



Valencia
Smart
City



What characterises a **Smart City**?

What are the **initiatives** that make Valencia a smart city?

What are the achievements of the innovation **ecosystem** of the city?



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WHAT IS A SMART CITY?

It is a city in constant search of new urban and focused solutions in which citizens perceive well-functioning urban services, in short, one focused on the **quality of life** of its inhabitants, but also of their businesses, tourists, researchers and entrepreneurs.

As established by the European Commission in its document **'Mapping Smart Cities in the EU'**, a smart city must consider solutions for **mobility, energy efficiency and environmental aspects, governance, economy, culture, leisure, sports and**

technology solutions that meet the **ICT needs of the citizen**, to draw up its plan of a smart city.

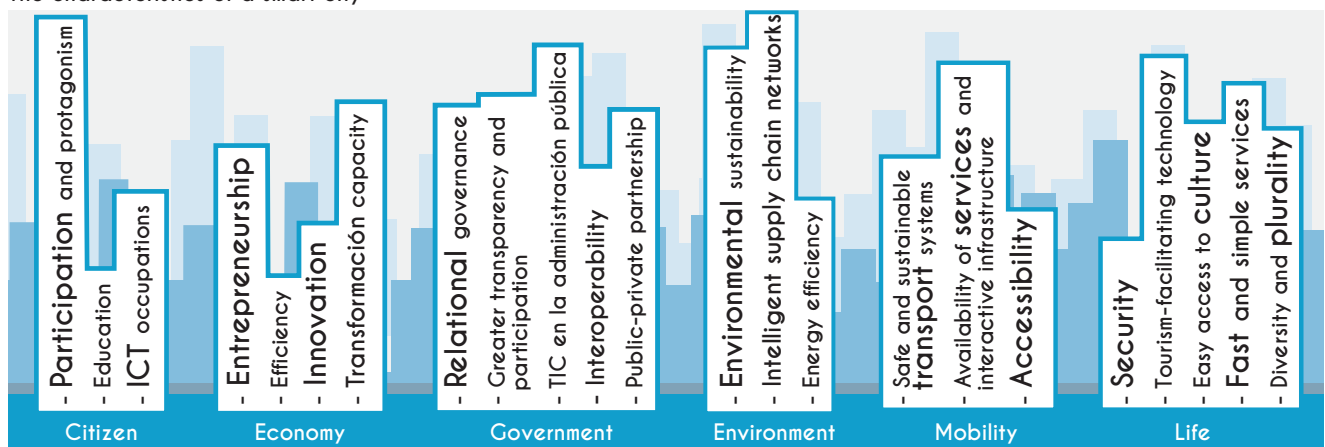
But it is each city is which make the most of its own capabilities and turn them into added value in its process of transformation into a smart city, watching other human, technological and institutional components.

Valencia already complies with all these features of **relational governance**, it is a city that **optimises its resources** with the help of **urban indicators**

of service quality and efficiency; **sustainable** and concerned about the environment, **connected, digital, resilient** and **innovative**, that seeks to attract and retain **talent**, which uses **technology** as the main tool to achieve these ends, and that transforms its data into **knowledge** that it gives back for sharing with the city on **open data** platforms.

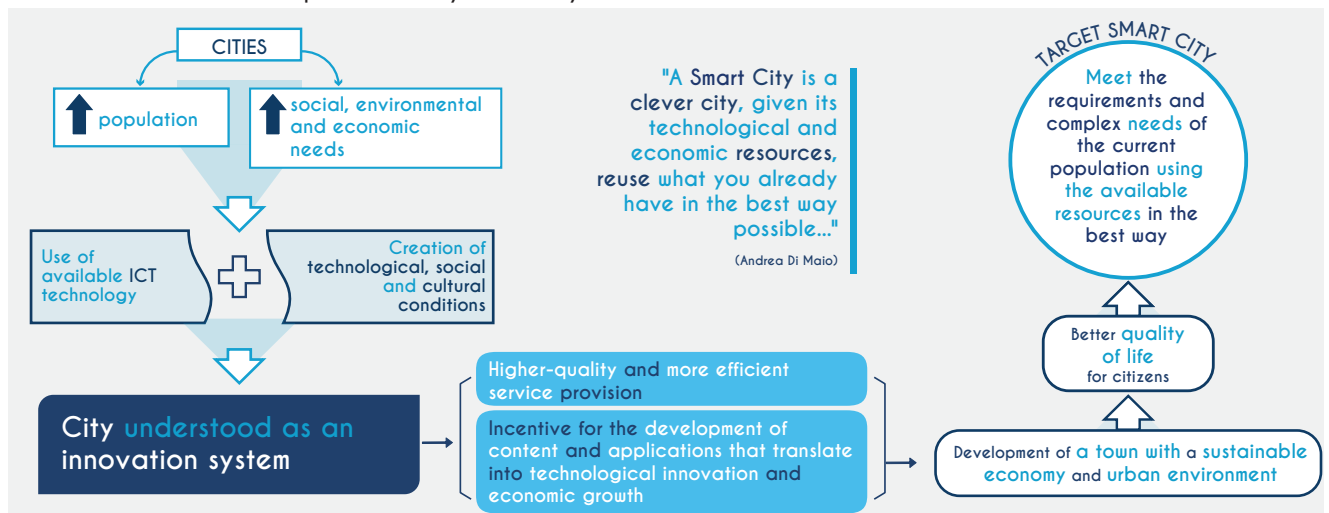
Enhancing the city's capacities using ICT to generate growth

The characteristics of a smart city



Source: Valencia City Hall and own material

The role of ICT in the development of a city: Smart City



Source: Own material



VALENCIA, SMART AND INNOVATIVE CITY

Valencia is a city that offers its residents an attractive and unique space to live in, where they can develop both personal life and business projects. This attraction is based on resources and capacities achieved over the years. From this advantage, unique to Valencia, was born the **Smart City (VLCi) strategy, converging with the European targets for the year 2020 and based on an agreement reached between the ecosystem of the Local Pact for Innovation.**

To say that Valencia is committed to a **smart strategy** means that it encourages the use of the power of knowledge, not only to better solve the problems of its residents but to **innovate** with the development of the objectives proposed by the protagonists of change: the citizens, companies and institutions.

The city is a place of interaction between different actors, and the VLCi approach affects everyone as well as their lives. It particularly involves the Administration, leading to the widespread use of new technologies, making electronic interaction and access to information increasingly more ecological, comfortable, secure and rapid. Digital management, **linking different stakeholders together, leading a transition to smarter, knowledge-based management.**

VLCi promotes actions to **foster innovative entrepreneurship** where there are great opportunities for cooperation between institutions, businesses and citizens, in a huge commitment to the generation of wealth and sustainable and quality

VLCi fosters innovative entrepreneurship by opening up the data the city generates to its citizens

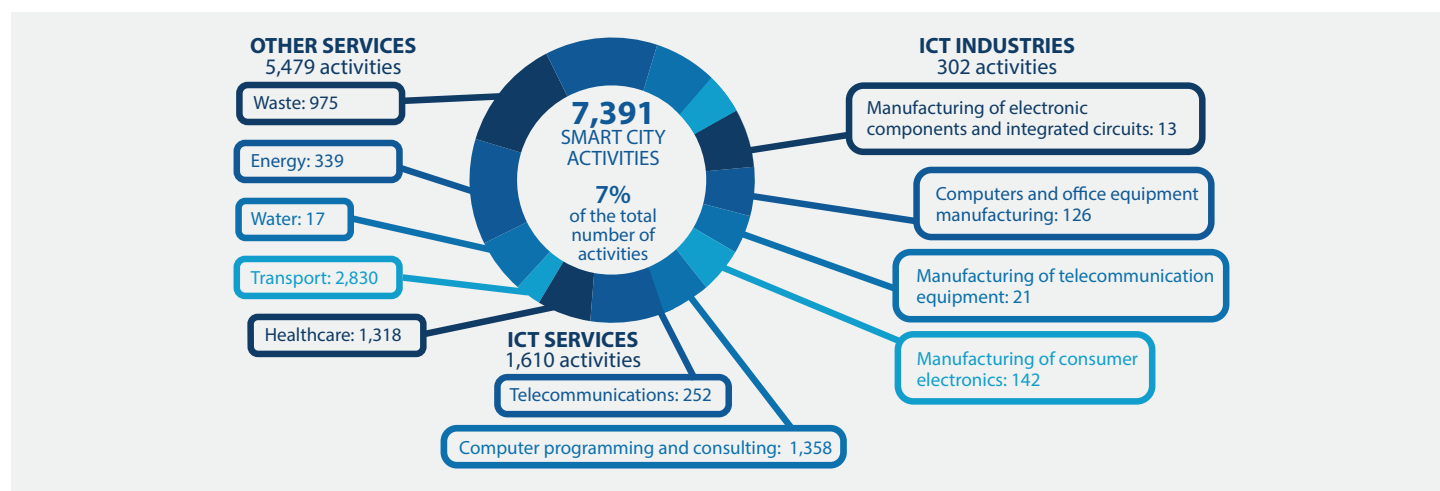
employment.

Valencia is committed to **attracting and retaining talent, innovative ideas and sustainable solutions** to improve city services and undertake world-class national and international projects, by encouraging business internalisation and placing the city in the world on the basis of good practices turned into reality for its citizens.

