Public Transport 4.0 and the Alternatives – on a Single Page

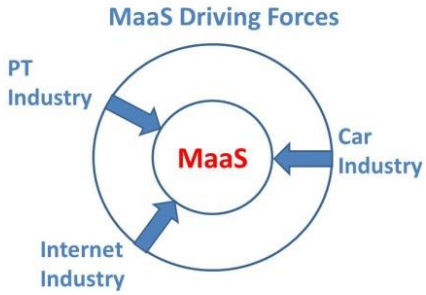
Today, in Germany around 80% of all passenger transport is covered by motorized individual traffic (MIT). By its continuous growth for many decades, MIT has marginalized the original means of mass-transportation and become the measure of all things in transportation regarding performance, convenience, safety, reliability, availability, costs etc.

Probably before 2027, managed fleets of driverless cars will be available for public road traffic. They will supply eco-friendly mobility on individual demand (**Mobility-as-a-Service**, **MaaS**) on the comfort level of present MIT – but at significantly lower cost.

This means that **individualized mass transportation** offerings will compete against MIT and legacy PT-offerings. MaaS will deliver a user-experience comparable only to the present Taxi-service, but as experts estimate, at only 0,10 € full costs per person-kilometer, which means 1/3 of MIT and 1/10 of Taxi costs. Reasons are the much higher occupancy rate, higher mileage and lower unit cost of the standardized vehicles used. In particular the cost proportion of vehicle acquisition, accountable for 80% of the total cost of service in MIT, will decrease dramatically. **MaaS is a disruptive successor technology for the mobility market**.

As MaaS requires far less vehicles to deliver the transportation performance of today's MIT, demand for parking spaces is expected to decrease by a factor of 4-5. Shorter safety distances and ride-sharing may enhance road utilization in congestion areas to some extent, but not dramatically. Road infrastructure remains the limiting factor. Depending on local demand vs. road capacity mobility is likely to grow moderately, but, provided market economy is working, total mobility spending will significantly drop.

Considering its enormous efficiency gains, there is no question, whether MaaS will come. When it will come, is of secondary importance. We have here an infrastructure-dependent market with a tendency to form a natural monopoly. This calls for regulation. The key question is, who will establish it and under which conditions. Three potential drivers seem obvious. Regional circumstances are expected to define their impact.



1. **Established PT-providers** may constitute "natural" providers of MaaS. By integrating MaaS into their legacy services forming an integrated **PT 4.0** offering, they may regain much of the huge market share MIV captured during the decades past. But

this requires their early and deliberate market entry with international harmonization and full political support - plus the abandonment of the dogma that PT means schedule- and line-oriented movement of large vehicles.

2. In spite of substantial entry costs, the enormous rationalization gains released by MaaS also lure newcomers in mobility into this new business, particularly **global internet enterprises**. Unlike present PT-providers, these companies are experienced in commanding customer contact, mastering layer dominance strategies, building up global markets, extracting profits internationally (meaning: tax-free) and imposing their technological and economic conditions on other parties involved. The actual operation of vehicles may typically be left to regional licensees or franchisees. Car industry may apply as suppliers of standardized components, while specifications as well as key software-components will be defined by the MaaS-providers. Present PT-providers may apply as franchisees – risking to cannibalize their traditional business and to devalue their publicly owned infrastructure.
3. **Car industry** with their expertise in vehicle construction may re-invent itself as MaaS-industry. They already work on driverless cars and explore MaaS, also considering cooperation with PT-providers and internet enterprises. But here, cannibalization of their so far very successful MIV-business gets in the way. Inevitably the German telco industry comes to mind, which was a leading global player during the 90s, before the internet revolution, but is almost extinct today.

The potential of MaaS for rationalization gains is enormous. For Germany alone, it is estimated to be a 12-digit number of € per year. Which share of it may Europe, its citizens, nations and economy, eventually be able gain? This will not only depend on the innovation power and foresight of its economy and their global competitors, but also on how skillful and determined politics will set the framework conditions for this new business and the underlying development process.