



Sant Cugat Smart City

Strategic Plan Document summary

Sant Cugat, February 22, 2011



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Evolution in urban management

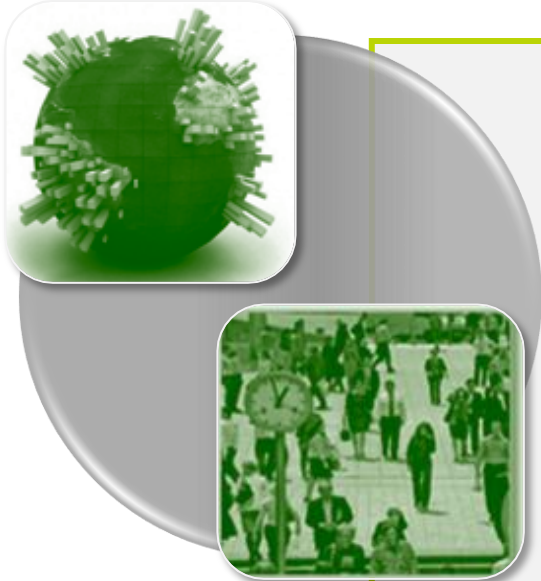
Smart City concept

Sant Cugat Smart City

Development plan



Cities translate the dynamics of a globalised world and a shifting reality into human scale actions



- Societies are connected at a global level, which enables the convergence of economic, social and environmental management models.
 - The mobility of people and goods increases as barriers and distance lessen.
 - Businesses design their strategies with a global mindset and operate at the local level.
- States lose ground to cities, which translate ongoing changes into human scale actions.
 - Local government actions have a more immediate impact on citizens and organizations
 - Within the city, interactions across society are more fluid.
- The citizen demands that the city evolve in order to adapt to new trends.
 - Increased participation
 - Better mobility and services
 - Quality and accountability in service delivery
 - Reduction of environmental impact
 - Social integration of different groups
 - Improved security, personal and public health

Additionally, the present context of economic crisis requires that city governance be focused on attaining higher levels of quality and efficiency

Evolution of conditions exogenous to the City

Until now ...
Economic Development

Shaping the growth of the city

- The city's challenge was delivering necessary services and adding infrastructure to match its population growth
- Urban planning was the backbone of all municipal actions
- Accelerated response to citizen needs prevailed over an optimal and integrated design of solutions



Evolution



...from now on
Economic Crisis

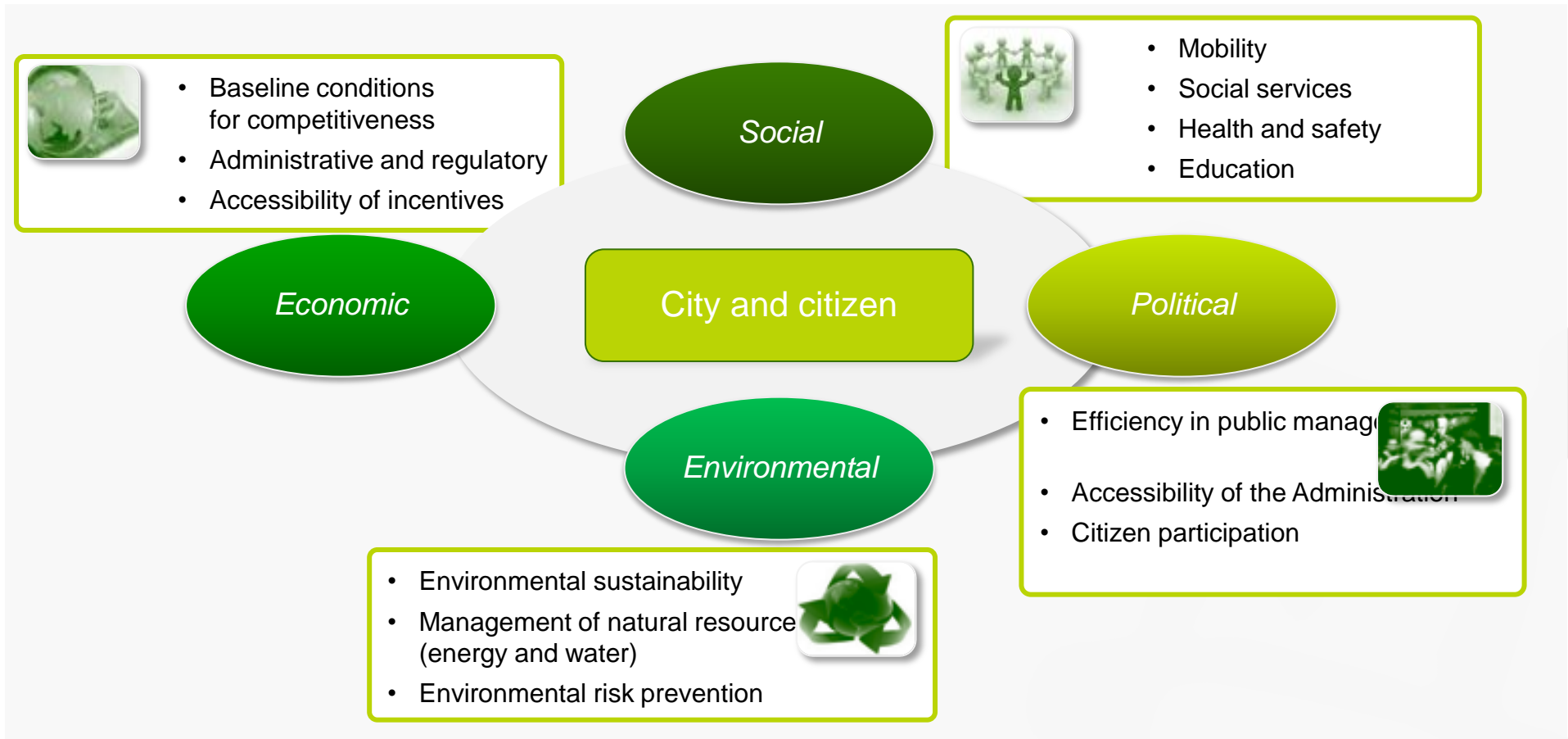
Efficiency and quality

- Consolidating growth
- Innovation as the new driver of all our activity.
- Delivering higher quality services in a more efficient manner: cost reduction and sustainable management
- Integrated vision of all city areas: development of synergies and operational cost reduction



This efficient and quality management will help address new societal challenges in the political, social, environmental and economic arenas.

