



## charles SCHWAB

### WORKSOFT CUSTOMERS

Worksoft's customers are among the most successful companies in their respective industries. A common thread among Worksoft customers is a commitment to exploiting leading edge technology solutions that lead to a sustainable and significant competitive advantage in the marketplace.

Worksoft's customers include such industry leaders as AFLAC, Charles Schwab and Northrop Grumman, all of whom have deployed Worksoft's flagship product, Worksoft Certify, within their organizations.

### WORKSOFT CERTIFY®

From the back office to the front line, software applications once viewed as a productivity enhancement are now seen as a competitive weapon. In the past, however, software test automation required that test cases be documented by business and quality analysts, then translated into a specialized scripting language by programmers. As a result, test automation hasn't delivered on the promise of cutting testing time and costs.

Until now. Seeking to simplify and accelerate software quality testing, Worksoft Inc. offers an innovative approach called progression testing. Our comprehensive software testing solution eliminates the need for programming, so it can be used by business analysts and other expert users who know the business best. Our flagship product, Worksoft Certify, structures information about critical business processes and how they should operate in a way that is easy to define, automate and maintain. This approach slashes the time and cost of software test automation by 60% or more, helping businesses attain significant and sustainable competitive advantage.

"...Our systems are an absolutely critical aspect of our business. Worksoft Certify enables us to get new systems up and running faster, and it is proving to be a truly revolutionary tool in helping us to route out the bugs and glitches that could disrupt service to our customers."

- Dawn Lepore, Vice Chairman & CIO, Charles Schwab Corporation

## Charles Schwab

### Worksoft's Certify® Solution Exceeds Expectations for Charles Schwab's Mutual Funds Department

#### OVERVIEW

The Mutual Funds Technology Group at Charles Schwab needed a testing solution for its mainframe CICS Mutual Funds trading applications, the core of its Mutual Funds processing. It also needed a solution for continuous testing across other trading channels including CICS, Client Server-GUI, and the Web.

#### CHALLENGE

Testing the trading of mutual funds is complex. There are about 40 different criteria for Customer Accounts (IRA, Corporate, Country Code, etc.) and about as many different criteria for the Mutual Funds being traded for those accounts (Investment category, Trading service codes, tax type, fee type, etc.). In addition, there are multiple values within each criterion. Even though Schwab had broad coverage for regression testing their Mutual Funds Order Entry System (MOES), new enhancement and maintenance projects demanded special emphasis for specific testing requirements. Creating the exponential number of cases for these specific requirements was increasingly laborious and time consuming.

Herb Isenberg, Technical Director of SQA in the Mutual funds Technology Group, at that time, was responsible for both needs analysis and tools selection, including testing tools for the group.

“Regardless of your tool or platform, this approach (Worksoft Certify) offers the most efficient and powerful solution for test automation available today. It reduces the development effort from weeks or months to days, and removes the need for your QA analysts to become script programmers.”

- Herb Isenberg, Technical Director of SQA, Charles Schwab Corporation

## DEFINING NEEDS

Herb Isenberg and Rob Miller (automation development consultant for the Mutual Funds Technology Group) needed a new test automation tool that would allow time for more comprehensive testing and results verification. They began searching for a tool that was faster for developing automation and one with features to manage test cases and the automation scripts as well. They also wanted the ability with one tool to test across the various trading channels that were on different application platforms.

The scripting tool that Rob had been using required extensive programming and maintenance. At that time he had written over 9,000 instructions (lines of code) for comprehensive testing of the MOES application and was only about 50% complete.

## NOT THE TRADITIONAL ROUTE

Herb initiated an industry search to identify a tool to meet their requirements. Some of the more widely used products (such as AutoTester, Robot, Silk and WinRunner) were eliminated because they were primarily programming or scripting tools. While these are solid development testing tools, they did not offer Schwab a true solution. Herb describes the challenge with these traditional tools, “*These tools require us to develop our own solution from scratch. We had been using tools like these. They are really programming languages. We found it was taking as long to develop and maintain our automated testing as it did to program the application features being tested in the first place. We wanted to buy a solution to eliminate extensive design, development and maintenance time.*”

## DISCOVERING WORKSOFT CERTIFY

When Herb and Rob learned about the structured approach and the features of the Worksoft Certify solution, it quickly became their first choice. Herb explains, “*Even though Worksoft Certify was a young product, I knew that Worksoft was on target with this tool. We found that Worksoft Certify replaced the need for programming logic with point and click Actions (a Worksoft Certify feature); plus the design of Worksoft Certify included managing automated processes as well as managing test cases.*” Rob points out, “*Worksoft Certify Actions offer a solution for handling simple and complex tasks—such as a task or Action like typing keys. With Worksoft Certify you simply select the Window, Screen, or Page you want, select the field or object you want, select the “Type Keys” Action and then fill in the pop-up window with the keystrokes. Worksoft Certify requires no programming. All Worksoft Certify Actions are structured this way. The programming to actually execute each Action is already done for you.*”

## WORKSOFT CERTIFY ADVANTAGES

Herb and Rob also found that Worksoft Certify offers modularization and management of test processes and test data, as well as a unique approach to reading and writing test data during test execution. Rob admits automation developers often are initially resistant to Worksoft Certify because they enjoy programming: *“I tell all my associates now that as much as they may enjoy programming, they no longer need worry about how to manage screen maps and test data. Once you define the screen, the object and the Action the automation is already done for you. With Worksoft Certify you just select these reusable components. The time required for the traditional design, development and maintenance of the various testing structures you may have developed in the past is over. That approach is antiquated. When I develop subsequent testing now with Worksoft Certify, it's like using a cookie cutter. You can't beat that productivity with any other tool that I've seen.”*

## IMPLEMENTATION & RESULTS

Herb obtained the necessary approval for a three-month research and development project starting the 2nd quarter of 2000 to determine if Worksoft Certify met his requirements. The results were instant. Instead of needing weeks and months to prepare and execute thousands of test cases, Rob used Worksoft Certify to create an entire test system, complete with verification, in just a few weeks. Not only was he able to develop automation more quickly and easily, but he also increased test coverage more than ever before.

He replaced his previous system of 9,000+ lines of scripting instructions with the structure of Worksoft Certify and about 450 Worksoft Certify Actions. The productivity gain was clear—maintaining 450 Actions vs. the previous 9000 lines of code required much less time and effort.

An ongoing benefit was obvious; subsequent test development would have the same advantage of the Worksoft Certify structured approach. Rob explains, *“I continue to develop with Worksoft Certify, for example, small groups of automation Processes that will execute thousands of different test cases, or Processes that screen scrape and store test data from thousands of screens. But, Worksoft Certify is actually easier than that. After my two-hour training session students are empowered. They have the confidence and skill to develop their own individual test cases.”*

Worksoft Certify continues to be used and appreciated in the Mutual Funds Technology Group and by testers and developers in other Charles Schwab organizations as well.