Robert Ehlinger,
CIO, Lannett Company, Inc.

Lannett
Prescribes Automated Business Process Testing

PAGE 16

VOL. 7 NO. 3 • 2016

Lannett Company, Inc. Prescribes
Automated Business Process Testing

Photos by: Jim Greipp, Pau Hana Productions

by **Ken Murphy**, Senior Features Editor

In 2015, Fortune named Lannett Company, Inc. the fastest-growing business in the United States, following a record $274 million in sales in 2014, which capped nine consecutive quarters of record net sales, and the acquisitions of Silarx Pharmaceuticals and Kremers Urban Pharmaceuticals. With those acquisitions, Lannett — a developer, manufacturer, and distributor of generic pharmaceutical prescription products — added nearly 400,000 square feet of manufacturing space and gained 15 additional products that have applications pending at the US Food and Drug Administration (FDA).

Developing and manufacturing specialty pharmaceutical products is a complex and highly regulated business, requiring meticulous processes to research, create, and bring to market new medications. Lannett leans heavily on SAP Business Suite applications for many of its end-to-end operational and back-end processes, including finance, manufacturing, distribution, inventory, quality assurance, and other production operations.

By onboarding two major acquisitions into its SAP landscape, Lannett adds to an already intricate tapestry of processes running through SAP ERP. Because this has occurred following a planned upgrade to enhancement package 7 for SAP ERP 6.0 (from SAP R/3 4.7), the issue of testing these integrated business scenarios and the overall application landscape rose to the forefront — making Lannett reconsider its traditional approach of manual-based business process testing. In this high-stakes business, every process has to perform as expected.

At a Glance

Goal: Introduce automated testing of core business processes along with an SAP upgrade to support continued growth, all while reducing test cycle times and boosting defect detection rates

Strategy: Added Worksoft Certify to perform end-to-end automated testing across the SAP ecosystem and to build a reusable repository for business process automation

Outcome: Achieved test automation coverage of approximately 90% of SAP business processes, a 60% reduction in production defects, and a 40% reduction in testing time per project; increased traceability and visibility into business processes with a reusable test automation library; and streamlined compliance reporting for Food and Drug Administration validation and Sarbanes-Oxley regulations

"With the planned upgrade, we recognized that we'd have to do extensive testing to ensure we didn't miss anything during the upgrade prior to going live into production," says Robert Ehlinger, Vice President and Chief Information Officer at Lannett. "This was the trigger to introduce automation into our testing environment. Without it, it would be virtually impossible to achieve coverage and ensure the quality of all of our business processes."

Even before planning the SAP upgrade and bringing Silarx and Kremers Urban onboard, Lannett recognized that its manual-based testing environment was not as efficient as it could be. While ultimately effective, the time-consuming and cumbersome testing process utilized too many resources, diverting functional users from higher value-added tasks. It wasn't uncommon, for example, for a quality assurance (QA) team to be temporarily diverted from a product release process by being asked to work through and certify the accuracy of a certain business process procedure.

When the IT department, working with the business, identified which business processes required testing based on changes introduced to production, it then pulled the appropriate business processes from its regression test script repository, printed them out, and identified the needed functional team resources. As an example, Lannett's material creation process touches about 10 transactions and involves five different departments. Manual testing required Ehlinger's team to coordinate multiple resources from each of those functional teams to work with IT to ensure accuracy in the system change.

This is why undergoing an SAP upgrade in parallel with a significant onboarding project made manual testing untenable in the long-run. "Manual testing was time consuming and required collaboration with many technical and business resources to work through the process until it was completed effectively," Ehlinger says. "It's certainly not the most efficient strategy, especially when you make a change a few months down the line and have to do it all over again. So we decided to look at automation."

Building Business Process Automation

A search for an automated testing tool that offered integration to its complex SAP environment led Lannett to discover Worksoft Certify, the flagship product from SAP partner Worksoft, which offers end-to-end business process testing for high volumes of both SAP and non-SAP process workloads. (For more information about Worksoft Certify, refer to the sidebar at the end of the article.)

"When we started looking at Worksoft Certify, our focus was to create a strong foundation for our SAP applications with a plan to then expand that coverage to our non-SAP landscape," says Jag Shivaramaiah, Lannett's Director of IT Application Services. "Right away, we could see that leveraging Worksoft would mean the functional teams we had engaged for manual testing cycles could be pulled out and deployed elsewhere."

The main reason this was possible is that the centralized platform's database can store high volumes of business process tests, which Lannett created with the intent to run its Worksoft test environment as a mirror image of its production system. This system would enable the business to run automation scenarios without impacting production.

"We went across all our functional areas to identify every end-to-end business process — such as the order-to-cash and procure-to-pay processes — and created test automation for all of them to use for our regression test cycles," says Shivaramaiah. "Initially, we had about 100 business process tests in place for the upgrade."

Because the order-to-cash process, for example, involves several transactions, end-to-end testing could entail more than a dozen test components linked together to simulate a complete production flow. With the business process tests verifying as-expected outcomes, the immediate benefit of automation, beyond a reduction in resources, has been better assurance and confidence that system defects will not make it into production.

(Left to Right): Jag Shivaramaiah, Director of IT Application Services; Robert Ehlinger, Vice President and Chief Information Officer; and Nick Kostiou, SAP ERP Business Analyst, Lannett Company, Inc.

