



2D Barcode – the next generation of barcoding technology

For almost five decades barcode technology hasn't changed. Now, GS1 has created the 2D Barcode, which will take traceability to the next level. Here's why.

For more than 45 years, consumers around the world have become familiar with the ubiquitous barcode, named by the BBC as one of the top 50 inventions that changed the modern economy. Applied by brand owners and manufacturers and used extensively along the supply chain, the barcode that most of us are used to seeing is the EAN-13, which appears on tens of millions of products worldwide.

The EAN-13 contains one piece of information only – a Global Trade Item Number or GTIN. A GTIN is the number uniquely assigned to the product by the brand owner from the numbers allocated to them by not-for-profit standards body GS1 Australia.

A GTIN is entered into a retailer's database as the look-up for the product. The product's description, price and other data is then linked to that GTIN, so that when it is scanned

at point-of-sale, or further up the supply chain, the correct information is provided to the user, decisions can be made and transactions recorded.

This has had a significant impact on the way companies do business across the world. Retailers have streamlined their supply chains, brand owners have pored over scanned data to make product development decisions, while consumers have been offered a range of products, made possible by better supply chain management capabilities due to better information; information made available by the barcode.

So, after 45 years it is time to take the next step. The GS1 DataMatrix is a two-dimensional barcode, that contains much more data than the 13 digits of the linear and one dimensional EAN-13. This allows much more information to be encoded than just a product identifier.

2D Barcodes can encode alpha characters as well as numbers, and over 3,000 digits instead of 13. Batch and serial numbers can be included in the data within the code. Best before or use-by dates can be added. Pack weights and variable

shelves. Recalled or expired product can be blocked from sale. Retailers can apply automatic mark-downs for product approaching expiry to facilitate stock liquidation without the added expense of remarking product on the shelf.

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dimensions or quantities can be included. This provides much more granular information about the product to support decision making at every point of the supply chain.

Suppliers and retailers can manage stock rotations based on expiration dates. Recalls can be managed by batch instead of pulling a complete product line from the

“For suppliers and retailers, 2D Barcodes mean that food products can be recalled by batch or lot number,” said Maria Palazzolo, CEO of GS1 Australia, “The affected batch can be identified more accurately within the supply chain. This means only the affected products need to be removed from warehouses and supermarket shelves.

Knowing the provenance of produce being bought is an important plank that will be available to consumers.

scannable barcodes.

Mark Dingley is chairman of the Australian Packaging and Processing Machinery Association (APPM), which represents the printing and coding suppliers who are working with manufacturers to deliver codes that are clearly readable by retailers.

“Understanding the transition from 1D barcodes to 2DBarcodes will be very important to manufacturers,” said Dingley. “Especially as this will likely drive changes to the production line with the move to in-line printing of the barcode from pre-print. Understanding that this may require additional infrastructure and validation on the production line to ensure that print quality is maintained from the first printed barcode to the last and that this is maintained day in, day out to achieve a high level of scanning at point of sale will be crucial to long term consistency. Discussions with your coding and label supplier will be able to assist in this transition if required.”

“Early learnings have shown that for suppliers who are transitioning to implement 2DBarcodes, getting in touch with their print partners early on in the process, as early as possible, will greatly assist in the transition process and help avoid

any complications that may occur with their product labels in-store and down the track,” said Andrew Steele, director, retail at GS1 Australia.

Manufacturers and suppliers should not assume they can turn this around quickly.

Consideration must be given to the data source, and ensuring data is consistent across the pack to align with inkjet batch and expiration codes. It will take trials and testing to ensure everything is adequately

the Innovative Technology of the Year award at the recent Food and Beverage Industry Awards. The judges acknowledged the technology ahead of strong competition for its potential to shape the future in much the same way the original barcode had done all those years ago.

The key takeaway for suppliers is to not think this can be implemented overnight. It may require an upgrade or enhancement to existing systems. Suppliers should start thinking today

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controlled to ensure the quality of codes remains high, long after installation. Maintenance is key. While those suppliers who use the codes for internal purposes, such as stock control, batch control and recall management are more likely to pick up errors as soon as they occur, long before products make it to market.

While still in the implementation phase, the results have been excellent. One result has been that 2DBarcodes were awarded

about how they can make this work within their operations so they can be ready to go when their customers make the request.

“GS1 is working closely with Woolworths and their suppliers to provide tools and assistance in support of their transition from 1D to 2DBarcodes,” said Steele.

“We’ve developed a dedicated webpage and handy step-by-step guide, available on the GS1 website which is great place for suppliers to start.” **F**

The product recall process currently requires all recalled products to be removed from the supply chain and disposed of.”

The benefits are significant, which is why Woolworths has commenced an initial implementation in its perishable goods area with two suppliers, Hilton Foods and Ingham’s. The lessons gained from this implementation will facilitate a smooth rollout across all suppliers over the next few months.

One of the early lessons, that was flagged from the beginning but is being better understood now, is the requirement for manufacturers to consider capabilities around dynamic coding, instead of pre-printed barcodes. This means they need some form of in-line printing or labelling capability, able to support existing production line speeds and to deliver consistently high-quality,



New barcode technology will have a huge impact on how consumers select products.