DIGITAL TRANSFORMATION STRATEGY
MADRID, DIGITAL CAPITAL

Capital Digital

SMARTCITY EXPO WORLD CONGRESS

Fernando de Pablo
Director General of the Digital Office of the Madrid City Council.

MADRID

Madrid is the **capital and most populous city of Spain**. The city has almost **3.45 million inhabitants** and a **metropolitan area** population of approximately **6.7 million**.

It is the **second-largest city in the European Union** (EU), and its monocentric metropolitan area is the second-largest in the EU.

MADRID - BIG CITY – BIG NUMBERS

Digital Capital

City

- 3,3 M — Population
- 181 — Nationalities
- 21/119/9.422 — Districts/Neighborhoods/Streets
- 325 k — Vehicles/day in M30 areas
- 35M/54M — Bus/Metro travelers monthly
- 224 k — Vertical road signs
- 745 k — Trees
- +4.400 — Parking meters
- 53.427 — Traffic lights
- 5 M — Floating Population
- 321 k — Companies
- 4.700 km — Streets and roads
- 2.095/219/10.707 — Buses/Lines/Bus Stops (EMT)
- 7,500/611 — Bikes/Stations (EMT)
- +4.800 — Electric Scooters (Public Concession)
- >23.000 — Streetlight
- +600 — Sport Venues (Public and Private)

City Council

- 475/125 — Procedures/Services to the citizen/companies
- 99 — Service and Assistance Offices
- 15/8 — Government and Delegated Areas/Municipal and mixed companies
- 901 — Municipal buildings
- 30.000 — Employees
- > 8.000 — Telecommuting daily employees
- > 22.000 — Mobile corporate lines

Technology

- 410 — Aplication servers
- 60 TB — Monthly traffic data
- 1.546 — Virtual servers
- 83 — Physical servers
- 5 M — Perimeter FW packets/hour
- 50,4 M — Events/hour SIEM
- 865 — Database
- 4437 — TB of storage
- 36 k — Corporate mailboxes

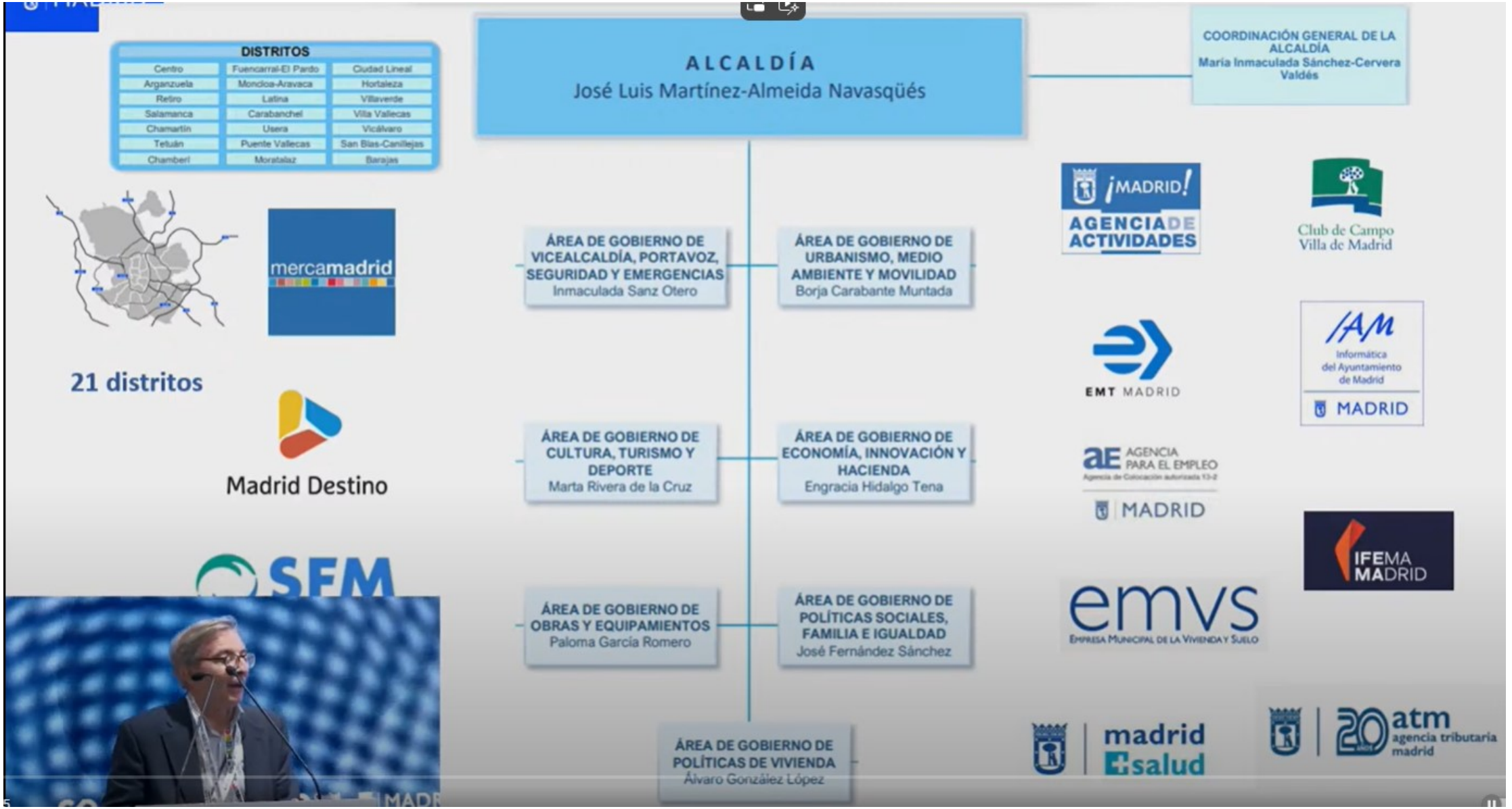
MADRID, Digital Capital

The Digitalization Strategy establishes Madrid as a reference city to work, invest, study, visit, enjoy and live; where technology enhances the efficiency of municipal and city services, the welfare and quality of life of people, addressing their inclusion and digital empowerment, and the generation of opportunities for social, sustainable and economic development.

