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The future of smart cities

1. Techno trends: future of the city
2. Market: platforms and convergence
3. Towards inclusive smart cities

Trend 1: 'Senseable' cities



- **Mobile internet: connectivity everywhere**
- **Sensors everywhere (Internet of Things)**
- **Smart buildings, street lighting, energy grids**

Trend 2: Web as a smart brain

- **Datastream mining:
realtime insights from Big Data**

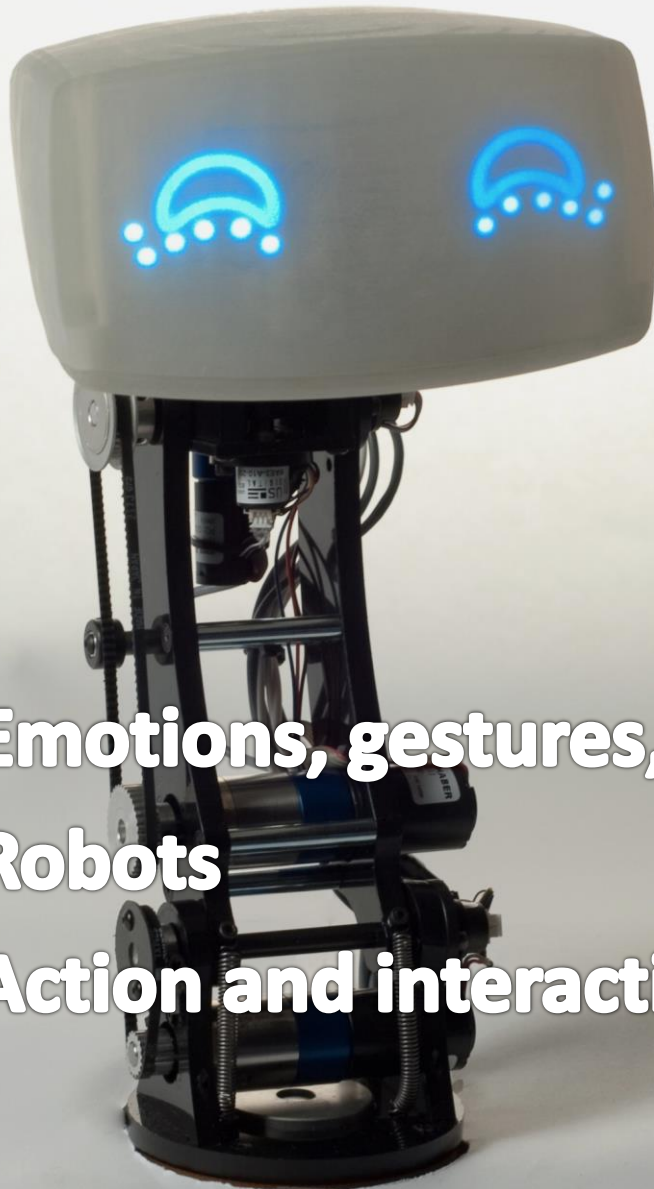
Trend 3: Social networks mapped

- **Insights in social dynamics of cities, the spread of ideas, knowledge, rumours, riots,...**
- **Crowd control**

Trend 4: Augmented reality

- Living IN the web
- Mix of online and offline worlds
- Interactive displays, surfaces, glasses, ...

Trend 5: social computing and robotics



- Emotions, gestures, language, tone of voice ...
- Robots
- Action and interaction

A vibrant, futuristic cityscape filled with numerous skyscrapers of varying heights and architectural styles. The buildings are densely packed, and many have balconies or platforms. The sky is filled with a large number of colorful, multi-rotor drones or flying cars, some in flight and others parked on the buildings. The overall scene is bright and detailed, suggesting a highly advanced urban environment.

