

**SIEMENS**



Brussels, 13<sup>th</sup> June 2014

# Smart Cities – A Siemens Perspective

# Agenda

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Smart City Programs

2

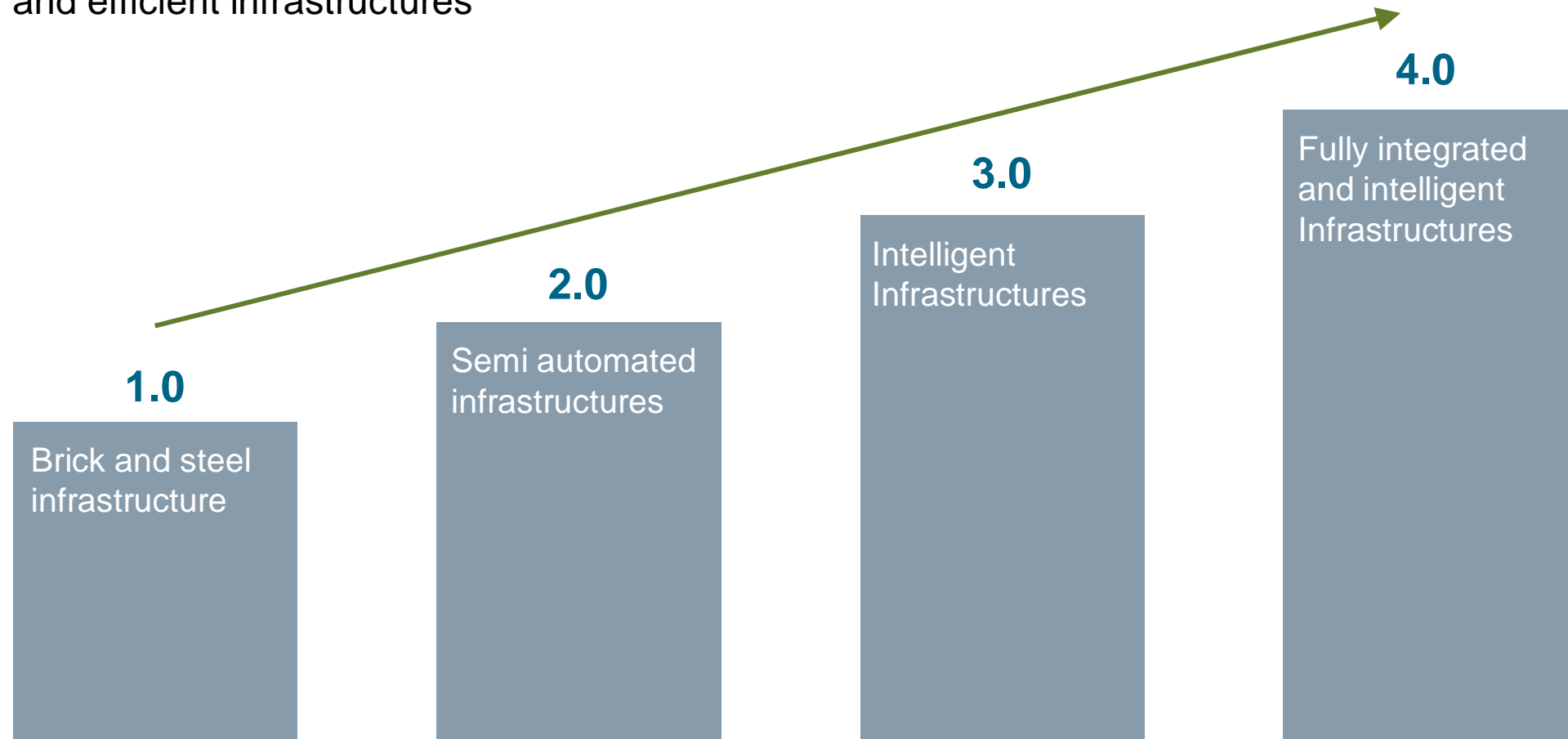
Intelligent Infrastructure

3

