

Demand Responsive Transportation – the Danish model



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Agenda

1. Flextrafik – Demand Responsive Transportation in Denmark (Movia)
2. The content of "the Danish model"
3. The future of Flextrafik



Movia

Movia is Denmark's largest public transport company. Movia is owned by 45 municipalities and Region Hovedstaden and Region Sjælland. Movia is responsible for public transport in Eastern Denmark with buses, local trains, and flexible transport services. Movia purchases transport services for over 5 billion DKK annually.



Movia offers "all inclusive" DRT

- Conducts tendering and negotiation of contracts
- Order- and planning system
- Physical quality monitoring with +500 on-site inspections of vehicles every month.
- Offers variety of products
- Conducts traffic Management and support to municipalities and regions
- Optimization and development
- High customer satisfaction
 - 87% of users are either satisfied (40%) or very satisfied (47%).
 - 97% of users experiencing that the Flex vehicle on their most recent trip appeared "well-maintained, clean, and safe".



The content of "the Danish model"

The Danish model is a combination of three major presumptions:

1. Combined operation of various transport types
2. High demand density
3. Combined tender model



Flextrafik (DRT) in Denmark offers integrated services (1)

FlexPatient

Free transportation from home to hospital for patients who cannot arrive by regular public transportation because of illness, disability, frailty, or lack of adequate transit service in rural areas. Provided in all regions, but not necessarily by Flextrafik.

FlexHandicap

For individuals with a severe mobility impairment. Flextrafik provide at reduced cost 104 one-way leisure trips per year to citizens with severely reduced mobility because of disability or frailty, at an out-of-pocket cost no higher than the cost of public transportation. Provided by Flextrafik in all municipalities in Denmark.



Flextrafik (DRT) in Denmark offers integrated services (2)



FlexMunicipality

Subsidized transportation to get residents to non-hospital medical appointments.

Provided in all municipalities, but not necessarily by Flextrafik.

FlexTur/PlusTur

Allows any citizen to arrange demand responsive transportation through Flextrafik. FlexTur riders share the cost of transportation with their sponsoring municipality.

Provided in all municipalities outside Greater Copenhagen.

Integration of DRT in Public Transport

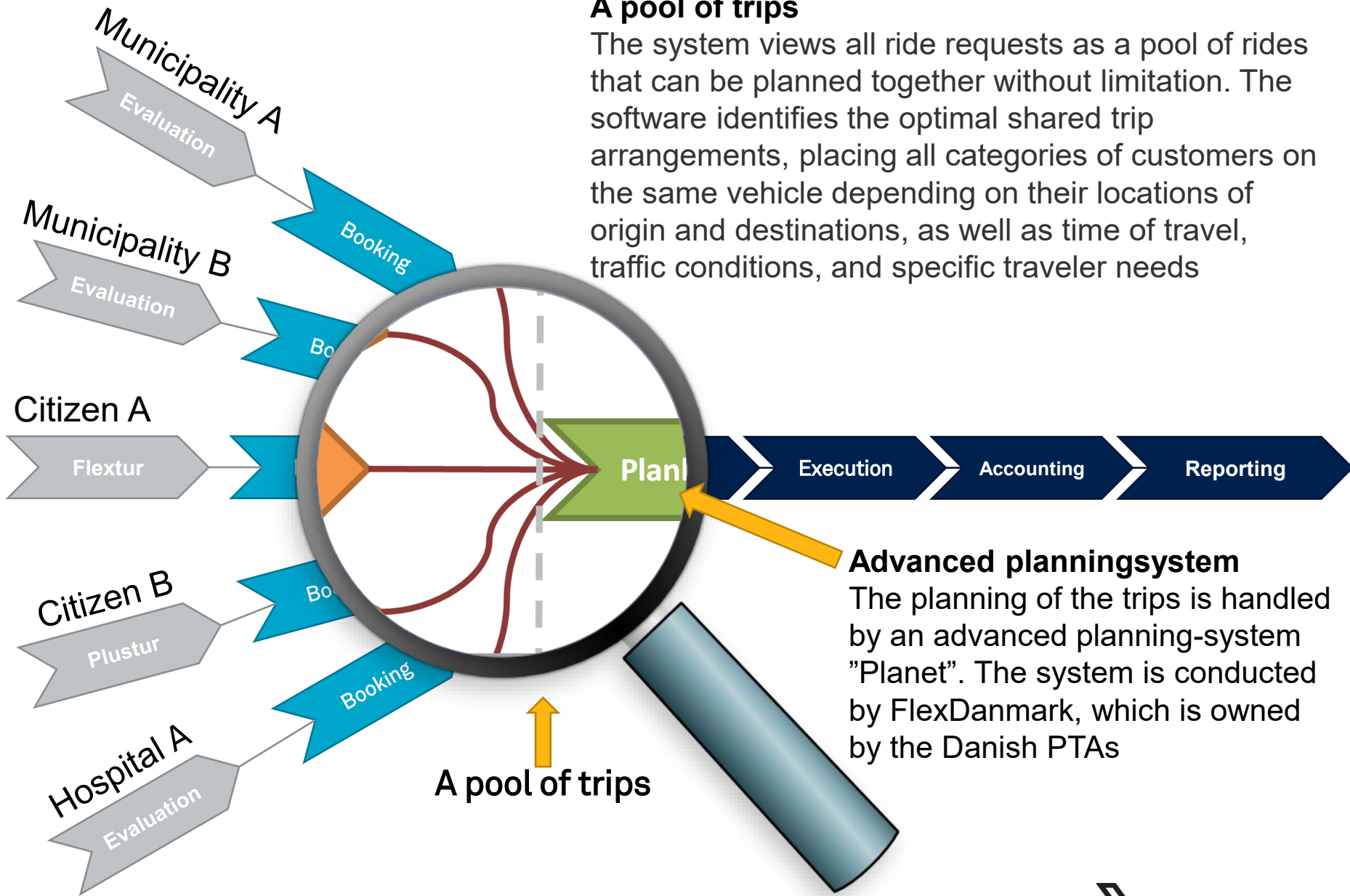
National collaboration between Public Transportation Authorities (PTA) in Denmark.

