

“Carried away by the crowd”: what types of logistics characterise collaborative consumption?¹

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Abstract: The growth of collaborative consumption is beginning to stimulate research work within the field of management science. So far, however, few researchers have studied the logistics aspects related to these developments. The aim of this article is to investigate the role played by logistics in thirty-two cases of collaborative consumption that we analyse. Depending on the type of logistics management and the function of logistics in these initiatives, we identify and describe four types of collaborative logistics: peer-to-peer logistics, business logistics, crowd-party logistics and crowd-driven logistics. This article contributes to the literature on crowd practices and collaborative consumption, and makes recommendations for improving the management of collaborative logistics.

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INTRODUCTION

Airbnb, KissKissBankBank, Uber, Fab Labs, Amaps, etc: the rise of these collaborative initiatives no doubt constitutes one of the most striking revolutions of the present day. They are developing amid a plethora of terminologies and encompass a wide range of (often emerging) initiatives in France. In particular, the following initiatives stand out: collaborative finance (crowdfunding), collaborative production (3D printing, FabLabs, DIY, etc.) collaborative education (e.g. open education and open knowledge) and finally collaborative consumption. According to the definition given by Botsman and Roger (2010), who popularised the term, collaborative consumption refers to consumer practices where individuals place more value on access to goods and services through collaboration than on ownership.

Our research focuses on these collaborative consumption initiatives, which cover a wide variety of activities such as car sharing, renting goods to other individuals, selling goods to other individuals, bartering, and collective purchasing (Ademe, 2013). These initiatives are facilitated by the massive spread of information and communication technologies (Internet, smartphones, etc.). Thanks to sharing platforms, collaborative consumption entrepreneurs can more easily identify and activate resources that have hitherto been idle (Botsman and Rogers, 2010). The magnitude of these projects is such that, according to PricewaterhouseCoopers, the collaborative consumption market could reach \$335 billion (nearly €270 billion) by 2025, compared with \$15 billion (€12 billion) today.

All of these collaborative consumption practices — which are rooted in the market economy as well as in the gift (Caillé, 2000) and sharing economies (Belk, 2014) — involve mobilising physical/human/informational/monetary flows. A logistic system, which can be defined as a system that handles the global management of physical flows (Fabbe-Costes *et al.*, 2010), is

therefore required within these collaborative consumption initiatives. However, the literature which has begun to study these practices has, for the moment, focused more on the positive or negative criticism of their underlying militant logic than on their logistic dimension. The aim of this article therefore is to study and analyse the logistics arrangements used within these collaborative consumption initiatives.

This paper is divided into three sections. The first provides an analysis of the current literature so as to better identify the concepts used in the field of collaborative consumption and apprehend the role of logistics aspects in the existing research. It also describes the methodological choices we made: case studies, via the online platforms² of thirty-two collaborative consumption initiatives that involve the circulation of a physical flow. In the second section, we present our findings and identify four type of logistics used in collaborative consumption initiatives: peer-to-peer logistics, business logistics, crowd-party logistics and crowd-driven logistics. In the last section, we discuss these findings and explore the theoretical and managerial implications of our research. One of the main contributions of this article is to identify a new "crowd practice" linked to logistics. Finally, the conclusion summarises the article's contributions and proposes an agenda for future research.

1. LOGISTICS: AN OVERLOOKED DYNAMIC OF COLLABORATIVE CONSUMPTION ?

Although collaborative practices are multiplying, there is no fixed terminology to refer to them. Researchers and practitioners use a multitude of terms: sharing economy, crowdsourcing, collaborative consumption, etc. In the first section we will examine what is covered by the term "collaborative consumption" (1.1). We will then review the emerging

² In this article we use the term "online platform" to refer to the web interface, set up by a collaborative consumption enterprise, that people use to connect with each other via the Internet. A collaborative platform is defined as "a system using information technology that makes resources and tools available to its users in order to facilitate collaborative work".

literature on the subject and show that it essentially focuses on the ideological frameworks that underpin these practices (1.2). Finally, in the last section, we take a look at the literature combining both logistics and collaborative consumption, and point out that it is as yet underdeveloped (1.3).

