



A horizontal banner containing logos and text. From left to right: the red and white coat of arms of the Ajuntament de Barcelona; the text "Ajuntament de Barcelona" in white on a dark background; the "iCapital 2014" logo; the European Union flag; and the "MOBILE WORLD CAPITAL BARCELONA" logo.

BCN DATASHEET 2014



1. TELECOMMUNICATIONS NETWORK



Strategic Framework and Executive Budget



Milestones

- 556 km of municipal FO including 90% of FTTH city coverage.
- +700 WIFI access points in Barcelona.
- 7.1 WIFI access points per Km2.
- 300 average users per WIFI access point.
- 69 neighborhoods in the city with more than 2 WIFI access points in Barcelona.
- 94,3% of citizens use the mobile phone, 73,8% internet and 76,9% of households have internet.



2. URBAN PLATFORM



Strategic Framework and Executive Budget



Milestones

- +2600 sensors integrated in the Sentilo platform.



3. SMART DATA



Strategic Framework and Executive Budget



Milestones

- 16 dashboards implemented in the Situation Room, generating 7 real time KPIs and integrating 24 city datasets.



4. SMART LIGHTING



Strategic Framework and Executive Budget



Milestones

- +50 street sections with LED lighting, a total of 1.155 streetlights.
- 50% of lighting power remotely controlled.
- 1.228 electrical panels remotely controlled.
- 300 lampposts which are expected to save 60% of lighting energy consumption by adapting the volume of pedestrians.



5. ENERGY SELF-SUFFICIENCY



Strategic Framework and Executive Budget



Milestones

- 37 public buildings with energy monitoring with 4.700 sensors installed.
- +53 Photovoltaic installations on municipal buildings, 1 small wind and 2 thermally activated cooling systems.
- 19,500 smart meters in the Olympic Village and 22 @ neighborhoods
- Urban heating and cooling network of 14 km connecting 56 buildings in 22 @ and Forum, 7 km and 8 buildings in “Zona Franca”.
- 13.975 kWp of photovoltaic panels installed +16,770 MWh saved.
- 57.181 m² of solar thermal panels installed with +40.027 MWh saved (88.167% cases reported favorable results with solar panels).



6. SMART WATER



Strategic Framework and Executive Budget



Milestones

- 300 public fountains remotely controlled, 77 ornamental fountains remotely controlled, 35 stairs and 34 elevators.
- 40% of the parks have automated irrigation.
- The new system reduces by 25% the volume of water consumed.
- With the introduction of this system three city parks will be managed automatically (13 ha).
- This new management platform saves 425,000 euros in the annual municipal bills for water consumption for irrigation of parks and gardens in the city, which is around 1.7 million euros per year.
- 293 hectares (68% of the total) are sensitive to be remotely controlled .



7. SMART MOBILITY I



Strategic Framework and Economic Executive



Milestones

- 300 electric bicycles that will complement the Bicing service.
- 294 public electric vehicles and 347 private (estimated), 262 public charging points, 409 registered users.
- +130 electric motorbikes to rent and +500 hibrid taxis.
- 50 sensors deployed in different zones of the Eixample to measure the estimated travel time for urban routes.
- Orthogonal bus network: Currently 13 lines (6 Horizontals, 6 Verticals and 1 Diagonal) in order to reach 28 (17 vertical lines, 8 horizontal and 3 diagonal). With a 5 to 10% savings estimation. 35 % of bus passengers on working days could move on high performance lines with a frequency between 5-8 minutes from 7am to 21 pm.



7. SMART MOBILITY II



Milestones

- **132 hybrid buses, each of which saves 2.329t annual emissions of CO2, 6.000k of NOX and 1,56M €**
- **200 controlled intersections with traffic light cycle managed from the traffic control center and 1 countdown clock on Tarragona Street.**
- **+500 parking sensors deployed.**



8. RENATURALISATION



Strategic Framework and Executive Budget



Milestones

- 17,91 m² of green areas per inhabitant, with more than 1.300 plant species biodiversity.
- Public space quality Index: 6,47.
- 77.3% achieved in the street trees planting campaign.
- 9.189.165 m² green spaces.
- 4.019.939 m² urban green spaces.
- 9.1 average grade in green spaces assessment.



9. URBAN TRANSFORMATION



Strategic Framework and Executive Budget



Milestones

- 136 construction projects deploying ICT services
- 47 wifi access points planned in construction projects
- 86 sensors planned in construction projects



10. SMART URBAN FURNITURE



Strategic Framework and Executive Budget



Milestones

- 3 Smart Bus Shelters in Barcelona and 18 + projected.
- 44 BCN citizen information points (digital kiosks).



11. URBAN RESILIENCE



Strategic Framework and Executive Budget



Milestones

- 35 Resilience Boards meetings- Projects Follow-up.
- 20% of the total projects closed projects of TISU.
- 1 wireless PA system.



12. CITIZENS



Strategic Framework and Executive Budget



Milestones

- **+10 Fabrication Laboratories under construction:**
 - 2 more than 90%: Les Corts and Ciutat Meridiana
 - 1 more than 50%: Fàbrica del Sol
- **LES CORTS:**
 - From July to December 2013 : 2,750 applications in 65 activities , support , visits ...
 - From January 2014 to April : 102 activities in 2013 uses , supports visits ...
 - In 10 months of concerted activity almost 167 activities and 5,000 people.