Success factors for Smart City Programs

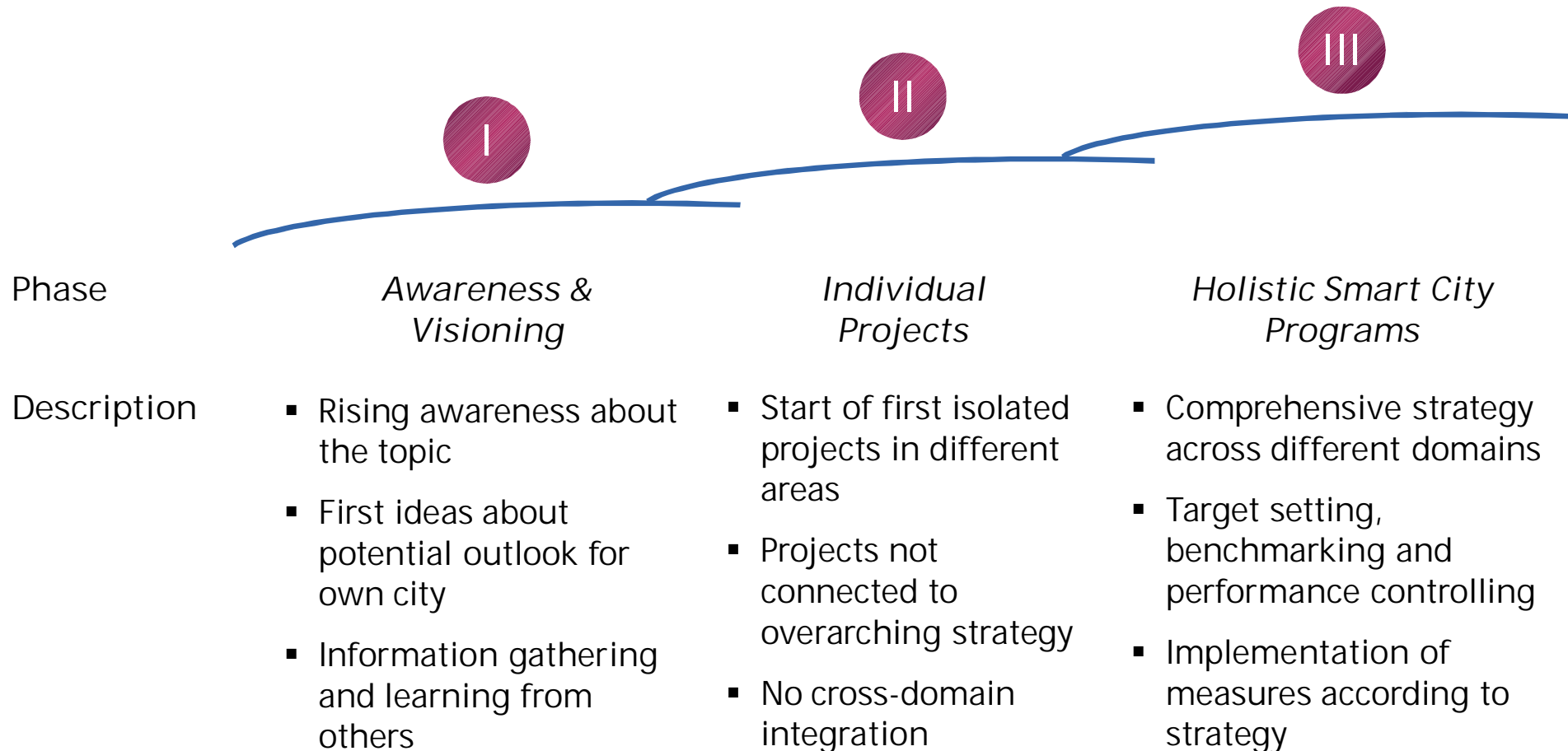
# At Siemens we lead the way towards more intelligent and efficient infrastructures

We are the **powerhouse for infrastructure automation** and lead you to more intelligent and efficient infrastructures