1.1. Collaborative consumption within the collaborative universe

The term "collaborative consumption" was popularised by Botsman and Rogers in their seminal work *What's Mine is Yours* (2010). According to their definition, "collaborative consumption occurs when people participate in organized sharing, bartering, trading, renting, swapping, and collectives to get the same pleasures of ownership with reduced personal cost and burden, and also lower environmental impact." Furthermore, the authors classify collaborative consumption initiatives into three categories. First, "Product Service Systems" which are part of the global "servitization" of the economy. These systems make it possible for consumers to use a product whenever they want without having to own it (e.g. car sharing). The authors then define the "Communal Economy", which facilitates the true empowerment of individuals (Shaw et al., 2006) gathered together "as a crowd" to develop new collaborative consumption practices (e.g. couchsurfing). Finally, thanks largely to the Internet, "Redistributive Markets" are developing, which enable individuals to swap, recycle, donate, and share on a large scale (e.g. eBay).

The collaborative consumption practices linked to the communal economy are partly rooted in crowd practices, as per Howe (2006). However, certain crowd practices such as crowdsourcing (Leimeister et al., 2009) and crowdfunding (Belleflamme et al., 2014; Mollick, 2014), do not properly belong to the field of collaborative consumption, as they only call on the crowd to generate ideas or to finance projects. The concept of collaborative consumption is very similar to that of the sharing economy. Indeed, for Botsman and Rogers, the sharing economy and collaborative consumption concepts are virtually interchangeable. According to

Belk (2014), collaborative consumption is when individuals coordinate the acquisition and distribution of a resource either for money or in exchange for another contribution, and therefore excludes practices that do not involve any compensation. The permeability and fuzziness of these concepts "have an impact on delimiting the field of participants: new entrants may be accepted on the basis of mutual recognition" (Jacquet, 2013). We will draw on this notion of mutual recognition between participants in our approach to the field of collaborative consumption (see boxed text 1).

1.2. Lack of detail in the literature on collaborative consumption practices.

Concerning the research on the practices in which collaborative consumption is manifested, there is a surprising disparity between the prominence of the concept in the national and international media and the inadequacy of the academic literature devoted to the subject. Compared with the proliferation of publications aimed at the general public — books "preaching" about the movement, the specialised press, mass media, blogs written by associations and experts, essays published online — there is very little academic research in this area. The existing literature is largely unrelated to management science research and is mainly found in the disciplines of consumer research, sociology and economics.

These studies often explore questions of sustainability (both environmental and social) or the revolutionary impact of these practices with respect to the capitalist market economy model (Demailly and Nouvel, 2013; Erving, 2014). They examine the ideology driving these initiatives and sometimes criticise the extremely liberal and "illicit" spirit of the most publicised initiatives (e.g. Airbnb, Uber). Although some articles focus on the importance of the social relationships at the heart of these practices (especially concerning Couchsurfing, a pioneering initiative), this laudatory view is far from unanimous (Jacquet, 2013). For example, a seminal article by Bardhi and Eckhardt (2001) denounces the purely utilitarian approach of Zipcar users that stands in contradiction to the values often promoted by proponents of

collaborative consumption. In the same vein, a recent study carried out in France (Carry, 2014) shows that the users of sharing services may be driven by various motivations: frugality, opportunism, eco-responsibility, etc.

More recent studies seek to estimate the potential of collaborative consumption practices and their impact on the organisations and business models of the traditional market economy. Generally, existing studies gravitate around two themes that have structured the debates: the new ways that people interconnect in the collaborative economy (Gansky, 2010) and the lasting effects of these practices, particularly those linked to a smaller environmental impact (Demailly and Nouvel, 2014). Logistics, an activity that stabilises the sharing relationships between different actors through flows (Paché and Paraponaris, 2006) and which is also as much a source of pollution (particularly greenhouse gas emissions) as a vector of sustainable organisational solutions (Rollet et al., 2013) should be at the centre of any research into collaborative consumption. This is not the case, however, and we have only been able to identify a few rare studies —bordering on the anecdotal— combining collaborative consumption and logistics.

1.3. What is the role of logistics in collaborative consumption?

Within the context of research on innovative business models and their carbon footprint, Gaziulusoy and Twomey (2014) take an example of peer-to-peer innovation in a closed-loop food business and describe the creation (alongside the digital marketplace) of a physical logistics platform that connects local producers to local consumers. In another study related to innovative business models and their paradoxes, Bastita et al. (2013) state that collaborative consumption models are created and adapted by start-ups developing online platforms that largely offer logistics services. Finally, a Sofres-La Poste survey (2013) of one thousand individuals identifies logistics complexity as a major barrier hindering the adoption of collaborative practices, ranked second only to fears concerning the security of exchanges.