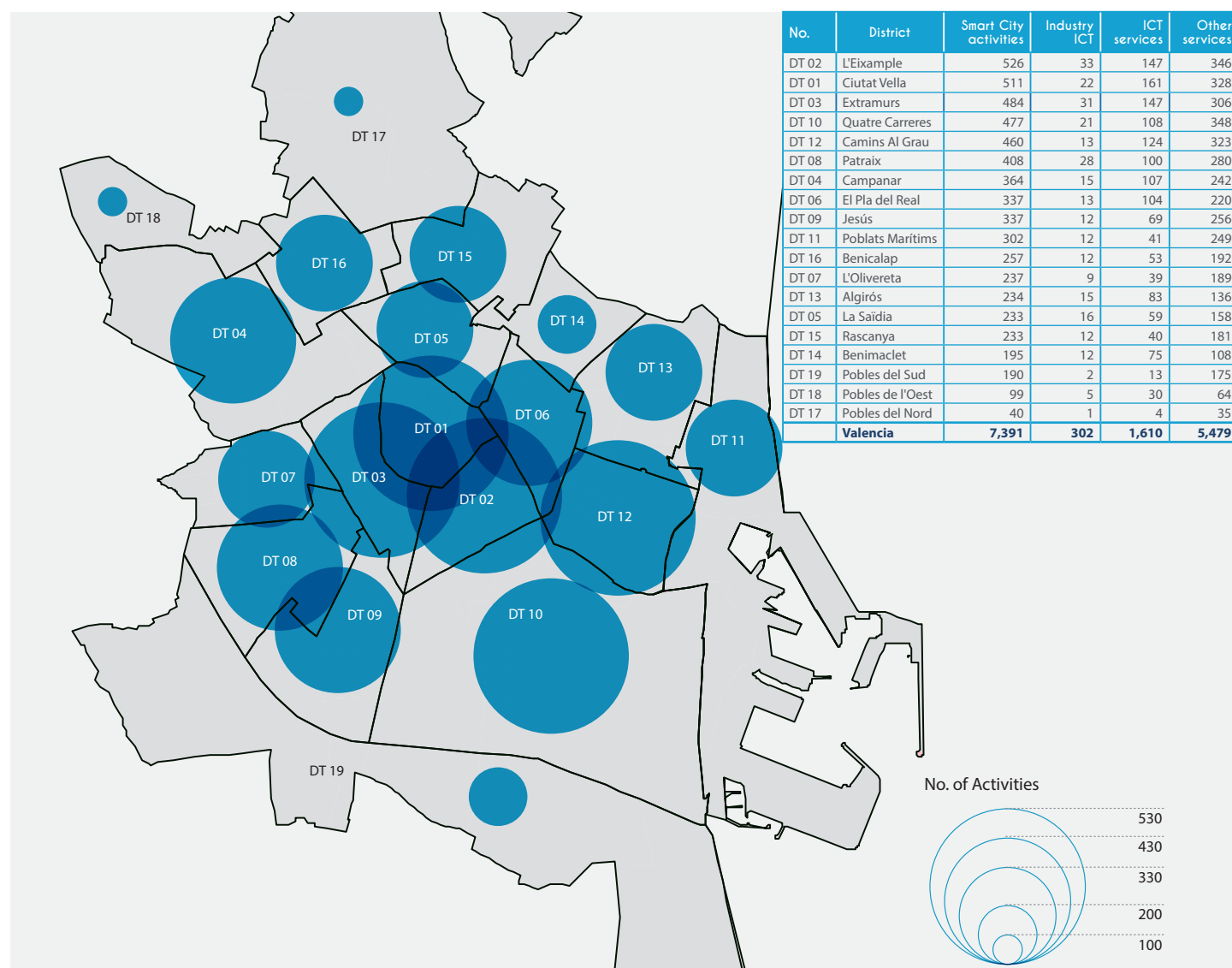
VLCi has opted for **inclusive and all-embracing development** based on the explicit aim of everyone sharing the achievements, ensuring equality of access to the returns obtained. The strategy of **sharing, integrating and reusing** is the smartest way to build an attractive city with an innovative spirit. With the necessary competence to stimulate by its incentives efficiency and effectiveness. In a city that is endowed with instruments for the promotion of smart solutions and uses them daily.



ACTIVITIES OF SMART CITY IN VALENCIA



Distribution of smart city activities in the city of Valencia. 2013



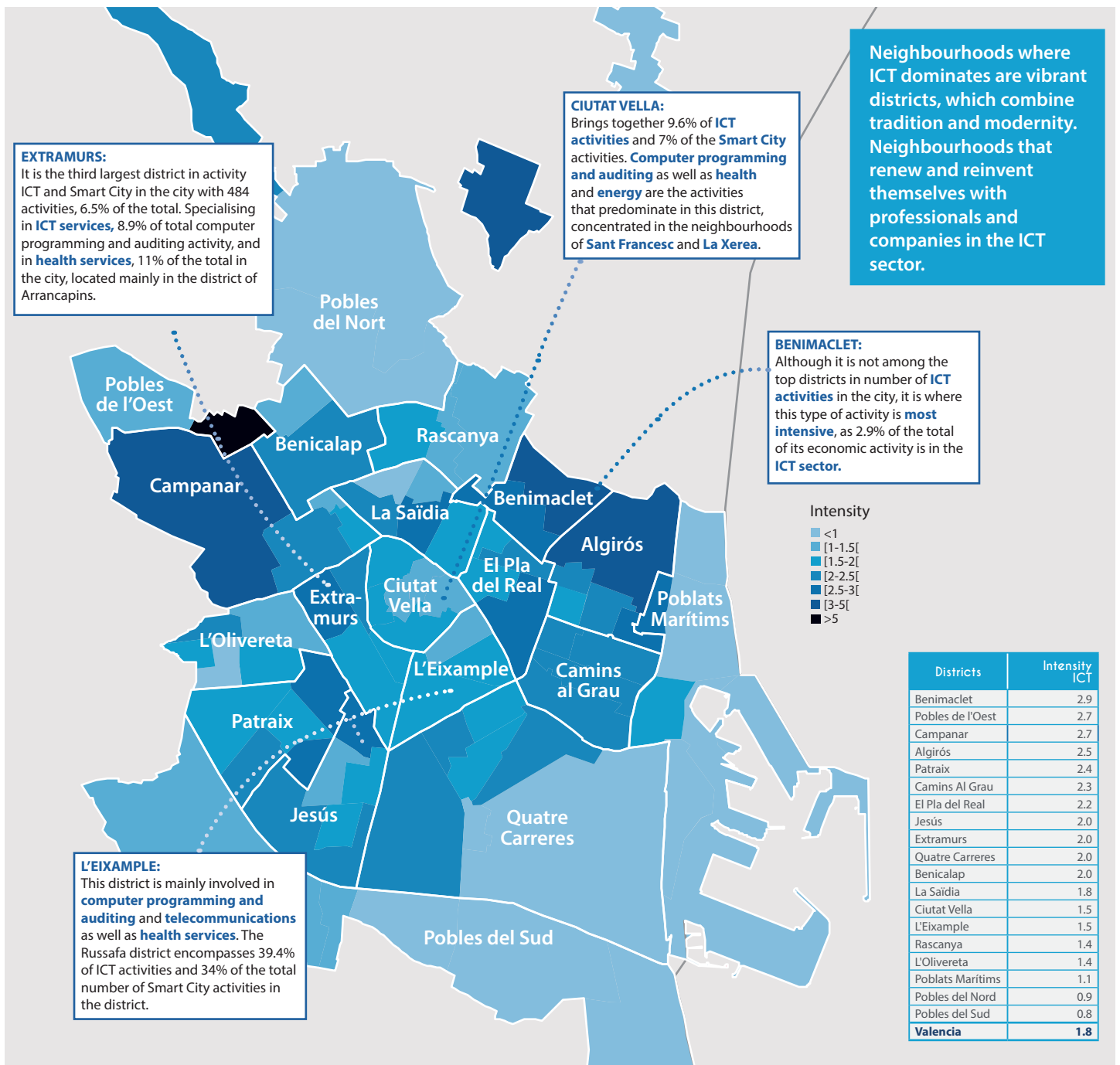
Source: Economic activities tax (Valencia City Hall).



Top-5 of the activities of smart city in Valencia

Electronic components and integrated circuits manufacturing		Computers and office equipment manufacturing		Telecommunication equipment manufacturing		Consumer electronic appliances manufacturing		Telecommunications		Computer programming and consulting		Other services	
Algirós	3	Patraix	14	Patraix	6	Extramurs	17	Extramurs	26	Ciutat Vella	139	Quatre Carreres	348
L'Eixample	2	L'Eixample	13	L'Eixample	2	L'Eixample	16	Ciutat Vella	22	L'Eixample	125	L'Eixample	346
Extramurs	2	Extramurs	12	Jesús	2	Ciutat Vella	13	L'Eixample	22	Extramurs	121	Ciutat Vella	328
L'Olivereta	1	Camins Al Grau	10	Quatre Carreres	2	La Saïdia	11	Quatre Carreres	21	Camins Al Grau	110	Camins Al Grau	323
Patraix	1	Ciutat Vella	9	Benicalap	2	El Pla del Real	11	Jesús	18	Campanar	96	Extramurs	306

Intensity of the ICT sector * in the city of Valencia. 2013



* Ratio of ICT activities and total activities in each of the districts.
Source: Economic activities tax (Valencia City Hall).



LOCAL PACT FOR INNOVATION: AIMS AND PROTAGONISTS

The positive **commitment** of the city of **Valencia** to draw up **strategic lines** for its **development** began almost two decades ago with the Strategic Plan for Valencia, in 1995. Over the years, the strategies and projects have been overhauled adapting them to the reality of a city in constant evolution and one which tackles new challenges in order to go forward.

That's how the **Valencia 2020 Strategy** came about which is the **roadmap** for the **city's economic and social development** addressing strategic challenges and seeking excellence and projection in those areas in which Valencia has great potential. The purpose of the Valencia 2020 Strategy is a smart, sustainable and inclusive growth in our city, with **innovation** as the **driver** of this **development**. In this sense, the Local Pact for Innovation is a key initiative of the city strategy and an example of governance for innovation.

It is a **coordinated overall strategy** the aim of which is drive **RDI, talent** and **entrepreneurship**, making **innovation** the cornerstone of the socio-economic development of the city of Valencia.

