

Closing the Skills Gap with Skylight

Upskill helps a major medical device manufacturer transfer knowledge and train its next generation of workers

Call it organizational wisdom, tribal knowledge or just plain knowhow: what veteran employees have learned on-the-job is an incredibly valuable part of driving efficiency, quality and safety across the industrial workplace. Here's how one medical device sterilization plant uses Skylight with smart glasses to save and share that essential knowledge from one skilled worker to the next.

Situation

One of the three largest medical device manufacturers in the world manages a plant in the US to package and sterilize 35 million devices a year—everything from laparoscopic scalpels to surgical staplers. The process is highly complex: it involves many steps with checkpoints to ensure safe processing of materials.

Any misses could put plant staff at risk of deadly radiation exposure or cause costly disposal of thousands or even millions of products. But a job well done means better patient outcomes worldwide.

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– Kelly, HR lead

This plant faces another challenge shared by thousands of manufacturers globally: how to address its growing skills gap. "In 2015, 27% of our workers were eligible for retirement," says Kelly, an HR lead at the company. "Fast forward to 2020 and we'll be at almost 50%. That's a huge risk to our knowledge base."

Preserving the knowledge of veteran technicians from the Baby Boom generation is critical while the plant works to find and train new staff to fill roles and plan for long-term sustainability and competitiveness.

Industry

Medical devices

Function

Manufacturing

AR Solution

- Skylight
- Glass Enterprise Edition

Use Case

- Knowledge transfer
- Training
- Remote expert assistance
- Safety compliance

Benefits

- Vital knowledge preserved
- Lower labor ramp time
- Better task compliance
- Reduced safety incidents
- Greater data insight

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Solution

Upskill helps solve this plant's big challenges via Skylight, its industrial augmented reality (AR) application platform for smart glasses. Upskill worked with plant management and IT to roll out Glass Enterprise Edition smart glasses powered with Skylight to help senior engineers and seasoned technicians record their activities while performing critical tasks across the plant.

These veteran experts use Skylight's real-time video streaming and recording capabilities, combined with hands-free voice commands, to record and narrate as they perform important steps in the sterilization and packaging process. Working through standard procedures, these highly skilled individuals also share "tribal knowledge" learned on-the-job and not necessarily documented in plant manuals that provides vital insights and nuances about the tasks at hand.

“ Knowledge management has been around for a long time and a lot of organizations really struggle with finding a way to capture that knowledge in a meaningful way. This is one of the best solutions that I've seen available today.

– Kelly, HR lead

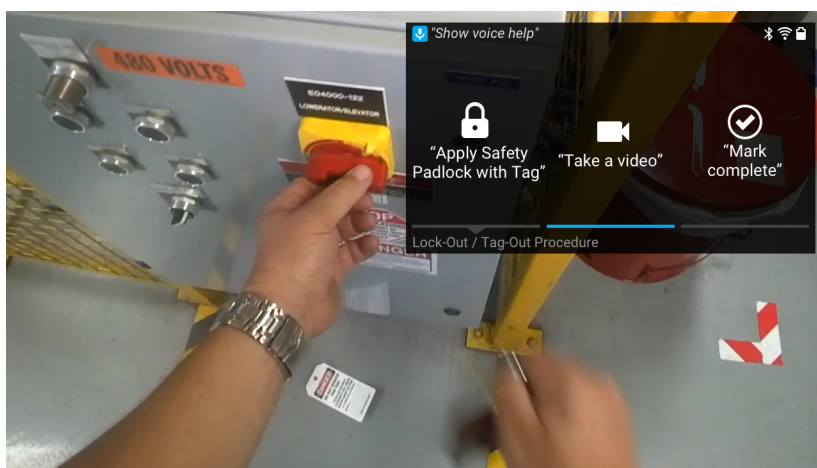
As video recordings are completed, they are saved within the glasses on Skylight and then quickly digitized and catalogued by the company's IT department to be made available to other workers for job training. There are hundreds of tasks throughout the plant and warehouse that are actively being recorded as the first part of their smart glasses implementation.

