

Summary

“kommunal mobil 2015” -Environmentally compatible commercial transport in urban areas - who and what is really helpful?

The German town of Dessau-Roßlau (Saxony-Anhalt) hosted this year's “kommunal mobil” conference held on 18 and 19 June 2015 in cooperation with the Umweltbundesamt (the German Federal Environment Agency), Deutsches Institut für Urbanistik (Difu) and Deutscher Städtetag (Association of German Cities). Over 90 experts from the fields of science, transport planning, other planning branches, trade and industry associations and chambers, logistics enterprises and consulting businesses discussed a range of current challenges in urban commercial transport.

Trends and general setting

Developments in urban transport

Welcoming the conference participants, State Secretary Jochen Flasbarth of the Federal Ministry for the Environment, Nature Conservation, Building and Reactor Safety, emphasised the significance of commercial transport for decarbonisation of the national economy. On aggregate, commercial transport, i.e. goods transport as well as service and business trips, accounts for one third of all traffic in urban areas. As described by Dr Wulf-Holger Arndt of Difu, current trends of labour division in the national economy, online retailing, rising customer expectations like delivery on the day of ordering (“same-day delivery”) or narrower time windows have entailed growth in the number of shipments and journeys, augmenting delivery and service transport operations in particular. The customer becomes a “stage director of his/her consignment”, raising the bar for the provision of logistics services.

Demographic change, too, has repercussions on the way supply transport operations are schemed. Service concepts for the senior generation offering special service functions, for example, are gaining importance. At the same time, the retailing sales channels (“multi-channel retailing”) are transforming in response to changing shopping patterns (and vice versa). Beyond the “classic delivery concepts” of address delivery, these changes in retailing come with new ways of putting goods on show and alternative delivery concepts. Inner-city spaces are hence increasingly becoming experiential spaces and showcases of online retailing with alternatives to delivery to addresses, including pick-up stores, show rooms and further e-commerce applications, e.g. in the field of perishable goods (e.g. food). The share of goods bought in physical stores and taken home may decline as a result.

On average, city dwellers generate 0.1 deliveries per day, with the trend heading upwards. The “Internet of things”¹, too, may generate traffic as transport costs continue to be relatively low. The “Internet of things” and the needs of business-to-business retailing are compounded by growing demands made on commercial passenger transport, too. Commercial passenger and service transport have come to account for over 50% of the journeys in commercial transport. Dispersing traffic volumes and a growing complexity of tour design (CEP service tours often comprise 140 to 150 shipments) trigger a considerable further differentiation of the problematic areas in traffic, posing growing challenges for planners and strategists dealing with commercial transport.

Ecological and transport challenges

The above-sketched increase in truck trips in the field of goods transport has led to exacerbating problems in urban spaces. Typical municipal problems with commercial traffic include double parking of delivery vehicles, intrusive noise and air pollutant emissions emanating from trucks in residential areas, major space requirements, separation effects and road accidents. In his presentation, Martyn Douglas of

¹ Autonomous exchange of information between objects via internet

the Federal Environment Agency pointed out that light commercial vehicles alone account for slightly under 21% of particulate matter (PM10) inside towns and cities. The social acceptance of visible and audible logistics is shrinking, not least as a result of its environmental impact.

On the other hand, the provision of commodities and services as well as waste disposal are important functions taken on by commercial transport. Securing performance of these functions while managing urban commercial transport in a way that is compatible with the city's functions represents one of the central challenges (not only) for municipal players.

Lawyer Karsten Sommer additionally pointed out that environmental objectives in commercial transport have so far enjoyed little effective promotion at state and regional planning levels. To date, state and municipal governments have not made clear sufficient requirements so that commercial transport is not regarded as a compulsory task, and municipal planning practitioners sometimes tend to lose sight of them. However, municipalities must be afforded greater flexibility within the legal framework, e.g. to facilitate setting up traffic controls (loading zones, user benefits for cleaner vehicles etc.).

Concepts and cooperation ventures

In many places, commercial transport has rarely been the subject of systematic planning at municipal level. The Hannover Region is one of the few exceptions. Tanja Göbler from the Hannover Region presented the regional concept for "Climate-friendly commercial transport", which prioritises analysing the opportunities for integrating this transport mode into planning routines and planning branches.

