

# Successful Test Case Management: It Takes More than a Spreadsheet

Testing software applications can require hundreds to thousands of unique test cases, weeks or even longer to execute them, and the ability to efficiently manage the results. As software becomes increasingly complex and development schedules more aggressive, teams are frequently overwhelmed by the sheer magnitude of the testing effort.

Most teams start out tracking and managing test cases and test runs using spreadsheets. While convenient for a small organization or department, spreadsheets can quickly become an unwieldy method for tracking test cases and results. As testing teams grow, or complexity increases, updating spreadsheets and assessing the current state of the testing effort becomes difficult. Project managers can spend much of their time simply managing status updates.

This article compares two companies, Acme Software and WysiCorp Software, to illustrate the benefits gained by managing test cases with a test case management solution.

## Outdated Test Case Management

At Acme Software, a small but growing software company, testers develop and maintain test cases in a spreadsheet. This gives them a way to map out test steps, define expected results, and record exceptions. It may not be easy, but it works.

Testers save the spreadsheets on their local computers. Some testers organize spreadsheets in folders based on the functionality or feature they test. Unfortunately, not everyone uses the same method of organization, and it is often a challenge to find the test case files.”

<b>Project</b>	ACME ATM
<b>Page</b>	Comment
<b>Date</b>	
<b>Objective</b>	Venty that if you click Cancel when adding a Comment, you return to the main screen with no changes
<b>Prepared by</b>	Kent
<b>Test Case #</b>	ATM_12
<b>Requirements</b>	User ID = Admin Password = 123456

	Steps	Expected Results	Actual Results
1	Open an item		
2	Right-click and select Add Comment	Add Comment dialog displays.	
3	Select Comment.	Comment field displays in the information window.	
4	Enter a Comment in the Comment field.		
5	Click Cancel	Should return you to Grid view with no changes.	

**Figure 1:** Key information about a test can be stored in a spreadsheet

Kent, a project manager at Acme, uses a master spreadsheet to track testing progress. This spreadsheet includes the test ID, test name, status, configuration, resources, as well as some roll-up columns for tracking which tests have been run, which have passed, and which have failed.

Test Tracking										
ID	Test Case	State	Configuration	Assigned	Tested By	Comments	Tested	Failed	Passed	Pending
09-2335SK	Spell check	Pass	W, M, Web	BVE	BVE		1	0	1	0
09-2335EX	Export to txt	Fail	Web	MVE	MVE		1	1	0	0
09-2335NI	Add new item	Pass	W, M, Web	RF	RF		1	0	1	0
09-2335AI	Archive item		W, M, Web	MVE				0	0	1
09-2335DI	Delete item		W, M, Web	MVE				0	0	1
<b>Total</b>							<b>3</b>	<b>1</b>	<b>2</b>	<b>2</b>

**Figure 2:** The master spreadsheet includes basic data about the state of testing

Kent submits a project status report to senior management every Monday. Testers are supposed to send him status updates twice a week on Wednesdays and Fridays, but because it’s a manual process most of the updates are submitted late. Now that Acme has added more testers to keep up with an increasingly complex development effort, Kent spends more than half of every day tracking down information to keep the master spreadsheet current.

## Spreadsheets Complicate the Testing Effort

Testers organize their spreadsheets differently and it is not always clear which test runs are next in the queue. Kent can see who a test case is assigned to in the master spreadsheet, but he has to sort the data in a separate document to evaluate each tester's work load.

It is also difficult for Kent to determine the results of tests run on different configurations. Because there is no defined standard for maintaining and updating spreadsheets, he is never 100% sure if a test is marked complete when it passes for all the configurations or if each run on a separate configuration is tracked as a separate test case.

Kent can see whether a test has passed or failed, but he cannot tell how many times it was run before it passed. There is also no way to easily see the dependency between one test and another, so Kent cannot tell which tests will be impacted if a particular piece of functionality is delayed.

## Spreadsheets Hinder Collaboration

To streamline the status update process, Kent investigated linking the individual spreadsheets to his master spreadsheet or giving the testers access to his spreadsheet to update the data themselves. Testers ran into sharing issues because the spreadsheet could only be open by one person at a time. Kent even considered creating an

in-house test case database, but there never seemed to be enough time or resources available to even get started on such an effort.

Kent has to collect data from each tester and enter it in the master spreadsheet, essentially entering the same information twice. He would like to add estimated and actual time columns to the master spreadsheet to help

determine when testing will be complete, but that would require him to collect even more information.

With every project, things become more complicated as the release date gets closer. Kent must address shifting priorities as some testers move to other projects while other testers prepare for the final pre-release push. Kent may visit testers several times a day for status updates and to decide where to reassign resources during the final weeks of testing. No tester looks forward to Kent's visit, viewing it as an unproductive exercise that takes away from getting the real work done.