The plant also uses Skylight for on-the-job training of less skilled technicians and new staff hires. Key processes and tasks are configured in Skylight using workflows to provide staff with step-by-step instructions for how to perform specific tasks. These instructions are based on documented procedures that have been digitized and stored within the company's existing Manufacturing Equipment System (MES). Skylight simply pulls that data into its server and then presents the instructions in an intuitive and easy to follow way within a technician's line of sight through the smart glasses.

In a plant where radioactive materials are handled every day, LOTO (lockout-tagout) safety procedures, for example, can be configured in Skylight to show workers exactly how to safely perform a task to minimize risk. The company also embeds the video recordings from its onsite experts as media files accessible through the workflow. This enables workers to reference these videos in context as they progress through a task.



Charles, senior sterilization specialist, uses Skylight voice commands on smart glasses to record training video.



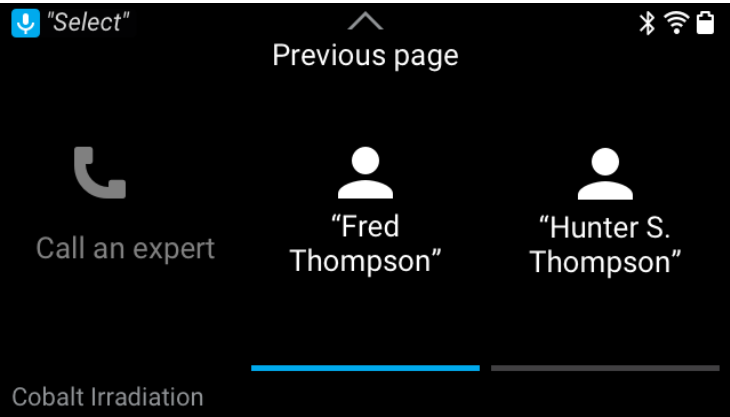
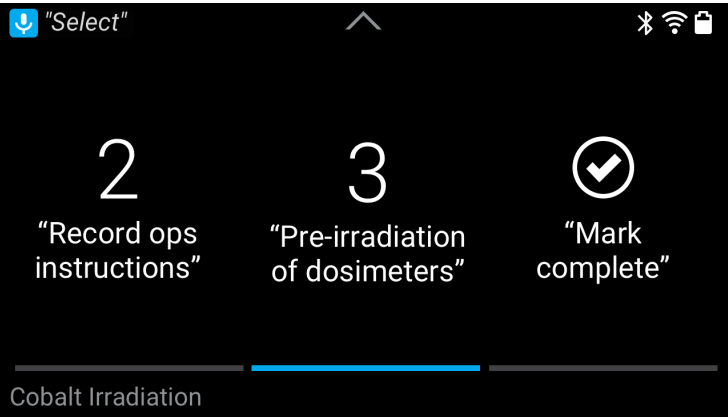
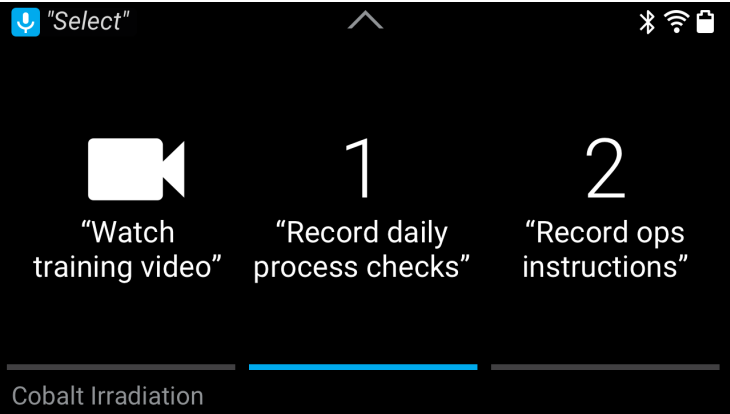
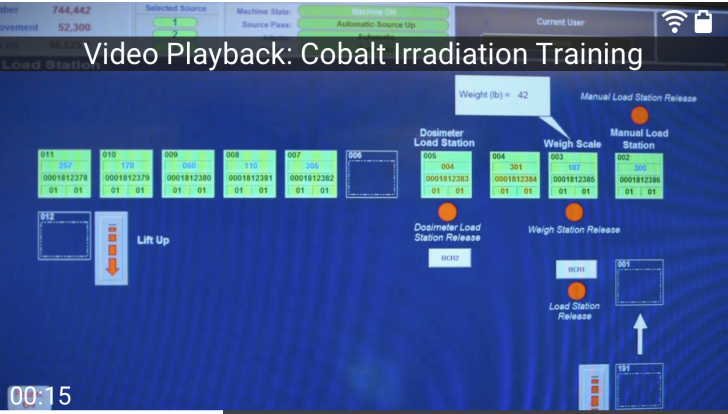
Charles' Skylight point of view on smart glasses while recording training video.

