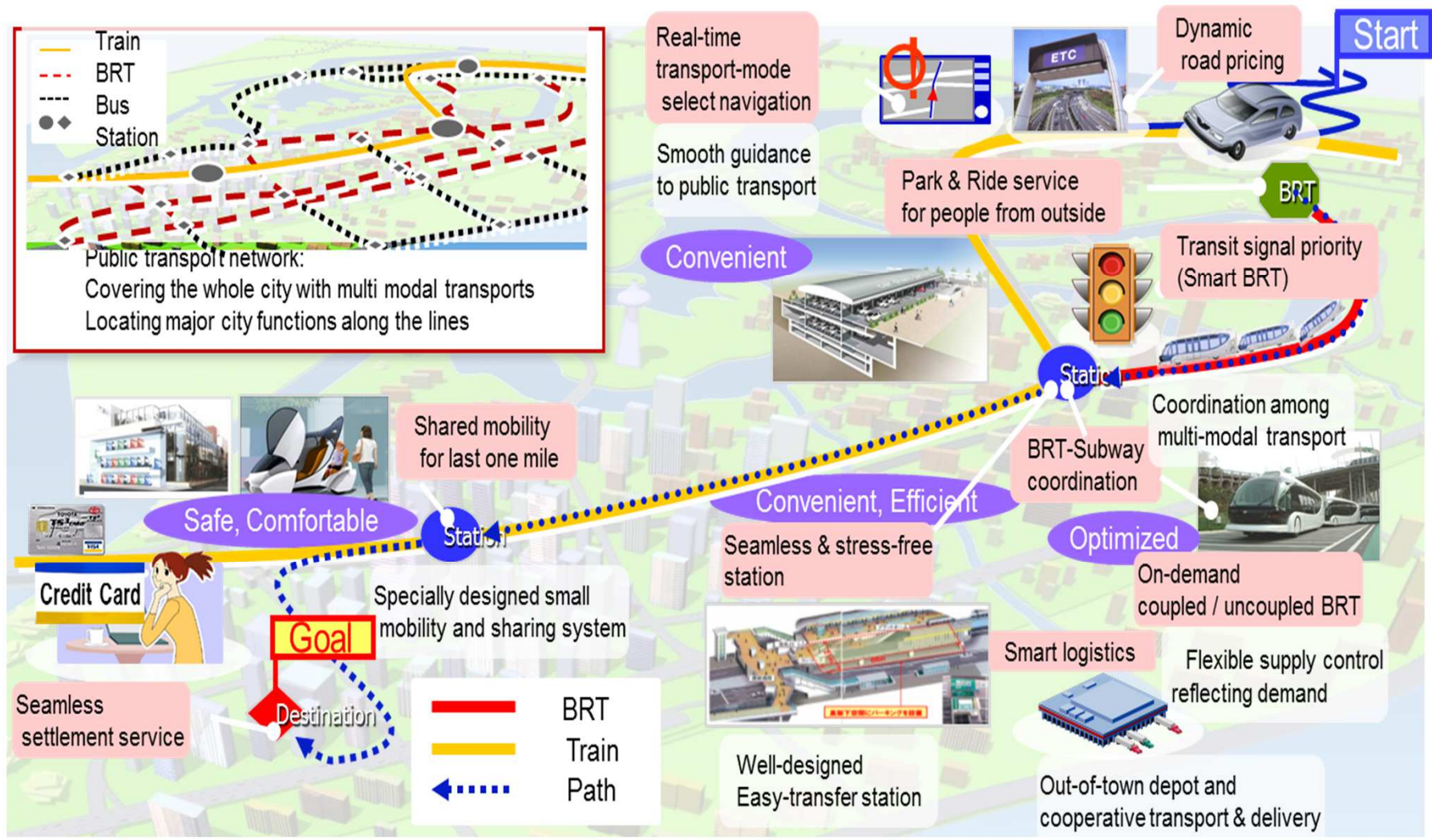


# Multimodal transport – an OEM perspective

Dr. Stephan Herbst  
Senior Principal Technologist & General Manager  
Energy Research Group & Environmental Affairs Group  
Toyota Motor Europe

