BARCELONA SMART CITY

Ajuntament
de Barcelona

Vision

The city of people

Technology as an enabler for:

✓ *Urban mobility more efficient and sustainable*
✓ *Environmental sustainability*
✓ *Business-friendly and attracting capital*
✓ *Integration and social cohesion*
✓ *Communication and proximity with people*
✓ *Knowledge, creativity and innovation*
✓ *Transparency and democratic culture*
✓ *Universal access to culture, education and health care*

Improve citizens' welfare and quality of life
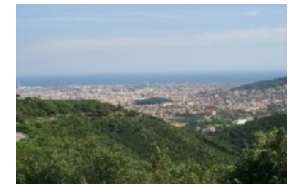
Economic progress

Vision

To become a city of productive neighbourhoods, at human speed, interconnected, eco-efficient, re-naturalised, energetically self-sufficient and regenerated at zero emissions, inside a high-speed interconnected Metropolitan Area.

"Many slow cities inside the same Smart City"

Barcelona is orienting its city evolution strategy towards to guarantee quality of life for its citizenry, social and urban improvement and added value in its neighbourhoods, fostering all its urban potential towards sustainable development and green economy, in favour of an energetically self-sufficient city and where nature holds a prominent role for the balance of the city. A connected city with a high-speed interconnected Metropolitan Area, that guarantees the region evolution and the improvement of its inner cities.

Reference framework
City Strategic framework

The framework is determined by the Smart Barcelona surrounding municipal and European citizens:

Reference framework
Global Strategic framework

Mobility

E-Government

Smart Cities

Systems of Information

Innovation

Reference framework

City Council: and ad-hoc organization

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Metropolitan
Area          Environment          ICT          Energy

