

The Environmental Consequences of Amazon 2-Day Shipping.

Introduction

What did you last order from Amazon? How quickly did it come? What box did it come in? It is time for us to confront our love for E-commerce and the rapid shipping speeds we have become accustomed to. As Amazon's flagship subscription service, Amazon Prime, becomes more ubiquitous in the retail space, we must ask what the environmental consequences of 2-day shipping are. This poster details how Amazon Prime encourages inefficient, polluting package delivery with greater waste, and what can potentially be done to mitigate these problems.

The Problem with Amazon Prime

Online commerce still leaves a larger carbon footprint than traditional retail (Weideli, 2013). Figure 1 shows the carbon footprint of a traditional shopper as compared to an ideal online shopper and a shopper that regularly uses rapid delivery like that of Amazon Prime. Online shopping is not inherently detrimental. However, current use has a major environmental impact, which can be attributed to two major problems with Amazon Prime's shipping model:

- 1. A transportation network that favors speed over efficiency and energy management.** More time in transit correlates to a larger carbon footprint. Ideally, E-commerce could reduce time in transit by taking personal cars off the road and allowing full delivery trucks to make more stops. However, to reach delivery speeds Amazon fills trucks less full and uses aircraft transportation, which is 8 times more energy intensive than trucks (DePillis, 2019) and emits more CO₂ (see figure 2)
- 2. Large amounts of waste packaging.** According to Adele Peters of Fast Company (2018), 165 billion packages are delivered each year in the US, equating to more than 1 billion fallen trees. Amazon often packages items individually, filling large boxes with airbags to protect the product, as exemplified in figure 3.

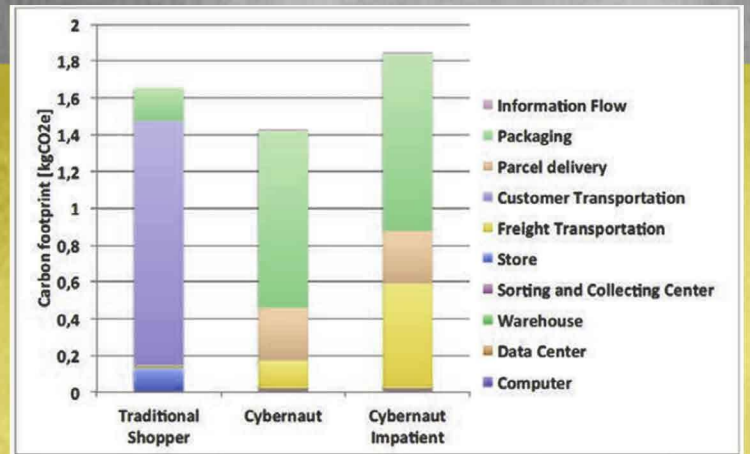


Figure 1: The categorized carbon footprints of different shoppers. Source: [Weideli, Demetri. Environmental Analysis of US Online Shopping. Dissertation, Massachusetts Institute of Technology, 2013. MIT, 2008.]

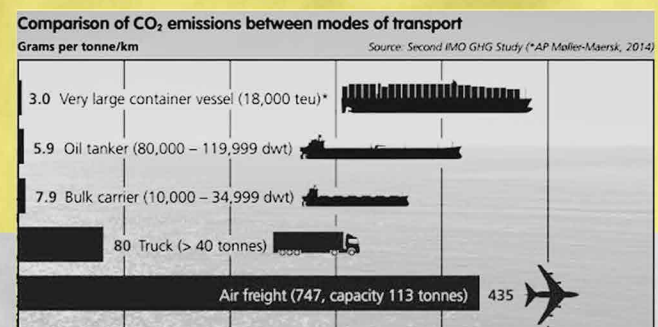


Figure 2: A comparison between the CO₂ emissions of different modes of transport. Source: [ICS: Shipping Set to Cut CO₂ Emissions by 50 Pct by 2050. (2015, September 15). World Maritime News.]



Figure 3: An example of excess packaging from Amazon. Source: [Haney, Patrick. Apple TV, 19 May 2011.]

What Can be Done

What can potentially be done to minimize the environmental impact of Amazon Prime?

- **“Nudging” the consumer and using peer pressure tactics.** DePillis (2019) suggests “nudging” by relabeling slower shipping to “green shipping” to promote the environmental benefits. Figure 4 shows what this could look like, relabeling longer shipping as green shipping and including the environmental impact. This tactic can persuade the consumer to make better decisions without loss to the individual or company.
- **More conscious transportation.** Freight vehicle emissions make up one quarter of transportation emissions (Nguyen, 2019) and aircraft transport consumes more energy than truck transportation. Jeff Bezos, Amazon founder, has promised to transition to more electric vehicles but, according to CNN business, “in a recent big last-mile investment, Amazon ordered 20,000 conventionally-fueled delivery vans” (DePillis, 2019). This transition to electric vehicles could be the answer to drastic emission reduction.
- **Reducing the culture of 2-day and 1-day shipping.** In fact, Amazon has made some steps away from immediate delivery. The company has recently initiated “Amazon Day”, in which the customer schedules a day for all deliveries to arrive. This allows multiple items to be packaged together, reducing overall packaging. The customer can then be rewarded with discounts and other perks. This allows for more compact packaging and fuller trucks that make less trips, greatly improving efficiency.

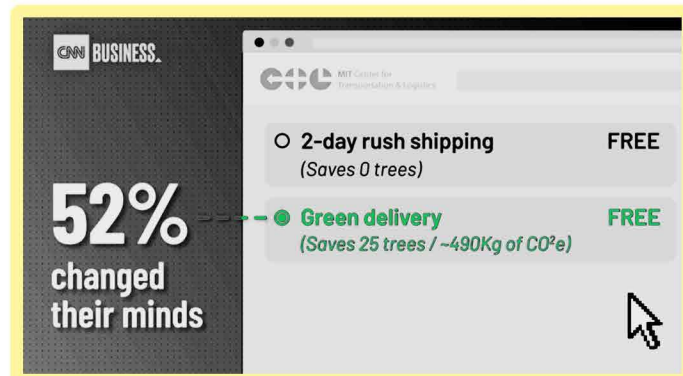


Figure 4: Potential Amazon interface in which the environmental cost is listed. Source: [DePillis, L. (2019, July 15). Rush shipping is often free. But the environment is paying for it. CNN.]

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