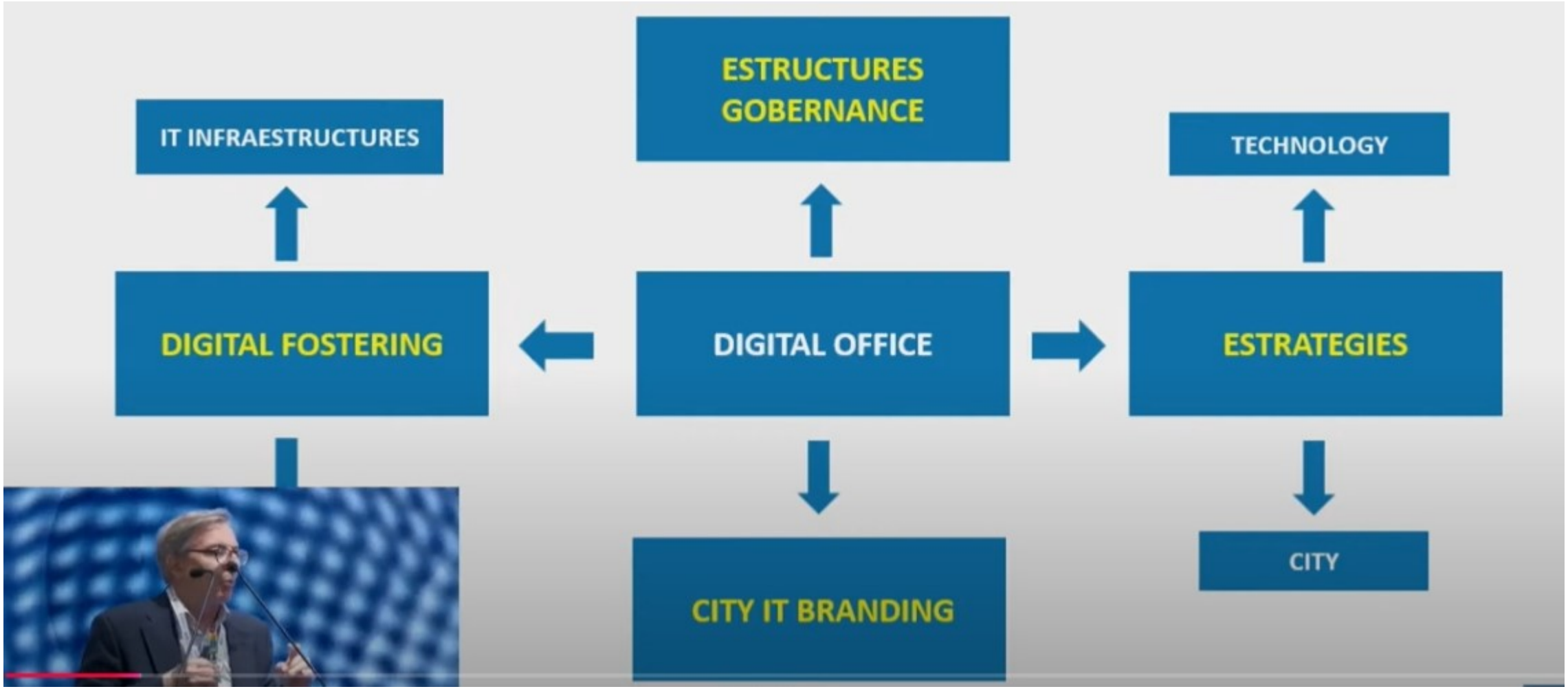
DIGITAL CITY- SMART CITY – QUALITY OF LIFE

IT Working for the AREAS of MADRID

CITY ORGANIZATION



DIGITAL OFFICE – MADRID
PRIORITIES – MAIN LINES OF WORK



IT ORGANIZATION (2021-2023)

IT DEPTARTMENT (IAM)

DIGITAL OFFICE MADRID

DIGITAL DELEGATES

DATA & AI STRATEGY

Madrid Data strategy
lete life
etter city.
valuation
nes
Madrid"

DIGITAL TRANSFORMATION

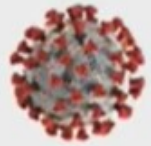
Digital transformation of the city and local public services in coordination with areas.

"Madrid Digital City»

DIGITAL GOVERNMENT

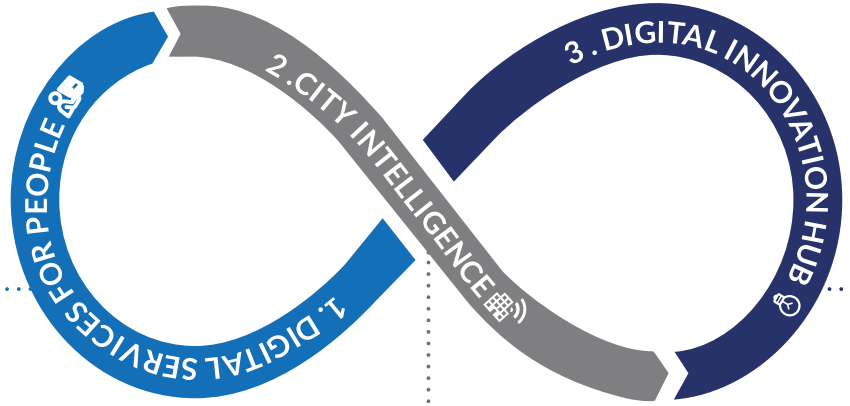
Fostering digital public services with citizens and companies. Efficient internal management.

"Madrid on-line"



