
AUTONOMOUS VEHICLES AND PUBLIC TRANSPORT – A MATCH MADE IN HEAVEN?

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In the beginning of the 20th century the car was introduced into society. It was probably considered a great machine, a product made for the privileged few, a type of luxury goods only for the wealthy (Tekniska museet, 2015). Without a doubt this machine was also considered dangerous and one can imagine the discussions in the pubs and alehouses – this machine can travel too fast, it is a danger to all those walking in the streets and it's only a matter of time before it will reap its first victim! What is wrong with the way we do things now? I can ride my horse as fast as I need and that horse can also be put in front of my plough or drag a carriage.

In just a few years all these people, who looked sceptically upon the future of the car, were proved wrong. Cars got cheaper and developed further, much thanks to Henry Ford who was one of the pioneers in mass production of the automobile (Iacocca, 1998). The broad public started buying cars and it became the primary means for transportation. The development went even further. This was the beginning of a new type of city planning where the residential areas were placed further and further away from the city centres. Yet this was not a problem as you could travel the distance comfortably in your private car. Shopping centres were constructed in the midst of large parking areas and the cities grew even larger. Urban sprawl was a fact.

We look at things differently now. The negative effects of car use like pollution, noise and space consumption have, together with urbanization, become problems which needs solving. New trends in city planning have sprouted as a result and today we strive to find methods to densify the cities with increasing usage of public transport, decreasing dependency of private cars and increasing quality of life in cities as a result. This way of planning, however, craves creativity, not only in the way we think but also in the way we use the technologies at hand.

The autonomous vehicle has existed in the public mind set for some time now, but it's not since recently that the technology, and the potentials that are generated, have become a public interest. We now find ourselves in the same phase as when the car was introduced a hundred years ago, but this time the new technology is the autonomous vehicle. High-end machines are produced by various car companies to suit high society. The technology is looked upon as a luxury product only available to the wealthy. The vast majority is sceptical or uncertain– this technology, could it be dangerous? Might it lead to death victims in the traffic? Are we truly able to control it? However, the potential gains are intriguing. If we use the history of private cars as a looking glass for the future, it is not hard to imagine that autonomous vehicles will soon be available in affordable versions and might even reach a market dominance.

However, we need to learn from past mistakes. History has shown us the risks of urban sprawl and measures need to be taken so past mistakes aren't revived. One solution, which is investigated in the report "Autonomous vehicles and Public transport – A match made in heaven?" by Wirén (2016) could be to implement autonomous vehicles into the public transport system. This way it would be possible for the vast majority to enjoy the benefits of this new technique without having to own a private vehicle. The autonomous vehicle could replace those trips with the highest effort input for the traveller, for example the walk from the bus to home after a trip with the purpose of shopping for groceries.

If we were to use autonomous vehicles in city planning, how would it be done? If they were implemented into the public transport system, the most time- and effort consuming parts of the public transport trip could be carried out in an autonomous vehicle. This theory was tested in a model in which trips with the purpose of shopping was the main focus, a choice that was made because trips with the purpose of shopping to great extent is carried out in private cars. An autonomous vehicle was suggested to replace the parts of the public transport journey where the walking time exceeded 2,5 minutes, or where the travel time by bus was shorter than the added time punishment when changing vehicles (+ five mins are added to the perceived travel time by public transport when there is a change in vehicles to compensate for the perceived discomfort). With this kind of implementation, the hope is that the autonomous vehicles can support and evolve the public transportation system instead of diminishing it, thus avoiding to make the same planning mistakes as after the introduction of the car into society.

It was shown that this kind of implementation might reduce travel time

by public transport and thus increase the attractiveness of public transport. It could also increase the demand for public transport and reduce the need to own a private car. Benefits that accrue with the implementation is, amongst others, a lessened need for parking spaces in the city and an increase in traffic safety.

Autonomous vehicles as part of public transport is a topic that has to be investigated more, but it already has very interesting potential and possible economical and life quality gains. And who knows? Maybe a time will come when we drive cars as a mere leisure. A time when we'd go out to the stables, polish our car and then brings it out for a ride, not so different from the way we look at horses and horseback riding today.

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