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## Understanding the purchasing behaviour of a large academic institution and urban freight demand

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### Abstract

Only in recent years has a conceptual model focussed on the ‘receiver’ end of the supply chain has been discussed amongst European urban freight researchers even though purchasing for large organisations does certainly have a documented and often regulated sustainability agenda. A localised city logistics Delivery Service Plan, within a ‘coherent campus strategy’ for an academic campus has been established at Newcastle University, located at the centre of a medium size British city. In order to better understand the relationships between delivery services, urban environment and staff attitudes, a questionnaire was conducted targeting Newcastle University staff, addressing the purchasing of all goods to be delivered at the work place. A high response rate led to new data on purchasing behaviour. Tentatively we would draw out that the qualitative surveys show willingness amongst the buying population to both suggest and embrace alternatives ideas. We can see that a very small core of people raise most of the orders, and as such it should be possible to influence the majority of orders through them.

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### 1. Introduction

Clean urban freight is a key European Union policy to both make cities environmentally sound, socially inclusive and economically viable as well as contributing to a 60% reduction of greenhouse gas emissions (GHG). Over 60%

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of the EU population currently lives in urban areas and contribute circa 85% of the GDP (European Commission 2007). The 2011 European Commission's Transport White Paper set ambitious scenarios and vision of the future urban freight transport "in order to halve the use of 'conventionally-fuelled' cars in urban transport by 2030; phase them out in cities by 2050; [and] achieve essentially CO<sub>2</sub>-free city logistics in major urban centres by 2030" (European Commission 2011). Some of the scenarios include minimising the number of freight movements and the distance required to carry them out; using low emission vehicles/trucks; and making maximum use of intelligent transport systems (ITS) to increase the efficiency of delivery.

However, these scenarios and most previous policy and research have focused on the operators of the transport chain and the shippers' (suppliers') initiatives. Only in recent years has a conceptual model focussed on the 'receiver' end of the supply chain has been discussed amongst European urban freight researchers (Verlinde et al. 2012; Browne et al. 2012; Zunder et al. 2014). A few examples have emerged of practical implementation of this approach, the most influential being the adoption of Delivery and Servicing Plans (DSP) as part of the London Freight Plan by the Transport for London (TfL), TfL's Palestra Offices in Southwark (Transport for London 2008) and consequent use in the 2012 Olympics. A DSP is the management and organisation of multiple operations of last mile deliveries from a demand based perspective optimised by efficient freight planning from the perspective of the receiving organisation (Zunder et al. 2014). It provides a framework to better manage freight movement by adjusting the conventional working methods of urban freight stakeholders to meet both the inbound logistics needs of the receiver and wider sustainability objectives. It may be more effective than previous interventions at the transport operator link in the chain since the delivery company is usually carrying out the expressed wishes of their customer, which is the supplier of goods or services in most cases. The supplier, in turn, is executing a supply to meet the expressed wishes of their client, usually the receiver. Whilst purchasing for large organisations does certainly have a documented and often regulated sustainability agenda (Hoejmoose & Adrien-Kirby 2012; Walker & Brammer 2009), and Newcastle University does indeed have sustainability targets in the procurement policy, the relationship between institutional organisation and organisation as freight receiver bears further investigation.

The research questions we wish to raise about purchasing, formal and private, and inbound deliveries are multiple. For example, what are the drivers of purchasing, are they institutional, individual, corporate or even private demands using the workplace as an alternative delivery location? What are the key determinants of purchasing behaviour of a large institution, is it planned, ad hoc and to what extent is it for other users? Do different goods types noticeably create different demands? How is the required timing of demand for good generated versus the actual need for the goods? Do different goods types noticeably create different demands? How are goods delivered to the end user? To what extent has the coherent campus strategy effected change that is noticeable or memorable? How do people feel about purchasing, inbound deliveries, private purchasing at work, and freight in general? Is the changing behaviour of purchasing towards freight efficiency a feasible option for a sustainable institutional organisation? What is not clear, and which this research addresses in some part, is the degree to which that expressed demand is conscious or unconscious at the individual buyer level and the institutional level.

A localised city logistics DSP, within a 'coherent campus strategy' for an academic campus has been established at Newcastle University, located at the centre of a medium size British city across 500 square metres. As the second largest employer city in Newcastle upon Tyne, the campus services 5000 staff and 20,000 students. The site presents some of the research problems emergent in this field in that it is legally a single organisation and yet functionally it has many of the characteristics of a devolved and decentralised entity, or even entities. The University has over 80 buildings holding 144 schools/departments/institutes each of which can make a purchase order via 466 expert buyers and 1,058 shoppers. Initial analysis using secondary data of procurement data and traffic count has identified key facts about the freight activity and purchasing patterns but there is little clarity or understanding of the relationships between these activities (Zunder et al. 2012; Zunder et al. 2014).

This especially true when private purchasing takes place and the buying activity is invisible from the University oversight. As part of the broader background research and workshops, "straw polls" at forums and workshops, as well as anecdotal reports from TfL, have suggested that up to half of staff may have ordered personal goods and had them delivered to work. The University central mailroom has received dried food, motorcycle parts and a regular flow of goods from Amazon. This is not a confirmed fact since as a University almost all these items can have legitimate work purposes, and Amazon is an approved supplier.

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