## The 4 stages of Infrastructure development

# Smart City programs need a clear target, performance indicators and cross-domain integration

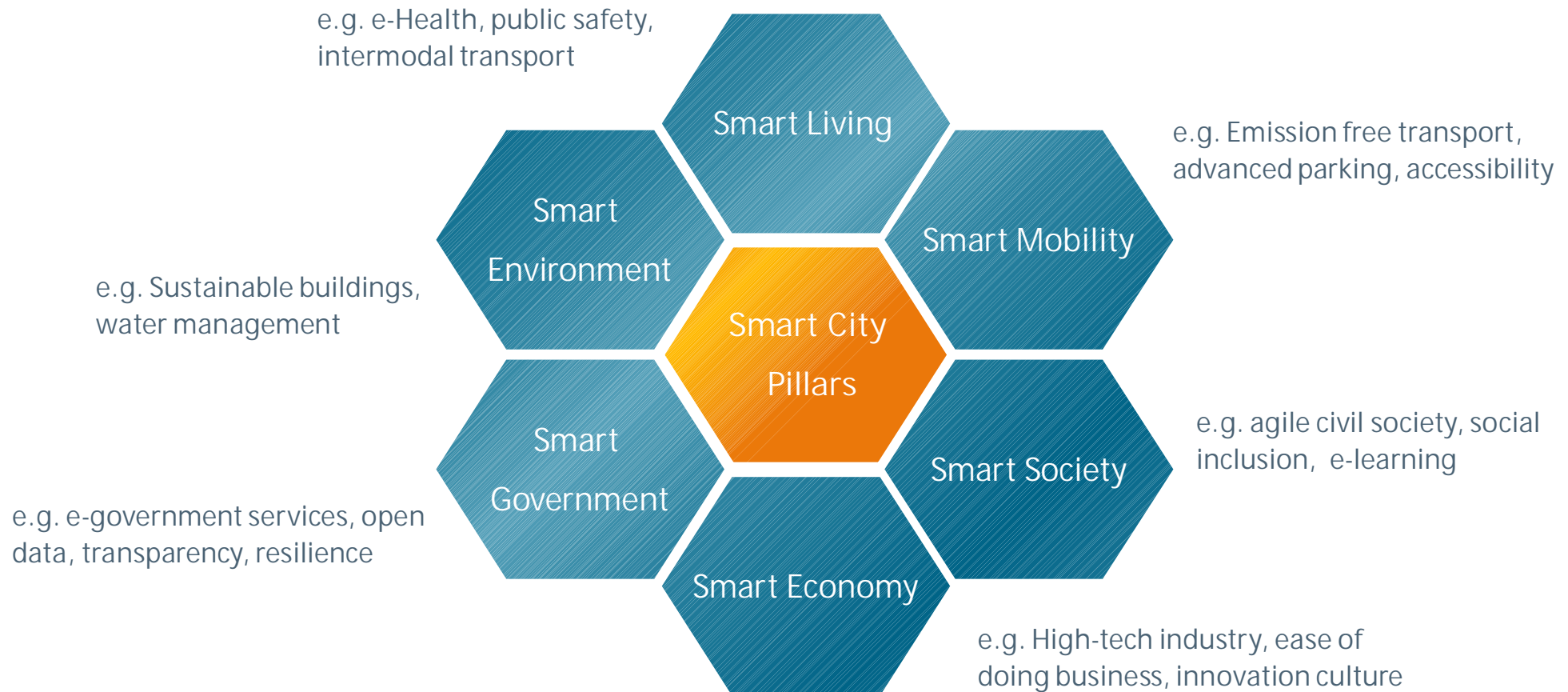


**Integration of vision and projects into strategy key success factor**

# Smart City Concepts go beyond technologies and need to integrate also social and political aspects

***A city can be defined as 'smart' when social capital, traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic development and a high quality of life***

