EXAL uncovers capacity and improves customer service with Preactor

EXAL Corporation is the world's leading manufacturer of extruded aluminum packaging. EXAL offers coil-based metal packaging container options in North America and Europe and is the leading independent contract manufacturer of aerosol products and liquids in Latin America. The company's manufacturing facilities are located in the United States, Argentina, Netherlands, France, Switzerland, Poland and Mexico, delivering a global capacity of 2.4B containers per year. EXAL's engineering allow for their customers to create innovative and award winning designs such as Boulevard Brewing Company's Unfiltered Wheat Beer Aluminum Bottle and Coca Cola®'s – Beijing Olympic Games "WE8" Aluminum Bottles.

Boulevard Brewing is the first brewer in the world to market aluminum bottles in EXAL's 66mm crown finish aluminum bottle. The larger diameter provided Boulevard's creative team with a broader canvas for it's retro-classic artwork that was printed on the package. The package was honored with a "Best In Category" Quality Award for Excellence in Metal Decorating from the International Metal Decorators Association (IMDA). Competing in the Miscellaneous Products category, the container was the only aluminum bottle package to be honored by IMDA.

Coca Cola®'s – Beijing Olympic Games "WE8" Aluminum Bottles.

The concept of WE8 was to foster cultural and artistic exchange between artists from around the world and to express the global connections of all people embodied in the Beijing 2008 Olympics. In recognition of the world meeting for the Beijing Olympics 2008, Coca-Cola® invited artists to depict the meaning of the occasion. Eight of China's most important visual artists were united with eight international musicians to express the connection of all people. The result of the artistic bridging of cultures was the "WE8" series of eight stylized aluminum bottle designs. For each bottle design, inspired by the "Coke Side of Life" marketing campaign, a talented musical artist also composed a companion song. Each aluminum bottle was sold exclusively in a single country reiterating the global impact of the Olympics.

The objective of the ESKA aluminum bottle was to create an innovative, design intensive package, consistent with the brand image, combined with improved package sustainability. Aluminum was selected as the package material as it is recyclable and, when recycled, offers outstanding sustainability. Consistent with the brand essence, lightweight bottles using EXAL's Coil To Can (C2C) process were selected over drawn and ironed cans and extruded aluminum bottles using virgin material, which requires substantial greater energy to produce compared to recycled material. The ESKA brand elements that are centered on other packages to communicate a strong, stylish, contemporary design were enlarged due to the direct print capabilities of the C2C manufacturing process.

Eaux Vives Water Incorporated - ESKA Water

EXAL's C2C manufacturing method has also been recognized on its own merits. EXAL was presented with a Stevie® Award for companies larger than 100 employees during ceremonies in New York City on June 22, 2009 for its evolutionary Coil-To-Can (C2C) aluminum container manufacturing technology.

EXAL's C2C technology was also a finalist in two other categories: New Product or Service of the Year – Manufacturing, and People's Choice Product or Service. C2C is an innovative hybridized technology that marries the manufacturing speed and light weighting of standard (drawn & ironed) beverage can technology with the dynamic shaping technology originally

available only with heavier walled extruded aluminum containers. Because of their lighter weight, containers made via C2C use less fossil fuel throughout the logistics chain, producing fewer transport-related carbon dioxide emissions than heavier packaging formats. EXAL's C2C process also utilizes post-consumer recycled aluminum as a raw material and finished C2C containers are 100% recyclable. It is widely understood that aluminum's sustainability is dependent on consumer recycling as it requires 5% of the energy to manufacture a given amount of recycled aluminum compared to the creation of a like amount of virgin aluminum. The post consumer content of C2C bottles varies from 50%-60% dependent on actual consumer recycling rates. Because the C2C process incorporates high-speed production lines, less energy usage per container is required.

A common thread through these EXAL success stories is the Youngstown facility in Ohio. Youngstown is home for one C2C line and thirteen extrusion lines. Quinn & Associates, the Preactor network partner for North America, was approached by production and IT staff at EXAL to discuss the possibility of improving productivity with Preactor. The Youngstown facility purchased the P300 Finite Capacity Scheduling (FCS) system and, when Brian Porterfield was hired as the planning manager, the project went forward in earnest.

