

U.S. Federal Government Agency

Executive Summary

A U.S. Federal Government Agency recently adopted Worksoft Certify to increase efficiency, reduce costs, shorten project timelines, capture institutional knowledge, and detect system defects earlier to reduce risk of disruption to business operations.

The business benefits with Worksoft Certify have been dramatic. Testing for the Agency's initial SAP[®] implementation had required 45 people working for 8,400 man-hours scheduled over 40 days. Implementation of Worksoft Certify has reduced the effort required to 192 man-hours scheduled over 12 days. **Labor costs per test cycle are now 98% lower and schedule time is now 70% shorter.** Assuming a \$50 per hour labor rate, the recurring savings per test cycle are over \$400,000 per major cycle, and additional benefits for minor test cycles throughout the year.



Background

This U.S. Federal Government Agency operates more than 50 facilities with more than 10,000 people world-wide. The dollar value of its services is estimated at more than a half billion dollars per year.

SAP software is used to manage operations. The SAP landscape includes ECC 6.0 and BW plus integrated third-party software for accounts payable and credit cards. SAP ECC modules used include Sales and Distribution (SD), Materials Management (MM), Production Planning (PP), Finance and Controlling (FI/CO).

SAP business process functions include customer service, telephone sales orders, electronic submission of orders, creation of purchase requisitions, processing of production orders, shipping and receiving functions. Staff review and approve work before it is submitted to customers and vendors, and communicate with vendors. Supported back office functions include accounts payable, accounts receivable, and financial accounting.

Testing Challenges

The Agency converted from a legacy system to SAP 4.6B more than 10 years ago. Testing was conducted using test script documents in a team-based test environment to manually test and document key business processes.

Manual testing was conducted at two sites. Testing at the first site was conducted in three sessions. Each session lasted two weeks and was conducted by a team of thirty people. Testing at the second site required one session lasting one week and was conducted by a team of fifteen people. Manual testing required a total of 8,400 man-hours of effort.

The prior approach relied on time-intensive manual testing and scripting to verify processes were working. Large groups of employees met at multiple locations to build scripts using standard forms. Business process owners who knew each business process worked together with SAP business analysts who knew the SAP transactions to create, execute, and document test scripts. The intensive collaboration effort was time consuming. Significant labor and travel expenses were incurred to complete the testing process. The existing testing approach was incomplete and offered limited coverage of end-to-end business processes.

Documentation was a challenge because of the volume of processes that support the operations. Manually preparing test scripts and documenting test results was time consuming and resource intensive. The test scripts documented inputs, basic test steps, and outputs but lacked all the details required to exactly replicate the test.

Access to the SAP system requires stringent authorization security to control access to staff-only functions. These are measures that are critical to operations and must be tested to ensure security.

The Agency upgraded from SAP 4.6B to SAP ECC 6.0 recently. Completion of a successful and cost effective upgrade required implementation of a fast and efficient automated testing framework that could provide cross-platform business process validation. The solution chosen was **Worksoft Certify**[®] – the only provider of truly end-to-end business process validation for SAP and other enterprise systems.

The Approach

The Agency's test automation management objectives were to reduce labor and travel costs, reduce the schedule time required for testing, improve and standardize test procedures and documentation, and minimize the amount of time business process owners were needed to support testing. The Agency decided to implement Worksoft Certify in conjunction with upgrading from 4.6B to ECC 6.0.

Most manual tests were replaced with automated tests. Test processes automated with Worksoft Certify were:

- Transaction testing required 863 tests. FI/CO – 335, MM – 184, PP – 119, SD – 212, Basis - 13
- Unit tests that formed business process tests within a module required execution of multiple transactions. Testing required development of 45 tests for FI/CO, 7 tests for MM, 29 tests for SD, and 3 tests for PP. Unit tests were linked to data sets to execute multiple scenarios per unit test.



- Twenty four integrated business processes were developed to test complex business processes and variations within each process. Tests ranged in complexity from small processes that required only a few hundred steps up to a process that required over 1,400 steps and tested sales orders, vendor contracts, vendor purchase orders, goods receipt, production planning, production execution, delivery, customer invoicing, payment receipt, and vendor payment.