Spheres and challenges of the new City



Some cities are developing technological projects within the domain of Smart Cities, taking on these new challenges with a vision of quality and efficiency



- Among pioneering cities in Smart City projects are:
 - San Francisco (smart parking meters, parking space management, electronic traffic information, waste management, public transportation, etc.).
 - Amsterdam (smart buildings, energy consumption and management, open data, waste collection, etc.)
 - Stockholm (controlled access to the city), Copenhagen (collaborative parking, bicycle infrastructure, etc.), Oslo (smart lighting), London (open data and public transportation), etc.

Despite everything, these new projects are limited in scope and lack an integrated focus in the resolution of all the challenges posed by city living.

There must be an evolution from isolated technology projects towards a model that addresses new city challenges from a comprehensive perspective and with an integrated focus.

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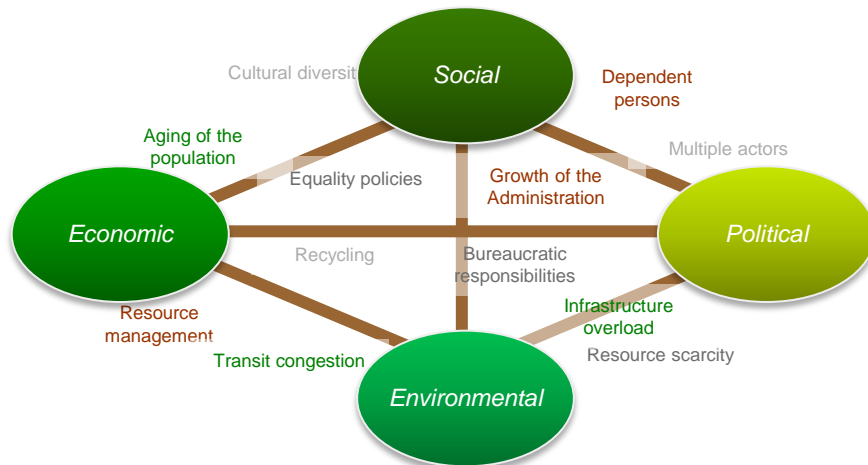
Sant Cugat Smart City

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The new challenges faced by the city spread over several domains and the relations among them, which means that solutions must provide an integrated vision.

Cross-linked impacts



Related actions

- Actions within the city are not always coordinated: information is not shared, all related domains are not taken into account, etc.
- Management has a vertical vision
- Multiplication of resource usage for similar purposes.

Key elements in the integrated vision

- Information, responsibility and decision-making sharing among subsystems
- Managing challenges in a transversal and coordinated fashion
- Locating operational synergies among services and processes

Furthermore, solutions to city challenges must strive for efficiency and quality in management, leveraging new technologies

Efficiency and quality in management

Striving for efficiency and quality in management, reducing and optimising resource usage through public-private collaboration and technological deployment

Elements of technological deployment

Collection systems

- Implementation of technology to measure city data in a continual manner

Communication networks

- Communication networks to efficiently transmit information between subsystems

Integrated management centre and systems

- Integrated management centre and systems used to analyze information, make decisions and implement them and analyze results

The Sant Cugat Smart City model is based on this integrated vision to address new challenges and pursue quality and efficiency through technology

Key characteristics of a Smart City

Foundations

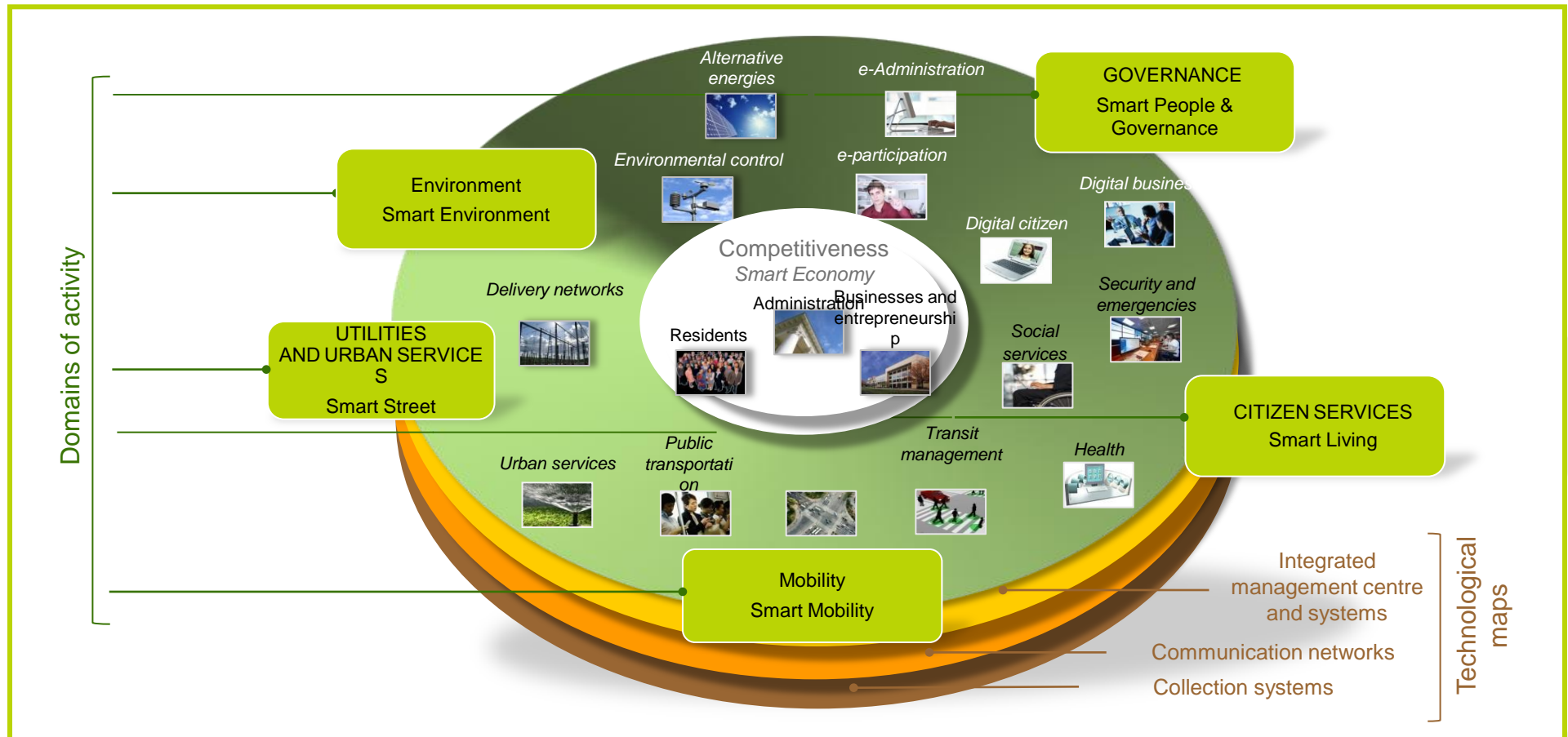
- Technological infrastructure and an integrated vision are its foundation
- Efficiency and quality of service is improved using new technological tools