Indeed, much of the thinking and discussion about logistics and collaborative consumption seems to be developing on the practitioner side. For example, the research magazine of market leader DHL (Bubner et al., 2014) devotes a lot of space to collaborative developments in its annual trends issue. For DHL's research wing, tapping into the crowd constitutes both a threat to the logistics industry (emergence of new competitors) and also a tremendous source of opportunities (potential of bringing in new actors from the crowd to crowdsource some of its activities in order to optimise its costs and improve flexibility). Evidently very advanced in these areas, DHL has now entered the field of collaborative consumption by launching its MyWays service, with a mobile app that allows individuals to share their geographic location and accept selected deliveries.

As we have just mentioned, the research dynamics on this subject seem to be limited and/or confidential. Yet collaborative consumption promotes new forms of intermediation (Gansky 2010; Nadler 2014), rethinks the logic of flows (particularly by emphasising the physical proximity of goods being traded), and promotes a positive environmental impact through the sharing of goods, resources, and idle physical space (Botsman and Rogers, 2010). In view of these different phenomena, its development should be accompanied by research on the planning, organisation and execution of physical flows generated by collaborative trade. In this perspective, this article aims to answer the following exploratory research question: "What types of logistics characterise collaborative consumption?" In order to narrow the empirical sample to a range of coherent initiatives (forming a whole that we can apprehend), we have decided to focus on France in this study. The boxed text below describes the methodological approach we adopted to study the logistics systems employed by various collaborative consumption initiatives.

Box 1: Methodology

We employed a qualitative exploratory methodological approach. In order to determine which initiatives to study, given the fuzzy and shifting boundaries of collaborative consumption, we followed the lead of other researchers (Schor, 2014) in adopting a pragmatic approach: take into account mutual recognition between actors in the movement. We therefore drew on the leading French blog on collaborative consumption (<http://consocollaborative.com/>) which started a list of 150 collaborative initiatives in June 2011 and has regularly updated it since then by mutual recognition with the Ouishare collective. In keeping with our research question, we chose to select only those initiatives that involve the circulation of a flow of goods. We therefore excluded experiences based on either financial flows (crowdfunding) or human flows (couchsurfing, for example). On the other hand, we included exchanges of services that involve physical goods (renting storage space, for example). On this basis, we studied one case for each category identified by the reference blog, several cases on widespread initiatives, and added two emerging experiences recently highlighted in the press. We ended up with a total of 32 experiences, analysed via a thorough exploration of their website (Etsy, Expediezentrevous, Kiwizz, Ilokyou, Lecomptoirdutroc, Zilok, Sharevoisin, Sacdeluxe, Monsieurparking, La machine du voisin, Vestiaire collective, Withaa, Jestocke, AMAP, Co-Stockage, Le Bon coin, Blablacar, eBay, La Ruche qui dit oui, Freecycle, Cueillette Chapeau de Paille, Recupe.net, Citizcoop, Drivy, PiggyBee, La Louve, Plantez chez vous, Buzzcar, Co-recyclage, Le relais, Sailsharing, Trocvestiaire). We collectively identified several characteristics (and how to describe them) grouped *a posteriori* under three headings: the product/service offered, the business model (role and compensation of the various actors) and the supply chain (type and scope of flows, logistics roles, etc.). Table 1 presents our coding framework in detail.

