



THE THREE KEYS TO NEXT  
GENERATION QUALITY  
ASSURANCE TESTING:  
**AUTOMATION, OPTIMIZATION,  
AND SUBJECT MATTER EXPERTISE**

## Apply these three keys to transform your quality assurance (QA) success

Health organizations face pressure to deliver products and services better, faster, cheaper, and with fewer “bugs” when they launch. Unfortunately, current QA processes aren’t always able to keep up with these demands. The need for better QA processes that meet today’s complex demands is now understood by health IT and health organizations. Today’s QA processes not only need to raise the bar from their currently levels but also need to help increase interoperability, provide real-time regulatory compliance, and timely customer support. Organizational leaders across the IT and healthcare industries must embrace the three keys to the next generation of QA services:

**Optimization**  
**Automation**  
**Cross-continuum subject matter expertise**

But in the day-to-day struggle to meet surging client demands, while preserving precious human and financial resources, putting those keys to work can be a challenge. Health IT organizations that serve the healthcare community know they must harness next generation QA to speed product releases, minimize testing cycles, and increase efficiency, but they often don’t know where to start.

For organizations facing this dilemma, we offer a simple suggestion: apply the keys of QA success to the pain points that cost you the most. In keeping with that suggestion, automation and subject matter expertise can transform how organizations test and prepare their data.

### Pain point: **Test case identification**

Test case identification has long been one of the most time- and resource-intensive parts of the QA process because it diverts valuable personnel,

incurs cost overruns, and often fails to meet desired results. Too often, test cases are identified not as a result of real-world user impacts and client-intended functions, but instead as a result of legacy test identification protocols and established software driven inputs, with the user’s perspective ignored.

To realize timely releases, minimize cost overruns, and increase client satisfaction, health IT organizations should apply the three keys of next generation QA to their test case identification strategy. Specifically, as a health IT organization focused on increasing testing efficiency and minimizing costs, you should:

Optimize your understanding of the application construct, business processes, and deployment scenarios. For example, be sure to clarify and establish appropriate test cases to account for different browsers, and specific customer configurations.

Deploy subject matter expertise to determine who experiences the greatest impacts when a test case fails. To ensure that only the most necessary and most effective test cases are run, identify the potential business losses associated with each test case, and determine whether there are workarounds. Decreasing the number of test cases that are run, while increasing each test case’s effectiveness, limits expenditures, speeds results, and decreases downstream testing redundancies.

Prioritize tests both against their importance to your release timing and against the client’s needs. For example, hazardous scenarios should be identified and prioritized, and should be understood in the context of the domain most relevant to the client.

Test against the client’s intended use rather than simply against the intended design. By doing so, you may find that certain features are

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no longer required — any efficiency gained is beneficial to you and to your client.

Test for performance, security, and availability against client-determined key performance indicators. Testing against general industry standards or assumed norms may be a common practice, but doing so squanders resources, leads to inadequate results, and creates no true differentiation.

Employ user-centric subject matter expertise so that you understand not only explicit, contractually agreed upon requirements, but also implicit, user-based expectations.

## Pain point: Test data preparation

Test cases are only as effective as the data used to perform them. If data that is irrelevant, inadequately scrubbed, or unverified is used in the testing process, efficiency suffers. Since test data preparation remains a largely manual process, the costs of lost efficiency in the preparation of test data is a significant and growing concern. In fact, more than 10% of the defects raised in production could easily be captured during the various testing phases if appropriately provisioned and verified data had been used.<sup>1</sup>

But data intake and provisioning is not the only pain point within the test data preparation process. Indeed, manually intensive and costly test data issues disrupt the entire test data preparation spectrum. For instance, organizational test data protocols typically suffer from:

### **Inadequate standardization:**

Different teams request data in different formats for different types of testing. System testing, data warehouse testing, performance testing, and user acceptance testing often have no standard data request form or provisioning process, slowing cycle times.

### **Poor data quality and integrity:**

Complex and heterogeneous systems, coupled with variable file formats and touch points, compound data quality and integrity issues.

### **High storage, licensing, and**

**maintenance costs:** Because redundant data sets and production clones are spread across various test environments and infrequently reused, overall operational and capital expenditures increase as testing outcomes suffer.

### **Excessive effort spent on test**

**data management:** Test data identification, extraction, and conditioning can consume between 12%-14% of the testing lifecycle, and sometimes even more.<sup>1</sup>

To adequately address the issues that make test data preparation such a persistent and costly pain point, organizations must leverage both automation and subject matter expertise. Automation can take the form of codeless scripting. Codeless scripting minimizes manual effort by enabling coding with the click of a button while reducing the need for data maintenance and empowering platform-based self-learning.

Subject matter expertise can be used to limit manual processes by adopting a user-centric approach to data and accessing only that data that is necessary

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<sup>1</sup> Source: Sutherland Insights research team



to perform the most essential tests. After all, an application only develops data resilience when it is subjected to testing with real data. A user-based approach to data preparation, performed by individuals with the ability to understand the client-centric business requirements of the testing process, will focus on the provision of only that specific data necessary for the most needed tests – computed tomography (CT) and magnetic resonance imaging (MRI) scans, for example. By targeting necessary data, the volume of data in need of clinical validation is reduced even as testing efficiency is increased. Additionally, data quality is enhanced, storage requirements are limited, and data request forms and provisioning processes can be more easily streamlined. This increases the likelihood of adoption by the end users since the application is better designed and ready for actual use.

### **Unlocking the power of test case identification and test data preparation to speed delivery, reduce errors, and increase user satisfaction**

By applying the three keys of successful next generation QA – optimization, automation, and cross-continuum subject matter expertise – to their most pressing testing pain points, health organizations can position themselves to transform what was a problem into a platform for greater success.

Optimization enables the number of tests to be reduced even as testing efficiency and efficacy increases. Through optimization, client-centric business process testing can be “shifted

to the left,” deploying valid data to test customer specific business issues earlier in the testing process. As a result, errors are identified earlier and the effectiveness of testing as well as the end user’s satisfaction increases.

Automation, through a platform that supports codeless scripting, minimizes touch points, speeds delivery, and reduces the time and costs of maintenance — all while freeing internal resources, helps support a more client-centric operational stance.

Subject matter expertise, applied by personnel whose core competencies span front and back end functions, ensures that the right tests are performed, using the right data, and at the right stage in the testing lifecycle.

**Is your organization ready for a new model of process transformation that puts exceptional customer experiences first? For more information on how we can help you transform your process to optimize the customer experience, please visit us at [www.sutherlandglobal.com](http://www.sutherlandglobal.com), email us at [sales@sutherlandglobal.com](mailto:sales@sutherlandglobal.com), or call 800-388-4557 ext.6123.**

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