The **Local Pact for Innovation** brings together the representatives of the RDI ecosystem in Valencia: universities, technological institutes, research centres, business associations, among others. Agents who already carried out innovation projects individually, who being part of the Pact, constitute a **platform** for coordinated work with **shared objectives** that promote joint projects. From joint responsibility and resource optimisation.

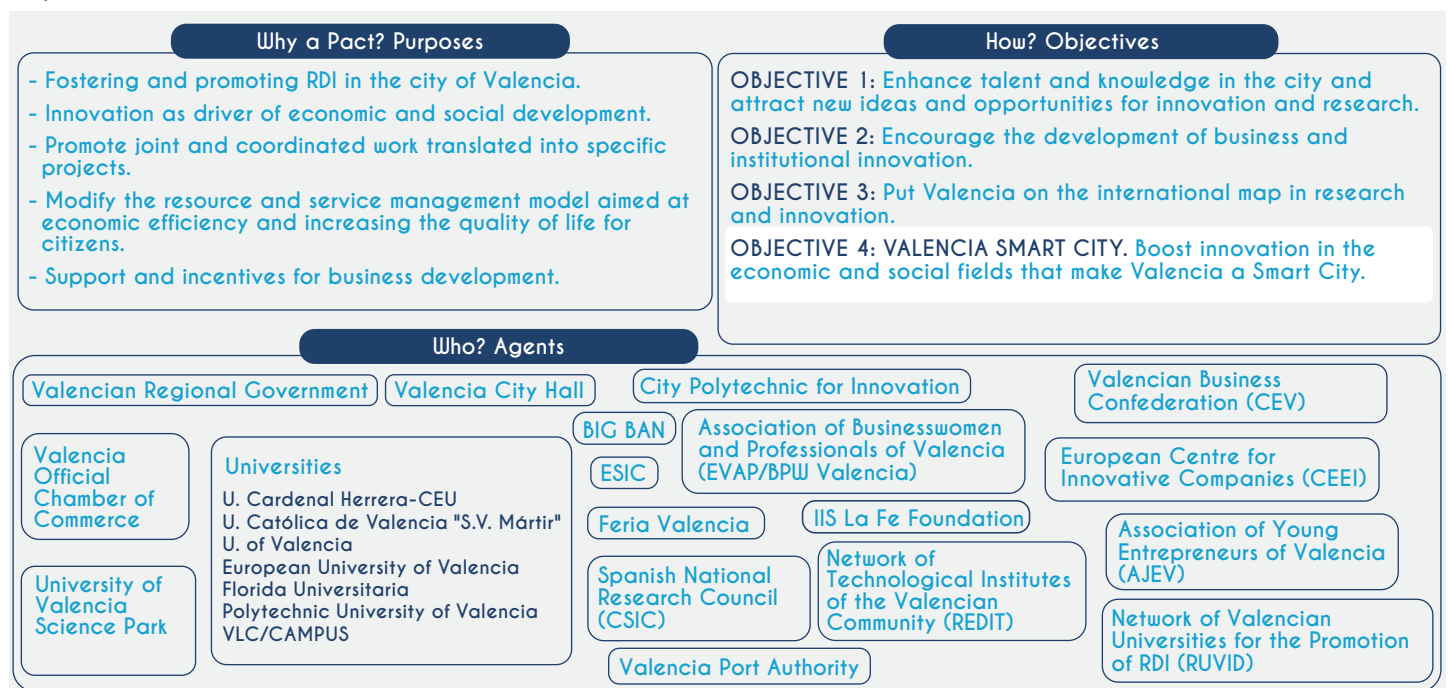
This shared platform rests on **four operational aims** carried out through specific projects. The joint efforts of these agents of innovation has resulted in specific initiatives and is strengthening the interactions between

Valencia, an example of relational urban governance for innovation and entrepreneurship

the main players in the RDI ecosystem and city entrepreneurship.

This development strategy has turned Valencia into a leader in the use of ICTs in its management model and is recognised as the **"City of Science and Innovation"** by the Ministry of Economy and Competitiveness. In addition it occupies **5th place** in the **Top 10** of the ranking **"European Cities and Regions of the Future 2014 / 2015"**, of the Financial Times newspaper, among the cities of southern Europe. It is also in **7th place** in the Top 10 Southern European cities with best **strategy** for attracting **direct foreign investment**.

Map of the Local Pact for Innovation



Source: Valencia City Hall and own material



E-GOVERNMENT, ECONOMY AND EFFICIENCY IN PUBLIC MANAGEMENT

Its determination to introduce technology into service management sets Valencia apart as a city of **SMART GOVERNANCE**.

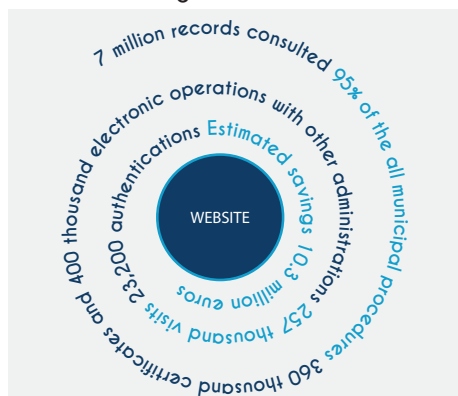
In September 2014 the **PIAE** comes into operation which eliminates the use of paper in the inner workings of City Hall. The process is completed with the start of the PIAE, so that the city of **Valencia** will have a City Council that works entirely with electronic government.

Thanks to this system there will be economic and time **savings**, as well as a more efficient operation, because it prevents the loss of records and reduces the administrative blockage, knowing at all times where each record is.

The **Electronic Headquarters** of Valencia City Hall, startup in 2012, made the city the **first in Spain** to allow citizens to do their **official paperwork online**, such as paying taxes and fees, consulting records, obtaining voter registration certificates, etc. This initiative has a remarkable aspect: **electronic representation**, which allows any citizen or company to be displayed electronically by another. This way communications between the local administration and the citizens is easier.

Remaining with accessibility, the

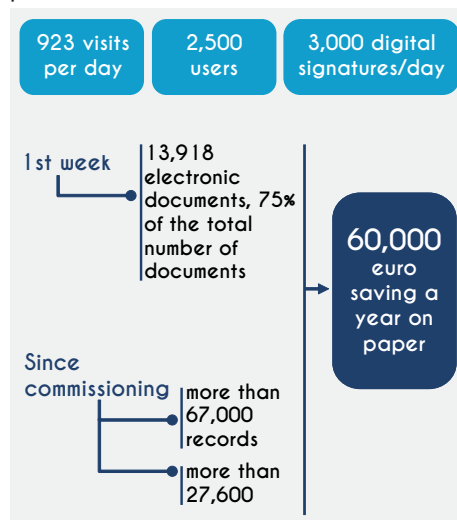
The Website in figures



Source: Valencia City Hall

municipal website incorporates the **Inclusite** tool that allows access to all its information for persons with disabilities. It is a cloud service that adapts the web to the needs of users by taking into consideration different

Impact of integrated e-government platform



Source: Valencia City Hall and own material

ways of interacting with computers. It enables interaction via the keyboard, in a participative manner or using sounds. This tool is included on the City Council website by means of a tab that indicates "accessible mode".

App Valencia was set up with the aim of bringing services to the citizens using

appValencia: connecting with Valencia



Source: Valencia City Hall and own material

First Spanish City Hall with 100% electronic records thanks to its Integrated Platform of Electronic Government (PIAE)

smart phones and tablets. Developed by the City Council, it integrates other municipal applications and is a **cross-platform access to geo-referenced information in real time**. It has traffic information, access to the means of transport closest to the user's location, filling stations, health centres and public Wi-Fi access points. The section *What's near me?* enables you to find various municipal facilities, tourism, public transport, the Fallas, tourism in Valencia depending on the kind of attraction or period they belong to, and social services.



SUSTAINABLE RESOURCE MANAGEMENT

Being a city that focuses on energy efficiency and a smart environment (**SMART ENVIRONMENT**) means taking decisive steps towards **technological renovation**, and the city of Valencia is doing just that. Action plans for air quality and noise pollution, sustainable energy depend on active participation with other cities, support from firm initiatives with specific aims and decision-making at the local level.

Valencia has an **Advanced Integral Water Management System** that measures rainfall, controls water traps and spillways in the sewer network and reuses more than 300 000 m³ of wastewater daily. **Supply**, which includes the water purification, transport and distribution, supply to citizens and facilities maintenance, along with **sanitation** are the two responsibilities the service has. One of the

city's commitments for improving **energy efficiency** are the photovoltaic roofs such as the ones installed in the depot of the Municipal Transport Company (EMT Valencia) with more than 600 panels. **Air quality** and CO₂ emissions reduction is a priority for the city, the municipal transport **bus fleet is 100% ecological**. Besides this initiative there is the commitment to **electric vehicles**, with a fleet of 47 environmentally friendly vehicles for

Valencia, model sustainable city

INITIATIVES

public lighting

- ✓ sodium vapour lamps by **LED lamps**
- ✓ 70% of streetlights with flow regulator
- ✓ traffic lights with **LED technology**

photovoltaic roofs

- ✓ EMT depots
- ✓ Mercavalencia
- ✓ Conference Centre
- ✓ Fire Station

advanced integrated water system management

- ✓ **real time** control
- ✓ **1,450 km** of infrastructure
- ✓ **35%** water saving

green areas and beaches

- ✓ **75%** of beaches with blue flag
- ✓ **5.8 million m²** of green areas
- ✓ **8.7 million m²** La Devesa del Saler Nature Park

smart water metering

- ✓ **60%** renewed (258,000 units), European leader in implementation of smart metering
- ✓ **430 thousand** by 2016

smart irrigation system

- ✓ **35%** water saving
- ✓ automated **drip irrigation**

municipal electric vehicles

- ✓ **saving** of **1 43** tonnes of CO₂ per year

early fire protection sensors in La Devesa del Saler nature park

vertical gardens

ACHIEVEMENTS

↓ **13.7%** in water consumption in 7 years

8 thousand tons CO₂ emissions reduction

↓ **24%** of energy consumed

PROJECTS

CAT-MED (Green Apple)

Climate-KIC (Transition Cities)

Climate-KIC (Public Procurement of Innovation in Action-PPIA)

SMILE (Smart Green Innovative Urban Logistics for Energy Efficient Mediterranean Cities)

H2020-CEPPI (Public Procurement of Innovative Sustainable Energy Solutions)

Source: Valencia City Hall, InnDEA and own material

EMT valencia
pioneer in 100% of
lines certified with
environmental quality
standard UNE-EN
13816

inspection tasks and water supply facilities, local police and the EMT. **Urban noise** is a challenge that cities face. Valencia, with its **Noise Map**, diagnoses noise pollution dynamically. This tool enables it to obtain information and carry out plans of action such as local regulations or the creation of the **Noise Pollution Service**.

