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Mobility and Urban Development
The Need for a Holistic View

Thomas Osburg

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Executive Summary

Mobility is grounded in people's urge for individual freedom, less in 'possession of mobility'. A paradigm shift towards more Shared Sustainable Mobility will only succeed if it is integrated into sustainable urban development and reinterprets people's freedom needs.

Freedom as the basis of mobility

People want to be mobile and move - how, when and where they want. This basic human need is not new and is based on an even stronger motivation: freedom. Mobility is less a goal in itself, the freedom of the individual is the desirable state. Freedom to move to where and when you want. Freedom to choose your workplace and place of residence virtually independently. These and more individual freedoms were and are (still) made possible by mobility solutions.

In the process, this desired freedom was based above all on the availability of mobility, which led first to the ownership of horses and then to the ownership of automobiles. These transport options were available to the owners at all times and allowed individual freedom.

Increasing individual traffic limits other road users

However, in recent years, driven by an increasing world population and the urge of people to the cities (urbanization), we see unprecedented external negative influences on this individual freedom: roads are full, parking space is scarce and the costs and burdens for the environment is rising.

The aim of this WhitePaper is to put the current mobility debate in a larger context. New forms of mobility can only be understood and shaped with new concepts of urban development.

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Kant is often attributed the following saying: The freedom of the individual ends where the freedom of the other begins. We are currently experiencing this phenomenon: Increasing private traffic increasingly restricts other road users in their freedom of movement, it pollutes the environment, damages the health of uninvolved citizens and thus leads to the desired opposite: non-freedom. In this situation, we are increasingly looking for new solutions. Efficiency and sufficiency play an important role here

Concepts of efficiency are at the forefront of the current mobility discussion. Here, less intervention is made in the basic structure of the affected habitat, but an attempt is made to make the traffic (which is still considered necessary) more efficient. For example, through parking space management, autonomous driving, car sharing or smart traffic management systems. Obviously, these concepts of increasing efficiency will not be sufficient in the long term despite short-term relief.

This whitepaper was published in a slightly modified and shortened form in August 2018 in the science blog adhibeo of Hochschule Fresenius.

Sufficiency has been considered rather marginally so far. This is understandable, because mobility is defined not only by an individually relevant understanding of freedom, but more concretely by the accessibility of the most important institutions for people: workplace, school, shopping or administration. Pure mobility inefficiency will be too short here.

Sustainability in Urban Mobility
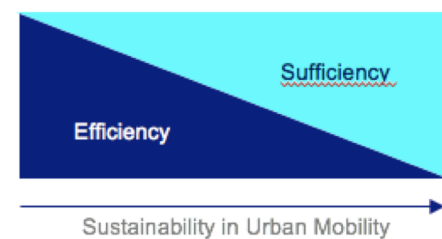
Holistic approaches to urban planning are needed. For example, they can bring the necessary facilities closer to people's homes or, through smart digital solutions, can make traffic largely redundant.

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About the author

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Of course, these approaches of sufficiency are more likely to be realized in an urban space in which commercially reasonable concepts are conceivable due to the large number of people. Things are different here in rural areas: the increasing so-called rural exodus can lead to greatly reduced mobility offers, which government agencies must maintain for reasons of the political postulate of equitable living conditions. Mobility in non-urban areas is therefore increasingly becoming a meritorious asset.

Another, only marginally discussed aspect is to be found in the problems of rapidly increasing global tourism for urban mobility. Popular destinations such as Barcelona or Dubrovnik are suffocating in the stream of tourists, in addition to their own mobility challenges.
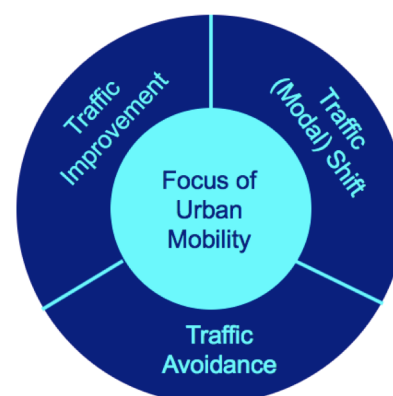
The dimensions are huge: Dubrovnik officially has 200,000 inhabitants, but four million

Visitors (i.e. 20 times more than inhabitants) per year. For a city like Munich, this would mean 30 million visitors per year, a situation almost unimaginable today.

This over-tourism is far from being a niche problem for fewer cities - increasing global mobility is presenting more and more cities with new challenges in sustainable mobility management.

