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The Disrupters: The First to Market Automation Technologies to Revolutionize Mobility

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When automation will start having a market impact

- When it will solve real transport problems
 - Allowing a different use of time in queues
 - Relieving from parking seeking burden
 - Allowing new transport services
 - Allowing higher quality transport services
- When it reduce costs
 - For service providers
 - For final users
 - For cities?

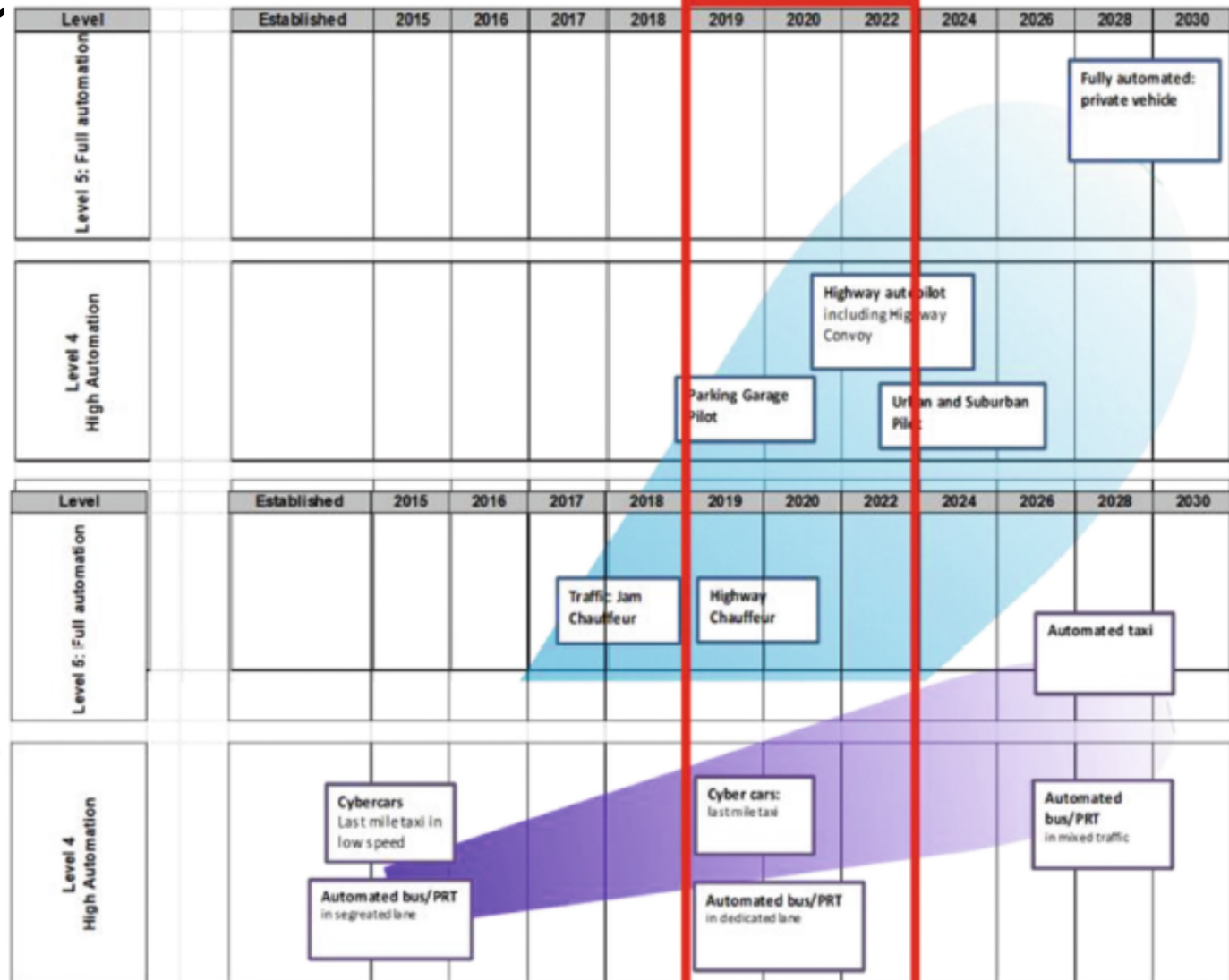




Next to market technologies for ERTRAC

Individual
autonomous
cars

Shared mobility
systems



Automation functions to market in 2020

- In the public transport domain
 - CyberCars (Fully automated last mile public transport services on carefully selected, certified and designated infrastructures)
 - High speed busses on dedicated corridors
- In the private vehicle domain
 - SAE level 3 high speed highway chauffeur
 - SAE level 4 Low speed Parking Garage Pilot



