

# 'INFLUENCERS' IN URBAN FREIGHT – A BUSINESS MODEL PERSPECTIVE

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## ABSTRACT

This study explores how norm-setting third-party urban freight stakeholders, referred to as 'influencers', may indirectly put pressure on carriers in the urban freight setting. The paper indicates that influencers have a potential to initiate considerable change in how carriers shape their business models. The results thus bring to light the often-overlooked power that influencers have in relation to the development of actor behavior along the urban freight supply chain.

## INTRODUCTION

Stakeholders that are not directly involved in the supply chain, but whose actions have bearing on several characteristics of the local transport system, have recently been highlighted in urban freight research (eg. Ballantyne, Lindholm, & Whiteing, 2013). Business Improvement Districts (BIDs), facility management companies and public procurement organisations are examples of stakeholder groups that at first glance appear peripheral but who actually may exert considerable influence on more central figures in the urban freight sector (cf. Browne, Allen, & Alexander, 2016; Holguín-Veras & Sánchez-Díaz, 2016). In relation to the key players in the supply chain these remote stakeholders are often third-party organisations. Yet these organisations influence especially goods receivers in how they organize their logistics flows and procurement practices. This is done through for example the provision of guidelines for the selection of service providers or by establishing rules for how deliveries are to be conducted within specific areas. Other concrete examples of influence are property owners that control access to freight related infrastructure and public procurement associations that put restrictions on the type of vehicles that are eligible for certain delivery assignment or stipulate rules that regulate the timing and frequencies of deliveries. These organisations may therefore influence both the types of services that are available within certain areas and shape physical aspects of the urban milieu, such as the location and size of loading facilities. Hence, in the areas where these organisations are active they may exert influence over how particularly smaller goods receivers (e.g. independent shop owners, restaurants or other types of small businesses) operate. We therefore label these norm-setting third-party urban freight stakeholders (cf. Ballantyne et al., 2013) as *influencers*. These organisations engage with issues linked to sustainability (e.g. local pollution or congestion) and they are thus often strongly motivated to enforce standards of behaviour that by changing the attitudes of receivers may put financial pressure on the firms that provide transport

services. However, the role of these third-party organisations in relation to the business side of transport services is still poorly understood.

Urban freight research has recently emphasized the importance of taking business practices into consideration when moving sustainable innovations from a conceptual stage to market. Research has been motivated by an ambition to develop a holistic understanding of what it is that inspires businesses to deploy new types of services (e.g. Björklund, Abrahamsson, & Johansson, 2017) or adopt technological innovations (e.g. Quak, Balm, & Posthumus, 2014), and to execute this research the business model, a comparatively new analytical concept, has been adopted. By highlighting the business model, research shifts focus from single factor explanations, such as pricing, to more complex relationships related to the topics of corporate value creation, stakeholder relationships and corporate sustainability (cf. Boons & Lüdeke-Freund, 2013; Teece, 2010). Based on the state of research described above, the purpose of the paper is to explore the role that third-party urban freight stakeholders play in relation to the promotion of sustainable urban freight activities as well as the potential impact that their actions have on the business models of urban freight service providers, particularly the carriers.

## **METHOD**

Since the business model is an analytical construct which builds on established nomenclature within logistics and business literature it is possible to bring new insight into urban freight research by applying the concept to previous academic work done on organisational behaviour associated with actors in the urban supply chain. Hence, part of the paper is based on a literature review of research on third-party stakeholders' potential to influence how logistics is executed by the actors within the supply chain. The results from the literature review were then used as a basis for an explorative study in which we identified influencers and their potential impact on business models of service providers.

A study was then conducted through interviews with influencers about the requirements and demands, related to logistical services, which they put on receivers. The results from the interviews were then analysed using the business model canvas and a framework developed from previous urban freight research, to the map how the influencers impacted the business models of the carriers.

