

# Collaborative mobility

## Peer-to-Peer expands into the world of transport

Dr. Jörg Beckmann, Director of the Mobility Academy

### Abstract

This article introduces the concept of collaborative mobility or collaborative transport, drawing on the concept of collaborative consumption in the context of what are known as Peer Peer-to-Peer (P2P) networks. Collaborative transport differs here considerably on both the supply and demand sides from the former principal “competitors” in the transport sector – public collective transport and private individual transport – and, as both a social and a technical innovation, holds out wide-ranging prospects for alternative forms of mobility organization in our everyday lives and also for a reorientation of the entire mobility sector in societal policy terms.

### From co-consumption to co-mobility

A good friend of mine, a transport sociologist by profession, likes to stress to his professional colleagues who tend to smile at his passionate commitment to “hyphenated sociology”, that transport, to a greater extent than practically all other social, economic, technological, cultural and political sub-systems, is a marvellous and meaningful mirror of our society. All those societal developments which will change our lives today and tomorrow are embodied in transport in a most impressive way: from ecological modernisation of the entire system to new forms of interaction in the way in which daily mobility is organized. My friend regards everyday transport as an ideal field for all kinds of social scientific research, from socio-psychological research in the field to the great theories of modernisation.

In point of fact, transport sets an imposing stage for all those transformation processes which modern societies present to their mobile citizens. In the 1980s and 1990s, neo-liberalism was reflected in the withdrawal of public transport authorities from the rail (operating) business, globalisation is changing the face of air transport and leading to its continuous growth, processes of urban development are giving trams a new lease of life, the cult of the body and consensus view of sustainability are turning the familiar bicycle into a neat green mobility (style) tool, while post-materialism is advancing the cause of private and commercial car sharers in our West European conurbations.

In particular, the success story of car sharing, more than almost any other innovation in transport, has in recent years marked the onset of a new mode of transport that I would like to introduce here under the heading of “collaborative



transport". On the market for collaborative transport, attractive new opportunities are seeing the light of day, beyond the big technical systems of classical motorised individual transport and collective public transport by rail or road; today, these new techniques have moved beyond the status of a simple niche demand. New Peer-to-Peer (P2P) networks are being established between collective and individual transport in which the citizen liberates his mobility from the private purchase of a mobility tool, such as an automobile (and prefers to use the vehicle without at the same time owning it), while at the same time he looks beyond just one or a few major suppliers to satisfy his mobility needs. Private car sharers like tamyca.de, car sharing central hubs such as mitfahrgelegenheit.de and long distance bus transport providers including deinbus.de which only organizes a service if sufficient users wish to travel are all advocates of this new kind of mobility organisation; so too are the established lists of previously used vehicles which enable private re-users to own a mobility product without having to incur the immediate loss of value which goes with a new purchase, while at the same time not having to pay a substantial margin to a go-between dealer.

The growth of this collaborative transport offering is therefore in the first instance a social innovation within our everyday transport system; in the second place, however, it is also a mirror image in the transport field of our society in that it extends to the mobility sector a much discussed social phenomenon, i.e. what is generally known as collaborative consumption or co-consumption.

Once again, this new kind of mobility focuses on the automobile, the traditional cornerstone and hub of our routine mobility which is being reinvented yet again as it moves into the world of P2P networks. But how can it be that this icon of much derided, post-modern hyper-consumption seems to be giving up its distinctly individual character (private ownership as a status symbol) to become instead the symbol of a post-materialistic life style group which discovers its identity in sharing and exchanging?

### **Co-consumption – more than just a plaything of post-materialists**

In my search for an answer to that question, I was struck by the inspired words of another friend. When he pays me a visit, this particular friend, a banker by profession, with a diabolical grin on his face likes to remind my three daughters who are fighting over their Playmobil princesses that "sharing never works". With his misguided irony he torpedoes my manifestly hopeless attempts to persuade these three to share their plastic toys.

But in the world of collaborative consumption my friend's maxim is now being stood on its head because sharing enhances the value of a good; that at least is how the growing number of co-consumers all over the world apparently see things. As the trend researcher Jeremy Rifkin already explained in the year 2000 the "economies of share" reflect a "move away from economic models in which there are winners and losers towards models in which everyone who takes part is a winner"<sup>1</sup>. Referring to these models, we can also see why more and more

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<sup>1</sup> Rifkin, J.: Access, Campus 2007, p. 5



people today are deciding not to buy a vehicle of their own and prefer instead to hire a car when they need one; in this way, their mobility is guaranteed without the financial burden of private car ownership. Against that background, Rifkin says that “the traditional value of possession, which was regarded as a means to increase personal autonomy and hence gave a sensation of freedom, is playing second fiddle to the new value of optimised access”<sup>2</sup>.