Architecture    Urban Habitat    Water
                    Area

Housing    Urban      Infrastructures    Urban
           Planning                      Services
```

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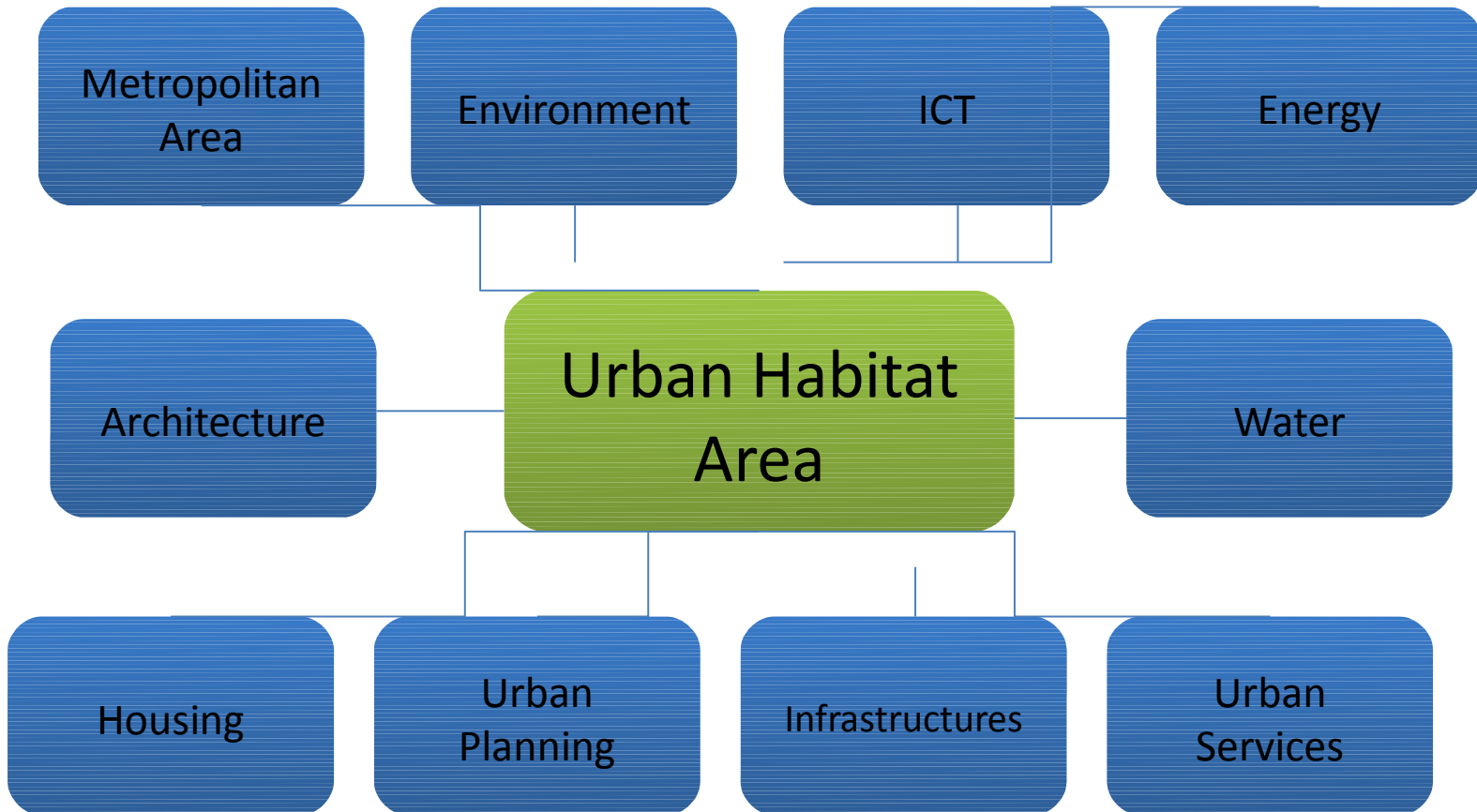
Barcelona Smart City Programs
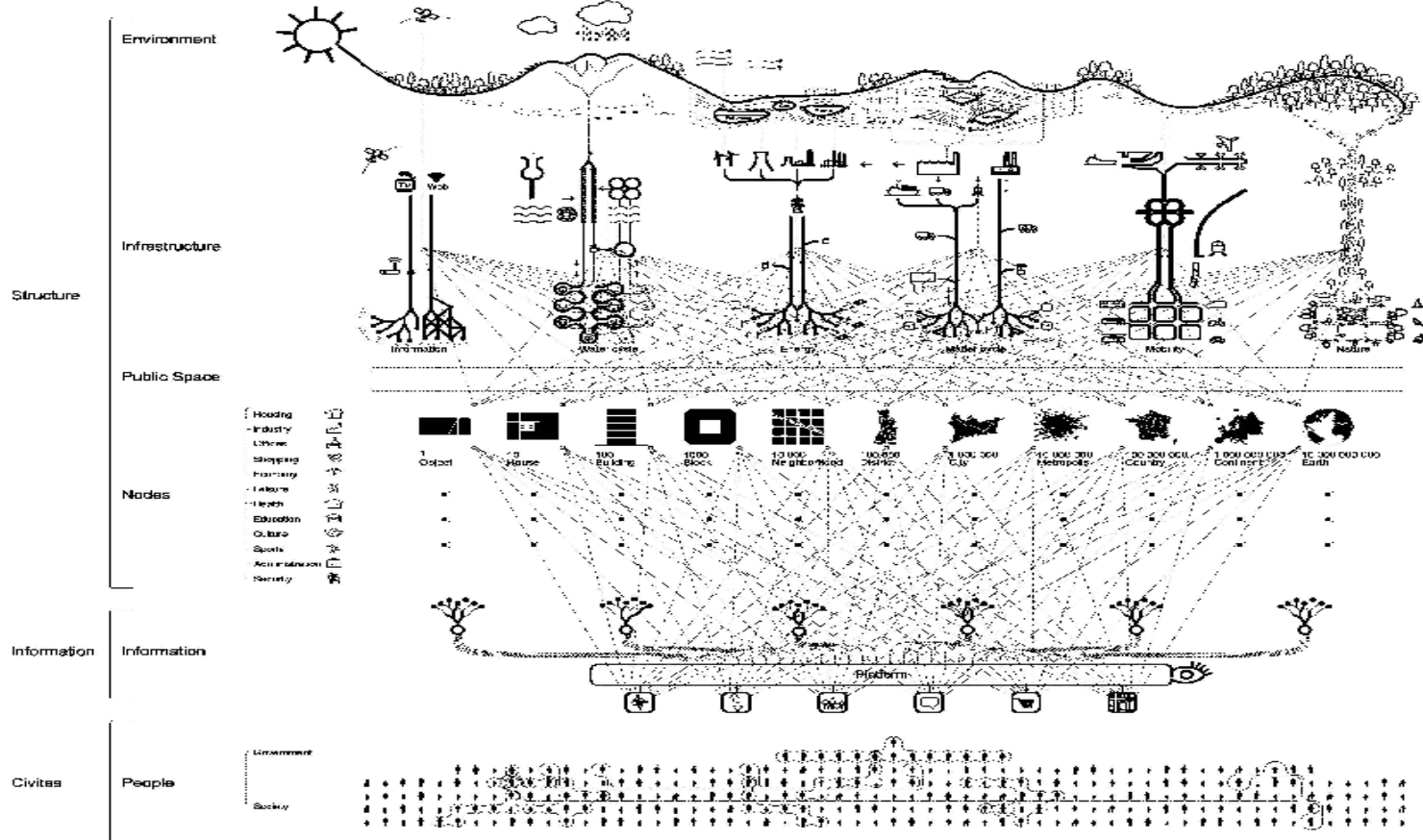## The 8 principles to make a self sufficient city

1. Define your own city model with "your city mantra"

2. Analyze the structure of your city and define your priorities

3. Rethink your city systems, not just upgrade them.

4. Develop the economy of city services with partners

5. Make your city more resilient and promote long term investment

6. Build a liveable city, increasing public space for people

7. Change your organization by breaking the silos

8. Work with other cities and be part of the city protocol society
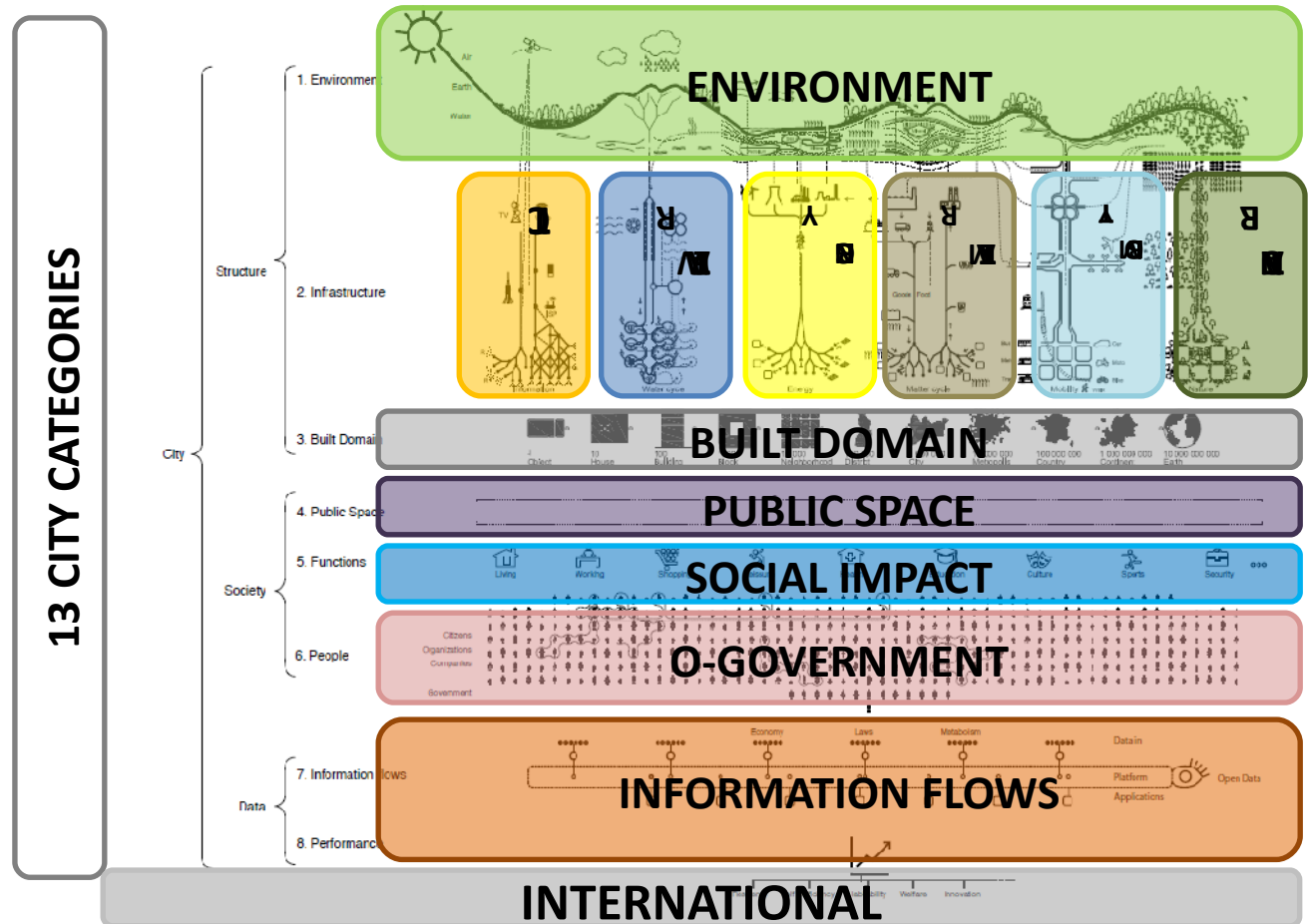
Barcelona Smart City Programs
