# Polytag × Co-op

| Providing invaluable new insight
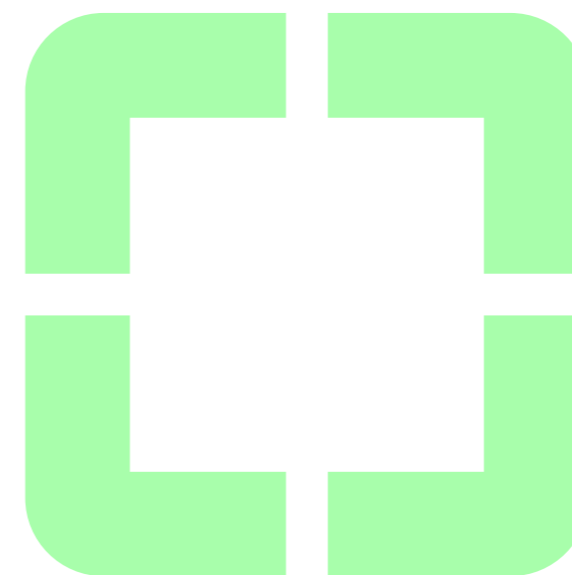
**Polytag**

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# From the top

Polytag as a business is evolving. Working with leading retailers and brands has enabled us to identify new ways to utilise our technology. This means we are now able to support our clients in a variety of ways, from incentivising end-users to recycle more, to providing unique new marketing opportunities.

We are delighted that Co-op has joined other leading grocers - including Aldi and Ocado - in becoming a pioneer of Polytag technology. It will now gain access to new data that will provide it with a means to track its own products' recycling rates, as well as helping it improve communication with individual consumers.

In this report we highlight how Co-op is deploying our unique-every-time QR codes in different ways - visible and invisible - to interact with its customers and provide invaluable insights into how consumers dispose of packaging.

Polytag has come a long way since its inception, and we're excited by this next chapter that complements the work we're doing in the Digital Deposit Return Scheme arena.

We will be leading the way in helping the grocery industry transition from stripy barcodes to GS1 approved QR codes, as well as delivering never-seen-before insights on packaging lifecycles that will allow brands to accurately measure against their ESG targets and respond to legislative reporting requirements.

But we're not stopping there. We believe that packaging can become an even more important marketing channel for brands. Using our unique-every-time QR codes will enable businesses to talk director to a customer in order to provide educational and promotions messages through fully-branded and customisable landing pages.

Our ultimate aim is to help increase recycling rates and our technology is providing a platform to incentivise consumers to dispose of packaging correctly. We truly believe this will have a game changing impact on the UK's circular economy and have a profoundly positive impact on the planet.

We look forward to onboarding more brands and retailers as we continue our journey to revolutionise the way that plastic packaging is utilised throughout the supply chain. Please get in touch with our team to learn more about our solutions.

Alice Rackley
CEO and Co-founder
Polytag
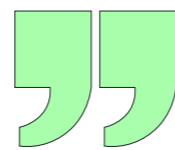
> **The retailer is leveraging our unique-every-time QR codes in different ways - visibile and invisible - to interact with its customers and provide invaluable insights into how consumers dispose of packaging.**

# An introduction to Polytag

Customers, retailers and brands want more and more insightful information and data on products and packaging. But how can this be done at a low cost right throughout the packaging lifecycle?

Polytag uses two tag formats – a black ink QR code and an invisible UV code. Polytag helps brands and retailers speak to their customers via QR codes, and works to further improve traceability of products using two tag formats.

Now, brands, retailers and governments can unlock insightful information on how packaging is disposed of and recycled using GS1-approved global standards and tag formats.

The tags used can be used throughout the supply chain thanks to the interoperability of the

GS1 standard codes, from warehousing, to point of sale, consumption and ultimately disposal and recycling, Polytag's patented two tag formats provide a wealth of data to brands – data that simply hasn't been seen before.

Currently, sustainability initiatives are seen as a cost centre, often lacking meaningful data. With Polytag, brands can deliver meaningful sustainability initiatives with a demonstratable return on investment and never-before-seen data.

