



## MN Department of Revenue Begins Test Automation Transformation Journey

The Minnesota Department of Revenue manages the state's revenue system, administers state tax laws, and manages 30+ different taxes and collects over \$20.5 billion annually. The MN Department of Revenue serves the people of Minnesota from its offices in Saint Paul.

MN Department of Revenue  
St. Paul, MN  
revenue.state.mn.us

**Industry**  
Public Sector

**Employees**  
1,300

### CHALLENGES

MN Department of Revenue is challenged by the demands on limited testing resources that manage annual updates. In addition, they are challenged by multiple updates to their tax software products throughout the tax year. Test resources currently complete the thousands of test scenarios required to provide full test coverage for annual updates to the software. The imbalance between schedules and testing resources results in delayed deployment schedules and conflicts in business priorities for business testers. Frequent updates to the primary MN Department of Revenue software package and lack of test automation are an ongoing challenge to implementing annual changes to the state tax systems. Equally challenging was the lack of belief in test automation as a solution. To be successful, the solution would have to be equal parts technology and cultural change.

### SOLUTION

- Trissential completed a quality health check, a Proof of Concept with the AutoQ Test Architecture, a three-month engagement to demonstrate the benefits of test automation of the three major tax software packages used by MN Department of Revenue
- Trissential conducted workshops and planning sessions with management and the entirety of the tax operations staff and provided recommendations to demonstrate the benefits of implementing test automation. A key goal of the effort was to obtain buy-in to test automation from the tax operations test coordinators through demonstrating the effectiveness of test automation
- The scope of the test automation effort covered electronic filing from multiple tax filing software sources and the IRS, Optical Character Recognition (OCR) Software used to process paper returns, and the integrated tax processing software package used by the Department. Corporate and individual tax filing processes were covered
- Trissential conducted regular knowledge transfer workshops with state technical resources to ensure the automation architecture, coding techniques, tools and technology were passed on to the state
- An Agile scrum approach was used to complete the test automation work to promote communication, collaboration, frequent feedback, and project visibility with the customer



### ESSENTIALS UTILIZED

[MANAGEMENT CONSULTING](#)

[BUSINESS AGILITY](#)

[CONTINUOUS QUALITY](#)



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### RESULTS

Minnesota Department of Revenue gained test workflow documents, test scripts, code documentation, code repository, and a tools list for the highest priority test scenarios in the three main process areas managed by the tax operations units. Demonstrations of the test automation resulted in full buy-in of the tax operations unit on the feasibility and benefits of test automation and software quality management. Training was provided to all test coordinators on the principles of quality management and analysis. It was consistently demonstrated that automation could reduce resource time spent testing by more than 90%. For example, one resource is responsible for testing the integrity of 1,350 reports. During a major software update, less than 10% of these reports were covered. A sample of the report test scenarios was automated to demonstrate 100% test coverage of all 1,350 reports could be achieved in a fraction of the time spent covering 10% of the test scenarios.