



# how can data science underpin and accelerate progress on sustainability?



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# introduction.

**It might sound like the preserve of tech and IT whizzes, but data science – simply put, the act of extracting meaning from data – underpins a lot of the progress on sustainability when it comes to retail technology.**

**As we've seen already, the concept of sustainability is far broader and more multi-faceted than simply the environment, spanning instead the '5 Capitals.' This in turn requires both an organisation, and its leadership, to define exactly where it can have the biggest impact, rather than drowning in all the possibilities. It's what's known as a sphere of influence and, in retail, means we consciously zero in on in-store tech, the supply chain and workforce transformation when thinking about sustainability as the areas where we can bring about real change.**

That sphere of influence might sound pretty narrow. But in reality it contains a multitude of opportunities to make a positive impact on all five capitals – natural, human, social, manufactured and financial – achieved by combining the latest technologies with specialist knowledge, and the capacity to design and deliver change.

And the common enabler that underpins this work? Data science.

## leveraging data science to make an impact on sustainability.

A lot of the time it can feel like we are drowning in data, both as organisations and as individuals. Every online purchase. Every loyalty scheme. Every time we sign up to a new app.

Well, without data science it can all become an amorphous mass of facts and figures. Pretty useless in other words. With data science though, that mass begins to take on a clearer and more defined shape. Those facts and figures evolve into insights into how an organisation works, where there is room for improvement, and where there are hot spots in, say, the supply chain that need to be addressed.

Done in the right way, it's therefore a process that can link together disparate data and find patterns, trends and insights. It can help organisations to visualise process and behaviours more clearly. With the right system in place, it can help model data in real time too, creating a constant feedback loop on what's working and what isn't. All which feeds into far more informed, evidence-based decision making.

That makes it a critical tool when it comes to sustainability. A retailer looking to track the

environmental impact of its supply chain, for instance, will need to be collecting data at various points, and turning that information into clear, actionable insights in order to gauge which element has the biggest carbon footprint.

The same goes for trialling any new sustainability initiative in store or across the supply chain. How much has it been used by consumers? What resources does it require from the business? What are the costs involved? All this data needs to be turned into clear and transparent insights on whether or not that initiative should be tweaked, continued or cancelled.

This goes for any new system designed to help retailers avoid excess inventory and surplus stock. Workforce management software that has been deployed to improve staff wellbeing or productivity. Or AI-driven technologies that are helped to create delivery routes with the lowest carbon footprint. Each initiative would need a robust use of data science to ensure it is making a meaningful difference on the relevant area of sustainability.

## data science in action.

There are already plenty of examples of retailers using data science in this way.

Tesco and its long-term commitment on reducing food waste across the business is one case in point. When, in 2017, the grocer committed to ending edible food waste across the business, it used data in a myriad of ways to make progress. It measured surplus at each stage of its supply chain and used this to identify individual food items causing the most waste. It partnered with food sharing apps to track surplus stock at store level each day, and notify nearby charities. And it published visualisations of waste across each part of its supply chain and shared this with consumers and investors.

At the Co-op meanwhile, its ability to set science-based targets for its carbon emissions has only been possible thanks to painstaking behind-the-scenes work on collating and mapping out data, and then using this to build a breakdown on its total greenhouse gas footprint. It's then used this to identify what reductions are feasible and within what timescale.

## making the best use of data.

Don't be put off by the associations that come with the term.

Data science is simply about making best use of all the data available in retail and, when it comes to sustainability, that couldn't be more critical. It's the common enabler that underpins so much work across all five 'capitals of sustainability' and one that will ensure retail tech is a measurable and meaningful part of the change.



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