Trend 6: robots and drones

- **Robots, drones, (semi)autonomous vehicles**
- **Great impact on the design of the city**

Trend 7: Do It Yourself Production



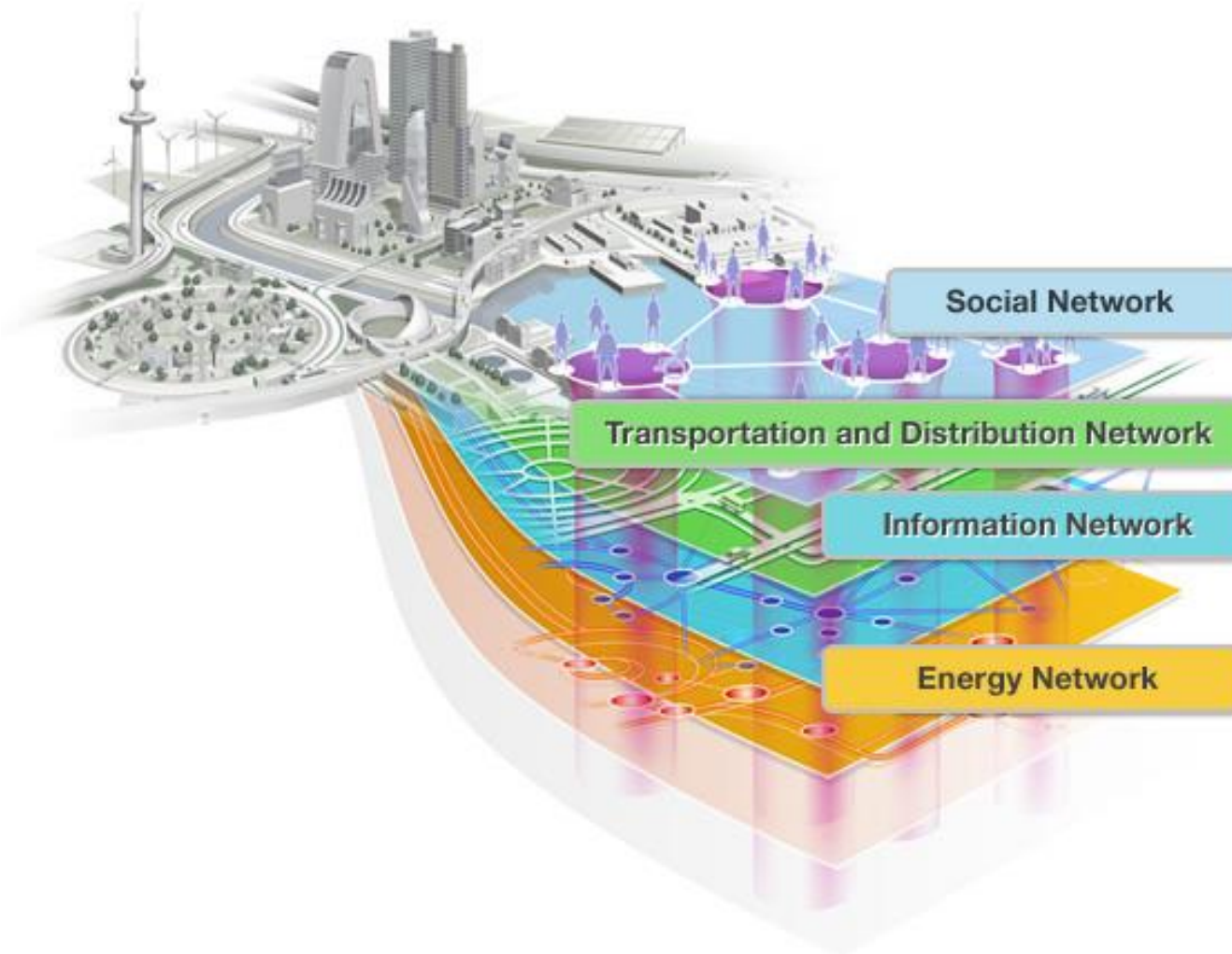
- 3D Printing, DIY Biology
- citizens as designers, producers, distributors
- local production: agrofood, beehives, energy
- sharing economy

Trend 8: Circular cities

An aerial view of a futuristic circular city. The city is composed of several concentric rings of buildings and roads, with radial roads connecting the rings. The city is surrounded by lush green forests and a winding river. The overall design is highly organized and circular, reflecting the 'Circular cities' trend.

