

Packaging for today's demanding fulfillment

Until the recent stock market adjustment, dot.coms were all the rage. In addition to failing analysts' profitability hurdles, many of them came up short on the delivery end during last winter's holiday season. Even if they're no longer Wall Street's darlings, they won't all go away. Those likely to succeed are rapidly revising their delivery process. Those solutions often spill over to the packaging department.

Packaging consultant Al McKinlay is concerned the dot.coms are not drilling down to a sufficient level of detail. "Some companies are moving into e-commerce with no thought to upgrading their packaging, and it's causing problems," he says. "The move to e-commerce parallels an increase in packages moving in a less-than-truckload (LTL) environment instead of a truckload one. That means more handling and more need for dunnage." One of the problems he has encountered is companies using inflatable packaging which can deflate or

MANY MARKET FACTORS ARE CHANGING THE DEMANDS PUT ON PACKAGING. IT'S TIME TO TEST YOUR NEED FOR AN UPDATE.

By Helen L. Richardson, contributing editor

overinflate with air cargo's changes in altitude.

Not all packaging solutions mean changing the package. One option is to upgrade the product to better withstand the rigors of the LTL or parcel carrier environment. That carries a cost. When e-commerce is only a small portion of the business, companies don't want to incur the cost of upgrading *all* product. For some, upgrading selectively makes sense. They only strengthen the product to be sold individually.

POSTPONE PACKAGING

Another innovative packaging solution that's improving bottom lines is postponement.

This logistics strategy, which works well with final assembly and product customization, also can offer big savings when applied to packaging. According to Diana Twede, associate professor with Michigan State University's School of Packaging, many companies can reduce inventory and transportation costs by packaging at the last minute. Packaging postponement can reduce the risk of missed forecasts and minimize financial losses due to obsolescence and package damage. The longer and wider the supply chain, the greater the potential benefits, says Twede.

Packaging and manufacturing postponement can work together to customize standard products for regional markets. As international firms increasingly develop such global products, Twede claims postponement applications have been growing. Sony's European operation is a prime example.

According to Twede, a Sony factory in Wales makes television sets based on a Eurochas-

sis—a basic design which can be tailored late in the production process for each market in Europe, including language specific packaging and manuals. Sony doesn't have to commit inventory to specific countries until a later stage. Since the distribution area is confined to Western Europe, there's no logistical advantage to postponing the operation to regional locations, so Sony customizes the products and packaging at the factory.

Catalog and e-commerce companies are big users of logistics postponement. Typically, they stock inventory at a central location or at a small number of strategically located sites, and ship to order. Since there are many possible order configurations, they must select a set of standard container sizes and shapes to minimize the number of container sizes. That allows them to buy each at a volume discount.

To minimize the time from order to delivery, logistics postponement usually involves premium transportation-LTL and air freight. Accordingly, Twede says packages should be as small and compact as possible to minimize shipping costs. However, she cautions, packaging also needs to be sufficiently robust to withstand repeated handling, conveyors, and mixed-load stacking.

If postponement doesn't suit your operation, look at reuse as a strategy. Today's fast-moving supply chains are increasingly favorable environments for returnable containers.

LOOK TO RETURNABLES

Twede credits two logistics trends with fueling manufacturing companies' growing use of returnable containers. By

minimizing the number of days in the inventory replenishment cycle, just-in-time (JIT) production minimizes the number of returnable containers required for a system. The fewer the containers needed, the lower the initial and ongoing cost of the strategy.

In addition, the JIT trend is usually accompanied by strategies to consolidate the number of suppliers and reduce their geographical distance from the customer. These factors, which increase control and reduce transport cost and the required safety stock of containers, also favor the use of returnable packaging.

The second trend is the emphasis on supply chain management—streamlining the supply chain to perform only those activities which add value. Channel members' goals focus on providing delivered value rather than individual companies sub-optimizing parts of the system for their own profit. As companies work together to tighten supply chains, they create a favorable environment for a returnable packaging strategy.

A different type of system offers a way to link packaging elements worldwide.

NETWORK YOUR PRINTERS

These same tight supply chains and fast turn times are putting pressure on the packaging crew to speed up their end of the distribution process. As companies have more need for speed, they also have less tolerance for errors. The solution: Those workhorse printers churning out labels and barcodes can increase visibility into the packaging process.

"There's pressure to get more visibility in all operations throughout the organization,"

says Terrel Pruett, director of product marketing for thermal printers with Printronix. To provide that visibility, Printronix and others have created networks which provide printer output management capability.