	Characteristics analysed	Response format and scales
Product/service offering	Description of the products offered	To be defined according to the terminology used by the platform
	Type of exchange	Sale, rental, loan, gift
	Type of offering	Product and/or service
	Type of supply and demand actors	Company, individuals and type of loop: direct/ indirect loop
	Geographic scope of the initiative	1/ Regional (or) 2/National 3/National with cross-border expansion 4/ International coverage
	Range of the offering: product/service lines	Restricted, Medium, Broad
	Width of product assortment: number of lines per product type	Restricted, Medium, Broad
	Depth of product assortment: number of items per line	Restricted, Medium, Broad
Business Model	Value proposition	To be defined as stated on the website
	Functions of the collaborative platform	1/ Cataloguing offers 2/ Mapping offers (in the sense of geo-positioning) 3/Developing rules for exchanges 4/Security of transactions (rating participants, insurance, etc. 5/ to be completed depending on the experiences studied
	Role of the supplier	Main roles of the supplier (marketing, evaluation, advertising...) apart from logistics
	Role of the demander	Main roles of the demander (marketing, evaluation, advertising...) apart from logistics
	Supplier compensation	Pricing (actor, calculation), compensation procedures
	Platform compensation	Compensation procedures and planned future changes
	Key figures	revenues, magnitude and value of exchanges, number of employees...
Supply Chain	Length of the supply chain	Length of the supply chain: average distance travelled by merchandise (short or long)
	Range of merchandise flows	1/ Local flows 2/National flows /Global flows
	Type of flow management	Centralised/decentralised: quick illustration of operations
	Flow management	Collaborative platform, supplier, demander, third parties, group
	Logistic role of demander	0/None 1/ Negotiate logistics with the supplier 2/ Ship products 3/ Pick up products 4/ Other
	Logistic role of supplier	0/ None / Negotiate logistics with the demander 2/ Ship products 3/ Pick up products 4/ Other
	Logistic role of collaborative platform	0/ None 1/Design/plan logistics systems for exchanges 2/Inventory 3/Control (quality, compliance) 4/Packing 5/Shipping 6/ Produce shipping documents 7/ Customs formalities. 8/Assess the logistics performance of participants 9/ Other

Table 1: Coding framework

2. FOUR TYPES OF COLLABORATIVE CONSUMPTION LOGISTICS

Our analysis of the data collected reveals two structuring variables that help to identify the logistics present in collaborative consumption: (1) the type of logistics management, which

may either be *centralised or decentralised*, depending on the collaborative initiative, and (2) the role played by logistics, which may simply constitute *support* for the initiative or, more fundamentally, may be the very *purpose* of the collaboration. By combining these two key variables, four types of logistics can be identified at the heart of collaborative consumption: peer-to-peer logistics, business logistics, crowd-party logistics and crowd-driven logistics (Figure 1). These four types of logistics should be considered as ideal types (as per Weber), which have been formed by comparing the case studies. The following paragraphs briefly describe each of these types and their characteristics are summarised in Table 2.

	Decentralised logistics management	Centralised logistics management
Logistics = support for the collaboration	<i>Peer-to-Peer Logistics</i>	<i>Business logistics</i>
Logistics = purpose of the collaboration	<i>Crowd-Party logistics</i>	<i>Crowd-driven logistics</i>

Figure 1: The four types of logistics in collaborative consumption

2.1. Peer-to-peer logistics

The first type of logistics that we find in collaborative consumption is what we propose to call peer-to-peer logistics. In this logistic framework, the individuals who trade, donate or share goods or services will, by mutual agreement, arrange and carry out the necessary logistics themselves. Peer-to-peer logistics is frequently used in collaborative consumption: individuals buying an item on Le Bon Coin, lending an object on ShareVoisins, picking up the keys to a car rented on Drivy, or donating an object through freecycle, etc. This type of logistics is used

to provide operational support to the collaborative initiative and, as its name suggests, is entirely organised and managed by peers. In this case, the role played by the collaborative platform is purely as an informational intermediary: it connects individuals through a website, potentially provides them with the information needed to complete a transaction in a secure fashion (sample contracts, practical advice, etc.), but does not intervene in the circulation of physical flows which are therefore direct (C to C). If logistics is to be delegated to peers, then the management of physical flows involved in the collaboration cannot be too complex. Facilitating and supporting peer-to-peer logistics is a key challenge for these platforms. Therefore they tend to promote local exchanges that require relatively simple logistics, including a geo-positioning function. Some of them (e.g. eBay France using Mondial Relay for global exchanges) may also form a partnership with a logistics provider that peers can call on when they require more complex logistics services.

