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Low Carbon Logistics

First sketch for preparation of a research – and developmentproject in the field of EU Funding InterregV South Baltic Programme 2014-2020

Almost everywhere cities are in a process of permanent growth related to population and economy – a process that goes along with higher and higher freight volumes. Even in the tourist-oriented towns freight transports are a problem, because the tourists will stay away if noise, stench and uncertainty increase and, in worst cases, even the SPA status of such locations could get lost. Urban municipalities are under pressure to reduce local CO2 emission, fine dust and noise loads.

Freight services contribute to urban transport with 20 to 30 percent only, but cause about 80 percent of urban traffic jams – the feared “moving bottlenecks”. Furthermore, many of the transportation vehicles drive with half load when passing the city. Institutions like hotels, hospitals and shopping centers are approached every day by many, sometimes half-empty transporters, which results into overcrowded loading stations and further increased congestion.

In addition, European climate objectives towards reducing green house gases and fine dust emissions must be targeted and while ensuring a close to smooth traffic flow in the locations. According to the EU Commission's guidelines of urban traffic, Europe shall be completely CO2 neutral in 2050. Already by 2030, a nearly emission-free city logistics shall be achieved.

Considering this, the pressure on the cities regarding a development of sustainable transport infrastructure solution further grows. What has been achieved regarding local passenger transport in many places is completely missing for urban freight transport. With regulatory measures alone - a congestion charge or low emission zones - the municipalities will quickly reach their limits. Modern city logistics is demanded. The aim is to make the inner-city freight more efficient and less polluting by means of purposeful planning and control which can be achieved via cargo consolidation outside the city borders and last mile transport in smaller vehicles only at defined times of the day and with emission reduction.

This idea is far from new. For efficiency reasons, some offerers have made first attempts on their own, but without achieving the decisive effectiveness. This could be drastically changed if logistic service providers and municipalities start to cooperate and adjust to the challenges the other side is facing. Municipalities have their specific procurement procedures, specific decision making processes and a specific perspective on risks. These differ from those of logistics service providers. Both sides have to become aware of the differences and orient their work to this.

Solutions for load consolidation include load handling terminals at the city edges as collection points for lorries, a separation of different good groups, commissioning on the pallet level according to the order of delivery and a standard labeling plus IT system for handling, route planning and invoicing.

Another decisive factor is the way of distribution into the cities. A distribution from the terminal with small and smallest vehicles depending on the transport good makes sense. Thus, load bikes, traditional small pickup trucks or electric trucks, sometimes even electric trucks for larger goods can be used here. As certain goods can only be transported with larger vehicles so that container piggyback solutions must be developed here.

Furthermore, route planning and time scheduling are needed during the supply which can be implemented by using traffic-related forecast tools, RFID tags, GPS devices, street sensors and barcodes. Thanks to geofencing (entering or leaving pre-defined zones) and location based tracking, routes can be read in real time and a spot can be bypassed in case of unexpected interruptions.

To ensure the success of the concepts, cities must create framework conditions. Which means: internal planning points and control bodies must be established and areas for consolidation centres must be provided. The logistic service provider must start to rethink and develop tailor-made solutions for efficient, climate-protecting inner-city goods supply in close cooperation with city administrations, IT service providers and vehicle manufacturers.

With that kind of modern city logistic, cities and logistic service providers achieve a reduction of CO2 loads via goods traffic for 30 to 40 percent. This corresponds with four to six million tons carbon dioxide less per year. Furthermore, the traffic flow in many cities could be optimized for up to 40 percent.

And last but not least: A completely new market for logistic service providers develops here – with a huge turnover potential. Even today, incomes of about 24 billion Euros are on the global horizon.

We would like to invite you to participate in the development of this project and take advantages of good examples from other countries and regions and exchange experiences with other partners in the South Baltic area.

The project shall be funded in the Interreg South Baltic Programme 2014-2020. International partners are:

- Sweden: **Energikontor Sydost AB - Energy Agency for Southeast Sweden**, Karlskrona
- Poland: NN
- Lithuania: NN
- Germany: Competence Centre of Rural Mobility

The project could for example include:

- Planning, construction and operation of a goods handling terminal
- a Community Building strategy inside municipality, transport companies of all kinds and companies in the city that depend on logistic services

- a profound operation strategy.
- Legal safe holistic solutions for single companies in situ.
- Traffic solutions that indeed result into reduced traffic flows and reduced emissions
- An ICT traffic optimization concept based on real time information for significant avoidance of rides and emission reductions

For this purpose, the Competence Centre of Rural Mobility wants to involve the following partners into the project:

- Legal issues: IKEM, University of Greifswald (confirmed)
- Community Building: Research team Communication, University of Rostock (confirmed)
- IT and Traffic Solutions: Fast information technologies (asked)
- Vehicle and load solutions: Voith GmbH (asked)
- Most important partners: City administration (asked), shipping companies and local entrepreneurs

Wismar, this 22 June 2015 Udo Onnen-Weber