

## IT Analysis – I am Not a Number!

By Clive Longbottom, Service Director, Quocirca Ltd

Just for a moment, please regard the humble bar code – unloved, old, barely noticed by people these days. What does it do? Well, the most used bar code, based on the Universal Product Code (UPC) standard, first appeared in 1974 on a pack of Wrigley's chewing gum in Ohio. The number carried by that bar code represented that product, and if the same bar code was on a product today, that same number would be associated with it, and provided that Wrigley's hasn't re-assigned that number to a different product, those little parallel lines of varying thickness would still be a unique identifier the world over to that type of Wrigley's chewing gum.

The UPC codes were created to stop companies from going out and creating their own bar codes (or other means of identifying items), ensuring that there was uniformity and consistency in bar code usage. The group that had to look after all of this in Europe was the European Article Numbering (EAN) International group, and the Uniform Code Council (UCC) in the US. These two groups then came together to create the EAN.UCC group, which later became GS1 in 2005. GS1 is a not-for-profit organisation with 1.1 million members worldwide, and its mission is to provide a range of means to ensure commonality of item identification to enable its members (and those involved with its members) to optimise their value chains with the minimum need for data transposition or matching.

So far, so good. A pack of sweets manufactured in the US, shipped via Holland and sold in the UK will be easily identifiable everywhere by the number represented by this magic little bar code as it moves around. However, isn't RFID (Radio Frequency Identification) going to replace bar codes?

Not in my lifetime. Yes, RFID will become increasingly important at the container and pallet levels, but RFID at a low-value item level is no where near ready. However, RFID and bar codes will need to work together.

Luckily (or, in reality, by design), GS1 has covered this. As well as the bar code

responsibility it has, it also governs the issuance of EPCglobal Manager Numbers for RFID. GS1 also provides the open standards for its Global Data Synchronisation Network (GDSN), ensuring product, company and location data between trading partners is accurate, consistent and compatible. GS1 regards the physical tag as just that – the bar code itself or the RFID tag is not what identifies the product – it is the number that is carried by the tag.

GS1 works by providing its members with a block of unique numbers or identifiers in pretty much the same way as the IANA assigns IP addresses to companies. These can be used in 7 different forms known as keys depending on what the company wants to identify. Global Trade Item Numbers (GTINs) are the most common of these and are seen on products on supermarket shelves the world over via the ubiquitous bar code. So, for example, a company in the UK would be provided with a block of 100,000 numbers all beginning with the same 2 number code to indicate the country of origin of the owning company. Following a set of guidelines, these numbers are then assigned to separate items in the company's portfolio. The company itself decides what number is assigned to what product, but that number will be guaranteed to be unique, worldwide, within the GS1 standards.

Therefore, the same identifier can be used in RFID tags as for bar codes – there's no data matching required. A pallet load of individual items could have an RFID tag that gives a two character, organisation specific EPCglobal Manager Number plus an organisation provided suffix (in a similar way as for bar codes, where GS1 provides a geographic prefix and the organisation provides the suffix) for the whole pallet (or crate, container or whatever the overall unit is) which then provides additional information on what the pallet contains as defined by the associated GTIN – the bar codes on each item would then have the same GTIN.

From there on, it's a case of those companies that want to make the most of these unique identifiers assigning the product's number

associated with the bar code, RFID and/or other physical tag to the appropriate record within applications such as SAP. Then, by ensuring that all electronic transactions include this number in their data – whether it be as a header to an email, a traditional EDI transaction or an XML transaction – commonality of product identification is guaranteed. On dealing with the data, it is relatively easy to split out the GTIN and know exactly what item the transaction covers.

Supply chains are easier, tracking is easier. Costs can be driven out of the supply chain, and suppliers, user companies and consumers should all be happy.

Is there a downside? Certainly. Research by Quocirca for GXS (a solution provider member of GS1 UK) shows that one of the main reasons behind low adoption of electronic data exchange is not that it's too expensive or that standardisation hasn't happened, but that there are just too many standards to support. GS1 is creating yet more standards (mainly around XML, but also new bar codes that take up less room, called the Reduced Space Symbology (RSS) system – nothing to do with Really Simple Syndication). Although these standards are being driven by GS1's membership, the problem here is that new standards rarely replace the old, and the big problem for GS1 will be in driving adoption and persuading people to rapidly move to the new while minimising the continued use of the old, while managing to maintain synergies with existing and emerging business to business transaction systems, such as UN/EDIFACT, ASC X12 and so on, while also ensuring integration and usability within the XML replacements/enhancements coming through from the bodies that own these standards. GS1 has not been massively successful here in the past – there are 6 distinct extant bar code versions (nominally covering different needs, but with a degree of overlap), as well as others that use different approaches.

However, GS1 has the support of the major retailers around the world – the likes of Walmart, Tesco, Sainsbury's and so on – as well as the support of rafts of smaller companies that see standardisation and ease of electronic transactions as a means to be more effective. Other verticals are also seeing the benefits – healthcare is looking at how to use a different type of key to a GTINs – Global Location Numbers, or GLNs, can be used to track not only items of kit within a hospital, but also patients. Matching the GLN against a patient's records can then help in ensuring the patient gets the right medication.

GS1 seems to be moving in the right direction, and should move rapidly with the support it has. However, many smaller suppliers are unaware of GS1, and merrily devise their own numerical identifiers for their products, which then have to be manually promulgated to customers, who may just decide not to deal with a supplier who does not have standard identifiers. The cost of membership of GS1 is low (averages a few hundred pounds), and GS1 provides an increasing amount of on-line value to its members. To ensure that you can benefit from this community, I'd advise joining – you could find that GS1 enables you to transact business on a grander scale.

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Quocirca is one of Europe's leading independent industry analyst firms. One of its biggest assets is the core team of highly experienced analysts drawn from both the corporate and the vendor communities. This team prides itself on maintaining a bigger picture view of what's going on in the IT and communications marketplaces. This allows all of Quocirca's activities to be carried out in the context of the real world and avoids distractions with fads, fashions and the nuts and bolts of specific technologies. Quocirca's focus has always been the point of intersection at which IT meets "the business".

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Quocirca's primary research involves the surveying of many thousands of technical and business end users each quarter, analyzing their perceptions of the possible impact of emerging, evolving and maturing technologies on their businesses.