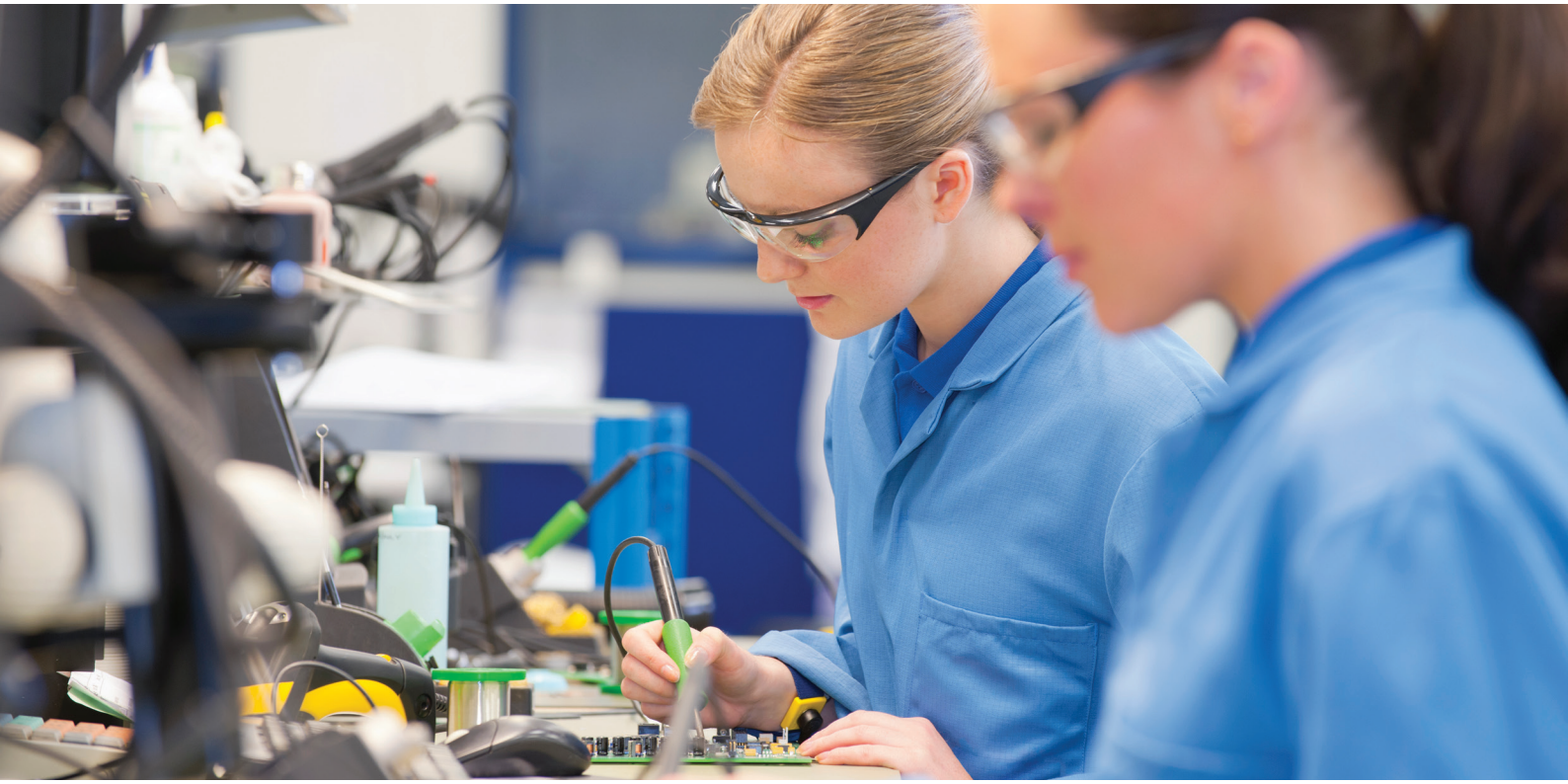

How iQor is Using Integrated Solutions and Expert Knowledge to Automate High-Skill Work

PROVING THE VALUE OF REVERSE LOGISTICS

Consumer and commercial electronics are more reliable than ever, but they still need support after the sale.

Sometimes they break or are returned for exchange. Or, in the case of cable and satellite service, millions of consumers move or switch providers every year, resulting in a receiver that needs to be returned. Overseeing these "reverse logistics" processes can be complex and cumbersome and it is why companies often turn to iQor to manage the complete return and repair process.