- **Renewable energy**
- **Recycling: closed material loops**
- **Repurposing**
- **(Rain)water**
- **Plastics**
- **Bio-based production**

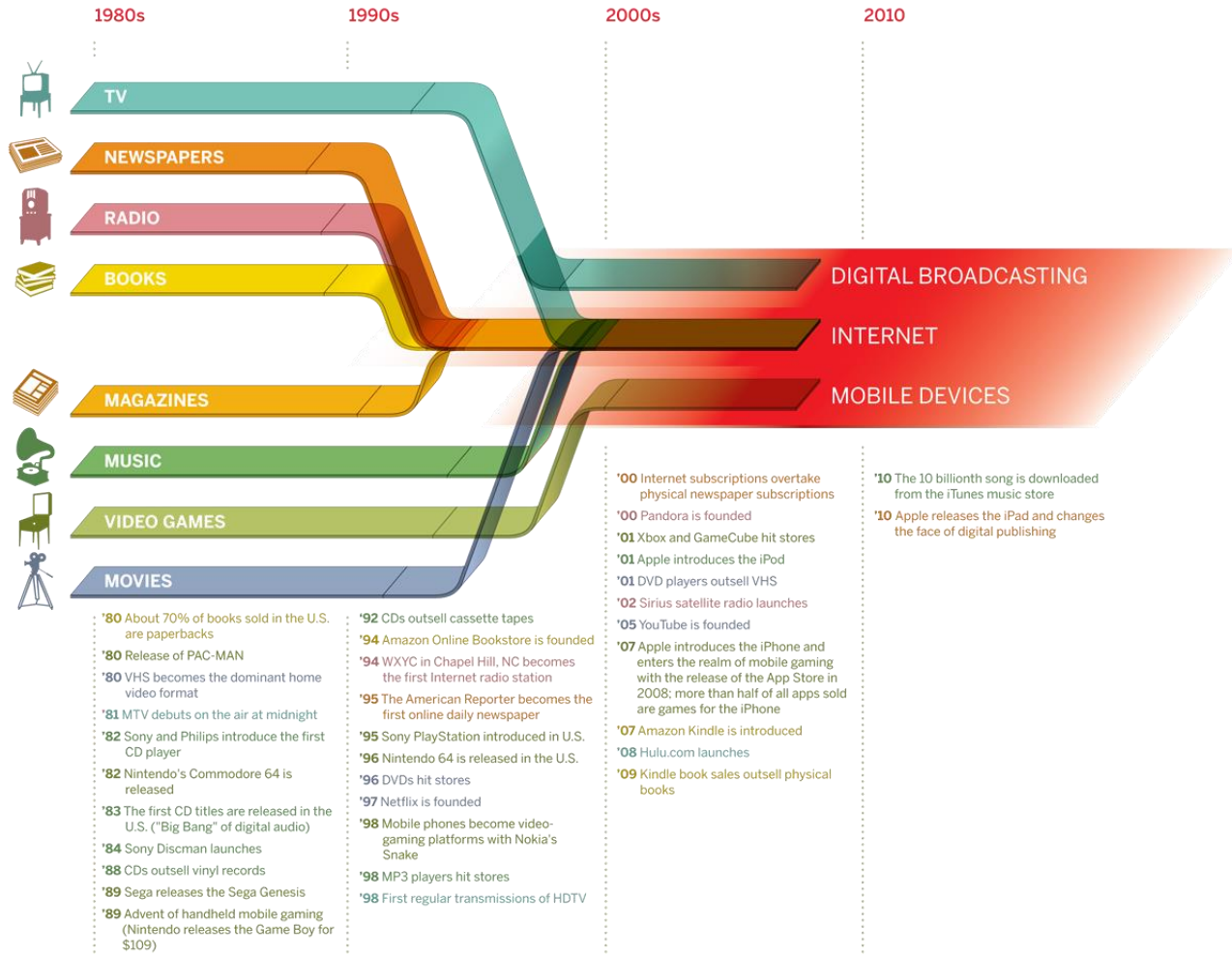
Smart cities: layers



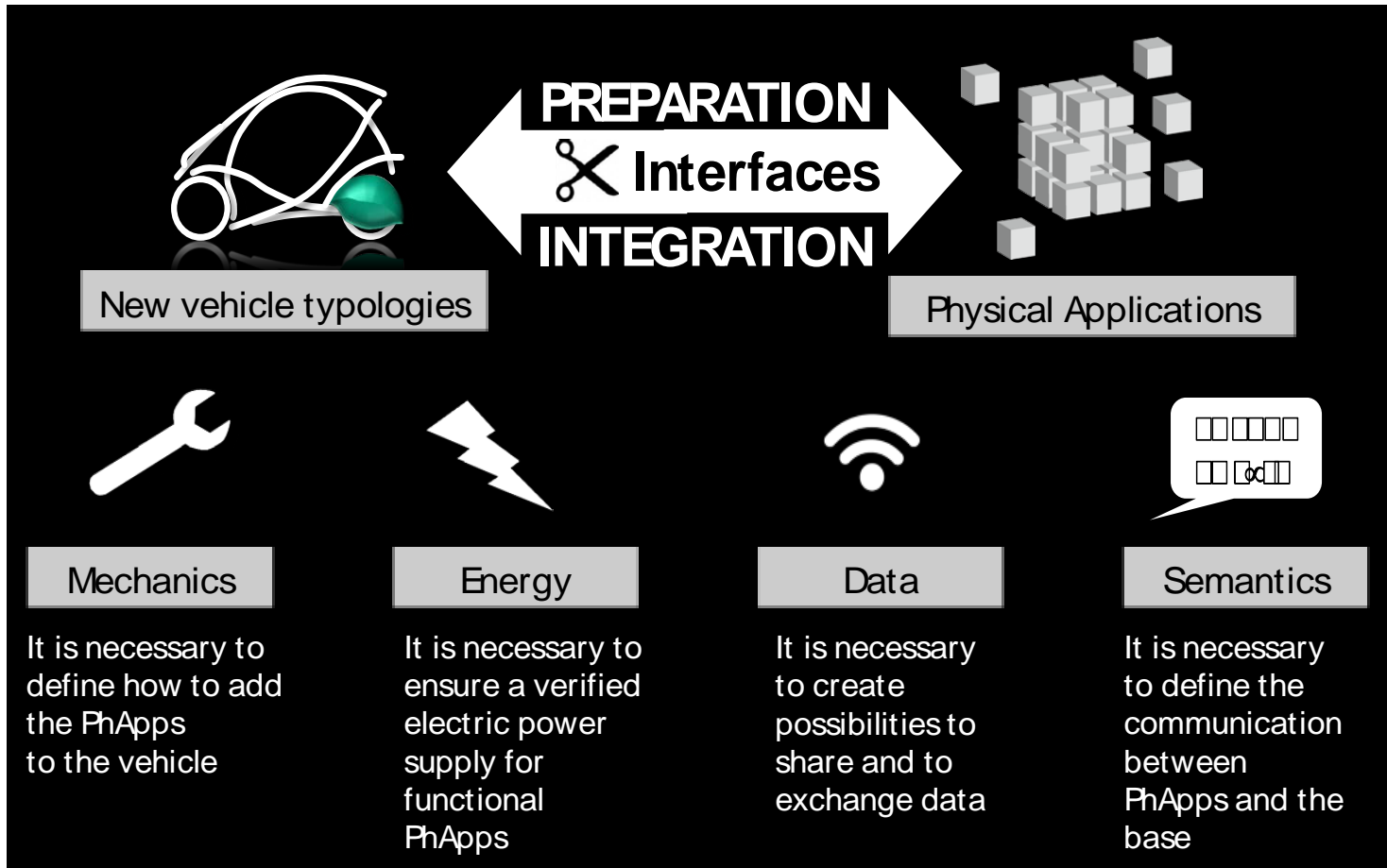
Market: Platform revolution

- Digital technologies impact all industries
- Cross sectoral, cross boundaries, cross layer
- Convergence of markets and competition
- Speed-up innovation (scale, efficiency)
- Universal infrastructures become platforms for multiple integrated services
- Cocreation between governments, industries, universities and citizens