Two examples of **energy efficiency** are the **Mallilla Municipal Sports Centre** which has a 30% energy saving thanks to its thermal insulation and which generates 86% of the energy it requires due to its solar panels and cogeneration system; and the **6th unit of Local Traffic Police** with a geothermal system that saves 40% on energy and emissions.

Valencia fosters **urban planning** within a framework of **sustainable** growth. The city is growing at the rate of 8%, four times under the provisions of the Planning Regulations. Sixty percent of the municipal area is protected, with 150 000 m² of the historic city centre pedestrianised, a 30 kph speed limit in the centre since 2010 and 500 areas of cultural interest or local importance.

In an effort to achieve environmental sustainability pioneering projects are being carried out in L'Albufera National Park: **LIFE projects**, and European projects: **Climate-KIC** (climate change adaptation).

ACTIONS OF A SUSTAINABLE CITY

Participation

Valencia member of:

- Euro-Mediterranean Sustainable Cities Network
- Spanish Network of Cities for Climate
- Spanish Network of Healthy Cities
- Spanish Network of Cities for Accessibility
- Knowledge and Innovation Communities (KICs)

Commitment to specific objectives.

- "Covenant of Mayors" (European Energy Efficiency Action Plan): reduction of CO₂ emissions
- "Covenant of Mayors for climate change adaptation"
- The City of Valencia Adaptation Plan to Climate Change
- Valencian Climate Change Observatory
- VIT Energy. Network for innovation around the energy sector

Local decisions

- Noise Abatement Regulations
- L'Albufera Light Protection Regulations
- Pollen map: alert service for allergy sufferers.
- Strategic Map of Dynamic Noise.
- Action Plan for the improvement of air quality.
- "Mutis... control your noise": app to measure noise levels.



ECOLOGICAL AND SUSTAINABLE TRANSPORT

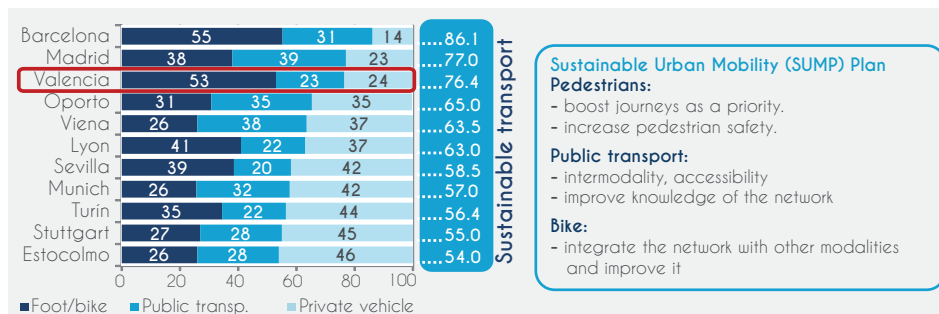
The introduction of **ICT** on municipal transport, **intermodality** and improvement in city **logistics** make Valencia a city with **SMART MOBILITY**.

An important step in this regard is the **Plan for Sustainable Urban Mobility (PSUM)**. Includes the strategic lines for transport management and ensures citizen accessibility and mobility. The existence of the **Traffic Control Room**, a comprehensive and smart traffic management system, helps to achieve the objectives of the PSUM. This room, considered the best equipped in the whole of Spain, regulates traffic lights, manages the 750 cameras in the city and real-time traffic information.

The city of **Valencia** is committed to a network of **sustainable municipal transport** based on ICT, sustainability being the hallmark of the Municipal Transport Company (**EMT Valencia**) with the majority of buses running on biodiesel, compressed natural gas and hybrid systems.

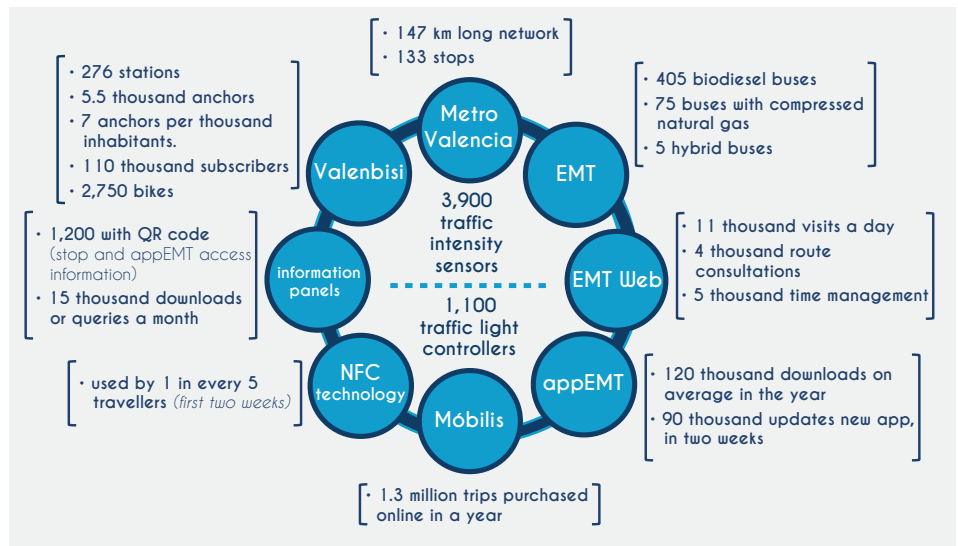
Users not only have the **EMT Valencia** and **Metrovalencia website**, with all the information on lines, timetables, routes and tickets, but also the **Móbilis** chip card that allows them to charge it with more than one type of transport and facilitate their journey management. The Móbilis card can be recharged *on-line* and

Getting around in Valencia?



Source: Valencia City Hall and own material

Integrated mobility in the city of Valencia



Source: Valencia City Hall and own material

NFC Technology and mobile phone charging in the municipal transport network

incorporates the **QR code** to access the terms of use of the card using a mobile phone camera.

Committed to **integrated public transport**, the new EMT app provides information on sustainable mobility in the city and an integrated QR reader. The city of Valencia is the first in Spain to implement a **public transport payment**

service using a smartphone. The service offered meets the full cycle of acquisition and use of a transport access ticket. Information panels on EMT shelters take yet another step towards **accessibility** for people with reduced mobility by including **bluetooth** and speakers that play the text on the information panels, and a **Cyberpass** system.

Supporting sustainable and alternative means of transport, the city of Valencia has 137 km of **cycle lanes** and a network of public rental bicycles, **Valenbisi**, with more than 100 000 subscribers.

Currently, Europe is concerned about improving the logistics of its cities. Valencia is working on projects such as **SMILE** (sharing solutions), **Efrud** (solutions for urban transport of refrigerated goods) and **Pro-E-BIKE** (solutions for the transport of goods and passengers using electric bicycles and electric scooters) to optimise deliveries in the city with the least **environmental impact**.



QUALITY OF LIFE FOR CITIZENS

The city of Valencia has taken **smart steps** so that its citizens are the protagonists and beneficiaries of the technology and innovation it is committed to. It has managed to involve citizens and make them participatory (**SMART PEOPLE**) improving their quality of life and facilitating their daily lives in the city (**SMART LIVING**).

Valencia is an open, attractive, dynamic and multicultural city that national and foreign visitors come to. The value added of **tourism** is reflected in the development of **technological** tools that facilitate enjoyment of the city.

INTERACTIVE TOURISM

- **Valencia Tourist Card:** a combined card for transport, access to museums and city monuments, discounts on leisure activities and shopping. With app for smartphones and it will include NFC.
- **VLC Valencia app:** all of the tourist information in the city, places to eat, stay, geo-referenced street map and up-to-date information, ticket purchase, among other offers.
- **App Fallas:** compilation of information about the Fallas.
- **Valencia Tourism Web:** it contains an interactive map of the city, tourist routes, downloads of street plans of Valencia, metrovalencia, or municipal buses.
- **Valencia calendar widget:** mini computer application for receiving up-to-date information about the city, culture calendar, news, events.
- **Turisvalencia.mobi:** portal for mobile phones with routes through the historic centre, routes by bike and information about what is happening in the city.
- **Valencia à la carte:** information about the gastronomy the city offers, *on-line* booking.
- **Downloadable digital guides:** tourism, Fallas and restaurants
- **e_postales:** postcards of the city to download and send *on-line*.

Smart management of emergencies and **security** are housed on four technological platforms that improve the response time of emergency vehicles, increase the quality of citizen services and efficient use of resources: Via@libre Emergency

Management System, Smart Efficient Response System (SERS), Comprehensive Emergency Support Information System (CESIS) and Advanced Command Post Support System (ACPSS).