Also

- Bidirectional, agile and scalable (up/down) access is enabled among city actors -residents, government and businesses
- A dynamic vision is adopted: change is detected and the city adapts to it in a dynamic fashion, reinventing processes
- Technology is at the service of the citizen, and its application is adapted to their technological know-how
- Solutions to new challenges are produced managing knowledge and supporting creative talent
- Solutions enable access to all residents and make the most of existing talent within connected organizations

The Smart City offers solutions based on three technological plans to cover all city domains and establish the conditions necessary for competitiveness

Diagram of a Smart City Domains and links

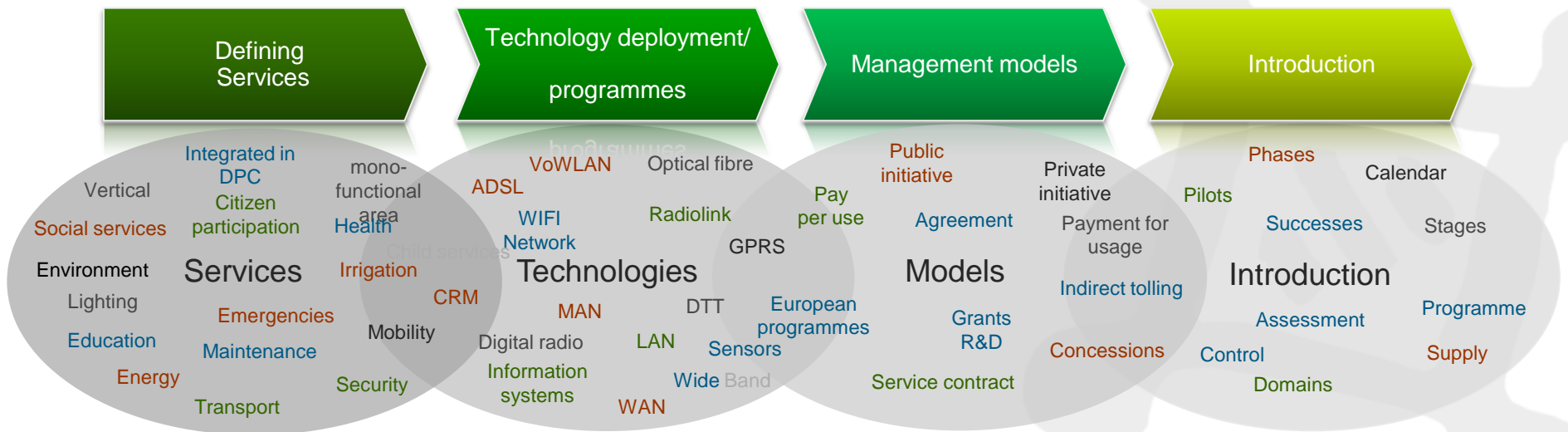


The objectives for the city are the key drivers in defining and structuring new services, technology deployment and the management model of the Smart City

Vision and strategy *Priority objectives for the City*

Basic principles *Integrated vision: information sharing and transversal management of challenges*
Efficiency and quality in management: optimizing resources, creating synergies, learning and innovating
Technology deployment through three plans