Capital Digital

STRATEGIC AXES



STRATEGIC OBJECTIVE 1

AXIS 1
The best digital administration with public employees as change agents

AXIS 2
Technology focused on making people's lives easier

STRATEGIC OBJECTIVE 2

AXIS 3
Safe, resilient and capable city

AXIS 4
Managed based of evidence and data

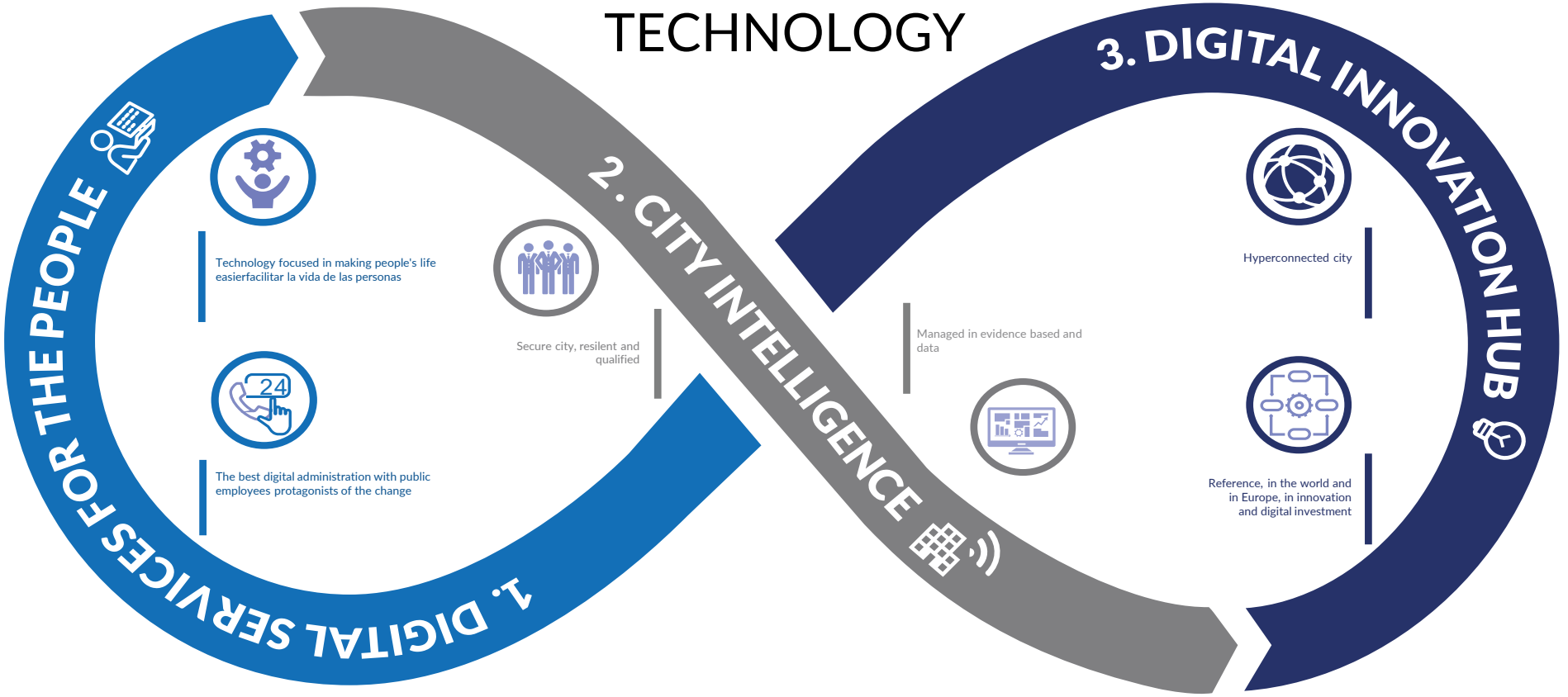
STRATEGIC OBJECTIVE 3

AXIS 5
Hyper-connected city

AXIS 6
Benchmark, in the world and in Europe, for digital investment and innovation

Strategy: Madrid, Digital Capital

IT'S NOT JUST ABOUT TECHNOLOGY



3 objectives

6 axes

3 addressees

PEOPLE AND COMPANIES

CITY HALL

TERRITORY

Strategy: Madrid, Digital Capital

A strategy that is coherent with the European, national and local context, and which is aligned with the city plans of the different municipal areas.

EU Digital Compass 2030

Recovery, Transformation and Resilience Plan.

Strategic Plan for the City of Madrid

Recovery, Transformation and Resilience Plan for the city of Madrid

European Declaration on Digital Rights and Principles for a Digital Decade

Digital Spain 2026 and plans

Village Agreements

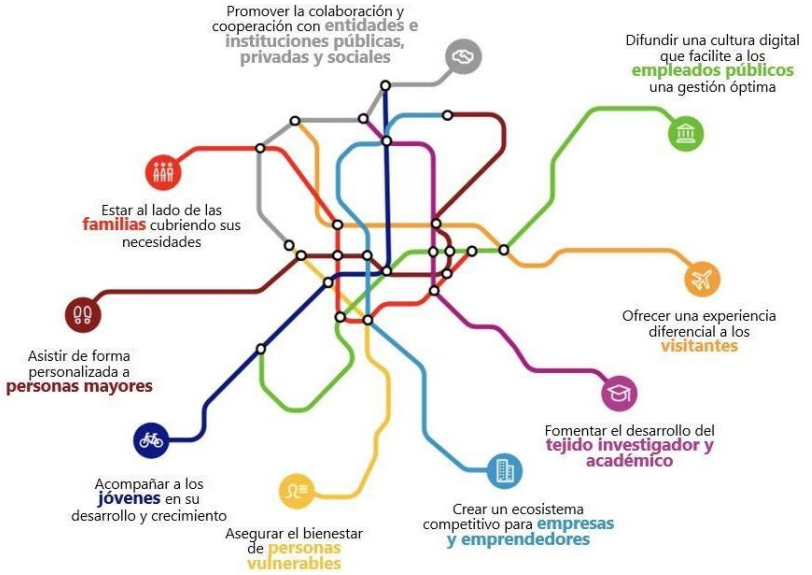
Government Area Strategies and Plans

Madrid's Digital Transformation Strategy 2023-2027

Strategy: Madrid, Digital Capital

It responds to the needs and expectations of people, companies, areas of government and districts of Madrid. Open and flexible to incorporate proposals from the reflection processes.

Individuals and companies

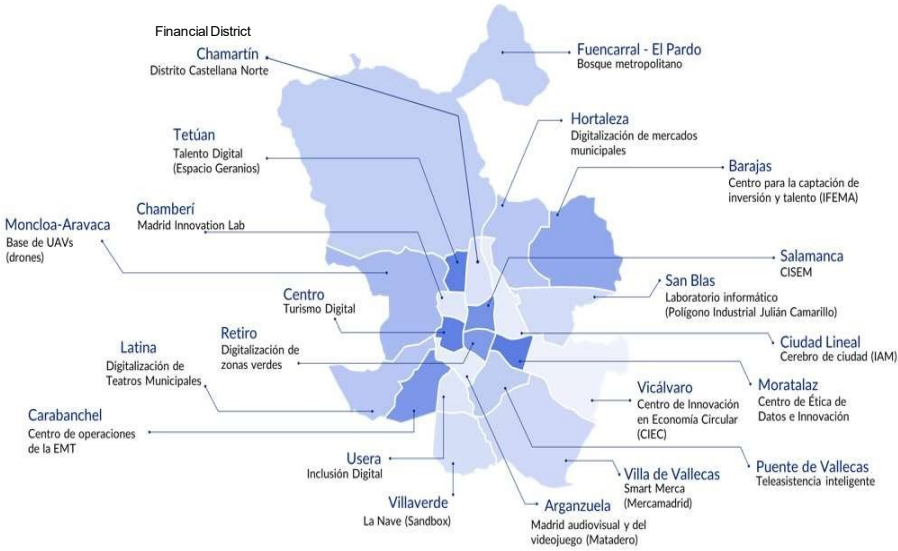


All individuals and companies **participate in and benefit from digitalisation.**

City Council

Improved municipal policies and services through digital media.

