

MaaS & Fluid Infrastructure



IBI GROUP
Antulio Richetta – Director
14 November 2017



Defining the Cities of Tomorrow

A global firm providing comprehensive urban solutions driven by superior design and technology.

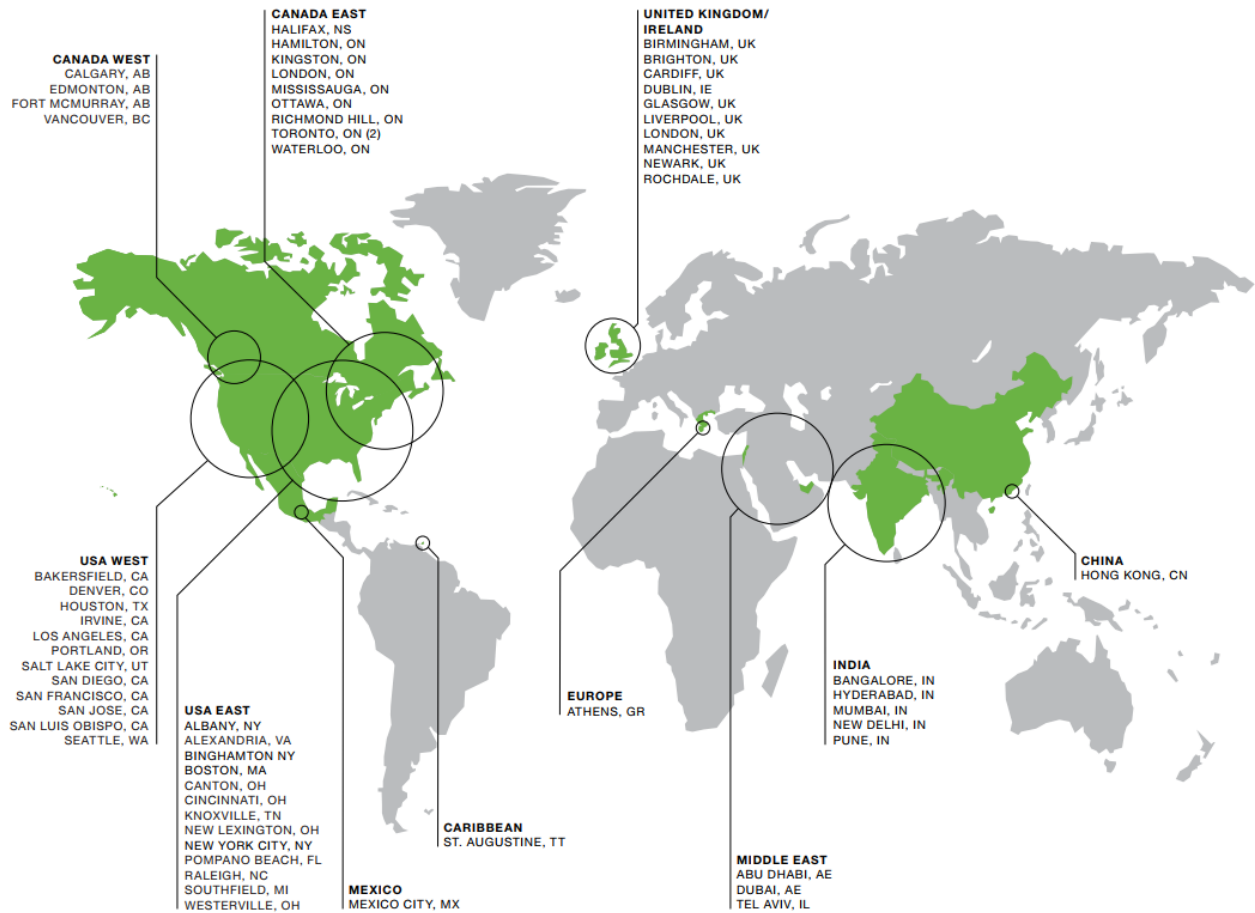
From IBI Group's inception in 1974, we have brought comprehensive approaches to our work in delivering the best solutions for our clients. Our design and technology-driven solutions are vital to creating a future for our cities to become livable and viable entities where opportunities exist and grow.