Anatomy of a Smart City

Barcelona Smart City Programs
Conceptual Model

13 CITY CATEGORIES

- 1. Environment
- Structure
- 2. Infrastructure
- City
- 3. Built Domain
- 4. Public Space
- 5. Functions
- Society
- 6. People
- 7. Information Flows
- Data
- 8. Performance

ENVIRONMENT

BUILT DOMAIN

PUBLIC SPACE

SOCIAL IMPACT

O-GOVERNMENT

INFORMATION FLOWS

INTERNATIONAL

Barcelona Smart City Programs
Smart Programs

1. New Municipal Network [1]
2. Urban Platform [1]
3. Intelligent Data [1]
4. Next Generation Networks (4G)
5. Smart Lighting
6. Energy self-sufficiency
7. Energy efficiency in buildings
8. Smart Water
9. Zero emissions mobility
10. Smart Parking
11. Smart Transportation
12. Urban transformation
13. Urban resilience
14. Smart Citizens
15. O-Government & eficiency
16. Cloud BCN
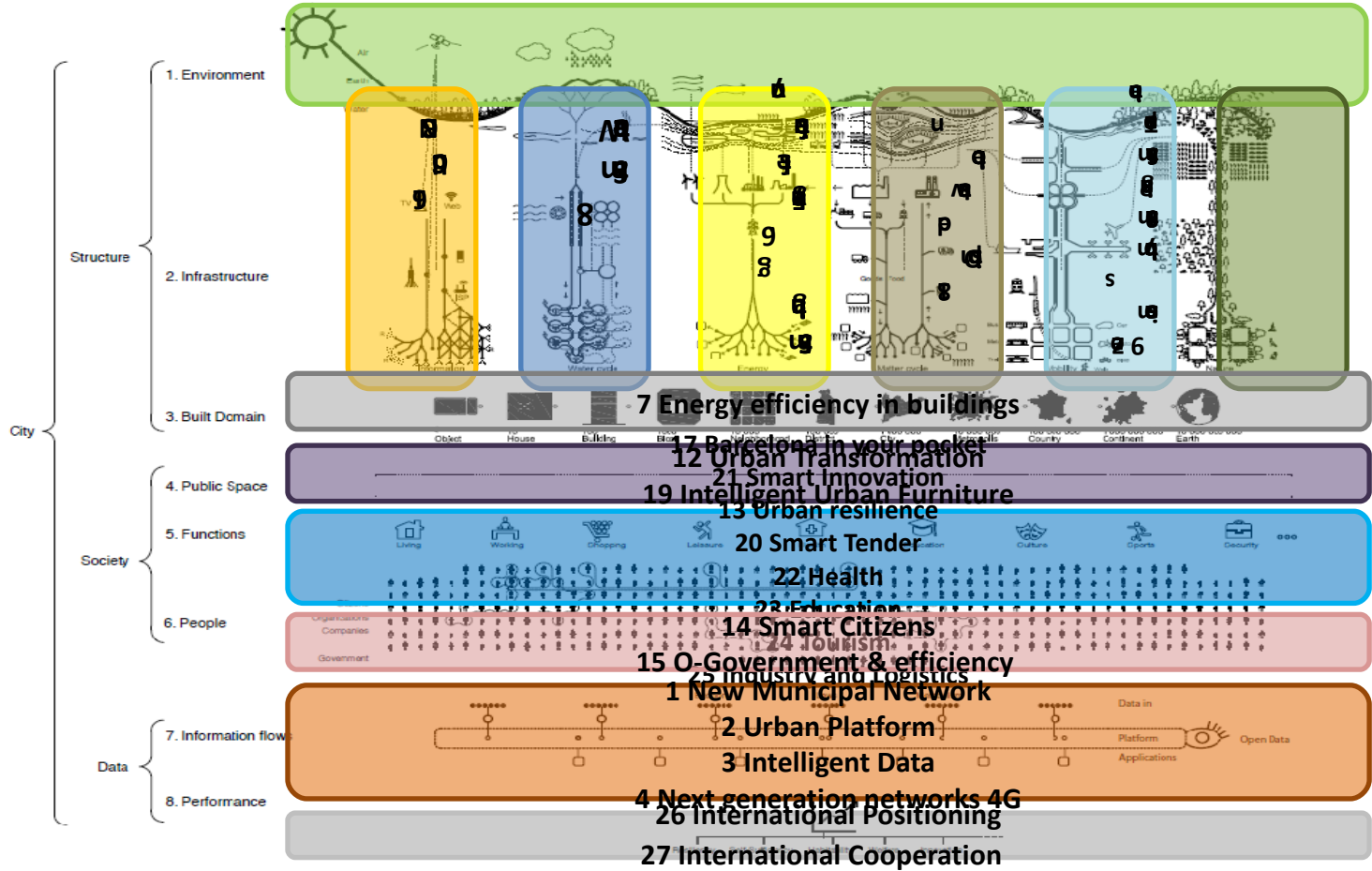17. Barcelona in your pocket
18. Optimised Waste Collection

[1] *Transversal programs*