Both tags – a visible QR code, unique to each label, and invisible tags were applied to Co-op's 2-litre spring water bottles to give the retailer a new viewpoint of how their packaging was handled and disposed of by consumers and the local authority in Abergele and Teesside.

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# The problem

Limited label space

Label space is already a small area and is continually shrinking. Mosaiced with trust marks, nutritional information, branding, barcodes and ingredients, space is small. More and more, brands are realising the power of connected packaging. Once scanned, customers are taken to a fully branded landing page where they can find out more about the product. BY 2027, most stripy barcodes will have transitioned to QR codes, using GS1 standards.

Disconnected consumers

Brands are finding it difficult to connect with their customers. By applying unique-every-time QR codes at the bottling line, we have been able to improve the customer experience by opening up a webpage at the tap of a button. Connected packaging allows brands access to packaging traceability, and consumption patterns of Co-op's products; on the Polytag dashboards, Co-op can see at IP address level where the packaging was scanned by a customer's phone.

No packaging lifecycle data exists

The invisible tags applied to the bottles are invisible to the human eye and customers do not know they are there. However, once they are recycled at a Polytag-enabled recycling centre or MRF, they are counted in on the plastics conveyer. This count is sent in real-time back to the Polytag dashboard where Co-op can view the rate of recycling of the own brand spring water. This live count can help to form internal ESG targets.

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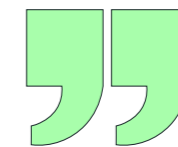
We're deploying QR codes on every pack available for all our brands in the next three years. QR codes are arguably the most unexploited and under-leveraged media vehicle that exists.

Manual Arroyo
CMO
The Coca-Cola Company

"

The duality of the UV tag and QR code on our water bottles will enable Co-op to gain a greater understanding on a product's journey in the recycling chain and provide valuable insight to shape guidance and measurement for future initiatives to encourage more people to recycle.

Rob Thompson
Packaging Manager
Co-op

# Our methodology

## Invisible Tags

Flexographic labels printed at Tipografic are printed at speeds of 200-300 metres per minute, which is hundreds of labels each minute. To add the layer of invisible tags across the label, all that's needed at the printing stage is another plate in the process.

The ink is standard in the printing industry, often used for eye marks, and used to signal each new label to the application machine. These are often seen as black marks, but can also be UV to avoid being visible to the human eye.

Polytag uses a range of existing processes and machines in new ways, ensuring that standard printing speeds are kept and FDA-approved inks are used.

Tags are applied across the label so that the UV Tag Reader in the recycling centre just has to see one of the identical codes.



### Why 2D Data Matrix?

We use GS1 Data Matrix Syntax, which includes the product's GTIN represented as a 2D Data Matrix. This tag format is standard on each bottle, and not unique to the unit. This is because it is printed at the plate printing stage.

2D Data Matrices have an 30% error correction rate. The UV Tag reader has to read just one of these 49 codes on the label, that can be 30% obscured, yet we can still capture the data required to update the brand account dashboard.
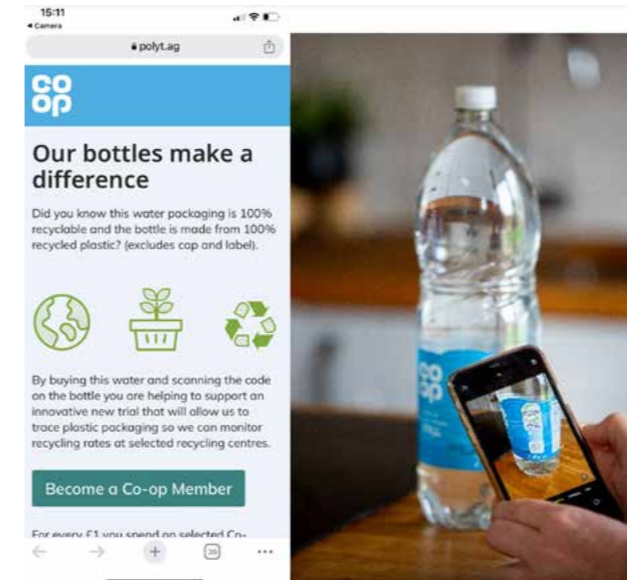


## QR code printing

High-speed printing lines at Tipografic were one of the two points a code is applied. The second code, a unique-every-time QR code, is digitally printed at the bottling stage.