A new private transport mode: the perfect private transport

In periphery-to-periphery daily commuting trips

- The commuter drives her vehicle only for the first mile from her house to the first motorway junction
- The vehicle then drives itself with the highway chauffeur automation function allowing her to work on her computer, to do shopping on line, to entertain, or whatever else.
- When reaching the end of the motorway stretch of her trips she will need to resume control and drive from the last motorway junction to her destination.
- She will drive to the front door of her destination and alight there from the vehicle which goes to park itself using the SAE level 4 Low speed Parking Garage Pilot automation function.

Pros and cons

- Pros
 - The driver can sustain a longer journey and more traffic as she is doing other activities while driving
 - New economy for the on-board services will start or productivity will increase
 - More vehicles (and more expensive) will be sold with good effects on the traditional industry economy
- Cons
 - More low occupancy trips will be made increasing VMT (with all its consequences)
 - Parking restrictions will cease to be a demand management tool for cities
 - Public transport ridership will decrease reducing even more its income/costs ratio

A new public transport mode: the perfect public transport

In medium demand peripheries of large cities

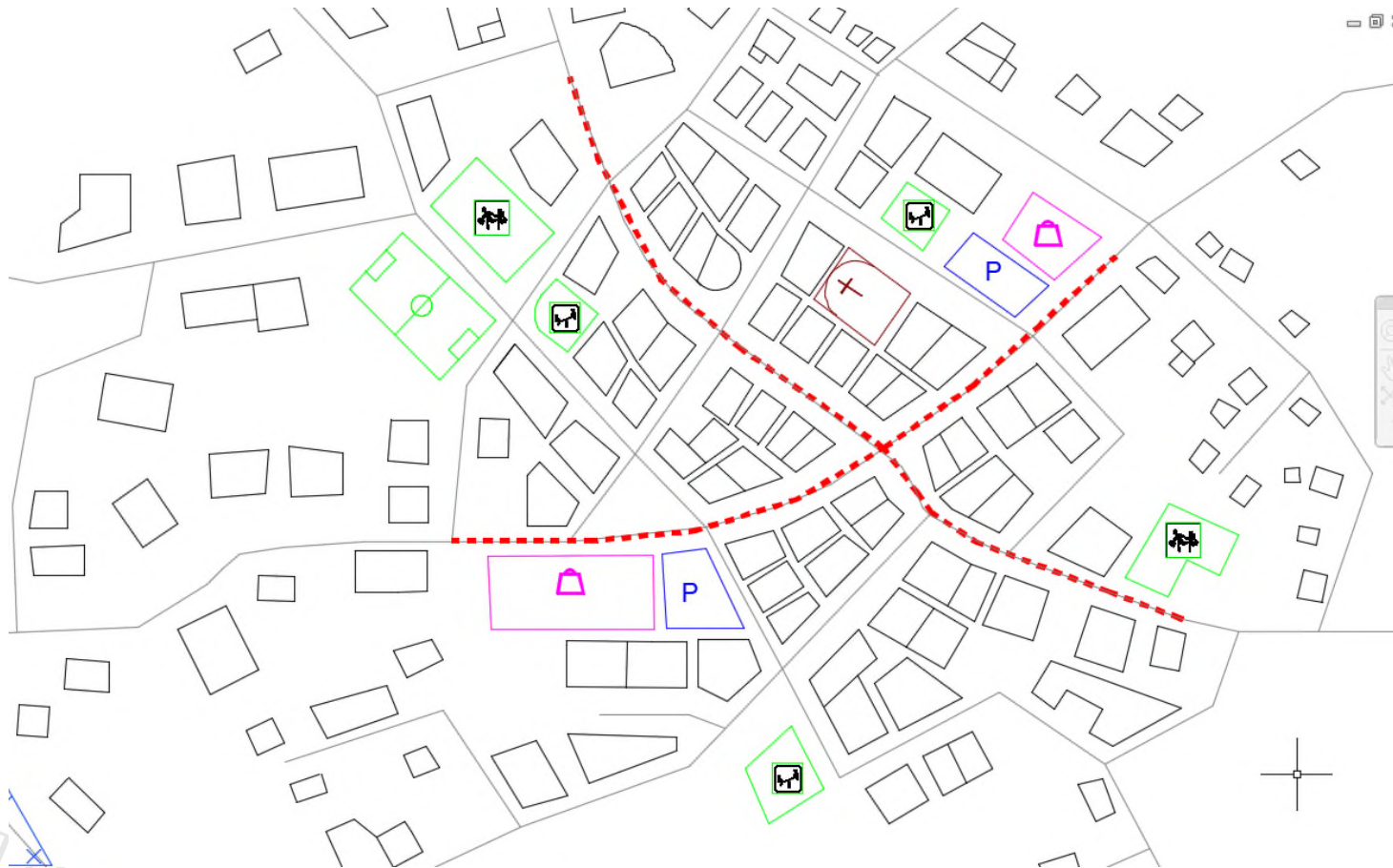
- Commuters book the morning ride to the closest train station through an APP
- The APP either gives time and place for the pick-up or the parking place of the car to drive
- One customer drives the others
- The car is left at the station from where it goes to relocate itself either by full automation at «shuttle speed» or following a leader and forming a platoon.
- If there is no close station to go, road corridors are established for high speed platoons to an interchange stop



