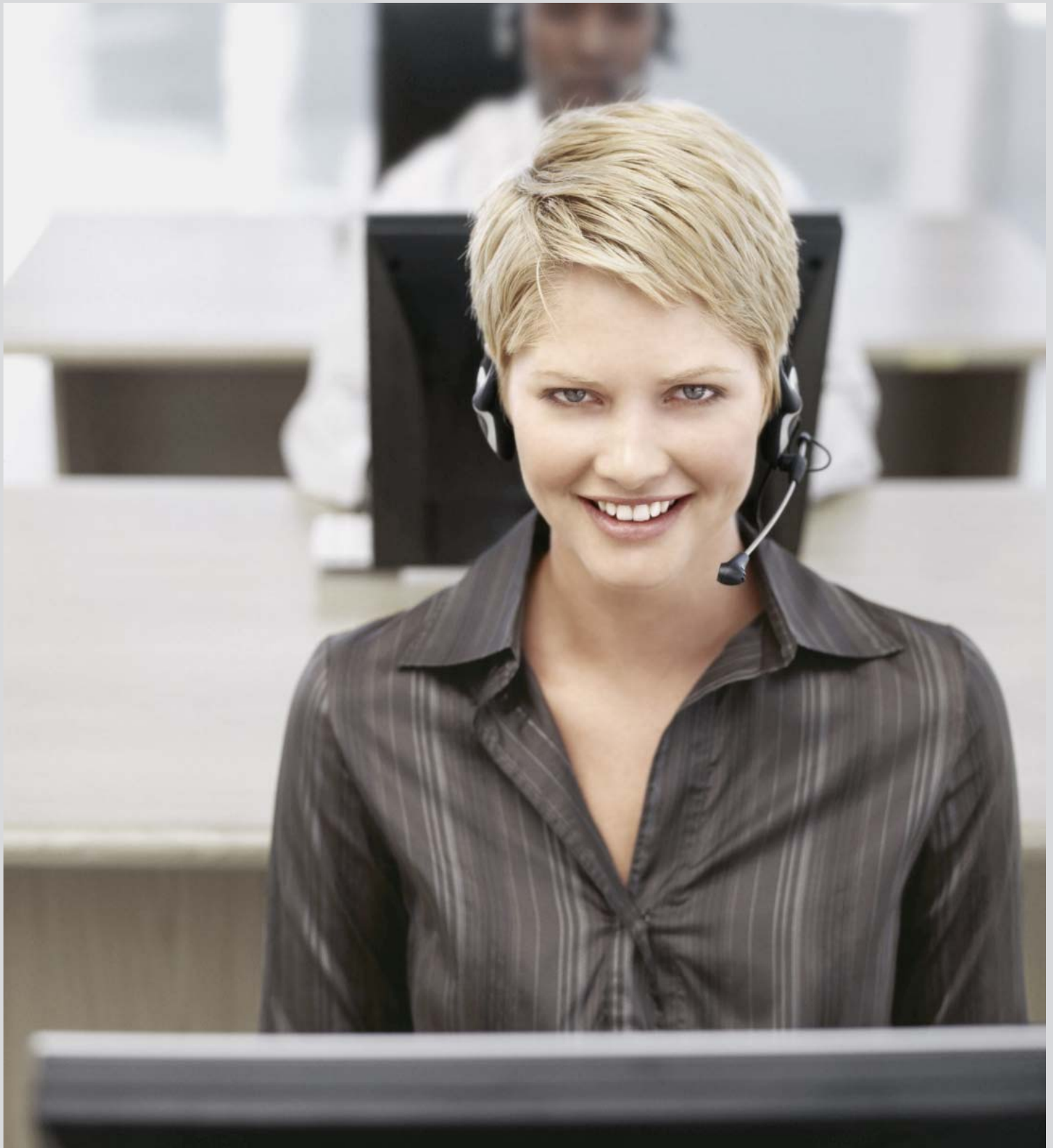




QUALITY MANAGEMENT FOR SOFTWARE IMPLEMENTATIONS AND UPGRADES

CONTROLLING IT INFRASTRUCTURE AND
ENTERPRISE SOFTWARE RISK

To help ensure that the underpinnings of your business remain sound, it is vital to validate that your software solutions provide the quality, performance, and availability required for optimal operations.