# Toyota's Urban Mobility vision – co-modality



# Building blocks of a future mobility system

Vehicle  
technology &  
energy

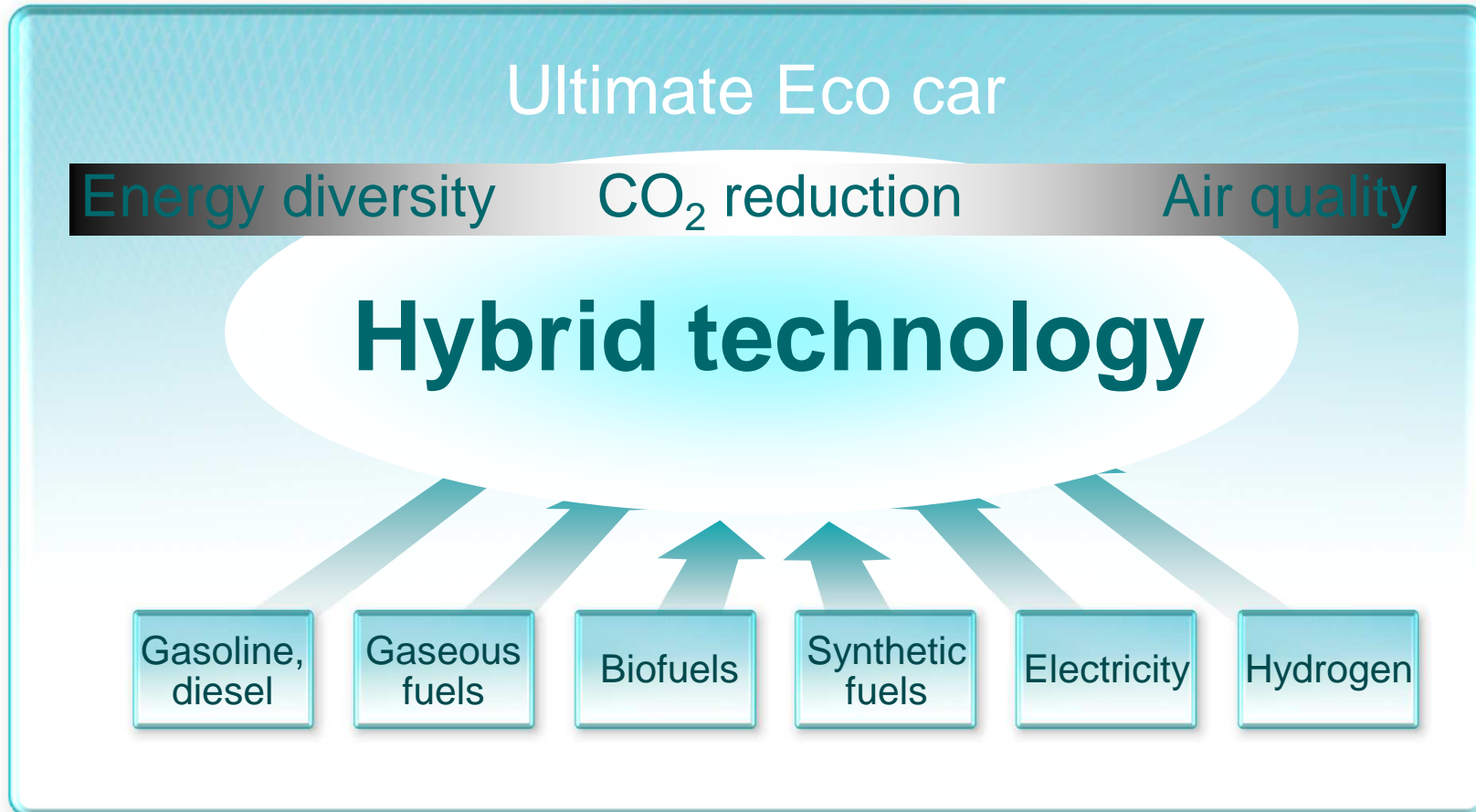
Management  
systems

Information  
technology/  
-systems

Behaviour

# Towards sustainable mobility & the ultimate Eco