Territory

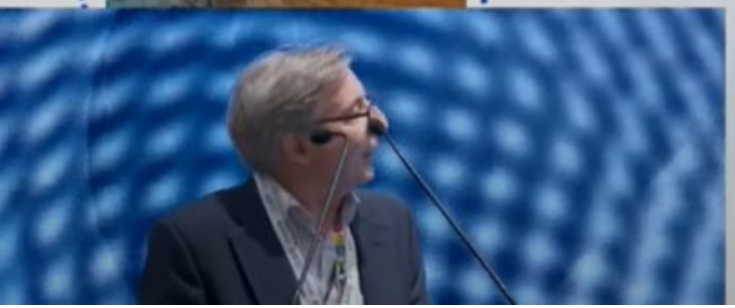


Promoting **district welfare and economic growth through** digital.

An ambitious but realistic strategy

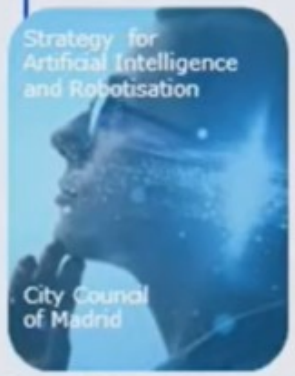
The Strategy builds on and integrates action plans designed to incorporate emerging technologies that facilitate and accelerate digitisation of municipal and city services. **PACKAGE OF IT STRATEGIES**

Digital Capital



Rationalisation and simplification action plan

Artificial Intelligence and Robotisation Strategy



Mobile App Strategy

Cybersecurity Strategy

Madrid GovTech Programme

Digital Administration Plan

5G Agenda

Multicloud strategy

Data Strategy

Digital Training Plan

MADRID

HUMAN ADAPTIVE CITY

The **Human Adaptive City** concept is achieved when a comprehensive and real-time view of the city is available as a result of addressing challenges in a holistic manner, which facilitates efficient adaptation and response to the changing needs of inhabitants and contributes to **create inclusive, resilient, innovative and sustainable people-centred urban environments.**

Capital
Digital
AREAS OF ACTION
Digital services for people
ICT infrastructures, security, cybersecurity and resilience
City intelligence: Smart Madrid and sustainable
Madrid, a hub of digital innovation

Capital Digital

DIGITAL SERVICES FOR PEOPLE

Madrid is committed to facilitating the daily lives of its citizens through excellence in digital services. To this end, it designs, develops and offers services that are easy, fast and convenient, ensuring that all citizens can benefit from them.

Capital Digital

CITY INTELLIGENCE INTELLIGENT AND SUSTAINABLE MADRID

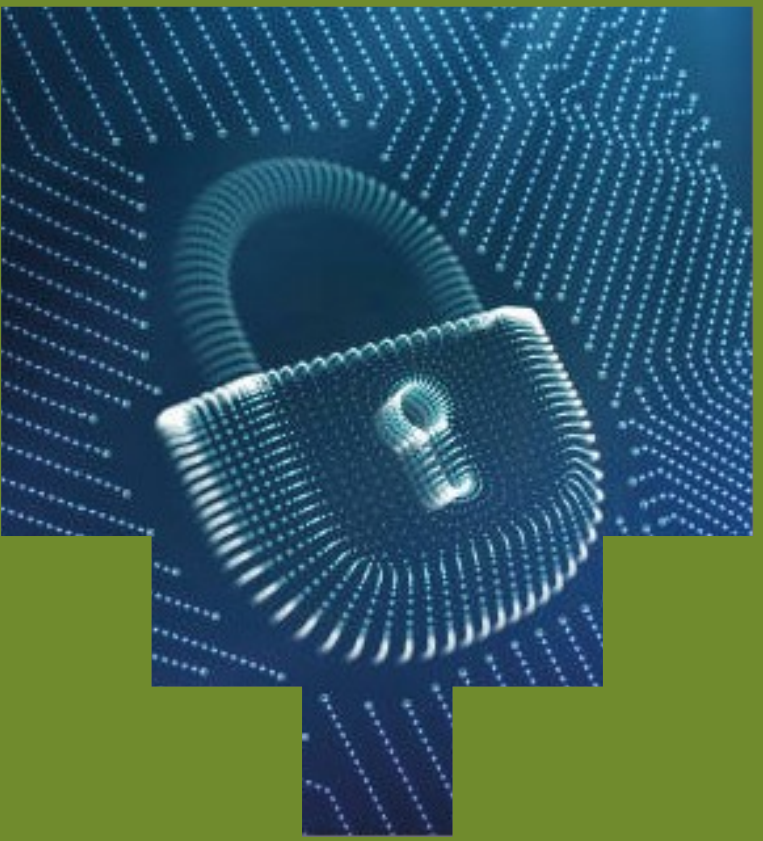
Madrid seeks more efficient and sustainable management through the intensive use of technology. The city adapts and responds to its environment, improving the quality of life of its citizens and optimizing resources. This approach allows for a more lively, connected and resilient city.

Capital Digital

MADRID, DIGITAL INNOVATION HUB

Madrid is working to become the preferred destination for innovation, investment and talent in the digital sector. To this end, it is developing an attractive ecosystem to invest, work, study, visit, enjoy and live, positioning the city as a benchmark in digital innovation.

Capital Digital



ICT INFRASTRUCTURE, SECURITY, CYBERSECURITY AND RESILIENCE

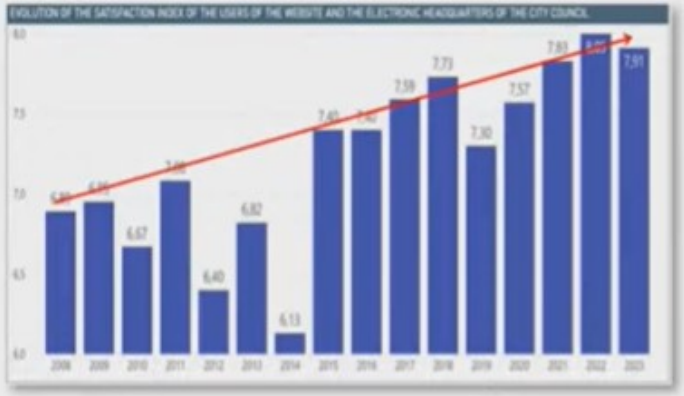
Madrid sizes, strengthens and reinforces its technological infrastructures to guarantee the availability, scalability and flexibility of its digital services. It starts from the pillars of security and cybersecurity and ensures resilience to potential threats and disasters, to maintain the continuity of services and the trust of citizens in the digital environment.

