FIWARE
Global
Summit

Smart Buildings Data Models

The Path to Buildings Smartification

Gran Canaria, Spain
14-15 September, 2022
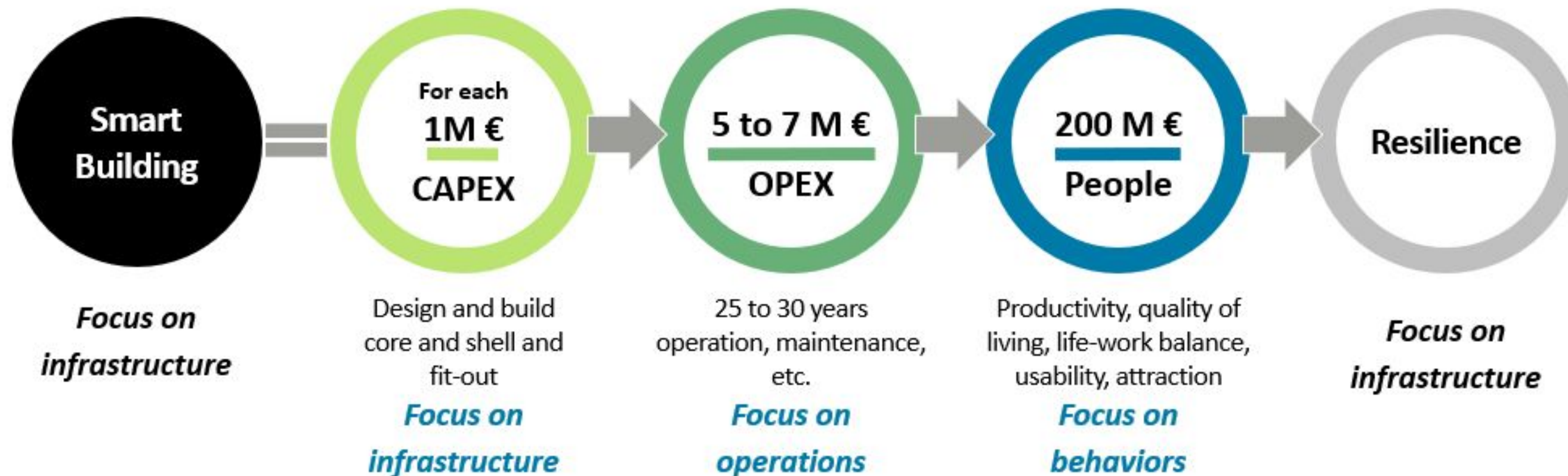**#FIWARESummit**

Leading
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Open APIs for Open Minds

Smart Buildings: our vision of a smart building value

"Smart buildings are **digitally connected structures** that combine optimized building and operational automation with intelligent space management to **enhance the user experience**, **increase productivity** through quality-of-service delivery, **optimize costs** through efficiency and effectiveness, and **mitigate physical and cybersecurity risks**." *Deloitte*

For each 1 € Capex, a Smart Building can generate a 200 € return when focusing on improving tenants' experience

Smart Building	For each **1M €** CAPEX	**5 to 7 M €** OPEX	**200 M €** People	Resilience
Focus on infrastructure	Design and build core and shell and fit-out	25 to 30 years operation, maintenance, etc.	Productivity, quality of living, life-work balance, usability, attraction	*Focus on infrastructure*
	Focus on infrastructure	**Focus on operations**	**Focus on behaviors**	

