



BRIGHTPOINT NORTH AMERICA LLP

Brightpoint North America LLP, a global leader in the distribution and logistics services in the wireless industry, partnered with Purdue's engineers to help streamline and remove a bottleneck in one of its cellular phone packaging lines. After analyzing the process of this line, Purdue's TAP associates suggested automating a step that would reduce the bottleneck. This solution also reduced the ergonomic challenges for employees because the operators were constantly rotating their hip by up to 180 degrees to pick, place and off-load the product.

Enter a team led by Purdue professor Mark Jackson, who worked with doctoral student Milan Rakita to design an innovative piece of equipment as a solution. Anderson Tool & Engineering was contacted to produce the piece of equipment. Now, after a six-month trial, the machine will be added to eight other production lines at Brightpoint over the next 12 months. In addition, Brightpoint officials project increased productivity, better ergonomics and a reduction in cycle time per line of 9 to 12 seconds per order, and operating cost savings of at least \$25,000 each year per production line.



“This TAP program has been instrumental in developing one of our business-plan objectives — introducing new, innovative ways to improve our processes and introduce automation into our manual operations. Purdue’s technical assistance and partnership with Brightpoint’s supply chain operations have strengthened our overall processes. For Brightpoint, Purdue TAP is a very valuable resource and partnership that is helping us to be successful in supporting our customers.”

— Jeff Long, Director, Quality and Industrial Engineering and Facilities, Brightpoint North America LLP, Plainfield, Ind.



“The analysis by TAP, drawing on the expertise of Purdue faculty and researchers, led us to conclude the company that had provided the assembly of the failed container liner used a heat treatment firm that did not provide acceptable quality. Replacing the components in a container of this size alone would cost in excess of \$25,000, not to mention the costs in lost production and the adverse impact on customer deliveries. With the quick turnaround on this project by Purdue TAP, we have installed the new component and restarted production on that line. This project clearly confirmed the validity of Purdue’s expertise in this area.”

— Gerry J. Dail, Manager, Engineering and Aerospace Tool Design-Manufacture, Lafayette (Ind.) Operations, Global Hard Alloy Extrusions, Alcoa Inc.

ALCOA INC.

Alcoa Inc. engineers at the Global Hard Alloy Extrusions facility in Lafayette, Ind., discovered that an H-13 tool steel component used to manufacture aluminum extrusions for the aerospace industry was cracking. Was there a material defect in the container lining assembled and supplied by an outside company, causing it to fail after less than 100 cycles vs. the expected 1+ million cycles? Or were the cracks, or fractures, due to exposure to high temperatures during the aluminum extrusion production process at the Alcoa facility? An Alcoa team led by Gerry Dail turned to Purdue TAP to see if university engineers could solve the mystery. Alcoa wanted to understand the cause of the failure before installing new material into the container housing and repeating the problem, preventing losses that could reach \$50,000. A research team involving Purdue Materials Engineering Professor John Blendell and graduate student Kamesh Swaminathan used scanning electron microscopy and hardness measurements in their analysis. The result: The faulty steel tool had an excessive hardness, causing it to behave in a brittle manner and fail prematurely. In response, Alcoa decided to approach another company to complete the relining of the steel tool so the global manufacturer could restart production on that assembly line.