For Rifkin the essence of this post-industrial change therefore resides in a growing demand for access to a benefit which could previously only be obtained through possession. It is precisely this argument of “use in place of ownership” which provides the social glue for the scene and is the main reason for taking up co-consumption. The fact that sharing many routine objects not only makes social sense but also good ecological and, in particular, economic sense, is immediately apparent in the case of the automobile which is simply left standing instead of being driven for most of the time. But the home drilling machine, which is apparently used on average by its owner for just 13 minutes a year, also appears regularly on the list of everyday objects which are readily shared. Two main drivers seem to be encouraging this growing trend towards sharing:

1. Developments in the virtual world of the internet have enabled a growing number of people to satisfy their demand for a particular product benefit without also having to own the product. The replacement of digital sound reproduction equipment by direct downloading of a song onto your home computer is a good example. According to Brian Chesky, CEO and co-founder of airbnb.com, these developments have brought us to the threshold of the third internet revolution: the first simply meant going online while the second revolution with its social networks enabled a digital get-together; the third revolution now represents a “coming together in the real world”. In other words, it is turning the worldwide web into new digitally assisted forms of organisation of everyday life in a community in the real world.

2. Secondly, ecological modernisation of the real world has also been accompanied by the arrival on the scene of new sustainable lifestyle groups for which the creation of access to a benefit instead of purchase of a product at the same time held out the prospect of treating the natural environment in a way which spared resources on the principle that “sharing” becomes “caring” (for the environment).

The universal presence of the internet and a deeply rooted consensus on the principle of sustainability therefore helped to bring momentum into the “share economics” described some time ago by Rifkin; this phenomenon is now gaining momentum, especially in the urban centres, as the trend topic of “collaborative consumption”. One typical emblem of this movement is the Peer-to-Peer network “airbnb.com” which in the first years of its existence arranged more than 500 million overnight stays and in 2011 alone was able to increase its overnight numbers by 500%. If we are to believe Brian Chesky again, airbnb.com is also seeking to bring about a more equitable distribution of the added value of the tourism industry at the point where it is generated. To put it more clearly, the

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<sup>2</sup> ibid



visitor to New York no longer spends the night in one of those bed bastions of the multinational hotel chains on Times Square but sleeps, eats and buys (or exchanges) with like-minded persons in Lower East Side and by doing so experiences the truly authentic New York. So does this spell the end of the hotel industry as we knew it up to now?

Anyone who thinks of co-consumption in those terms naturally also associates it with a modicum of criticism of society with which he might like to shake the ideological foundation of capitalism – the bourgeois concept of private property and its inviolability. For example, by purchasing a car did not the generations of private car drivers of the last hundred years also show their willingness to accept the concept of property ownership which was associated with membership of the dominant class and still is today?

Be that as it may, most of our new co-consumers are probably indifferent to this aspect: “Mrs Exchanger” and “Mr Sharer” no doubt see their action as a practical opportunity, which at the same time creates a sense of meaning and community, to reduce their cost of living rather than as an anti-capitalist U boat. However, we do discern here a process of societal change which Jeremy Rifkin was one of the first to detect with his economic analysis. The technical and social trends of recent years have accelerated this process, turning it into a contemporary phenomenon which is now being reflected in more and more areas of our lives.

### **Collaborative mobility between individual transport and public transport**

What is mobility? Anyone who tries to find a comprehensive answer to that question today can take his pick from many different disciplines and, depending on the direction of his research and political convictions, will come across a great many different definitions. From econometric models via socio-scientific attempts to interpret meaning and on to planning guidelines, transport providers and mobility thinkers have plenty of food for thought to offer us. Anyone who reads up on this subject in German-language publications, is bound to encounter attempts to draw a boundary between transport and mobility; this analysis generally reaches the conclusion that transport describes the movement as such of goods and persons in geographical space, while mobility refers instead to the simple possibility of physical movement. Mobility as an unrealised manifestation of transport then seems to be something like potential transport, while transport itself tends to denote kinetic movement.