car The right car, the right place, the right time

Vehicle  
technology &  
energy

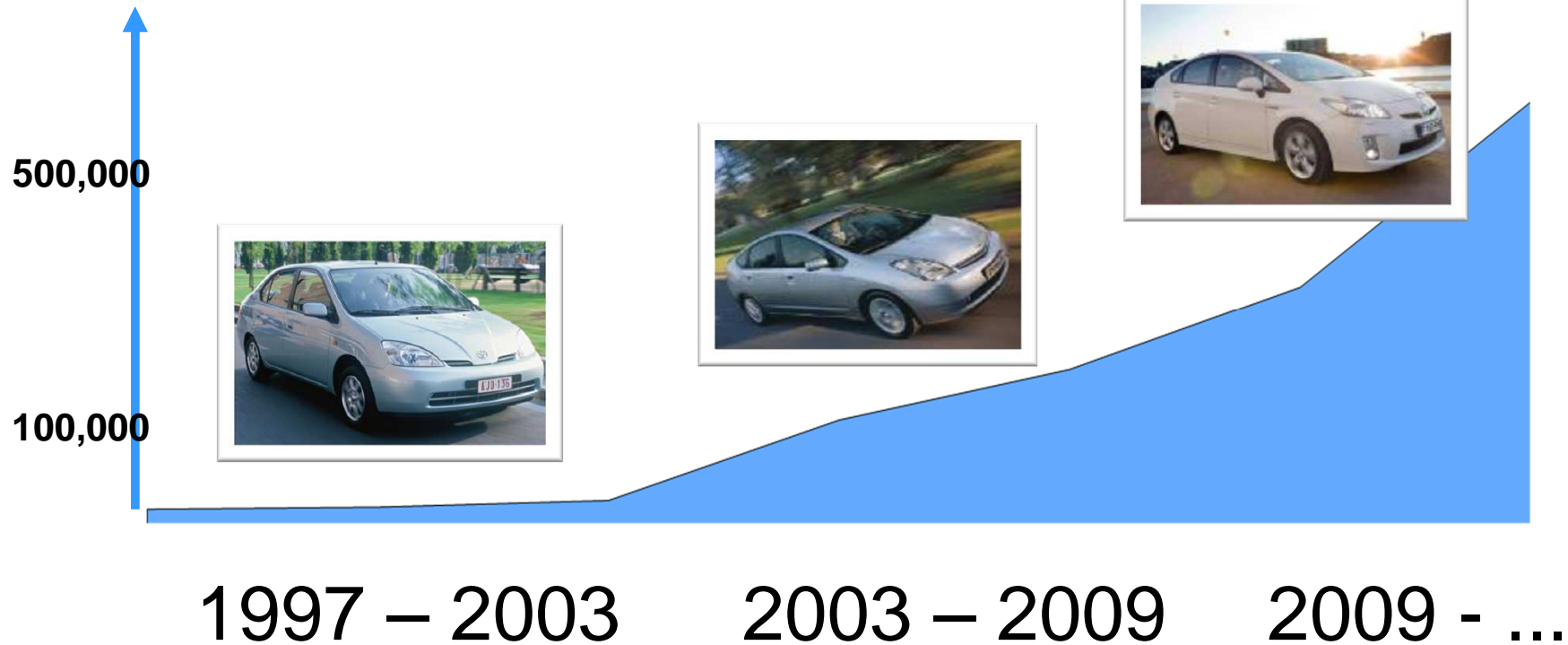


# Full Hybrid: a game changer

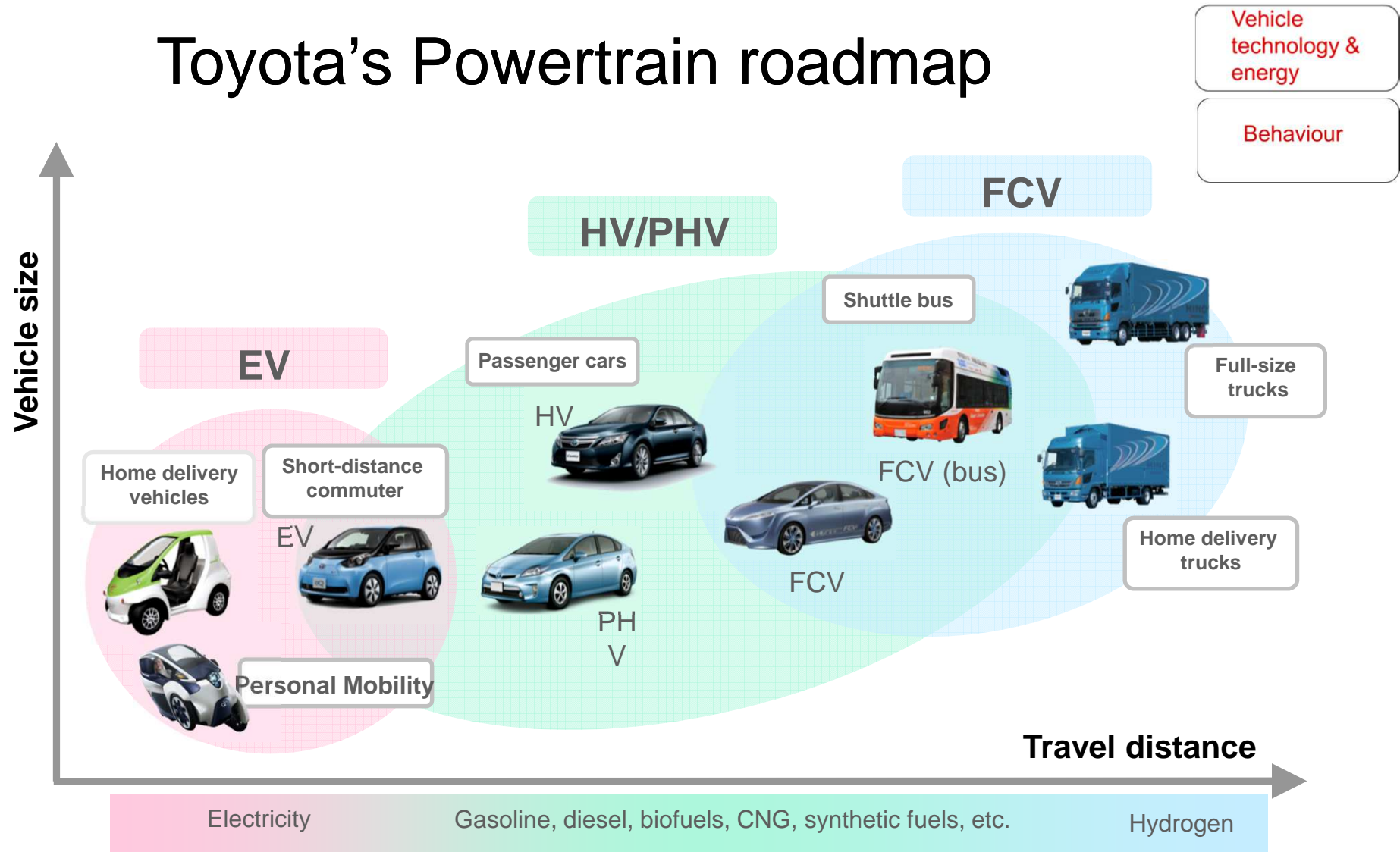
Vehicle  
technology &  
energy



Prius yearly global sales  
volume