## **URBAN FREIGHT AND BUSINESS MODELS**

The introduction of the business model concept in research on city logistics seems to be largely based on the expectation that it is only when the business sector has access to a viable business model that an innovation can reach beyond the demonstration stage and long-term change can be achieved. This is also in line with much of the business model research that is going on in other fields and is based on the functionality attributed to the business model concept in previous research (Chesbrough & Rosenbloom, 2002; Zott, Amit, & Massa, 2011). In research on city logistics, the business model concept has therefore been accentuated as a necessary factor in the introduction of technological innovations, such as electric vehicles (Quak, Nesterova, & van Rooijen, 2016), but also to bring about changes in how companies arrange their operations (Quak et al., 2014). Finding viable business models

has been identified as a significant challenge for companies providing new types of logistics services, such as instant deliveries (Dablanc et al., 2017; Frehe, Mehmman, & Teuteberg, 2017). In addition, logistics research also indicates that business models have a potential role to fulfil in relation to the sustainability initiatives in cities, such as joint delivery systems (Taniguchi, 2014) and consolidation services (Björklund et al., 2017; Quak & Tavazzy, 2011).

The business model concept is generally considered as a means to define both the organizational and financial architecture that a business rests upon and it is done in a way that demonstrates how the business creates and delivers value to customers (Teece, 2010). As such it becomes a broad description of what it is that makes a business function in a specific setting or with certain types of resources or processes in place (Zott et al., 2011). A generally accepted definition and widely used application of the business model concept is the business model canvas (Osterwalder & Pigneur, 2010) which has been applied in earlier city logistics research (cf. Quak et al., 2014). This framework divides the business model into parts that can be easily mapped based on an array of questions which are used to characterize each part. The framework also compiles the parts into blocks that deal with specific sides of the business model i.e. the customer-oriented side and the production-oriented side of the business.

**MAPPING INFLUENCERS IN URBAN FREIGHT**

As described in the introduction we define influencers as norm-setters that act as third-party in relation to the actors that are directly involved in the urban supply chain (cf. Ballantyne et al., 2013). As shown in Figure 1 we conceptualize influencers as organisations that exert direct influence on how especially small goods receivers may operate and arrange their logistics. Previous research indicates that such organisations engage with issues linked to sustainability (e.g. local pollution or congestion) and enforce standards of behaviour on the receiver. In Figure 1 we show the flow of orders and goods with solid lines and the flow of pressure or influence with dotted lines. Figure 1 also shows this pressure as a one-way direction however it is likely that interaction between receivers and influencers builds on a negotiation process which involves the demands of many types of stakeholders, meaning that it is a more complex process than unidirectional pressure going from influencers to receivers. In the case that the receiver changes preferences that in turn will mean that contracts with the shipper must be changed. The shipper has to then put pressure on the transport service provider or carrier (which often is a third-party logistics provider) to make changes in how the transport service is executed. It is noteworthy that the receiver may put pressure on the transport service provider despite not having a direct contractual relationship.

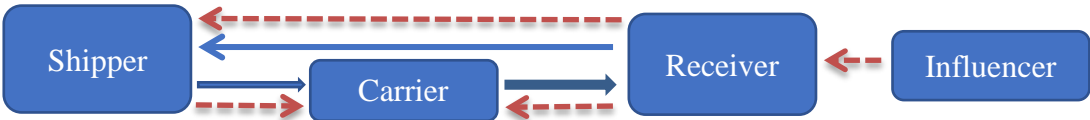


Figure 1 The influencer’s role in relation to the supply chain

Going through the literature we identify four key groups of influencers active in the urban freight setting: Business Improvement Districts (BIDs) and similar initiatives, property owners, facility management companies, and public procurement organisations. These groups of actors have no or very little direct interaction with the transport service providers that are active in the geographic area where the influencers have their base of operation.