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Barcelona Smart City Programs
Programs for Areas

27 PROGRAMS IN 13 CITY AREAS

7 Energy efficiency in buildings
17 Barcelona in your pocket
12 Urban Transformation
21 Smart Innovation
19 Intelligent Urban Furniture
13 Urban resilience
20 Smart Tender
22 Health
23 Education
14 Smart Citizens
24 Tourism
15 O-Government & efficiency
25 Industry and Logistics
1 New Municipal Network
2 Urban Platform
3 Intelligent Data
4 Next generation networks 4G
26 International Positioning
27 International Cooperation

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Barcelona Smart City Programs
Key Points

- A new organisation oriented towards goals and objectives of a Smart City

- Legal framework that allow PPP

- Urban zone for PPP to set and grow

- To feed the urban innovation ecosystem

- Living Lab, development of a community of citizens, developers

- Installations for SME experimentation

- Opening of new opportunities so that citizens can be more active and participative
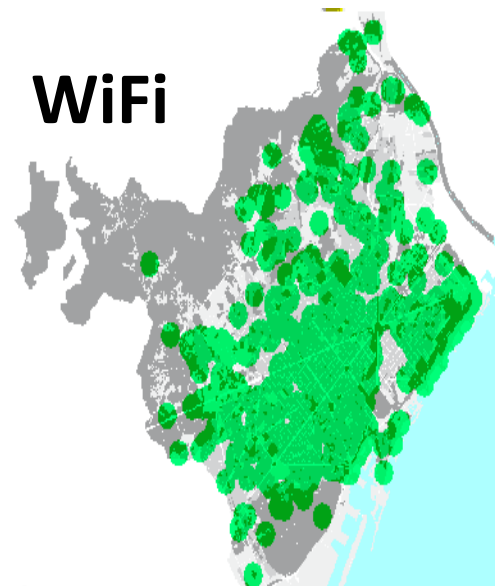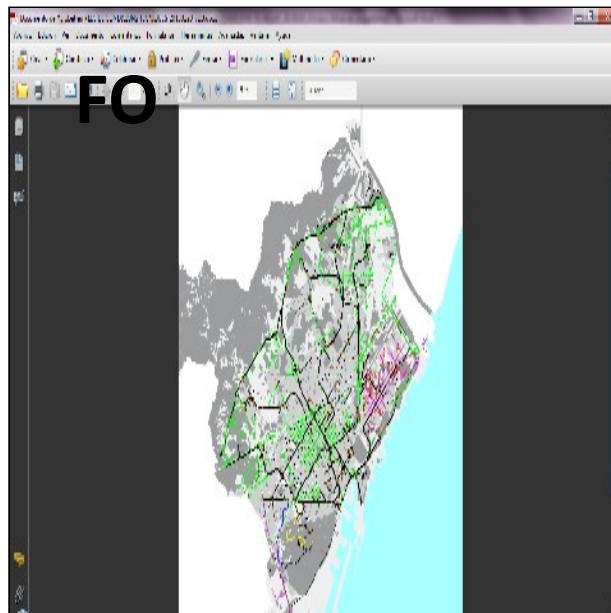
- Strong international links

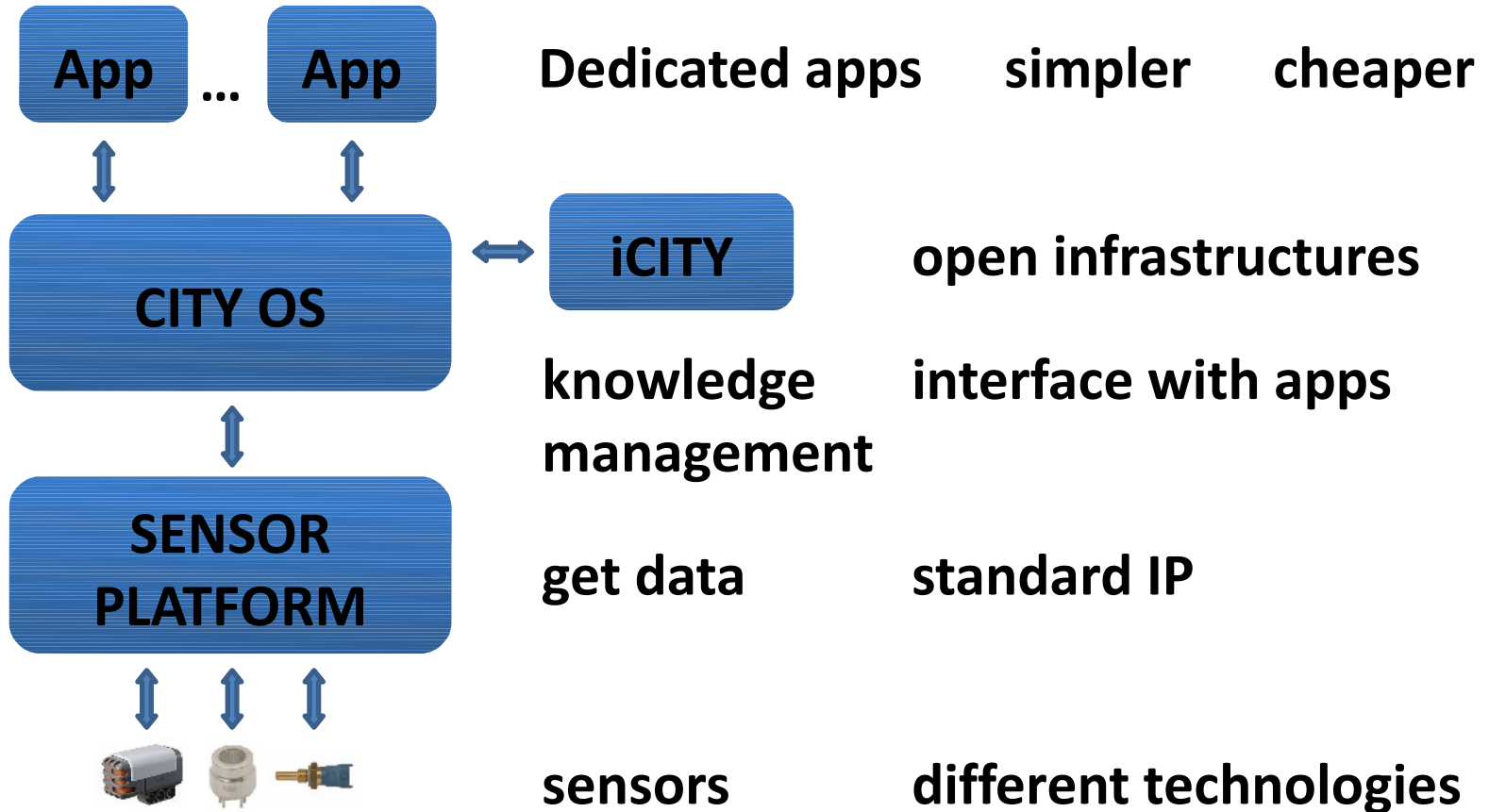# Barcelona Smart City Programs

Transformation of a running city

5. THE BASEMENT: INTEGRATED NETWORK

FO

WiFi

WIDE { **capacity** **capillarity** } **prepared for sensing**

5. THE INSTRUMENT: URBAN PLATFORM

App ... **App**   **Dedicated apps   simpler   cheaper**

CITY OS   **iCITY**   **open infrastructures**

knowledge management   **interface with apps**

SENSOR PLATFORM

get data   standard IP

sensors   different technologies

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6. INTELLIGENT DATA

Real time data   **Reports**

Situation room

What it is happening
at the city

Corporative tool

City indicators

How is the city

Citizen's tool

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7. SMART SERVICES