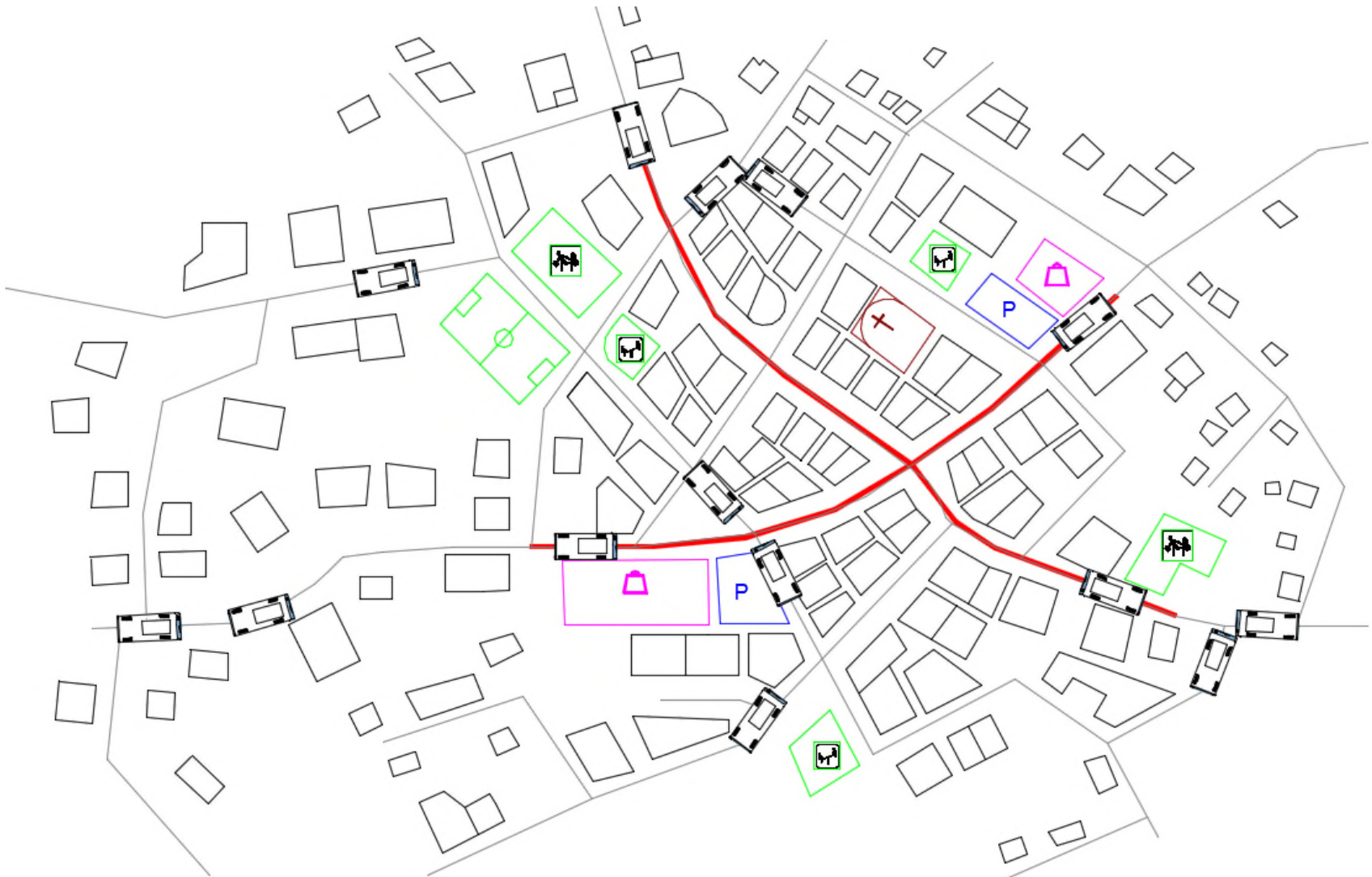
Pros and cons

- Pros
 - With ubiquitous systems the entire public transport in the city becomes more **capillary, timely** and **fast**
 - Even if not profitable services even in low to medium demand areas becomes financially neutral
 - New business models can start
 - Vehicle occupancy will grow significantly decreasing VMT with its consequent impacts
- Cons
 - Less private car use will most certainly translate into less private cars owned with all its economic consequences
 - It is needed a citizens mind changing of transport (more smart, shared and efficient than now)