13. OPEN GOVERNMENT



Strategic Framework and Executive Budget



Milestones

- 1 Virtual Citizen Help and Information Virtual Office (OVAC) in “Centre de la Marina” (Passeig de Zona Franca) managed from the “Sant Miquel” OAC.
- 602 available Open Data resources (datasets).
- 25.768 visits to the Open Data portal.
- Open Government portal visits:
 - Transparency: 10.739
 - Participation : 5.204
 - Open Data: 5.090



14. BARCELONA IN YOUR POCKET



Strategic Framework and Executive Budget



Milestones

- 581 Barcelona Contactless Points.
- 550 ATMs, 1M credit cards with NFC technology, 19.000 dataphones in the city businesses.
- 653 recommended APPS in APPS4BCN Portal.
- 46 apps with 1.421.974 downloads.
- 10.069 Mobile ID downloads, 5.510 registrations, 1.133 accreditations and 24.435 administrative procedures.



18. SMART WASTE COLLECTION



Strategic Framework and Executive Budget



Milestones

- 1980 pneumatic waste collection points in the city.
- 240 pneumatic waste collection points in 22@.
- 3,38% Pneumatic waste collection/ Total home collection.
- 37,00% Selected Collection.



16. SMART REGULATION



Strategic Framework and Executive Budget



Milestones

- Collaboration (Agreements, MoUs and CICs) actives: 35 (7 with cities, 21 with companies and 7 with institutions/foundations).
- 7 Government Measures.



17. SMART INNOVATION I



Strategic Framework and Executive Budget



Milestones

- 40 BCN Smart City Tours performed since 29/10/2013.
- 1 Smart City Innovation Center with Cisco and Schneider Electric.
- Barcelona has in 2012, 28.500 workers in ICT activities, 3,5% of the city employment and 54% of the ICT employment in Catalonia. 98,5% of the ICT employed work in the services sector and 1,5% in ICT manufacture.
- 25% more ICT companies and 6,9% more workers compared to 2008. 40,9% of the ICT sector companies perform innovative activities. +3.000 people work in R+D activities in Catalonia. The ICT sector comprises +10.000 companies, generates 17M€ and directly employs +73.000 people.



17. SMART INNOVATION II



Milestones

- Catalonia generates 20% of turnover in the ICT sector and the state, almost 70% of ICT companies in Spain are located in the province of Barcelona.
- The creation of new businesses in Barcelona remains 42 % below pre-crisis levels .



18. HEALTHCARE AND SOCIAL SERVICES



Strategic Framework and Executive Budget



Milestones

- Today, 338.000 people are over 65 years old in the city, a third of them are over 80. Projections indicate that 1 in 4 people in the city will be over 65 in 2040.
- +56.647 households with tele-assistance, most of the people is over 75.
- +200 people suffering from neurodegenerative diseases carry a GPS. device that helps to localize them when they are lost or disoriented.
- +2.427 danger detection devices installed in homes.
- 15 Easy Tablet for caregivers of dependent people.
- +1138 Radars with + 431 users.
- 8 Hospitals, 8 CUAPs: emergency system 24x365
- HC3 i RE available: 100 % publication and notification
- Data sharing HC3 – SIAS: social work connected network (gen15)
- cat@salut La meva Salut: in expansion since January
- Emergency
- Emergency Medical System (SEM): 'green corridor'



19. EDUCATION



Strategic Framework and Executive Budget



Milestones

- “Let’s mobilize informatics” course within the mSchools program has already been implemented at +200 high schools with +200 business professional active leaders and +250 trained teachers.
- +300 teachers in the training session to learn scratch (language invented by the Massachusetts Institute of Technology (MIT) to introduce kids in the programming world).



20. SMART TOURIST DESTINATION



Strategic Framework and Executive Budget



Milestones

- **3 Virtual Tourist Offices in:**
 - Pl. Catalonia
 - Barcelona Design Hub
 - City hall
- with the intention to deploy more screens. Screens at various points including:
- Tourist information
 - Accesses (port, airport, etc.)
 - Municipal centers
 - Tourist attractions.



21. INFRASTRUCTURES AND LOGISTICS



Strategic Framework and Executive Budget



Milestones

- 1 ECOcalculator at Barcelona's Port.
- 10 weather and air quality sensor stations.
- 700.000 signals through 80 servers that make up 5 control environments. All of them managed in real time and centralized in a unique platform.



22. LEISURE AND CULTURE



Strategic Framework and Executive Budget



Milestones

- **Pending**



23. INTERNATIONAL POSITIONING



Strategic Framework and Executive Budget



Milestones

- iCapital Capital of Innovation.
- 1st Smart City in Spain, 4th in Europe and 10th in the World.
- 1st Most Attractive City in Europe for Organising Events.
- 6th Most Highly Regarded City Worldwide .
- 2nd City for Organising International Events.
- 23 important Smart events attended in order to position Barcelona.
- 419 member schools in Agenda 21.



24. INTERNATIONAL COOPERATION



Strategic Framework and Executive Budget



Milestones

- 30 City Protocol memberships.
- 9 international projects running.



QUOTES



At CES in Las Vegas Forbes reported that Deputy Mayor Vives told Cisco CEO John Chambers that Barcelona is saving **\$58 million** a year on smart water management and that parking revenues have increased **\$50 million**. Additionally, **47.000 jobs** related to the smart city effort have been created in Barcelona.
<http://www.forbes.com/sites/connieguglielmo/2014/01/07/ces-live-cisco-ceo-chambers-to-deliver-keynote/>

Washington Post quotes Barcelona CIO Manel Sanroma who indicated that the city has reduced costs by about **\$3.1 billion** a year installing sensors in public water pipes and parking meters. http://www.washingtonpost.com/business/on-it/cisco-ceo-at-ces-2014-internet-of-things-is-a-19-trillion-opportunity/2014/01/08/8d456fba-789b-11e3-8963-b4b654bcc9b2_story.html

<http://smartcity.bcn.cat/en/>

Municipal Institute of Information Technology



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