At IBI, we define how cities look, how cities feel, and how cities work.

40+
years in
business

2600+
employees

61
global
offices



61 offices located in major urban centres within North America, the Caribbean, Europe, Middle East, and Asia
Canada 14 offices | USA 25 offices | International 22 offices





I

Intelligence: systems design,
software development



B

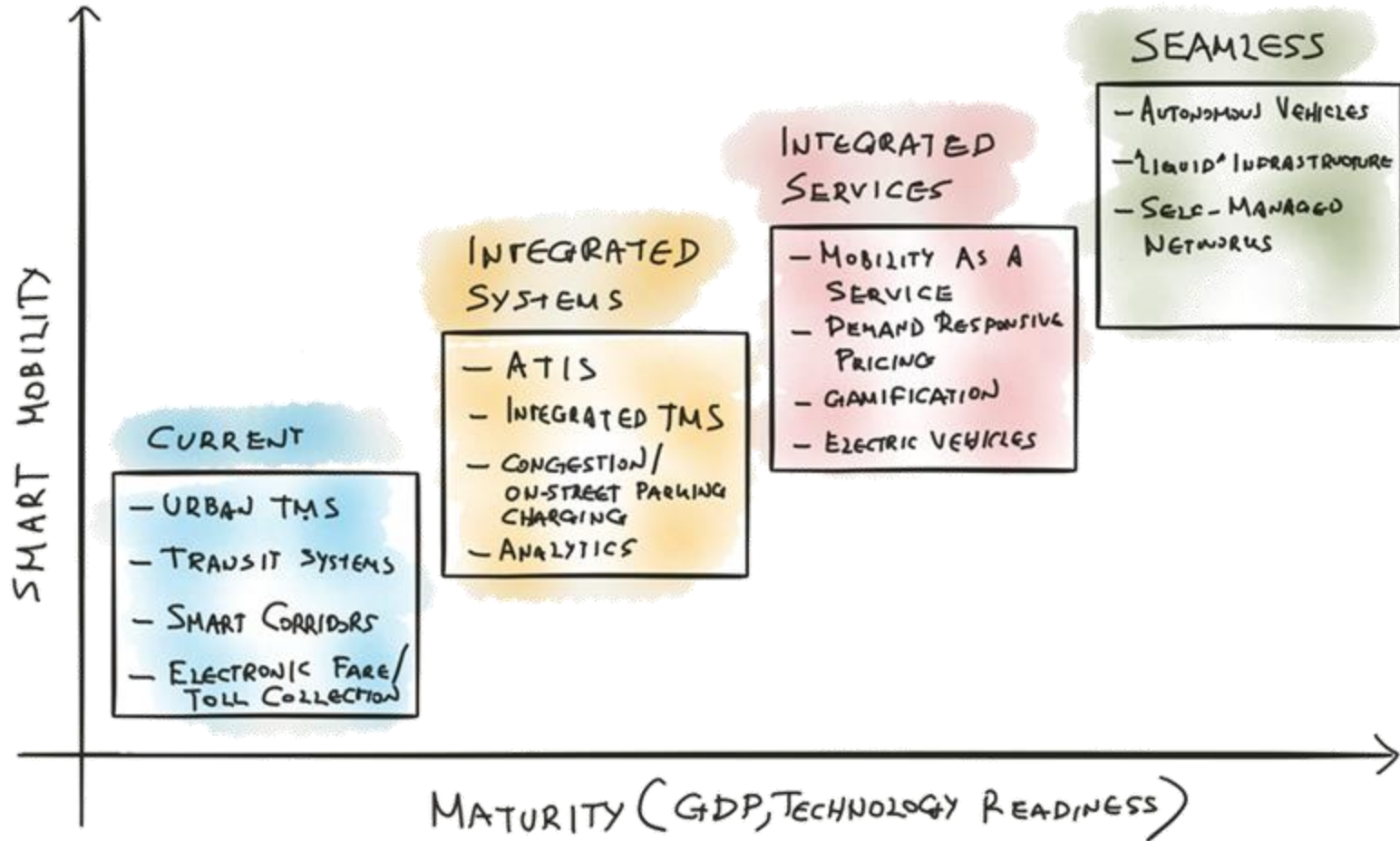
Buildings: building architecture,
interior design, building engineering
(mechanical, structural, electrical)



