Automation Improves Driver Longevity and Fleet Efficiency

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Industry changes like warehouse automation, SKU proliferation, and an increase in alternative store types, along with workforce dynamics, combine to necessitate route distribution systems that increase productivity and decrease operating costs. New lift-pallet systems offer the biggest promise for supporting product innovation in the marketplace.

Customer Demand for Package and Size Options

The need for improved route distribution systems results from extraordinary growth in the number of product innovations. Food and beverage segments have seen the greatest growth, with chips now available in twelve or more flavors, to beers offered in different sizes (with multiple flavors in each size), to a boom in single serve packages, customers are purchasing a much wider variety of products.

This change in how consumers want to purchase has introduced complexity into the supply chain, with resulting impacts to warehouse management systems as well as route distribution systems that get the goods onto the shelves. The rapid rise in SKU growth from increased product options over the past few years is illustrated below.

The average number of SKUs on a route has more than doubled between 2003 and 2011. This increase makes it increasingly difficult to move goods through the supply chain and is causing the need for innovation in route distribution systems. The 2-wheel hand truck in use since the 1940s is not sufficient and store managers believe distribution equipment is taking up valuable aisle space and a desire to get product delivered to the shelf faster.

"The SKU proliferation has intersected with the need to speed up delivery by taking it out of the route drivers' hands. Those companies which efficiently pre-pick and package the large number of different items in the warehouse differentiate themselves by meeting the growing demand for packaging variety," noted Greg Ecker, Executive Vice President.

At the same time as SKUs are proliferating and new outlet types are developed, there is a growing concern about the employees performing distribution jobs. Seeking productivity gains, companies have turned to warehouse automation, which is resulting in fewer trucks and trailers out on the road and a potentially shrinking workforce with fewer route distribution drivers. The shrinking workforce means tenured employees tend to stay on the job longer and, as the workforce ages, it becomes more difficult to do the work at the same level with the amount of bending and twisting involved. These new best-practices solutions keep dedicated hard-working delivery drivers on the road.

Beverage Distributors Seek Best-Practices for Delivery

Watkins Distributing Sales and Service, a family-owned and operated distribution business in Idaho, was investigating ways to improve efficiency and driver longevity. Watkins has more than one hundred thirty employees and delivers approximately four million cases of beer per year. Watkins began experimenting with warehouse and delivery changes several years ago. Like other beverage distributors looking for best-practices, the company delivered for major companies like Anheuser-Busch, as well as shipments for craft breweries, such as Craft Brewers Alliance and Firestone Walker. The variety of beverage products being delivered required Watkins to organize both warehouse and trucks quickly and effectively. The company began to phase out 16- and 18-bay trucks, typically side-load, in favor of end-loader trucks with lift gates.

Delivering to Convenience Stores and Large Grocery Stores

Continued process improvement mandated that the company find easier methods for drivers to deliver products at their many stops. Watkins experimented with various options, including pallet jacks, six-wheel carts, and the Magliner CooLift Delivery System. These new pallets are smaller than traditional pallets, with a regular pallet storing up to 75 cases; CooLift can only hold about 35-50 cases. Larger traditional pallets require the assistance of an electric pallet jack, and cannot fit into the back rooms of most convenience stores. Watkins found that these smaller pallets allowed them to create "hybrid" routes, tailored to the realities of this delivery model.

According to Mitch Watkins, President of Watkins Distributing, "We have a lot of routes where a driver has to deliver to ten smaller stores and one or two large grocery stores. The smaller pallets are perfect for the convenience stores, because the driver can roll the pallets right through the front door and into the back room before he even has to touch a case. Meanwhile, we can also load regular-sized pallets, for the grocery stores, next to the CooLift pallets on the truck. It allows us to be flexible and pack for the kinds of routes."

The system allowed product to be delivered to the store with a fifty percent reduction in driver product touches. At the delivery location, drivers transfer product to the final destination through a standard sized door, unlike with full-size pallets, because of the pallets' compact size. The system was designed around the footprint of getting through a doorway easily, maneuvering store aisles, and turning in tight radius corners.

The system's pallet height is 13.5 inches, judged by major ergonomic studies as the best height from which to lift products, as compared with a standard pallet height of 4-6 inches. Customers have reported an astounding 60 percent reduction in worker loss time events, directly tied to the driver avoiding bending when lifting a case of product.

Happy Drivers Yields Best-Practice Delivery

Watkins ran an in-house comparison with six-wheel carts and hand carts, and drivers responded most favorably to CooLift. With hand carts, every case still had to be transferred one at a time onto a hand cart. Drivers had to wheel that cart into the store, move the empty cart back to the truck, and manage the empty carts

Impact of SKU Growth on Delivery and Warehousing

Side load aggregate build — *Source: Magliner*

	2003	2007	2008	2011
Average # of unique SKUs at distribution center	220	312	337	365
Average # of SKUs on route	105	153	165	212
Average # SKU picks per customer stop	12	14	21	29

as they accumulated over the route. A convenience store might receive a hundred cases in a delivery and a driver will typically have to go back and forth from his truck eight times before checking with the manager. Afterward, there is still an additional eight to ten runs into the cooler to put product away.

Watkins reported that with the new solution drivers had a lot less physical and organizational stress and strain. When drivers do not have to pull every case of beer off a truck one at a time drivers deliver more stops with less impact on their bodies.

Several pallet lengths with differing weight capacities are available, which optimizes space on the trailer as products can be "cubed" out most efficiently on the truck. The optimum build on the pallet can optimize space on the trailer.

The system has been in use for several years and several new innovations to increase warehouse productivity have been introduced, based on process observation and customer feedback. For example, a pallet adapter tool allows the warehouse to use a forklift or walky rider to move two pallets at once from a warehouse picking process. With more than 1000 of the systems on the ground, customers reported an increase of about 10 percent in the number of deliveries made, with about a 20 percent increase in product moved by each vehicle, for an overall productivity increase of about 15 percent. Fewer trucks on the road result in smaller fuel bills, and less physical impact on the driver.

The beverage industry has seen an explosion of new products and SKUs in recent years as craft brewers assume a larger market share and electronic inventory management becomes more critical. These data result in a new complex reality about truck loading and delivery. As fuel costs rise, it is increasingly essential that distributors make effective use of space, manpower, and trucks. These factors have generated a need for more efficient and flexible delivery systems.