MADRID
Capital Digital
IoT MAD LAB
UNA CIUDAD CONECTADA
CMAD
Centro de Ciberseguridad Ayuntamiento de Madrid
5G FORO MADRID
CENTRO DE TRANSFORMACIÓN DIGITAL
OFICINA DIGITAL
Objetivos de la Oficina
VOLUNTARIOS DIGITALES
Capital Digital
COORDINACIÓN GENERAL DE LA ALCALDÍA
IAM
OFICINA DIGITAL
DELEGADOS DIGITALES
S.G. ESTRATEGIA DEL DATO
S.G. TRANSFORMACIÓN DIGITAL
S.G. ADMINISTRACIÓN DIGITAL
PRINCIPALES INDICADORES DE ADMINISTRACIÓN DIGITAL
Datos actualizados a febrero de 2023
Madrid Mobility 360
MADRID móvil
Madrid Te acompaña
Eurocities Digital Forum
MADRID, 5-7 OCT 2022
CITIES FIT FOR EUROPE'S DIGITAL DECADE
TODAY IS THE FUTURE
boletic
Transformación Digital en Madrid
Estrategia de Transformación Digital 2023-2027
Promueve la digitalización de forma transversal en Madrid
PLAN DE CAPACITACIÓN DIGITAL
easydro
SAP
Azure
opentext
IBM kyndryl
MADRID MultiCloud
T Systems
esri

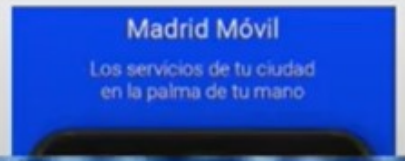
SOME ADVANCES FOR PEOPLE, COMPANIES, THE CITY AND CITY COUNCIL

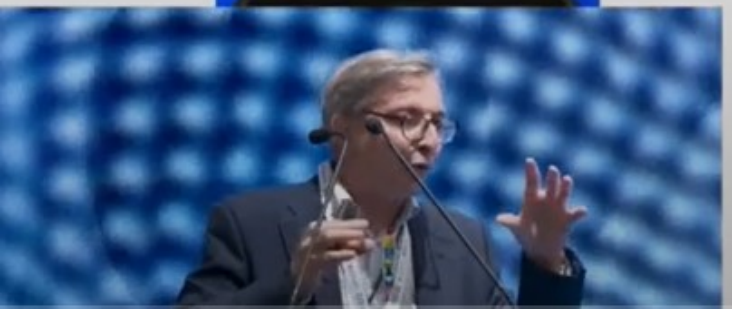
Capital Digital

Administración Electrónica

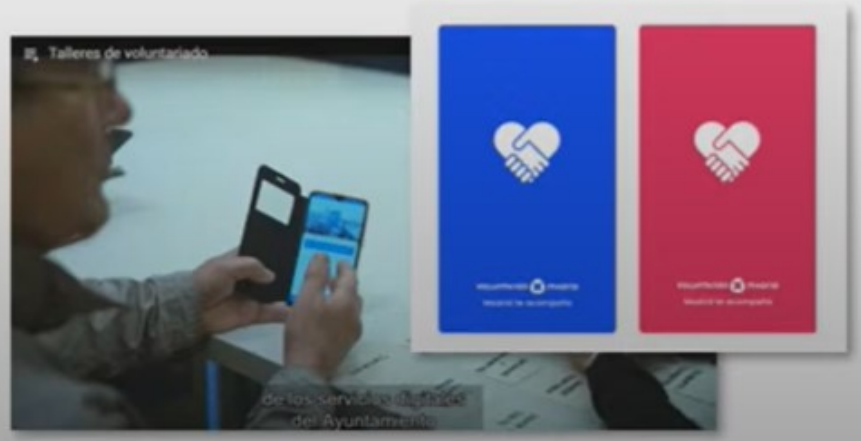


Madrid Móvil





VOLUNTARIADO DIGITAL



AUTOMATIZACIÓN

SOME ADVANCES FOR PEOPLE, COMPANIES, THE CITY AND CITY COUNCIL

Capital Digital

CIBERSEGURIDAD

CENTRO DE TRANSFORMACIÓN DIGITAL

Capital Digital MADRID

POSICIONAMIENTO INTERNACIONAL

City	Country	LOSI value
Tallinn	Estonia	0.9271
Madrid	Spain	0.9271
Riyadh	Saudi Arabia	0.9167
Copenhagen	Denmark	0.9063
Dubai	United Arab Emirates	0.9063