Telecom and IT

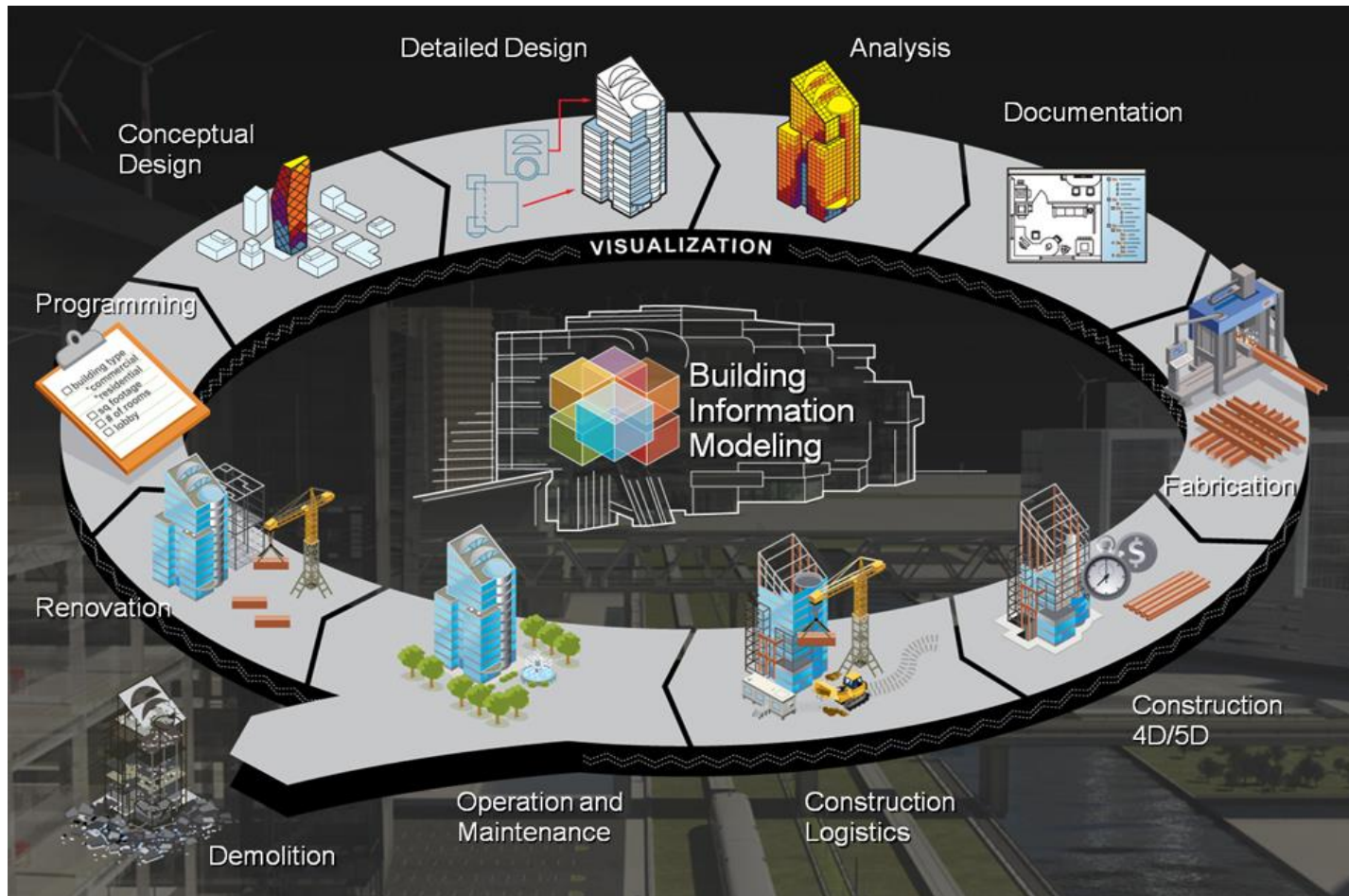


Smart mobility

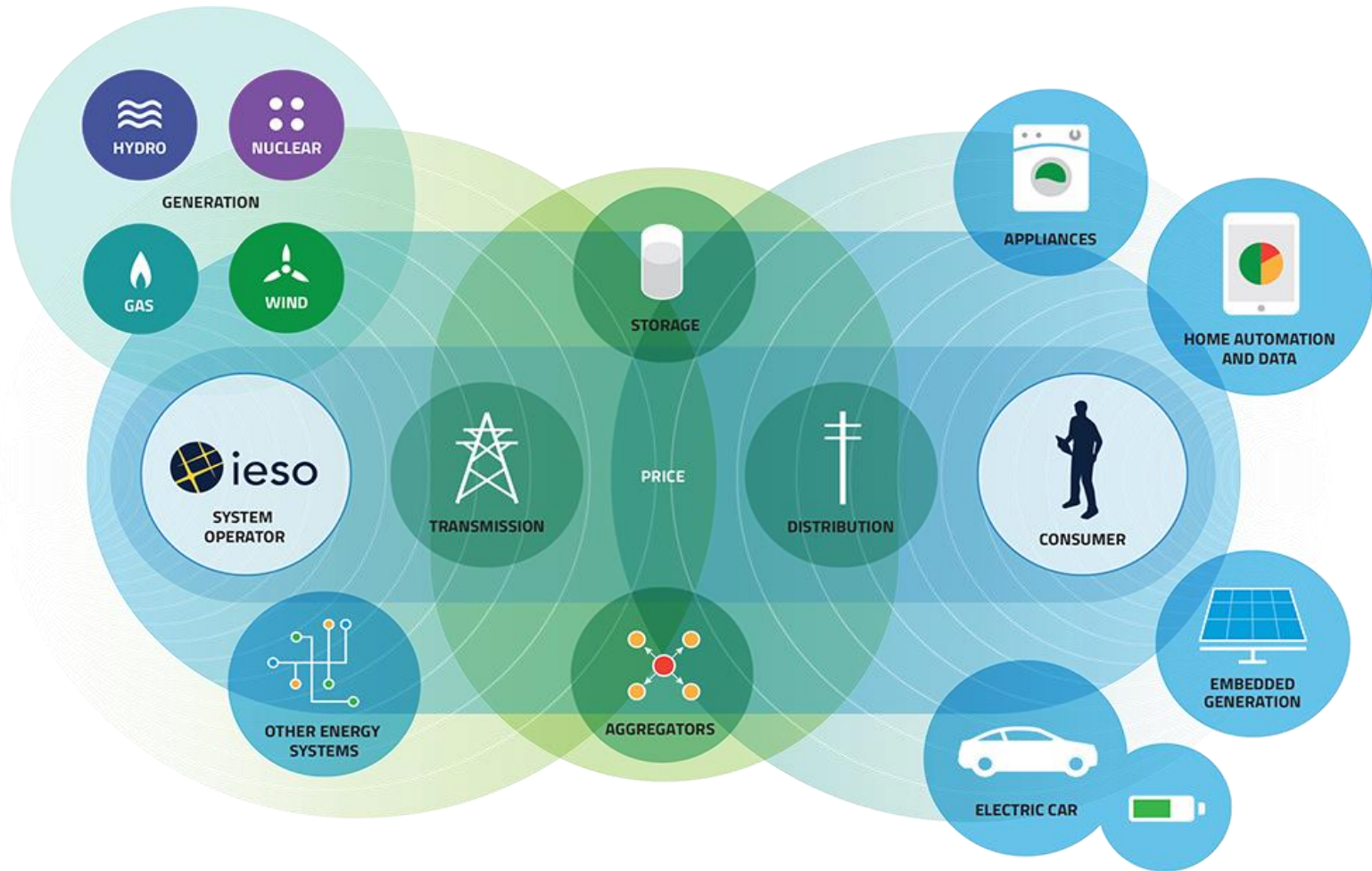


MIT & Audi

Smart buildings