"The manager of a shipping operation depends on outputting labeled packages to consumers, loading them onto trucks with a shipping manifest, and generating invoices," says Steven Marsh, director of product marketing for line matrix products with Printronix. "His/her primary concern is verifying the stuff (s)he thinks has been printed actually has been printed correctly and that the proper barcodes were printed and put on the product. Even though the barcode is printed with a thermal printer and the invoice on a line printer, the manager wants to be sure it all happened."

Printronix's PrintNet allows the shipping manager to monitor printer performance from any PC in the company's global network. Marsh explains the network lets you verify that printers are ready to print, did print what was expected, and are ready to print again. You can even test for readability of the printed barcode.

PrintNet is a combination of software and hardware that "lets you get into the mind of the printer," says Marsh. The link allows managers to change the configuration setting of a printer, switch active ports, even remedy some printer problems remotely, reducing downtime and errors in the system. This networking capability encompasses all Printronix product lines and technologies manufactured in the last three years. On older Printronix

equipment and some other manufacturers' products, the software operates as a printer manager. You can see if the printer is on or off line, but you can't see the same level of detail as with the newer equipment.

The older equipment may not be around much longer anyway as the trend is to newer, faster equipment to keep pace with changing shipping needs.

CHANGING MARKETS

Printronic is seeing definite effects on the printer industry as e-commerce demands different types of information, delivered more quickly. The need for speed, for example, has resulted in increased demand for the company's line of fast laser printers.

Marc Schwartz, director of product marketing for Printronix's laser printers, says it doesn't matter where the order originates, you still have to do all the steps to fulfill the order and handle returns. As e-commerce—especially the business-to-consumer segment—and other logistics strategies generate orders in smaller lots, companies are churning out even more labels. Many retailers include a return label with a barcode. It can be easily scanned to facilitate handling returns. In fact, lots of firms set up second and third facilities to handle the volume of e-commerce and returns, each requiring its own printing equipment.

Because even the dot.coms and catalog fulfillment companies require efficient back-end operations, Marsh says his line of heavy-duty mainframe computer printers are not going away in the face of the e-commerce-spurred increase in the volume of small packages. "For all the front-end interaction,

there's a physical back end. E-commerce companies need the same infrastructure development on the back end traditional businesses have."

Schwartz sees companies combining many of these forms into one to speed up the order processing operation. The dot.coms, in particular, fell behind on order fulfillment last year. Now many of them are upgrading equipment for speed.

Monarch Marking System also has observed e-commerce-inspired spikes in demand. On the whole, however, changes have been more evolutionary. Bob Glavin, Monarch spokesperson, points out companies now have multiple packaging stations in the DC; some of them are mobile packaging stations. That means printing is being done in more places, and

the equipment they're selling is smaller and faster.

It used to be companies could print 1000 labels all the same for shipment to the same store. Now, each label is different, and suppliers are putting more labels on packaging, says Mike Bevis, senior director of marketing for transportation with Monarch.

Each package probably has an internal label telling what's in it. In addition, many carriers are requiring their own label—usually with a 2D barcode. They're often providing software, sometimes even the printer to print them. Increasingly, LTL carriers are emulating the parcel carriers in requiring barcodes. In fact, some carriers won't pick up unless the package is properly marked, adds Bevis.

Shippers add their own ship-to/ship-from label. Most are applied at the shipping point. Large retailers, such as Wal-Mart and Nordstrom, require product to be pre-marked from the supplier, with details such as purchase order number, quantity, and weight

The customer is demanding ever more information and visibility throughout the supply chain. The packaging industry is moving to meet that demand. The dot.coms who let customers down last year are paying a heavy price for ignoring the fundamentals of fulfillment. Don't let inattention to details like packaging sabotage your supply chain strategy. **T&D**

Richardson, former senior editor with Transportation & Distribution, is a freelance writer living in Colorado. She can be reached at helen@pagosa.net.

RESOURCES

For more information, contact these resource organizations:

American Plastics Council at www.polysyrans.org

Flexible Packaging Assn. at (202) 642-3680
www.flexpack.org

Institute of Packaging Professionals at (703) 318-8970
www.ippo.org

International Mailed Pulp Environmental Packaging Assn. at (262) 241-8522, www.impepa.com

International Safe Transit Assn. at www.ista.org

National Wooden Pallet and Container Assn. at www.nwpa.com

The Society of the Plastics Industry at (202) 371-2489, www.plasticsindustry.org

Western Packaging Assn. at (888) 275-8124

Women in Packaging at www.womeninpackaging.org