SURFLOGH WP 6 BUSINESS MODELS

Borås Case Study:

The Good goods approach for clean and efficient city logistics in Borås

Authors	Chrstoffer Widegren, Sara Thiel, Jonathan Cowie, Keith Fisken
Quality Assessor	Damian Stantchev
Date	1st June 2021

CASE STUDY : The Good Goods approach for clean and efficient city logistics in Borås

1. Introduction/Background

The case study surrounds the establishment and subsequent development of the Good Goods concept in Borås, which was targeted at introducing new solutions for consolidation of goods to the city centre and zero emission logistics for goods and recycling material. The main focus of the project was B2B, however after initial operations were established, B2C also become partly relevant when integrated with home deliveries.

2. The City of Borås

Borås is a trading city which in recent years has seen a strong growth in population, and currently has 113,000 inhabitants. It is also home to 13,000 businesses, with the main industries being e-trade and textiles, both of which heavily rely on well-functioning logistics. The logistics sector itself however has seen strong growth, to the point where Borås is now a major logistics hub and dryport for Gothenburg.

The city aims to strengthen sustainable regional competition by knowledge support within the regional strategy of Västra Götaland. Other development areas are the "Cost to serve" strategy, which aims to provide the inner-city connection with a supply chain approach that is focused on CO2-neutral transports, and different key-cases which employ innovative high capacity electric truck/bike systems and IT-support. Another key aim of the strategy is to achieve a steady city freight policy by creating future infrastructure options that favour a pedestrian friendly inner city centre.

Borås is a highly active member of the European Textile Collectivities Association (ACTE), an organisation that is made up of 30 municipalities across the European Union which represents the interests of territories with strong textile, clothing, leather, footwear and fashion industries. ACTE manage joint projects in all spheres of the network, often co-financed through European or national programmes.

Within Borås, other EU co-financed projects are "KRUT" (get people into work), "KOBRA" (an educational project), "Point" &"Space" (integrate skills and business) and SINFONIA (deployment of large-scale, integrated and scalable energy solutions in mid-sized European cities).

3. Policy framework

In terms of the national policy framework, as from 1st January 2020 municipalities in Sweden were given the legal power to introduce one of three different levels of low-emission zones into all or parts of their respective areas, but it has been left to individual cities themselves to decide whether and where low-emission zones should be implemented.

The first type of low-emission zone (LEZ Level 1) regulates heavy-duty vehicles (lorries and buses, linked to age and EURO-class). The second type of LEZ (level 2) sets standards for cars. Initially, diesel cars that meet the Euro 5 and 6 emission standards may drive here. As from 1st July 2022 however,

standards will be made stricter, allowing only Euro 6 diesel cars, with no differentiation made between these vehicles and hybrid electric/diesel engines. Petrol-driven cars will have access if they meet Euro 5 or higher, with the same criteria applied to hybrid electric/petrol vehicles, natural gas vehicles and E85 vehicles. Cars with better environmental performance, such as electric cars and fuel-cell vehicles, will still be able to enter these zones.

The third type of LEZ (level 3) sets the highest standard. This zone only allows purely electric, fuel-cell and gas-driven cars that meet Euro 6. Similar standards also apply for heavy vehicles.

At the time of writing, 8 municipalities had introduced level 1 LEZs, with Stockholm being close to formalising a level 2 LEZ. Borås itself however, has not as yet introduced any of the forms of LEZs.

In terms of local traffic regulation, the main affected parts in Borås are central areas that are regulated as pedestrian zones. Some intersections with other streets are walking speed areas, and a few are ”regular” streets (with pavements, parkings, loading bays etc). The pedestrian zone regulation means that only authorized traffic is allowed to enter the streets (i.e. residents, deliveries, emergency transporter). Beyond these measures, there are no further restrictions regarding access to the pedestrian zones, such as time windows or vehicle lengths in the case of delivery vehicles, although some streets do have specified loading bays.

At the time of writing, there are a number of measures being considered in order to reduce traffic in certain areas of the city, such as:

- Length regulations
- Car free zones

Time windows are also being considered for certain streets and street segments, to reduce freight traffic at times of the day when there is a high presence of pedestrians and cyclists on the streets.