The booming CEP² market has in many places led to bottlenecks as highlighted in the presentation of Dr Julius Menge of the Berlin Senate Administration for Urban Development and the Environment. As no dedicated parking space can be reserved for CEP services, the vehicles of CEP services frequently double park, obstructing vision and causing risks of road accidents. On the other hand, the "last mile" is a principal cost factor for logistics providers. It often accounts for 50 percent of the costs of CEP service providers. Burkhard Horn of the Berlin Senate Administration for Urban Development and the Environment in this context described a concept geared to securing space as part of the "Integrated Berlin Commercial Transport Concept". This concept, on the one hand, secures space for freight villages and logistics close to railway lines, ports and the motorway to segregate long-distance and urban traffic, and additionally reserves space for logistics sub-centres, for example, along the Berlin's circular metropolitan light rail line, the "Ringbahn".

Prof Dr Herbert Sonntag of the Wildau Technical University of Applied Sciences highlighted that most journeys in commercial urban transport are made in passenger cars, many of them in vans and small trucks, while only about 5% use trucks of 7.5t or above. Nevertheless, the expanse of land used by commercial transport is immense. Roads are used for delivery, sale, storage and construction. The road also is a logistics space for goods transport and craftspeople. Of all delivery and pick-up operations, 36% take place in the public space.

Jochen Richard of the engineering firm Richter-Richard Aachen/Berlin, in contrast, explained that analyses must focus on trucks when it comes to both mitigating emissions and the usage of roads and bridges. He also stated that, while individual measures tend to be less expedient in enhancing the efficiency of municipal action towards conformity with the EU Air Quality and Environmental Noise Directive, agreed packages of measures need to be conceived, and the highest mitigation effects can be achieved by action in the field of commercial transport.

Initiatives and examples

Many different approaches have already been practised beyond embedding urban commercial transport into transport management concepts. In the city of London, for example, entering the inner city makes economic sense mainly with locally emission-free engines like those of electrical vehicles as the city toll is particularly expensive for polluting vehicles. Using e-mobility for delivery is an option in Germany,

² CEP: Courier, express and parcel services

too, as evidenced by a project of DHL for zero-carbon delivery using a fleet of over 100 e-vehicles in Bonn.

A central step to advancing e-mobility resides in procuring environmentally compatible municipal fleets. Related procurement concepts should be put on the broadest possible basis and even comprise cargo bikes. These green vehicles could be vested with privileges for inner-city delivery.

In this respect, Christian Rudolph of Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR - German Aerospace Centre) presented the outcomes of an EU project titled "Cycle Logistics", according to which 50% of all motorised journeys (for both private and business purposes) having to do with goods transport can be shifted to bicycles or cargo bikes in urban environments. In commercial delivery transport, the potential for transfer is no less than 38%. The aim of transferring motorised traffic to e-cargo bikes could be distinctly promoted this way. Delivery service employees appear to display increasing levels of acceptance of this mode of transport, one contributor being the "wellness factor" of bicycle use as the weather is not much of an issue for many employees. Martin Kaufmann of the Rudersberg municipality quoted a postman as saying: "I'm not that handicapped with a bicycle", and Marten Bosselmann of the Federal Association for Parcel and Express Logistics quoted a courier service driver as saying: "Cycling makes my body feel better". Cargo bikes, pedelecs and e-bikes are therefore a suitable option for delivery and courier services. Furthermore, there is a whole range of different service and sales vehicles available, for example for purposes like street cleaning and waste disposal. User benefits arise from the opportunity of delivery parking on bicycle parking space, the possibility of circumventing traffic jams, and as a result of the lower unit costs of e-cargo bikes.

Increased proliferation of cargo bikes should be accompanied, or flanked, by standards for this traffic mode and measures to adjust the streetscape as well as the logistic concepts. Initial approaches like the BentoBox point into this direction, a solution presented by Dr Julius Menge of the Berlin Senate administration for Urban Development and the Environment. It involves a cross-company point of consolidation between delivery vans and bicycle couriers for the last mile. If electrically assisted, cargo bikes can increase the trip lengths and cargo weight. As opposed to the passenger car market, the market for electrically assisted bicycles today offers a large range of products covering nearly all segments.

Wolfgang Aichinger sketched how electrically powered vehicles can mitigate at least part of the environmental impact of road freight transport. He regards commercial transport as a field more suitable for using plug-in vehicles than private transport. This, however, presupposes some considerable technical developments. With batteries reducing the payload by 20%, using such vehicles may not be economically viable. Götz Bopp of the Chamber of Industry and Commerce of the Stuttgart Region explained that, besides on-board solutions and planning approaches to managing urban logistics, the demand side and customers' consumption patterns also play a crucial role. Supply and disposal are important urban functions, which, of course, have to be managed in an environmentally compatible way.