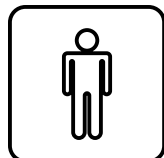
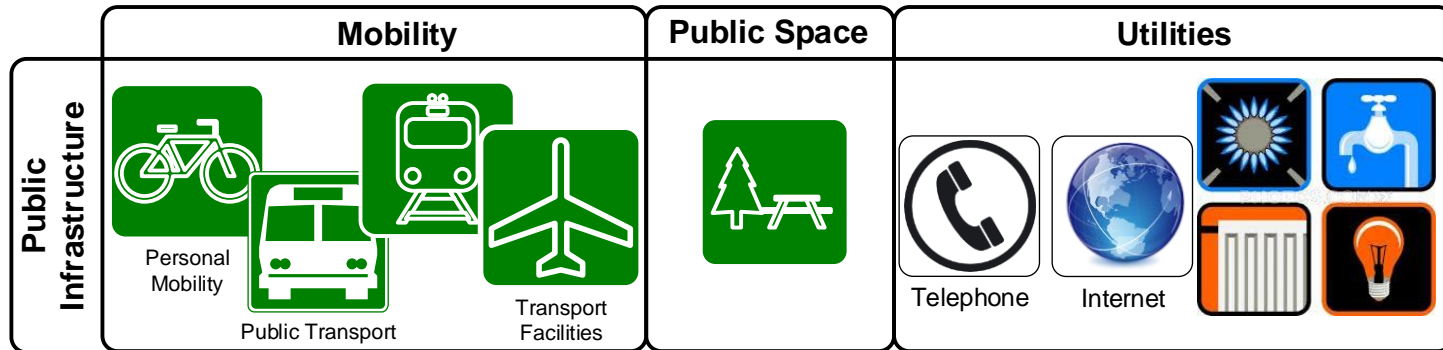
I

Infrastructure: planning, urban
design, landscape architecture,
transportation, civil engineering

