



Process improvements,
technology and
equipment advances
must be equal partners
in the 21st century
warehouse

BY PAT RUSSO

WAREHOUSE OF THE FUTURE

Yesterday: wooden pallets; floor-stacked inventory; hand trucks; mechanical material-handling equipment; paper-directed picking

Today: warehouse-management system software; plastic pallets; electronic material handling equipment; computer-directed picking

Tomorrow: robotic material-handling equipment; voice-directed order picking; conveyORIZED labeling

As the dramatic rise in SKUs cause warehouses to bulge at the seams, today's beverage companies are balancing customer-service and cost-containment efforts. They must maintain sufficient stock to fill customer needs, employ efficient inventory management techniques, and guard against unnecessary capital investments.

"Clearly, the SKU expansion is the No. 1 challenge facing beverage warehouse operations," says Rob Joslyn of Keene Consulting. "It touches every area of the operation."

The reaction is often predictable. "The tendency for many companies is to respond to product proliferation by pouring more concrete," says Joslyn. "Building expansion is too frequently the answer. Unfortunately, this response is dated, expensive, and does not maximize the economic value of new products, which often have low volumes and margins."

In contrast, the successful 21st Century beverage warehouse responds with a well-planned blend of innovative material-handling equipment, process improvements, and technology aimed at managing space and productivity.

"These solutions extend the useful life of existing warehouse space, eliminating or postponing the need for new bricks and mortar," Joslyn adds.

For small- to medium-volume operations, acquiring the appropriate solutions presents additional challenges. "A small business already has a certain level of efficiency," says Bruce Eicher of Manhattan Associates. "Larger wholesalers can move from place to place and expand on their technology and knowledge base. It's harder to justify for the single-facility, family-run distributorship."

While the latest advances may have prohibitive costs, prices for more mature solutions—such as warehouse management systems—are actually dropping.

But acquiring new technology should not be considered a "silver bullet."

“As with most supply-chain management processes, there’s a 70–30 rule,” says Jeff Woods of Gartner Group. “Only 30 percent is technology; the rest is process. If you only bring in technology to automate existing processes and don’t use the technology to redefine operations, you won’t get the benefits. In fact, automating broken business processes makes you inefficient faster.”

Industry experts cite the importance of planning to successful efforts. Baseline measurements of current operating conditions should be used to guide needed improvements. “Focus on the business process

and understand the technology options that are available to help you solve business problems,” says Woods.

Once solutions are located, investigate business-improvement claims and return-on-investment (ROI) periods. Select vendors with industry experience and understanding, and check the references they provide.

Given industry trends, using automation effectively may no longer be a luxury reserved for large firms.

“In 25 years, after a significant consolidation in

beverage warehouses, those remaining will be the ones that made investments in the technology and material-handling equipment that allow them to operate more economically and provide superior customer service,” says Joslyn.

So, what advances are powering beverage warehouses, both now and into the foreseeable future? The answers depend on the needs of stored products, available square footage and your readiness to adopt new methods. With the proper planning, the right equipment and technologies can strengthen strategic advantage and customer service, creating bottom-line improvements into the next century.

Systems that know it all

For smaller beverage companies, the maturing warehouse-management system

(WMS) market is good news.

With software vendors developing more beverage industry-specific functionality at lower costs, smaller firms can consider abandoning paper-based picking and manual processes. Others can replace a proprietary WMS that offers limited functionality with a Windows-based system.

Having accurate inventory awareness brings many benefits. “If you can’t find it to get it out the door, you can’t sell it,” says Bruce Eicher of Manhattan Associates. Knowing every product location and quantity reduces inventory investment, eliminating overstocking and enhancing FIFO processes. A new WMS can also provide the ability to meet retailer demands for advanced ship notifications (ASN).

One wine distributor realized a 50-percent gain in order accuracy and a 25-percent productivity increase after WMS implementation. For a beer distributor, knowing product locations during busy season meant finishing loads four hours earlier.

