Institute of Transport Economics
Norwegian Centre for Transport Research

ENGLISH Summary

ViV - a living lab for sustainable deliveries
– On ViV and the urban consolidation centre Fornebu HUB

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The main findings of the report are:

- ViV is a living lab for sustainable last mile delivery in urban areas, with an organisation and working methods that supports intermunicipal cooperation, innovation, learning and resource acquisition.
- The pilot Fornebu HUB highlights that current legislation, business structures and traditions in the logistics and transport market make it challenging for municipalities to facilitate urban consolidation centres.
- TØI researchers have developed a first version of a simulation model for pre-evaluation for urban consolidation centres. With further development, the simulation model can help make effective choices between alternatives in the development of the service.
- There is a need for interdisciplinary studies of urban logistics measures, including studies of the business and social value creation of urban consolidation centres and other urban logistics measures. ViV is a good case that should be evaluated at the end of the project period.

About ViV

ViV - *Goods Logistics in the E18 Western Corridor* - is a regional collaboration for sustainable solutions for last mile delivery in urban areas. The initiative's purpose is for the last mile to contribute to attractive cities and towns, reduced greenhouse gas emissions and efficient solutions for the business sector. ViV is a Norwegian living lab where new solutions are tested, developed and evaluated on the heavily populated corridor along highway E18: Oslo, Fornebu, Sandvika, Asker and Drammen. ViV is also working on the development of new ways for municipalities to collaborate, both with other public actors and with private actors. The partners were/are Viken County (from 2024 Akershus and Buskerud Counties), Oslo Municipality, Lier Municipality (from 2024), Bærum Municipality, Asker Municipality, Drammen Municipality and the Norwegian Public Roads Administration. The ViV project started in 2020 and is planned to be completed in 2025.

ViV is not a legal entity and therefore cannot enter into agreements or make binding political decisions. Cooperation agreements are entered into between the individual municipalities and actors who are not partners in ViV. Each municipality is responsible for the implementation of

pilots and measures in its municipality, so these are subject to the same democratic processes, management and control regime as other pilots and measures in the individual municipality. This organisation also helps to ensure that results and processes are better anchored in the municipalities and that both ViV, pilots and measures can be adjusted and adapted on the basis of a wider range of considerations and knowledge.

The organisation and working method in ViV:

- seems to be well suited for collaboration across organisations at different levels of government in the public sector
- facilitates the development of new ideas and solutions. A great deal of effort is being made to find solutions to barriers, including knowledge gathering and reorientation of the planned course.
- seems to handle complexity, risk, uncertainty and adversity related to concept development and piloting in a constructive way. The concepts that ViV wants to pilot are very ambitious, and the development of new solutions with the goal of scaling up lasting, commercially profitable operations is demanding and unpredictable.
- has contributed to good access to project funding, as well as mobilising resources and knowledge across municipalities and between departments in the municipalities. Noteworthy here, and somewhat untraditional, is the cooperation between the planning communities and procurement departments in the municipalities.
- supports the acquisition of external knowledge, learning from concept development and piloting in ViV and the sharing of insights and results with actors outside ViV.

ViV is financed through county, municipal and external funds. Each partner pays an annual participation fee, which goes to, among other things, covering the salary of ViV's project manager. External funding is obtained through applications to calls for climate, innovation and research funding. Most of these funds are earmarked for specific projects, studies, tasks or pilots, and a significant proportion of the funds are used for project appointments in the municipalities.

ViV is working on four concepts with the goal of developing these into pilots and, in the long term, lasting solutions: Hub, pick-up point (parcel locker), streamlining of municipal deliveries and a digital marketplace for goods logistics. In addition, work is being done on testing new technology, where a drone project is being carried out.