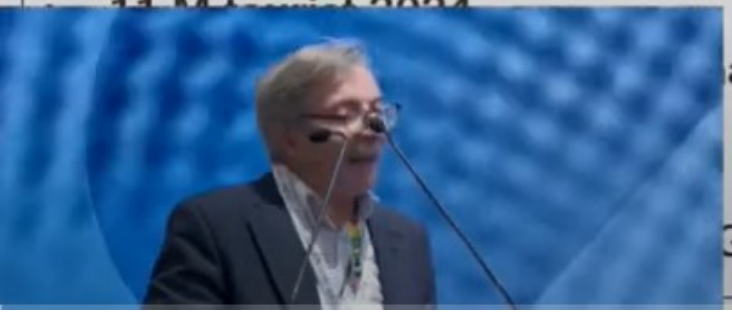
MADRID HUB DIGITAL

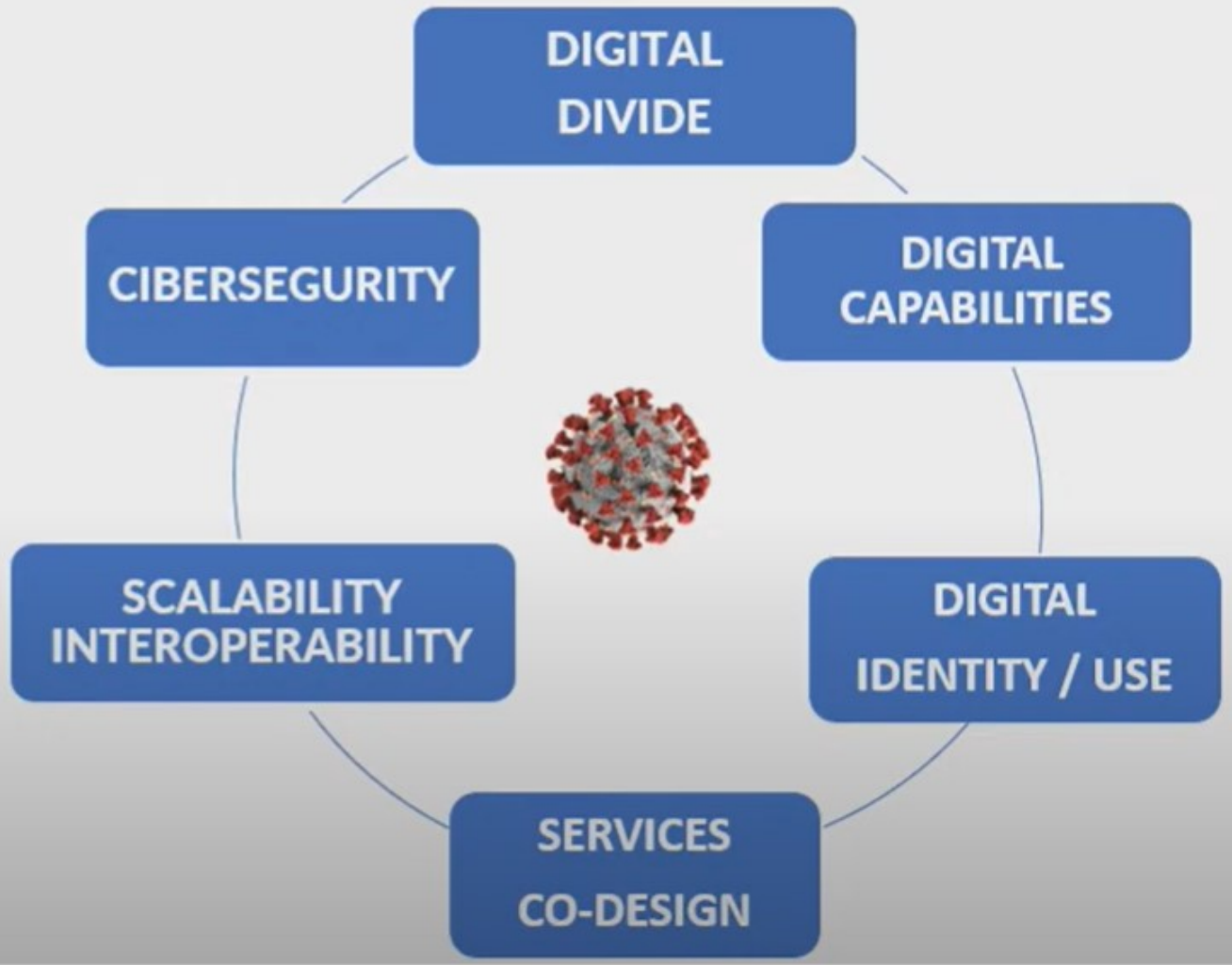
MADRID TALENTO

EIPA EPSA

WHY? MAIN DIGITAL CHALLENGES TO ACCELERATE DIGITAL TRANSFORMATION AFTER COVID

- 30.000 public employees
- 800 local offices
- 3,4 M millones in census (services to 5 M)
- 11 M tourist 2024
- [redacted]al-SME)
- [redacted]GDP (12%, + in IT)

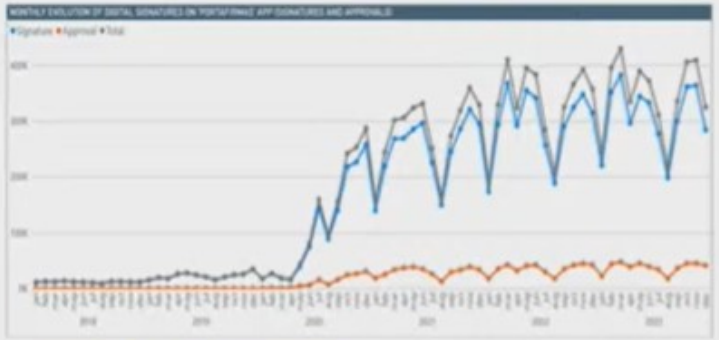




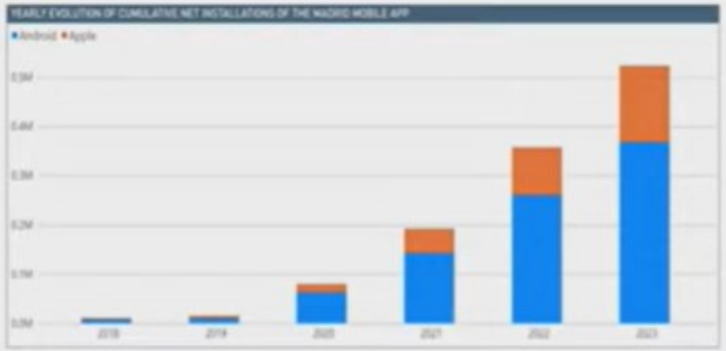
DIGITAL SERVICES OBSERVATORY

Digital Capital

ELECTRONIC SIGNATURES AND APROVALS



NET INSTALLATIONS OF APP MADRID MOVIL



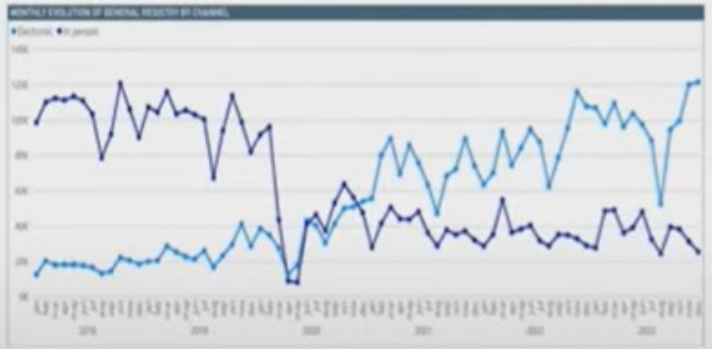
MAIN DIGITAL MANAGEMENT INDICATORS

MADRID

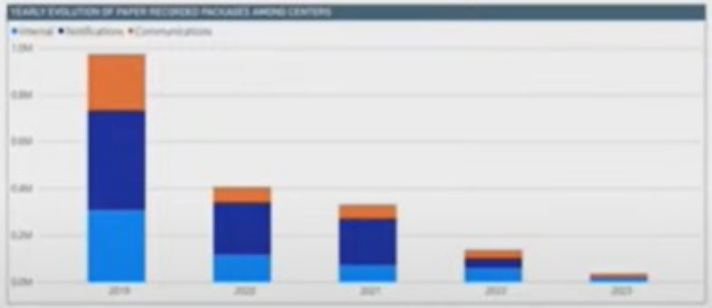
GENERAL REGISTRY	DIGITAL NOTIFICATIONS	DIGITAL IDENTIFICATIONS	PAPER DELIVERIES	DIGITAL SIGNATURES	INTERMEDIATION PLATFORM	SPORTS ACTIVITIES
CITIZEN REGISTRY	DIGITAL CERTIFICATES	MADRID MOBILE	MADRID NOTICES	ATTENTION FOR THE ELDERLY	WEB SERVICES SATISFACTION	UN LOSI INDICATOR