*(Adapted from Caragliu et al. 2009)*





# Singapore developed a cross-domain sustainability strategy, covering major infrastructure areas



## Singapore Resource Profiling Study

- Identification of energy efficiency potentials in Transport, Information Technology and Buildings
- Impact analyses of new technologies which drive the agenda of City Authorities and roadmap for implementation
- Evaluation of e.g. 36 transport levers to identify CO<sub>2</sub> reduction potential
- Test-bed concepts for pilot projects



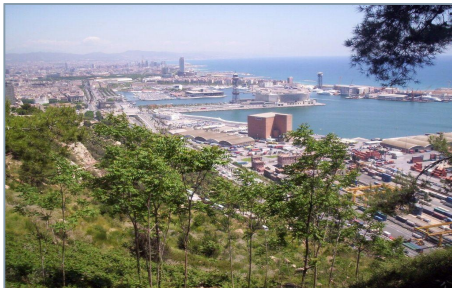
# Smart Cities aim to increase efficiency via cross-domain collaboration and new partnerships

## Many cities started Smart City Programs...



### *Santander*

More than 12,000 sensors to help the government operate as efficiently as possible



### *Barcelona*

Working to merge urban planning, ecology, and information technology to improve the lives of citizens



### *Amsterdam*

Aims to become one of the most sustainable cities by 2040 with help of a unique partnership called Amsterdam Smart City (ASC).

## ...from which others can learn

- Focus on comprehensive strategy across infrastructure areas and domains
- Implementation of IT and smart technologies as enablers for new services
- Stakeholder involvement and strong partnerships beyond “traditional” networks
- End-user orientation of measures and services
- Positive impact on sustainability, quality of life and competitiveness of cities

# Siemens is supporting the development of the Smart City project Aspern in Vienna (Austria)

## Facts and figures

- Target: Multifunctional urban space for 20'000 inhabitants and 20'000 jobs
- Development period: 20 years
- Planning area: 240 ha
- Net construction area: 100 ha

## Challenges

Build a Smart City quarter as a worldwide flagship project for energy efficiency and quality of life and to showcase Vienna as one of the smartest and greenest cities in the world

## Smart solutions

- Active smart grid management
- Electro mobility in the Smart City
- Building energy management systems including decentralized generation and storage
- Self-sufficient energy supply
- Smart public street lighting
- Infrastructure monitoring

## Customer benefits

- Platform to extend the tested smart quarter technology city (Vienna) and Europe wide
- Sustainable economic growth initiated by smart solutions and high quality of life



## Siemens is also supporting the Smart Dubai program of H.H. Sheikh Mohammed



### Smart City Vision for Dubai

"Smart City's main aim is to provide better connections and increase cooperation between the emirate and its residents. It promotes the use of government facilities using the largest possible number of smart applications."