Three approaches to new mobility solutions

Both in the mobile urban environment and in combating OverTourism, three approaches are central :

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Three approaches from sustainable efficiency to lived sufficiency

- Traffic improvement
- Traffic (modal) shift
- Traffic avoidance

- In a first step, it is about the traffic improvement, i. the more optimal control of traffic accepted as given. From an environmental point of view, this includes discussions about the right drive technology for cars, diesel, electric, hydrogen, etc. Digitalisation can also better manage traffic flows, optimizing the utilization of existing traffic routes or improving the distribution of tourists in cities such as Dubrovnik or Barcelona for the whole year. It is hardly questioned whether the entire traffic is necessary.

- Shifting traffic in stage two assumes that a mere improvement of the situation is only possible to a certain extent. They are looking for alternatives, be it a new shopping center on the outskirts of the city or just a whole new capital, as is currently the case in Egypt. The advantages of these approaches get the

Although the affected areas are positively affected, there is no measurable improvement for the entire ecosystem.

This would only be possible with the third stage - traffic avoidance. Clear goal here is to significantly reduce the overall traffic. However, the associated partial reduction in individual mobility will be possible above all when there is less need for mobility.

This is where concepts for the design of the urban living space intervene. In other words, the infrastructure must come to people if one does not want people to go to the shops or workplaces they need.

Digitalisation naturally plays an important role in all mobility design concepts. New technologies and innovative business models make today

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About this white paper

This White Paper is a heavily abridged pre-release version of a Trivelas Institute study on new urban mobility concepts published in 2019.

already a decisive contribution to the solution of the challenges.

This development primarily favors the so-called modal split, i. the distribution of traffic on different modes of transport. One distinguishes here (apart from classical micromodal concepts) above all between the intermodal and the multimodal approaches:

With intermodal approaches, people change the (existing and known) means of transport several times a day, use bus and train, rental car and rental bike successively. The efficiency gains result above all from the optimal coordination of individual modes of transport.

In multimodal approaches, you choose your means of transport depending on the situation: Who today combined train and bike, book a rental car tomorrow, because he goes to the theater in the evening. This advanced approach is based primarily on a better understanding of customer needs and requires predictive analytics tools.

Smart City Solutions are increasingly contributing to solutions not only in terms of efficiency (bus and train services, car or bike sharing, etc.) but also in matters of sufficiency (supported by big data, predictive analytics or artificial intelligence).

The particular challenge lies in the acceptance and trust of the population. In the field of mobility too, smart cities are difficult to implement if the inhabitants are less smart. Education and building of trust among the population is therefore crucial for the implementation and implementation of new urban mobility concepts.

For some years, we have seen a decline in the confidence of the population in institutions, while trust in individuals is increasing. Publicist Rachel Botsman calls this the "Era of Distributed Trust".

Micromodal Concepts → Intermodal Concepts → Multimodal Concepts

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- The first step is to create acceptance and thus confidence in the overall idea of mobility, which is no longer based on individual ownership but on the existence of mobility services ('Trust the Idea').

- After that, trust must arise at the level of individual solutions, i. Trust in concrete mobility offers. ('Trust the Platform') should be created. Only with the general acceptance of the Shared Sustainable Mobility is it possible to create a deeper acceptance for individual, in the optimal case multimodal offers.

- The third step focuses on trust in individuals ('Trust the People'). At a communicative level, these may be influencers, in the area of urban mobility solutions, other persons with whom mobility is shared, e.g. via shared systems, vehicles or billing.

Mobility: more than road traffic

These considerations are intended to show that mobility means far more than making current road traffic more efficient.

Without a complete rethinking of the role of mobility, which has to be anchored above all in the much closer coordination with urban life concepts, we will find it difficult to solve future challenges.

New status icons

The status quo, often referred to as an argument, in connection with the ownership of prestigious cars already hardly plays a role anymore. Individual status icons are often volatile and can change rapidly over time.

It seems quite realistic that individual freedom replaces the car in the near future as status symbols. What will remain is the desire of people for freedom and the associated mobility.
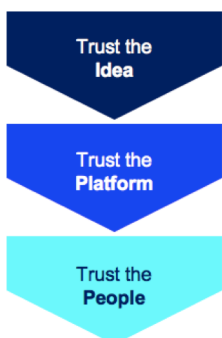
The Trust Stack

Botsman (2017)
Who Can You Trust