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EXECUTIVE SUMMARY

VALIDATE SOFTWARE QUALITY, PERFORMANCE, AND AVAILABILITY

Software applications are an essential element of nearly all business processes today. If IT infrastructure is not up and running as expected, business simply will not get done. With IT such an integral part of business, testing new enterprise applications is crucial to organizational success. To help ensure that the underpinnings of your business remain sound, it is vital to validate that your software solutions provide the quality, performance, and availability required for optimal operations.

Implementing applications without first testing and verifying their performance is a risky venture. It can lead to downtime and defects that have detrimental impacts throughout the organization. Projects end up exceeding budgets and deadlines. Untested new applications don't deliver as promised, scuttling ROI. Product and service quality suffer. Suppliers and customers are dissatisfied. And it all eventually shows up on the bottom line.

Thorough, end-to-end testing of software and business processes is expensive, time-consuming, and often impossible with real-world time lines, expectations, and cost constraints. Organizations like yours need a quality assurance solution with comprehensive, automated functionality that increases testing speed, efficiency, and accuracy; lowers costs; and helps ensure that new enterprise applications deliver the best possible business results.



OPTIMAL SOFTWARE PERFORMANCE AND RELIABILITY

TAKE A LIFE-CYCLE APPROACH TO SOFTWARE QUALITY MANAGEMENT

Firms in all industries depend on enterprise software solutions to enable and automate critical business processes. These solutions allow companies like yours to manage the entire value chain, respond faster to market changes, and better align overall strategies with operations.

The benefits of enterprise software bring new challenges and risks, however. When crucial activities are dependent on IT, technology must remain up and running for an enterprise to stay in business. If all the pieces of the heterogeneous IT environment aren't properly managed, the business can suffer.

Implementation, upgrades, and maintenance of enterprise-wide business solutions require a comprehensive, life cycle-based approach to managing quality, performance, and operations.

From relatively minor fixes to major upgrades, changes to the IT infrastructure can affect your ability to serve customers. Major interruptions and downtime can have a significant impact on revenues, costs, and bottom-line profitability.

In a heterogeneous IT environment, conventional QA testing is no longer sufficient to measure the performance and reliability of enterprise software solutions. Companies need to take other steps to address and manage the risks, time, and costs associated with IT initiatives.

Implementations, upgrades, and maintenance of enterprise-wide business solutions require a comprehensive, life cycle-based approach to managing quality, performance, and operations. Without a clear quality assurance (QA) strategy and integrated testing tools, the total cost of ownership of enterprise software can be difficult to manage and control.

Manage Business and Technology Change

To add value and support the business, IT managers must balance efficiency and effectiveness in their projects. Yet the speed of business today means that business requirements are in a state of continuous change. Development and implementation teams make changes to software code. Compliance requirements introduce detailed regulations and procedures. Initiatives such as service-oriented architecture (SOA) and complicated system integrations add further complexities.

Each stage of the application life cycle – implementation, upgrades, and maintenance – introduces specific challenges that must be addressed to help ensure the quality and continued operational success of mission-critical IT infrastructure. With legacy, custom, and point solutions integrated with enterprise-spanning solutions, the IT ecosystem is increasingly heterogeneous and testing is ever more complex.

POWERFUL ENTERPRISE SOLUTIONS = COMPLEX TESTING PROCESSES

OPTIMIZE BUSINESS-CRITICAL SOFTWARE QUALITY

With a sophisticated QA solution that automates, controls, and enacts quality requirements, you can reduce the time and costs associated with implementing or upgrading business applications.



Next-generation SOA solutions offer greater power and flexibility to create, configure, and integrate complex composite applications. While this empowers IT to add value to the business by providing strategic input instead of just transactional support, it also adds complexity to IT testing processes.