Introduction diagram for the Smart City



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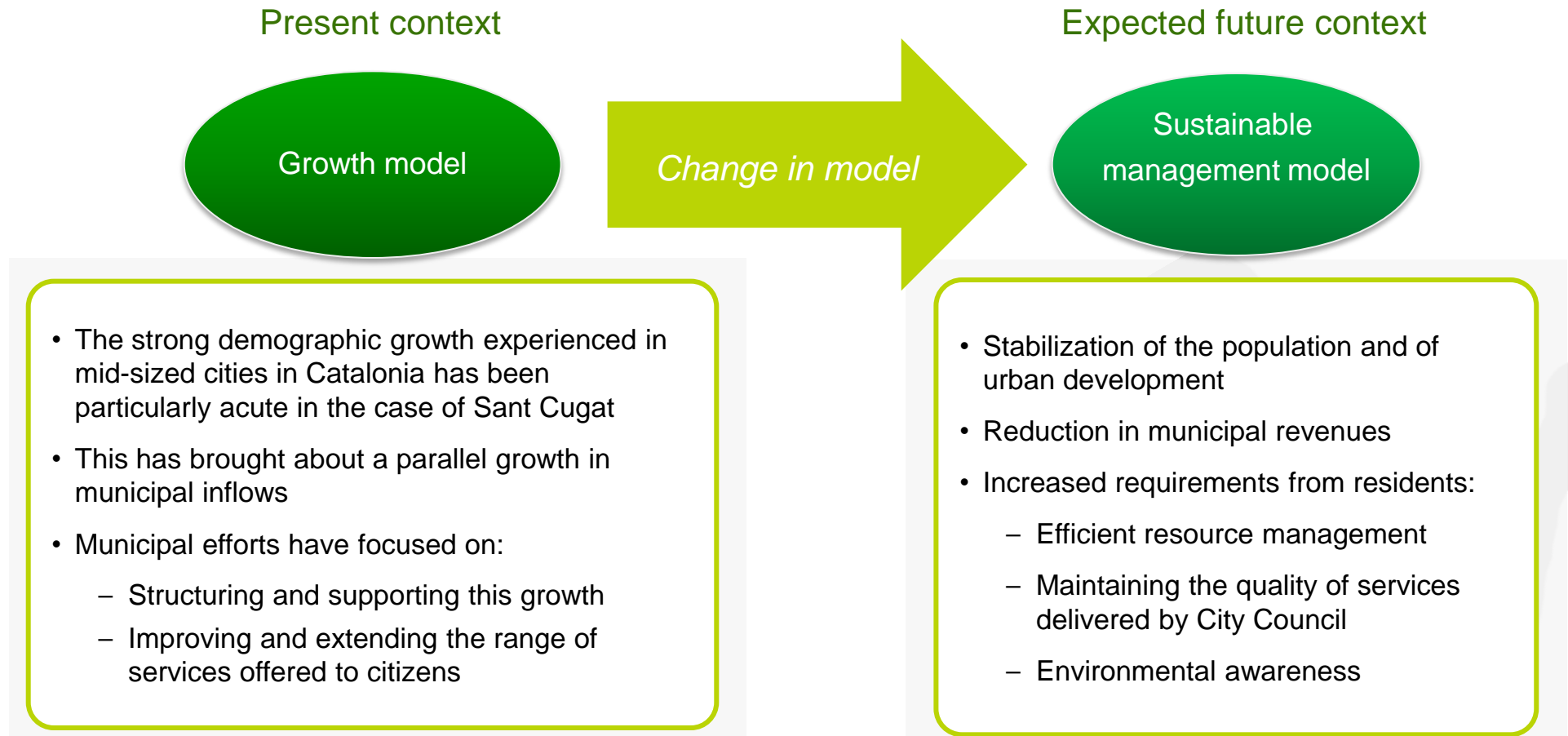
Directives and guidelines for Sant Cugat Smart City

Structure of the Smart City model in Sant Cugat

Development plan



Sant Cugat's development within the present context requires an evolution of its management model towards economic, social and environmental sustainability



The sustainable management model will need to adapt to the institutional positioning directives of the Sant Cugat City Council, which are based on innovation

Institutional positioning directives

Technological model of reference

Innovation

- efficient management and resource usage
- quality of life improvement for young families
- Supporting entrepreneurship
- The development of a transparent and efficient governance model: e-government and participation
- Environmental awareness and commitment

- Service integration
- Infrastructure integration
- Promoting the usage of municipal networks
- Marshalling synergies
- Reducing expenditures
- Double usage (public-private) of the network

Additionally, all actions laid out in the Strategic Plan must be geared towards producing savings and returns on investment, as part of the directives of the new management model

Sant Cugat Smart City Model



- Improvement in the quality of citizen services and offering added value
- Defining a business model for each technology investment, taking into consideration the role of the private sector
 - Engaging providers
 - Prioritization of projects with an economic and social profitability slant
- Integrating resources available to all organs and institutions in order to increase their profitability.

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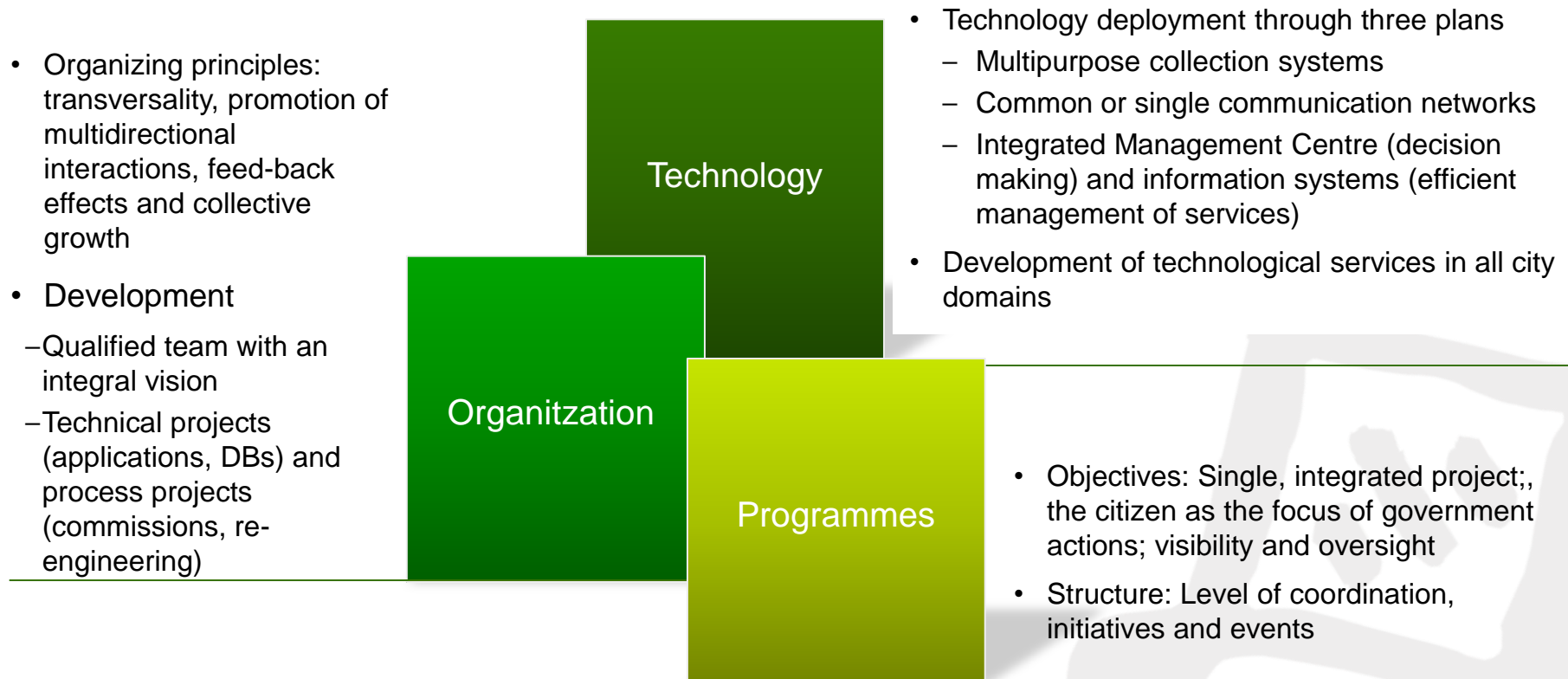
Structure of theSmart City model in Sant Cugat

