Harpak-ULMA Transforms Its Service Experience with Augmented Reality

As a leader in packaging solutions, Harpak-ULMA is known for its quality, customizability, and customer-centric approach. Like all OEMs, Harpak-ULMA knows efficiency is key to success, and it works hard to provide a streamlined approach to selling, servicing, and expanding customer projects. With a long history in both machine and process innovation, and a desire to provide its customers with the best possible experience, Harpak-ULMA started to investigate new ways to improve how it provides service.

Opportunities to Improve the Service Experience

The labor shortage, a widening skills gap, multilingual environments, legacy equipment, and increasingly complex processes and machines are rampant challenges in the manufacturing industry. For OEMs like Harpak-ULMA and their customers, it's getting harder to retain expert technicians and hire new ones. For Harpak-ULMA, this can impact the ability to provide a great service experience. For its customers in process manufacturing, this can leave them unequipped to perform proper maintenance and turning to inefficient DIY methods.

> "*Labor shortages, skills gaps, and high turnover continue to pose significant challenges for our customers... We are committed to offering innovative solutions that not only address these present obstacles but also anticipate future complexities...*"

Carlo Bergonzi, Product Manager, Harpak-ULMA

No stranger to innovation, Harpak-ULMA knew it needed to prioritize digitization to meet expectations from the newer generation in the workforce. With that in mind, the manufacturer started to investigate new ways to help train its technicians and provide them with the right tools to do their jobs while out in the field. Knowing its customers were also feeling the strain of the labor shortage, Harpak-ULMA saw an opportunity to increase service technician effectiveness, while empowering customers to service and maintain their own machines at a much higher level—through remote collaboration and guided work instructions. This reduces the cost of service, removes time delays and improves first pass outcomes—essentially improving service efficiency for both OEM and customer.

Innovation Opportunities with AR

Harpak-ULMA selected PTC's enterprise augmented reality (AR) solutions—Vuforia Studio, Vuforia Expert Capture, and Vuforia Chalk—along with ThingWorx Internet of Things (IoT) asset monitoring to create more effective training, optimize field service efficiency, and enable customer self-service:

More effective training

As the manufacturer knew its experts were retiring and it became more difficult to hire new employees, Harpak-ULMA knew that more effective training would benefit both its own service technicians and its customers. For its service technicians, Harpak-ULMA leveraged AR to provide both immersive 3D guidance and clear, in-context work instructions. When compared to traditional classroom training and paper-based work instructions, AR experiences that are directly overlaid on machines proved to be a more effective, hands-on learning alternative. This change significantly accelerated technician comprehension and expertise.

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> *"If they can put on a HoloLens, if they can take out a tablet, walk around the machine, go through the procedure, and already have experienced it before they 'truly experience it,' it can be really powerful."*
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> **Alexander Ouellet, Innovation Manager, Harpak-ULMA**

Harpak-ULMA created similar training experiences for its customers, enabling them to set up their machines faster and expedite time to production, all without the need for extensive support from Harpak-ULMA. This saves customers money and frees up Harpak-ULMA's experts to spend more time on their important tasks.

Field service technician optimization

With fewer resources, efficiency is key. Optimizing field service technician utilization was critical for both Harpak-ULMA and its customers. To improve first-time fix rates, Harpak-ULMA used a combination of Vuforia and ThingWorx. ThingWorx uses sensor data to enable performance monitoring and condition-based monitoring, giving both Harpak-ULMA and its customers better insights into how machines are performing and when they'll require service.

Using this information, customers know when a machine will need repair, which parts will need to be replaced, and how much downtime they can expect—all in one dashboard.

Once a service technician is deployed, they can utilize the machine data to better understand the problem and leverage AR instructions to fix it faster. To ensure a repair is done correctly, Vuforia's AI visual inspection tool, Step Check, can confirm if something passes or fails a check and document the results. When a technician can't be there in person, they can implement remote collaboration and assistance through Vuforia Chalk. These new tools help improve first-time fix rates, reduce mean time to repair, and increase customer satisfaction.

Meanwhile, ThingWorx delivers IoT capabilities that can transform both service and future operations. If usage data uncovers areas where customers might be struggling, Harpak-ULMA can leverage that information to create new AR work instructions for operating their machinery.

Enhanced customer self-service

Harpak-ULMA was already finding immense value in improved training and field service technician utilization and efficiency, but it would realize the most impactful benefits through AR-enabled customer self-service.

The same IoT data and AR experiences used by Harpak-ULMA's technicians can be leveraged by its customers. With the TFS 500, "a Thermoformer designed to hygienically seal food, non-food, and medical products," Vuforia enables customers to view real-time health status, energy consumption, and visual components. ThingWorx allows technicians to monitor machine status, track performance, and identify and solve problems before they result in unplanned downtime.