Fornebu HUB

Fornebu HUB (2022-2025) in Bærum municipality is an urban consolidation centre pilot that originates from ViV and seeks to consolidate goods between private logistics companies to reduce vehicle movements related to last-mile goods deliveries. The pilot is carried out in collaboration between Bærum municipality (project owner, project manager), Bytjenester AS (operator) and Aker Property Group AS (owner of premises). The municipality assesses, tests and introduces measures that will enhance the benefits of using Fornebu HUB, including through municipal procurement and traffic regulation for goods transport in Sandvika.

It has proven difficult to get the providers of logistics services in the parcel distribution market (Posten, DB Schenker, PostNord) to use the delivery services provided by Fornebu HUB. Bærum municipality has started a collaboration with its largest suppliers to senddeliveries via Fornebu HUB. In principle, this is voluntary on the part of the suppliers, as it was not a requirement in the current framework agreements. ViV is working to include the use of a urban consolidation centre in framework agreements.

It is challenging to get enough product volume / customers to use Fornebu HUB. If Fornebu HUB is to be a permanent offer managed by the municipality and with an interchangeable operator, it will probably require even stronger involvement with the customer base than the municipality has today.

With a switchable operator, system integration (communication between the customers' and the assembly terminal's computer systems) should also belong to Fornebu HUB or the solution should be available in the market so that a new operator can offer a seamless transition. During the first two years of the pilot, there has been a lot of manual work to keep track of all deliveries, this is the biggest barrier to efficient operations.

Fornebu HUB largely faces the same challenges as other urban consolidation centres that have been tested as part of public sector and/or research initiatives. Most of the consolidation centres that have been in operation for several years (often with relatively modest public subsidies), have either had the exclusive right to deliver during certain periods of time or the hub is an alternative to paying tolls to drive into the city centre.

The municipality's efforts to find customers for the consolidation hub and make it work efficiently must not displace the focus on the goals of reducing traffic and land use generated by goods delivery as a whole. It is important to take into account that the consolidation affects logistics chains that are not part of the hub.

ViV has, to a greater extent than other urban consolidation centres described in the literature, raised issues related to laws and regulations as barriers to the achievement of societal goals. This applies to the regulations to ensure fair competition (competition law, state aid legislation), traffic rules, procurement rules and perhaps the Local Government Act.

Tools for evaluating urban consolidation centres

TØI researchers have developed a first version of a simulation model for urban consolidation centres. The simulation model is intended to be used as part of a pre-evaluation, where it will be investigated how well an urban consolidation centres will function. The model, if further developed, can help make effective choices between alternatives in the development of the service by simulating different scenarios. The information can be used for preparation and planning of the design of the service, goals of the service and which indicators to measure.

Need for further research and development

The ViV project shows that the legislation provides a narrow scope for the municipalities to implement measures aimed at the reorganisation of the last mile. Limitations or possible limitations have been registered in the Road Traffic Act, the Competition Act, the state aid rules, the procurement rules and perhaps municipal legislation. There is a need to take a critical look at the regulations as a whole and see how they relate to societal goals. Similarly, there is also a need to look at the traditional roles of the various actors in the value chains for urban logistics and for transport and land-use planning as it is carried out today. There is a need to carry out interdisciplinary studies between law, logistics, transport and social sciences, among others.

There is a lack of data to perform good calculations of the socio-economic costs of the first mile and last mile links in the transport chains in cities and how this is affected by congestion

and time spent in urban areas. Inherited traditions for which actors have which roles in urban logistics, and how this corresponds to sustainable urban development, have been little studied.

When it comes to new initiatives for urban consolidation centres with the goal of commercial profitability, it may be appropriate for other municipalities to wait until ViV has made further progress in its development work. A research question that should be elucidated further is: Are there contradictions between what urban consolidation centres offer as value creation for their customers in order to achieve sufficient revenue stream (market positioning) and the solution that best provides the desired value creation for society in the form of less traffic, less land use and fewer emissions?

ViV has gained valuable knowledge and experience about parcel lockers and the use of municipal procurement to achieve savings and creating more efficient logistics. We recommend that an external final evaluation of ViV be carried out.