



Packaging Optimization: Packaging More Efficiently using MagicLogic's Advanced Load Planning Software

Previously, many companies only shipped B2B, but with e-commerce booming, supply chains face increased pressure and rising costs, especially for packaging. Often, packages are awkwardly shaped or must follow complex loading rules. Learn how MagicLogic Optimization focuses solely on developing the most efficient loading solutions for the logistics industry. With over twenty-five years of industry experience, MagicLogic's innovative and effective loading solutions are suitable for B2B and direct-to-consumer sales, increasing supply chain resilience and reducing costs.

High-Speed Cartonization Reduces Packaging, Increases Efficiency, and Increases Supply Chain Resilience

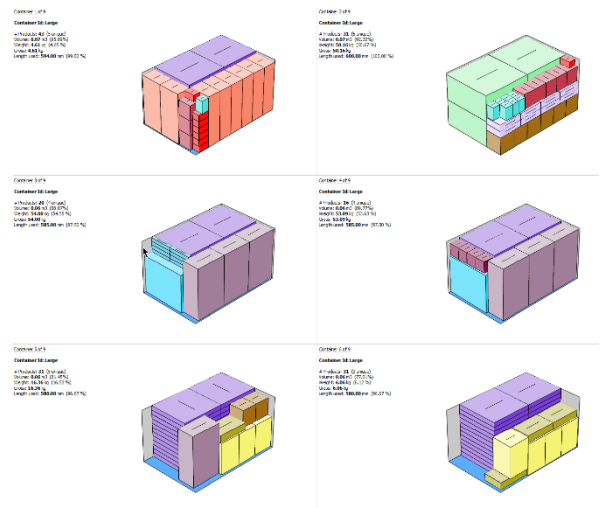
Packaging is a key part of the supply chain, but its value is often overlooked. A good, effective packaging system is far more complex than just picking a cardboard box, and nowadays is an invaluable system that needs careful coordination to ensure goods are packaged safely, efficiently, and economically. Efficient packaging not only makes sure the goods travel smoothly from the warehouse or distribution center to their final destination but plays a vital role throughout the entire logistics process.

The recent and continuing popularity of e-commerce is introducing new challenges to the logistics industry, particularly as consumers are demanding faster shipping and increasingly expect it to be included in the price. Not only do consumers expect packaging to be top quality, ensuring goods arrive in perfect condition, but they want to feel good about their purchase, knowing that their packaging is environmentally friendly. From the supplier's perspective, they want to ensure they are not using an expensive warehouse to store unnecessary packaging materials, and packers can select the right sized cartons quickly, using minimum dunnage or fill material. Additionally, manufacturing costs to produce corrugated boxes have increased substantially, along with other packing materials used to transport goods securely and safely.

Meeting the Challenge of Cartonization

MagicLogic's BlackBox™ Optimizer is a Windows service specifically designed to integrate easily and quickly with most WMS and ERP systems available today. One of the main applications of this plug-in module is Cartonization, where it selects the optimally sized carton or box in near real-time, order after order, making it the perfect option for eFulfillment.

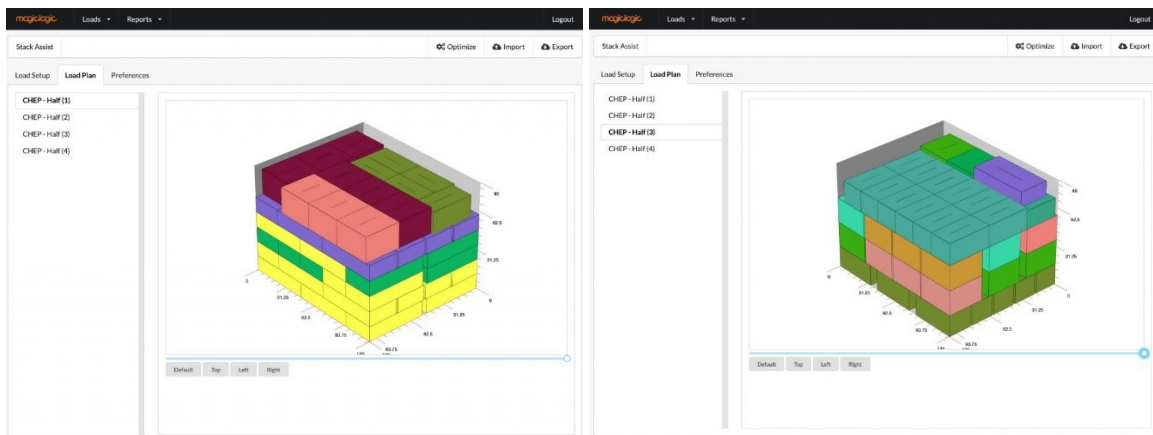
Maximum fill rate is the main objective of BlackBox, which it achieves at lightning-fast speeds. In addition, its near real-time response provides results that are usable during checkout, calculating the best and most efficient shipping rates using correctly sized cartons. As a result, the need for expensive dunnage and fill materials is minimized, and orders are perfectly packed, ensuring they arrive in pristine condition.