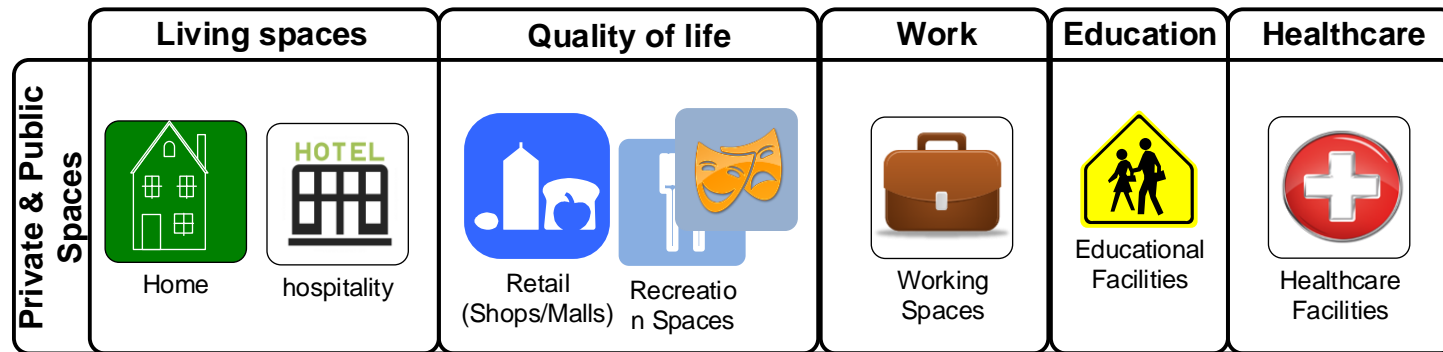
The Smart Mobility evolution



Infrastructure



People



Things

Fluid infrastructure

FLUID INFRASTRUCTURE USES TECHNOLOGY TO OPTIMIZE ITS OWN USAGE

SHORT/MEDIUM TERM

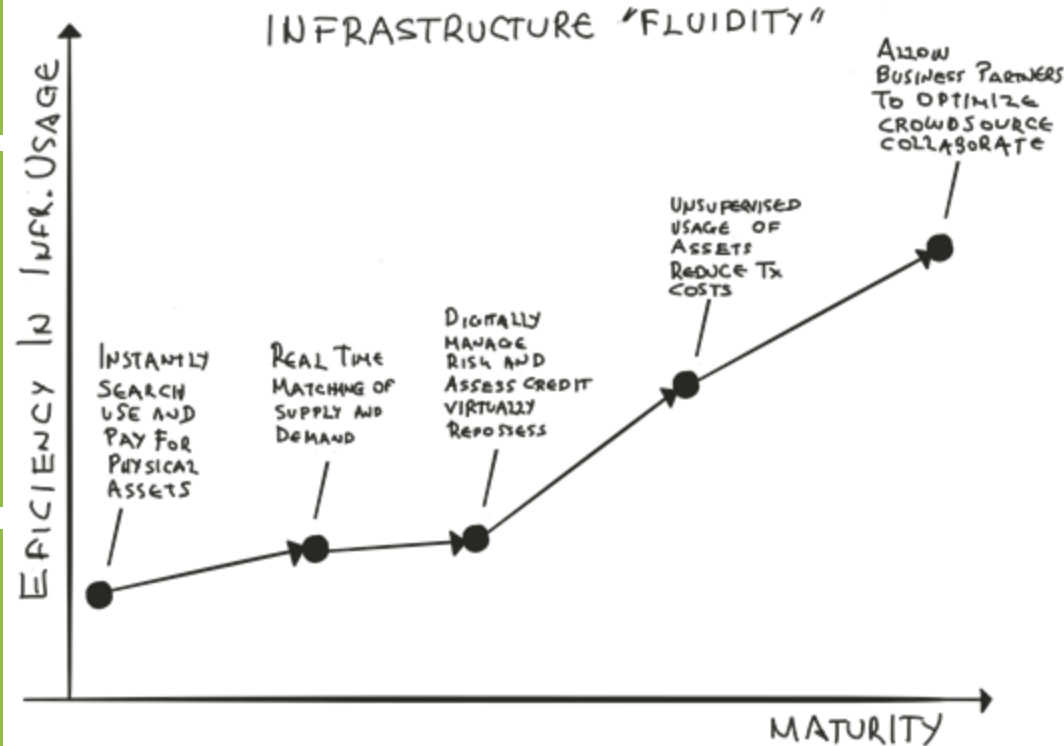
New business models

- Excessive capacity unlocked
- Usage optimized through dedicated marketplaces

LONGER TERM

Changes itself

- Polymorphism
- Less infrastructure required to accomplish the same throughput



How infrastructure becomes more fluid

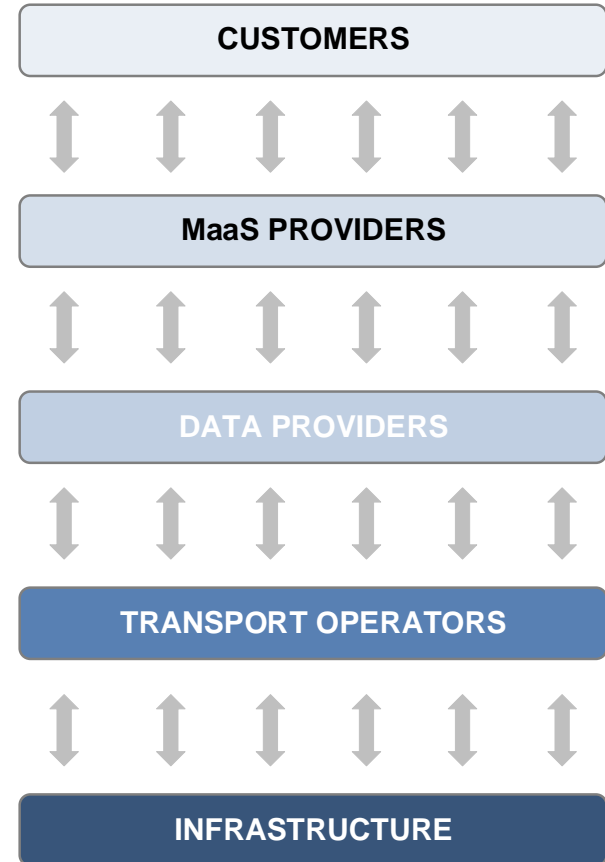
	Mobility	Public Space	Utilities
Public Infrastructure	<ul style="list-style-type: none"> • Dynamic/ demand responsive pricing • Real-time information re: its usage • Discount schemes based on usage 	<ul style="list-style-type: none"> • Real-time information re: its usage • Security • Part of mobility infrastructure network when considering active modes of transport 	<ul style="list-style-type: none"> • Ubiquitous service offering • Access to fast telecommunications an enabler for more fluid infrastructure

	Living spaces	Quality of life	Work	Education	Healthcare
Private & Public Spaces	<ul style="list-style-type: none"> • Neighborhoods with diversity in uses • Flexible spaces • Adaptive 	<ul style="list-style-type: none"> • Real time information re: availability • On-line reservation systems 	<ul style="list-style-type: none"> • Fostering collaboration and adaptation to rapidly changing business models • Ability to accommodate growth 	<ul style="list-style-type: none"> • Combines areas for private study, learning in groups and areas where students from different groups can interact 	<ul style="list-style-type: none"> • Available anywhere • Hospital spaces flexible • Real-time information re: availability •

	Public & private infrastructure and spaces
Things	<ul style="list-style-type: none"> • Ubiquitous presence of sensors and actuators • IoT becomes the connective tissue of our everyday lives • Enabler for more fluid infrastructure