Integrates the PTAs DRT-solution “Flextur” in the Public Transport as a last mile-solution called “PlusTur”.

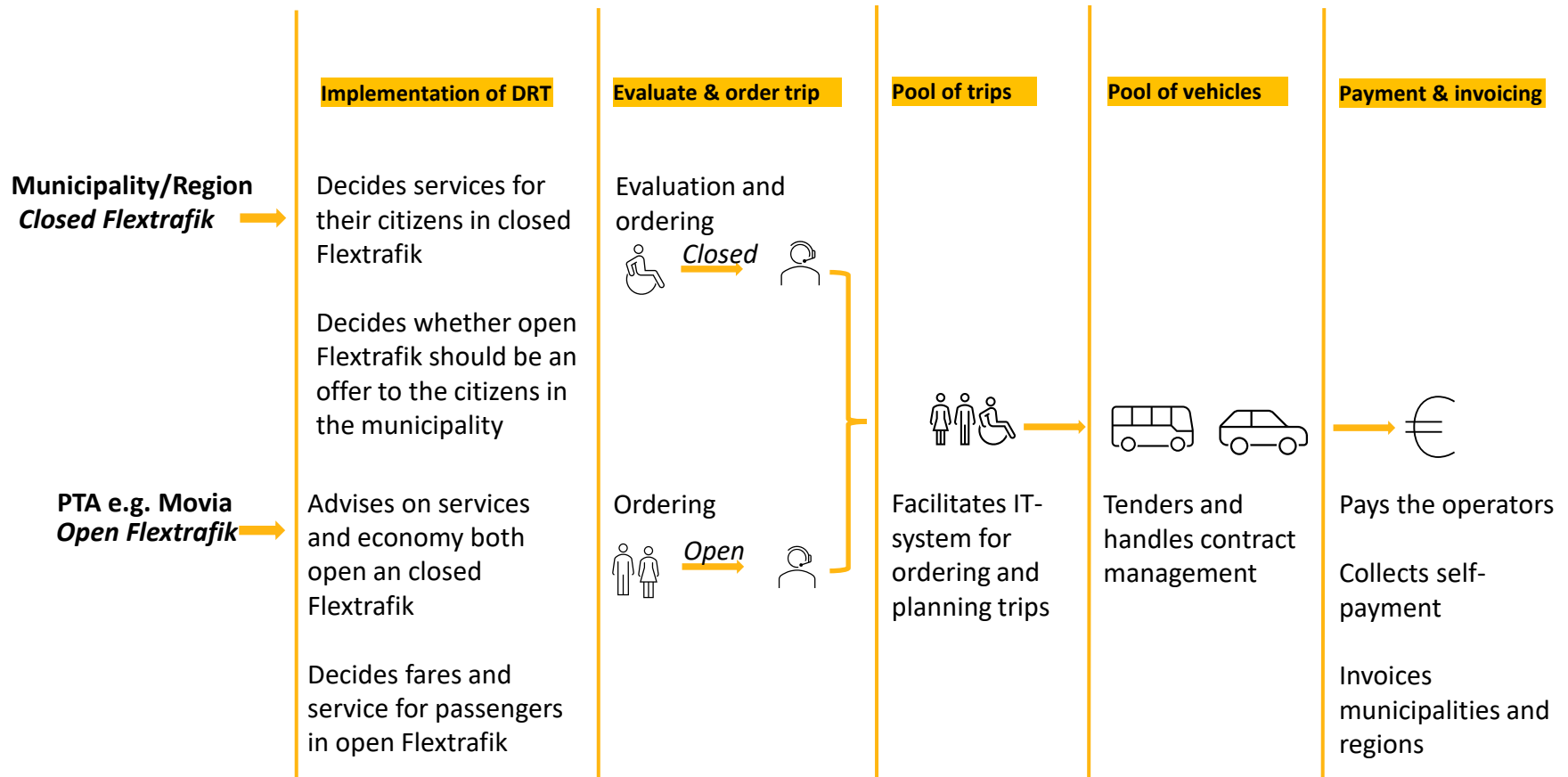
Focuses primarily on accessibility to bus and train in areas with lower population density