With 32,000 employees and operations in 18 countries, iQor is one of the largest customer and product support companies in the world, supporting many of the world's largest consumer electronics manufacturers.

The set-top receivers, digital-video recorders, laptops, phones, tablets, and other devices that arrive at iQor product support centers are tested for faults and, if economically salvageable, refurbished and returned to customers. In many cases, the refurbished product is better than the original.

"Consumer electronic devices are changing rapidly" says iQor senior director of global IT solutions Chris Hall.

> We are always pushing ourselves to find better ways to collect, organize, and share the best repair practices."

Customers also want service centers to exhibit ever-higher levels of technical expertise. Growing interest in the Internet of Things means that nearly all devices now are starting to include connectedness, logic, and memory as core features.

"We process thousands of jobs a day," says Hall. "More of these jobs are starting to involve complex devices. Our clients are challenging us to manage this complexity and still deliver high-quality refurbished units that cost less and work as well or better than new products."

Automating diagnostics and expertise

Skilled technicians can examine a malfunctioning component and isolate its issues fairly quickly. But finding enough skilled technicians to satisfy the production needs of a high-volume program can be difficult and not particularly cost effective.

> The know-how of our most skilled technicians is hugely valuable. Our leadership wanted to capture that knowledge and automate our test data in ways that could improve performance and reduce costs," says Hall. "They came to my team to make it a reality."

Hall was thinking about these issues when he reached out to PTC to discuss improving productivity through better handling of resident knowledge.

"Chris was already using PTC Service Lifecycle Management (SLM)," says Sarah Othmer, PTC market lead and project manager. "We knew his operation and were excited to help him improve productivity and retain and attract business."

"There are no competitors for PTC," says Hall. "Other solutions require a lot of customization to deliver similar capabilities."

iQor collaborated with PTC to implement ThingWorx and integrate Service Knowledge and Diagnostics (SKD). ThingWorx is enabling the company to rapidly build and run connected applications. Service Knowledge and Diagnostics is providing sophisticated problem-solving tools and knowledge at the point of service. These advantages are enabling technicians to perform at a high level of competency with minimal training and supervision.

PTC worked with Hall to connect testing units on each technician's workbench with workflows stored in the SKD knowledgebase and create a Connected Service Knowledge and Diagnostics (CSKD) platform.

Other solutions, such as iQor's depot management system, are integrated into iQor's assessment and repair process through ThingWorx. iQor also chose to host their ThingWorx platform in PTC's cloud environment, which offers high security and an average availability of 99.5 percent. This ensures that any connected device can talk to the central platform easily.

Acquiring knowledge is an intensive but worthwhile process

Creating the CSKD knowledgebase was essential for the improved process to work. This step involved conducting extensive interviews with senior technicians and documenting the most common diagnostic routines they used to isolate problems. The team working on this effort called it "building the cookbook."

The CSKD cookbook recipes detail the processes master technicians intuitively use to resolve problems in as few steps as possible. This process required substantial effort, but iQor expects it to realize a significant return on this investment.

"Along with achieving costs savings of more than US $1 million annually, we are using our most talented technicians to support our goal of rolling out our new capabilities to additional cost centers," says Hall.

Implementing the knowledgebase and other solutions has taken about a year. With lessons-learned from this initial engagement, Hall expects future implementations to go twice as fast.

Continually improving the process

iQor has implemented processes to continually optimize the knowledgebase. “We have taken our master technicians off the floor and moved them to the front office,” says Hall. From there the master technicians can monitor repairs in real-time. This visibility into the process enables them to continue to improve workflows by using repair data to fine-tune the line operator knowledge guides.

With the current process, an inoperable unit is delivered to a technician workbench after it is logged into their service depot management (SDM) system. The unit under test (UUT) is connected to the technician’s station and scanned into ThingWorx. From there diagnostic data seamlessly walks the technician through troubleshooting the unit using the CSKD knowledge platform. Each step in the CSKD guide sends real-time commands to ThingWorx to control the overall user experience.

When the process ends, ThingWorx either resets a value or tells the technician to take a specific action. This action is automatically logged into the SDM shop floor system. The test process is repeated until all of the error codes are resolved.

> Building a knowledgebase and automating activities is allowing us to share the expertise of a small number of master technicians with a large number of frontline workers,” says Hall”

“The result is a low-cost refurbished unit that often performs at a higher quality rate than a similar unit fresh off the production line.”

To learn more, please visit:
http://www.ptc.com/service-lifecycle-management/knowledge-diagnostics

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