



3 ways that technology can make retail more sustainable

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By
C&T

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At the place where production meets consumption, retailers are a vital component of any modern economy. This is truer today than ever before: in the tumultuous first days of the pandemic, retailers kept kitchen cupboards stocked, bathrooms clean, and supplied the entertainment that sustained us through long spells of lockdown.

But like many industries, the retail sector must acknowledge an area in which it's lacking – sustainability. Every year, UK retailers alone contribute some [215,000kg of CO₂ equivalent emissions](#) through the lifecycle of the goods they sell. This places them among the greatest emitters of greenhouse gases in the country, contributing some 80% more than all road transport combined.

It's a similar story across Europe. The continent's penchant for 'fast fashion' generates around [650kg of CO₂ equivalent emissions per capita](#), making apparel and household textiles the fifth largest source of pollution linked to private consumption.

As climate concerns intensify, these issues can no longer be ignored. Consumers, especially younger ones, are demanding change. More than [three-quarters of British grocery shoppers have boycotted](#) certain products based on a brand's environmental standards, [while seven out of ten Millennials and Gen Z say they would pay more for ecological and sustainable offerings](#).

Can retailers rise to the challenge of environmentalism and satisfy this growing green sentiment? The answer is yes — and technology is at the heart of the solutions. Here are three ways that technology can make the retail sector more sustainable.

1. Technology can help us understand the environmental impact of our purchases

Retailer-customer synergy is crucial if sustainability goals are to be realised. To this end, we need to help shoppers understand the environmental implications of their purchases.

Advanced point-of-sale systems can provide data-driven insights into customer behaviour. The re-use of plastic bags, for instance, can be monitored and recorded at checkout, offering rewards to eco-minded shoppers who remember to bring their own.

COOP DK, a Danish grocery chain, is leading the way with this sort of intelligent personalisation. Rolled out last year, the supermarket's smartphone app lets

shoppers see the carbon footprint of their basket (and how their shop compares with the average). The goal, the company says, is to nudge consumers away from the most carbon intensive products — like meat and dairy — and towards more sustainable options.

Looking to the future, blockchain-enabled solutions and IoT sensors promise to take this process a step further, offering customers real-time insights into their cart's carbon footprint right across its supply chain journey.

This level of eco-transparency is advantageous not only for the shopper, who is empowered to make more informed choices based on their unique 'sustainability score', but also for the retailer, which is able to demonstrate quantifiable climate action, dispelling any notion of '[greenwashing](#)'.

2. Technology can optimise supply chains

When a business decides to go green, cleaning up its in-house operations is an obvious starting point — but if the supply chain that a retailer relies on doesn't follow suit, that hard work will have been for nothing.

Unsustainable supply chains are a major issue. A recent piece of research from the [Harvard Business Review](#) highlighted a litany of supplier issues, including marginal or non-existent green management systems and high staff turnover preventing meaningful environmental interventions. To combat these complaints, more and more retailers are embracing supply chain digitisation.

Data-driven dashboards can pull together metrics from every stage of a product's journey: manufacturing, distribution, marketing, and delivery. Detailed, AI-powered insights highlight eco-issues along the way, guaranteeing an item's environmental provenance by the time it reaches the buyer.

Fashion retailer [Tommy Hilfiger](#) is one of many firms decarbonising supply chains with technological innovation. Using 3D design software, the clothing brand now develops 100% of its seasonal lines virtually, with no physical garments made or sampled prior to launch. This meets consumer needs faster, the company says, and allows for greater sustainability.

There is, of course, still a requirement for large scale production when items are ready for market. This process typically presents a challenge for retailers — the need to buy enough so shelves aren't empty, [but not so much that waste is inevitable](#).

Again, technology can help with this. Smart, cloud-based warehouse management systems maximise storage capacity by using machine learning to optimise layouts. This increases energy efficiency, cuts down on wasted space, and helps retailers procure precisely the right amount of stock required.

3. Technology can be designed more intelligently to reduce digital emissions

Environmental costs aren't limited to physical retail processes — 'digital emissions' are of equal concern but are often overlooked. Every time an e-commerce site is accessed or a product page is clicked, electricity is used to power data centres, transmission networks, and consumer devices. With the e-commerce sector's meteoric rise — [online sales have almost quintupled globally since 2014](#) — this is a growing concern.

On average, websites produce [1.76 grams CO₂ per page view](#). For sites with 10,000 monthly page views, that means 211kg of CO₂ each and every year. In the US and the UK, fashion retailers Victoria's Secret and UNIQLO are among the most carbon intensive websites, with [around six grams of CO₂ emitted per visit](#). On the flipside, the likes of H&M and Marks & Spencer rank highly, [producing just a fraction of a gram with every click](#).

Curious about how much CO₂ your website produces? You can check it [here](#).

Intelligent digital design is the secret to website sustainability. This means clever use of compressed images, efficient file formats, lightweight fonts and page frameworks, and offering 'dark mode'.

Going green doesn't need to be difficult

Retailers know the importance of sustainability, but they need the tools to properly channel their green ambitions. Optimising customer experiences, refining supply chains, and reducing digital emissions — these can all be achieved with the right expertise and the right partnerships.

Eco-conscious digital specialists like CI&T understand the changes that need to be made: how people, ideas, and new technologies can be brought together to deliver the most sustainable results. Digital consultancies can design tailored solutions that reduce emissions across a retailer's operations, help them tell compelling stories, and connect them with the right ESG partners to ensure they deliver on sustainability commitments. For customers and companies — and, indeed, the planet

as a whole — that's something worth striving for.

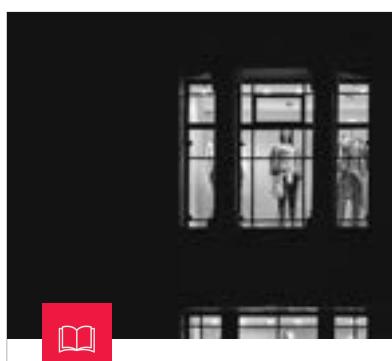
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