

Case Study: Primex Distribution Box

How a midwestern snack food producer excelled past its economic and sustainability packaging metrics.

Project Narrative

As a regional manufacturer of snack foods, Mikesell's®, headquartered in Dayton, OH, primarily services the grocery and convenient store industry in the states of Ohio, Indiana, Kentucky, and Illinois. Though we offer private label goods, the bulk of our business is our own Mikesell's® brand. To distribute our branded products, we have adopted a direct store delivery (DSD) model of daily replenishment of fresh snacks, which requires the procurement of 105,000 corrugated fiberboard containers annually. Snack food is transported in these containers to the stores, removed, and placed on the store's merchandising shelves by Mikesell's own fleet of 59 DSD route carriers. The empty containers are collapsed, placed back in the truck, and returned to one of two factories to be reused, on average 5 times, before then being recycled.

We are subject to pricing pressure from national suppliers. We needed to reduce our packaging costs by pursuing an alternative, durable package for factory to store transportation that provided a higher number of reuses. A favorable ROI had to be achieved. Another primary motivation was to reduce our environmental footprint in line with our goal for better stewardship to our stakeholders and the communities we thrive in. Maximizing ROI and environmental stewardship were at the forefront of our goals. In addition, when considering a packaging change, the alternative had to maintain its easy-open feature, hold the same amount of retail product, protect the product, and maintain the same collapsed size as the existing container to keep factory storage space to a minimum.

In early 2018, we began looking for a better alternative to the corrugated fiberboard containers and eventually chose a custom container solution designed and fabricated by Primex Design & Fabrication (PDF), Richmond, IN. The new container is constructed of Bubble-X™, a co-extruded, polypropylene, bubble board manufactured by their sister company, Primex Plastics. The material is ultra-light, yet ultra-strong, providing durability weather resistance



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and protection for our delicate products. Primex offered the convenience of a total solutions approach and the technical know-how resulting from their vertical integration. In addition, PDF's structural design engineers were able to meet the challenge of maintaining a similar collapsible design in the plastic container found in the existing container. The container needed to fold outward and then back inwards, which is not typically achievable in co-extruded profile PP board. After a few trial boxes, the design was set. The Primex solution delivered on all design requirements. In the Fall of 2018, we ordered a small batch of 50 containers for our drivers to test. After a successful trial, an initial order of 3,000 was issued. Since that date, we have ordered 42,000 containers. The full system-wide implementation will consist of 60,000 containers, which is expected by year-end. The implementation quantity is necessary to accommodate fluctuations in demand and to cover the extensive number of DSD carriers in our operation.

Project Outcomes

Economic impact: Though the upfront investment in the plastic container is higher, the significant increase in the number of reuses far offsets the additional investment. It has a lower cost of ownership. Our business model ROI calculations were based on 100 reuses versus the 5 being experienced by the corrugated fiberboard container. To date, the 100 reuses are projected to be credible as we experience little fall out. We expect to achieve over a 300% ROI by implementing this solution. Or, simply stated, we expect to experience an 80% cost reduction each time a container is used. These savings will further our competitive posture in the market, and fuel investment in R & D and our people.

Unexpected Benefit: In the design process, the graphics of the box was greatly enhanced, building our brand equity. Though a quantifiable metric was not employed to measure its impact on sales, our company's image is certainly promoted.

Environmental Improvements

Environmental Impact: According to the EPA's WARM model analysis, by eliminating the corrugated solution, we are saving 217 metric tons of greenhouse gas emissions entering the atmosphere annually, or approximately 2170 metric tons over 10 years. From a source reduction standpoint, the Primex solution nets a savings of 64 metric tons annually or 640 metric tons every 10 years from potentially entering the solid waste stream. This is certainly a tremendous reduction in our company's environmental footprint. The new solution is not only fully recyclable but will be fully recaptured by Primex Plastics at the end of its useful life. Primex Plastics, as we understand, is one of the largest recyclers of plastic extruded profile board in the nation.