## **Business Improvement Districts**

Business improvement districts (BIDs) are partnerships between public and private sector actors established to improve the attractiveness of a specific geographic area in ways that benefit the local business sector (Briffault, 1999; Grossman, 2008). BIDs have gradually grown in popularity and become an international phenomenon which has been adapted to local requirements (Ward, 2007). Actors within the BIDs are generally acutely aware of externalities caused by extensive urban freight traffic and members generally strive to target such externalities in order to make the local area more attractive for third party stakeholders such as customers and visitors. Previous research shows that BIDs in different countries are engaged in a wide range of activities; some of these activities have a significant impact on urban freight. BIDs unite fragmented actors, especially businesses, and promote sustainable urban freight solutions by for example provide platforms to implement pilot projects or schemes that lead to more sustainable deliveries in urban areas (Browne et al., 2016). Tangible initiatives are freight consolidating schemes; the introduction of environmentally friendly vehicles for the final deliveries; establishing small scale urban consolidation centre (UCC) which decrease the amount of traffic in the area; collaborative procurement schemes like buyers' clubs that reduce the number of suppliers involved and result in fewer trips; common recycling and waste management schemes; discouraging of private deliveries to work places; development and promotion of different delivery and service plans (A. Brettmo, Browne, Holguín-Veras, Jose Wojtowicz, & Allen, 2017; Browne et al., 2016).

## **Property Owners**

Property owners are a powerful and important group of influencers with incentives to be active on issues that relate to urban freight. The externalities that logistics services generate may have a detrimental effect on property value and thus directly impact the balance sheet of the property owners. Property owners have a power to promote or even dictate to their tenants how to organise their logistics setup or some parts of it connected to flows in and out of buildings. Examples of tenants that make logistical decisions are small offices, restaurants and shops. By promoting and facilitating the consolidation of flows, organising accessible goods reception area, extend concierge services for goods, property owners may facilitate changes in delivery routines that make them more sustainable. Property owners may for example persuade tenants in a multitenant building to use the same facility management company which would lead to the consolidation of both flows going in and out of the building. In Sweden the project *Älskade stad* showed that property owners in Stockholm can and are expected to take a lead in implementing sustainable solutions in their building management and services provided to their tenants (Elander, Lindgren, Wastesson, Langbroek, & Georen, 2017). Consequently, property owners can be acutely aware off and act on the negative impacts of externalities generated by urban goods movements. Property owners also appear to understand that goods accessibility (i.e. that goods are delivered efficiently while not jeopardizing air quality, safety and liveability) play a crucial role for a well-functioning city of tomorrow, often working long-term to enhance the quality of the area in which their property is positioned. This awareness is tightly linked to the interest of property owners to secure the future commercial value of their properties.

## **Facility Management Companies**

Facility management companies work to ensure certain standards in facility management by providing services and products to tenants. The facility management companies often manage certain logistical flows to and from their customers, provide cleaning, catering, and at times even take over purchasing functions for some goods. Facility

management companies thus provide a wide range of services for their customers and some facility management companies establish a green profile by catering to certain aspects of sustainability when interacting with customers. Previous research has shown that facility management companies prioritize certain environmental aspects of their operations and are striving for continuous improvement of their environmental performance. Facility management companies often use environmental improvements as a marketing strategy. This allows them to position themselves in relation to competitors by adding value to the service portfolio, creating a competitive edge. Facility management companies may act as an orchestrator of logistics flows on behalf of their customers, choosing the most sustainable suppliers and optimizing goods movements. Particularly, by managing several customers in the same multitenant building or managing several buildings at one smaller geographical area this category of actors may have considerable impact on large volumes of goods. It is however noted that even though facility management companies are willing to work with sustainability they often need the support the property owners. This is especially the case when there are investments needed to be done in the property to decrease the externalities that freight movement creates.