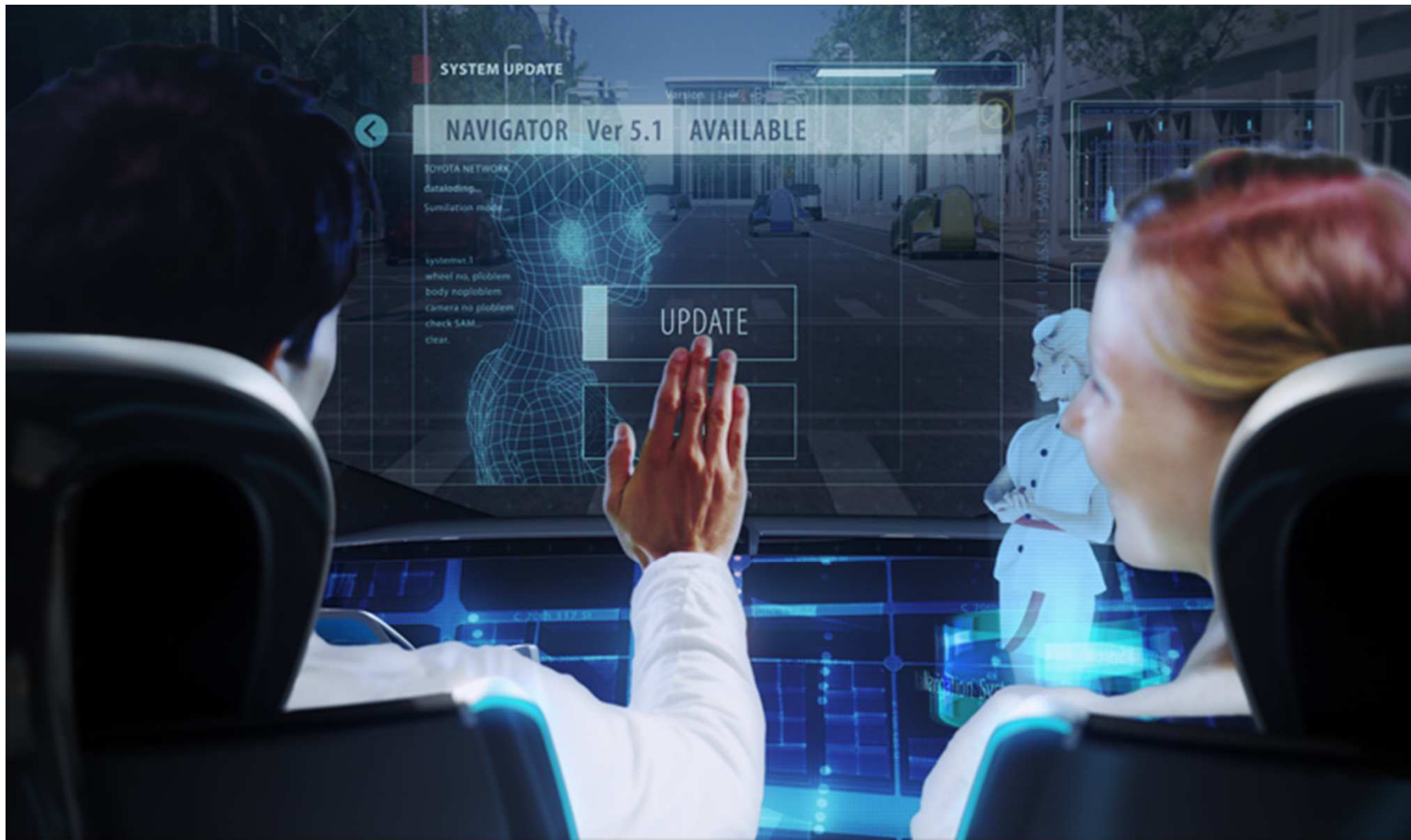
# Toyota's Powertrain roadmap



# Easy navigation

Information  
technology/  
-systems

Behaviour



**TOYOTA**

# Autonomous driving

Information  
technology/  
-systems

Behaviour



**TOYOTA**

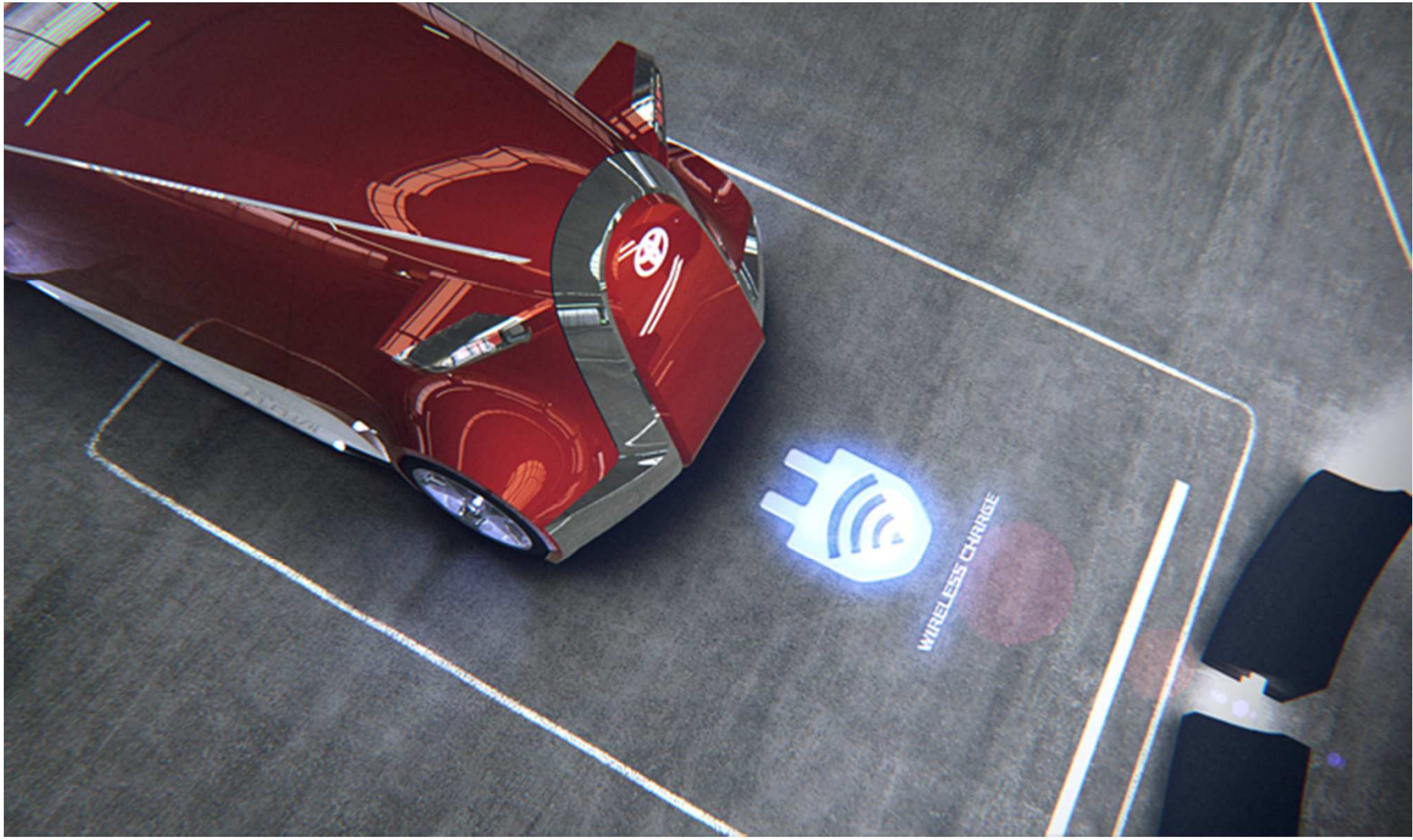