In such a heterogeneous environment, conventional QA testing and validation practices are no longer sufficient to measure the performance and reliability of enterprise software. Companies like yours need to take other steps to address and manage the risks, time, and costs associated with major and minor IT initiatives.

IT organizations must understand essential business processes and goals; prioritize software changes and perform testing in light of their business impact; and identify and resolve performance issues proactively.

By executing greater control over software initiatives, IT can better align QA activities with business outcomes, minimize disruptions, and alleviate risks.

Mitigate Risk with the Right Testing and QA Processes

What is needed is an integrated set of software solutions and best practices to help ensure the quality, efficiency, performance, and operational integrity of enterprise applications. The answer lies in a QA solution that enhances the quality and performance of your technology and tightly aligns quality processes to enterprise software methodologies.

For project preparation and blueprinting, test requirements must be mapped to business requirements to enable full coverage of critical activities and functions. During the realization stage, the organization must define and execute a

test strategy that optimizes business processes and mitigates risk. For final preparation, IT must test software performance to help ensure that the new or updated application is scalable to meet the needs of your business and users, including employees, suppliers, partners, and customers.

When implementing, upgrading, and maintaining software, all crucial business activities must run according to requirements, maintain efficient and effective operations, and satisfy customers. IT and line-of-business leaders assess risks and rewards and create service-level agreements (SLAs) to establish technical requirements, implementation deadlines, and final product quality standards. To reach SLA goals efficiently, it is essential to replace manual activities with automated testing functionality.

AUTOMATED TESTING FOR MORE EFFECTIVE QA

ELIMINATE TIME-CONSUMING, ERROR-PRONE MANUAL TESTING

Traditional testing activities can require costly, time-consuming, and error-prone manual testing, along with user participation across the organization. This can divert time and energy from core business activities. In addition, testing requirements are not always in line with strategic priorities. Plans can take too long to create and execute. And testing approaches are often haphazard and lack structure. Such testing methodology is inefficient and ineffective, and it has a negative impact on employee morale, customer satisfaction, and the bottom line.

Quality management software can address these and other issues by enabling you to manage the entire testing process for both SAP® and non-SAP solutions and related business processes. With a sophisticated QA solution that automates, controls, and enacts quality requirements, you can reduce the time and costs associated with implementing or upgrading applications. You can manage software standards, develop testing scenarios and plans, schedule and perform tests, and track bugs and other issues. Reporting functionality improves testing visibility with graphical data displays and automated documentation creation.

Improve Efficiency – and Results – with Automated Testing

Testing software implementation projects requires a substantial investment of time and resources and is subject to many pressures that can adversely affect a successful outcome. Time is short, requirements are in a state of constant flux, subject matter experts (SMEs) and line-of-business managers are unable to devote the time needed, and sufficient bandwidth to perform testing is often not available. Facing these challenges, it's no surprise that many testing initiatives fail.

Many companies address this difficult situation by automating testing activities, but significant time and effort can still be required. Automated tests can break down with each customization, configuration change, or patch made to business processes. With enterprise-wide solutions and globally dispersed organizations, the challenges are compounded. Testing initiatives are particularly subject to delays, and when defects are found later in the process, costs and risks only increase.

Optimal QA methods call for up to six test cycles to record, enhance, and maintain automated tests adequately. But typical testing runs only go through three cycles due to time, budget, and other constraints, undermining the integrity of automated tests and making the ROI in traditional test automation difficult to demonstrate.

Many companies continue to test software implementations manually, relying on business users across the organization to click through various business scenarios. This method has drawbacks beyond diverting employees from their core activities. Manually testing software functionality is a massive task and lacks reusability and repeatability. It is also impractical to test all functionality manually, so in practice this approach also lacks coverage. And for complex solutions, it is essentially impossible to test all permutations and ensure that changes, fixes, and upgrades do not break existing functionality. Other companies test randomly, guessing at which functionality should be tested rigorously or not at all. This haphazard approach can lead to unanticipated problems that lead to downtime or malfunctions that can be extremely costly and difficult to resolve.

