

Passing the test

TeleTracking Technologies' software quality assurance program delivers applications customers can depend on



“HP LoadRunner 9.0 helped us eliminate over 90 percent of manual scripting work used for performance testing. LoadRunner significantly improved our understanding of how our applications are performing under high data volumes prior to releasing to our customers.” — Suzanne Blanda, Director, Quality Assurance, TeleTracking Technologies, Inc.



Objective:

Hospitals count on Teletracking Technologies, Inc. software to track patient admissions and transport workflows and bed availability—so rock-solid performance of Teletracking Technologies applications is key to the company's value proposition.

Approach:

Teletracking Technologies' Quality Assurance department leverages HP LoadRunner 9.0 software in its QA processes to ensure its software meets performance criteria upon release.

IT improvements:

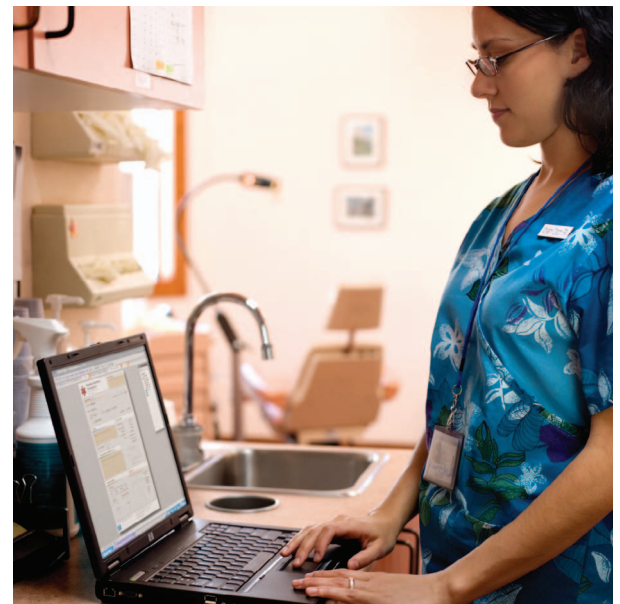
- Supports all Teletracking Technologies applications, including legacy
- Tracks pop-up window inputs automatically
- Very little custom coding needed
- Enhanced analysis means more performance data available
- Scheduler allows more realistic simulations

Business benefits:

- Enables fulfillment of Teletracking Technologies value proposition
- Facilitates on-time release of new and enhanced software
- Helps ensure application releases meet high quality standards

HP customer case study: TeleTracking Technologies, Inc., leverages state-of-the-art application testing to ensure its software delivers solid value to its customers.

Industry: Healthcare



No software vendor can survive for long if its products don't perform and function as intended.

For Teletracking Technologies, Inc., the stakes are even higher. Hospitals use Teletracking Technologies software to automate the workflow of patient transport, placement, and bed turnover.

It is of little surprise, therefore, that software quality is a high priority for Teletracking Technologies management.

Solving the bed capacity problem

Teletracking Technologies, founded in 1991, pioneered automated patient flow management solutions. Today it's the industry leader, with a recent compounded growth rate over the last three years of 27 percent.

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—Darryl Bozeman, Senior Quality Engineer, TeleTracking Technologies



The primary market driver of that growth: hospital overcrowding. Two decades of hospital closings, along with the growing number of baby boomers requiring medical care, means bed capacities are tight. Add another all-too-common factor—inefficiencies in bed turnover management—and problems can mount very quickly. Patient admissions can be delayed for hours. Ambulances may need to be diverted to more distant emergency rooms. And hospitals lose revenues because they aren’t maximizing the use of their existing capacity.