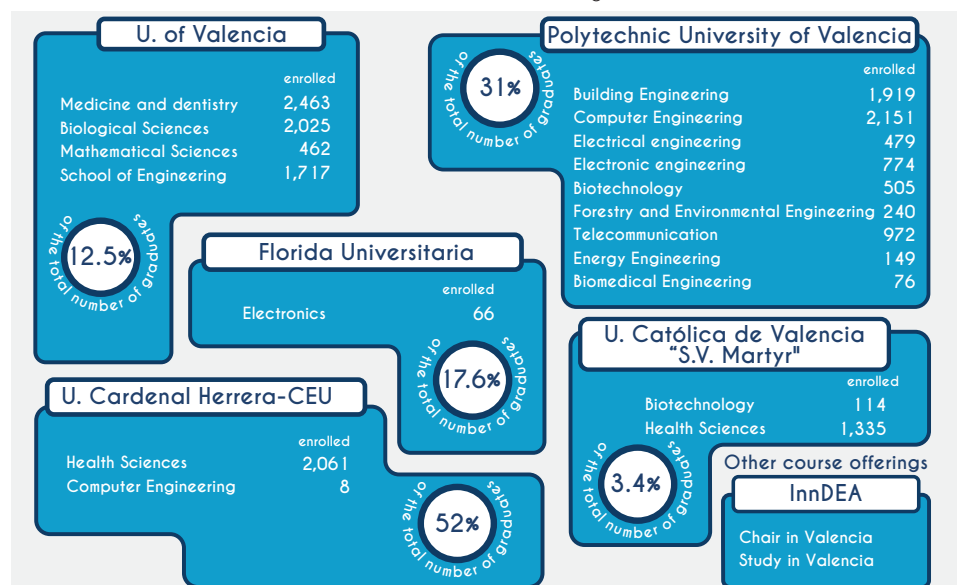
To improve the **quality of life** of citizens and visitors there is the website and the **pollen map**, with data on pollen levels by city district and locality, and an alert system for allergy sufferers.

The tendency of cities towards **e-urban, smart and sustainable** town planning, is also taking place in Valencia. In the social sphere, the Building as a Service (**BaaS**) project seeks to convert the Patraix Social Centre into a smart pilot building which, by means of its automation facilities, makes choices according to its needs. In

U. Polytechnic of Valencia, among the top 400 in the world and best polytechnic in Spain.

Educational offer for a smart city.

Students enrolled on courses in 2012/13 and students who graduated in 2011/12



Source: Valencia City Hall and own material

a sporting context, the thermal insulation of the **Malilla Municipal Sports Centre** contributes to its energy efficiency. Within the framework of safety, the **6th Traffic Unit of the Local Police** has a geothermal system that contributes to energy conservation. The **Light2CAT** project develops concrete additives that are sunlight-activated help to clean the air in cities.

Smart cities require **trained** professionals who can help them meet their specifications. Valencia is home to prestigious universities and education centres that guarantee the future **human capital** of the city. This will enable it to continue to participate in projects such as **Mobitrans** (operational planning by users of their urban journeys), **Transbio Sudoe** (transnational biocluster that seeks to improve the ecosystem for innovation in biology and health) and **SANP +** (Nutritional Support System for Patients, software that manages *on-line* the nutritional process of hospitalised patients in Valencia Teaching Hospital).



APPVALENCIA AND OPEN DATA: PUBLIC PARTICIPATION AND TRANSPARENCY

Valencia has a firm commitment to bring information about the city closer to its inhabitants and visitors. Thus, it has developed a **Geographic Information System** (GIS) with 230 layers and more than 3,000 points that facilitate access to geo-referenced information about the city.

Based on this important item and considering the role played today by mobile technologies, Valencia, following one of the priority objectives of the **smart city strategy**, launches **app Valencia**.

This application, developed by the City Council, is a **multidisciplinary**, **interactive** and **customisable** platform that facilitates, in real-time, geo-

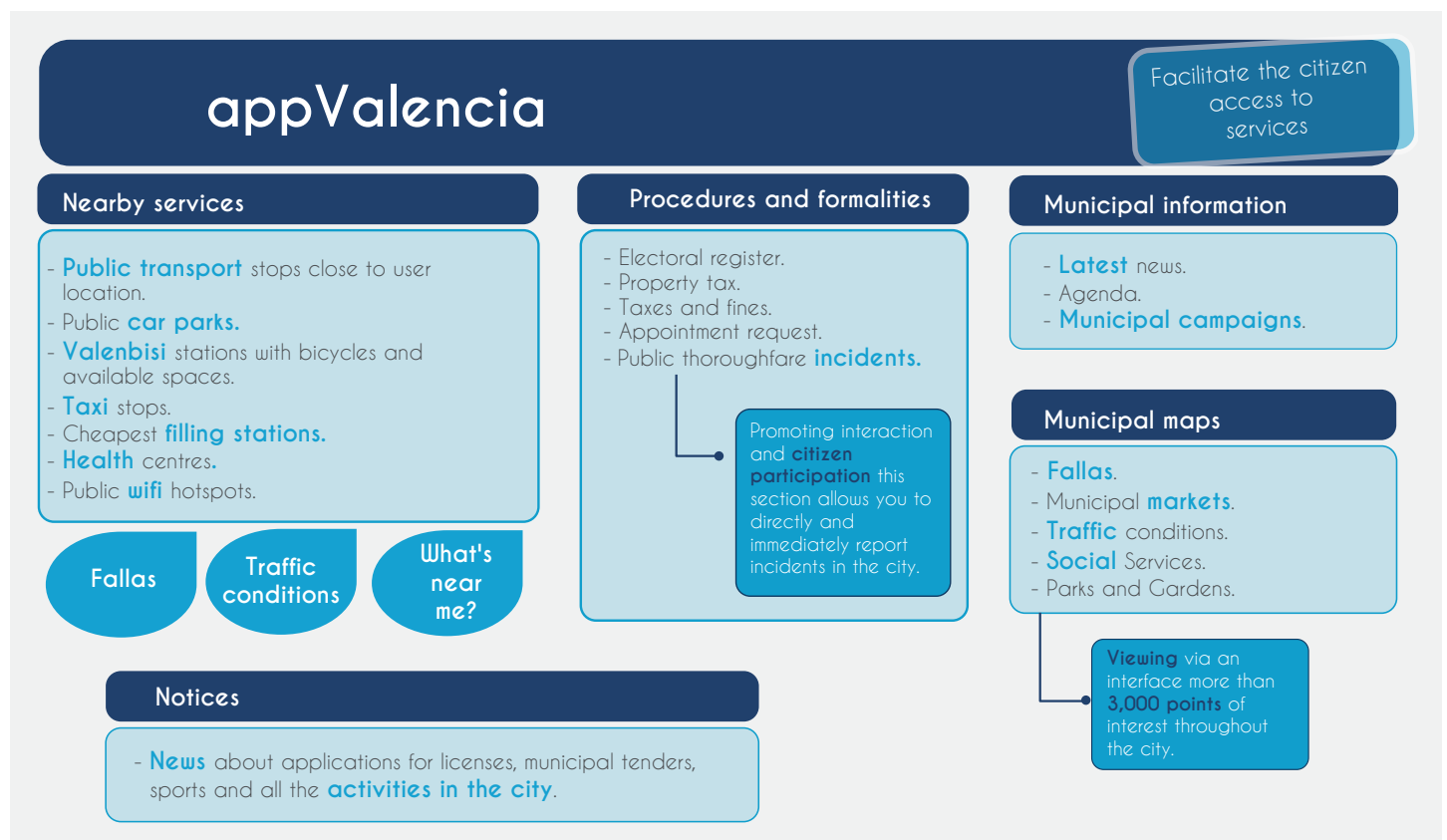
referenced information from the city of Valencia. Its aim is to **bring the administration** closer to citizens and, in general, all the urban environment that surrounds them.

Whilst it makes access by its citizens to **municipal services easier**, it is also intended to be a useful tool for tourists to help them with trips, routes and information about tourist attractions, as such the Fallas.

In short, it attempts to make available to users all the **urban technology** and become a **showcase** to boost the city's attractions and its position as a Smart City.

Another initiative that encourages **transparency** and **citizen participation** is the creation of the **open data website**. It offers society a complete suite of data via an updated catalogue of layers of information about the city, 74 open data sources, prepared by the City Council. The objective is the use of these to create **added value** and to promote economic potential. To achieve this applications created by users of this database are encouraged, constituting a place to display these innovations. It has more than 6,200 users and more than 9,200 downloads.

Bringing the city closer to the residents: appValencia



Source: Valencia City Hall and own material



VALENCIA, TECHNOLOGICAL CAPITAL: VLCi PLATFORM

Valencia is the first Spanish city which will centralise municipal information in an integrated management **computer solution for the city based** on the paradigm of services in the cloud and the first European city to use **FI-WARE** on a Smart City platform: Valencia Smart City Platform (**VLCi**), recognised by the EU as **good practice**.

This open common repository receives information, via 350 indicators, about the city, its citizens and the municipal services, enabling real time monitoring of what happens in the city and designing strategies for more efficient management.

Due to this **data centralisation**, the city connects all its areas, establishing a complete **interoperability** between

them and allowing its evolution to be measured as well as its position relative to other cities. The **reduction in public spending** and **greater efficiency** in the management and **quality of resources** are the objectives being pursued.