One final point to highlight is the Borås Connect initiative. This is a strategic development concept that aims to strengthen the position of Borås as a leading logistics region, develop efficient and environmentally friendly transport solutions, and develop new logistic infrastructure. As a result, national/international, regional and local logistics are integrated in order to facilitate:

- High capacity transports
- Dry port facilities
- Efficient and zero emission city logistics, hence the development of the current Good goods pilots
- Overall fossil free transports
- Electrification of terminals, regional transports and last mile transports
- Test and validation

Perhaps unusually within a local authority, Borås does have a high focus and expertise in the area of logistics/freight transport, and active links with leading industry players. As an example of this, Borås is a leading partner in the ‘Autofreight’ project, which is a research and development initiative to enable automation of long vehicle combinations between major cities. In the project, the authority is responsible for the construction of the traffic system for more efficient container transport together with Ellos Group, Kerry Logistics, Fristads, Speed Group, Volvo Buses and GDL Transport. The transport system will also be linked to future potential feed systems of goods to Borås city.

4. Good Goods Operations

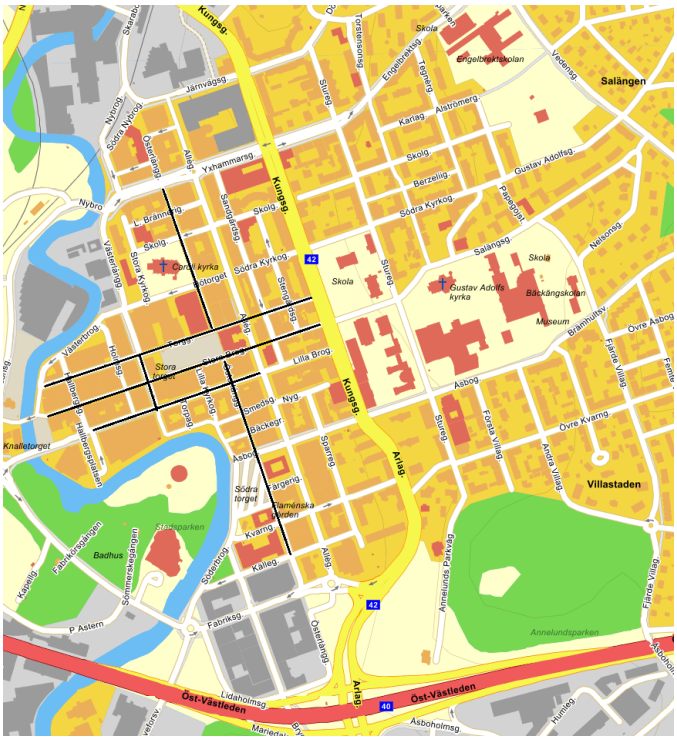
Good Goods came about due to the need to create solutions for consolidation of goods to the city centre, as well as zero emission distribution of goods and waste. As such, the municipality of Borås (Department of Trade and Industry Development), The Merchant Organization Borås City, and the real estate owners association joined forces with local transport company Stures Åkeri and the municipal company Borås Energi och Miljö in the Surflogh Pilot "Good Goods".

Stures Åkeri AB is one of the larger hauliers located in Borås and mainly transport general cargo and less than truckload consignments under contract to DHL in the Västra Götaland region. The link with DHL was the main basis on which the Boras micro hub was established, although branded as 'Good Goods' rather than DHL, with the intention that other transport carriers and PCS operators could also place local deliveries (and collections) through the micro hub. In practice however, the price of actually using the facility (for other carriers) proved to be a significantly less critical factor than the principle of handing over goods to another operator for last mile delivery.

A secondary revenue flow was established in collaboration with Borås Energi och Miljö to provide a collection service for dry waste, hence introducing an element of two-way flows into the operation. As a result, deliveries could be made to clients, and then dry waste taken away in the van. In order to facilitate this service, a specially designed trailer was attached to the van.

In order to provide the service, small warehousing space was rented to the west and adjacent to Borås city centre, and as this was a micro-hub, only very basic facilities were required. An electric van was leased, however due to the dual-purpose of the operation, the vehicle used, from the perspective of waste and recycling materials, was completely different from regular refuse trucks with less storage space and no opportunity to compact waste. Nevertheless, in operation the vehicle proved to be far less intrusive than regular waste collection vehicles in dense parts of the city, and highly suitable for the transport of certain recycling materials (especially glass) from the city centre to the consolidation point adjacent to the micro-hub. Focus for the delivery option was exclusively on small consignments. This was generally consistent with Stures Åkeri AB existing business for DHL in Borås, and it was hoped that this would enhance the opportunities to achieve significant consolidation effects from other operators. A further factor in this decision was because the electrical power van has a slight disadvantage regarding cargo space compared to a regular distribution van, with around a 1t carrying capacity compared to 1.3t capacity for the latter.