The Co-op labels were printed with a 16×16mm white space as part of the plate printing process, then a 12mm QR code was applied at the bottling line.

Xact, our partnering printing company, installed the kit to ensure that there was no downtime or any hindrance to the line. The bottling took place at standard speeds, with the machinery that we installed applying pre-loaded GS1-compliant barcodes without any disruption.

Co-op developed a landing page that informed customers of the charity donation on their water bottles and funding of water security projects in Africa in partnership with The One Foundation.

Our landing page builder tool, available to brands via their dashboard, is fully customisable and can update the landing page as many times as required. Using landing page templates, brands can quickly and easily link QR codes to a landing page per barcode.

### Why QR Codes?

Our QR codes are GS1 compliant and compressed using their algorithm to create QR codes that can be printed at high speeds. By using an open standard, such as GS1's, the codes can be used across the supply chain. For stock management, to at point-of-sale at tills, to in the consumers' hands.

Customers scan the QR code and are transported to a landing page with information on Co-op's sustainability and commitments to water security projects.

Thanks to the individuality of each code, and the fact all codes meet GS1 standards, any app can use our unique-every-time QR codes in order to manage rewards, loyalty points, discounts and deposits using the serialised code to eliminate fraud. Bower has recently done a similar scheme with Ocado Retail.

# Results



By applying unique-every-time QR codes, Co-op has been able to connect with customers, sharing marketing and educational content that can be easily updated and fully branded to meet their requirements.

The QR codes also have the potential to revolutionise the retail space at barcode level. GS1's Project Sunrise predicts that standard 1D barcodes will be obsolete by 2027, replaced with much richer customer experiences provided by interactive QR codes.
The project was low-cost and easy to implement. It has granted Co-op valuable insight into the behaviour of its customers. From the Polytag dashboard, Co-op can view how many customers interact with the QR code, and also have valuable insight into how many of their bottles end up in recycling centres.

Invisible tags are easily integrated into the standard plate printing process at a low cost. With plans to expand the network of UV Tag readers in more recycling centres across the UK, and expanding the range of products with invisible codes on them, more data will be available for a wide range of stakeholders across the UK. The world-first solution that Co-op implemented can change the way we think about recycling and the current insufficient data that recycling centres, local authorities, retailers, compliance agencies and governments grapple with.

Polytag presented the data on the Polytag Platform, giving Co-op an insight into data they've never seen before.
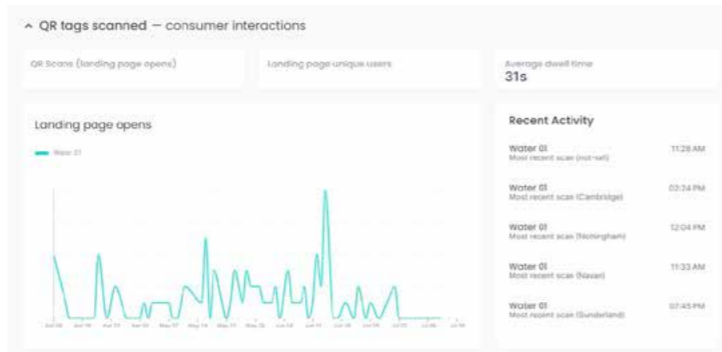
# Conclusion

The technology we used is accessible and low-cost to implement, and Polytag's platform is fully scalable.

Co-op has unlocked amazing data with this project and opened up new ways of communicating with customers.

The valuable insight into consumption patterns, market penetration and disposal information allows Co-op to understand their customers and encourage sales. The label is now seen as a revenue driver.

Thanks to GS1 interoperability, the QR code can be read at point of sale on tills, or can even be read by enabled apps, whether that be for recycling, nutritional needs or sustainability needs.

The invisible tags have also given Co-op valuable insight into the recycling levels in the Conwy area of North Wales, with several kilos of recycling being measured.
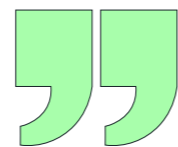
**Thanks to GS1 interoperability, the QR code can be read at point of sale on tills, or can even be read by enabled apps.**

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