Understanding UCCnet

How will it change the way you do business?

By Randy Goldbeck

After attending the Hardlines Technology Forum in April 2004, I realized that a major restructuring of the behind-the-scenes processes used by mass market retailers was already well underway, but I didn't know how quickly it would happen. When we received word late last year that some of the largest retailers of green goods would be implementing those processes in 2005 and that the vast majority of our industry had yet to even hear about this technology, we started working on this article. "Understanding UCCnet," attempts to familiarize you with this new operating system. This is a very technical subject, so we apologize in advance for throwing so many new concepts at you and for using so many unfamiliar acronyms. ***— Bridget White***

UCCnet, collaborative planning forecasting and replenishment, radio frequency identification, EPC, global data synchronization and the like. What is all of this? And how will it affect your business?

Major changes are underway in the retail industry that will have a lasting effect on the way the largest companies retail products. And, of course, along with these changes come numerous acronyms, technologies, standards and other issues that were unheard of only a few years ago. Over the next few years, Wal-mart, Kmart, Target, Home Depot, Lowe's, Ace Hardware and many others will be rapidly moving forward with the hardlines industry initiative to synchronize product information. This will mean a major shift in the way these retailers interact with their suppliers, and it might eventually mean the rest of retail follows along.

No more paper bills, no more guessing what or when was shipped, no more missed promotions. Everything will be done electronically via RFID tags and computers. Sound like the Jetsons? It's not; it's for real; and it's not far away.

WHAT IS UCCNET?

UCCnet, a subsidiary of the Uniform Code Council, Inc. (UCC), was established in 1999 in response to growing requests from retailers, manufacturers and suppliers to address the problem of inaccurate supply chain data, such as product descriptions, item numbers or price. Inaccurate or outdated data that is used in invoice pricing or purchase orders can result in product delivery errors and lost sales — problems that have been estimated to cost the industry over $50 billion annually.

UCCnet is a non-profit, neutral organization in charge of maintaining the GLOBALregistry. This registry acts as a worldwide index that stores the basic information about all products distributed to retailers worldwide. Because UCCnet is a neutral party, major retailers have endorsed it and have created a mini-Y2K event as they request suppliers to comply. As of December 2004, more than 3,000 retailers and suppliers have signed up with UCCnet.

To publish to the GLOBALregistry, suppliers gather their product information and assign a unique 14-digit global trading item number (GTIN) to each product. Because products may be shipped in many ways, a ➧

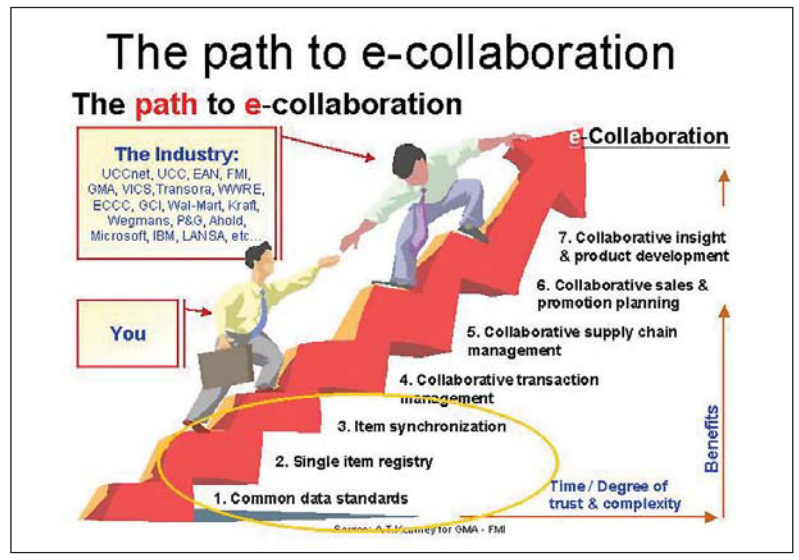

Figure 1. CPFR process.

Defining UCCnet

UCCnet: UCCnet is a neutral standards organization that provides an Internet-based supply chain management data registry service for e-commerce. A non-profit subsidiary of the Uniform Code Council (developers of the UPC code), UCCnet provides a global repository where suppliers can register item data and share supply chain information.

GLOBALregistry: This registry acts as a worldwide index that stores the basic information about registered products.

GTIN: This is a unique 14-digit item number that suppliers assign to each product published to the GLOBALregistry.

GLN: The global location number is a unique number that identifies each retailer. Suppliers use GLNs to publish information to that retailer.