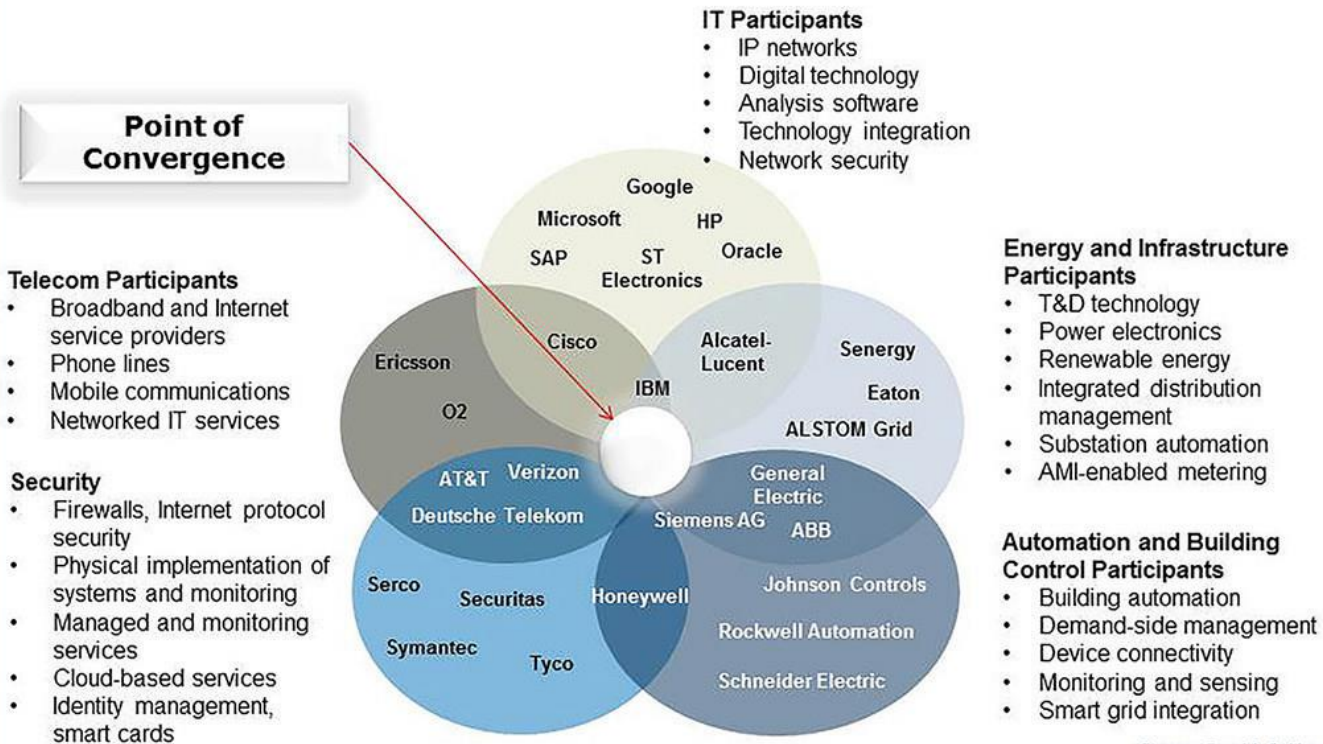
Smart energy



Point of convergence

Convergence of Competition

Companies in the smart city space will not only partner and converge among themselves to offer 'smart' capabilities but would also start converging with different participants in the ecosystem.