The answer to this dilemma is in the numbers. For automated testing to be feasible, a solution must demonstrate positive ROI in less than two cycles. With such a return, the time and effort spent on automated testing is more than justified. Testing assets can also be reused at later stages in the process, further increasing efficiency.

QA VALIDATION TO OPTIMIZE SOFTWARE PERFORMANCE

INCREASE RESPONSIVENESS AND AGILITY



Enterprise software solutions are complex, unique applications that are customized to your business. Numerous software components are typically modified and integrated with other applications, such as legacy and point solutions. In this complex environment, QA solutions must be able to validate that new implementations can scale from their initial testing configurations to meet the performance requirements of the entire organization.

Suitable QA solutions need to support performance testing for a wide variety of IT ecosystems and protocols. Such solutions must be able to paint an accurate picture of system performance; verify that new or upgraded software performs as needed; and locate and remediate choke points in application performance.

Sharpen Visibility into Production Readiness

QA applications generate a great deal of data while testing enterprise software performance and quality. You need a solution that turns raw data into valuable, actionable information to support decisions to go live and analyze the value and risks of implementations and upgrades. The solution must enable you to define, monitor, and measure key performance indicators (KPIs) for greater visibility into all aspects of testing activities and processes. Important KPIs include defect trends, requirements coverage, and transaction response times.

With such actionable information and visibility into quality processes, you can analyze trends, goals, and timeliness; make needed modifications; and identify and resolve QA issues.

APPLICATION AVAILABILITY MEANS BUSINESS AVAILABILITY

IDENTIFY IT ISSUES WITH PROACTIVE QUALITY ASSURANCE

With a sophisticated QA solution that automates, controls, and enacts quality requirements, you can reduce the time and costs associated with implementing or upgrading business applications.

Companies today typically manage enterprise applications in a reactionary fashion, responding to downtime and complaints after the fact. Many companies also lack sufficient visibility into the technology supporting their business processes, leading to inefficient and erroneous handling of bugs and issues. As a result, IT groups are assigned the wrong issues to resolve, mean time to resolution increases, and critical work is disrupted – with impacts felt across the organization.

IT organizations must change their way of thinking and operating. Rather than reacting to problems as they arise, IT must proactively manage enterprise software. Organizations like yours need to adopt a controlled, integrated, man-

aged approach to application quality. You need a solution that enables you to identify problems before they negatively impact business users and operations. Such a solution must go beyond system metrics and let you analyze problems from the standpoint of business processes and users.

Manage the Enterprise Application-Change Life Cycle

Given the constantly evolving nature of technology, your organization must continue to make changes to applications already deployed and in production. Some changes may be requested by business managers, with upgrades and patches developed by your IT department. Other changes may come from software providers. And while your business needs to make modifications and adapt to new requirements, you need to alleviate the risks associated with software changes – ensuring through testing that all runs as smoothly as possible.

While continuous change to technology is a fact of life, many companies lack the ability to assess the risks and rewards of such changes accurately. Every IT change – whether it's a relatively simple upgrade or a completely new implementation – has an impact on your business. You need to know how IT changes will affect day-to-day business operations that simply can't be disrupted.

You need a QA solution that lets you analyze the business impact of any IT changes before they're made so you can mitigate the risks of managing your enterprise software. The solution must help you make better decisions regarding software changes, determine how to allocate time and resources, and do the following:

- Identify changes automatically
- Analyze the potential business risk and technical impact of changes
- Optimize testing strategy and execution

Maintaining automated tests subsequent to software changes also presents challenges that can derail the testing process. For automated testing to work, the QA solution must have change-detection functionality that enables IT to modify tests readily in response to changes in the underlying business processes and software.

THE SAP QUALITY CENTER APPLICATION BY HP

DRIVE QA DURING IMPLEMENTATION, UPGRADES, AND MAINTENANCE

The SAP Quality Center application by HP is a single, integrated software solution with the comprehensive functionality required for quality management. It reduces the risk and uncertainty of implementing SAP and non-SAP software by providing consistent, repeatable, automated testing functionality. SAP Quality Center offers greater visibility and traceability throughout the application life cycle, taking your organization beyond the limits of traditional testing approaches.