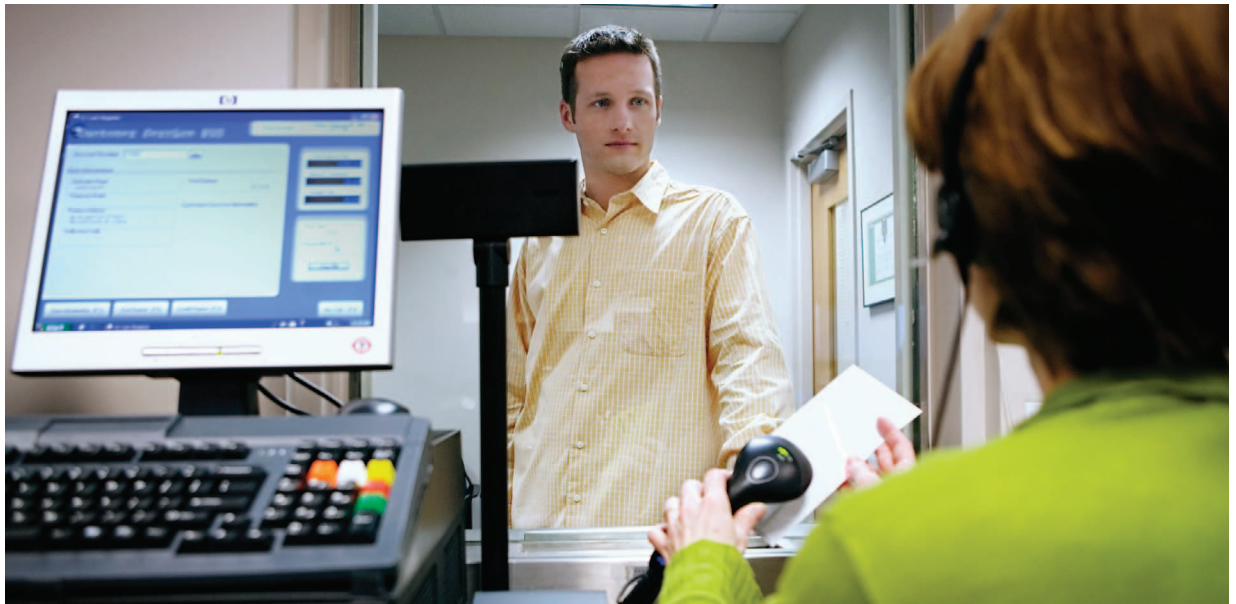
In addition to the importance of this software to hospital operations, Teletracking Technologies is also an independent software vendor (ISV). As such, their business depends on producing quality software that customers can rely on. In the highly competitive commercial software business—poorly performing

software with lots of defects is a recipe for failure. This is where the Teletracking Technologies Quality Assurance team comes in.

QA: a critical function

The QA function is viewed as business critical by Teletracking Technologies executive management—so much so that organizationally, it’s been separated from the company’s development and IT functions. “Teletracking Technologies made a strategic decision to keep its QA department autonomous,” says Suzanne Blanda, Director of QA, Teletracking Technologies. “Structuring the company that way ensures that QA processes are not driven by development timelines or development goals. We answer directly to upper management and we’re empowered to develop processes that are tightly aligned with QA objectives.”





Those processes are heavily dependent on the right set of testing tools, according to Darryl Bozeman, Senior Quality Engineer, Teletracking Technologies. Bozeman's specialty is software performance testing—he was tasked with implementing tools to refine Teletracking Technologies' QA processes shortly after he joined the company.

One area of particular importance was performance validation as this did not have a scalable process or model. The company was interested in a more formal and rigorous testing process, which meant implementing an enterprise, automated performance testing tool.

A crucial specification for the tool, Bozeman explains, was the ability to support the company's legacy applications. Unlike its newer, web-based software versions, the company's legacy software runs on a different platform. These older iterations are still important to the company's product portfolio however, so Teletracking Technologies regularly releases new versions and updates.

After evaluating two potential performance testing products, Bozeman determined that LoadRunner was the best product for the job. "We worked with both vendors to devise a way to test our legacy software, and in the end, it was LoadRunner that came through—by using a Citrix client protocol, LoadRunner recognized the Visual Basic application."

