

BLUE CROSS BLUE SHIELD OF MASSACHUSETTS SOFTWARE AUTOMATION PROJECT



Blue Cross Blue Shield of Massachusetts (BCBSMA) is the largest health care insurer in Massachusetts, with 3.5 million members, \$6.7 billion dollars in premiums in 2008, and an 80% market share. In the annual national rankings of America's Best Health Plans 2008-09, *U.S. News & World Report* and the National Committee for Quality Assurance (NCQA) ranked BCBSMA 9th among all commercial HMO/POS plans, and 4th among all Medicare plans in the nation.

In 2005 and 2006, BCBS retained Telesis to build an end-to-end software test model, which became the enterprise standard testing model for all future BCBSMA endeavors. Since the results were so positive, BCBSMA engaged Telesis again in mid-2009 to build and implement an automated regression test facility for a broker's software application called BlueLinks. BlueLinks is a database for new business and renewal membership health applications. BCBSMA does an estimated 65,000 renewals each year, which were being tested manually every time code changes were added to BlueLinks. BCBSMA had tried twice unsuccessfully to automate BlueLinks, once with internal personnel and once with an internationally known consulting firm.

This project began with the sorting of business priorities, by taking real world business transactions and then defining the testing priorities, based on business rules. Telesis used the priority grids in BT3, its software test optimization tool, to construct, prioritize and organize the testing assets. BCBSMA wanted to identify and fix defects in its most critical business scenarios first, and thereby mitigate any real world processing risks.

The next step was for Telesis to configure BT3 to overcome the common automation failure points (object recognitions errors, script replay failures, etc.) BlueLinks was experiencing with QTP, Hewlett-Packard's popular software automation test tool. BT3 changed and optimized the way the test scripts were built which, in turn, reduced the amount of test script coding required by almost 75%. Telesis also built reusable actions, a function library, and recovery scenarios for BlueLinks to complete the advanced test automation architecture.

The final phase of the project was to document everything and to provide custom training and mentoring to BCBSMA technical and non-technical personnel on how to architect and utilize, on a daily basis, this new and reliable test automation architecture. At the end of the training, even the most non-technical users could build and run prioritized, automated BlueLinks testing scripts.

The remainder of the project involved automating the four groups of transactions: high and medium priority renewals, and high and medium priority new business. Before beginning work on each group, Telesis personnel met with their BCBSMA counterparts to define the transactions in the group to be automated. Then, Telesis used BT3's test data generator to generate relevant test data automatically. As Telesis finished the work on each group, it provided BT3 asset support for the project duration and documented the process. BCBSMA signed off on each automation acceptance.

BCBSMA's two concerns at the project outset were:

(1) Ease of use:

- a. business personnel must be able to use the automation;
- b. test assets must be reliably reusable;
- c. the test coding workload must be substantially reduced, and

(2) Return on investment: time to re-run automation test scripts versus manually re-inputting the test cases.

While BCBSMA corporate policy specifically precludes individual employees from endorsing project work, BCBSMA personnel went out of their way to hail the project as a huge success. Telesis automation efforts turned a week's worth of manual testing into a half day, which represented a nine-fold increase in speed. The ROI was 89% in reduced test execution time. At the project conclusion, BCBSMA personnel recommended Telesis to other parts of BCBSMA for additional work.