The streets within the main focus of Good Goods are marked on the map below. However Good Goods does also occasionally operate in the surrounding areas.


Kungsg.
Salängen
Villastaden
Allag
Östra Kyrkog.
Lilla Brog.
Stora Brog.
Stora torget
Lilla torget
Knalletorget
Stadsparken
Badhus
Arnelundsparken
Östra torget
Östra Kyrkogårdsgatan
Fabriksg.
Lidaholmsg.
Asboholmsg.
Östra Villag.
Fjärde Villag.
Femte Villag.
Andra Villag.
Övre Kvarng.
Övre Åsbog.
Åsbog.
Gustav Adolfs kyrka
Museum
Bäckängskolan
Engelbrektskolan
Järnvägsg.
Yxhammarsg.
Nybro
Nybrog.
Östra Nybrog.
Västerbrog.
Hantverksg.
Hallbergsgatan
Fabriksgatan
Sommarskeegatan
Sågarbrog.
Sågarg.
Smedsg.
Nyg.
Bäckegr.
Kvarng.
Källeg.
Stureg.
Torsten Ivarsg.
Engelbrektsg.
Tegnerg.
Karlag.
Alströmerg.
Skolg.
Berzeliig.
Gustav Adolfsg.
Papeggen
Salängsg.
Nelsonsg.
Bjärnulfsg.
Vendersg.
Fabriksg.
Österlångg.
Annelunds Parkvag
Kungsg.
Östra Kyrkog.
Stora Kyrkog.
Östra Kyrkogårdsgatan
Östra torget
Östra Kyrkogårdsgatan
Östra Kyrkogårdsgatan
Östra Kyrkogårdsgatan

Borås Energi och Miljö and Borås Municipality. This is also consistent with a bottom up approach (Cowie and Fisken, 2019), with complementarity rather than competition/substitution the major issue. As such, Good Goods does not formally act as a subcontractor for other (large) logistics companies, but rather base volumes are generated from established partnerships. What this constitutes is the base level required to run efficient operations with the view to adding further volumes and services in the future. This also means that the marginal costs of the operation are significantly reduced, and hence the need to establish a critical mass (in terms of customer base), is less critical. The study by Taniguchi (2014) of a UCC in Yokohama (Matomachi district) reinforces many of these base line ideas. There the author identified three success factors in its creation and operation, namely good leadership and enthusiasm towards achieving the desired goals; collaboration in stakeholders --- public-private partnerships; and a business collaboration to maintain joint delivery systems. In essence what existed was a convergence of interests, a factor that has been key in establishing the Borås pilot.

5.2 Overcoming the Private Goods Issue

A key factor in establishing the partnership with DHL has been (partly) overcoming the issue of consignments as private goods. Schliwa et al (2015) found a major barrier to the further growth of cycle logistics operators was the reluctance on the part of the PCS companies that their consignments be mixed with parcels from other courier companies. The experience of the Borås pilot is that this has not been a major issue, as DHL have taken part in a number of previous city logistics projects. As a company therefore, they have been quite open to such initiatives, certainly in smaller areas with dedicated vehicles. Added to this is the fact that in local terms, this is a high profile project.

In the case of Good Goods, a small sticker on the van highlights DHL as a partner in Good Goods initiative. As such, not all branding has been removed and this may also generate positive PR for the partner to be associated in such progressive projects. This experience however can vary from courier to courier, hence in other locations with other companies this may still present a major barrier.

5.3 Elkington's Triple Bottom Line (3BL)

The purpose of Good Goods is not only to operate economically profitably, but also to contribute to the social improvement of the city and to contribute to a healthy environment and climate, and as such is consistent with Elkington's idea of the triple bottom line (Elkington 1999). The electric vehicles contribute to all of these aspects, however the underlying reality is that this represents a balance and trade-off between capacity and the size/model of the vehicles that integrate well with an urban context that presents narrow streets dominated by pedestrians and cyclists. In the end, as with the Groningen pilot, this means the economic business case comes under pressure. This in turn may suggest that (certainly in the short term) any business model in green urban logistic3requires a 'social' element to it, where specific payments (from the public sector) are made where the aims being pursued are for the wider public benefit.

