Dixons Carphone

CASE STUDY

SYNTASA


## BACKGROUND

Dixons Carphone plc is a leading multinational consumer electrical and mobile retailer and services company, employing over 42,000 people in nine countries. In 2014, Dixons Retail and Carphone Warehouse merged to create Dixons Carphone, whose primary brands today include Currys PC World and Carphone Warehouse.

As customers increasingly shop in different ways (online, in-store, reserve and collect, etc.), Dixons Carphone identified a need to provide an intuitive product suggestion journey on their websites, similar to what you will find in its retail stores, where skilled sales professionals assist customers with product suggestions that might be helpful (e.g., a laptop case for a laptop, or an HDMI cable for a large-screen TV). The vision was to be able to offer bundles to online customers that were personalized - based on what was known about the individual customer - and offer them in real-time - so as to drive incremental sales and margin to the business. The objective then was to apply mathematical modeling, data science, and machine learning techniques to increase cross-sold products on the Currys and PC World websites. A data science team was created within the Dixons Carphone eCommerce department and they set out to build a bundling recommendation engine.

## CHALLENGES

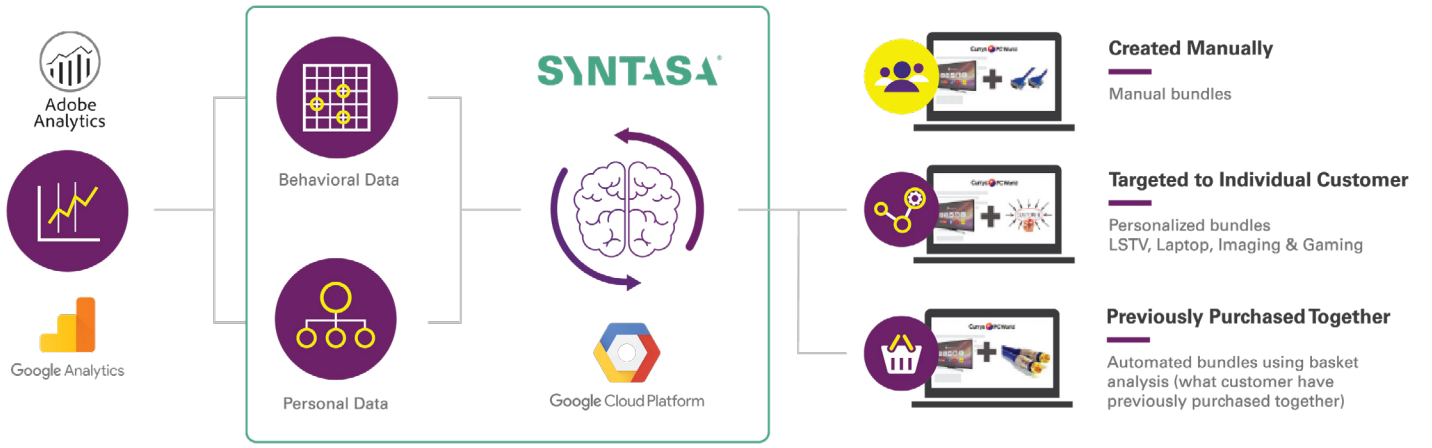
Initially, product attachment was a relatively manual process, in which the online merchandising team would manually set up bundles for each individual product and each individual add-on product to that. They identified the need to not only automate that process, but also add a layer of personalization. The team had created a natural attach model (similar to market basket analysis), which looked at combinations of products naturally purchased together by all customers (still, not personalized), and had been unable to put them into production on their website.

**"What we had a challenge with was the ability to look at the granular detail of the user-level data, so that we can start to look at what an individual customer is doing (and might do) on our website."**

- Chris Ward
Former Ecommerce Insight Manager, Dixons Carphone

Furthermore, when they looked at their Adobe Analytics data, they realized that it was very structured and not in a format that could be used right away for analysis. Without an extensive data engineering team, they needed a solution to help architect the data and create production models that could productionize at scale with varying levels of demand. The Currys PC World brand is highly seasonal with traffic volumes increasing by as much as 10x on prime shopping days such as Black Friday and Boxing Day.

# DIXONS CARPHONE CASE STUDY




## SOLUTION

Syntasa was engaged to plug natively into their existing technologies and within their GCP environment to synthesize behavioral data so that it could be available for analysis right away. It's part of what's called their Supercharge Attach project. When a customer arrives at the Currys PC World websites and opens a product detail page, a query is made to the recommendation API, containing the customer's visitor ID and product ID. This recommendation API then returns personalized or non-personalized bundle recommendations, based on the customer's history on the Currys PC World websites. Personalized recommendations are prioritized when sufficient browsing history is available – and when this is not available, natural (non-personalized) recommendations are served to the customer.

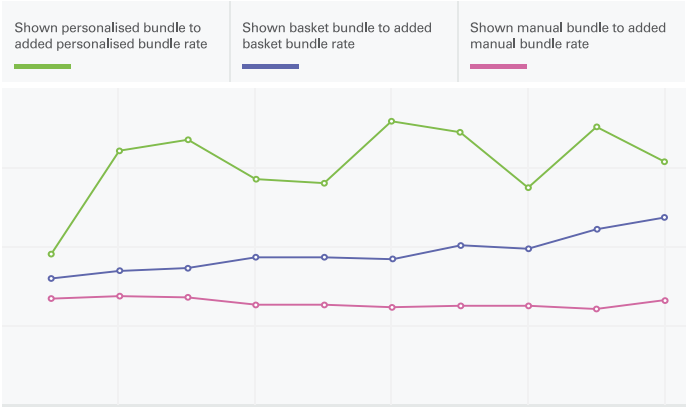
"Syntasa has been really invaluable in speeding up our time to value by architecting our Adobe Analytics data and productionizing data science and machine learning modeling at scale, and in such a way that we can confidently pass that into production systems to drive the user experience"

- Paula Bobbett
Head of Online Performance, Dixons Carphone

To produce personalized recommendations, Syntasa built a Nearest Neighbor model to generate a neighborhood of similar customers, based on browsing behavior and products purchased together by similar customers. Additionally, the Dixons Carphone team built an algorithm they call Natural Attach to produce non-personalized recommendations. The model was then productionized with Syntasa's Composer module.

## RESULTS

Dixons Carphone is now able to combine multiple business data sources into their big data environment to build machine learning modeling with the data, as well as to pass the modeling outcomes to their activation channels (i.e., websites, optimization tools, CRM, etc.). The team has seen the following results:




**Product coverage has doubled:**

Product coverage, which Dixons Carphone defines as the share of product views on the website where a recommended bundle was displayed, has increased from 32% coverage with the manual bundling solution to 72% with the automated and personalized data-driven bundles.

**Add-to-basket rates have increased 3x:**

When provided with personalized, AI-driven product recommendations, customers are 3x more likely to add the product to their basket when shopping online. For customers who hadn't generated enough data, Dixons Carphone's natural attach recommendations outperformed manually-created ones by 1.3x.