More data, better data

Teletracking Technologies has been using LoadRunner ever since, most recently moving to the latest version of the product: LoadRunner 9.0. The latest revision of the software, Bozeman says, offers even more of the flexibility that makes it a standout performance testing application.

One big advantage HP LoadRunner 9.0 has is that it lets Bozeman record inputs captured by pop-up windows. Teletracking Technologies software, he says, makes extensive use of modal dialogue windows in order to simplify its user interface. For example, suppose a transporter has moved a patient from an emergency room to x-ray, a process managed by the company's **TransportTracking XT™** application. The transporter records the patient's location in the software via fields presented in a pop-up window. This interface simplifies the data entry task, making it easy to complete quickly and efficiently. It also ensures all fields will be completed. Forcing inputs by way of modal dialogue windows is therefore integral to the functionality and value of Teletracking Technologies applications.

Simulating the pop-up window's use is a crucial aspect of conducting performance tests on the software. Before switching to LoadRunner 9.0, Bozeman says, the only way to record the data inputs in these windows—which might generate up to 35 lines within each view state—was manually. Now it's done automatically using LoadRunner. "This has eliminated 90 percent of the manual work I had to put into our load testing scripts," Bozeman says. "With LoadRunner 9.0, we easily record every action in these windows."

The impact of the new capability is significant. It allows the QA team to complete its testing more quickly—and report the test results with more confidence.

"When we've finished testing an application, we have a meeting where we report our QA results," Bozeman says. All of the software stakeholders attend, including QA, tech support, and the Teletracking Technologies executives responsible for signing off on product

Founded in 1991, TeleTracking Technologies has grown to be the leading provider of workflow automation solutions to the healthcare industry. As the first organization to address bed turnover issues more than twelve years ago, TeleTracking continues to develop and introduce groundbreaking workflow automation solutions to strengthen and enhance hospital operational efficiencies.

To learn more, visit www.teletracking.com

launch dates. They review QA data such as response time and CPU usage, as well as other quality readiness criteria, and make a “go/no go” decision about whether to put the software into production. Having solid, accurate data about the software’s performance is therefore critical. “We have to be ready for these meetings,” Bozeman says. “Because that’s when we stand in front of management and tell them whether the software is ready to go. HP LoadRunner software ensures we’ll be prepared.”

Regression tests and scheduling

Along with its added functionality, the new software’s analysis features are another bonus, according to Bozeman. “We now have the ability to drill down further into the performance numbers. I really like that. It means we’ll have more data available for management if they ask.”

The extra data has another potential bonus: it enables Teletracking Technologies’ development team to isolate and troubleshoot performance bottlenecks. “With LoadRunner 9.0, QA will be able to set up and run these tests again as part of regression testing after receiving any necessary fixes.”

And then there’s the software’s scheduler function. “I’m excited about that, too,” Bozeman says. “It will help us design more realistic tests by simulating real life usage of the software. Instead of simulating 25 nurses running the system for a half hour, we can set it up to act like people are logging on, logging off, returning after a few minutes to log on again. It will more accurately show how the applications will perform in a hospital environment.”

Validating with confidence

So would he recommend LoadRunner 9.0 to other QA professionals? Absolutely. “With this software, the quality of our performance data is outstanding. It lets us create scenarios that we simply couldn’t simulate before. It lets us validate our software with much more confidence.”



“It’s easy to use,” Bozeman adds. “There is very little custom coding needed to run LoadRunner 9.0 for our applications—and that frees our time for other tasks.”

As Teletracking Technologies adds new applications to its portfolio—something that is inevitable as the company’s mobile device user base grows, saving time only becomes more important. “More and more of our customers are equipping their staff with mobile input devices,” Bozeman says. “So this is an area where we envision significant expansion in the future.”

“Our company is growing because our software fills such an important need in hospitals today—and because the hospitals buying our software know they can trust it to work,” Bozeman concludes. “LoadRunner 9.0 helps ensure our customers get the rock-solid applications they need to manage the patient flow.”

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44AA1-3427ENW, June 2007