If we now also refer to the Anglo-Saxon specialist literature, in search of the idea of mobility, we find a similar distinction but with a slightly different bias. Here alongside mobility, emphasis is frequently also placed on access to spatial functions, because this is after all the true reason for which people move through physical space. In transport planning especially, access has now become a central leitmotif which has a determining influence on the design of everyday transport systems. A distinction is then made, depending on the understanding of planning, between access to the functions themselves or to the means of transport which bring access to these functions within physical reach. Collaborative mobility refers more specifically to this notion of access: gaining access to a mobility service,



without actually owning the product that delivers this service, is one of the distinctive features of co-mobility from the transport planning angle. Thanks to this feature, collaborative mobility differs clearly from the classical notion of individual mobility based on private ownership of the tool which permits mobility.

Now if co-mobility is no longer part of the traditional individual mobility system, is it instead an aspect of public transport? Will the private automobile which is used communally automatically become an integral part of public transport of persons over short distances in our cities? The answer to these questions must surely be a resounding “no”, because neither is a transport service being provided in this instance by the public authority nor is the service open to the public. Contrary to the situation for instance with urban transport undertakings, in this case no major (semi-) public transport provider comes into play and sells its service to a transport user in the B2C format. What is more, this service is not accessible to the public but can in fact only be traded directly in P2P format between a supplier and a user.

With this clear demarcation from conventional “power blocks” in the transport industry – individual private transport on the one hand and public collective transport on the other – collaborative transport or collaborative mobility is now creating something totally new which presents great challenges to the established transport providers on both sides and opens up new opportunities for mobility for future generations of transport users.

Co-mobility is set to become a real competitor for the two familiar transport models (public and individual), because they are both having to contend with a problem which does not arise for collaborative transport, namely their cost structures. On the one hand, conventional collective public transport is becoming increasingly flexible and designed for particular target groups, while at the same time it is also becoming distinctly more expensive and requires ever more intensive use of resources. On the other hand, private individual transport with its icon, the automobile, is becoming increasingly environmentally-friendly, but also more and more exclusive and financially expensive. With collaborative transport this problem simply does not arise. On the contrary, collaborative transport benefits in the final analysis from the capacities of its competitors that are unused today and offers a great deal of low cost and environmentally-friendly mobility with little investment.

### **What are the typical features of co-mobility?**

Collaborative mobility is sustainable mobility. It is economically sustainable because it makes better use of existing capacities and requires no additional investments in infrastructures. It is ecologically sustainable because, by making better use of existing capacities, it spares finite resources; then again, it is socially sustainable because it promotes new forms of communal mobility organisation. But how can co-mobility be characterised more accurately and more effectively through its contribution to sustainability? What does it and does it not stand for?



### ***Use instead of ownership***

For a number of years, the slogan of use instead of ownership has been the banner of car sharing providers all over the world. In fact the car sharing companies which have grown up in the past 20 years have been able to use this concept to place an impressive focus on their core business. Wanting to use an automobile without at the same time buying and owning the vehicle has today become a familiar feature of urban mobility. The growth of the Swiss market leader “Mobility CarSharing” also provides impressive evidence of the successful nature of this business model as an entrepreneurial venture. But in recent years even the established automobile manufacturers have gone on to develop ownership-free forms of use out of the classical leasing business and invested in car sharing projects like Car2Go (Daimler) or DriveNOW (BMW). They have done so partly because of the realisation that “ownership-free” forms of vehicle use through leasing, rental or sharing have the advantage, as compared to a one-off sale, that the customer relationship lasts for much longer and can be deepened further.

Wanting to enjoy the benefit of the product without owning that product is a basic principle of every kind of car sharing – regardless of whether the provider is an entrepreneurial mobility service provider (B2C) or the neighbour two streets away who offers his car for sharing on the internet. Beyond this shared characteristic, collaborative car use through Peer-to-Peer networks shows further features which are typically no longer found in the services offered by car sharing enterprises.

### ***Sharing instead of hoarding***

Contrary to the principle of “use instead of possession” on which B2C car sharing is based, with P2P car sharing the automobile remains in private ownership on the supply side. For various reasons, the supplier wishes to retain private ownership of the vehicle but is at the same time looking for ways of minimising the overhead costs of maintenance via a rental business. Here the motive is not the abolition of the private car and the accompanying loss of autonomy or at least the perceived loss, but the idea of not having to permanently reserve the product benefit (in other words “hoarding”) without actually making use of it.

