

# Bridging the Gap Between Design and Execution



## ABOUT THE COMPANY

AMP Robotics Corp. is modernizing the world's recycling infrastructure by applying AI and automation to increase recycling rates and economically recover recyclables from mixed material streams. The AMP Cortex™ high-speed robotics system automates, identifies, and sorts recyclables. Designed to run 24/7, the robotic operations perform at superhuman speed and provide extreme accuracy. With deployments across North America, Asia, and Europe, AMP's technology recovers recyclables from municipal collection, precious commodities from electronic scrap, high-value materials from construction and demolition debris, and valuable feedstocks from organic material. As the demand for robotics to retrofit existing recycling infrastructure continues, AMP's efforts to modernize and expand will help aid society's path to a circular economy.

## AT A GLANCE

### Mission

Enable a world without waste

### Best Thing About Arena

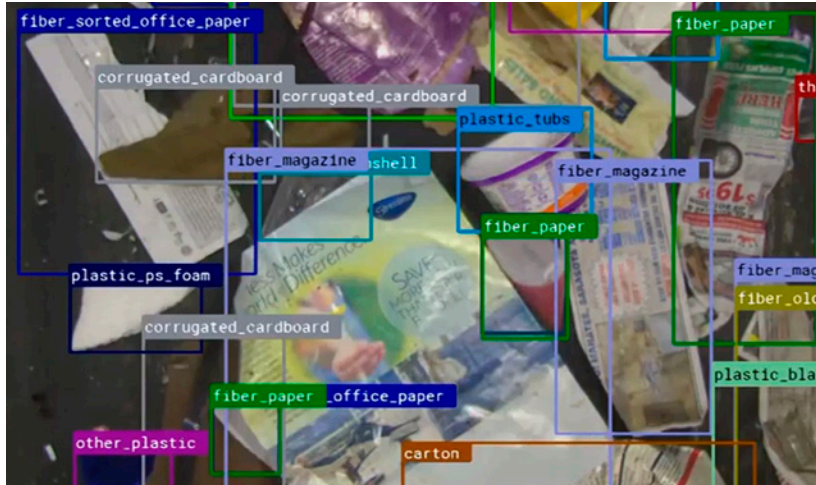
Intuitive solution with a short learning curve speeds adoption and gets new users trained quickly

### Bottom-Line Impact

Integrations between CAD, PLM, and ERP bridge the gap between product ideation and manufacturing and helps AMP Robotics increase production speed

### Key Benefits

- Streamlines design and manufacturing processes with SOLIDWORKS and NetSuite ERP integrations
- Improves engineering change efficiency with controlled processes
- Reduces engineering change rejections
- Provides intuitive and scalable cloud solution with no IT overhead
- Increases product development efficiency tenfold



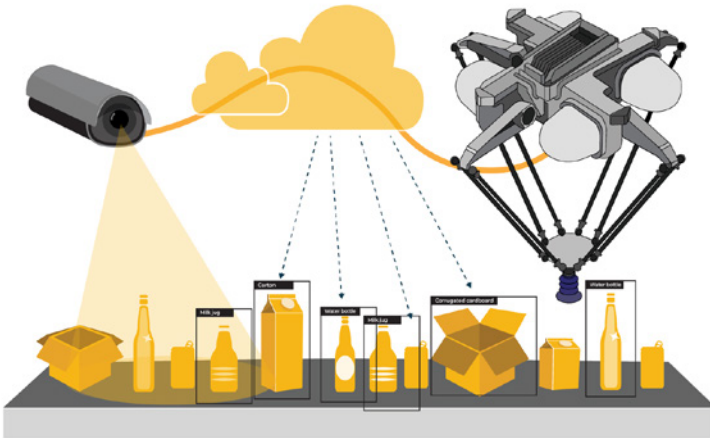
## BUSINESS CHALLENGES

AMP needed to establish formal change processes and provide visibility into product information across design and manufacturing. Using their computer-aided design (CAD) software for mechanical and hardware design, and enterprise resource planning (ERP) system to execute those designs, AMP engineers had limited revision control and access to information. Only certain engineers had access and authorization to review and approve changes. The company's buyers, purchasers, and suppliers likewise required access to product-related information. What was missing was a solution that would integrate their CAD and ERP and connect other ancillary systems to aggregate and manage this information in a centralized location. "We're a company that's working towards scaling our products and our solutions," said Scott Krueger, AMP Robotics' PDM Specialist. "If you're not fully integrated, that's not scalable for sure."

## SOLUTION

AMP needed a solution to not only bridge the gap between their CAD software and ERP system but also needed to establish control over processes for managing bills of materials (BOMs), engineering changes, and documentation to ensure accurate information is released to the ERP. They worked with a third-party consultant to find the right product lifecycle management (PLM) solution that provided integration with their existing systems, flexibility, and scalability to grow with the company. Also high on their must-have list was a cloud solution to avoid maintenance and additional IT overhead.

The Cloud PLM solution from Arena met all their requirements for integrations, scalability, and process control. To address their key challenge of bridging the gap between design and manufacturing, AMP integrated Arena with their mechanical design software, SOLIDWORKS, and their ERP system, NetSuite. The SOLIDWORKS integration allows all released mechanical and hardware designs to be managed under engineering change control within



Arena PLM and accessible by all necessary team members. And with the integration to NetSuite, manufacturing is assured they receive approved and accurate product information such as BOMs, parts, and standard operating procedures (SOPs), avoiding late-stage production errors. AMP now has a completely streamlined design for their manufacturing process. “We didn’t have processes behind any of the things that we were doing,” said Krueger. “Having Arena be a central repository allows us to have the right documentation to execute and know the right expectations on how to manage change.”

“ I can’t emphasize enough how much Arena is the keystone for managing all our product information and processes, from product design, through engineering, quality, manufacturing, production, and to customer service—at the end, Arena links it all together.

—Scott Krueger, PDM Specialist, AMP Robotics

## KEY BENEFITS

Since implementing Arena, AMP has been able to improve engineering change processes. With the integration to SOLIDWORKS, all released design information is now available in Arena for review and sign-off. When everything is approved, like part numbers, part definitions, and part descriptions, the information gets pushed to the ERP system. “Using Arena has helped greatly reduce the engineering change turnaround time,” Krueger said. “Engineering change rejections have also gone way down. Everybody that’s looking at changes has a sense of what’s going on.” Krueger further stated, “When I take a step back to the beginning when we were first starting to look at Arena, we didn’t even have an engineering change process. Only particular engineers could make changes because they were the only ones who had access to the data.”

Growing from 12 to over 300 bots in their fleet, Arena has helped AMP’s ability to scale and further their ongoing development of AI-enabled automation applications for recycling—like AMP Vortex™, the company’s latest innovation for recovery of film and flexible packaging. The company also plans to leverage Arena’s quality management system (QMS) as processes, procedures, and data capture of product outcomes become more widespread.

“Having Arena has increased our product development efficiency tenfold from what we had. Just having that sort of solution at our disposal has propelled everything else that has happened within the company and around it,” stated Krueger.