

One Small Click, One Major Problem?



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We first took an interest in the environmental consequences of the rise of online retail back in 2017. At the time, we wrote that, depending on the situation, eCommerce could “represent the tip of the green IT iceberg” and “demonstrate the relevance of new technologies to energy transition.”¹

This growth is well underway. Over the last five years, revenue from online retail sales has grown 165 per cent, reaching \$3,535 billion in 2019.²

Furthermore, while eCommerce was already expected to grow ever-faster in the coming years, the 2020 COVID-19 crisis

has simply accelerated the process, sounding the death knell for many bricks-and-mortar outfits.

How can the environmental cost of the eCommerce boom be fairly assessed? Nowadays, as every industry and trade sector claims transparency over its environmental impact, and to be working on mitigating it, it would seem particularly timely to examine the issue from the specific viewpoint of its impact on climate change.

A Sector With High Climate Impact

The transition to new modes of social experiences (remote-working, social distancing, etc.), as seen particularly in 2020, is not without effect from an environmental point of view, especially because of the link

between consumers’ behaviour and the different means of transport used. In fact, eCommerce alone generates 21 per cent³ of the greenhouse gases emitted in Europe. Together with electricity generation, it is the sector that will have to decarbonize the fastest if the European Union is to reduce, by 2030, its greenhouse gas emissions by 44 per cent of current levels.⁴ Of the aforementioned 21 per cent, nearly three-quarters is generated by road transport, mainly private cars and the small vans so popular with eCommerce delivery drivers.

At first glance, the benefits (to the climate) of an expansion in eCommerce therefore seem obvious. On the one hand, there are dozens of trips to shopping centres in private vehicles with internal combustion engines; versus (on the other) a single delivery round, bringing all

those individuals the goods on their shopping list. Apart from the social consequences of such a change in behaviour, which will not be discussed here, the impact of eCommerce on GHG emissions will depend a great deal on the purchasing method it replaces, as well as its impact on our behaviour as consumers in general.

Vehicle GHG Emissions

Although private vehicles certainly emit CO₂, delivery vehicles do, too. In fact, by virtue of their weight and larger size, delivery vehicles emit considerably more CO₂ than private cars.

And, don't forget, consumers don't always drive themselves to the shops. Town-dwellers benefit from shorter distances to stores and from public transport services that emit little CO₂. In reality, only a massive switch to 100 per cent-electric vehicles would enable eCommerce in urban areas to generate lower GHG emissions than if consumers had taken public transport, cycled, or even walked to stores to make their purchases.

In addition, the transition, in Europe, of the stock of privately owned vehicles to 100 per cent electric-powered models by 2030 will reduce the marginal gain in GHG emissions brought about by eCommerce, further reducing – from this point of view – eCommerce's climate benefits.

Changes In Consumer Behaviour

Discussions that compare eCommerce to bricks-and-mortar retail are often conducted from an 'all-other-things-being-equal' stance and as if the expansion of eCommerce does not bring about changes in consumption patterns.

The term 'substitution' is used when an online purchase takes the place of one that would have been made in a store.

This skips over the possibility that eCommerce increases our propensity to consume, and over the resulting environmental externalities. This question has already been examined many times, but none of the research provides a definitive answer, given the diversity of habits and product types, and the difficulty in modelling how a consumer would have behaved without eCommerce.

The simplicity of a mere mouse click, the availability of thousands of products on one website, and the possibility of buying a

wide range of items in a single transaction are all factors contributing to the success of eCommerce, but which could also explain its impact on the volumes of goods consumed.



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They are not, of course, the only factors. In the fashion industry, for example, the almost constant renewal of collections, combined with extremely low prices, contribute to the growth in sales volumes.

Managing Returns

A more subtle aspect than the quantity of goods purchased through eCommerce is that of goods purchased with the intention of, if necessary, returning some, either because we don't like them or because they are otherwise unsuitable.

Here, too, the clothing industry comes immediately to mind. Research in this area⁵ shows that the level of returns has a significant impact on the GHG emissions generated by eCommerce. Such returns increase the overall eCommerce-related GHG emissions and their environmental impact, all the more so if, as already happens, returns are sent back to Asia for repackaging or are even, according to one NGO's allegations against Amazon, simply destroyed.⁶ It should be noted that the systematic acceptance of returns is

now becoming standard in bricks-and-mortar retail, forced to align itself with eCommerce practices to remain competitive.⁷

No Going Back, But A Number Of Routes Forward

As with many innovations driven by technological change, the development of eCommerce does not automatically bring about an improvement in terms of the environmental impact of our activities. This impact depends first and foremost on the use we make of these new possibilities. If eCommerce becomes an excuse for the over-consumption of unsustainable goods, a large proportion of which are returned to the retailer, its impact on climate change is likely to increase and negate the achievement of our carbon-neutrality targets.

Our analysis of companies in the sector, and the dialogue around ESG aspects that we conduct with them, are consequently aimed at encouraging a rapid transition to 100 per cent-electric vehicle fleets, powered entirely – just like their IT infrastructure – from 100 per cent-renewable sources. These two measures will not prevent other negative impacts, including the generation of waste and the consumption of other natural resources. However, they do deliver a credible response to climate emergency for a sector with an ever-growing impact on the climate.

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1 <https://www.candriam.be/siteassets/image/marketinsights/sri/bricks-and-clicks-offers-the-most-sustainable-retailing-model/candriam-short-paper-e-commerce-publication.pdf>

2 <https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/>

3 Eurostat data

4 Under the Paris Agreement, the European Union has committed to reducing its greenhouse gas emissions by 45 per cent compared to their 1990 levels by 2030. In 2019, the European Commission raised the target, committing to a 55 per cent reduction by 2030 and carbon neutrality by 2050. This 55 per cent objective equates to a 44 per cent reduction from the level of emissions recorded in 2019.

5 See in particular Cullinane, S., et al. (2019). Retail clothing returns: A review of key issues. Contemporary Operations and Logistics, Palgrave Macmillan, Cham: 301-322.

6 <https://www.amisdelaterre.org/destruction-de-produits-neuf-fin-de-l-impunite-pour-amazon/>

7 "Retailers rethink returns policies as increase in 'serial returners' impacts bottom line", <https://home.bardaycard/press-releases/2019/05/retailers-rethink-returns-policies-as-increase-in--serial-return/>