Plustur is only an option when certain criteria are fulfilled, e.g. distance to the nearest bus stop or train station or waiting time for the next departure.





Demand Responsive Transportation (DRT) in the Danish model

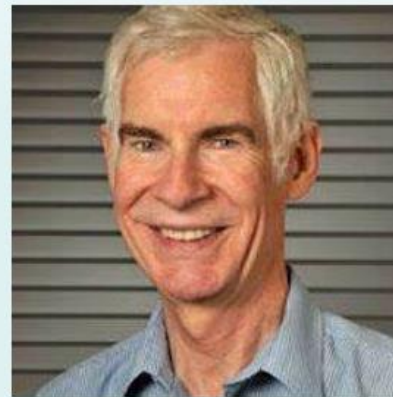


Demand density

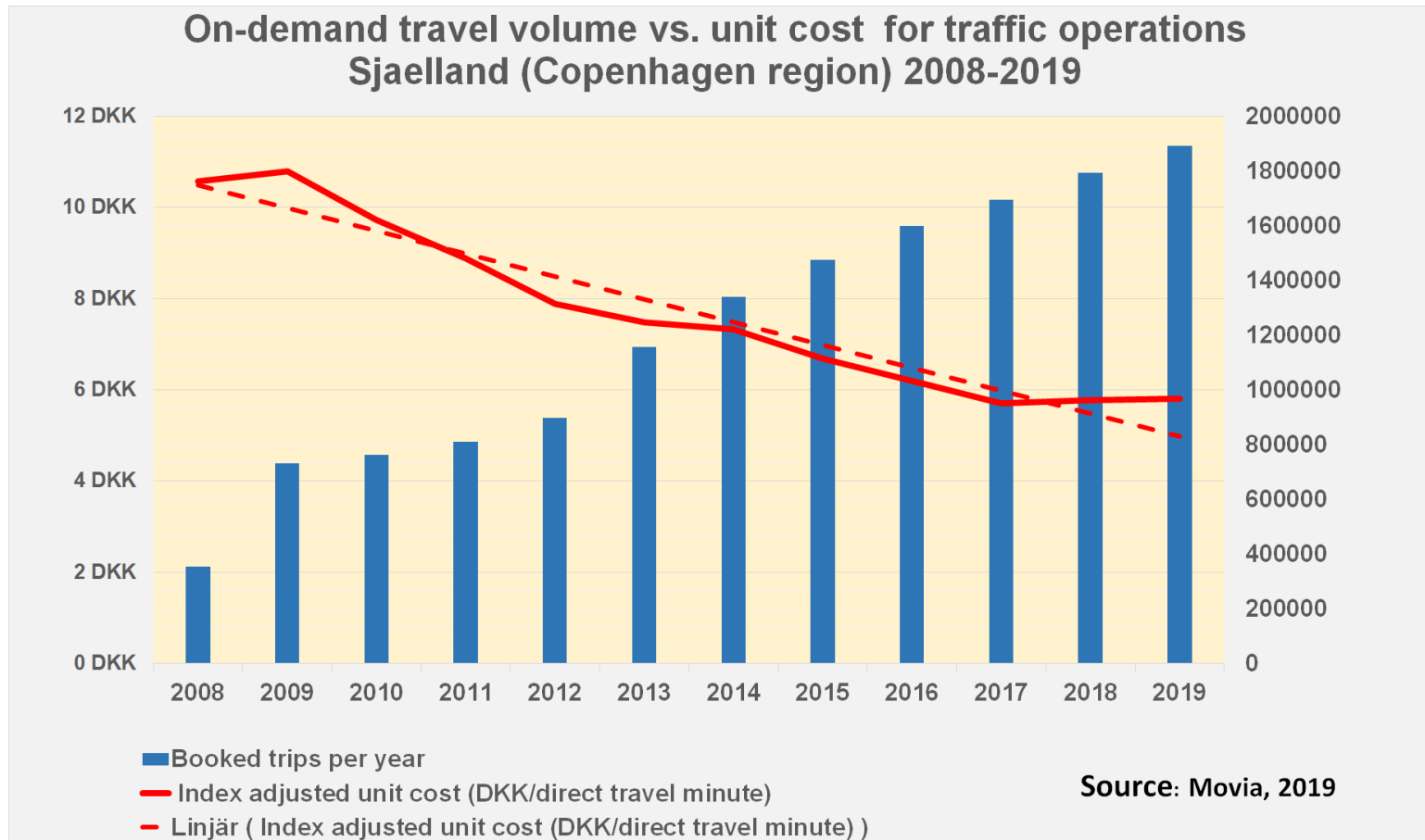
”It is all demand density, stupid!”