The way in which the particular rental transaction is organised depends entirely on the nature of the P2P network in which the supplier and client meet up. For instance, RelayRides in the USA leaves the supplier with 65% of the rental price, uses a further 20% to cover the cost of insurance and retains 15% for itself as the arranging commission. In Switzerland, Cartribe on the other hand currently only offers to establish contacts through its hub without imposing any charges. In this particular case, every vehicle owner who would like to share instead of hoarding his car, can set up his own tribe and so group together a large number of tribe members from the neighbourhood around himself and his automobile.



### ***Moving instead of standing still***

Co-mobility also represents an economic benefit which is the result, e.g. of potential reductions of infrastructure costs for stationary traffic, i.e. parking spaces. On average, an automobile stands still for 23 hours a day, at least that is the rule of thumb. Obviously when a passenger car is not in use it takes up a substantial part of the highway infrastructure in conurbations. This economic cost of parking includes “(1) all costs which are directly related to the procurement, provision and operation of the parking space infrastructure, (2) the value of the land involved and (3) external costs<sup>3</sup>”.

Mention should be made here of the opportunity costs of the parking lane along the edge of the street which arise from the limitation of alternative uses (i.e. carriageways, bus lanes or cycle tracks and pedestrian paths) or the external costs which are generated by traffic looking for parking spaces or by accidents caused by stationary traffic.

A further economic cost of stationary traffic is also immediately apparent to anyone searching for a parking space near his urban home. Such spaces are scarcely ever available free of charge and as a rule the person who is looking for a parking space generally internalises part of this external benefit of stationary traffic via the parking charge. Both for the economy as a whole and for the individual, parking is an expensive proposition – making it always preferable to be on the move!

A shared automobile is generally a moving automobile which stands still less frequently and therefore makes less use of the stationary traffic infrastructures. Moreover, a car sharing automobile replaces some six to eight private passenger cars and therefore frees up some extra parking space. My friend from the financial industry might express this particular feature of co-mobility as follows: “Standing still does not improve a car!”.

### ***Earning instead of paying***

While the economic cost-benefit ratio of co-mobility will no doubt have to be analysed in more detail in coming years, the direct use of collaborative mobility is already apparent to everyone who regularly hires out his vehicle. Instead of having to foot the entire bill for operation and maintenance of the vehicle, he also offers his rights of use to others. In P2P mode the vehicle now brings in income. Earning instead of just paying is therefore another central feature of co-mobility. The costs of private ownership of a vehicle are therefore passed onto others and the vehicle keeper still enjoys the benefits which he sees in possessing a private car. Perhaps, unlike the aspect of the overall economic benefit, the individual benefit accruing to the supplier can already be clearly defined today. The economic significance of the private automobile now changes, turning it from a classical consumer good into a means of production in the new sharing economy.

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<sup>3</sup> Eschert, Ramona: Ruhender Verkehr: was er tatsächlich kostetet (Stationary traffic: the true cost); Internationales Verkehrswesen (60) 5/2008, p. 177.



However, not everyone who would like to earn money today as a co-mobility supplier needs a mobile means of production to implement his business model. Often, a garage entrance space is sufficient, for instance in London. Thanks to parkatmyhouse.com a commuter travelling to the City of London can save money and time nowadays by simply leaving his car in front of a house entrance close to his office. P2P parking may make the constantly recurring debate in favour of and against new car parks in the inner cities superfluous in future.

