Cargo trams to relieve clogged streets?

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Urban freight transport as we know it has reached its limits in many towns, particularly the ones with medieval road plans. Can rail be the answer?

The use of rail in urban freight transport in Europe hasn't really outgrown the experimental stage yet. PhD researcher at Swedish University of Gothenburg Niklas Arvidsson compares various projects to find out what would work best in his home town. His research is part of a bigger project involving six PhD students, which is partly state financed, partly paid for by logistics companies.

Case study
In his paper Niklas describes four cargo tram projects:

- Dresden - CarGoTrams (2000-today). Hourly service, only from distribution centre to Volkswagen factory in city centre and back.Vienna - GüterBim (2004, on hold). Transport of spare parts between the main workshop and the satellites of the freight light rail of the Wiener Linien (the municipal public transport operator) + testsZürich - Cargo tram (2003-today). Bulky waste collection from households along the city´s peripheries, near the trams' final stops. Amsterdam - CityCargo (2007-2008, bankrupt). Large scale distribution of goods to stores and restaurants.F097 image 2

Dresden is a privately owned operation between two points and Zurich and Vienna are non commercial municipal services focusing on waste recycling and transport of goods for the retail industry respectively.

Amsterdam is the project Niklas identifies as closest to realising the concept. “But unfortunately things did not turn out well,” he says. Niklas describes the Amsterdam case, on which we reported earlier here on *MindsinMotion.net*, in detail.

We're curious about his research and his plans for Gothenburg. This summer Niklas will present his case study, but that will not be the end of his involvement. He is looking for the right way to realise actual rail freight transport in Gothenburg. His research has taught him dos and don'ts in general and for Gothenburg in particular.

Wiser
Amsterdam and Gothenburg share many geographic and political characteristics. But Gothenburg can learn from what went wrong with CityCargo. The Amsterdam project was launched during the

last days of financial prosperity. "Banks even demanded that the project would be large scale from the very start," says Niklas, sounding astonished. His case study suggests that starting small is the wiser option.

Niklas distinguishes five barriers:

- F021 Image 1An electrical car has limited radius; rail freight transport lacks door to door capability, so requires additional transport, for instance by electric distribution vehicles (EDVs).
- Both the trams and the vehicles distributing goods further, mustn't hinder personal traffic or daily city life.
- Building add-ons, or sidings, to tracks for loading and unloading in the city center is very costly.
- Potential opposition from other logistics competitors.
- The number of actors involved is greater in light rail freight than in traditional freight by truck set-up, which complicates the decision process, implementation and cost-benefit division amongst the actors.

Design
Apart from the benefit of hindsight (from previous projects) Gothenburg has another advantage: there are old tram models (M28/M29) available, which are perfectly suited for the project and are very cheap.

Specific tram designs can be problematic. Because of the narrow local streets, Amsterdam trams, for example, are about thirty centimeters narrower than their Gothenburg counterparts. What's more, the Amsterdam trams are not suited for an EDV roll on and roll off scenario. The old ones have a 'drop centre' design, meaning the middle wagon is lower than the other two, whereas the new ones are built for disabled people with low entrance possibilities throughout the entire tram, requiring the wheels to be built in and sticking up in the compartment. The floor of a M28/M29, on the other hand, is flat from the back to the front and fifteen metres long.

Added value
Niklas is enthusiastic about the combination of tram and EDVs, for it gives employees the opportunity to be part of a team, rather than work alone as is usual in

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freight transport. "Our set up requires a team of six," he explains. "The added value of drivers is when they deliver goods. Whereas normally you'd have drivers driving back and forth, our team consists of one tram driver delivering two full truck loads every hour, and truck drivers in the city centre and in other places where the tram has stops, who drive only the last mile.

"Tram driving is not as expensive as many people think," Niklas adds, "so that is a bonus. But the real money making will be in the efficiency increase."

One shot

So what, according to Niklas, are the chances of Gothenburg getting an electric cargo tram soon?

"I don't want to rush things," says Niklas, "I'm in this for the long term. You see, I only get one shot at convincing people. But I don't want to be too well prepared either, presenting one all-inclusive plan, for participants must feel they're part of the project and I value their knowledge and input.

"We haven't contacted operators yet, but we're working together with the environment manager at the traffic office now, who is 'carefully optimistic' – or realistic, I should say. I'm a little bit more optimistic myself. I'm constantly looking for things that make me stop, like the weight issue of a bridge that needs to be crossed, but I haven't found any so far."