# Easy access to energy through connectivity

Vehicle  
technology &  
energy

Information  
technology/  
-systems

Behaviour



**TOYOTA**



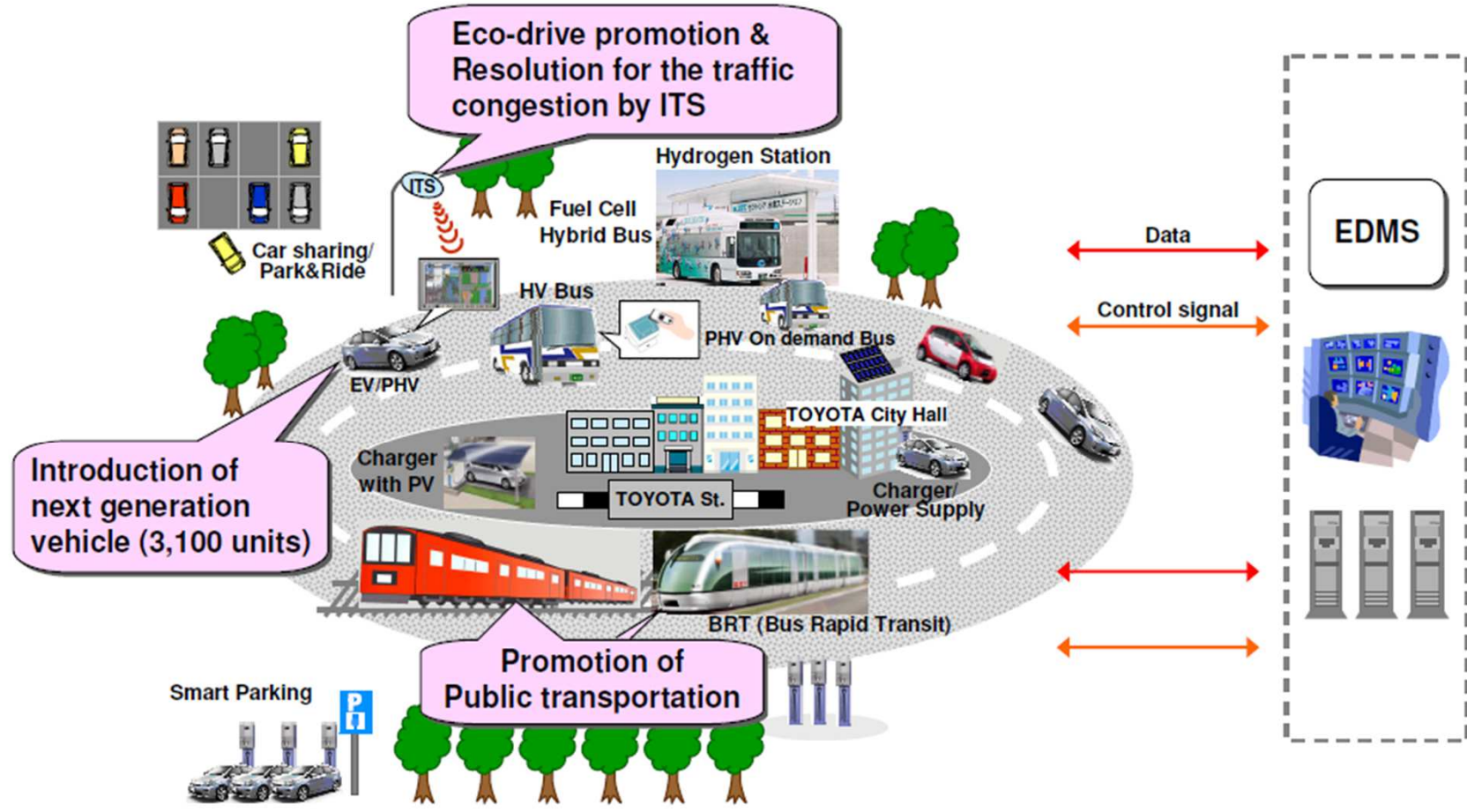
# Implementation example: Toyota City

Vehicle  
technology &  
energy

Information  
technology/  
-systems

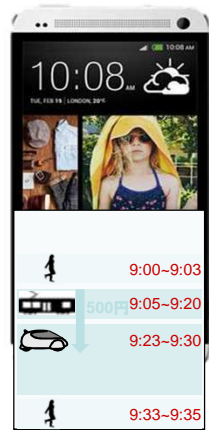