### **Public procurement companies**

Public procurement companies are organisations that have sort of an umbrella function, deciding on the type of goods that will be delivered to public organisations, such as schools or nursing homes. Public procurement companies decide on the type and quality of the products and services that should be provided to the final customers; they organize tenders; choose the suppliers and create framework agreements that stipulate how the deliveries should be made. Sustainable urban deliveries are often included into the sustainability agenda of public procurement companies. The public procurement organisations are cost conscious but nevertheless often motivated by social and environmental values, i.e. by doing the right things in the eyes of their clients. This means that they often prioritise quality and sustainability (Alena Brettmo & Browne, 2016). Their policy regarding deliveries of the goods can make a significant impact in improvement of urban deliveries to more sustainable ones (Alena Brettmo & Browne, 2016). Several studies have described the connection between purchasing practices and freight trip generation. One of the key results is that public spending is usually high and thus can give a leverage in application of environmentally sustainable deliveries of goods for public purposes, for example using more green vehicles or sustainable delivery schemes (Balm, Amstel, Habers, Aditjandra, & Zunder, 2016; Mcleod et al., 2015). A case study on procurement practices of municipal public procurement organisations showed that their decisions on choosing and contracting supplier and goods specifications impact freight flows for public needs by for example specifying the delivery terms; the environmental standards of the vehicles; frequency of the deliveries made; including incitement for demand planning and demand consolidation; optimisation of delivery schedules and routes; coordination of deliveries when possible (Alena Brettmo & Browne, 2016).

## **RESULTS**

Through the literature review and interviews with urban freight stakeholders we identified that Business-Improvement-Districts (BIDs), property owners, public procurement companies and facility management companies have the potential to impact goods receivers in ways that triggers changes in business models of the carriers that provide delivery services to receivers. Based on categorizations used in earlier research it is possible to divide the

initiatives that the influencers made into two groups, physical and organisational, though they are interconnected and depend on each other (Browne et al., 2016). When mapping how the physical and organizational initiatives play out on the business model canvas we identified the following examples of implementations that would concern carriers (See Table 1).

Table 1 Examples of physical and organizational initiatives

Physical	Organisational
Vehicle related requirements such as greener vehicles.	Scheduling or time-agreed deliveries.
Requirements to participate in (e.g. deliver to) UCC-initiatives.	Parking related regulations and anti-idling programs.
Common carrier locker system.	Signage for loading-unloading facilities.
Consolidated deliveries.	

The physical and organizational initiatives have different impact on the business models. The physical initiatives tend to result in higher capital costs and often higher fixed costs which mean that the operational risk to the transport service provider increases comparatively more than in the case of organisational initiatives. In the case of organisational initiatives there are costs associated with learning and staffing but even though such costs may be considerable they are often easier to counteract and tend to be of the variable type, meaning that they are easier to manage in the case of a fall in customer demand. Consequently, the organizational initiatives do not raise the operational risk in the same way as the physical initiatives.

Discussing the individual examples, the request for more environmentally sustainable vehicles puts particularly high pressure on the service provider. The interviews showed that the public procurement companies may stipulate that delivery vehicles must meet certain environmental standard. Facility management companies also controlled and monitored the environmental standards of the sub-suppliers' vehicles, including reviewing the amount of CO<sub>2</sub> emissions produced by deliveries to their customers. Such requirements force carriers to modernize their vehicles which, depending on the type of vehicle, can be connected to substantial changes in the cost structure of the business. Requirements may mean that carriers' vehicles need to comply with certain environmental standard or that additional vehicles need to be acquired in some way. For example, the customer might request that final deliveries to be made by emissions-free vehicles like bikes, electrical vehicles or vans. Hence, operators may be forced to invest in, or in other ways secure access to, a more expensive vehicle fleet. Unless stakeholders are willing to share the additional costs, such development is likely to raise the fixed costs of operations. Due to the additional capital investment or additional costs associated with leasing contracts there may be considerable time before the delivery service is profitable unless prices are raised. Depending on type of the relations with the customers and key partners, carriers can try to lower the risk that this increased cost entails by entering into more long-term relationships with those customers that make such requirements.

