How GS1 Digital Link strengthens 2DBarcode technology

GS1's Digital Link is a critical component for sharing data from multiple sources.

GS1 is educating manufacturers and producers about the importance of GS1 Digital Link and 2DBarcodes, adding an extra element of protection to products. *Food & Beverage Industry* News reports.

As the use of 2DBarcodes continues to grow across the Australian food and beverage industry, global barcode organisation GS1 continues to educate stakeholders about the importance of the technology.

The organisation knows that 2DBarcodes are here to stay, and will only become more prominent in the future, so educating the industry early is of critical importance.

One element of the 2DBarcode's's strength lies in their ability to retain large amounts of data that helps to protect against a range of issues, including counterfeiting and provenance.

The Grocery Manufacturers Association in the USA estimates the counterfeiting of food could be costing the industry as much US$15 billion per year, globally.

As a result, the demand for a stronger system to reinforce things like traceability, authenticity, and provenance, is high. Coupled with this is growing consumer demand around greater transparency of how products were made and where they have come from.

While the industry has been well educated on the purposes and benefits of 2DBarcodes, the role GS1 Digital Link plays has not yet been as highlighted.

"GS1 Digital Link is a standard that specifies how structured data can be embedded inside a data carrier like a 2DBarcode," said Marcel Sieira, GS1 Australia chief customer officer.

The concept of a 2DBarcode having a URL inside it has been around for a long time but what GS1 Digital Link does is provide very specific specifications on how GS1 data structures, or common bits of data used by everyone along the supply chain, can be embedded inside a URL which can then be embedded in a barcode.

The barcode then provides access to a wealth of data in a format business can readily identify and use to underpin their own processes, or to share product information with their customers. The format is standardised. It's a GS1 global standard

This means that when a barcode scanner reads a traditional barcode it looks for certain values in the string of numbers and those values tell the scanner what the data is.

"For example, if the scanner was to read a specific sequence of numbers the scanner would know the data that follows is an expiry date," said Sieira.

"It can process that expiry date appropriately in whichever system is doing the scanning.

"The scanner needs to know the structure of the data so it can deconstruct the individual components and use them appropriately in the destination systems and that's exactly what GS1 Digital Link does. It gives data points on how to create structured data inside a URL."

In doing so, all the relevant data points stored on the 2DBarcode's URL can be immediately identified by the scanning system, whether that be at the point of sale or during the supply chain journey.

"At the same time, what it also does is allows that URL to direct the user, a consumer for example, to a range of different digital assets that the brand owner for that product might have available and want to share with the consumer," said Sieira.

"These digital assets don't just have to be websites where you read about product information, obviously those are places you might want to take a shopper to, but Digital Link can also direct that inquiry to a digital service."

An example of one of these digital services could be a direct link to the brand owner's own systems to do something like recognise if the product has been part of a recall.

The customer can scan the 2DBarcode's Digital Link and be directed to either a recall page or to the brand owner's own website where the recalled products may be listed.

"It can also make an inquiry into other systems such as authentication," said Sieira.

"If you have a serialised barcode number, then each product can be uniquely identified and so a brand owner's service can also recognise that unique number and ascertain if the product is authentic or not."

"If you can capture the geofencing information about the shopper doing the scan and realise that person happens to be in Japan, but you had shipped it to a different country, then that begins to raise questions about authenticity of the item, as an example," said Sieira.

"It can also make traceability inquiries so you can discover the provenance of the item or information about the quality of that item as it travels through the supply chain."

The same concept applies to maintaining awareness of products that are nearing their used- by or best- before dates, this in turn can have a huge impact on the level of food waste generated by outdated food and beverages.

Woolworth's work with 2DBarcodes is a perfect example.

Woolworths Australia knew they needed a way to make available more information and more granular data, about the products they sold, without causing confusion or wasting precious label space.

Putting product identification and product information into one on-pack symbol, the 2DBarcode has unlocked a new dimension of capabilities for Woolworths and enabled a variety of efficiencies for the retailer and their suppliers.

As a result, Woolworths recorded up to a 40 per cent decrease in the amount of product going out of date and ending up in landfill.

Also, by making expiry date management more efficient, Woolworths stores using 2DBarcodes have seen up to 21 per cent improvements in productivity.

GS1 Digital Link and 2DBarcodes are a powerful communication channel for retailers and brand owners.

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This is because the supermarket was able to quickly and easily identify if a product is approaching its expiry date and proactively mark it down, so that the product can be sold without having to be disposed.

"2DBarcodes have immense potential, and we're excited to see how they will improve traceability and stock management," said Richard Plunkett, general manager for business enablement, Woolworths.

"At Woolworths, we plan to build on the potential of 2DBarcodes to offer customers valuable information on provenance, quality and sustainability," said Roberto Olivares, senior project manager, Woolworths.

"As we work towards a better tomorrow with our suppliers, 2DBarcodes can help us communicate a product's verified sustainability credentials to customers."

As of early 2022, 2DBarcodes were already on 50 per cent of products in Woolworths' meat range in over 1,000 stores—and that number is growing every month.

This authentication process also helps brands to track their own products once they have been shipped away, either nationally or internationally.

"Today there is an increasing number of codes on a single product that creates confusion on one hand, but also removes valuable on-pack real estate for brands, the single 2DBarcode can help that.

"That space is valuable for promoting the brand rather than having multiple codes."

Sieira said the importance of traceability in the food and beverage industry could not be understated and 2DBarcoding, along with GS1 Digital Link, creates a new channel to achieve better traceability results.

"Traceability across every subsector within the food and beverage industry is imperative for a raft of reasons," he said.

"You want to be able to ascertain the provenance of your products. So having a system which identifies information about ingredient suppliers, product manufacturing, and where the product comes from is important."

As demonstrated by Woolworths, those who adopt 2DBarcodes will, in the future, be able to make available to consumers sustainability and certification information about their products.

This includes things like the crop and serial number, harvest information including a map of the farm, pack date; , nutritional information, serving size; , storage and recipe suggestions, packaging recycling instructions; , and more.

For more information, visit the GS1 Australia website at https://www.gs1au.org/digital-link, www.gs1au.org. **F**