Smart city: 3 generations



**Industry-led
technology driven**

**City-led
technology enabled
'mayors rule the
world'**

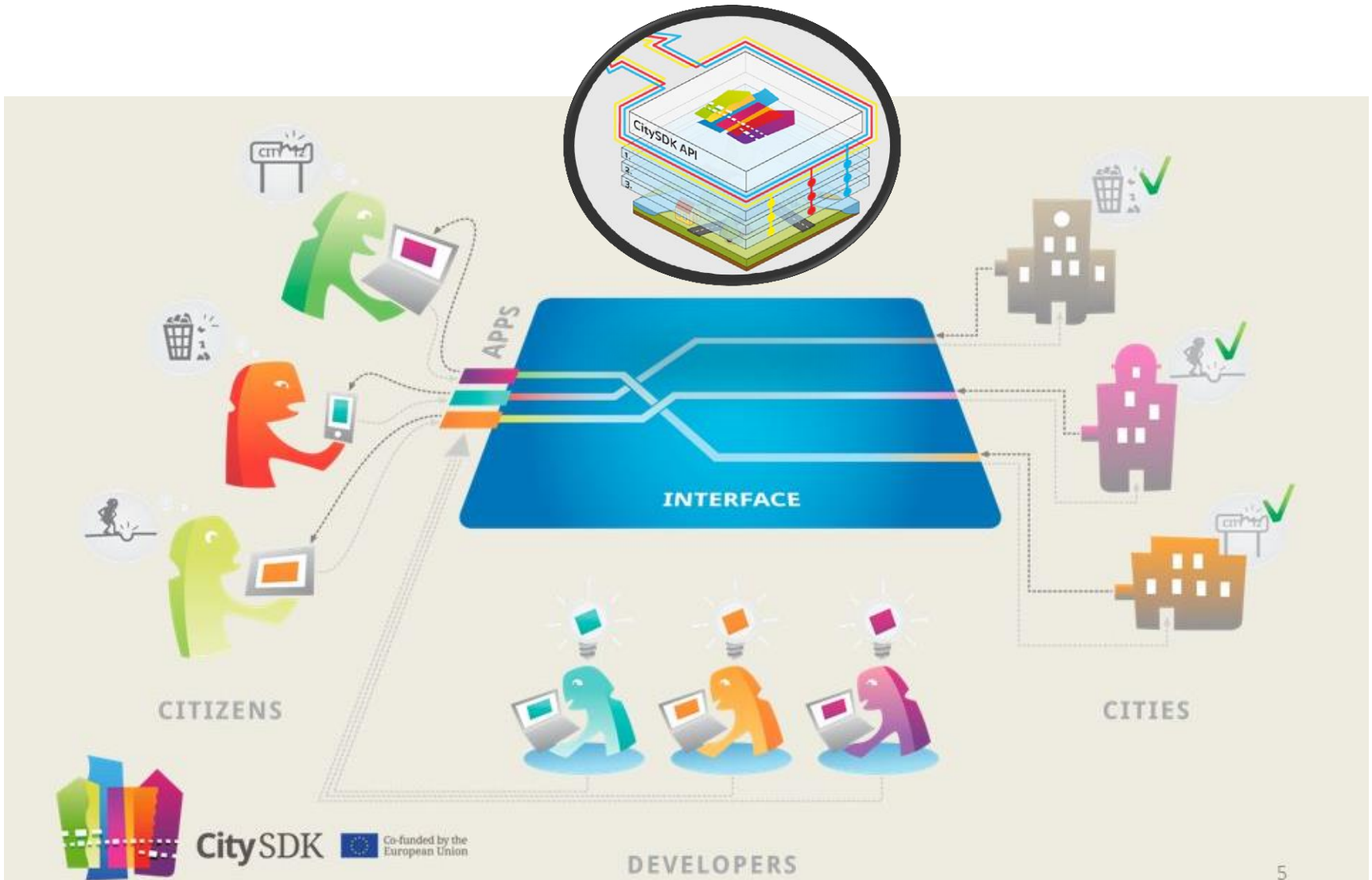
**Citizen co-creation
technology enabled
participation, DIY,
inclusive cities**

technology platforms



cocreation platforms

Smart city appstore



Policy implications

- Public interests:
 - Access (e.g. net neutrality)
 - Interoperability to prevent lock in (e.g. open source)
 - Privacy (user control over data)
- Ownership (e.g. decentralized, public, cooperatives)
- New business models: purpose-driven, reciprocally
- Governments to set (societal) goals and challenges