ERP: Enterprise resource and planning systems are management information systems that integrate and automate many of the business practices associated with the operations or production aspects of a company.

CPFR: Collaborative planning forecasting and replenishment is full collaboration between customers and suppliers. CPFR means delivering the right product at the right time at the right price to the retailer.

RFID: Radio frequency identification is a method of remotely storing and retrieving data. An RFID tag is a small object, such as an adhesive sticker, that can be attached to or incorporated into a product. RFID tags contain antennae to enable them to receive and respond to radio-frequency queries from an RFID transceiver.

EPC: The electronic product code is a simple, compact "license plate" that uniquely identifies objects (items, cases, pallets, locations, etc.) in the supply chain.

unique GTIN is required for all packaging levels of a product (e.g., 4-inch geranium, 6-inch geranium, 606 flat of geraniums, etc.). Once a product has been added to the UCCnet GLOBALregistry, the supplier decides which retailer(s) to publish to. To publish, the supplier uses a global location number (GLN) that identifies each retailer. The supplier may publish to every store in the retailer's organization or get as granular as publishing GTIN information to a single store.

If this seems like a lot of work, it is. A new thought process must be applied to product naming, and all existing product information must be scrubbed. Yet, in many cases, suppliers who have completed the UCCnet exercise have discovered that their newly created GTIN information is a better product description than what was originally stored in their enterprise resource and planning (ERP) systems.

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THE BASICS

Setting on top of the whole process is collaborative planning forecasting and replenishment (CPFR). The ultimate objective of CPFR is full collaboration between customers and their suppliers. CPFR is being adapted across numerous industries from the U.S. government to pharmaceutical companies to retail. With technologies like radio frequency identification (RFID) and electronic product code (EPC), it will be possible for events on one side of the supply chain to have a ripple effect throughout the rest of the supply chain.

For example, someone in California will purchase a Boston fern at Home Depot, which will immediately trigger a replenishment notice at the supplier in Florida. Suppliers will have visibility to retail systems and will be able to re-stock those stores based on actual sales, seasonality and even weather. CPFR means delivering the right product at the right time at the right price. Throughout this entire process vendors will be able to track any product anytime and anywhere.

And, this process is already under way. The initial steps to make all this possible include the definition of a common standard, a single place to store all the item information that supports those transactions and a mechanism to synchronize item information among all parties. UCCnet has taken these steps, and the standard is here today. Fortunately or unfortunately (depending on how you view it), almost every major retailer has adopted the UCCnet standard and is now pressuring suppliers to comply as soon as possible.

Think of the CPFR process as a seven-step staircase (see Figure 1, page 67). Until trading partners ➧

can synchronize item data, collaboration efforts will not be successful. Planning can't be based on outdated or erroneous product information. Nor will RFID deployment be successful if the GTIN is not imbedded in the EPC. Without that GTIN information, trading partners will not be able to determine what they have scanned. In reality, common data standards, single item registry using GTIN and item synchronization (suppliers and vendors sharing product information) are steps 1, 2 and 3 to the entire process — they are the base.

WHAT ARE THE BENEFITS?

A recent A.T. Kearney study for Grocery Manufacturers of America – Food Marketing Institute revealed the following:

- Correcting catalog errors costs $60-80 per error.
- Thirty percent of item data in retail catalogs is incorrect.
- Each SKU requires 25 minutes of manual cleansing per year.
- Every invoice error costs $40-400 to reconcile.
- Sixty percent of all invoices have errors; 43 percent result in deductions.
- The average product roll-in takes six weeks.
- Percent of sales lost to inaccurate data is 3.5 percent.

The net result is an estimated $50 billion loss through supply chain inefficiencies each year. In a presentation to the UCCnet Advisory Council, one major retailer revealed that 37 percent of product information from their largest supplier was being re-keyed. After the study and because of corrective measures, the retailer discovered that it was getting more accurate dimension information and an increase in new product market share over other retailers. Many suppliers are keeping this study in mind and are asking their retailers to comply by setting recommended compliance deadlines. The reality is that virtually every retail supplier will, at some point in time, be required to join the UCCnet bandwagon.

HOW DOES IT WORK?

It's fairly simple.

Step 1: Attached to a supplier's information system is a piece of software that is either purchased or leased. The synchronization software enables the system to create what is called item masters, a very detailed product description with all the necessary data required by the GLOBALregistry. This part of the system manages GTINs and harnesses all of the product information: initial load, publish price, size, etc. It also handles action commands in reference to the product, things such as corrections, additions, de-listings, publishings, etc.