A further point worth highlighting about this initiative is **the ecosystem of open innovation** which Valencia will become. The experimental **laboratory** for experimentation **on-line FI-WARE, FI-Lab**, enables entrepreneurs to use **Open Data** which the platform generates,

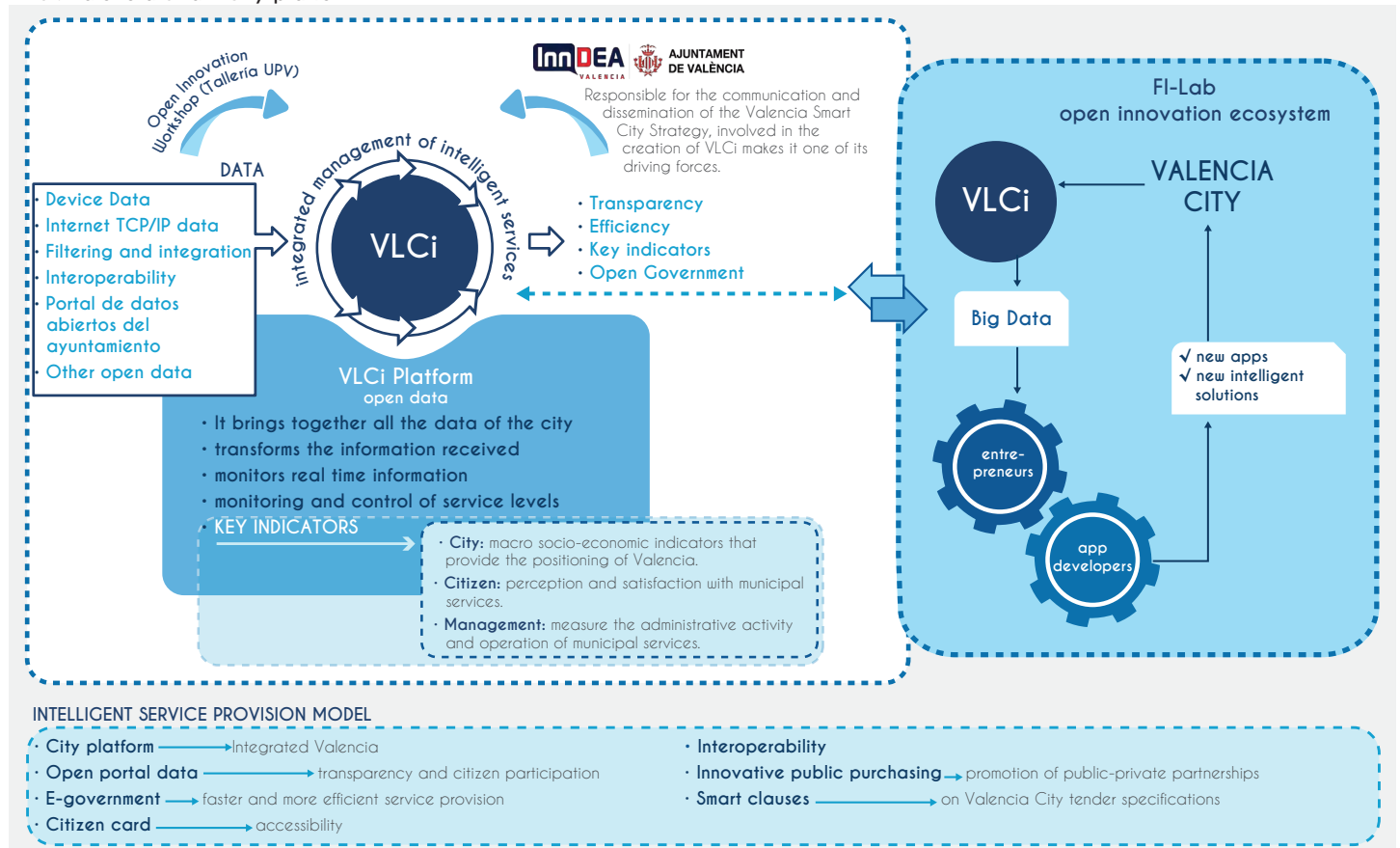
giving rise to new smart applications for the city.

The integral management of smart services that constitutes the **VLCi strategy** uses the **FI-WARE platform**, understood as a common technology base of the city that **opens** its **database** to **entrepreneurs, innovators and developers**. The **VLCi platform** anticipates developments and needs, managing data into **knowledge** for **decision-making** in the city.

As a result of these initiatives, Valencia participates in **European Innovation Partnership on Smart Cities and Communities (EIP-SCC)** platform.

VLCi platform as the brain that manages the city's information

VLCi: Valencia Smart City platform



Source: Valencia City Hall and own material



VALENCIA, MEETING POINT FOR INNOVATION AND SMART CITIES

The fourth edition of the **Festival of Innovation** drives the development and marketing of profitable business lines that will contribute to a sustainable economy.

With the 13th edition of **IEEE Sensors**, the **Smart City** gains special protagonism due to the role of sensors for the transmission of information about the city.

EmTech Spain is the annual Conference on **innovation, business, and emerging technologies** organised by the **Technology Review (MIT)**. 2014 was the 2nd consecutive year that it was held in Valencia, with an attendance of around 600 people and 30 experts in different areas.

App Trade Centre (ATC), business platform and exhibition of the **technology** applied to **apps**. It has a **lecture** and exhibition programme.

The **Iberian Tech Tours** event chooses the **25 most promising companies** from Spain and Portugal. The 2014 edition took place in Valencia and Lisbon.

National symposium of the International Union of Radio Science, **"URSI 2014"**, is a convergence point for **research** and innovation activities in **ICT** in the **telecommunications** and **electronic sciences** sector. Valencia hosted the 29th edition of this event.

Valencia, together with Seville and Las Palmas de Gran Canaria, last October held the event **"FIWARE: Connecting Cities to the Internet of the Future"**, sharing the data from these cities in a **Fi-Lab** environment. The theme focuses on **energy efficiency**, tourism and mobility.

Startup Weekend FIWARE Special Edition focuses on the **entrepreneurship** of individuals and companies that develop **services/applications** using open data from **FIWARE technology**. It is the first time that an event of this type has been held for which it was responsible **InnDEA**.

The App Date a meeting of developers, entrepreneurs, companies and individuals immersed in the most popular **apps** and new proposals...

NETWORKS OF SMART CITIES THAT VALENCIA TAKES PART IN

Spanish Network of Smart Cities (**RECI**), composed of cities with a system of innovation and work networking, seeks to provide the city with a model that improves **economic efficiency**, through **innovation** and **knowledge**. **Valencia** coordinates **work group 5** (Government, Economy and Business).

CLIMATE-KIC (Knowledge and Innovation Community), this is the most extensive European platform of **public-private** partnership that works to achieve the **objectives** of **climate change adaptation and mitigation**. It integrates **research**, business, and technology to turn **innovative ideas** into new products and **new lines of business**, services and work.

Spanish Network of Cities for Accessibility, a place for the exchange of ideas and experiences about **accessibility actions** that cities carry out.

EIP-SCC (The European Innovation Partnership on Smart Cities and Communities), brings together **cities, industry** and **citizens** with the aim of improving urban life by applying more sustainable integrated solutions. To do so it combines **ICT** with **energy management** and **transport** to achieve **innovative solutions** to the **challenges** that **European cities** face. **Valencia** participates in the work group of the city platform.

Innpulso Network, recognises and encourages initiatives in **science** and **innovation** carried out by Local Authorities to enhance **collaboration** between municipalities, to improve their **innovative profile** and to work on a model of **sustainable development**. To be part of this network, the city must have the distinction of **"City of Science and Innovation"**.

Spanish Network of Healthy Cities, promotes the **interaction** between **cities** with the aim of **promoting and protecting** health.

Spanish Network of Cities for Climate, composed of cities in whose policies **climate protection** is a **deciding factor**.

Euro-Mediterranean Network of Sustainable Cities, promotes the concept of **environmental sustainability** as a fundamental element for **economic development**, equity and balance in cities.

COOPERATION NETWORKS FOR THE PROMOTION AND TRANSFER OF TECHNOLOGY AND KNOWLEDGE IN VALENCIA





ENTREPRENEURSHIP, DRIVER OF THE CITY'S ECONOMY

The aim of making the city a destination for investment, attraction and enhancement of **entrepreneurial talent**, research and knowledge, as well as creation of an **innovative ecosystem**, has given way to initiatives that stimulate intelligently the economy of the city of Valencia (**SMART ECONOMY**).

Valencia City Council, through InnDEA Valencia, has launched **VIT Emprende**, a **cooperation network** for entrepreneurs, innovators, support institutions, mentors, investors, and companies whose common denominator is innovation. The objective is to create **synergies** at work, contact between players in the field of entrepreneurship, technology transfer and enhance **RDI** activities, whose effects benefit economic growth and employment.

Based on the Innovation Map, the Catalogue of Resources and Geoemprende, **VLC Business** came into being with the aim of attracting investment, **encouraging**

the creation of enterprises and stimulating the innovative business fabric thus showing the city's potential.

The **Innovation Map**, first fruit of the Local Pact for Innovation, was created in order to access information, create synergies between the different players and encourage business opportunities. It is a **dynamic and** visual tool which identifies and locates the players in **RDI in the city** of Valencia and its metropolitan area (public entities, universities and institutions undertaking training, companies, meeting places for entrepreneurs, innovation support entities, research centres and creative environments).

Information about support resources for entrepreneurship and innovation and research is collected in the **Resources Catalogue**. This tool aimed at entrepreneurs, companies, students and researchers provides information on scholarships, funding, awards, support agencies and offices and other elements that facilitate entrepreneurial activity in the city.

At the time of starting a new business, knowing niches in the market and the

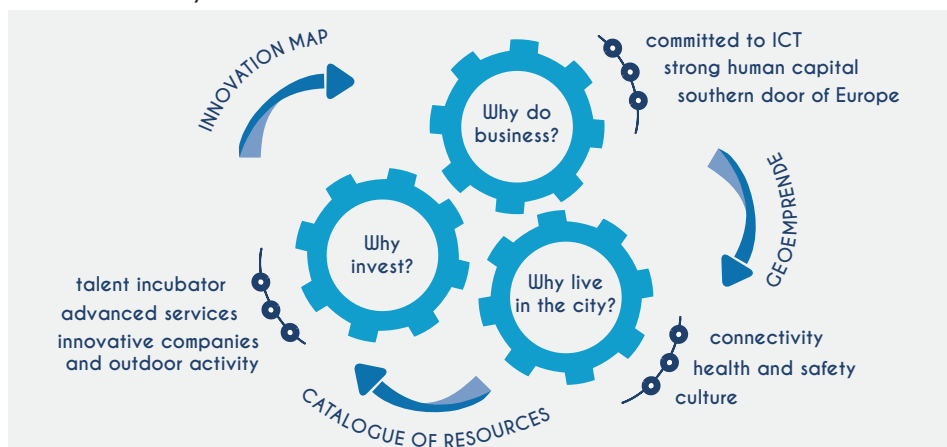
intensity of activity in the chosen area is crucial to the success of a new company. Thus, **Geoemprende**, a geographic and business tool, provides knowledge about the business situation of the different areas of the city, activities that exist, the companies involved and undersupplied areas. This battery of data enables the entrepreneur to make an analysis of their business potential.