Evaluation and financing

The 2011 EU White Paper on Transport envisions nearly zero-carbon city logistics in large centres and switching distribution transport over to hydrogen, electric and hybrid vehicles by 2030, as highlighted by Tilman Bracher of Difu in the final discussion. Such political signals are likely to accelerate the replacement of fleets and trigger a generation change to lower-emission vehicles. Other political requirements like tightened consent limits for air pollutants and traffic noise or the EU Environmental Noise Directive illustrate the necessity of integrating commercial transport into planning processes.

Besides basic policies, this also requires adapting data collection methods and models, and especially communicating hands-on examples of strategies, activities and legal opportunities of implementation. Another important element described by Dr Katrin Dziekan of the Federal Environmental Agency consists in assessing and evaluating the implemented activities. Besides verifying goal achievement by evaluating the impact, the process evaluation accompanying the entire planning procedure must be analysed to identify inhibiting and conducive factors in planning implementation. Prof Dr Herbert Sonntag pointed to the serious statistics issue in commercial transport. This might be mitigated by standardising data

collection methods in commercial transport to improve comparisons between data gathered in different collection campaigns and tap into synergies. It might as well be imaginable to conduct a network survey comparable with the System of Representative Traffic Surveys (SrV). An improved data basis allows better recording of the issues and high-precision solution development.

Specific programmes promoting activities in the field of urban commercial transport are rare. Joachim Gerth of the German Ministry of the Environment, Nature Conservation, Building and Reactor Safety recommended resorting to the programme for promoting road alterations of arterial roads as these were also the focus of grievances in the field of urban commercial transport. Unfortunately, hardly any preventive activities - even for foreseeable upcoming problems - have enjoyed such promotion. Fred Dotter of Graz-based transport think tank FGM AMOR described the support provided by CIVINET Deutscher Sprachraum in disseminating knowledge and in assisting in - sometimes highly complex - applications for EU funding programmes in the field of urban commercial transport.

Conclusions

One important action area in municipalities involves integrating the earmarking of space for commercial urban transport into municipal land-use planning. Suitable logistics siting compatible with urban life – freight villages and peri-urban transshipment points – must be found and secured to minimise the number of truck journeys or redirect them to less sensitive routes. From a municipal perspective, it therefore appears meaningful to develop transshipment space for consolidating deliveries to craftspeople, retailers/wholesalers and households as well as concepts for last-mile transshipment.

Additional last-mile logistics space should be located in places close to inner cities and densely populated areas. Microhubs might be set up there as decentralised storage sites for deliveries, as well as automatic parcel delivery systems, delivery boxes and parcel shops to simplify door-to-door delivery to customers. Especially in road alteration schemes, land for delivery vehicle parking must be taken into account.

Thomas Kiel of Deutscher Städtetag stated that redistributing city space will pose major challenges to commercial transport in the next few years. On the one hand, there is a lot of demand for attractive sites, e.g. riverside or downtown areas, to be used for residential purposes. On the other hand, many municipalities support the idea of reserving land to facilitate transshipment towards the inner cities.

Besides managing the space requirements of goods transport, another meaningful solution appears to involve using clean hybrid trucks that would run under fully electric power in sensitive inner-city areas, thus reducing local pollution. Offsetting the extra costs of electric vehicles in commercial transport would, according to the opinions expressed by all experts in the final debate, be a promising field of funding effective action in the national electric mobility programme of the German Federal government.

Further potential initiatives include setting up delivery zones and opportunities for night-time delivery with low-noise vehicles (electric vehicles). On the one hand, this raises the question of the specific on-site requirements, and on the other, of harmonisation of certain rules and regulations, e.g. parking cards for craftspeople and tradespersons, or regarding the compliance with noise limits during night-time delivery. In view of competing land uses in streetscapes, Gerd Bretschneider of Fuhrgewerbe-Innung Berlin-Brandenburg e.V., a regional road haulier interest group, pronounced himself in favour of giving commercial transport the same attention paid to local public transport or garbage disposal.

At the end of the day, commercial transport requires developing complex concepts based on a combination of core, flanking and supporting activities. There is hence no simple answer to the question “Who and what is really helpful?”. An unequivocal finding is, however, that city-compatible management of urban commercial transport must reunite all political levels, along with loading as well as transport operators in cooperating towards developing and implementing a locally tailored and effective combination of activities.