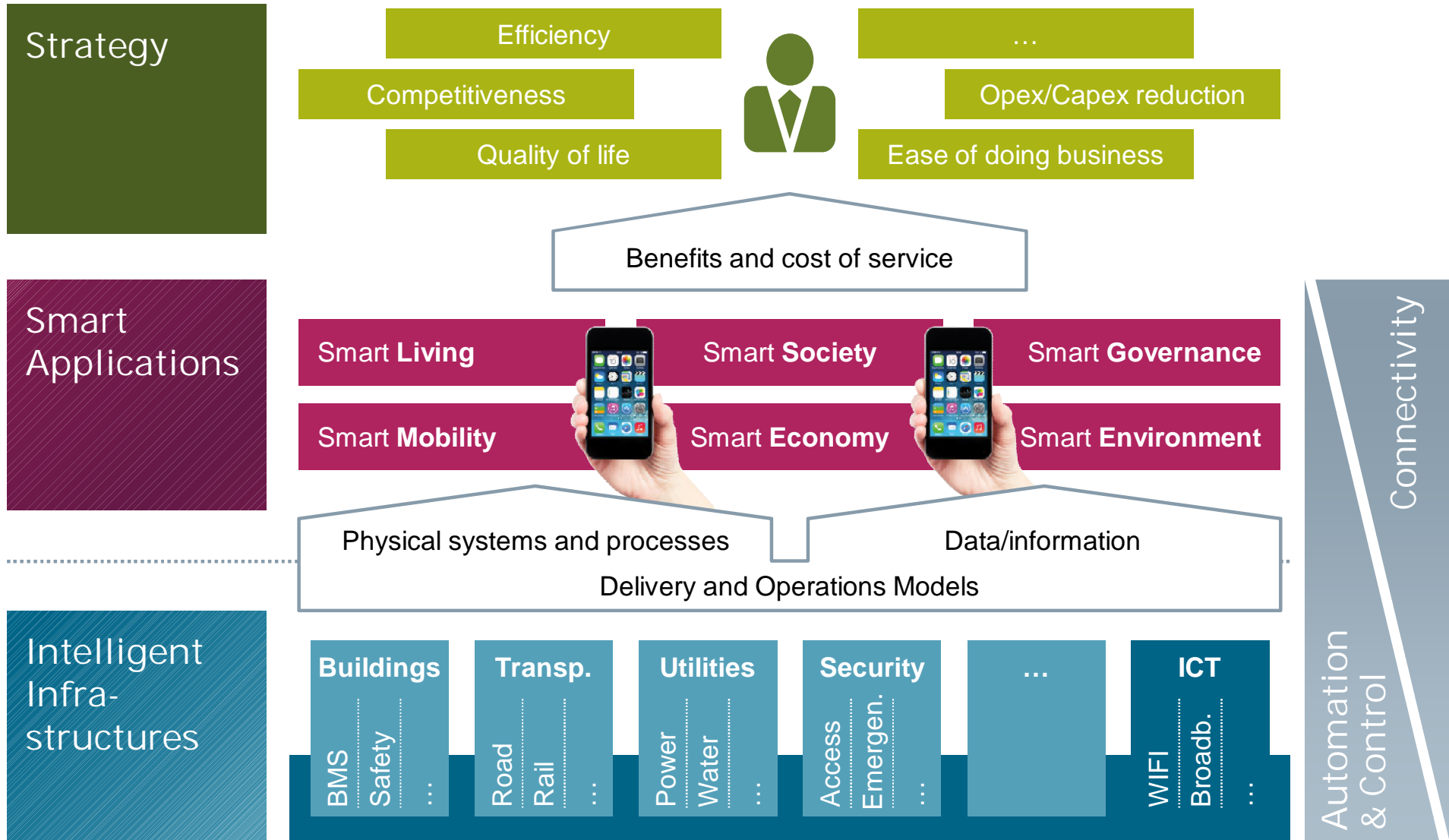
*H.H. Sheikh Mohammed Bin Rashid Al Maktoum*