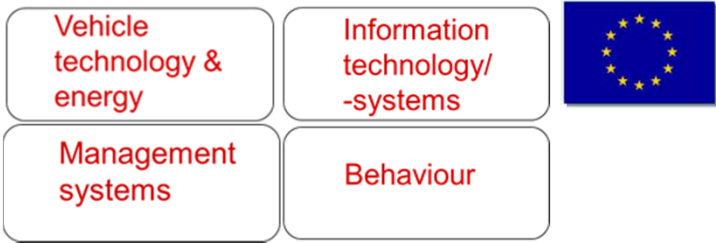
Management  
systems

Behaviour



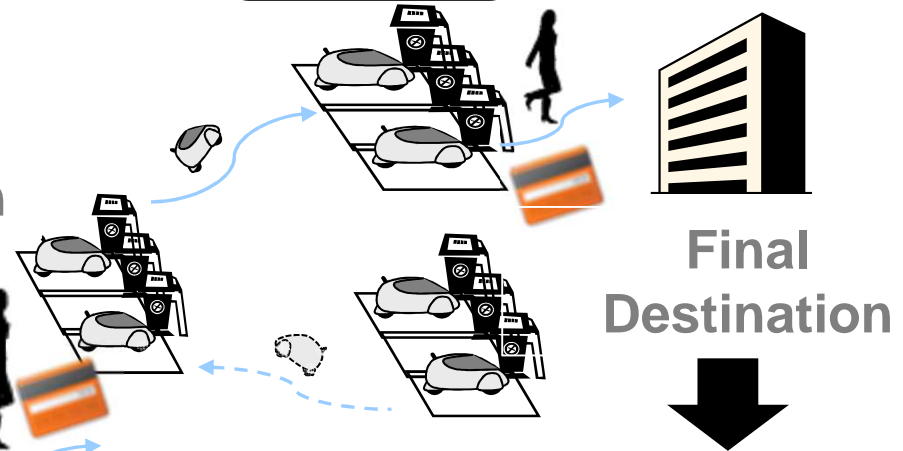
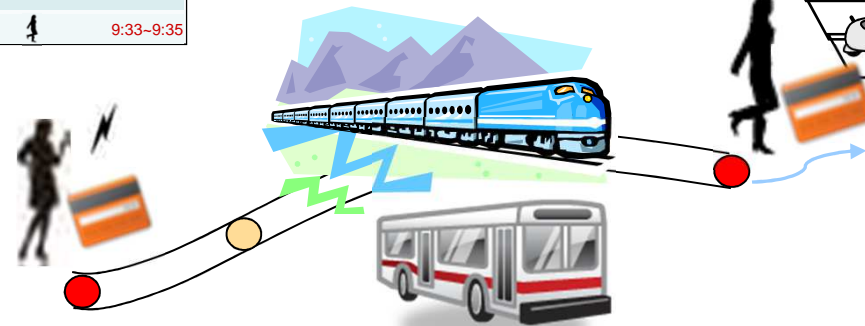
Effective use of various transportation systems will contribute to "Green community" in terms of human movement