2.2. Business logistics

The second type of logistics that we find in collaborative consumption is one that can be considered traditional and that we propose therefore to call "business logistics". In this type of logistics, the management of physical flows is handled centrally (like manufacturing and trading companies) by the platform promoting the collaborative arrangement in order to complete the exchange between peers. The difference with the first type of logistics is that in this case the collaborative platform positions itself both as an informational intermediary (through a digital platform) and as a physical intermediary (through a logistics platform). The main motivation for the collaborative platform to invest in a logistics platform in this case is that it is a necessary prerequisite for supporting the exchanges between peers. This may stem, for example, from the need to ensure that products match the descriptions given by peers (no defects, not a counterfeit product, etc.). This need for quality control is what spurred the Vestiaire Collective website, which enables individuals to swap luxury clothes and

accessories, to channel all items through its logistics platform in Levallois. The use of a physical logistics infrastructure may also stem from the need to carry out value-added physical operations on the products (sorting, grouping, etc.). For example, Le Relais, an organisation that collects used textiles donated by individuals, routes all the items through recycling platforms that are able to sort the clothes. Business logistics in collaborative consumption operates an indirect physical flow between peers: C to B to C.

2.3. Crowd-party logistics

The third type of logistics found in collaborative consumption is what we propose to call crowd-party logistics. This differs from the previous two cases where logistics served merely as support to the collaboration; here logistics is the very purpose of the collaborative arrangement. In this case, the collaborative platform calls on the crowd to provide logistics services, which may involve transporting merchandise — like the services offered by the Expédiez-entre-vous and Piggybee websites. Or they may involve storing or warehousing merchandise, as is the case for Co-stockage and Jestocke. The platform enables potential users to tap into the crowd rather than calling on third-party logistics firms as is done traditionally. Indeed, the crowd possesses logistic capacities (vehicles, space, etc.) which can be pooled. The aim of this type of platform is to tap into the crowd's capacities — which are often under utilised — to offer logistics services to individuals and/or businesses (type of flow: C to B or C). One of the key issues for the platform here is to reassure users (suppliers and demanders) about the risks generated by the sharing of logistic resources. This may be done by forming a partnership with an insurance company, which is what Co-stockage does, for example, obliging users to take out an insurance policy with Hiscox. Other approaches involve setting up a review and rating system for demanders to evaluate suppliers and identify those who may be problematic. Note that, in this type of logistics, the website only plays an

informational role and does not intervene in the physical management of logistics which is entirely delegated to the collaborating users.

2.4. Crowd-driven logistics

Finally, the last type of logistics that we find in collaborative consumption is what we propose to call "crowd-driven logistics". As in crowd-party logistics, logistics again constitutes the purpose of the collaborative arrangement. However, the aim here is not to tap into the logistic resources of the crowd, but to enable the crowd to regain control over its logistic choices concerning the supply and distribution of certain merchandise. The way these platforms operate (e.g. La Ruche qui dit oui — the Food Assembly, in English) often resembles a strategy of resistance against traditional supply chains and manifests the crowd's desire to circumvent traditional distributors and establish direct contact with producers (B to C). This type of logistics has mainly developed in the food industry, as consumers increasingly feel that they are being held captive by large retailers and grocery chains. This type of arrangement requires the platform to effectively empower the crowd to organise and control the entire supply chain together with producers and to help them to make logistic decisions collectively and in a centralised fashion. This may involve the use of an associative structure, such as occurs in community-supported agriculture associations (AMAP in French), which enable members, both individual consumers and farmers, to make logistic choices every year. It could also involve cooperative type structures, such as that set up for the collaborative grocery store project, La Louve. In this type of initiative, the platform must take on a role of physical intermediation in addition to its informational role. Notably, the platform must enable the crowd to contribute physically to the daily logistic activities. Within a community-supported agriculture association, for example, the members are asked to take turns participating in the weekly distribution of fruit and vegetable baskets. Similarly, at the collaborative store La Louve, members of the cooperative must make a commitment to work

in the store at least three hours per month and to serve as shelf stocker/department manager in place of paid employees.

Table 2 below summarises the main characteristics of collaborative consumption logistics.

	<i>Peer-to-peer logistics</i>	<i>Business logistics</i>	<i>Crowd-party logistics</i>	<i>Crowd-driven logistics</i>
Definition of logistics	Peers organise the logistics needed for their exchanges	The platform organises and carries out logistics between peers	The crowd offers logistics services	The crowd handles the planning and management of logistics
Logistics role of the platform	Connect individuals and support logistics	Handle the logistics needed for the collaboration	Enable the sharing and optimisation of individuals' logistic resources	Provide consumers with the infrastructure to regain control over logistics
Type of intermediation by the platform	Informational	Physical and informational	Informational	Physical and informational
Key function of the platform	Geo-positioning	Logistics	Insurance	Governance
Dominant orientation of flows	C to C	C to B to C	B/C to C	B to C
Type of offer	Local exchange of products and services	Products requiring intervention (sorting, quality control, etc.)	Shipping, warehousing	Local grocery and perishable products
Typical examples	Sharevoisins, Kiwizz, Le Bon Coin	Vestiaire collective, Le Relais	Expédiez entre vous, co-stockage, piggybee	La ruche qui dit oui, community-supported agriculture, la Louve