Meeting Consumer Demand for Complex Cartonization

Many customers need to pack awkwardly shaped products or must follow complex packing rules. BlackBox uses sophisticated algorithms to ensure even difficult products are packed properly yet efficiently. These rules include:

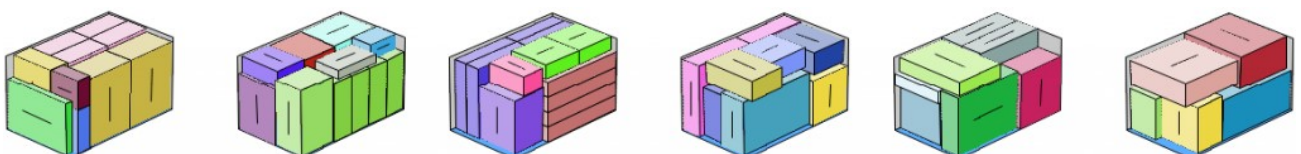
- Hazmat rules
- “Similar item” nesting (items must share some like attributes, e.g. width and length)
- Hybrid liquid volume (packing fluid or flexible shapes into contiguous volume)
- Compression factor (squeeze an item in one or more dimensions to controlled levels)
- Gift boxes / expensive packaging – use only if required
- Elastic-sided flexible container modeling for fast carton-set creation and evaluation. This is something that deserves quite an in-depth conversation
- Folding and rolling – our latest feature this will let you tell MagicLogic BlackBox if a product can be folded in $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ etc. or even rolled to save space



Some key existing features related to Cartonization include:

- Pack by pick sequence or zone
- Keep set items together, conversely you can prevent mixing of certain items (the bowling ball with the nachos)
- Lock items to specific container or packaging
- Irregular-shaped containers. Not just jiffies but also cut-off containers, rounded etc.
- Irregular-shaped items: cylinders, L-shapes (which is a surprisingly versatile shape)
- Unit/Case/Layer/Pallet Quantity handling
- Fill-up quantities. Items can be tagged as ones which can be increased in quantity to maximize carton utilization
- Optimize for cost, including max-value per carton
- Internal loading zones per carton to cater for chill-packs, padding, dividers

MagicLogic's BlackBox is built into the software provided by numerous Tier 1 logistics providers and can be found on the desktops and servers of some of the largest logistics operations worldwide. Because it utilizes true 3D placement of each item, the software ensures an optimal solution. As a result, MagicLogic has achieved substantial savings for customers over the years, sometimes running into hundreds of thousands of dollars annually. MagicLogic software also helps to save time by streamlining packaging operations.



Real-World Results

True Manufacturing, a company known worldwide for its high-quality refrigeration, enlisted the help of MagicLogic to ensure replacement and spare parts were shipped more efficiently and quickly. Before, packers selected the best carton by eye before deciding how best to pack an order, using fill material and bubble wrap to ensure the parts arrived undamaged. As a result, shipping costs were higher than necessary.

Nowadays, MagicLogic's BlackBox is integrated with an automated packaging system purchased by True Manufacturing. The system scans the items to determine their dimensions, while BlackBox uses the information to select the correct sized carton based on these measurements. The automated packaging system then creates the carton. As a result, staff no longer need to create shipping cartons, and visually, the parts are better presented in the cartons while still following all loading rules. Most importantly, the parts still arrive in perfect condition but are far more economically packaged.

True Manufacturing packaging expenses were reduced by USD 213,000 in the first year of use without even considering the environmental benefits.

Another well-established company, Toysmith, also uses MagicLogic's advanced Cartonization software. Toysmith transitioned to a new WMS, but unfortunately, the fill rate was not as expected, with an average of just 68%. This resulted in increased labor, materials, and shipping costs. However, after implementing MagicLogic's BlackBox, Toysmith saw a significant improvement in fill rate, resulting in fewer cartons per shipment and decreased shipping costs. Toysmith currently has a fill rate set at 83%, and cartons are being filled close to capacity, so packers need to spend less time adding fill material. The company also analyzed their average revenue per carton, which increased between 12 and 15%.

Over the past twenty-five years of business, MagicLogic has helped companies improve loading capacity across a wide range of industries. MagicLogic has the expertise to solve complex logistical problems, often providing custom solutions for customers who have unique requirements.

Would you like more information and a demonstration of our software?

[Connect with our expert team today](#) (link will open in email)

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