Smart Buildings: use cases and benefits

Real Estate is shifting its paradigm

From: **Location, Location, Location**

⬇

To: **Location, Experience, and Insights**

Deloitte's Synergy implementation focus on **Use Cases for people**, employees, dwellers, and visitants of the buildings. Also, the **number of use cases and flexibility increases with the correlation between domains.**
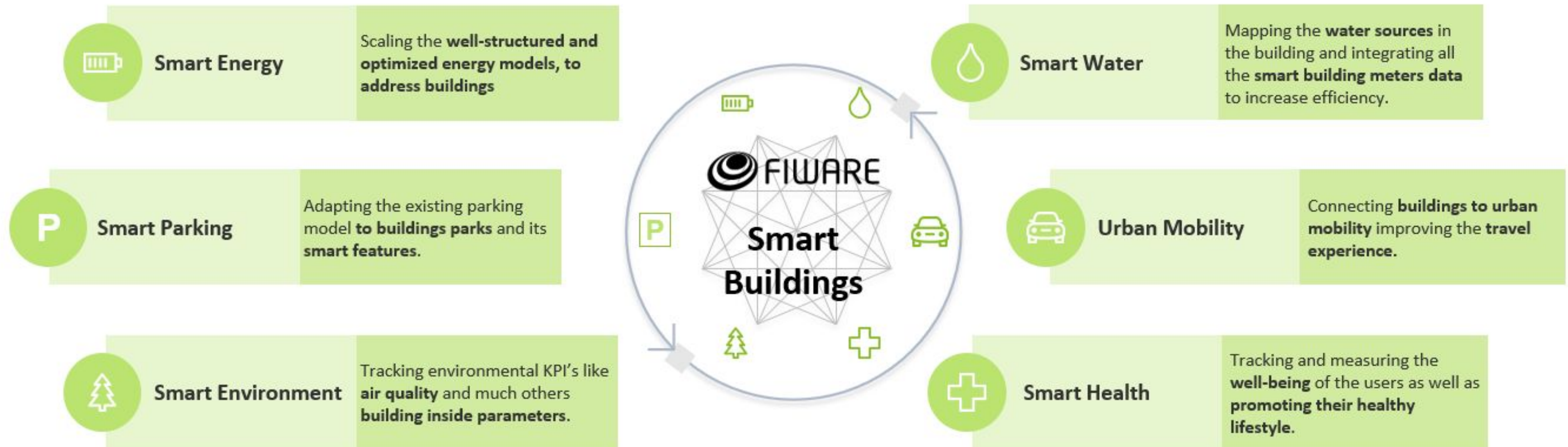
Comfort and wellbeing optimization	Optimized workplace and seat allocation
Visitor's Experience	Optimized Room Experience
Smart Energy Manager	Smart Vehicle Parking
Monitoring and Improving ESG Compliances	Smart Maintenance and Incident Management

People Benefits

Productivity	Wellbeing	Data Aggregation & correlation	Workspace Optimization	Health & Disease Prevention	Sustainability	Connectivity

Tenant Benefits

Lower Operating Costs	Employee Retention	Reduced Downtime	Talent Attraction	Higher Sales	Customer Retention

Owner Benefits

Decreasing Operational costs	Achieve Valuable Certifications	Attracting Preferential Financing	Quicker Sales	Higher Rental Rates	Higher Occupancy Rates	Fit-Out Flexibility	Decreasing Carbon Footprint

If people feel their needs fulfilled, owners can take a premium, and tenants increase their recognition

Smart Buildings: accelerate by existing Fiware data models

To craft a smart buildings, it is necessary to ensure that all domains communicate through the same ontology. We could start expanding some of the Fiware existing data models to support a smart building, such as:

Smart Energy
Scaling the **well-structured and optimized energy models, to address buildings**

Smart Water
Mapping the **water sources** in the building and integrating all the **smart building meters data** to increase efficiency.

Smart Parking
Adapting the existing parking model **to buildings parks** and its **smart features**.

Urban Mobility
Connecting **buildings to urban mobility** improving the **travel experience**.

Smart Environment
Tracking environmental KPI's like **air quality** and much others **building inside parameters**.

Smart Health
Tracking and measuring the **well-being** of the users as well as **promoting their healthy lifestyle**.

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Smart Buildings

Smart Buildings: increasing value, creating additional data models

To craft a smart buildings, it is necessary to ensure that all domains communicate through the same ontology.
Increasing value, new data models must be defined for the main domains of a smart building, such as:

Buildings Lighting

✓ Integrating all the lights of the building and creating a **dynamic experience** that could be **increased by external factors like the sun or occupancy**

Buildings HVAC

✓ Integrates all the sensor data and connects to the building operating system with the possibility of **communicating with other domains of the building**.

Buildings Elevators

✓ Smart grid of elevators to **improve its efficiency** in terms of energy consumption, **average waiting time**, and reduced maintenance costs.

Buildings Booking Spaces

✓ Integrating the **room booking systems** providing a more **efficiency usage** and creating a near real-time **people flow** inside the building.

Buildings Security

✓ Connecting all the Security and Safety domains and IOTs to **correlate data and improve security measures** inside the building.

Buildings Access Control

✓ Integrating the access systems providing a **better access experience** and creating a near real-time **people flow** inside the building.

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Thanks!

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