Mr. Porterfield brought experience with Preactor from another aerosol and beverage container manufacturer. Brian was determined to apply the lessons learned to find the shortest path from concept to an effective operational Preactor system. After an initial assessment of the state of the Preactor deployment in Youngstown, Brian moved quickly to accelerate the system implementation. "A team approach is essential in identifying needs prior to deployment. There is simply no avoiding the fact that all the stakeholders must feel that their interests are represented," observes Brian. He adds: "Another element of our success was the direct interaction with Quinn & Associates to quickly resolve problems and develop solutions. It is easy to defer project tasks to a remote corporate asset but the end users, who live day-to-day with the system, must have access to implementers with a depth of experience who can act as a sounding board for system design decisions."

The business system in use at the Youngstown facility is Sage Accpac. Before the introduction of Preactor, the manufacturing application of Accpac was limited. With the arrival of Brian, the time had come to make greater use of Accpac to support production. Brian knew the importance

of precise data in producing meaningful output from Preactor, which meant a data cleaning and validation effort was paramount in the implementation. The results of the top-down review of the system revealed Accpac needed improved bill of material information, and product attributes and specifications to be added to provide the information to make best use of P300 FCS.

Brian insisted that the level of integration of Preactor to Accpac must not become counterproductive to project objectives. “Previous experience, where Preactor was slaved to the ERP system with the view that Preactor was only an extension of the ERP, resulted in limiting the flexibility of Preactor,” says Brian. “Care had to be taken to use the data elements in Accpac to reduce duplicate data management with Preactor without compromising the flexibility and power of the P300.” Preactor forced the discipline with data that benefitted the production process, notably correct and complete bills of materials and requiring that artwork was approved at the correct point in the production run.

“It is easy to look at container extrusion and oversimplify the manufacturing process,” says Greg Quinn, president of Quinn & Associates. “On one hand, there is the extrusion process, creating complex shapes from a small amount of aluminum. On the other hand there are all the issues of multi-color, multi-pass printing on a 360 degree surface. All of this on very high speed lines. There was a lot happening very quickly to make the aluminum bottle for your favorite beverage found at the corner convenience store.”

Following the “keep-it-simple” framework envisioned by Brian, the Accpac product information is supplemented by detailed information in the Preactor database. Preactor databases for setup groups, products, and special instructions are tied to sales and work order information generated

by Accpac. Tooling sets are modeled as a constraint in Preactor. Brain resisted the temptation to model components of the tool set as individual constraints. “Looking closely at the toolset makeup, so few components are interchangeable or otherwise can be swapped between toolsets. The level of effort to maintain the data in Preactor when the exceptions could be easily managed by the end user made it clear that the definition at the toolset level was the practical choice,” says Brian.

Another element managed in Preactor is that the production method can dictate what type of slug to be used (“alternate slug type”). A slug is a disc of aluminum the size of a large coin that is extruded to create a container. Sometimes a change in line for a product may require a change in slug. By tracking that difference in raw material, the planner can create more accurate material requirements to support production when lines are changed to improve overall plant floor performance. Custom reports were needed to track the unique aspects of EXAL’s production plan. A custom open order report was developed for the customer service representatives.

EXAL realized its production enhancements hoped for in purchasing Preactor. To date, EXAL has reduced the changeover hours in Youngstown by 30%, which translates to increasing available capacity by 200,000 containers per month. Customer service levels, as measured by customer commit date to actual delivery, have improved from 80% to 97%, directly attributable to P300 system.

“A major plus with the system implemented at EXAL is the confidence we have in the different planning scenarios,” Brian points out. “We now can look at all our alternatives given bookings and line conditions, and can act with certainty that the solution suggested by Preactor will be realized on the production floor.”

This success does not mean the end of Preactor innovation at EXAL. Several enhancements in the Preactor scheduling model are planned in the future, including calculations to determine appropriate slug type for a new lightweight product line.

“What EXAL has achieved is impressive,” observes Greg of Quinn & Associates. “Through the thoughtful top-down design methods tempered by Brian’s experience, EXAL has taken the best elements of two affordable software systems and created a solution where the whole is much, much greater than the simple sum of the parts.”