Rely on a Scalable, Web-Based Approach to Quality Management

SAP Quality Center incorporates the complete testing process in a Web-based, scalable, and flexible application. It enables the full gamut of QA management, including requirements management, test planning, test case creation, and defect tracking and management for SAP and non-SAP software environments. With the application, you can achieve the following benefits:

- Meet software release deadlines
- Coordinate decentralized software projects across the business
- Help ensure that crucial business processes are running at optimal levels
- Confirm that new releases are ready to go into production
- Verify and document testing of priority business requirements
- Demonstrate that potentially destructive bugs have been fixed

Powerful tools enable you to organize QA activities to reduce costs and risks. The application facilitates communication and collaboration by bringing together the various groups involved; gives you control over QA processes; and automates the testing of SAP and non-SAP applications.

Reduce Costs and Improve ROI with Powerful Automated Testing

The automated testing functionality of SAP Quality Center lets you initiate QA activities earlier in the software life cycle and reduce maintenance during testing. Business users and nontechnical SMEs can focus on test flows that truly represent your business activities, and quality engineers can focus on facilitating automation. The application helps ensure effective testing efforts, reduces costs, improves ROI, and it enables you to perform the following activities:

- Manage test assets
- Analyze and report on test progress, status, results, and quality metrics
- Facilitate collaboration within IT and across the organization
- Run repeatable, reusable tests to increase test efficacy and reduce costs
- Provide data and insights to inform go-live decisions

Facilitate Compliance and Reporting

The automated reporting functionality of SAP Quality Center generates testing documentation, including all steps performed and data used to validate the results. The application keeps you in compliance and saves money and time usually spent on manual documentation activities. You can thoroughly test new software more quickly, release higher-quality applications, and lower implementation and upgrade costs.

Optimize and Validate the Performance of Business Processes

With the SAP LoadRunner application by HP, you can accurately test the performance of SAP and non-SAP software. SAP LoadRunner is efficient and consumes minimal resources. Yet it applies loads to the entire software configuration under test to highlight scalability issues. SAP LoadRunner enables you to do the following:

- Emulate any number of business users to apply realistic stress levels to the application under test
- Accurately measure user response times
- Monitor components of the application under stress
- Analyze and report on performance issues before going into production
- Diagnose potential performance bottlenecks in SAP and non-SAP applications

Analytical and diagnostic tools provide visibility into business-user, enterprise-level, and code-level performance data, pinpointing likely reasons for slow application performance. You can move from a reactive to a proactive stance, detecting and prioritizing issues based on their potential impact on core business operations. Integrated diagnostics take you to the root of problems and help resolve issues quickly with minimal business disruption.

Test the Impacts of Changes

When upgrading or implementing new software, it is essential that core processes continue to work as expected, without disrupting day-to-day activities. During rollout of process and software changes, you need to regularly test applications and related processes to help ensure that critical business operations are not adversely affected.

The SAP Test Acceleration and Optimization application helps eliminate the need for customized, manual testing procedures that are costly and time-consuming. The software streamlines testing procedures by generating automated testing components, uploading them to SAP Quality Center, and running them as part of your automated tests. You can reduce expenses by reusing components and readily update them when process or data changes are made.

The SAP Quality Center application by HP is a single, integrated software solution with comprehensive quality management functionality that offers greater visibility and traceability throughout the application life cycle.

Used with SAP Quality Center, SAP Test Acceleration and Optimization enables speedy, agile, and efficient testing of both SAP and non-SAP applications and related business processes.

Benefit from the SAP HP Partnership

Reap the benefits of the partnership between SAP and HP with QA functionality that enables software quality and performance management for SAP and non-SAP applications. To learn more about how SAP can help your business, call your SAP representative or visit us at www.sap.com/usa/services/consulting/saptesting.epx.

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