From an overall perspective however, the purpose and ambition with Good Goods ties in very well with Borås ambition of a vibrant, green and safe city street environment.

5.4 Bottom up verses top down

Again, this is one of the underlying themes that has emerged from the Surflogh project. In the case of Borås, the pilots of Good Goods were initiated and funded in a top down approach. The evaluation methodology of the pilot and ambitions for sustainable logistics were set by the City of Borås and the Surflogh project.

The approach regarding the development of the pilot projects however was more of a mix of bottom up and top down up. In the first stage of the pilot (regarding consolidated deliveries), local businesses were interviewed, and detailed goods flows were identified along with the needs and prerequisites of the potential client base. The real estate owners had an important part in assessing the potential for different kinds of solutions as well as the merchant organization, Borås city. Regarding the second stage (recycled waste collection), there were fewer potential customers, which were invited into discussions directly by the project management. The approaches created a constructive climate for further discussions and cooperation with the different stakeholder groups. By entering a partnership with the local/regional transport company Stures Åkeri, this was linking the micro hub into an existing supply chain. Because a base flow already existed, this also presented the opportunity to run the service at a very low marginal cost. This was also the case with the logistic partner for the waste collection service, Borås Energi och Miljö, a municipal company with substantial business volumes in the city centre and good prerequisites to utilise the electric vehicle in the best possible way.

5.5 Policy Maturity

In some respects, a critical factor in the development of the Good Goods initiative has been in the area of policy development, or more exactly, policy maturity (Kiba-Janiak, 2017). As highlighted above, unusually for a public authority, Boras Municipality has a relatively high level of experience and expertise in the area of logistics/freight transport, and through the Borås Connect initiative views this as a key development area. This is in stark contrast to most other local authorities, where previous studies have consistently found very limited evidence of such organisations having any responsible entity for goods transport issues (e.g. Ruesch and Glucker, 2001; Lindholm and Binge 2014). This also links into the perspective of process theories of organisational development and change as outlined by Gammelgaard (2015) and applied to city logistics. Of the three processes highlighted, specifically, life cycle, evolution, and teleology, the situation in Borås probably best reflects the last mentioned, teleology, which is said to exist where an action has a purpose due to dissatisfaction with the current situation, e.g. too many vans, and hence this leads to new solutions being sought and decided upon by management/stakeholders.

5.6 Current Constraints

The main constraint associated with the Good Goods initiative is the lack of uptake of other PCS companies, but for the main part this is not related to the private goods issue, but rather the existence of pre-existing supply chains. Within the Swedish market as a whole, PostNord (Swedish/Danish postal service), holds around half of the total market, hence have existing channels that from a commercial perspective can be considered to be efficient. Added to this is the fact the PostNord have a large distribution centre not far from Borås city centre. In many respects, it makes little sense for such operators to join the Good Goods service, and hence this simply reflects the realities of the situation. This would tend to suggest that concentration should be on the smaller hauliers and transport companies rather than major providers, and hence the role and future direction for Good Goods may be to use the micro hub to attempt to capture a larger share of deliveries not made by PostNord.

6. Future prospects

The city centre of Borås is about to face a number of changes. The number of inhabitants is growing and the number of shipments to private individuals has increased dramatically due to rapid growth of e-trade. Transports to companies are also increasing due to less warehousing space, and more specific and diverse delivery terms and services. All of this puts increased pressure on the quality of public space. Therefore, whilst promoting the Borås Connect initiative, the city authority is aware that this should be pursued in a sustainable and progressive manner. The city of Borås is therefore committed

to enhancing public spaces through the creation of more dedicated pedestrian and cycle zones in the city centre and plans to implement stricter policies for logistics. This will have implications on existing supply chains and result in the need for carriers to implement new 'greener' modes of operation. Good Goods aims to make a strong contribute as a smart emission-free alternative for certain incoming and outgoing transport flows in the city of Borås.

Good Goods is a unique service in Borås that is viewed as having significant potential over the next few years. Since the "base volumes" regarding goods and recycling material makes the marginal costs low for keeping the consolidation and zero emission transport services in place, Good Goods has a robust base, and the possibility to provide the perseverance needed to keep the services running even with slow progress in adding further volumes and customers. With focus on emission free distribution as well as a more efficient distribution system with consolidation and less freight traffic, the Good Goods initiative is very much in line with the future vision of the municipality of Borås.