"With Skylight, we can directly point to each of the valves and show how you lock it out," says Charles, a senior sterilization specialist and one of the plant's expert veterans who recorded the instructions for many for their their LOTO procedures. "If you put a pin in for gravity or if you turn a switch off for electricity, you can capture all the safety hazards you're looking at. You'll point to it, select it, lock and tag it out. And it's good to go."

“ You don't feel like you're by yourself; you feel like there's someone talking to you. You can see what's going on as you're doing it. It's very cool, and I think it's the wave of the future.

– Charles, senior sterilization specialist, on use of Skylight live video streaming technology

Charles adds that Skylight’s live video streaming functionality, also called “see what I see,” is an excellent feature to support the plant as more and more staff come on board and get trained. Before, he and other supervisors would have to work very long shifts to ensure that there was always an expert onsite to troubleshoot when issues arose. Now, technicians in the plant can simply initiate voice calls with their smart glasses to reach more senior technicians – whether those experts are in another room within the facility or at home taking calls for middle-of-the-night emergencies.



End-user point of view using Skylight on smart glasses.

From a business perspective, aside from knowledge transfer, plant management is utilizing the deployment of Skylight on smart glasses to understand the workflow of some of its production machines. As workers perform tasks and the steps are captured using Skylight, management is able to see potential inefficiencies in its processes to understand what works well and what doesn't.

“ One of the advantages of the Skylight solution is that the infrastructure is already in place. It interfaces well with our CMS, MES, CMMS, Maximo, SAP, and all the other enterprise systems in our supply chain. So across all these sectors we'll be able to use the solution and deliver the use cases in a faster, more efficient and effective way.

– Theresa, IT senior manager

The IT department works closely with management to manage and configure Skylight as new use cases emerge across the plant where smart glasses can drive efficiencies. "Flexibility and scalability are very important in our organization" says Theresa, an IT senior manager. "One of the advantages of the Skylight solution is that the infrastructure is already in place. It interfaces well with our CMS, MES, CMMS, Maximo, SAP and all the other enterprise systems in our supply chain. So across all these sectors we'll be able to use the solution and deliver the use cases in a faster, more efficient and effective way."

Solution

With Skylight, the medical device manufacturer is able to save critical knowledge for the future. It is closing the skills gap between veteran experts and enthusiastic newcomers with better compliance, improved production quality and greater insight into plant operations and processes.

"Humans retain about 10% of what we see and 30 to 40% of what we see and hear, but we retain about 90% of what we see, hear and do," notes Kelly, the HR lead. "With the Skylight platform, all three of those elements are combined to increase learning exponentially."

And while that is important everywhere, the gravity of the impact extends well beyond the plant itself. "These instruments that we sterilize are going out to our customers and our community, maybe to our own families," says Karen, a sterilization technician. "It's not just a box of tools; you're giving a good product to a doctor so he can use it to save a life."

“ Skylight offers us an opportunity to utilize technology to enhance how information flows within the facility, how we're training our employees and how we're making decisions with data to then enhance our business outcomes and make better business decisions."

– Larry, plant manager