



## Baker Hughes: Achieving Huge Cost Savings, ROI, and Value by Automating Testing with SAP® Software

Baker Hughes, a leading oilfield services company, built a testing center of excellence (TCoE) to **expedite and automate the testing of applications** and improve quality and performance while reducing cost. Using testing solutions from SAP, the TCoE has helped the company go live with multiple applications at significantly reduced cost and risk.

# Executive overview

## Company

Baker Hughes

## Headquarters

Houston, Texas

## Industry

Oil and gas

## Products and Services

Oilfield services

## Employees

57,100

## Revenue

US\$19.8 billion

## Web Site

www.bakerhughes.com

## BUSINESS TRANSFORMATION

### The company's top objectives

- Provide a positive user experience globally, independent of location
- Ensure functional commitments of the application have been delivered
- Continuously improve quality and productivity while cutting time to market

### The resolution

- Established testing center of excellence in IT and strategic partnerships for delivery of testing services
- Implemented standardized testing processes, tools, and artifacts; established metrics and a continuous improvement program to prevent quality escapes
- Focused on high reuse and complex testing scenarios, taking a collaborative approach to involve all stakeholders including customers

### The key benefits

- Improved quality and reduced costs caused by poor quality
- Improved productivity and reduced cycle time
- Improved on-time delivery record
- Produced a superior user experience

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## TOP BENEFITS ACHIEVED

# 25%

Costs saved by resolving failures early

# 35%

Less time required to plan and create test cases

# 60%

Shorter testing cycle time

[See more metrics](#) ▶

“Analyst studies have proved that defects are orders-of-magnitude cheaper to fix if caught early in the application lifecycle rather than late – a big reason why the TCoE is saving us so much money.”

Faisal Asif, Director, Project Management Office, Testing Center of Excellence, Baker Hughes



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# Making testing more effective while saving time and costs

Baker Hughes is a global oilfield service company that provides advanced products and services to help customers find, evaluate, drill, produce, transport, and process hydrocarbon resources.

Baker Hughes has run its business with SAP® software for more than a decade. It continually introduces enhancements and new applications from SAP and others. For testing software prior to deployment, it used to rely on developers and business-process owners. Testing was entirely manual with little structure or guidance.

The company has many enterprise systems connected by hundreds of interfaces. The extreme number of changes made thorough testing practically impossible, resulting in postproduction defects. There were no defect-storage or

performance-testing capabilities; therefore, an application might run well in one part of the world but poorly in another, which IT generally learned after the fact. Users demanded a better experience and ever more solutions. Compliance required that thorough testing be done before changing systems.

With enormous projects looming, including an upgrade to the SAP ERP application and the conversion of a new acquisition, the BJ Services Company, from Oracle to SAP software, Baker Hughes knew that testing would be critical to success. Therefore, it resolved to shore up its testing infrastructure and methodologies by creating a testing center of excellence (TCoE) to centralize, automate, and standardize its testing processes.

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“Our vision for the TCoE was to enhance the user experience via superior testing. Every defect the TCoE finds is one fewer to impact our users, who spend less time testing and more time producing.”

Faisal Asif, Director, Project Management Office, Testing Center of Excellence, Baker Hughes



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# Building the TCoE around the strongest tools on the market

For TCoE software, Baker Hughes chose the SAP Quality Center application by HP for functional testing, the SAP LoadRunner application by HP for performance testing, and the SAP Test Acceleration and Optimization application for scripts. “Seeing the tight integration with SAP ERP, we made our choice quickly,” says Faisal Asif, director of the Project Management Office for the TCoE. The firm also chose Quick Test Professional from HP for powerful testing of non-SAP software.

“SAP Test Acceleration and Optimization delivers 1,200 standard testing scenarios that cut our development time by 80% to 90%. We developed reusable test scripts for business-process scenarios; automated the most-used, highest-risk scripts; and instituted standard testing processes to catch defects before they entered the later stages,” Asif continues. “SAP LoadRunner lets us run load- and performance-testing scenarios from 15 locations worldwide. When we were readying one set of new applications globally, it revealed bottlenecks where response time would have been over 30 seconds in some cases. We helped developers cut that up to four seconds globally. Today, one to three

people can run more than 2,000 scripts against SAP software in less than a week, while it used to be a fraction of scripts run by many people during a much longer period.”

A governance model with a dedicated manager was created for cross-department adoption. In an onshore/offshore model, Baker Hughes’ strategic partner Infosys develops testing scenarios, automation, performance testing, and metrics reporting and provides a TCoE workforce that varies with project load.

The TCoE engages early in a project’s lifecycle and continues throughout. It does not replace unit or integration testing. It offers objective testing, minimizing the time for user acceptance testing and delivering a potentially defect-free production deployment.



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# Delivering success after success

The TCoE also uses the SAP Quality Center application for other systems, including Baker Hughes' custom applications. It has performed 647 projects, executed 18,865 test cases, and identified 4,545 defects in 40 applications in the first two and a half years of use, while meeting every deadline. Via test-case reuse and automation, it cut the cost of instilling quality into applications so much that testing today costs 90% less than in pre-TCoE days. The TCoE has also developed many tools to enhance planning and execution productivity. These tools facilitate test case reuse, increase defect data

completeness, ease test case review, speed up troubleshooting, and save time for business users.

Through test script reusability, test automation, and the use of offshore resources, Baker Hughes is accomplishing far more with far less than ever before. "We saw a complete return on our investment during the SAP ERP upgrade alone," says Asif, "and that was just the beginning. These solutions now allow us to efficiently run over 2,000 scripts on SAP applications with one to three staff members within a week."

## KEY BENEFITS

# 100%

On-time delivery

# 45%

Reduced regression testing effort

# 30%

Shortened user acceptance testing cycle

# 80%

Improved transaction response time

# 90%

Reduced overall testing costs

# 35%

Saved costs by reusing existing test scripts





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# Streamlining the delivery of SAP HANA® and much more

Baker Hughes was an early adopter of the SAP HANA® platform, which is about to be deployed for real-time financial analysis and reporting. The company is also transitioning to a single global instance of SAP ERP while moving more than 50 enterprise applications to a consolidated computing environment, and rolling out SAP applications to operations of the former BJ Services Company in more than 65 countries. “The rate of change in our IT landscape is unprecedented,” Asif concludes. “In the past, with our limited resources, we would have been anxious about the quality of all these applications when they enter production, but our success record with the TCoE gives us confidence that the transitions will be smooth.”

Baker Hughes is also upgrading to the latest version of SAP Test Acceleration and Optimization in order to integrate with the SAP Solution Manager application management solution.