Step 2: Once the item masters are ready to be published, the ➧

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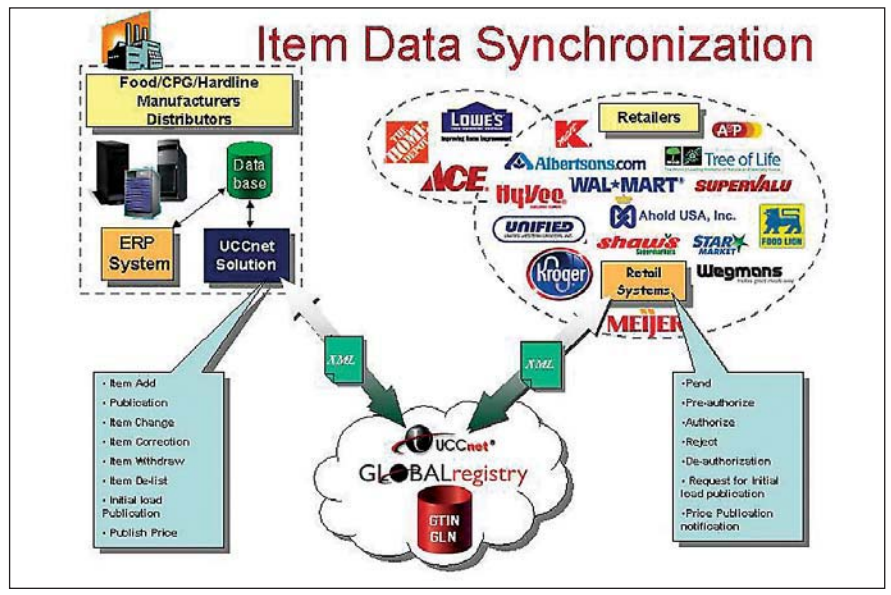

Figure 2. Chain of events.

system sends the GTINs and GLNs to the GLOBALregistry for review and approval and/or rejection by the specified retailer.

Step 3: The GLOBALregistry notifies the appropriate retailer, and they review and approve and/or reject via XML transaction back to the supplier's system. This transmission notifies the supplier that the GTIN is in one of the following statuses: pending review, pre-authorization, authorize, reject, de-authorize, accept or accept pricing. Any of the approval replies mean that the process worked correctly and is basically complete. A rejection reply usually means that some information was missing or incorrect, and the supplier will need to rework that product.

SYSTEM REQUIREMENTS

Most systems do not have the GTIN attributes required by retailers and the GLOBALregistry. Likewise, most systems do not have the capability to synchronize to the GLOBALregistry. Obviously, with enough time and money anyone could build the required system, but with several software choices already on the market why entertain such a distraction?

As suppliers publish more and more GTINs, the need for certain capabilities becomes crucial. Depending on the number of GTINs the supplier has, they may want to consider an integrated software system. For a supplier with many permutations, such as pot size and crops, it becomes overwhelming to manage the data and publish to the GLOBALregistry. Integration to their existing information system is critical in maintaining continuity between item master files and the UCCnet GTIN tables.

ELEMENTS TO CONSIDER

Before deploying any UCCnet solution a supplier should look for the following characteristics in any solution they may deploy:

- ERP integration,
- GTIN management,
- GLN management,
- workflow and messaging, and
- query capability.

ERP Integration. The ultimate objective of UCCnet is to synchronize data in the supply chain. To be effective suppliers need to start with their own systems, so any solution they choose should provide the ability to access their item-of-record or ERP product master file(s) in real-time. Since many ERP systems don't have all the required attributes for the GLOBALregistry, the solution must also have the ability to extend these attributes.

GTIN management. Because GTINs are at the heart of the GLOBALregistry, any solution chosen must make the task of managing this information easy. An easy-to-use graphical user interface needs to be accessible for any user who will be part of the UCCnet workflow. This solution should:

- Maintain GTINs and add/link/publish. These are the base ➧

functions required for a supplier to publish to the GLOBALregistry.

• Incorporate EAN.UCC validation. Checking item attributes before adding them to the GLOBALregistry ensures that the data adheres to the UCCnet standard, which avoids errors in outbound UCCnet transactions.

• Support containment (links). Containment lets suppliers replicate each piece of GTIN information into other forms (e.g., sleeves, cases, carts), eliminating the need to re-key records.