Completing VIT Emprende is **Valencia Emprende**, a website with advice for people who want to develop an idea or a project specifically or consolidate and expand their existing business, ultimately increasing the business RDI.

Entrepreneurship in the city has in **Las Naves** a place for **innovation and creation** that focuses its activity on supporting emerging contemporary creativity in the city. It has several areas for the **development** of various **creative activities** and **innovation**. Along these same lines, the Business Resource and Innovation Centre (**CREIX**) is a breeding ground for companies which gives way to an **innovation ecosystem** and entrepreneurship that facilitates the setting up and consolidation of **new companies** in the city.

Valencia, 5th city of the future in southern Europe

VLC BUSINESS: Why Valencia?



Source: Valencia City Hall and own material

European Cities and Regions of the Future

Top 10. Southern European cities		Top 10. Southern European cities. Best strategy for foreign direct investment	
Ranking	City	Ranking	City
1	Barcelona	1	Barcelona
2	Lisbon	2	Lisbon
3	Oporto	3	Oporto
4	Bilbao	4	Bilbao
5	VALENCIA	5	Skopje
6	Madrid	6	Murcia
7	Murcia	7	VALENCIA
8	Skopje	8	Málaga
9	Seville	9	Seville
10	Málaga	10	Lendava

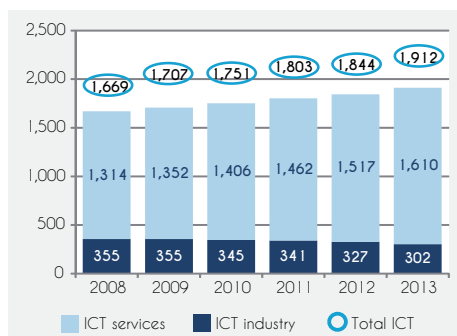
Source: European Cities and Regions of the Future 2014/15, Financial Times



BUSINESS FABRIC AIMED AT THE ICT SECTOR

In 2013, the city of Valencia there are **1,912 ICT activities**, 2% of the total number of economic activities in the city. The ICT sector has grown, between 2008 and 2013, by 14.6% and at an average annual rate of 3%. Within this sector, the majority of companies are engaged in ICT **services**, accounting for **84.2%**, which has increased by 5 percentage points since 2008.

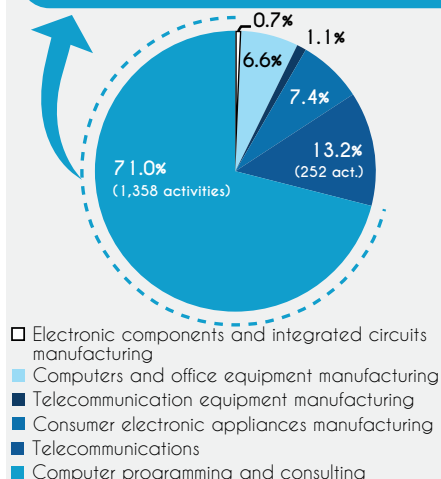
The ICT sector in Valencia
Number of activities



Percentage structure of ICT activities

Ranking of districts and neighbourhoods of greatest activity in programming and information technology auditing

District	Weighting	District	Weighting
Ciutat Vella	10.2%	Sant Francesc	5.7%
L'Eixample	9.2%	Sant Pau	4.2%
Extramurs	8.9%	Russafa	3.6%
Camins Al Grau	8.1%	Arrancapins	3.5%
Campanar	7.1%	Mestalla	3.5%
		Benimaclet	3.5%



Source: Valencia City Hall and own material

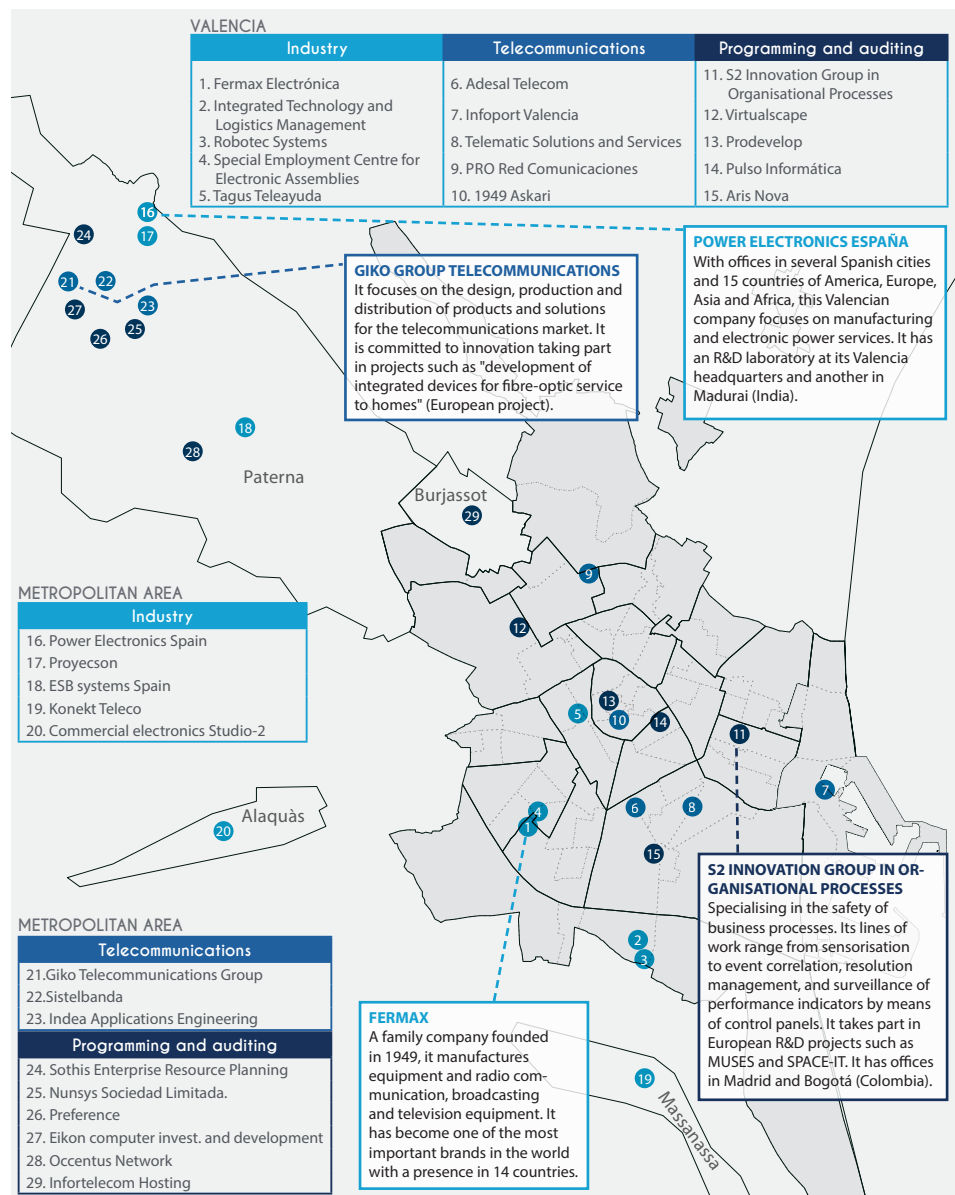
In recent years, ICT services have grown at an average annual rate of 4%. Such behaviour explains why telecommunications as well as consulting and programming are a positive development over this period of time. While both ICT services grow, it is telecommunications that is doing so at a greater rate, 11% of the annual average, with respect to programming and

consulting, 3% on average in the year.

Programming and **consulting** absorb 71% of the total number of ICT activities, **telecommunications** are 13.2 per cent and the **rest of the ICT industry**.

The **metropolitan area** of the city of Valencia also has an important **ICT activity**, focusing especially in the municipality of **Paterna**, thanks to the presence of the **Technology Park**.

Leading companies* in the ICT sector of the city of Valencia and its metropolitan area



* Selected companies based on income from operations in their sector of activity
Source: Bureau van Dijk, SABI



SOME SMART CITY SUCCESS STORIES

Grupo Aguas de Valencia, 3/4 of homes in Valencia already have smart meters

With the installation of 650,000 remote smart reading operating units scheduled for late 2015, Valencia will become the first European city with wholly smart metering. It enables remote reading from a single control centre, improvement in service provision to citizens and a 90% reduction in claims due to reading errors, as well as an exhaustive control of water saving for citizens.

ETRA Group, efficient management of urban mobility

Enterprise group with an international presence, a leader in mobility and comprehensive services, it implements necessary technology in the areas of mobility, traffic and transport, lighting, energy, security and communications.

The Centre for Traffic Management (CMT) of the city of Valencia is equipped with technology that enables the city's traffic to be managed in real time and dynamically. ETRA received the recognition of ITS (Intelligent Transport Systems) in the area of "Urban Traffic Management" for the CMT of Valencia.

Network of Technological institutes of the Community of Valencia (REDIT), multi-sectoral RDI service

REDIT responds both to the RDI needs of the main production sectors and technologies and fields of knowledge of multi-sectoral application. It is composed of 13 technology institutes which, in relation to smart city projects, noteworthy contributions of the ITI (IT Technology Institute) and ITE (Energy Technology Institute). REDIT is also one of the local entities that actively participates in the smart city working group of the Local Pact for Innovation of Valencia.

Municipal transport company of Valencia (EMT), innovative and sustainable transport

The EMT is the administrative body that manages the public bus network in the city of Valencia. Its objectives are the quality of service and to advance in the use of the latest technologies and alternative fuels that offer a significant reduction in carbon emissions from urban buses. EMT Valencia has a 100% organic fleet that helps prevent the emission of around 55,000 tons of CO₂ into the atmosphere each year.