Another type of service that goods receivers can ask from carriers is consolidation of goods for final delivery, using different consolidation schemes. The aim of such a request is commonly to decrease traffic pressure in certain areas. One way to consolidate deliveries for

the last mile is to use a UCC, where the goods destined to certain areas are accumulated and sent to the receivers in one flow (Allen, Browne, Woodburn, & Leonardi, 2012). The practice of establishing an UCC adds both fixed and variable costs (rent of the spot, handling, loading and unloading, etc.). The solution is complicated to introduce since it drastically changes the business model of many well-established carriers. To start with, the operator that is assigned to consolidate the flows and made the final deliveries must find a warehouse (usually not far away from the city) and then to organize the flows: deliveries and pick-ups several times a day. It also means that some of the carriers have to give up the last mile and leave the goods at UCC. Some transporter operators might find this especially challenging since they want to have a face-to-face contact with their customer. The fear is that this will change the relationship with the customers and potentially lead to a decrease in future revenues.

Goods receivers might ask to re-schedule the deliveries and have the goods delivered outside the peak hours or even at night hours. This entails change for carriers delivery hours which means arranging contracts with staff and at times implementing both new equipment (e.g. quieter cargo cages or vehicles) resulting in rising costs (cf. Holguín-Veras, 2008). In countries with strong unions or strict legislation such arrangements may result in considerably higher costs associated with wages and compensations. There also needs to be a way for the receiver to accept and verify the goods. One way is to have a person on place at the receiver's site that will accept the goods (which is costly) or have the agreement with carriers that the carrier will have the access to the building and will deliver the goods and leave them at the receiver's site. That requires a trustful relationship between the receivers and transporters and also some investment in equipment and systems like cameras, electrical lockers, etc. Carriers provide the following value proposition to their customers: on-time deliveries, reliability deliveries, quality. So, for example, in order to meet the requirements of goods delivery scheduling, some of the carriers have to establish even closer relations with the goods receiver, perhaps even have a common IT-system that could help them to synchronize the delivery and goods acceptance in optimal way.

## CONCLUSION

A deciding factor in relation to the topics discussed above is the agenda that is set for the influencers. Different influencing organisations have different reach in relation to the goods receivers, some of them set the rules for them, others propose to organise flows differently or consolidate the flows by acting as an orchestrator. Thus, there is different potential for influence on the business models of service providers depending on these differences. Furthermore, the results show that the incorporation of sustainability as a key aspect of logistical services leads to an expansion of their agenda. Consequently, as the pressure rises on influencers to incorporate sustainability into their goals the potential for these organisations to impact the business models of service providers is expected to rise as well.

Another aspect to consider when analysing the work of these organizations is the role that they play in the relation to the future trajectory of the urban freight sector. Being often motivated by concerns for sustainability these organisations are actively pursuing and participating in projects and programs for sustainable innovations. Acting on behalf of the groups that they represent, influencers voice their concerns in a wide range of forums. This

means that these organisations act have impact in early stage development of sustainable innovations giving the organisations more weight than what is expected when considering the lack of direct presence in the supply chain. Based on these results influential third-party organizations may be categorized in relation to range of services that they offer and the geographical distribution in which they are active; providing a narrow or wide range of services in a clustered or dispersed geographical area. These categorizations imply that the impact on business models may increase both in likelihood and severity when discussing organisations that engage with actors in a dispersed geographical area and concern themselves with a wide range of services.

This paper explored the potential impact that third-party stakeholders have on the business models of freight service providers in urban settings. Based on the review of previous research on the interactions between the stakeholders within the urban freight sector the classification of such organisations and their potential for influencing business models of service providers was compiled. The study shows the variety of these types of organisations as well as differences in their modus operandi, i.e. the way in which they interact with and influence other organisations. However, one common feature is that they can reach and bring together many fragmented goods receivers, promoting and encouraging sustainable logistics while providing a platform to organise sustainable solutions. The results also indicate that the obstacle that sustainability efforts pose to service providers may be better understood by evaluating how a specific action will impact existing business models.

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