Data updated from December 2023

GENERAL ENTRY OF DOCUMENTS



PAPEL DELIVERY AMONG CENTERS



DIGITAL SIGNATURES

E - NOTIFICATION

CONTEXT - PUBLIC ADMINISTRATION IN SPAIN - EUROPE

Digital Capital

COORDINATION INTEROPERABILITY COLLABORATION

high level of administrative decentralization

Central Government

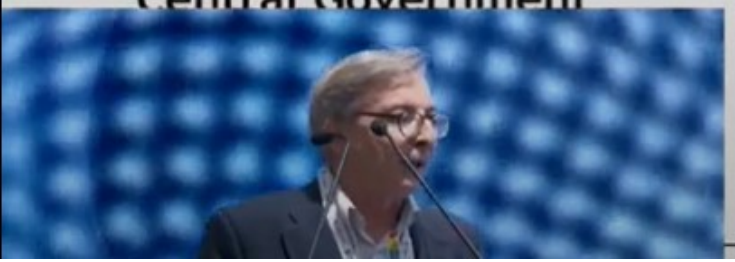
Regional Government

17 Regions
2 Aut Cities

Local Government

8.108 Local Administrations

MADRID



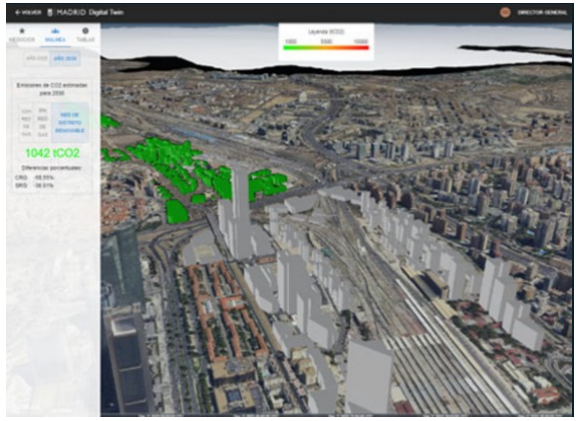
On going Transversal PROJECTS

Capital Digital

Main Projects

Digital Capital

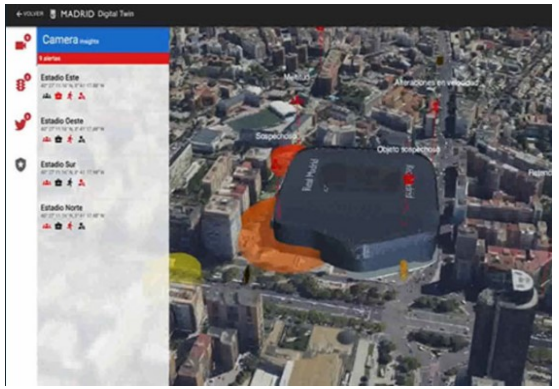
DIGITAL-TWIN – Case Of Use



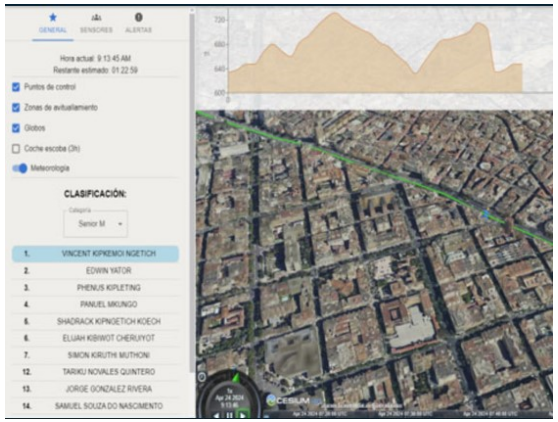
The digital twin **allows the integration of 3D mapping of different urban planning proposals** and the integration of associated information, such as, for example, the estimated CO_2 emissions of the different plots projected to the year 2030.

Mercamadrid's digital twin provides real-time insight into the operation of the wholesale food market. Using data from simulated traffic sensors around the site, traffic jams are detected and traffic management is optimised to ensure an efficient flow of loading vehicles.

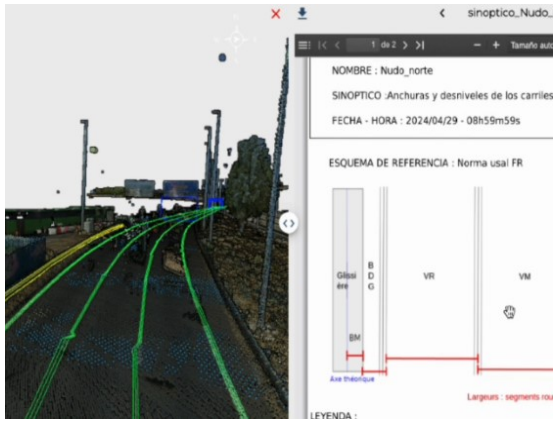
The digital twin of the **Bailén Bridge in Madrid**, **generated from a** *point cloud*, **provides a detailed three-dimensional representation of the infrastructure**.



The digital twin enables the **security management of a sporting event and its surroundings, including streets and accesses**. The creation of this digital model is based on the capture and analysis of real-time data through a system of **high-definition surveillance cameras**, capable of detecting movements of people, identifying objects and anomalous behaviour, and monitoring pedestrian and vehicular traffic flows.



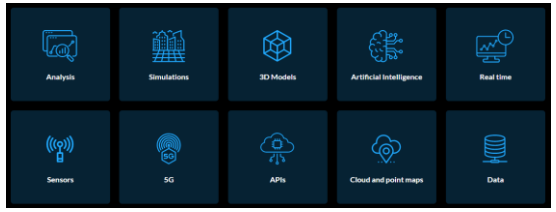
The digital twin of the **Madrid Half Marathon** offers a real-time view of the state of the race and the situation of the runners. Through the monitoring of the steps of each runner at each kilometre point, the digital twin offers estimates of paces and arrival times at the next points at individual and category level.



The digital twin facilitates the application of artificial intelligence algorithms on point clouds and 2D and 3D cartography to perform **automatic calculations of the different variables of an infrastructure**: gauge, inclination or width of lanes, radius of curvature or height of the safety barrier, among others.

DIGITAL-TWIN

Digital Capital



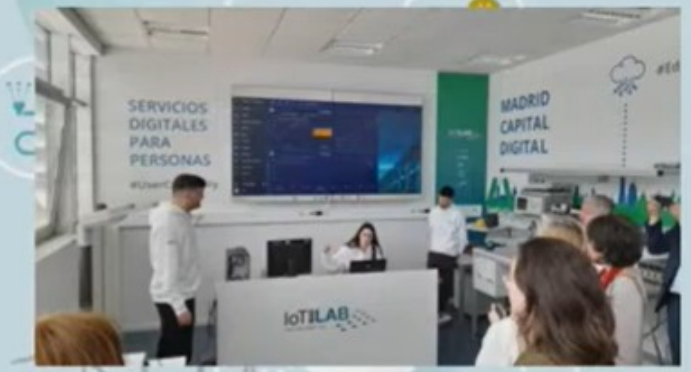
MOBILE MAPPING
+
USE OF AI
To IDENTIFY
CITY ELEMENTS

POLITÉCNICA

ETSIT UPM

IoT MAD LAB

A CONNECTED CITY



for

INTEROPERABLE

To facilitate the connection between different devices and sensors, so th

NEUTRAL

To ensure access to libraries, information and knowledge.