Streamlining Compliance Reporting

Automated reports and documentation in Worksoft Certify enable Lannett to more easily comply with FDA validation and Sarbanes-Oxley regulations. With an audit trail that reveals the author of every business process test, its output, and its changes, Lannett can tailor compliance documentation to match requirements of specific regulators.

"The traceability is very important in terms of documenting the link between test scenarios and user requirements," says Shivaramaiah. "Typically, regulators ask for proof of testing in terms of acceptance, regression, and integration testing, and Worksoft allows us to achieve that traceability across the life cycle. Worksoft makes it very easy to comply with FDA compliance and audit requirements whenever they come up. I simply have to print out a report with the complete business process showing who did what." And because the test scenarios are run and maintained on a regular basis to ensure quality, there is a much higher likelihood that the process descriptions are accurate and up to date when the time comes to use them to generate compliance documents.

Achieving End-to-End Visibility and Boosting Quality

According to Nick Kostiou, SAP ERP Business Analyst at Lannett, the company has achieved automated coverage of

Lannett

Headquarters: Philadelphia, Pennsylvania

Industry: Pharmaceuticals

Revenue: $407 million (2015)

Company details:
- Founded in 1942
- Recent US Food and Drug Administration (FDA) approvals for Abbreviated New Drug Applications (ANDAs) include Neomycin Sulfate tablets, Potassium Chloride extended-release capsules, and Temozolomide capsules
- Named by Fortune as the fastest-growing company in the US (2015) with nine consecutive quarters of record net sales

SAP solutions:
- SAP ERP
- SAP Process Orchestration

Third-party solution:
- Worksoft Certify

Worksoft Helps Lannett Deliver What the Doctor Ordered

Worksoft, an SAP partner, is a leading global provider of automation software for high-velocity business process testing and discovery. Enterprises worldwide use Worksoft intelligent automation to innovate faster, lower technology risk, reduce costs, improve quality, and deeply understand their real end-to-end business processes.

In preparation for an SAP upgrade and integrating two acquisitions into its SAP environment, Lannett Company, Inc. turned to Worksoft for high-speed business process testing to ensure every process works. With Worksoft automation, Lannett shortens project timelines, reduces costs, and improves the quality of business processes.

As a pharmaceutical company, efficient and accurate compliance are high priorities for Lannett, which uses Worksoft Certify to generate reports and documentation that streamline reporting for Food and Drug Administration validation and Sarbanes-Oxley compliance. "Worksoft Certify helps Lannett provide regulators with process documentation, proof of acceptance, and regression and integration testing," says Shoeb Javed, Chief Technology Officer at Worksoft. "The enterprise-level business process knowledge encapsulated in Worksoft's automation platform enables Lannett to efficiently meet compliance requirements with speed, accuracy, and confidence."

Worksoft Certify eliminates manual effort and enables shorter project timelines, fewer software glitches, and a high-quality user experience with new digital technology. With Worksoft, companies can validate half a million process steps in a matter of hours across hundreds of business processes on hundreds of cloud-based virtual machines. Global 5000 companies across all industries choose Worksoft for high-speed process discovery and functional testing of digital, web, cloud, mobile, big data, and dozens of enterprise applications, including SAP, Oracle, and Salesforce.com.

For more information, contact info@worksoft.com or visit **www.worksoft.com**.

roughly 90% of its business processes run by SAP ERP, with a goal of increasing that to 95%. Lannett also saw an immediate 60% reduction of defects making it into production. "This coverage of our SAP business practices would be virtually impossible from a manual viewpoint," Kostiou says. "From a resource perspective, instead of tying up the business, we now can have one person initiate the automated process — and we have the results overnight. We know exactly what to expect."

Ehlinger says that in addition to preventing costly downtime during implementations, other benefits include business users feeling more trusting of the quality of the overall system because of increased confidence in the accuracy of the data provided. "Because the business processes are all clearly laid out within Worksoft, functional as well as technical teams can much more easily see and understand how all the different pieces integrate," he says. "When new people come on board and want to understand how a process such as sales and distribution works, they can just go through the processes in Worksoft to understand how it all ties together."

There are innovation advantages as well. Ehlinger says that with a newfound visibility into process integration, business teams seem to be more open to using new technology and adapting to new business processes because they know they will no longer be challenged with the cumbersome task of integrating new processes into the testing cycle.

From a time-savings perspective, Shivaramaiah says that if a 16-week project introducing new SAP technology typically involved four weeks of testing, automated business process testing with Worksoft Certify helps shave off about three of those weeks — shortening the elapsed time of test cycles by roughly 75%. "Instead of having to deploy five resources for a complex project, now I can leverage those resources elsewhere in the business to drive innovation across the organization, and that translates to a savings of around one or two full-time employees each year," he says.

Expanding Test Automation Beyond the SAP Landscape

In addition to Lannett's stated goal of achieving up to 95% coverage of its SAP business processes through automation with Worksoft, the company also intends to increase coverage of its non-SAP portfolio, including its electronic data interchange (EDI) processes.

"While the upgrade to SAP ERP was the fundamental driver for Worksoft, the system isn't limited to SAP software. Expanding it out to EDI is just one of the ways we see Worksoft automation continuing to drive additional value across our other applications," Ehlinger says. ∎