

Qualitest Ensures Utilities Organization Has Zero Downtime with Their ETL Processes and Data Migration Testing



Challenges

Upgrading the wind farm legal document management system.

The Data ETL process had to be tested, which came from two separate databases and from around 400,000 legal documents.



Solutions

Creation of a task plan for all the steps of the ETL testing process and items to be verified.

Execute the ETL task plan as many times as needed until all the defects are fixed.



Results

The entire ETL process took just 24 hours to complete which was less than originally estimated.

The “Go Live” for the project had a smooth cut-over and no issues were found.



Client overview

The Client is a large utility, electric and gas organization based in the American Midwest. They are reinventing how they power communities, how they care for their customers, and have a strong commitment to the planet. They are also leading the way in clean energy solutions and have a goal of providing carbon-free electricity by 2050.

They needed a solution for an application involved manages all the legal documentation for their wind farms including agreements, deeds, easements, boundaries, contracts, and owners. The system also displays the properties on maps to show where each wind farm is located.

Bye bye old system! Escaping the clutches of outdated tech

Our Client needed to migrate from their older version of their system because the Vendor discontinued the support they provided. In addition, they wanted to save on hardware and support costs when upgrading, and decided to move to the Vendor's hosted environment, SaaS, and shut down their on-premise servers and support.

This complicated migration required that the data in the on-premise environment be moved to the Vendor's hosted environment. Whether the client was to stay on-premise or move to the Vendor-hosted environment the data needed to be translated for the new system.

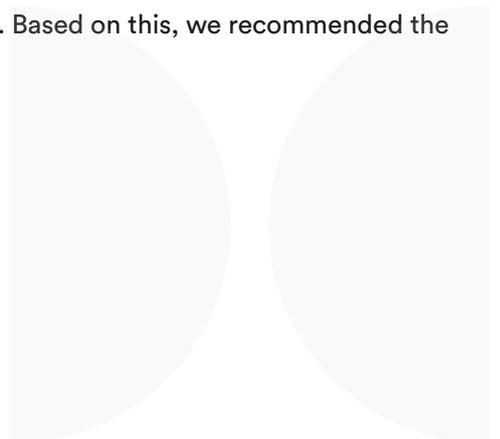
This project started about a year earlier with no test manager assigned to it, and as a result it did not go well. With the project itself being fraught with problems and challenges, Qualitest was engaged to lead the testing efforts and bring the project back on track.

When we inquired about the data that needed to be moved, we found out that the Vendor stated they take care of all data used and that our Client did not need to be involved at all in the process. This posed some challenges when it came to testing their data.

When support ended, a new adventure began

Qualitest conducted an initial assessment of the Client's existing test effort. Based on this, we recommended the following testing solutions:

- System integration tests
- Manual performance tests
- User acceptance tests
- Regression testing
- ETL testing
- Production implementation testing





We recommended ETL testing as the way forward for our Client. There was test data in the Vendor hosted test environment, but it was over a year and a half old, and the application had been upgraded a few times to a newer version by the Vendor since then. No one knew if the ETL process for the Vendor hosted test environment had ever been tested on the client's data, not even the Vendor.

Stage 1 – planning

We set up working sessions with the Client's technical resources as well as the Vendor's. We created a step-by-step plan with all the tasks needed to get the data from the current Client production environment, send it to the Vendor, translate the data and load it on the Vendor hosted environment. This included responsible person(s) and timings for each task.

We then set up working sessions with our Client's technical resources and the Vendor to create the test cases that needed to be run for each task.

Next, we set up a working session with our Client's Business team to explain why ETL testing was needed and the approach to test the data after it was run through the ETL process. We worked with the Business to help them create their test case for testing the translated data.

All this work set the project up in a good position to test the ETL process end-to-end.

Stage 2 – test execution

When the project was ready to test the ETL processes, the tests were run twice with 73 test steps in the task plan that needed to be executed.

In the first execution of the ETL task plan and testing, the Vendor found a few major problems with the translation process and fixes were made as the testing progressed. The goal was to make it through all the task plan steps on the first execution. This first execution took five days to complete, where the original estimate was 24 hours.

The number of issues were not disclosed by the Vendor, only that they ran into some issues with specific tasks. Our Client's Business team did not execute their tests during this run because the Vendor had to manipulate the data and our Client only wanted to run their tests after a successful, clean completion of the task plan.

The second execution of the ETL task plan and testing proved the ETL processes worked as expected. This second execution took about 24 hours, as estimated. Our Client's Business team did their testing on the translated data in the Vendor-hosted test environment and the data looked as expected and was correct.



Key benefits

- The ETL process that was run in Production during “Go-Live” was successfully completed within 24 hours, which was less than was originally estimated and all the data was converted correctly.
- The ETL testing proved our time estimates were 100% accurate, giving end users the exact timeframe of how long the system would not be available, which allowed them to accurately plan alternative work during this time period.
- Zero defects were encountered during the Production Go-Live ETL process because of the testing.
- The remaining system migration tasks were completed on time and as planned thus giving little to no business disruption to our Client.
- No additional costs were incurred to keep the on-premise environment running past the “Go Live” date.

“ The ETL testing that was undertaken proved our time estimates were 100% accurate, giving end users the exact timeframe of how long the system would not be available. This allowed them to accurately plan alternative work during this time period. ”

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