### ***Networking instead of individual ownership***

Just as the trend towards co-consumption previously reinvigorated formerly central routine practices such as sharing or exchanging in mobility, so it is also giving fresh momentum to existing mobility services, including one with which many of us are familiar from our student years: ride sharing. Agreement on shared travel opportunities on the carpooling.com hub and its particular partners in nine European countries today via the internet and smartphones, has developed into a profitable business model. The welfare gains result from the cost savings, the lesser burden on the environment and the assurance of individual mobility without the need for your own car. Ride sharing is, however, also a life style decision – a smart form of hitch-hiking not just for the generation of what are known as “Millennials”. In the case of co-mobility too, the issue is not simply that of providing a transport service, but equally often of marketing a mobility experience – in other words exactly as is the case in the experience world of public transport or in the brand world of a car manufacturer. But what is the exact nature of this mobility experience? A decision on the choice of mobility or a means of transport is based on a number of different factors. The factors which are frequently named as key determinants, such as cost and time, are certainly necessary reasons, but cannot in themselves adequately explain why a transport user opts for a particular type of transport. If monetary and time aspects alone held the key, the makers of medium and prestige class vehicles would long since have had to halt their production. The situation is similar with certain forms of co-mobility such as car pooling. Here too money can always be saved and not uncommonly time too. Another fact is that ride sharing creates an identity in the social group of the pool. This is the same kind of identity which many private motorists associate with the purchase of a particular brand of vehicle. According to Pierre Bourdieu, identity and distinction are, broadly speaking, the two defining aspects in favour of or against membership of a particular life style or mobility style group. Being co-mobile therefore reflects more than just a wish to travel at low cost: a person who is co-mobile belongs to a group of alternative, innovative and sometimes collective travellers who are not just different but also organise their mobility more smartly than, in a nutshell, those other people who spend money which they do not have on mobility tools which they do not use to impress people whom they do not like. Ride sharing in this group of co-mobile persons then also permits precisely that result which is always the purpose of mobility in the true sense of the term: meeting other people and ideally those whom you appreciate, i.e. networking with your peers.





### ***Throwing off the fetters***

Mobility is at one and the same time an experience of autonomy and sharing in social life. It increases individual freedom of action, creates new multi-local life styles and biographical mobility events and so broadens personal networks. In the (global) networked society, the geographically dispersed organisation of social reference persons is gaining ground and influencing conduct in transport to such an extent that a further increase in motorised individual traffic can be expected. This development confronts politicians with new challenges because “the geographically dispersed organization of close social reference persons is an obstacle to the reduction of motorised traffic which is necessary for ecological reasons. It runs counter to the efforts of politicians to reduce car traffic so as to cut back the negative impacts of traffic volumes”<sup>4</sup>.

But if the maintenance of geographical social networks cannot be mastered in any other way than by using personal and individual motorised traffic, it surely cannot be the task of politicians to seek to reduce that phenomenon at the expense of individual wellbeing and quality of life. On the contrary, technical and social innovations are required to design personal transport in such a way that it satisfies ecological criteria while at the same time enabling the functions which promote wellbeing to be maintained.

This is achieved specifically by integrating the automobile into co-mobility. The automobile becomes the object of social innovation which enables the environmental balance of individual personal transport to be improved while at the same time enhancing its gains in terms of well-being. Co-mobility changes the one-dimensional understanding of individual mobility in which an autonomous user with his private car represents a social policy risk into a multi-dimensional vision of mobility in which many inter-dependent users extend their mobility options and enlarge freedom to choose the means of transport by calling upon the service which permits use of an automobile (instead of by private ownership of the vehicle). In this way, co-mobility becomes a symbol of the global networked society in which existing social ties (e.g. to particular means of transport) are broken and a new network geographies created which leave more space for multi-modal linking of multi-optional mobility offerings. Co-mobility then becomes synonymous with multi-mobility.

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<sup>4</sup> Ohnmacht, T: *Mobilitätsbiografie und Netzwerkgeografie*, Eigenverlag, Zürich 2009, p. IX



## Conclusion

“Using”, “sharing”, “moving”, “earning”, “networking”, “freeing up” – those are the features of co-mobility as they are perceived today. Of course these are all features which only have positive associations. In reality, the new P2P networks open up mobility options which promise at one and the same time an individual and an economic benefit. The growth rates of the relevant internet hubs in the whole field of collaborative consumption prove the great demand which the different suppliers of certain useful services such as car sharing are encountering today.

But is the socio-technical system of co-mobility really one which exists entirely without unintended side effects? Does the release from private ownership of a mobility tool really deliver that kind of freedom which it is said to provide? Or do other dependencies perhaps arise in relation to the intermediaries between supply and demand which now list in their databases the drivers who have been set free on their journeys by the “Share-o-Mobile” system? How transparent is such a co-user profile and what type of customer loyalty is created as a result? How does this new transport *infrastructure* interact with the classical transport *infrastructure*? New questions to which we will certainly find new answers – provided that we do not stop sharing again and put paid to the superstitious belief that sharing really has no future.