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Co-mobility – high efficient inter-modal services in passenger transport

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Definition and benefits

Modern societies are highly mobile, and their members organise their transport both individually and collectively. Rail-based services at regular intervals with fixed routes are not attractive enough in the long term without other supplementary forms. Co-mobility refers to the integration of individual and collective transport modes "on a single surface", i.e. a combination of public and private transport services, a consistent operating interface, ease of access and a coordinated tariff system. In this respect, new information and communication technology play a central role as media for access, bookings and payments.

By contrast with freight transport, the combination of several different modes of passenger transport in an integrated transport system is still in its infancy. The combination of the use of private car modules with "classical" public transport services has only played a very minor role up to now. The first initiatives consisted of cooperation between car-sharing service providers and local transport companies. Inter-modal services are most widespread in Switzerland. For several years there has been a successful cooperation between the nationally operating car-sharing company Mobility, the Swiss railway company (SBB) and most of the local transport associations. The greatest progress in the integration of a bicycle module has probably been achieved by the call-a-bike service of the German railway company (DB).

The advantages of inter-modal services from the point of view of the customer are obvious - he/she can use various means of transport to suit the need of the moment. From the perspective of the economy, manageable passenger transport costs and a better utilisation of the existing transport capacity are worthwhile goals that can be achieved by a more extensive combination of the different modes of transport. For example, the need for buses that are almost empty can be eliminated if taxis can be used at moderate cost at times when the demand is low. And considerable gains in efficiency can be achieved if the means of transport which were so far separate can be combined to harness their strengths in accordance with the fluctuations in the daily and seasonal demand.

And a higher utilisation of the transport capacity would also have direct ecological effects. Car-sharing vehicles, for example, are used 3 to 5 times more than private cars. The same transport performance can therefore be achieved with significantly fewer vehicles, furthermore car-sharing fleets can use new and more economical cars more quickly and efficiently.

The need for research

Although scientists, researchers, transport planners and practitioners agree that an integration of the various modes of transport could provide urgently needed relief for the environment and achieve net benefits for the economy, the barriers and problems that hinder a broad implementation of co-mobility in passenger transport are nevertheless great. On the

one hand, public transport companies are finding it difficult to integrate new services and market them in a forceful manner. On the other hand, there is not yet any pressure of demand from the users because they have not yet had sufficient experience of new inter-modal services. It is therefore an urgent concern to place the main emphasis of research into new inter-modal services on the development of business models and market acceptance. Only then the real hindrances to implementation can be identified, and possibly remedied. However, this requires a high degree of entrepreneurial commitment. Other conditions which could encourage the development of inter-modal transport are already in place: first of all the high availability of moderately priced mobile phones and Internet services, and secondly the reduction of privileges for private car transport in major population centres by increased parking charges and vehicle access restrictions for the city centres. The pressure to achieve greater efficiency in transport in general, and to impose stricter limitations on pollutant emissions in transport, especially CO₂ emissions, will become even greater in the future.

At the same time, there is a broad consensus, especially in relation to rail transport, that additional transport modules must be offered to increase the depth of the services offered to enhance the quality of these services.

There is still a significant deficit in research about the market acceptance of new services and new service features. This would involve a relatively high level of technically oriented research and development, but there is a disproportionately low commitment to the conceptual development of practically feasible inter-modal transport concepts and testing processes. So it is still largely uncertain whether and under what conditions customers would accept inter-modal services and to what extent these services can be expected to benefit the environment and the transport systems. Overall, there is therefore a high need for "implementation research" into inter-modal transport services.

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