

# CLOSING THE LOOP: RETURNABLE PACKAGING BOOSTS SUPPLY CHAIN EFFICIENCY

Innovative solutions such as pooling of reusable containers can cut costs and improve performance

Packaging—particularly the outer packaging designed to protect a shipment while being handled on the production line, in the warehouse, and in transit—is an often-overlooked aspect of supply chain management. Many view it as simply a cost of doing business, something that is neither glamorous nor strategic. This has generally been the case in the automotive industry, but now that conventional wisdom is coming into question.

As automotive manufacturers continue to expand globally, exposing their supply chains to more risk, their need to effectively package products in transit becomes more urgent. Moreover, packaging-related delays can be extremely costly in an industry that relies on efficient parts consolidation and direct, uninterrupted deliveries to production lines.

But the automotive industry faces a number of packaging-related issues. One is that poorly packaged products do not fully utilize the capacity of sea containers, increasing the likelihood of in-transit damage. But such issues aren't limited to ocean voyages. Other problems include the inconsistent availability of containers and associated materials used in



manufacturing, warehousing, and distribution; a lack of asset visibility; product contamination from dirty receptacles; and inefficient returns management for reusable packaging.

These problems are widespread, as documented in a study of packaging practices in the auto industry by the consulting firm Deloitte<sup>1</sup>. Industry surveys “have consistently shown that suppliers and OEMs (original equipment manufacturers) frequently face difficulty in getting the right packaging to the right place at the right time,” says Deloitte. Just one example: The firm estimates that the loss rate of pallets and lids for reusable containers is especially high, in the range of 15–20 percent.

The Deloitte study raises another concern: Even though a lot of capital is tied up in automotive product packaging, executives do not pay enough attention to this aspect of operations, and the result is a significant amount of waste in packaging management processes.

What automotive manufacturers and suppliers need are reliable, cost-effective packaging solutions that maximize fill rates, are optimized for intercontinental moves, and raise the efficiency of freight operations worldwide. They are finding that it is indeed possible to have all that—while also making progress on meeting their sustainability goals.

#### **Finding fixes**

There are a number of approaches to developing such solutions. One is to ensure more collaboration between supply chain and packaging experts to develop optimal packaging formats for specific products.

For the automotive industry, Deloitte proposes “pooling-based” solutions, where an organization owns a fleet, or pool, of standard, returnable containers for use across the supply chain and manages “the entire process—shipping, cleaning, preparing, and tracking of the containers.” This option is especially effective at driving down costs when there are enough users to achieve economies of scale, advises the consulting firm.

An example of such a service is a pool of returnable, plastic containers managed by a third-party logistics provider (3PL). A container now in use is the ISOBIN 33, which measures 1190 mm (l) x 1140 mm (w) x 845 mm (h) in size and can carry up to 907 kg when loaded. The bin has a dust cover as well as a Euro-style fork strap for convenient handling. It typically carries goods in disposable packaging, such as cartons. The 3PL is responsible for the upkeep and positioning of the units, and the OEMs and suppliers have the added benefit of not having to make any capital investment in those assets.

There are three main ways in which this type of pooling solution delivers more efficiency to the automotive supply chain:

#### **Cost reduction**

A primary benefit is that loading cargo in standard-size plastic bins that are specifically designed to fit inside high-cube sea containers enables shippers—the automotive manufacturers and suppliers—to minimize space wastage.

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<sup>1</sup> <http://www.oesa.org/Doc-Vault/Knowledge-Center/Supply-chain-content/Deloitte-Reducing-Packaging-Costs.pdf>

Similar gains are possible in storage areas. Heavy-duty plastic units can be stacked six high, whereas traditional units such as cardboard boxes can only be stacked two or perhaps three high without increasing the likelihood of costly damage. In addition, conventional packaging materials such as wood and cardboard can be problematical. Wooden pallets that are not treated properly may be prone to insect infestation and often have to be scrapped. Infested pallets are also likely to be rejected by customs authorities. Cardboard is vulnerable to rough handling.

These reusable systems also help companies to comply with sustainability goals. Higher sea container utilization means that fewer boxes have to be transported, and eliminating cardboard and wood eliminates the need to use and recycle these materials.

### **Global coverage**

Global 3PLs can use their logistics expertise and transportation networks to create and manage a worldwide pool of returnable bins—in effect, a lean supply chain for packaging.

When an export or import shipment is initiated, the 3PL allocates the required number of units at the designated loading points. This can be done automatically via electronic links with the shipper's ordering systems. The 3PL will also advise on cargo consolidation and loading-density strategies. When the shipment arrives and the ocean containers are unloaded, the 3PL is responsible for taking back the empty bins, shipping them to a service center, and redeploying the cleaned and inspected units.

This continuous movement of bins is carefully orchestrated. For example, the 3PL endeavors to find backhaul trips for empty units, much like trucking companies do in order to eliminate wasteful empty miles. Where possible, triangulated movements are planned. "One of the biggest challenges when operating a returnable system is 'connecting the dots,' and 3PLs are able to find synergies between customers," says Stewart Robertson, Managing Director – Packaging and Strategic Development, DHL. Tracking the status of assets is made easy by cloud-based information systems and radio frequency identification (RFID) tags on cargo-carrying units.

### **Compliance and safety**

It's not easy to keep up with changes in packaging regulations worldwide, particularly for shippers that are not familiar with this element of their freight operations. However, noncompliance leaves companies open to cargo delays and can be a safety issue if packaging does not meet the required specifications.

Third-party, returnable packaging solutions greatly reduce this burden. The 3PL is responsible for supplying standard units that comply with International Standards Organization (ISO) testing criteria and meet all safety codes.

As a critical component of freight operations, packaging is an important factor in supply chain efficiency. The challenge now is to promote the wider adoption of innovative concepts such as reusable bin and container pooling. "The use of forty-foot sea containers gained momentum in the early 1960s; now we are trying to create the same revolution within these boxes," says Robertson. "The new pooling systems will revolutionize the way parts are shipped and delivered in the automotive industry."