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In the Sant Cugat Smart City plan, the use of new technologies is supported by the organizing principles and transversal programmes

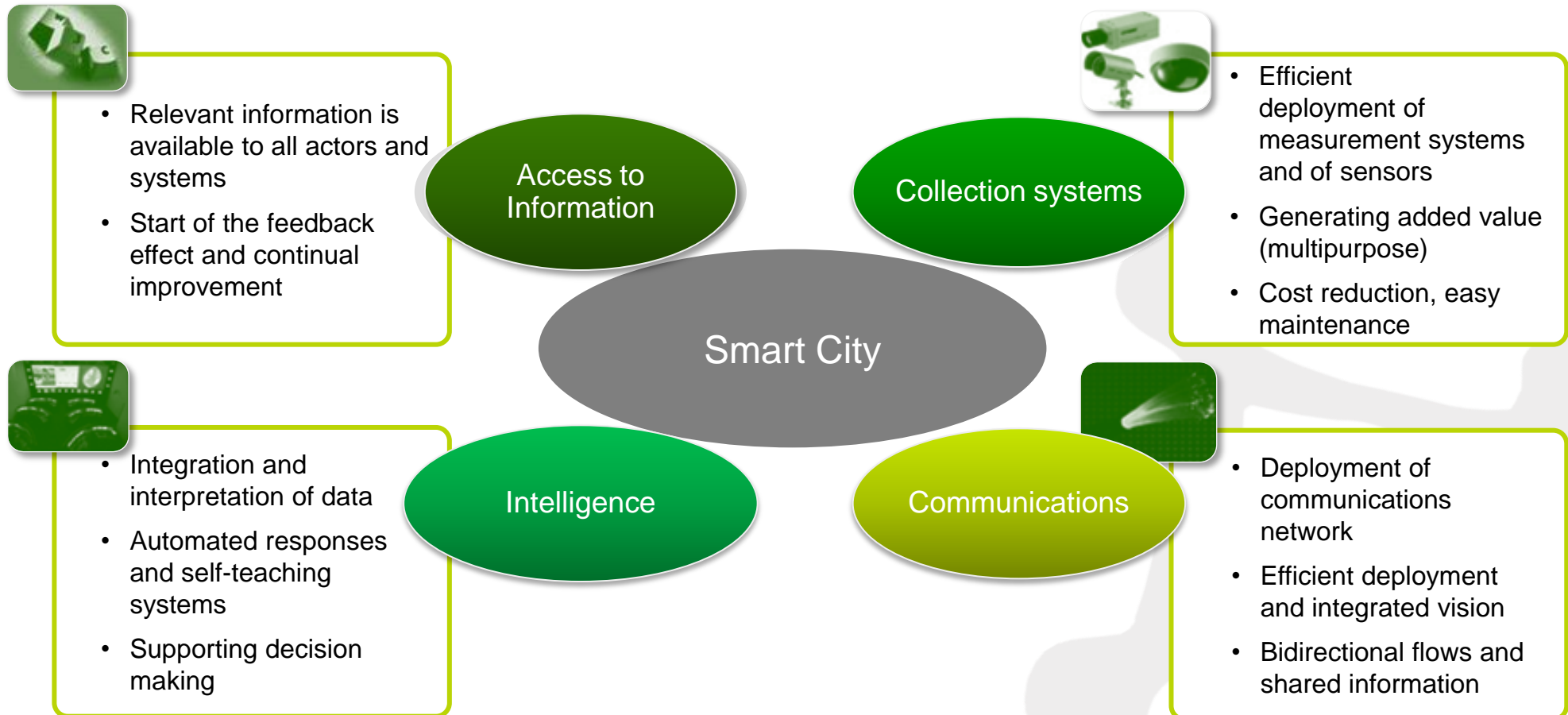
Levers for the development of a Smart City in Sant Cugat