## Test Case Management is Not Spreadsheet Management

Test case management should not be an exercise in collecting and entering data. Rather, it should ensure you have the proper test coverage for the required quality, and that you are on track to meet deadlines. You cannot successfully allocate testing resources if you are constantly chasing down updates from testers.

Centralizing data in a test case management application, like Seapine's TestTrack, improves the consistency of test cases and streamlines reporting. More importantly, it allows teams to do things that would be nearly impossible to do with spreadsheets.

Unlike Acme, WysiCorp Software uses TestTrack for managing and tracking its test cases. All test cases and results are stored in a single location, making it easier to view the tasks involved in the testing effort. Nora, WysiCorp's QA manager, can assess the state of testing at a glance. She can see the status of each test case, who it is assigned to, and what type of test it is.

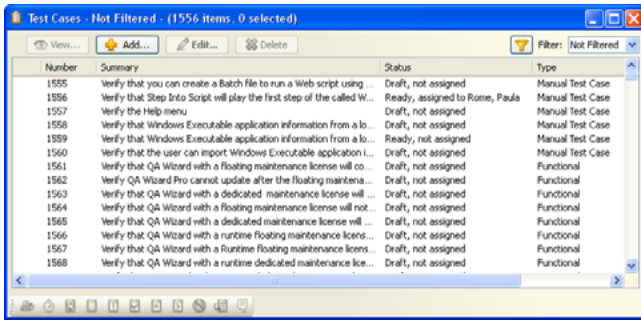


Figure 3: TestTrack TCM is a central repository for test cases, test runs, and test results

Nora does not worry about inconsistent test cases because TestTrack ensures everyone enters the required information. All test cases include the scope of the test, any pre-conditions, and the expected results. Adding steps to a test case is simply a matter of typing in the additional information. Because the test cases are consistent, one tester can write the test case while another can run it.

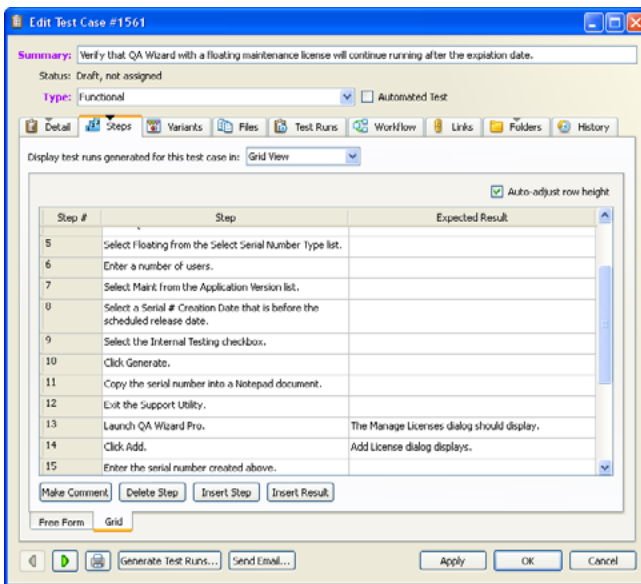


Figure 4: All the details of a test case are stored in a consistent format

## Improve Collaboration with TestTrack

WysiCorp has also implemented a test case review process to make sure all the functional requirements are covered and the test case includes the appropriate details and parameters.

During the review process testers enter time estimates and comments about the test case. Comments from reviewers and the actions taken during the review process are conveniently stored with the test case. With Acme's spreadsheets, there is no way to easily review a test case and track the comments and activities performed on a test case.

TestTrack TCM automatically tracks the changes made to a test case, making everyone accountable for their work. With TestTrack, Nora can see who made the change and when. She can also be notified when a test case changes and prevent unauthorized users from making updates.

With spreadsheets, project managers and other team members depend on the testers to notify them if a test run fails. At WysiCorp, Nora has configured automatic notifications about test run failures so she is always in the loop.

Another benefit is TestTrack's integration across requirements management, test case management, and issue management. WysiCorp can link test runs and defects together. When a defect is fixed, testers immediately know which test runs need to be re-generated and executed to verify the fix. They can also identify defects that prevent the execution of test runs. For example, a test run checks that an application sends an email when a file is added to a directory. However, if a defect prevents users from adding files the email test run is blocked until the defect is fixed. Users are automatically notified once the defect is fixed, allowing them to execute the previously blocked test run without additional delay.

## Establish Traceability with TestTrack

WysiCorp also has to make sure its team follows its defined application development processes. For WysiCorp, this type of traceability is required by its customers to ensure work is performed properly. For many other companies, traceability is a regulatory requirement for safety-critical software.

