

BUSINESS VALUE SPOTLIGHT

Improving Product Quality and Increasing Delivery Speed with a System Framework Supported by HP Quality Center, HP Performance Center, and HP LoadRunner

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Overview

A research and development (R&D) division at a large U.S. healthcare services company deployed its common architecture framework to enhance quality improve time to market for its hospital management system products. To ensure that it achieved this goal, the company turned to HP Quality Center, HP Performance Center, and HP LoadRunner solutions to support its framework.

The company's primary customers are hospitals that strive to deliver high-quality, cost-effective healthcare services. Critical to the success of achieving this goal is improving the quality and accuracy of their data.

As a direct result of the HP implementation, there has been a significant reduction in the number of software errors that hospitals experience as well as a reduction in the time required for full deployment of their configured applications. Some groups within the organization have saved staff time because of improvements in both system monitoring and test automation and a reduction in application repairs. In total, the realized benefits from the HP solutions, over a three-year period, have exceeded \$30 million.

Business Value Snapshot

Organization: Large U.S. healthcare services company

Operational challenge: The Company strives for testing automation and error reduction in its developed software through rigorous testing using HP.

Solutions: HP Quality Center, HP Performance Center, HP LoadRunner

Annual benefits:

- Improved patient safety: 80% reduction in prescription error rate
- IT staff productivity: \$6.05M per year
- Cost reduction: \$2.84M per year
- Revenue benefit: \$1.39M per year

ROI: 365% over three years with payback in 3.9 months after full deployment

Implementation

The company uses a common framework for all of its applications, providing a standard architecture on which services are built. HP Quality Center was chosen to support the framework because of the solution's ability to test and monitor results in the company's research and development environments over multiple applications.

HP Quality Center, HP Performance Center, and HP LoadRunner were deployed five years ago in an effort to apply a common set of testing tools across all R&D groups. Since the HP solutions have been implemented, the company has compressed testing time, reduced the number of errors found in the software, improved software time to market, and helped its customers achieve higher patient safety goals.

Challenges

At the start of the HP deployment, the primary challenges were securing organizational buy-in from the groups that would be affected and creating a plan that would lead to a common testing methodology applicable to all groups. An IT manager said, *"Our challenges were primarily that we had multiple business units with multiple requirements. In the beginning, the biggest issue with this was the need to agree on a common methodology, and then bring all groups to that methodology."*

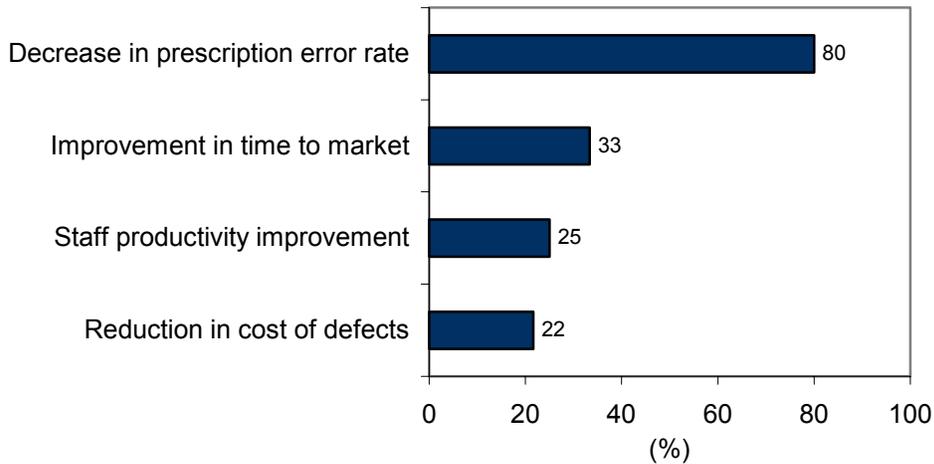
Benefits

Since the deployment, costs have been driven out of the application development process by increasing quality, hence reducing the number of errors. This is critical in healthcare applications, where errors often have dire consequences. By deploying the HP Quality Center solution, the company was able to automate and manage its testing and monitoring processes, thereby improving application quality, and pass the benefits on to its customers.

Business Impact

The deployment of HP Quality Center, supporting the common architecture, has given the company the ability to test product lines more quickly and recognize and fix a greater number of errors before the products are shipped to customers. Creating more efficient tests has saved the engineering staff considerable time. As a result, staff members are more productive, with the total number of staff required remaining flat over the past three years. The company's customers now have more accurate data. Hospitals that deployed the company's solutions have enjoyed an 80% reduction in the prescription error rate. Figure 1 shows the high-level benefits.

FIGURE 1
Percentage Improvements Since HP Deployment



Source: IDC, 2008

Testing Staff Productivity

The engineering staff receives a boost from two sources. First, HP allows the organization to automate testing across all testing groups. This means that technicians can begin tests at the end of the business day and then let the tests run overnight. Second, testing procedures require less time than before the HP solutions were introduced, allowing the staff to run more tests per week. One company manager commented, *"For functional testing types, we've had a dramatic improvement in the time required to perform manual tests, from three to five minutes down to 45 seconds. And for longer tests, with our testing automated now, we just kick them off at night, during off-hours, and let them run."*

Across 2,000 registered HP Quality Center users, the three-year staff productivity improvement is estimated to exceed \$18 million.

Cost Reduction in Software Development and Deployment

Finding errors earlier in the development cycle dramatically reduces correction costs. Errors found after the software has been shipped to a customer location cost more to repair than those found in-house. Correcting errors at a hospital's site involves significant time and cost and adversely affects customer satisfaction.

Since the HP deployment, costs have been reduced because better testing has allowed the company to identify a greater percentage of defects in the software applications it builds. The improvement has been specifically noted with regard to the automated testing procedures. A manager said, *"With the introduction of automated testing tools, one group experienced error rate reductions, from 8% down to 3%."*

IDC estimates that cost reductions in this area saved more than \$8.5 million in three years.

Revenue Increase

HP solutions have also supported reducing time to market because the amount of rework attributed to errors has been reduced. A faster rate of test completion will allow the company to grow its customer base and deliver its solutions to more hospitals per year. Currently, the company does not recognize revenue until a hospital's installation is complete. To facilitate quicker payment, the company will begin testing the final version of its software on the hospital environment. The company is making the transition to testing software at the customer's site rather than in-house. Assigning the dedicated testing staff to perform onsite automated testing will reduce installation time from approximately *nine months* to about *one month*.

IDC estimates the total revenue benefit exceeded \$4.1 million over three years.

Business Benefit

Patient safety is a key driver behind the company's products. In a typical hospital, there are hundreds of possible data points per patient. In the past, this data was managed on paper and difficult to cross-check. Hospitals use the company's solutions to more accurately enter data through digital means (e.g., laptop, PDA), extract data from hospital databases more quickly, and avoid manually matching prescriptions to patients. In addition to patient safety, hospital staff time is saved since patient information is matched and stored in one location and manual paperwork is greatly reduced.

"It's definitely money well spent. We have a good adoption rate within the company on it. I'm meeting with my analysts today — I would imagine that we're going to have a real good stat survey back from our customer base because everybody really does enjoy the product," a company manager said.

Return on Investment

After examining the company's current costs and benefits, IDC developed a three-year forecast ROI analysis. The ROI from the implementation of HP Quality Center, HP Performance Center, and HP LoadRunner solutions is \$3.65 for every dollar invested. Payback will occur in approximately four months after full deployment because of a relatively low initial investment, which included hardware and software costs, installation and maintenance time, and software licensing fees.

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