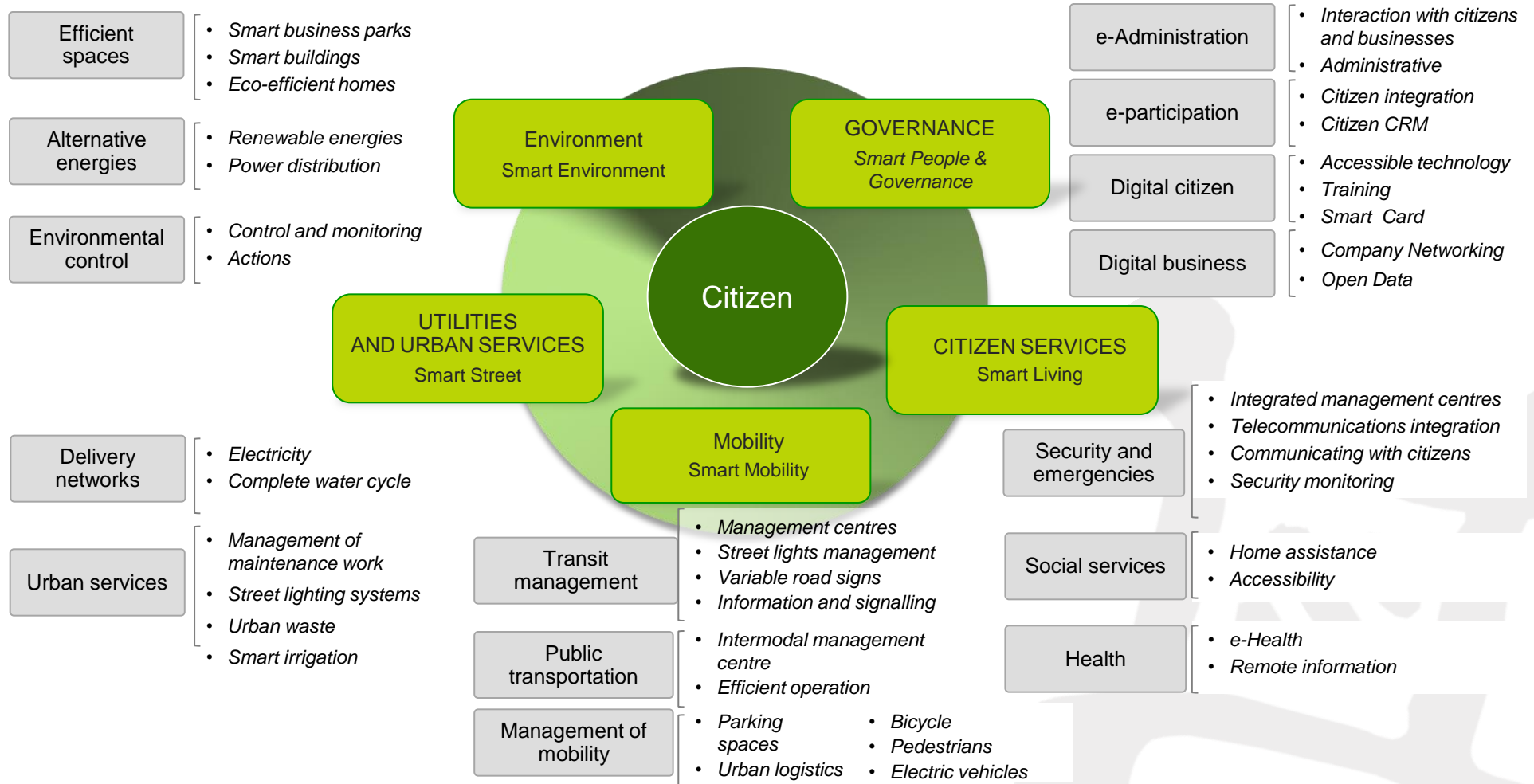
The deployment of technology of the Smart City in Sant Cugat is structured following for key elements

Key elements in the deployment of technology





Technology projects will cover basic activities and will be in alignment with the objectives for the city, as laid out in the reference model





In addition to developing technology projects, Sant Cugat must have an organization charged with promoting transversality among the different functional areas of government

Basic principles for the Organization for Sant Cugat Smart City

Transversality

- Promoting transversal and coordinated efforts in the organization's functional areas.
- Sharing information, following processes and common methodologies
- Locating synergies in resources usage and avoiding inefficiencies and redundancies

Multi-directional interactions

- Promoting bidirectional information flows: action-reaction
- Promoting cross-linked information channels with multiple simultaneous actors
- Creation of integrated networks of interaction among different areas

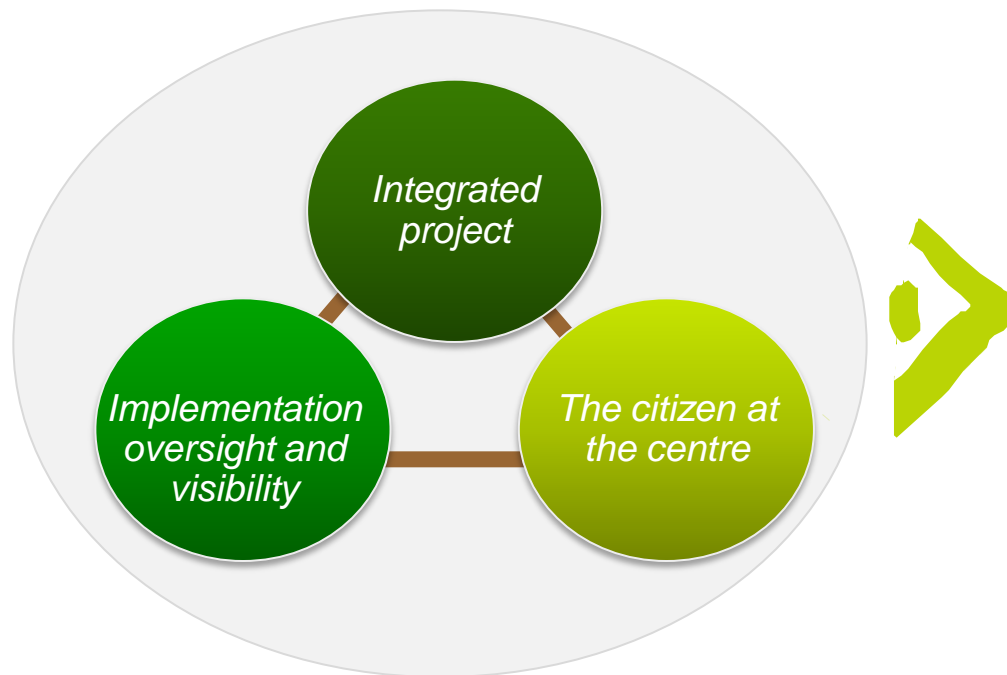
Feedback effect

- Enhancing initial designs through experience: continuous learning
- Ongoing assessment of conditions and adaptation to change
- Extending the focus in the design of solutions: 360 ° vision and collective growth