7. References

Cowie, J., & Fisken, K. (2019). Delivering on Sustainable Logistics by thinking inside the Box – a case study of a successful business model. Paper presented at the Scottish Transport and Applications Research (STAR) Conference, Glasgow Caledonian University, Glasgow, 23rd May.

Elkington, J. (1999). *Cannibals with Forks: The triple bottom line of 21st Century business*. London: Capstone

Gammelgaard, B. (2015). The emergence of city logistics:The case of Copenhagen's Citylogistik-kbh. *International Journal of Physical Distribution and Logistics Management*, 45(4), 333–351. https://doi.org/10.1108/IJPDLM-12-2014-0291

Kiba-Janiak, M. (2017). Urban freight transport in city strategic planning. *Research in Transportation Business and Management*, 24(October 2016), 4–16. https://doi.org/10.1016/j.rtbm.2017.05.003

Lindholm, M. E., & Blinge, M. (2014). Assessing knowledge and awareness of the sustainable urban freight transport among Swedish local authority policy planners. *Transport Policy*, 32, pp. 124–131. https://doi.org/10.1016/j.tranpol.2014.01.004

Ruesch, M., Glucker, C., 2001. City enquiry: European Survey on Transport and Delivery of Goods in Urban Areas. Zurich, Switzerland

Schliwa, G., Armitage, R., Aziz, S., Evans, J., & Rhoades, J. (2015). Sustainable city logistics - Making cargo cycles viable for urban freight transport. *Research in Transportation Business and Management*, 15, 50–57. https://doi.org/10.1016/j.rtbm.2015.02.001

Taniguchi, E. (2014). Concepts of City Logistics for Sustainable and Liveable Cities. In *Procedia - Social and Behavioral Sciences* (Vol. 151, pp. 310–317). Elsevier B.V. https://doi.org/10.1016/j.sbspro.2014.10.029

SURFLOGH BUSINESS MODEL CANVASS

City pilot:Borås

Date: Dec 15 2020

Value Propositions

Why should a client use the offered service?
- Shop owner: Consolidated deliveries mean less time for handling goods, and the service could be adapted for specific needs regarding time windows for deliveries etc.
- Shop owner: Collection of recycling material means that less space is needed for storing, and time and money can be saved compared to handling it by themselves
- Shop owner: Possibility to offer same day home delivery service with zero emission vehicles

- Transport company: More cost effective in many cases to use the last mile pickup and distribution service compared to BAU. Strengthened environmental profile and brand towards transport buyers.

- Transport company (waste): More flexible solution, safer operations in the city center , strengthened environmental profile

What alternatives do customers have?
- No established options regarding same day home deliveries. BAU possible regarding transports of goods and waste

Does the current value proposition meet customer needs fully?
- Yes, regarding current customers, but further development needed to broaden the customer base

What is the mechanism through which pricing policy is determined?
- Mainly self cost analysis, and where a fee is added in order to run the services in a financially sustainable way

To what extend is price used to manage demand to match capacity?
-Price is not used to manage demand in any specific way, otherwise that it is kept as low as possible to attract more customers.

Customer Segments

What customers and customer segments are mainly served?
- Local shops
- Various local offices/businesses
- Transport companies

Who are the most important customers?
- DHL, ten shops connected to a local e -platform

Are there any potential markets in which the current value proposition could be offered?
- More distribution services in general
- Expansion to provide services with locker boxes
- Bike courier services

Customer Relationships

What kind of working relationships do customers expect and how does the company maintain these?
- A personalized service; Reliable deliveries; Urgent deliveries prioritised; Face to face contact with operations manager

In terms of the most important customers, what types of business pressures are they operating under?
- Shops operating under harsh commercial times for city centers, and where uniqueness and customer contact are very important factors
- In terms of DHL, a fixed courier/haulier network, with need for constant movement of consignments through the system

How is the value or benefit created for customers communicated to the wider business community?
- Branded distribution vehicles
- Advertisement on social media by merchant organization
- Press releases and articles in local media

Channels

What are the critical elements in the service provided?
- Sustainable and zero emission logistics; Cost ; Personal approach; Flexibility and Reliability

Are the clients the final customers?
- Mostly yes

What would need to change to allow the current value proposition to be offered in other markets?
- Proof of the concept. Many potential clients positive, but not aware of the advantages of the concept.
- Larger network and customer base

Is there an identifiable 'critical mass' in terms of the customer base?
- No exact critical mass, but a sufficient base volume for goods and waste is crucial
- Business is based on regular delivery runs.