TestTrack automatically links requirements with test cases, defects, and even source code files, enabling the team to ensure that downstream artifacts are related to actual requirements. For example, if a defect is created as a result of a test failure, the team knows immediately which requirement it affects. They'll also know exactly what test cases need to be executed to verify the fix.

When WysiCorp creates test cases, TestTrack automatically links those test cases with the specific requirements they cover, giving testers immediate visibility into which requirements they are testing. If they submit a defect, it is also automatically linked to the failed test case, which is reflected back to the requirement. When a developer fixes the defect and checks in the code file, those changes are linked back to the defect as it is marked for verification. After the fix is verified, the defect is marked as fixed, the test case is marked as completed, and the requirement is satisfied.

Traceability makes Nora's job far easier. She can quickly view the status of test cases and test runs, where new defects have been added, and the team's existing level of coverage.

Overall, the entire team knows the state of testing and the quality of the application. Further, it knows how much more testing is required, and can easily estimate the time needed to ready the application for delivery.

## Easily Test Multiple Configurations with TestTrack

TestTrack also includes test variants, which represent the variable elements of an application that need to be tested, such as multiple platforms, databases, or client types. Testers can specify which variant applies to a test run. In this case, WysiCorp's application supports four different browsers and databases.

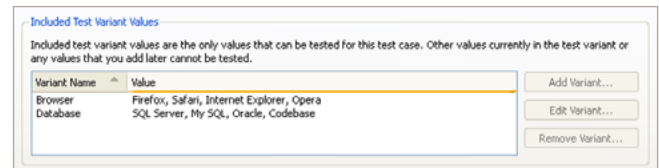


Figure 5: All the details of a test case are stored in a consistent format

When testers generate test runs, they can choose different browsers and databases. For example, during alpha testing, they might want to test Firefox and Internet Explorer with a MySQL database. The run results for each configuration are tracked in separate test runs. Since the results from the test runs are stored with the test case, it is easy to view the results for the different configurations. Nora can also quickly see which tests are completed, in progress, and waiting to be started.

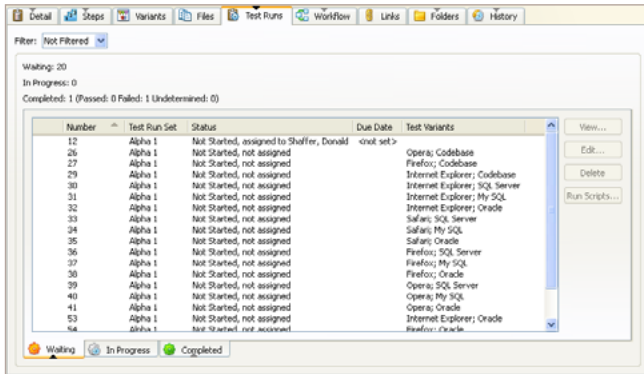


Figure 6: Test runs for multiple configurations are stored in one place

With TestTrack TCM, WysiCorp can link test cases and test runs to create contingencies. They can define parent items to indicate that a series of other test runs or test cases must be completed before the parent can be closed.

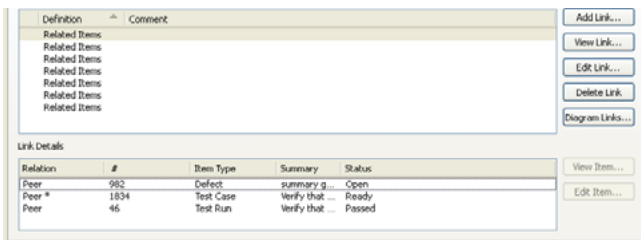


Figure 7: Link test cases and test runs to create relationships and dependencies

TestTrack's customizable folders also allow WysiCorp to organize tests by functional area, testing phase, sprint, or any other way required by the team. Because items can exist in more than one folder and there are both public and private folders, managers and testers can arrange the information in the way that makes the most sense for them.

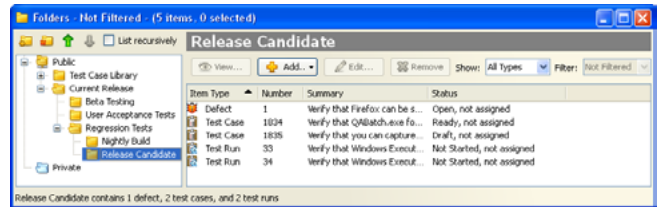


Figure 8: Use folders to organize tests

## The Right Tool Makes All the Difference

Testing tools have progressed rapidly. Not too long ago spreadsheets were the most convenient way to organize the testing effort. Now there are tools designed specifically for test case management, and there is no reason to use an inferior tool set.

Whether your testing team is large or small, TestTrack can provide many benefits including improved schedule predictability, higher product quality, increased job satisfaction, lower development costs, and shorter delivery times.