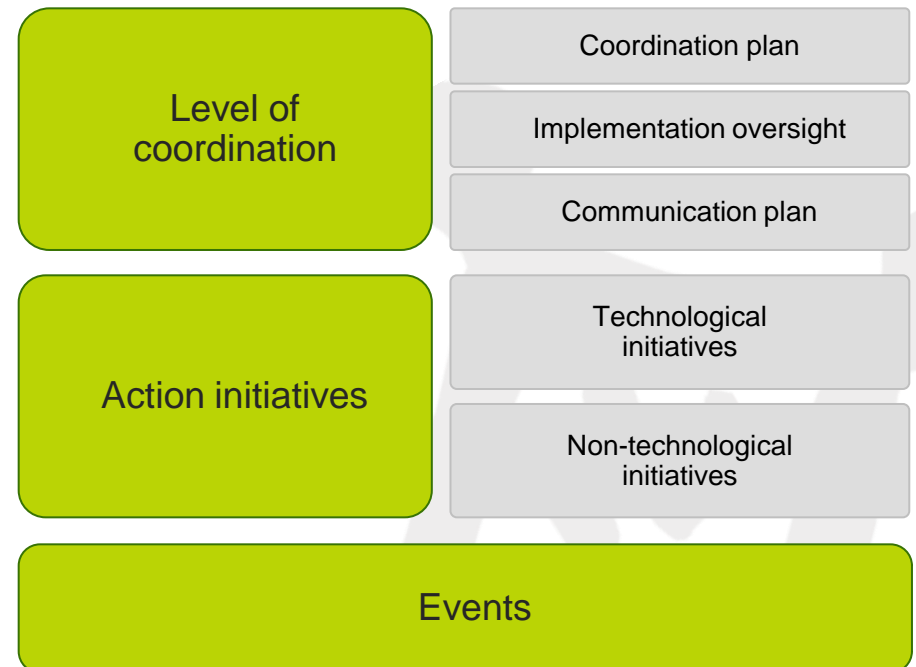
The Smart City model will be completed through specific transversal projects which seek to bring about an integrated project, placing the citizen at the centre and enabling the implementation of the goals of the Strategic Plan