• Auditing capability and non-repudiation. Auditing allows suppliers to track who they have published to and that retailer's response. Non-repudiation establishes that any UCCnet transaction has been successfully accepted by the GLOBALregistry and received by a retailer, eliminating friction in the supply chain.

• Publication history. When many GTINs are being published, a history log lets the supplier quickly view every retailer's response to their publications.

GLN management. A GLN is a unique identifier for each trading partner in the supply chain. Any solution should manage and group GLNs, making it easy for suppliers to manage their publications. For example, by grouping retailers or stores by GLN, suppliers can publish to a group of retailers at one time rather than individually.

Workflow and messaging. Building good GTIN data is a collaborative approach, and in large businesses with thousands of GTINs, it becomes increasingly difficult to track a GTIN through its lifecycle. A good workflow solution should ease new product introductions and product changes by moving GTIN lifecycle actions through the stages of approval and escalation.

Query capability. The GLOBAL-registry provides a wealth of information open to all members. A strong query tool should include an easy-to-use graphical user interface; it should also provide real-time access to the GLOBALregistry and control accessibility.

SUMMARY

At the recent EPCGlobal Conference it was announced that interest has been heightened by mandates from retailers such as Wal-Mart, Albertsons and Target. Many early adopters are hopeful their companies could derive meaningful, hard-dollar benefits. There are early indications of positive ROIs for suppliers and retailers using these technologies. But, retailers do not seem willing to pay suppliers more for their compliance. Many hardware and software products are still in an evolutionary state, but they are evolving quickly. One approach to minimize risk is to start a pilot project early on. This way users can discover the issues without exposing their entire product line.

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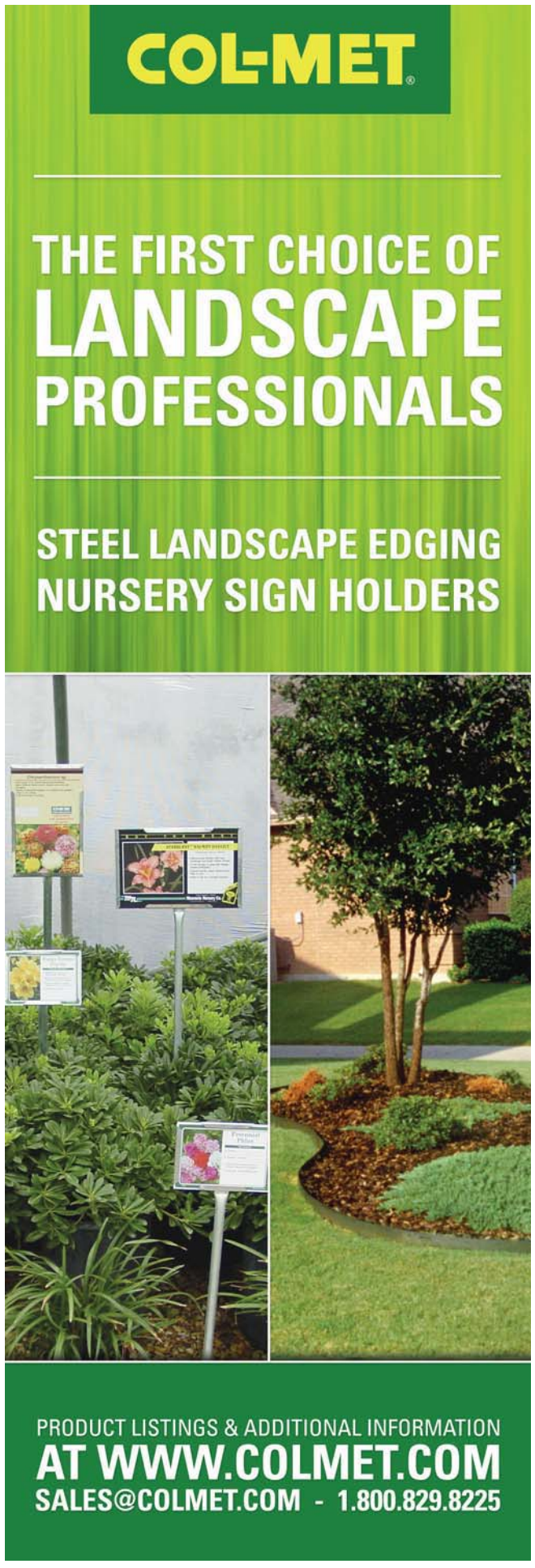

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