#### Strategic direction

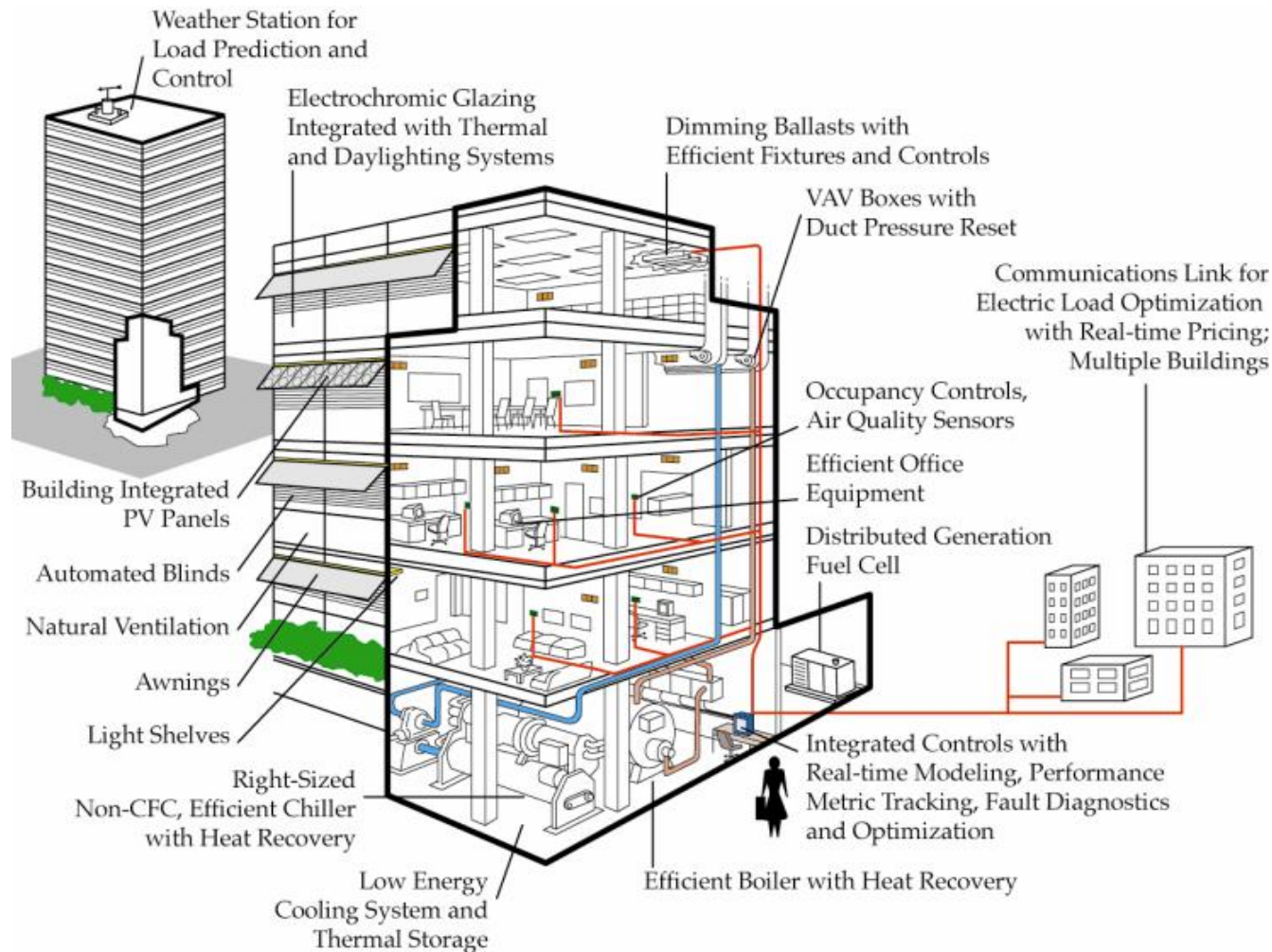


- **Transforming Dubai into the smartest city in the world** in the upcoming three years
- **Change peoples' live for the better** through high quality services delivered via ICT, smart applications and underlying intelligent infrastructures
- **More than 1,000 high quality services within strategic pillars**
  1. Smart Living, 2. Smart Mobility, 3. Smart Society/People,
  4. Smart Economy, 5. Smart Governance and 6. Smart Environment
- **Implementation via Smart Dubai Program Management Office,** governmental agencies, pilot districts and collaboration with private sector