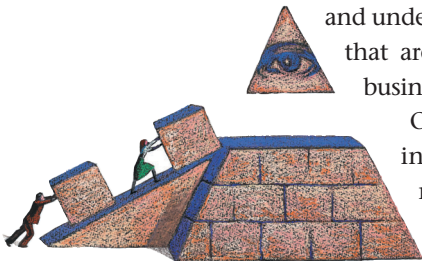
Agreements between material-handling equipment and WMS vendors are creating additional synergies. With a WMS-enhanced warehouse layout, products are picked according to zones and placed on a conveyor providing sorting capabilities. Products are sorted close to the shipping dock, enabling faster loading of multiple trucks.

By adding radio-frequency scanners, picking and receiving processes are enhanced and shortages reduced. Incoming shipments are identified by unique bar codes, enabling tracking of product movement. Each time they’re picked, placed into cartons and shipped, products are scanned again. Knowing exact shipment contents can eliminate shortages and deter theft.

Rack’ em up

The growing numbers of SKUs are not the only source of lost warehouse space. Due to their less durable packaging, lightweight PET containers cannot be stacked as high as bottles, are more prone to damage and require additional floor space in already cramped warehouses.

To reclaim this lost space and reduce



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potential product damage, Twinlode designed a vertical storage system. Its double-wide drive-in rack system is widely used in warehouses across North America, says Dennis Hartman, Twinlode's president.

Pallets are safely stacked in steel-beam shelves, permitting higher stacking and increased storage density. The racks, which accommodate any pallet size, take advantage of the doublewide concept to reduce handling cost.

Mike Roberts, Central Regional Logistics Manager for The Perrier Group, credits Twinlode's storage racks and dual-pallet lift trucks with reducing truck loading time by one-third and with dramatically decreasing product obsolescence.

Scan-a-porter

If you regularly pick mixed cases, wearable scanners can provide productivity gains over the familiar pistol-grip devices. Instead of having to remove and replace a scanner in its holster, pickers wear a small ring on the index finger that they press with the thumb to scan products.

The technology permits pickers, as well as forklift drivers, to have both hands free to handle merchandise. Symbol Technologies says that these devices are comfortable, ergonomically designed and cheaper than some traditional scanners. The cost of a single scanner—with includes a small computer worn on the forearm equipped with wireless capability—is \$3,000 to \$4,000.

Are you wireless?

Developments in cellular technology may shortly enable close monitoring of lift-truck activity from a central location. Companies are developing inexpensive applications that can provide real-time truck data over an Internet browser using a form of wireless data transmission known as cellular telemetry.

This data provides information on which trucks are in operation and confirms which ones have made deliveries. Impact alarms can report product damage, and default codes can aid mechanics with remote diagnosis of truck problems. The data can also reveal which trucks might be unnecessary,

while tracking truck usage can also reduce downtime and maintenance costs.

Hyster is piloting the cellular technology with its larger fleet customers. The company expects it to be a dealer-installed item. The chip that provides the monitoring capabilities takes only about an hour to install. Cost estimates for the lower-end model, which monitors only engine and pump activity, are around \$200. Adding all the bells and whistles—fault code monitoring, impact alarms and GPS—runs under \$1,000.

Clawing to the top

Anyone who picks mixed pallet loads has probably wished for a labor-saving device. To automate this labor-intensive effort, Tygard Machine & Manufacturing designed the Tygard Claw.

An attachment that can swiftly split pallet loads or remove excess layers replaces standard forklift tines, allowing cubes to fit in racks and full loads to be split in half. The four rubber-coated pads can gently lift and place layers ten times faster than manual operations.

The Tygard Claw can also be side-mounted on a lift truck that runs on rails, and customized for any number of layers or pallet size.

Tygard reports that the Claw is boosting productivity in more than 200 beverage warehouses. The layer-picking productivity rate is estimated at approximately 1,500 to 2,000 cases per hour.

Slim pickin'

Reducing aisle width is one strategy for coping with the need for additional warehouse storage space, and moving materials in slimmer aisles is the specialty of very narrow aisle (VNA) turret trucks, designed to operate in aisles less than five feet wide.

VNA turret trucks can place or lift pallets on both sides of an aisle, accurately handling products stored as high as 40 feet. Hyster, Raymond, Crown and other companies offer VNA vehicles. Some manufacturers offer counterbalanced VNA models that can match capabilities of conventional lift trucks.

VNA units provide faster picking operations than traditional trucks, offering the added benefit of productivity increases. ●