Table 2: Characteristics of collaborative consumption logistics

3. DISCUSSION AND MANAGERIAL RECOMMENDATIONS

Our findings may be discussed at three different levels. First, they contribute to the research on collaborative consumption by offering a *logistic* reading that is complementary to the dominant *political* readings. Second, they contribute to the literature on crowd practices, by showing that a complementary possibility is to use the crowd to handle logistics. Finally, they

have a managerial impact both for collaborative consumption entrepreneurs and for logistics service providers.

3.1. Peer-to-peer and Business logistics in support of collaborative consumption

Until now, studies on collaborative consumption have mainly debated the ideology associated with these new practices and whether or not they are "revolutionary" with respect to existing capitalist models. Alongside this political reading, our research shows that these practices also raise important logistics issues. In order to share, donate, recycle, sell or swap items between peers, one must be able to deploy the logistics solutions needed for these kinds of collaboration. Yet this issue is not mentioned by Botsman and Rogers (2010) who identify four key factors in the diffusion of collaborative practices: 1) a critical mass of users; 2) idle capacity (physical goods, time, space, etc.); 3) belief in "the Commons"; 4) trust between strangers who open the space to new intermediaries that may take charge of coordination and potentially use it to generate revenue. From this point of view, our research suggests that when the logistics needed are not too complex it is important to allow individuals to take charge of the physical aspects of coordination and support them if necessary (peer-to-peer logistics, see Table 2). As observed in the "consumer logistics" stream of research (Granzin and Bahn, 1989), individuals need to manage multiple logistics arrangements for their daily consumption and therefore possess the capacities and basic skills necessary to implement simple logistics schemes and to become actors in the organisation (Rouquet et al., 2013). In some cases, however, the logistics supporting a collaborative project may be too sensitive to delegate to individuals. The key point for collaborative entrepreneurs is to take charge of the logistics themselves (Business Logistics, see Table 2.). We show therefore that the intermediary role played by collaborative platforms is not confined, as the literature suggests,

to informational aspects (Gansky 2010; Nadler 2014), but may include logistic aspects when a virtual platform is combined with a physical platform.

3.2. Crowd-party and crowd-driven logistics: crowd practices of the 3rd type

The second contribution of our research is to identify and characterise a new form of crowd practice. Indeed, we show that, alongside crowdsourcing and crowdfunding, we are now seeing crowd logistics practices being deployed. For businesses and individuals, these practices entail tapping into the crowd to plan and/or execute the logistics necessary to the circulation of goods. Specifically, our research identifies two types of crowd logistics: crowd-party logistics, which taps into the logistic resources held by the crowd; and crowd-driven logistics which empowers the crowd to plan and develop logistics arrangements.

Crowd-party logistics practices show that the crowd is not only rich in ideas and money, but also in logistic resources. In one of her recent editorials, Botsman (2014), a pioneer in the field, announced that logistics is the next sector that collaborative consumption will move into, because the dysfunctions and under-utilisation found in logistics, especially in the distribution of goods to consumers, represent opportunities for collaborative consumption initiatives. As individuals are harnessing logistic resources that are often idle, they now appear to be a way of creating new arrangements for pooling logistic resources, alongside the traditional forms that exist between customers and suppliers or those now emerging between competitors (Carbone and Blanquart, 2015). This is a crucial point for our societies which are confronted with a sustainable development imperative. Pooling logistic resources allows us to improve logistics services while at the same time reducing our carbon footprint (Camman *et al.*, 2013).

The practices of crowd-driven logistics show that, contrary to appearances, logistic decisions are far from neutral for individuals. It appears that they may be the starting point for the plethora of "resistance" political projects, especially those opposed to the logistics used in retailing. This constitutes a contribution to this literature as recent marketing studies on

consumer resistance do not place much emphasis on the logistic dimension (Roux, 2007), whereas those on logistics tend to focus on the resistance of firms rather than that of consumers (Poirel, 2009). We should note however that a growing number of studies are emphasising the increasing importance of logistic issues for consumers, which is attested by consumer movements such as that of "locavores" (individuals who prefer to consume locally grown food whenever possible), as well as the recent communication campaigns run by distributors about the sustainability of their shipping (Boncori et al., 2015).