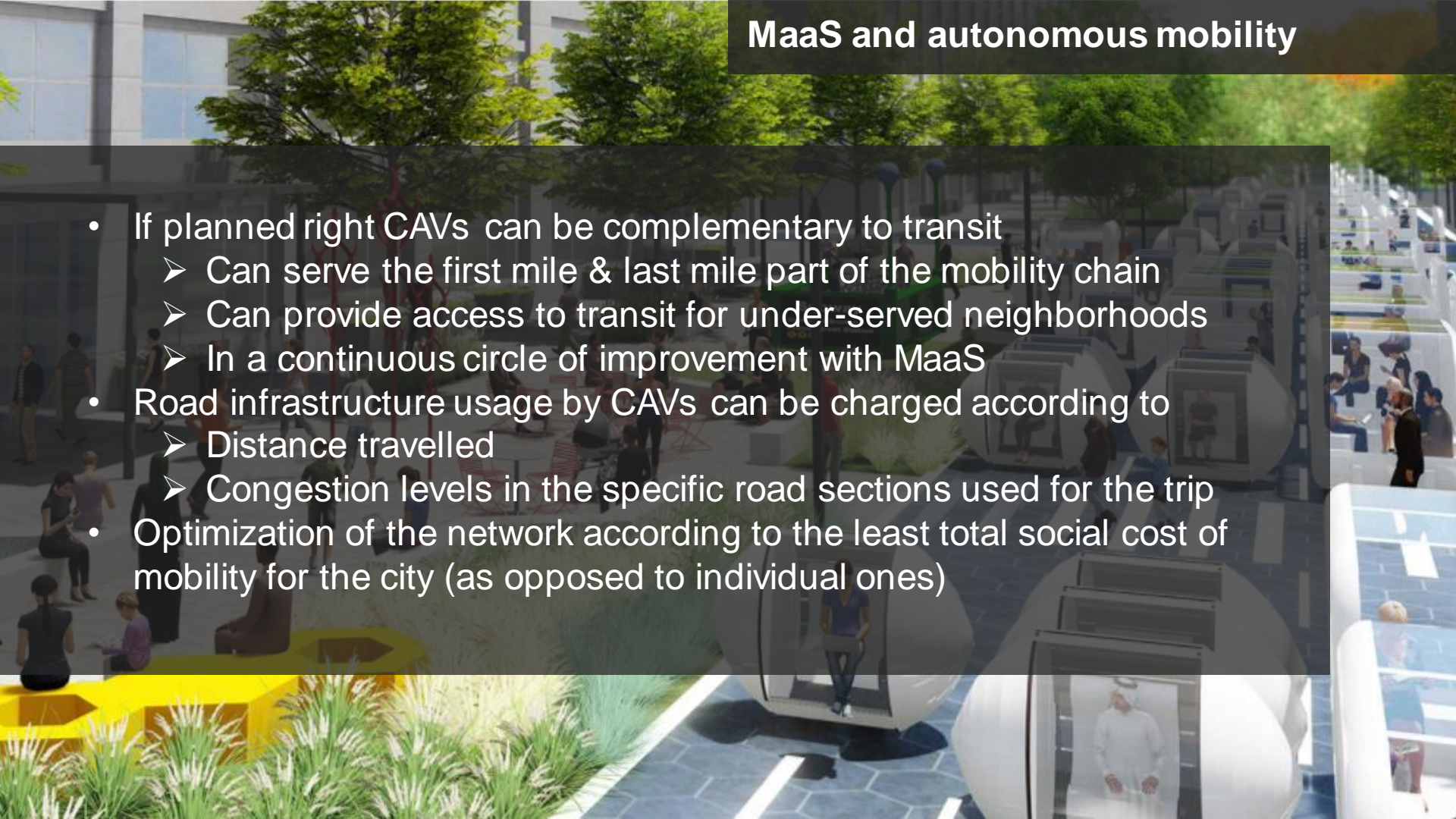
Why it matters for MaaS

- “Hidden” capacity is unlocked
- Lower cost of infrastructure to MaaS Providers and ultimately to customers
- By making infrastructure more “fluid”, we can enable it to be part of the MaaS value chain



MaaS and autonomous mobility

- If planned right CAVs can be complementary to transit
 - Can serve the first mile & last mile part of the mobility chain
 - Can provide access to transit for under-served neighborhoods
 - In a continuous circle of improvement with MaaS
- Road infrastructure usage by CAVs can be charged according to
 - Distance travelled
 - Congestion levels in the specific road sections used for the trip
- Optimization of the network according to the least total social cost of mobility for the city (as opposed to individual ones)



Futureproofing MaaS

- Important to avoid monopoly and have a healthy competitive environment including a variety of MaaS providers
 - Each provider focused in different modes/ infrastructure
 - Nevertheless with shared parts of their network
- Ride-sharing providers could possibly take a lead on MaaS deployment at some point as an extension to their services (and having the resources to support this expansion)
 - Alliances with transport operators
- Need to ensure that a fair regulatory environment is in place