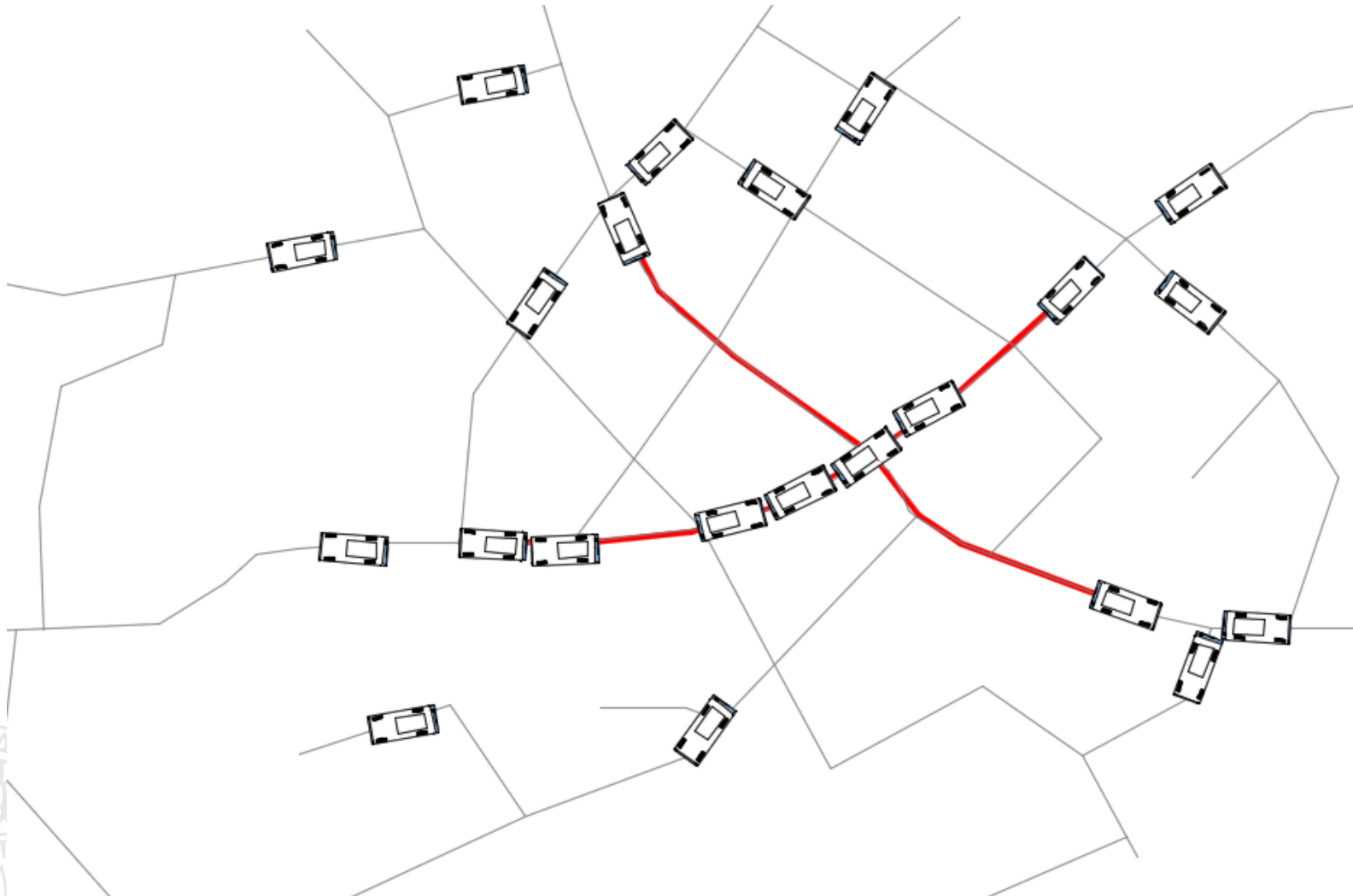
Focus on Dedicated corridors



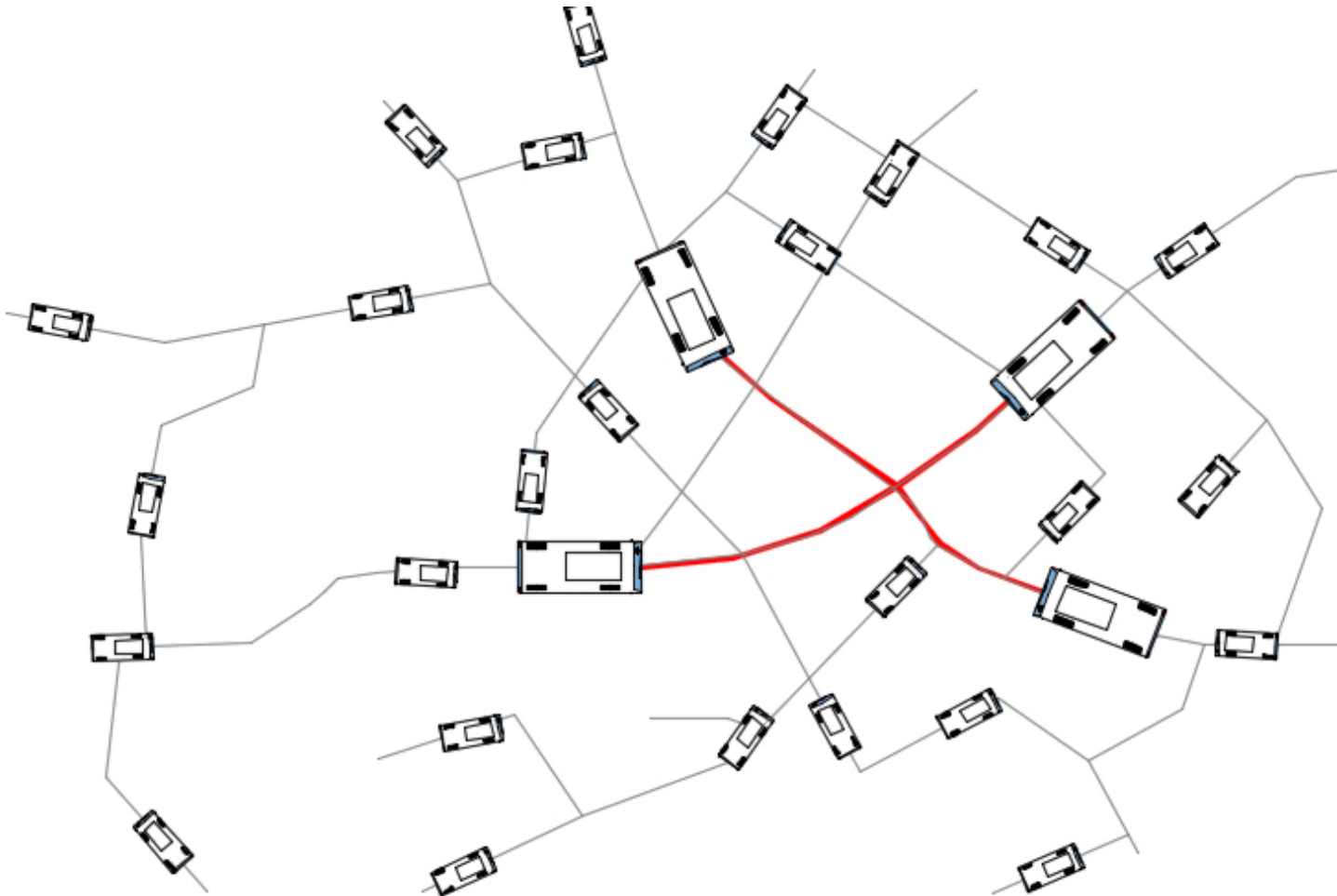
Low level of demand



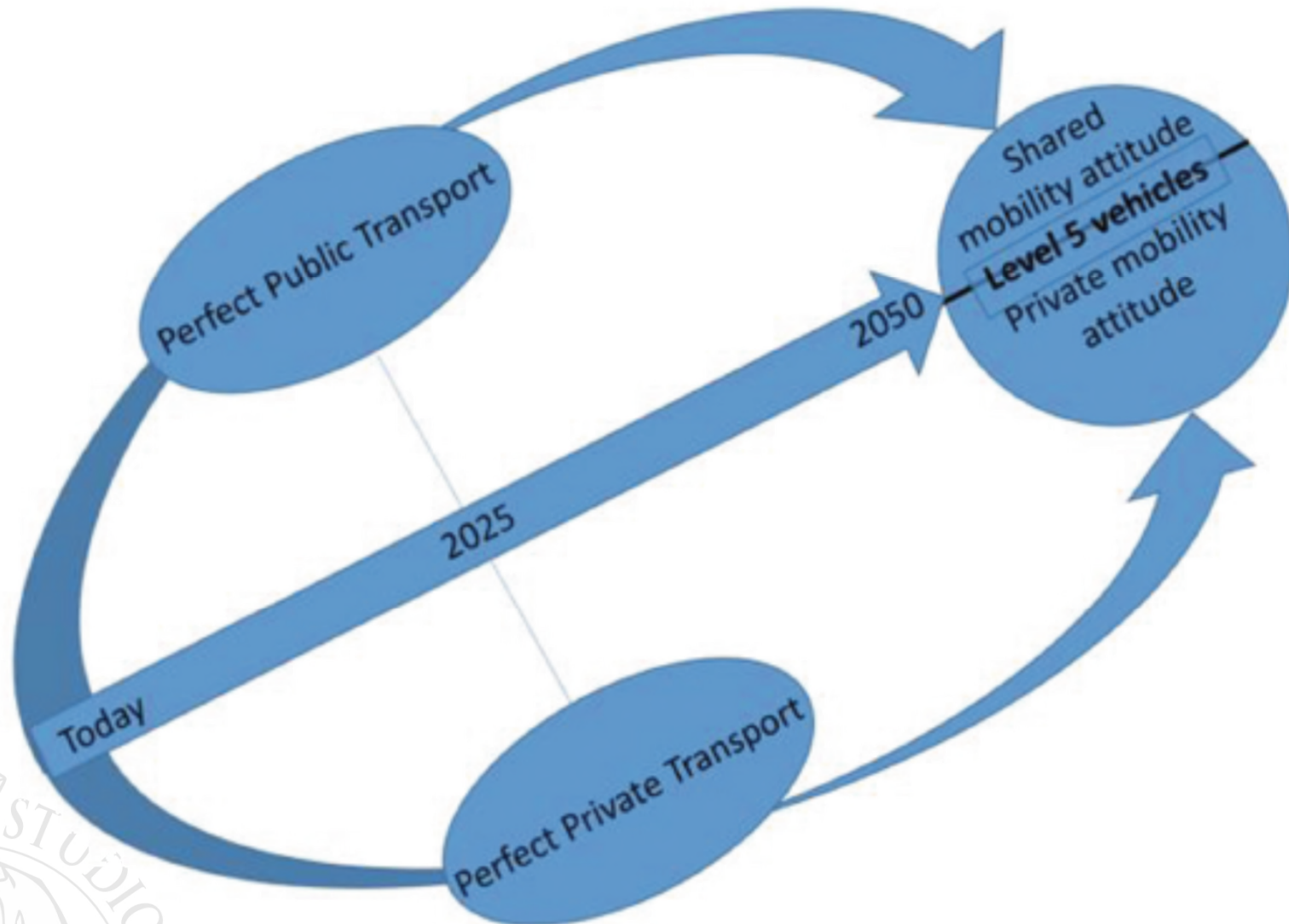
Medium level of demand



High level of demand



The importance of the path



Conclusions

- The final point, **all vehicles are fully automated** is the same but the path to reach it is very different
- The difference is the attitude toward **sharing**
- On one hand more individual behaviour with positive effects on the traditional economy and on the other more collective behaviour with better environmental and resource management consequences but uncertain economic results
- The **importance of policy**, even city level policy, is deciding **NOW** which direction to take





Thanks for your attention

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