3.3. Collaborative logistics: managerial interest in LSPs and collaborative platforms

Finally, the utility of our research on a managerial level is twofold. First, it is potentially useful to collaborative consumption entrepreneurs. The typology identified here, emphasising logistic aspects which had hitherto been neglected in the literature, can serve as an aid to collaborative platforms in their thinking about this dimension and help to incorporate it into their business model. A lack of logistic vision may lead to the failure of development strategies (Fabbe-Costes and Colin, 2007). What is more original is that our typology shows that collaborative consumption initiatives may be centred around logistics. Like the above-mentioned remarks made by Botsman (2014), our findings constitute an invitation to organisations in the collaborative universe to explore the possibilities for innovation associated with physical flows.

Second, our research may prove useful to the logistics services industry. Indeed, our typology shows that for LSPs — specialised companies that have the ability to design, manage, execute and control logistic activities on behalf of their clients (Hertz and Alfredsson, 2003), collaborative consumption constitutes both a threat and an opportunity. A threat because, by handling logistics services, the crowd can take the place of LSPs and capture some of their business volume. A threat, especially as new entrants coming from the collaborative

consumption sector may, in the long run, compete with logistics service providers. Uber, for example, which currently focuses solely on passenger transport may eventually seek to deploy its geo-positioning system to handle flows of merchandise. The California-based company is currently testing home delivery services in Chicago and New York... But although the threats are real, collaborative consumption also represents an opportunity, as DHL has realised, to develop new activities. Indeed, in order to function, collaborative consumption needs intermediaries that are able to manage informational and physical flows. LSPs have the abilities necessary to operate as intermediaries in supply chains (Fulconis *et al.*, 2006) and can offer their customers global geographic coverage and a tailored approach to services (Fabbe-Costes *et al.*, 2008). In this context, they may well seek to expand their market opportunities by helping the crowd to circumvent existing supply chains.

CONCLUSION

The aim of this article was to identify the logistics that are currently being used within collaborative consumption. Although few studies have examined this subject for the moment, our article suggests that there are four types of logistics coexisting in the collaborative economy. While this exploratory study makes a significant initial contribution to this subject, it is nevertheless an area that needs to be explored in greater depth.

In this perspective, one interesting avenue would be to study the conditions under which crowd-logistics may emerge and evolve. First of all, analysing the motivations or impediments for individuals to get involved in this type of initiative would throw additional light on the subject, complementing our analysis which focuses on the collaborative initiatives themselves. It would also be interesting to expand the study to include collaborative initiatives that focus on passenger transport. We are thinking, for example, of initiatives like Uber and

Blablacar which are enjoying a resounding success. The boundary between flows of goods and flows of people tend less and less to be impermeable and to make sense because logistic resources are being used more and more for both passengers and goods. A holistic approach to the study of collaborative mobility (of people and goods) would also be useful to examine more broadly the environmental impact of the physical flows it engenders.

More generally, research into the sustainability of collaborative consumption could be enriched in the future by drawing on the typology of logistics that we propose here. Indeed, the more efficient use of resources and the expected increase in the lifespan of shared products and goods have often been put forward as the two main criteria qualifying collaborative consumption as sustainable. Nevertheless, an in-depth analysis of sustainability should also include logistic aspects. In this regard, our typology could be used to carry out a broader and more reliable evaluation of the impacts generated by these consumption practices.

Finally, in line with existing studies on the interconnections between collaborative consumption and traditional economic systems, the impact of collaborative consumption on the logistics services and transport industry is undeniably an interesting avenue to investigate.

What can logistics service providers and operators learn from these new modalities for managing flows? How can they reinvent their role as supply chain coordinators in such a potentially different context? Are we witnessing the rise of a new contender whose role will mainly be one of mediation between storage space, transport and logistics abilities? Are social networks getting ready to move to the fore as the major information and communication technologies in the service of fragmented and scattered supply chains? In other words, will logistics firms be able to reinvent their role and their way of operating by drawing inspiration from the founding principles of collaborative consumption: capitalising on information systems (which they already know how to do), activating idle resources and acting as an intermediary in the market?

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