Energy
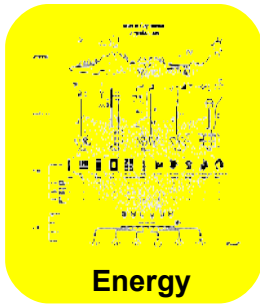
Smart lighting
- ➢ Individual remote management of LED lighting poles

Self-sufficient blocks
- ➢ Micro eco-generation
- ➢ Heating and cooling network

Water Cycle
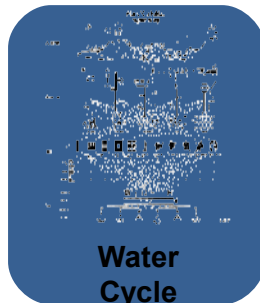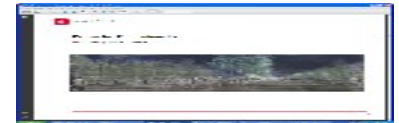
Smart water
- ➢ Smart sewer network
- ➢ Smart irrigation
- ➢ Telemanaged ornamental fountains
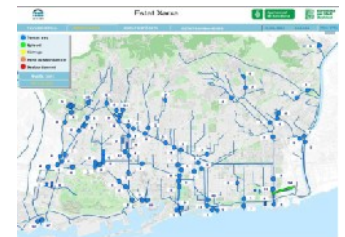
7. SMART SERVICES

Mobility

Zero Emissions Mobility

Smart parking

Smart transportation

➤ Worktable with cross-sector and government administration in

  ➤ Payment by mobile
➤ Public parking in private sites

  ➤ Orthogonal bus network
    ➤ Smart bus shelters

Building / Street / Neighbor hood

Urban transformation

➤ Inclusion of requirements for smart cities (telecommunication infrastructures and sensing) in streets remodeling tenders
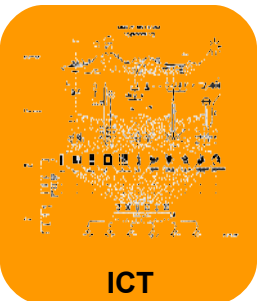
7. SMART SERVICES

Social Impact / Citizens

Urban Resilience

➤ 8 infrastructure and urban services tables (TISU)

➤ United Nations resilience office in Barcelona

Smart citizens

➤ Fab labs

➤ Citizens as a sensors

Citizenry

oGovernment

➤ Opendata

➤ Whabit

ICT

Barcelona in your pocket

➤ apps4BCN

➤ idBCN

➤ Barcelona contactless

➤ mGovProcedures

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8. HOW TO GET IT

Smart tender

Include in all appropriate public tenders clauses about smart cities

Partnership with innovation centers and other cities

9. INDUSTRIAL PROMOTION

Smart city campus

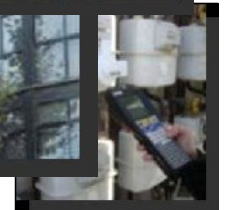Collaborative space between industry and university

Cluster of smart cities

Big international companies cooperating with local companies

Urban Labs

Testing smart city solutions in a real environment

βarcΣloⁿn@

Benestar   Algua   Residus Ciutat   Energia Logistica   Aire   Natura   Informació