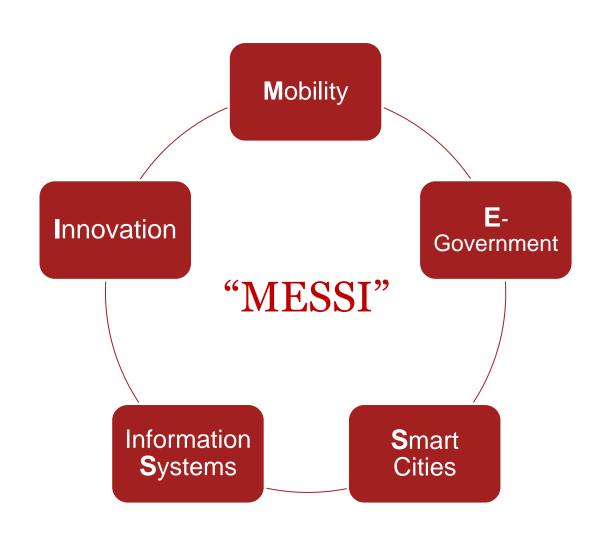


+ Robust Program Management

+ Financing

1. Vision & Long term Strategy

"To use the information technology to achieve five strategic objectives"



2. Public-private collaboration





Smart City Campus



















SIEMENS







3. Organizational transformation



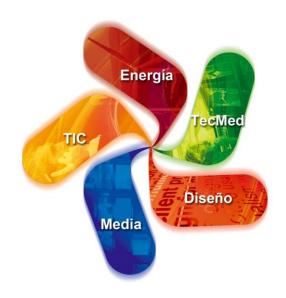
"An integrated approach to drive change within the City Council organization"

4. Innovation & citizen's involvement









5. International promotion







smart city expo

Muito obrigado



This publication has been prepared for general guidance on matters of interest only, and does not constitute professional advice. You should not act upon the information contained in this publication without obtaining specific professional advice. No representation or warranty (express or implied) is given as to the accuracy or completeness of the information contained in this publication, and, to the extent permitted by law, PricewaterhouseCoopers Assessres de Negocios, S.L its members, employees and agents do not accept or assume any liability, responsibility or duty of care for any consequences of you or anyone else acting, or refraining to act, in reliance on the information contained in this publication or for any decision based on it.

© 2014 PricewaterhouseCoopers Asesores de Negocios, S.L. All rights reserved. In this document, "PwC" refers to PricewaterhouseCoopers Asesores de Negocios, S.L which is a member firm of PricewaterhouseCoopers International Limited, each member firm of which is a separate legal entity.