# Example: Grenoble, France



Arrival Station

Departure Station



TOYOTA

TOYOTA

A photograph of a high-speed train in motion, blurred to convey speed, traveling through a tunnel. The train is white with blue accents. The tunnel walls are dark and curved, with a warning sign on the right that reads "WARNING NO TRESPASSING TRAINS ON". The floor is made of large, light-colored tiles.

# Sustainable Mobility Project 2.0

# Participating Companies



**TOYOTA**

**BMW  
GROUP**



**BRIDGESTONE**  
PASSION for EXCELLENCE

**DAIMLER**

**DB BAHN**

**HONDA**



**NISSAN**

**PIRELLI**



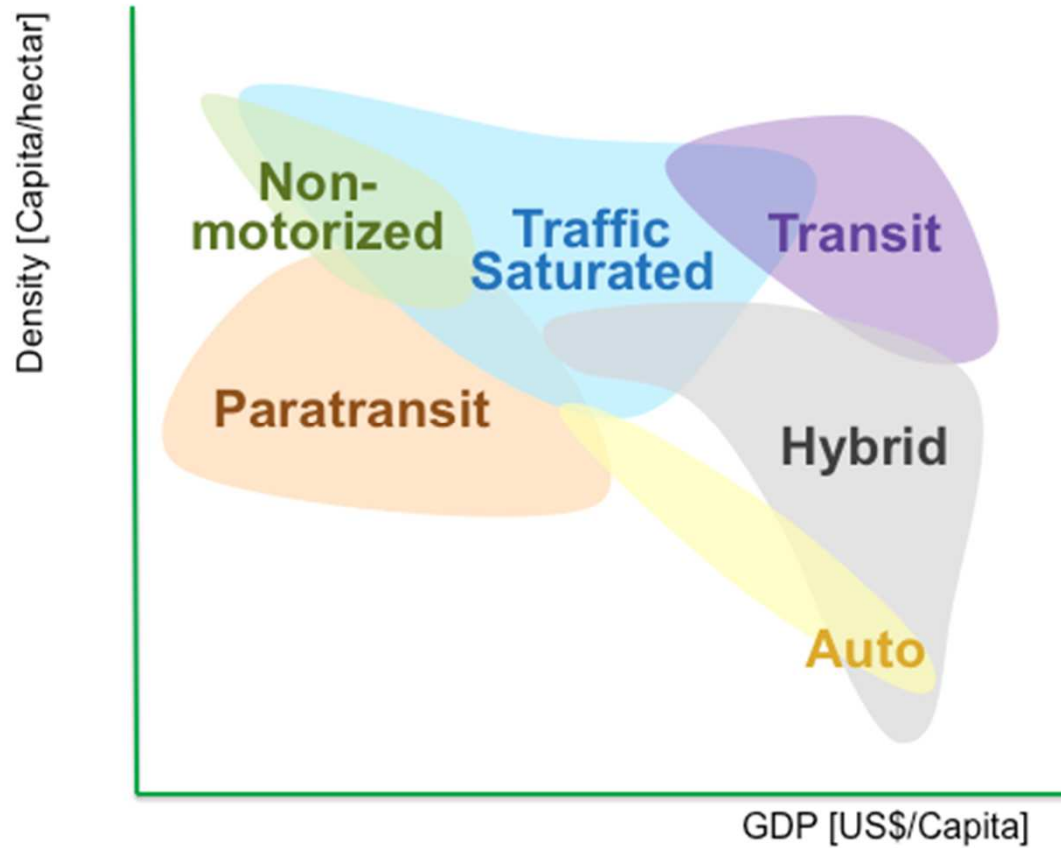
**VOLKSWAGEN**  
AKTIENGESELLSCHAFT

# Sustainable Mobility Project 2.0

...aims to accelerate the implementation of sustainable mobility solutions by

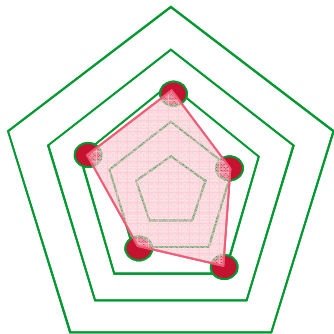
- focusing comprehensively on **city & intercity transport of people & freight**
- establishing a **unique global cross-sectoral platform**
- developing **sustainable mobility indicators** to measure progress
- working on concrete **“action plans”** for certain cities
- advocating and communicating to **create the right “policy accelerators” and framework conditions**