# Our understanding of the Smart City challenge – Smart Services based on Intelligent Infrastructures

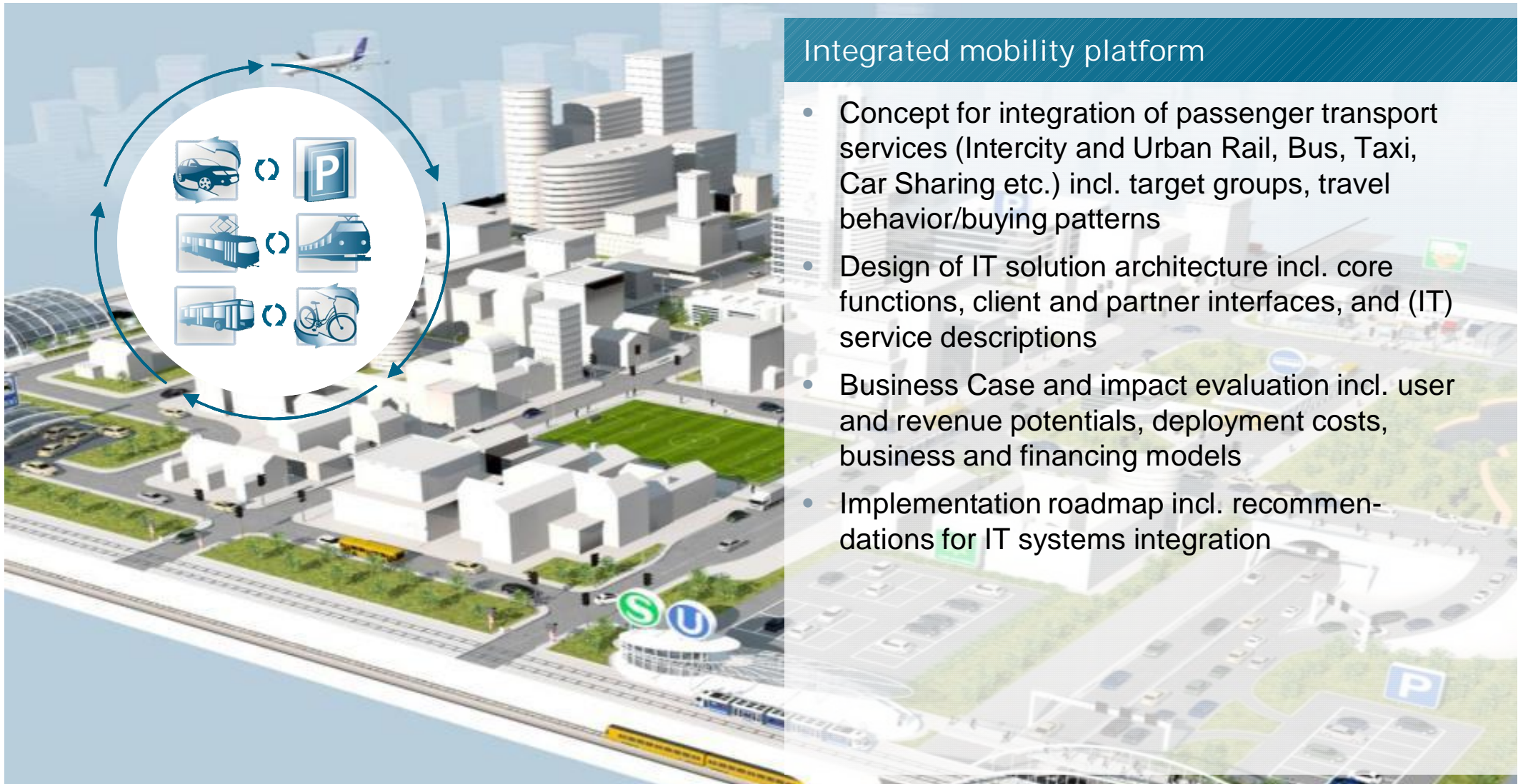


# Intelligent Buildings are able to operate efficiently and adjust automatically to changing conditions





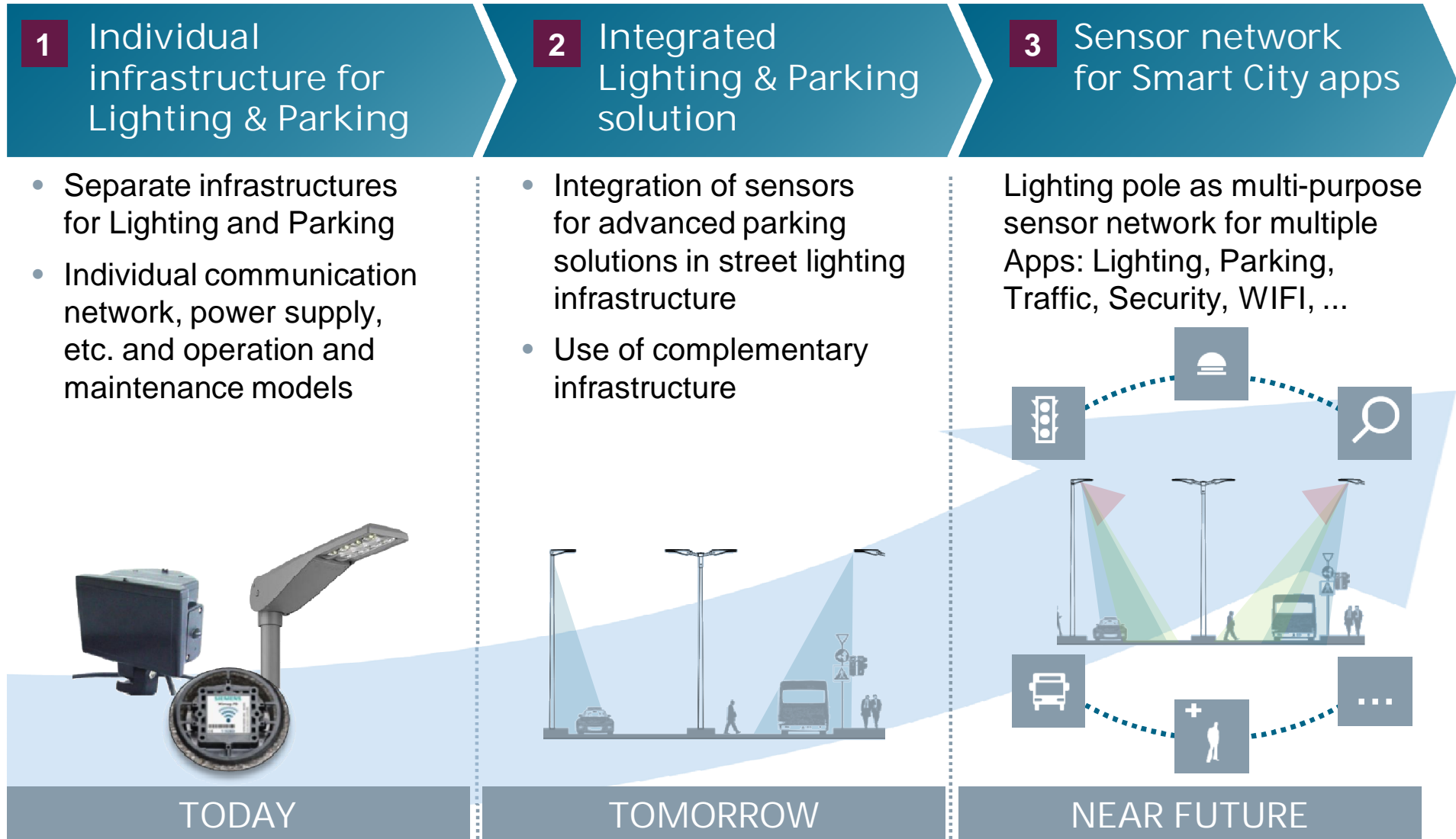
# Integrated Mobility Platform supports seamless travel across different transport modes



## Integrated mobility platform

- Concept for integration of passenger transport services (Intercity and Urban Rail, Bus, Taxi, Car Sharing etc.) incl. target groups, travel behavior/buying patterns
- Design of IT solution architecture incl. core functions, client and partner interfaces, and (IT) service descriptions
- Business Case and impact evaluation incl. user and revenue potentials, deployment costs, business and financing models
- Implementation roadmap incl. recommendations for IT systems integration

# Example of "Smart Parking and Smart Lighting" for evaluation of cross-domain OT & IT interdependencies



# Our lessons learned for successful Smart City Programs



Commitment from the top and clearly defined target



Integrated program management across organizational boundaries



Stakeholder integration and focus on citizens



Technological concepts combining IT and OT



Clear cost-benefit-analysis including non-monetized aspects



New collaboration models and partnerships

