

## Report on the thesis: “Crowdshipping: critical points of a sustainable urban freight system”

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“Crowdshipping” is an interesting area for research in light of the considerations made in the previous paragraph and it was the central focus of this dissertation. The system is rather recent and even a unanimous definition of which types of businesses qualify as crowdshipping is difficult to find. Given the novelty of the notion, there is no single term in the literature to identify it. Other words often found in searching for literature on this field are *crowd logistics*, *cargo-hitching*, *crowdsourced delivery*, *collaborative logistics* and *crowdsourced logistics* (Fung Business Intelligence Center, 2015; Buldeo Rai, Verlinde, Mereckx, & Macharis, 2017; Castillo, Bell, Rose, & Rodrigues, 2018). Crowd logistics is by far the most popular in literature, but it can be misleading. It is sometimes used to label logistic services that do not indicate exactly the same typology of services as the one this thesis aims at discussing. For example, it is easy to encounter platforms that mention the term “crowd logistics” but actually propose a platform that allow shippers to find more easily a better transport provider (CrowdLogistics, 2018), without mentioning the sharing economy.

The starting point of the research is a synthesis of the definitions proposed by different authors, before proposing the one that will be used henceforth. Buldeo Rai (and the others) define it as a concept encouraging the use of spare capacity in trips that are already planned to carry parcels, no matter the mean of transport, and as a promising tool for the development of a more sustainable transport (Buldeo Rai, Verlinde, Mereckx, & Macharis, 2017, p. 2). While they focus more on the sustainability side of the concept, others put the emphasis on the aspect that relates more to the business model and to sharing economy. They define it as “the outsourcing of logistics services to a mass of actors, whereby the coordination is supported by a technical infrastructure”, stating also that the objective “is to achieve economic benefits for all stake- and shareholders” (Mehmann, Frehe, & Teuteberg, 2017, p. 123). In the meticulous analysis performed by Carbone et al. (2017) crowd logistics is presented in more general terms as a system working “through collaborative platforms and mobile apps that connect individuals and firms to peers [...] in order to make the best use of distributed, idle logistics resources and capabilities”. They also add another characteristic: “crowd logistics calls on individuals to perform basic logistics services on an ad-hoc basis” (p. 242). This last article uses crowd logistics in a broader sense, mentioning four types of it. It includes also what it calls crowd storage, which – given that it is a system to store items – cannot fit in the discussion of this thesis and it will not be taken in consideration. The remaining three – crowd local delivery, crowd freight delivery and crowd freight forwarding - (Carbone, Rouquet, & Roussat, 2017, p. 243-244) will be grouped together under the comprehensive term of crowdshipping. The other papers

consulted offer definitions that are similar to these, which seemed the most interesting for their encompassment of different aspects of the concept. Drawing on them, it is possible to start giving a preliminary definition of what this thesis refers to when it mentions crowdshipping: *crowdshipping is a freight delivery system intersecting sharing economy and physical internet that proposes a sustainable model for logistics in which tasks are outsourced to a crowd by means of an online platform.*

Once arrived at this definition, which is still quite large, it was needed to further narrow the scope of the research. Crowdshipping can refer to crowdsourced delivery at the international, national or urban level. However, there are very few companies that deal with the first two types. Literature is scarce as well, since crowdshipping arguably offers most opportunities for last mile delivery. In fact, companies working with crowdsourcing and sharing economy usually needs to rely on a huge critical mass of users. This is an objective that is much easier to achieve in cities that are densely populated. The last mile transport is also the most polluting and expensive, as already mentioned, (European Commission, 2011; European Commission, 2013) and thus it is in need of more efficiency. For this reason, the research has been narrowed to crowdshipping at the urban level.

The research questions of this thesis were:

- What are the critical points that hinder or could hinder the development of crowdshipping?
- What are the possible solutions to these hindrances?

This thesis explored different aspects of crowdshipping. It chose to focus solely on its use for the last mile delivery and on the critical points that seemed to have not been fully taken into account in the existing literature. The effort to catalogue these criticalities provided a systematization of the issues crowdshipping might face. Some of them are real problems while others appear more as a matter of choice. The secondary objective to provide solutions to those very issues cannot be considered fully achieved. While the answers proposed in the previous section seem convincing to the author, more empirical evidences are necessary to prove if they are indeed correct. However, this thesis appears valuable inasmuch it tried to have a comprehensive and multidisciplinary approach to the subject. It seemed important to emphasize the fact that all the themes treated in this dissertation are interconnected and need to be considered together. It must be noted that the multidisciplinary approach does not reside in the criticalities themselves but rather in the various competences (in law, economics, engineering, sociology and so on) that are necessary to confront and solve those critical points. It is not possible to decide which types of goods to deliver without considering privacy concerns or the choice of the vehicle, privacy is inevitably connected to the type of contract and to social issues, and so on. This work might be useful as a stimulus for further developments of academic research and for practitioners in the field to address potential criticalities.