# STEP I: Establish City Cluster



Source: Jeff Kenworthy  
Cluster is based on 51 criteria

# STEP II: Identify and develop methodology to measure indicators



24 draft indicators to be revised and quantified within 2013

More flexibility and reliability

More convenience, comfort and accessibility

More active mobility

More social and cultural integration

More security

More pleasure



More resilience (disaster and ecological/social disruptions)

More economic sustainability

Higher utilisation rate

Increased opportunity (job creating, economic)

Improve health

More interaction with urban environment (connectivity)

Make mobility affordable

Provide appropriate access to mobility



Reduce noise

Reduce fatalities and injuries

Reduce accidents



Reduce congestion and delays

Reduce need for physical mobility

Reduce air pollution

Reduce GHG emissions across lifecycle



Improve resource efficiency

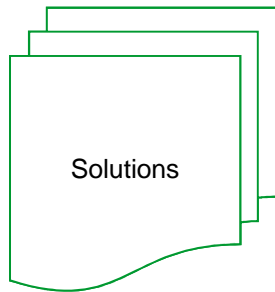
Improve energy/resource security

Improve sustainability in resource supply chain

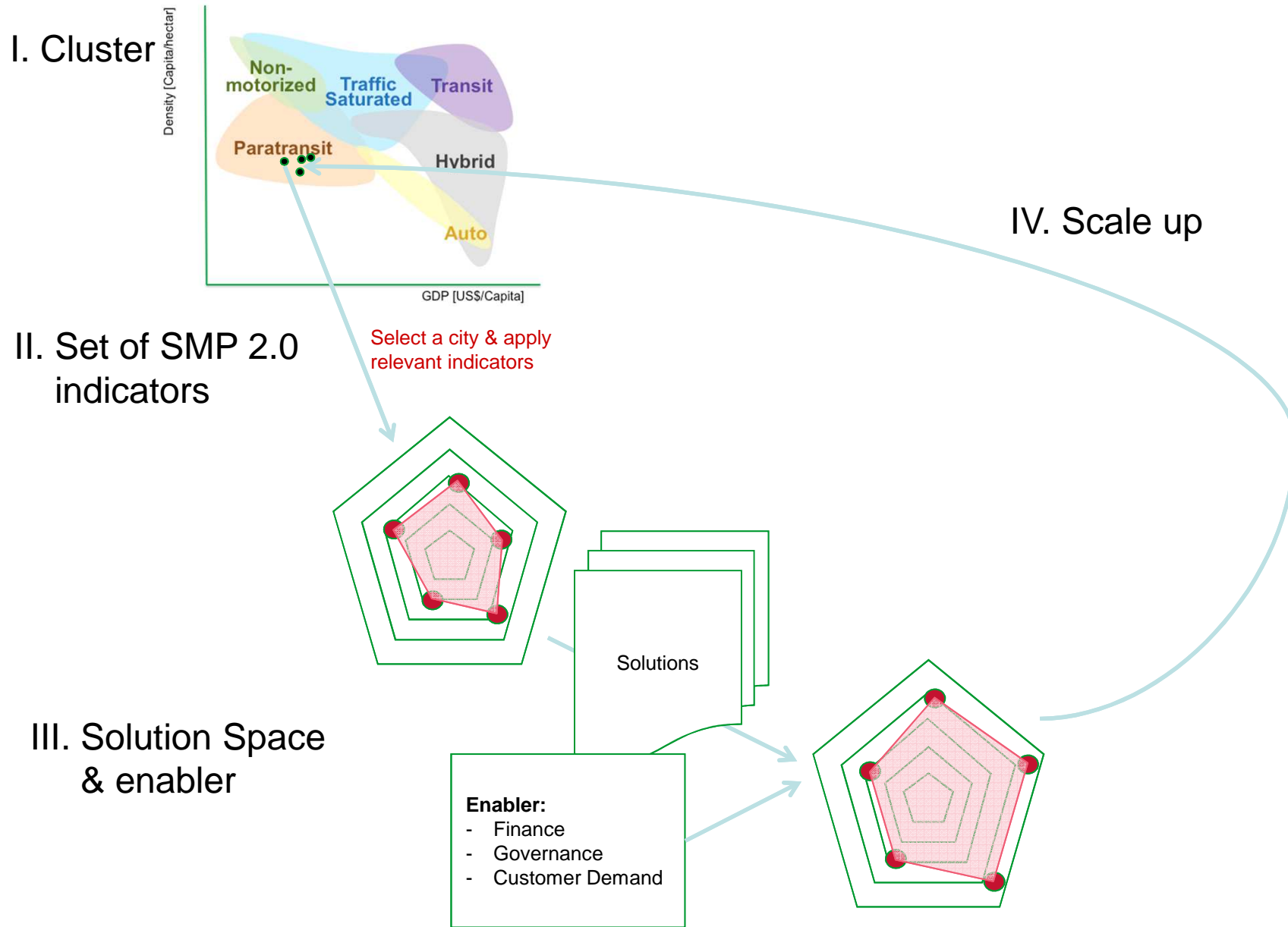
Minimize the negative and  
Maximise the positive aspects



# STEP III: Build a solutions portfolio (examples)



# STEP IV: Apply in a city and scale up in similar city types



# Sustainable Mobility Project 2.0 Timeline

