

8 IMPACTS OF SELF-DRIVING VEHICLES ON TERRITORIES AND LIFESTYLES

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As seen from its function and usage, the self-driving car is a conventional vehicle with a robotised driver. Whether for individual or mass transport (taxi and bus), this type of vehicle will provide the services as before. For Ifsttar, self-driving vehicles are not very likely to drastically change people's lifestyles.

Can self-driving vehicles alter lifestyles?

If the fleet of individual cars is gradually replaced by evermore autonomous cars, the impact on mobility practices will remain limited. In the longer run however, we may envisage consequences on users' modal choice (turning away from mass transportation if individual cars ensure more safety and comfort), the way they organise their daily activities (shopping in particular), telecommuting (working while on the road) and the mobility of young people and seniors.

If the vehicle becomes fully autonomous and shared, it will partly or completely come to be substituted for the public and private collective transport offering, e.g. school bussing. Such driverless shuttles are already being deployed over short urban routes. They will initially operate on

fixed itineraries and on dedicated lanes so they can be safely tested. In the longer run, these shuttles may become very flexible in their routes and timetables in order to further optimise the transportation offer.

Echoing the industrial transformations of our times

By replacing the private taxi or bus driver by machines, the self-driving vehicle reflects the heavy mechanization trend witnessed in industrial production. By giving up part of their free will to the benefit of a machine, men will be fundamentally challenged in their relation to technology. Industrial players, for their part, will introduce new business models and new services (e.g. playing advertisements aboard the vehicle to cut down the price of the journey). As a result, the relationship to the driverless vehicle will not be the same as with a conventional vehicle (c.f. research on breakthrough business models in the ITE Efficacy – Energy Transition Institute).

New perspectives arising from the waning interest in the notion of individual property

Unrelated with vehicle automation, households are seen to be less and less motorised in the centre of large towns. They tend to favour collective transportation modes such as car rental, sharing or pooling³. The mainstreaming

of robotisation will then make it possible to imagine vehicles that are used more. The fleet in operation will be better managed and used more. More recent, and better maintained vehicles will mean less pollution and less emissions of greenhouse gases (GHG). The gains, however, may be mitigated, if not altogether cancelled out by a possible rise in mobility (for people and also goods) and longer distances covered.

Public space to be rethought anew for all users

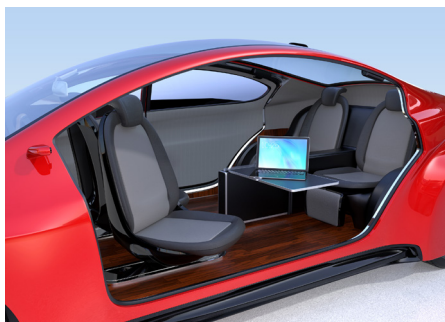
Automobile traffic significantly impacts the public space: roads, parking places, petrol stations, etc. The robotisation of vehicles will not diminish the impact of cars on public space, apart from the smaller parking footprint needed. But it will call for urban amenities to be rethought so as to incorporate those facilities indispensable to the guidance of vehicles or the management of passengers in full safety.

This is a good opportunity to reconsider the public/private space divide and the resulting strong segmenting that is usually enforced (sidewalks for pedestrians, cycling lanes for cyclists, dedicated lanes for busses, remainder of the roadway for other motor vehicles).

A new factor of urban spread?

Access to car ownership in the middle of the 20th century was a decisive factor for urban spread and peri-urbanisation. Private cars made it possible for people to settle down further away from cities, where access to individual housing is an option and less costly and with a quality of life meeting the aspirations of French people. If robotisation can be a source of even greater comfort, for instance by offering users the possibility of professional or leisure activities during their journeys, self-driving vehicles could again further promote urban spread.

1. LVMT: Research Laboratory addressing the City and Transportation
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3. ANR MoDe project (Motives for Demotorisation) steered by LVMT



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