Famous statement by MIT professor Nigel Wilson at a DRT conference in Monterey, CA, 2014.

Wilson was one of the founders of optimized DRT services during the 20th century ..

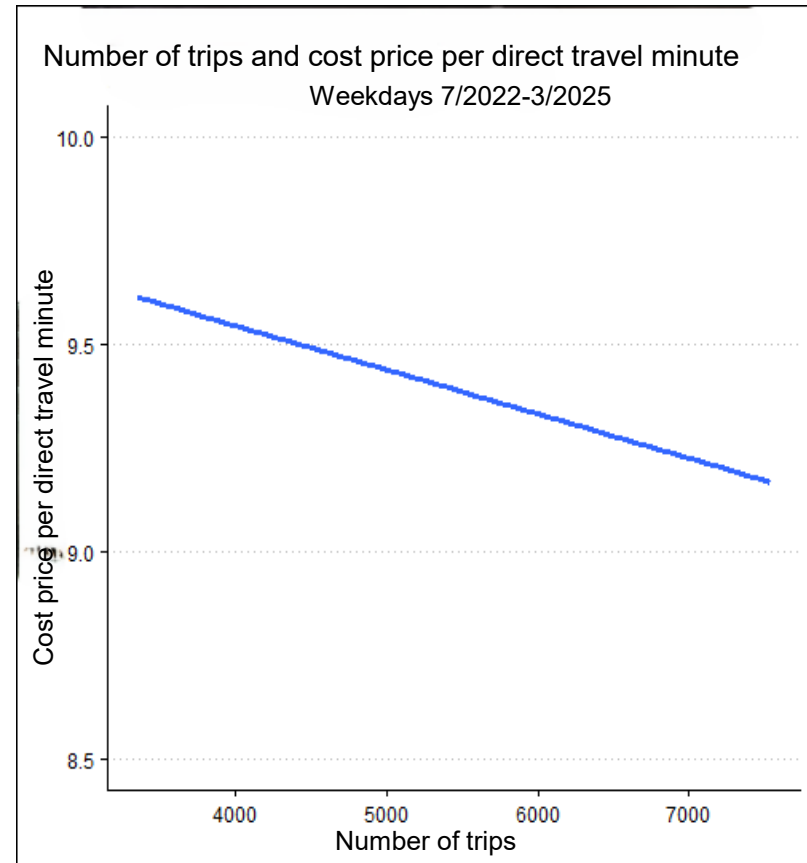


Travel volume vs. unit price



It's the demand density, stupid...

- Operating efficiency improves significantly with increased demand density.
- This applies across the entire Movia area, but also locally.
- The correlation between demand density and financial performance increases when external influences are reduced, for example in peripheral areas.



The combined tender model

Movia conducts tendering and negotiation of contracts with operators on behalf of all municipalities and regions. Low market-entry costs for operators.

- *Local market model (“spotmarket”)*
A unit price (danish kroner per vehicle hour) is given at the bidding moment (e.g. every year) and then used each time when assigning a suitable vehicle for the actual transport task (combined with other parameters)

The spotmarket contracts (approx. 85 % of all vehicles) ensures **low costs**, while only being paid when used

- *Fixed contracts*
A guaranteed minimum availability (9 hours) in the contract (contracts for 2-4 years). A geographic spread is ensured in the tender

The fixed contracts (approx. 15 % of all vehicles) ensures **security of supply**, while they are always available and not allowed to refuse trips





The future of Flextrafik in Movia

- Approximately 1.9 million passengers annually
 - Stable level over several years
- Continued focus on high quality
- Green transition:
 - All new passenger cars in Flextrafik will be electric from 2025
 - Trials with electric lift vehicles are ongoing, but progress is slower. Is to be combined with trials of charging stations at, among other places, hospitals
- Further integration with the rest of the public transport system
- Efforts are being made to expand cooperation, e.g. with more municipalities, to the benefit of all — citizens, regions and municipalities.
- Maintaining a high volume is essential for operational efficiency ⇒ ensures continued competitive pricing



Thank you for your time