Basic principles of the transversal programmes



Organization for the development of the Smart City

Programme structure and initiatives



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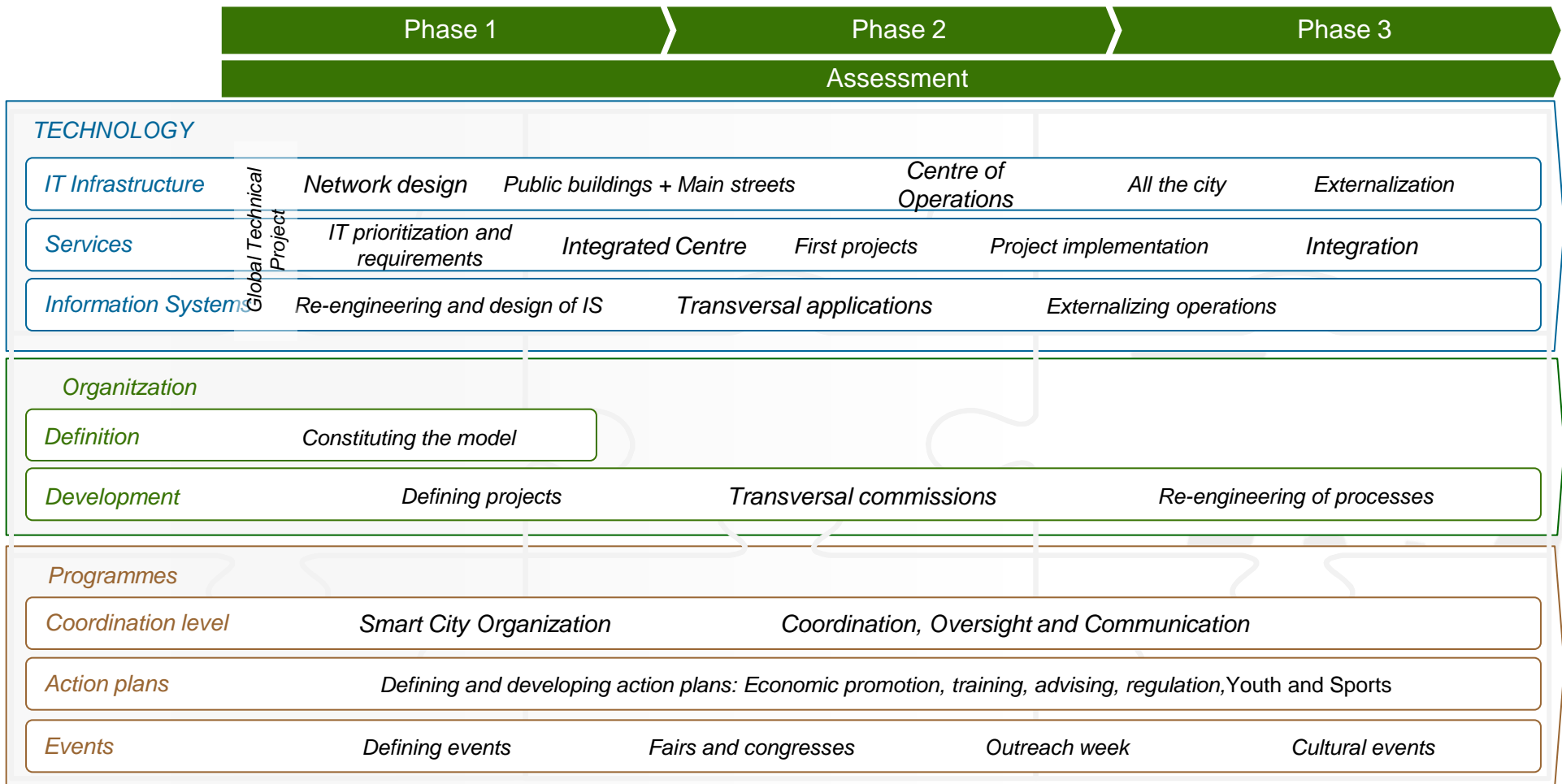
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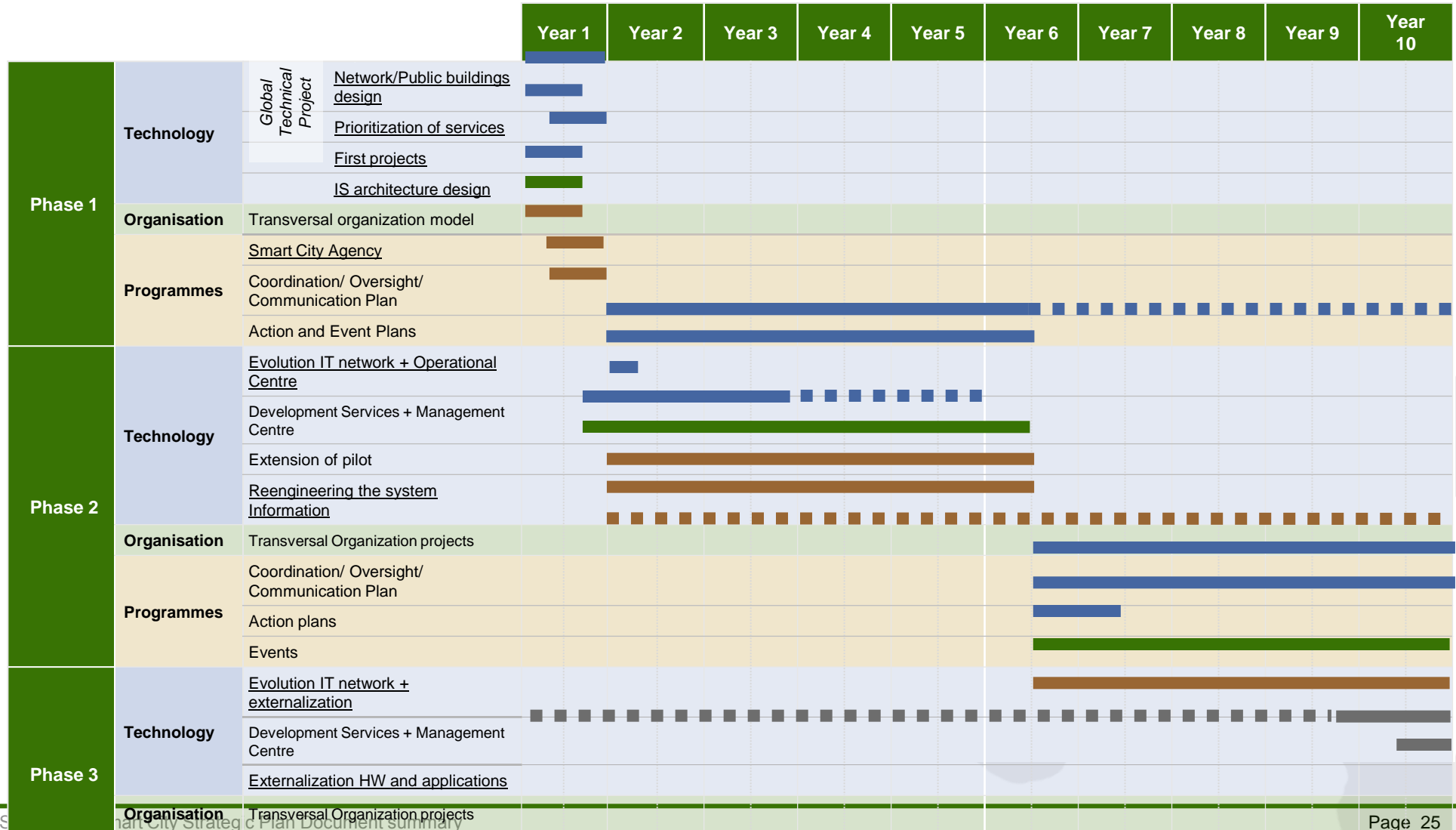


The roadmap for the development and implantation of the Sant Cugat Smart City model plans for the creation of integrating structures for initiatives in the technology, organization and programmes domains



XXX: Initiatives that promote integration

The expected implantation of the Smart City in Sant Cugat stretches over a ten-year span. Results, however, will be seen throughout



The first step will be the launching the technology projects and defining the make-up of the organization which will be charged with the development of the Smart City

First steps in the development of the Strategic Plan

3-6 months

Technology

- Designing the Global Technological Project
- Design and implantation of the Integrated Management Centre
- Developing the first technological projects

Organization

- Defining the transversal organization model
- Defining transversal projects: Technical projects and Processes

Programmes

- Constituting the Organization for the development of the Smart City in Sant Cugat within a framework of public-private collaboration

Conclusions of Sant Cugat, Smart City

- Sant Cugat's development within the present context requires an evolution of its management model towards economic, social and environmental sustainability
- Additionally the new challenges faced by the city extend into several domains and interaction among them, which means that their solution requires an integrated vision
- For this reason, the structuring directives for the model of a Smart City in Sant Cugat consist of an integrated vision in addressing new challenges and striving for efficiency and quality in solutions, marshalling new technologies
- In order to develop a Smart City in Sant Cugat, technology projects will be supported by an organisation charged with promoting transversality, as well as by a series of programmes designed to yield an integrated project that has the citizen at its centre
- The implementation of the Strategic Plan will be undertaken with the help of an Organization that will coordinate the Smart City initiatives and will launch the next steps within a context of public- private collaboration

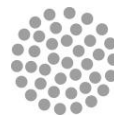


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