

E-commerce with groceries – Mapping areas of research¹

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1. Introduction

Information and communication technology (IT) has the potential to change individuals' roles and possibilities in an increasingly connected network society (Castells, 1998). Due to IT, the role of the end-consumer buying groceries and other fast-moving consumer goods (FMGC) through retailers changes (Narwal & Sachdeva, 2013). Internet-based grocery stores and solutions with pre-packaged grocery bags make the physical store unnecessary as an interface towards the final consumer as the industrial distribution system is being "short-circuited" (Marsden, Banks & Bristow, 2000), causing the end-consumer and the distribution system to interact directly with each other.

The digitization of commerce can also be seen in light of another development, which means that what is commonly known as distribution channels are no longer to be seen so much as channels, but rather distribution *networks*, with a number of interconnected actors who interact with each other (Gadde, 2010, 2012; Gadde & Hulthén, 2011; Huemer, 2012). These networks have emerged as a consequence of an inter-organizational organizing aiming at creating efficient distribution systems (Gadde & Håkansson, 2001; Gadde & Håkansson, 1992). These distribution systems are calibrated, tuned and well-adjusted and they are pushing forward new and developed roles within the distribution systems (Gadde & Ford, 2008; Gripsrud, 2004). For example, the role of intermediaries has been studied (Gadde & Hulthén, 2011). The conclusion from this development is that the structures that are of importance to understand are *network structures* rather than supplier and distributor *chains* (Frostenson & Prenkert, 2014).

2. Research question and purpose

This network approach is used as our point of departure in this paper, where we assume that retailers, producers and consumers relate to each other through interaction². The

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² This approach is also referred to as *IMP, Industrial Marketing and Purchasing*, from which the research is derived. See also: <http://www.impgroup.org>.

overall question that we are interested in is how e-commerce has changed the organizing of the networks around the distribution system of the grocery sector. The aim of this paper is to map the specific problem areas that may be identified in relation to this development.

3. Specific problem areas that deserve research attention

There is surprisingly little knowledge of what happens when the function of what has traditionally been the endpoint of the industrial system, the physical store, changes as a result of an e-commerce model. When an increasing proportion of consumers no longer do their shopping in physical stores, but over the internet, the whole system is affected. However, we have very limited knowledge of *how this pattern of behavior affects the organizing of the entire distribution system*. Moreover, one realizes the complexity that is created by e-commerce models, since the industry must continue to keep the physical stores as part of a traditional distribution model as well. According to Garcia-Dastugne and Lambert (2003), IT can have two principal uses in distribution systems; partly as a digitally enhanced market mechanism and as a digitally enhanced coordination mechanism (Garcia-Dastugne & Lambert, 2003: 258; Gadde & Hulthén, 2011: 37). If we choose to view the distribution system as a network rather than a chain, the coordination mechanism is of particular interest for the understanding of the impact of e-commerce on retailers' distribution. Based on a network approach and by focusing on digitally enhanced coordination mechanisms, we identify a number of problem areas.

3.1 Problem area 1: Organizing networks for distribution

In the existing distribution systems, the final consumer is mediated through a physical store i.e., consumables end up with the final consumer through the industrial system's ultimate end: the physical store. However, e-commerce changes this. The physical store as an interface towards the final consumer becomes unnecessary and the industrial distribution system "short-circuits" by these solutions, since the final consumer and the distribution system interact directly with each other. This development reorganizes the distribution system. Exactly how this is done and what processes it involves is an unexplored area. Thus, the overarching research focus can be concretized as follows, given that e-commerce is changing the final consumer's role in the system and that the distribution system is viewed as a network:

- *Research focus 1:*

How does the organizing of the network for distribution of groceries of local e-commerce solutions differ from the organizing of the network for distribution of groceries of a local physical store?

This overall research question can be divided into a number of sub-questions. We have identified two aspects that are crucial in this context. The first aspect concerns the way in which e-commerce lead to productivity and profitability improvements. The second aspect concerns the way in which e-commerce lead to sustainability improvements.

3.2 Problem area 2: How can e-commerce solutions lead to productivity and profitability improvements in the grocery sector?

It is well known that IT can make parts of the distribution system more effective and the literature is full of examples. Joint IT-driven storage systems that integrate buyers and sellers can for example reduce the costs for order processing (Woo, Hsu, & Wu, 2000). This type of efficiency is the whole idea behind the integrated inter-organizational IT systems for sourcing, ordering and delivery (Johnston & Vitale, 1988). However, such studies are concerned with how IT can streamline established inter-organizational structures. In our case, we clearly see how e-commerce is changing roles and functions in these structures in the grocery industry. How these changes in inter-organizational network structures affect the profitability of the actors involved is an unexplored field. Given this inter-organizational dynamics, we identify the following research focus:

- *Research focus 2:*
What are the differences in profitability patterns and profitability potential of an e-commerce solution compared to a physical store solution?

3.3 Problem area 3: How can e-commerce solutions lead to improved sustainability in the grocery sector?

The second aspect that we have identified concerns the connections between network organizing, e-commerce and sustainability. These connections have not been studied together earlier. However, sustainability issues in the grocery industry has been studied, e.g. ,retailers' work with codes of conduct (Egels-Zandén & Bergström, 2013) as well as retailers' work with Fair Trade goods (Bezençon & Blili, 2009) and ethical decision making in supply chain management (Ferrell, Rogers, Ferrell, & Sawayda, 2013). The IT-aspect has been touched upon in studies of accountability among retail companies (Frostenson, Helin & Sandström, 2010). These studies have provided important knowledge from the perspective of the retail firms but lack a detailed analysis of the inter-organizational dimension, although it is mentioned in for example Frostenson et al. (2010). Responsibility and sustainability aspects are not less complicated or important when discussing them in an IT-driven inter-organizational supply context. Given that sustainability issues have a legitimate place in such a network context (Andersson & Sweet, 2002; Frostenson & Prenekert, 2014), we identify the following focus:

- *Research focus 3:*
How can sustainability issues be expressed in the development of e-commerce solutions in terms of the organizing, profitability patterns and profitability potential compared to a physical store solution?

Conclusion

In conclusion, these three research issues deserve further attention in order to generate increased knowledge on the challenges associated with IT-driven grocery distribution, and how such solutions can thrive next to established physical store solutions. It is likely that new innovative ways to handle this emerges, such as local distribution kiosks, pick-up stations at work places and deliveries of groceries to the trunk of your car. Understanding how such solutions affects the organizing, profitability and sustainability of the distribution system is key to sustained success in the sector.

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