During initial machine setup, routine maintenance, or service, customers can use AR instructions to guide them and complete the task with a high level of expertise. To help ensure accuracy and compliance, AI capabilities will let the customer know when they've completed a step correctly or if something needs to be fixed. These easy-to-create instructions can be localized to any language and shared with partners.
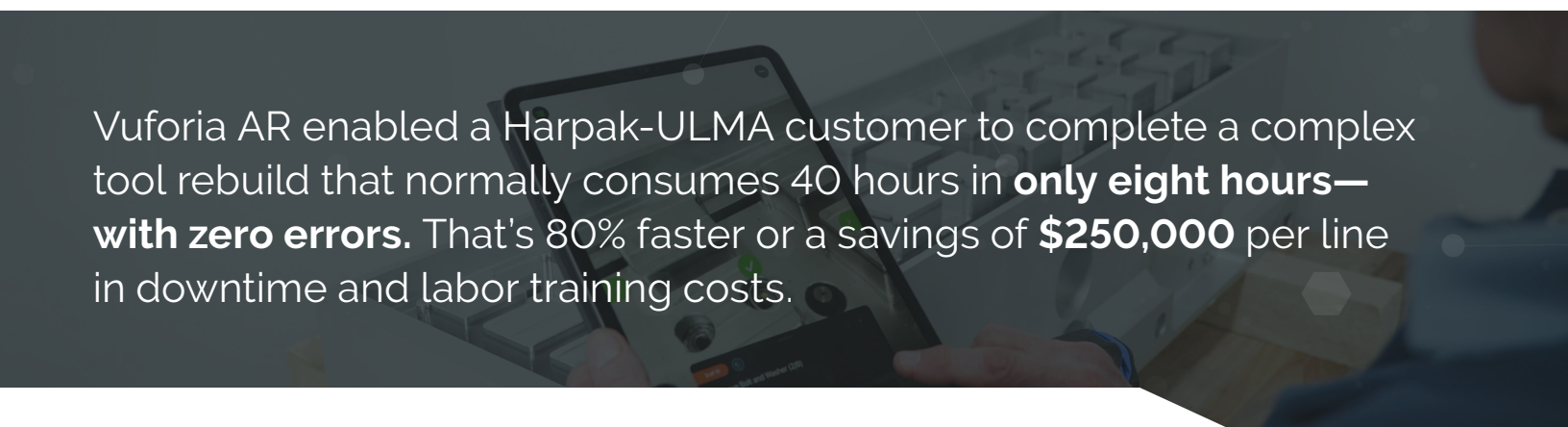
To truly illustrate the massive impact of enabling its customers, Harpak-ULMA highlights their challenges with tool rebuilds on its Mondini line of products. Many of Harpak-ULMA's customers run multiple packaging production lines 365 days a year, for approximately 20 hours per day. That means the machine's sealing tool must be serviced four to eight times each year—a highly complex process with over 1,800 steps—taking the machine out of production for almost a week each time.

These complicated and error-prone processes were completely transformed with AR work instructions through Vuforia Expert Capture. Regardless of their experience level, other technicians can leverage those AR instructions captured from the expert's point of view—using their mobile device or tablet— to complete rebuilds flawlessly. This is due to a combination of interactive AI and AR technology, which enforce step-by-step instructions and create a complete, automated audit trail of the procedure.

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"Across our industry, everyone is dealing with labor shortages, everyone is dealing with skill gaps, everyone is dealing with turnover... [AR] is a way to make your new hires as effective as your most expert workforce in the procedures that you put it in place." .

Alexander Ouellet, Innovation Manager, Harpak-ULMA

Vuforia AR enabled a Harpak-ULMA customer to complete a complex tool rebuild that normally consumes 40 hours in **only eight hours— with zero errors.** That's 80% faster or a savings of **$250,000** per line in downtime and labor training costs.

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Digital Transformation is Critical

Implementing and adopting new technology can present some challenges when it comes to change management, especially for a workforce that spans multiple generations, learning preferences, and experience levels. Harpak-ULMA says that emphasizing its vision through leadership, building engagement across the organization, adopting a digital culture, and working with a willingness to fail were the keys to making this transition successful. OEMs are uniquely positioned with access to equipment data through IoT and computer-aided design (CAD), which can be leveraged in AR to empower both their own workforce and their customers.

Empower Technicians and Customers with Augmented Reality

Upskilling your workforce, providing them with the right tools, and empowering customers with self-service solutions improves efficiency and enhances customer satisfaction.

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"We have customers specifically spell out as of three years ago that they want work instructions provided in Vuforia or they will not buy the equipment. Customers are getting smarter and smarter and driving in that direction, and OEMs will either adapt or die. It's as simple as that." .

Alexander Ouellet, Innovation Manager, Harpak-ULMA

To explore solutions for training, field service technician optimization, and customer self-service, dig deeper into AR work instructions. To discover more of Harpak-ULMA's journey with AR and IoT across its multiple digital transformation use cases, watch Alexander Ouellet's session from LiveWorx.

Watch the Full LiveWorx Session ›