Key Partners

Who are the most important business partners?
To what extent would a partner be described as a 'customer' or as a 'partner'?

Current in the project:
- Stures Åkeri (subcontracted haulier for DHL)
- Borås Energi och miljö (handling a large share of the market for waste and recycling material in Borås city
- Borås city (merchant organization for Borås city)

Future possibilities include:
- Other transport companies (focus on small actors)
- Local businesses

Are all partners equally important?
- At the moment, all are crucial for the progress of the project

Key Activities

What are the key competences and key activities within the business?/How does each contribute to the value proposition?

First/last mile delivery and pickup of goods
- This is key to the business, particularly in complementing rather than competing with existing provisions in the urban freight market

First mile pickup of recycling material
- An important complementary service to meet the needs of the businesses in the city center , and to strengthen the business case

Pickup, local home deliveris, and handling of returns
- An important complementary service to meet the needs of the businesses in the city center , and to strengthen the business case

Key competences are:
- Business development, identify gaps in the market where consolidated deliveries with zero emission vehicles can provide a viable service
- Flexible and dynamic service providers
- Trade and logistics expertise

All are key to the value proposition.

Policy Perspectives

What are the main policy documents relating to urban freight in the area concerned?
Local:
- Energy and climate strategy
- Handbook for the city environment
- The city layout plan

Regional:
- Climate 2030
- Regional development plan

National:
- Fossil free road transport 2030
- The national environmental goals

What current restrictions are in place with regards to deliveries (e.g. loading, time, area)
- Quite limited restrictions; designated loading bays in city centre; pedestrian streets and walking speed areas in certain segments -. Length restriction and time windows for accessing certain streets and street segments are considered.

To what extent does the value proposition (current offering) mitigate against these restrictions?
- The vehicles used are better suited to operate within the existing and planned legal framework

What revenue streams are available under state provisions?
- Some options within a national city environment programme, support might also be available from other programmes

Does there exist any public -private partnerships/forums etc. with regard to city centre management?
- Borås city (merchant organisation) facilitates cooperation between the private stakeholders and the municipality.

Cost Structure

Main cost drivers:
- Operating staff (major part of all cost)
- Equipment (cars, trailers)
- Information and marketing
- Terminal facility and inventory (not a major cost driver)

Overhead vs running:
- Quite low overhead ratio, since operations are well integrated with other activities, but not exactly calculated

Revenue Streams

What are the main sources of income (and does this map onto the most important customers)?
- For the goods distribution pilot, the sole revenue stream is from DHL at present.
- For waste collection the revenue streams are from existing customers
- For home deliveries the revenue stream is from the customers of the shops
- For collection of recycling material the revenue stream is from the respective businesses

How is the income generated
e.g. are there any secondary revenue streams such as 3PL services?
- The major part of the income is generated from existing contracts with DHL, and the customers to Borås Energi och miljö. The other revenue streams are supposed to increase gradually.

To what extent do revenue streams match cost drivers?
- Still to early to tell on overall level. Cost drivers matched to the absolute major part by revenues regarding goods transports.

What are the main financial risks in the current revenue model?
- Goods: Short term, highly dependent upon a limited client base, longer term, this situation remains unchanged due to failure to attract enough (stable) customers
- Waste: Uncertainty regarding the effectiveness of the tested solution vs BAU

Key Resources

Are labour skills specialised or general? If specialised, how are these maintained over time?
- General skills regarding operations, but service -minded staff very important
- Specialized management skills in order to develop the concept by networking and cooperation between different stakeholder groups
- Specialized business skills, specifically identifying and developing business opportunities
- Specialized logistic skills in order to develop and optimize the solutions adapted – both individually and as a system

What are the main capital requirements and how do these contribute to the value chain?
- Costs: Vehicles (ZE -vehicles), Personnel costs, Physical Hub -location
- Income: Payment per delivery / parcel, Payment for switching/emptying bins, Payment for additional services

IT – tracking systems, interface with partners, how are IT systems managed?
- A digital platform with integrated shop and delivery management functions is used for home deliveries
- Stures Åkeri uses DHL´s system (no need for integration with other systems yet)

Where profits are made, to what extent is this retained in the business?
- Low profit levels, with all presumptive profit being retained in the respective business for further development.

SURFLOGH
SMART - URBAN - FREIGHT - LOGISTICS - HUBS