Telefónica: VLCi Platform, accessing smart Valencia

This common and open solution designed by Telefónica, turns the information generated by the city, compiled from the various municipal services, into knowledge, presenting it on control panels with information that facilitates real-time decision making for municipal managers. It has turned Valencia into the first Spanish 100% smart city and the first one in Europe to implement the open initiative FI-WARE to a city management platform, which lets you share open data about Valencia with entrepreneurs from all over Europe.



Mobincube, software in the cloud

In a simple way and without being a programmer, this *on-line* generator of mobile applications allows users to create their custom apps. It provides the option of publishing apps developed by users in *markets* of each platform or App Stores, inserting commercial ads and earning 70% of the revenue from advertising. Currently they are 300,000 registered Mobincube users, and 20,000 applications have been published. Its head office is in the city of Valencia and it has an office in Silicon Valley (United States).

Kanteron Systems, technology for e-health

Leading company in biomedical health and computer technology working on technological solutions for hospital information systems. One of its most important contributions is the SPLIT solution that makes protected personal health information about patients anonymous. In 2014, it was nominated by the World Economic Forum for the Technology Pioneer award and has won Best Innovation of the year 2013 awarded by the Spanish newspaper El Mundo. Its headquarters are in Valencia and many international locations.

Prodevelop, developing social apps

Prodevelop has developed the application *Live Fallas* along with researchers from the Polytechnic University of Valencia. It is a social app to improve the Fallas experience, where the user can live the Fallas world live, discovering the "hot spots" on a map of Valencia, as well as discover in real time what happens at every Falla and every scheduled event, share photos and opinions and see ratings of other users.

The application has been developed within the framework of FI-CONTENT2 and has shared in the municipal app *AppValencia*.

SOLUTIONS THAT
WORK WITH OPEN
DATA
OF THE CITY
AND FI-WARE:

Air VLC

Telpark

Lazarius

Pay In

Smart BEE

Apparcando

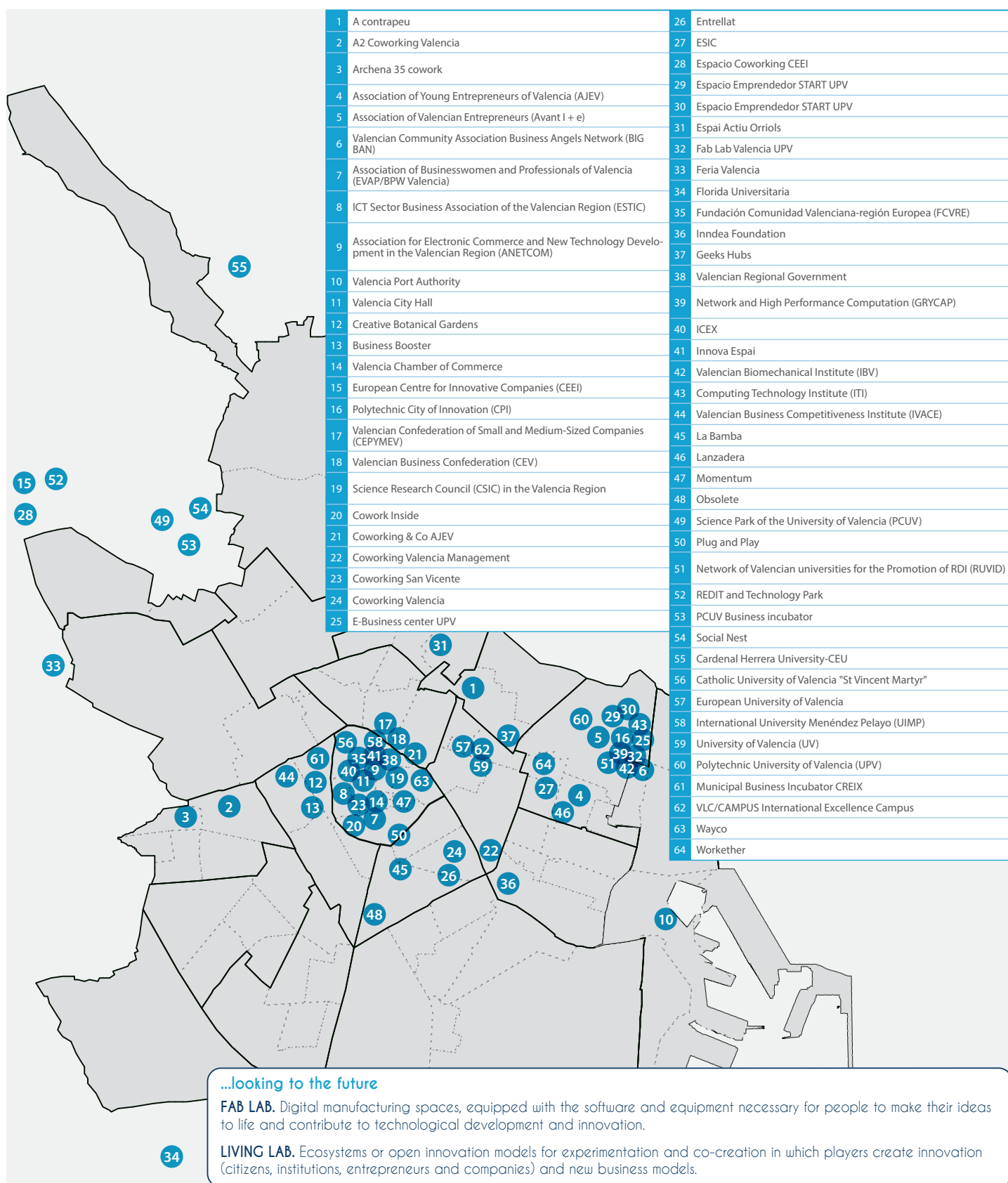
LiveFallas

Aguas de Valencia

RideU



KEY SITES FOR INNOVATION AND THE SMART CITY





VALENCIA, A CITY ACTIVE IN EUROPEAN PROJECTS

CAT-MED (Platform for Sustainable Urban Models)

Platform aimed at developing **sustainable urban models** taking as starting point the classic Mediterranean city. Develops a transnational system of **common indicators** to understand the evolution of urban systems and they are structured into four categories: the territory and city settings, mobility and transport, the management of natural resources and social and economic cohesion. It carries out an urban pilot project, "**Green Apple**", which brings together the features of a sustainable urban model.

Smile (Smart Green Innovative Urban Logistics for Energy) Efficient Mediterranean Cities)

Framed in the **urban logistics** of smart cities of the Mediterranean, this project develops and implements **innovative strategies**, plans and measures seeking **mobility** solutions in the distribution of goods that are **energy efficient**. In this sense, it promotes public-private **cooperation** with a direct impact on **energy saving**.

Ecodriving (CLIMATE-KIC)

The main objective of this initiative is to foster **smart and sustainable driving** in the city of Valencia. Using Cated Box and BLED technology that installs a wireless sensor in vehicles to transmit **diagnostic** information to an application installed on a mobile phone, which translates into tips for driver in real time, in order to improve their **driving** and make it more **ecologically efficient**. The results are reflected in a **reduction in pollution** and the carbon footprint, as well as having a measurement in real time of pollution in the city.

Mobitrans (sustainable mobility)

Aimed at improving citizens' way of life, Mobitrans is a project that explores **solutions** for **sustainable urban travel**. It encourages the use of public transport to research and develop technologies of information for **planning** travellers' journeys. Thus, it offers citizens an effective system for choosing **modes of transport** and routes by encouraging urban public mobility. The validation of the system is done through pilot testing in three Spanish cities, one of which is **Valencia**.

Light2CAT

The aim of this project is **air purification** in European cities. The means of achieving this aim is to put **titanium dioxide** in the concrete used in the structures of buildings, which is activated by contact with sunlight. In the city of Valencia, the City Council together with the **InnDEA Foundation** are responsible for validating this initiative in a real urban environment, as well as **publicizing the project** and its results.

LIFE projects

European project LIFE Ecolight: aimed at preventing light pollution in the Albufera Nature Park through the implementation of **more efficient and environmentally-friendly street lamps**. By-law for **light protection** in the **Albufera Nature Park**.

Biocompost LIFE project: promotes the removal of straw from rice fields using balers. This service is offered, free of charge, to farmers in Valencia. Reuse of the **collected straw** resulted in the production of **organic fertilizer** or compost mixing it with sewage sludge.

Ecorice LIFE project: proposes **alternatives** to the **burning of rice straw**. It boosts the use of straw for building materials (pozzolanic cement, the Colusa project, acoustic panels, etc.), materials for packaging, paper manufacture, livestock, mushroom cultivation and compost manufacture.

H2020 CEPPI (CLIMATE-KIC)

The origin of this project is the need for **energy solutions** in European cities. Its main objective is to strengthen the capacity of cities on how to achieve, through public procurement in favour of innovation, these more sustainable energy solutions. Public Procurement of Innovative Sustainable Energy Solutions (H2020-CEPPI) aims to demonstrate the positive impact of well-targeted **public auctions** providing a more **sustainable** energy result.

Transitions Cities (CLIMATE-KIC)

The climate change agenda in Europe is subject to the actions carried out by cities for the good of the environment. Hence, this project is aimed at building an **innovation system** for the transition to a low carbon economy. To this end it is developing knowledge, services and products. It consists of 6 clusters related to energy, construction, and urban mobility, whose joint action promotes and establishes an itinerary for achieving the **Europe 2020 objectives**.

PPIA (CLIMATE-KIC)

Coming into force in 2013, the draft Public Procurement of Innovation in Action (PPIA) is a network of **innovative public procurement** aimed at increasing the understanding of procurement methods in order to fostering innovation, its types, efficiency and adaptability, always with the ultimate goal of **reducing climate change**. It focuses on three key issues: housing and the built environment, mobility and energy networks.