Testing validated and documented that all major business processes function properly. Errors were identified and corrected to minimize the potential negative SAP upgrade outcomes to business operations. Test documentation generated by Worksoft Certify was reviewed and approved by business process owners and stored to support the financial audit and compliance processes.

Business Benefits

Improved Efficiency & Reduced Costs

With Worksoft Certify as the automation solution, the Agency has achieved significant improvements in testing efficiency and reduced testing costs. They have been able to greatly accelerate test cycle times. For example, it takes one day to set up predefined test data conditions in a new test system. Unit testing can be completed by two SAP business analysts in one day followed by integrated business process testing over two days. The entire end-to-end test process per system can now be executed in just four days -- compared to weeks of manual testing.

The Agency typically installs SAP support stacks on an annual basis. Support stacks are tested in sandbox, development, and quality assurance environments using transaction, unit, and integrated test processes before a support stack is applied to the production environment. Operating system patches are applied to the SAP landscape on a quarterly basis and are tested using Worksoft Certify with a reduced set of Certify test processes. Testing these requires one man-day of effort.

Complete Documentation & Capture of Enterprise Knowledge

One of the main benefits the Agency gained by implementing Worksoft Certify was eliminating the need to gather together business process owners to conduct testing. Automated testing can be completed by personnel that do not know the transaction or business process being tested. When personnel changes occur, there's no risk of losing the knowledge around business processes because Worksoft Certify maintains complete documentation of the exact steps required to execute a process. Certify creates detailed step-by-step documentation during test execution for future reference and audit compliance.

Defect Detection & Risk Mitigation

The Agency has been able to identify and resolve errors before a system change enters the production environment through automated testing using Worksoft Certify. Test development normally starts with creating master data and proceeding thru business transaction execution. The Agency has found that test scenarios must also include using existing transaction data. Execution of a test using existing

transaction data from a partially completed business process identified an error that occurred because there was a data requirement mismatch between what existed before the upgrade and what was required after the upgrade.

Achieving Sustained Value: Shortened Project Timelines

The most valuable benefits achieved with Worksoft’s automated testing software are the reduction in project testing timelines and the output of detailed test results in PDF format for audit purposes. Configuration of new business processes at the Agency now includes creating the associated Worksoft Certify test processes at the same time. Knowledge required to create both positive and negative tests is captured in the automated test during the development process. The time required to create and execute Certify test processes during the development phase is less than the time required to conduct repetitive manual testing. Tests are reliably consistent and can be quickly executed against a larger data set than is practical using manual testing.

Summary & Key Learnings

The Agency advises that learning to use Worksoft Certify and the development of test processes is best done well in advance of a SAP upgrade event. Worksoft Certify test processes can then be executed before an upgrade begins to validate both the process tests and the test system. Once the test system has been upgraded, the test processes are executed again to identify any potential defects and deficiencies. This generates substantial efficiencies in the upgrade process.

Testing for the Agency’s initial SAP implementation had required 45 people working for 8,400 man-hours scheduled over 40 days. Implementation of Worksoft Certify has reduced the effort required to 192 man-hours scheduled over 12 days. Labor costs per test cycle are now 98% lower and schedule time is now 70% shorter.

The Agency also suggests that a “test everything” approach is neither possible nor cost effective. Test development should focus on critical business processes that have a significant financial impact. The value of testing should be based on the business cost associated with an undetected failure. Maximum ROI is obtained through testing processes that are financially critical.

Implementation of an automated test solution does not have to be a large-scale effort. The Agency suggests starting with a small set of key business process tests, develop automated testing skills, and then incrementally build additional tests over time as part of the normal maintenance and development cycle.



About Worksoft Inc.

Worksoft® - an SAP® partner - is a leading global provider of business process validation software for complex, mission-critical applications. Fortune 500 companies use our solutions to lower technology risk as well as shorten project timelines, reduce costs, innovate faster, and improve business process quality. Worksoft solutions validate end-to-end business processes with high levels of automation - often exceeding 80%. Blue-chip companies across manufacturing, financial, government, energy, healthcare, retail, entertainment, and transportation sectors choose Worksoft.

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