Regulatory environment

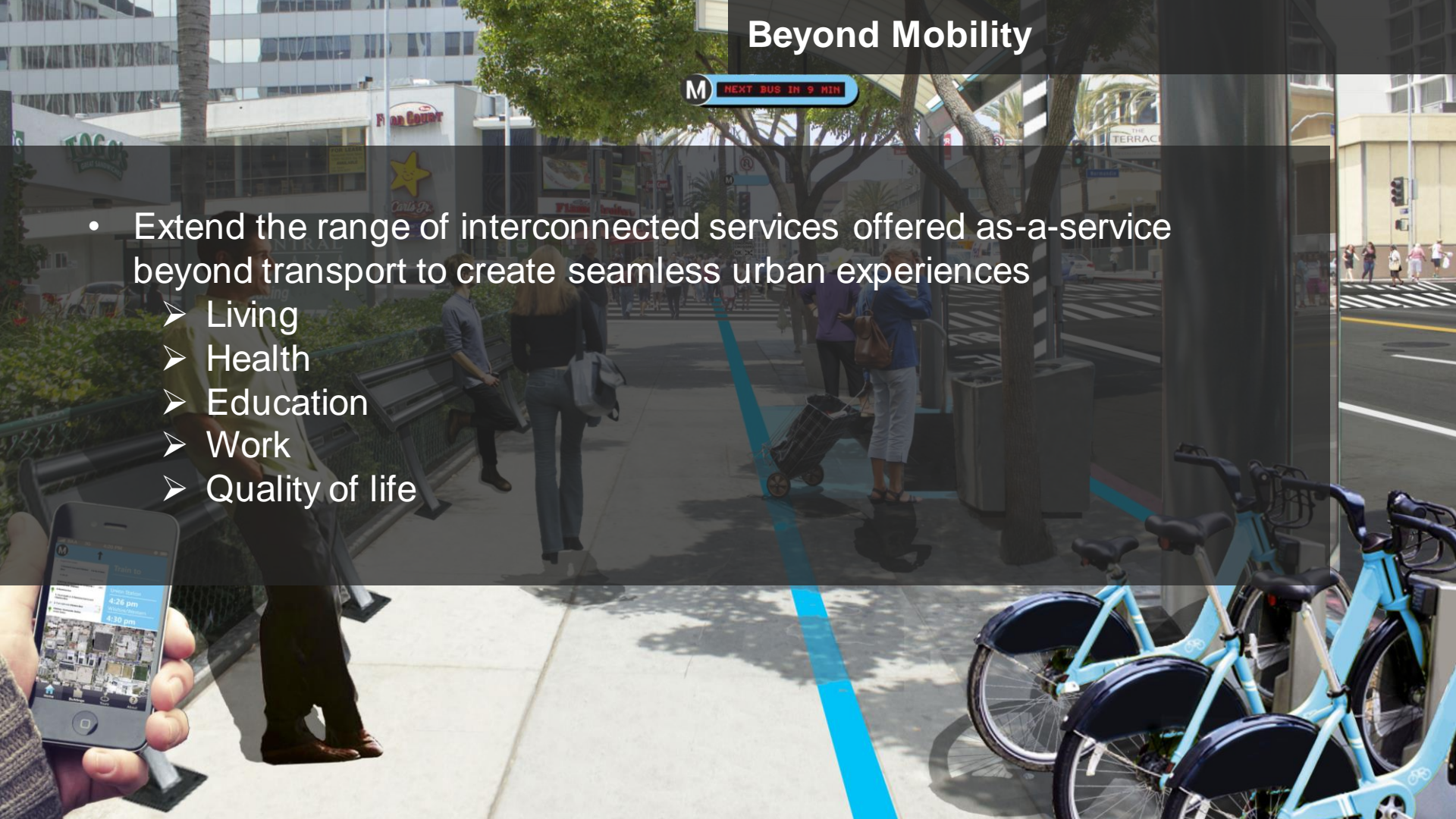
A photograph of a modern city street at night. The scene is dominated by tall, multi-story buildings with glass facades that reflect the city lights. In the foreground, a tram is visible on a red-paved street. Pedestrians are walking on the sidewalks, and streetlights illuminate the scene. The overall atmosphere is that of a vibrant, urban environment.

- Infrastructure regulation can become a barrier or catalyst to MaaS growth
- Principles
 - Transparent rules of usage by MaaS operators
 - No discrimination in infrastructure usage by any MaaS operator
 - Interoperability
 - Open protocols
 - Demand responsive pricing
 - Customers to pay for what is consumed
 - Self-managed networks

Beyond Mobility

M NEXT BUS IN 9 MIN

- Extend the range of interconnected services offered as-a-service beyond transport to create seamless urban experiences
 - Living
 - Health
 - Education
 - Work
 - Quality of life





**Defining the cities
of tomorrow**