5G FORO DIGITAL

5G - STRATEGIC FRAMEWORK IN MADRID

MADRID 360 · Capital Digital

1. Marco estratégico

2. Estrategias tecnológicas

3. Marco operativo

5G

Foro 5G

Foro Empresas

FORO 5G MADRID

FORO DE EMPRESAS POR MADRID

Colaboración pub-privada

Convenio **UPM**

Laboratorio IoT

Laboratorio 5G-6G

POLITÉCNICA

IoT MAD LAB

Centro de Transformación Digital:

Oficina Técnica 5G

CMAD

4. Actuaciones en curso

Espacios Urbanos Inteligentes

eui

Corredores 5G

5G MADnet

Funded by the European Union

EU MISSION LABEL CLIMATE-NEUTRAL & SMART CITIES

MOBILITIES FOR EU

EUGENIA 5GSC

5G for Smart Communities

EIRA EUROPEAN INTEROPERABILITY REFERENCE ARCHITECTURE

eGovERA for eGovernment and digital transformation

EUROPEAN DATA SPACES

Multicluod

Dato

Ciberseguridad

MADRID

MADRID

5G – IoT Corridors

Smart Urban Spaces with 5G connectivity to develop interoperable use cases in real-world demonstrator environments (solutions wit AI, Data and ciber) .

5G FORO DIGITAL

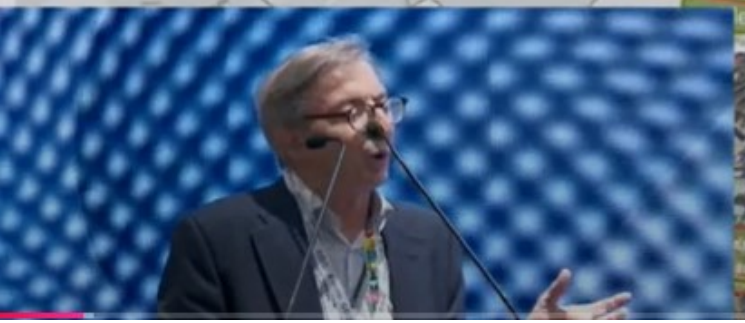
MONCLOA - ARAVACA

ETSIT
Investigación en bandas milimétricas
En licitación

Casa de Campo
Drones, Videojuegos, SAMUR 5G
En licitación

EMESGENCIAS
Network Slices para emergencias
En licitación

Ciudad Universitaria
5G para otras especialidades
Diseñado, pendiente de financiación (UNICO 5G)



CORREDORES URBANOS 5G

IoTiLAB MADRID

ARGANZUELA

Matadero
Mayores, Medialab y videoarte
Diseñado, pendiente de financiación (UNICO 5G)

Centros de Innovación
SAN BLAS
MORATALAZ
VICÁLVARO
PUENTE DE VALLECAS
CARABANCHEL
VILLAVERDE

CENTRO

Oficina de Turismo
Realidad eXtendida
Diseñado, pendiente de financiación (UNICO 5G)

VILLAVERDE

La Nave
Vehículo autónomo
Diseñado, pendiente de financiación (UNICO 5G)

VILLA DE VALLECAS

Valdemingómez
Entorno Industrial
En adjudicación

Mercamadrid
Vehículo autónomo
Diseñado con financiación HORIZON 2020

MADRID

https://youtu.be/WKwSD0ianRY&list=PLaxP1gUf9OHFZW8Q4SGWQV83Z6v-Gwnl2

Digital Capital

DIGITAL INCLUSION

Digital skills for all

"Digital Training, city talent"

...nology

...for people"

Volunteering

- Serving 500,000 seniors
- More than 18,000 volunteers

emancipatic

VOLUNTARIOS MADRID

Inclusive, Close and Capable City

Government Program:

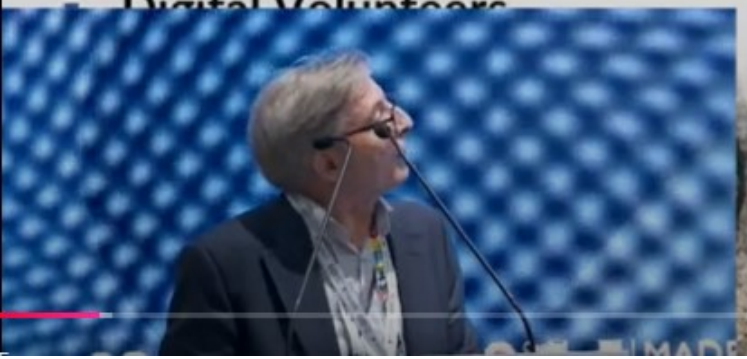
*" **Mitigate the digital divide** , and not only with the elderly, "inclusive city and close to citizens", with digital services that solve the problems and needs of people and companies "thinking and adapting to each one of them"*

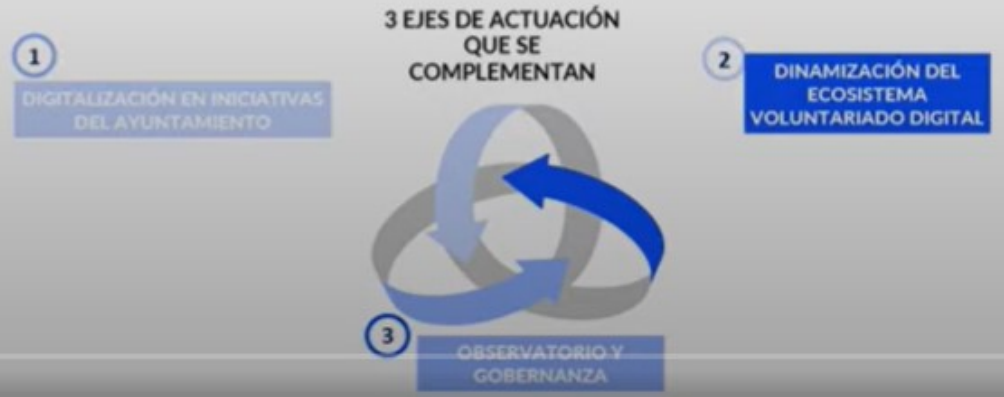
Actions

1. Creation of the Madrid Digital Capital alliance for all (think tank inclusive and close city)
2. Digital volunteering program of the city for all
3. Digitization agents in the Madrid line offices – reinforce the digital volunteer program
4. Launch of the program

Associated transversal projects :

- Digital Volunteers





Thank you

SMARTCITY
EXPO WORLD CONGRESS

Capital Digital