



# Coveros Coaches Platform Company

on How to Use Behavior  
Driven Development

CASE STUDY



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### Coveros Coaches Platform Company on How to Use Behavior Driven Development



#### CHALLENGES

- Unit tests not appropriately scoped
- Test suites took hours to complete resulting in slow feedback on code changes
- Lack of testing knowledge and poor test patterns led to an unstable testing culture
- Quality engineers were not involved in planning or scoping and testing was often an afterthought

#### SOLUTIONS

- Implementation of BDD and TDD to help develop appropriately scoped tests
- Targeted training on how to specify features and scenarios using the Gherkin DSL
- Coaching of squads on how to plan work using BDD
- Implementation of a BDD Test Strategy Guide with recommendations on how to scale to the rest of the organization

Coveros worked with a platform company that is a recognized global leader in multiple enterprise technology markets. The markets they operated in include intelligent business process management systems (iBPMS), dynamic case management (DCM), digital process automation (DPA), and low-code development. Our client had built a platform to help companies simplify their business process and automate key practices that deliver business value faster and more efficiently.

#### CHALLENGES

- Developers implemented unit tests that were not appropriately scoped - many tests communicated with the database, and would be better described as integration tests, slowing the developer feedback cycle and the organization's ability to rapidly release with confidence.
- Many "unit" test suites took hours to complete which provided developers with slow feedback on their code changes.
- Developers did not understand why they were writing certain types of tests and copied the poor testing patterns of developers before them, creating an unstable testing culture.
- Quality engineers were not involved in story planning or scoping, and testing was often an afterthought.
- Quality engineers did not trust the automated tests, resulting in a large manual testing effort before each release was shipped.
- Few functional automated tests existed, and those that did were not stable. As a result, the testing "pyr-

amid" that the company should have been striving for looked more like an hourglass.

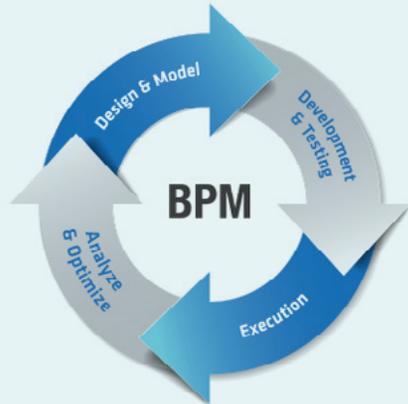
The platform company's quality engineers were having difficulty keeping up with testing the features that the development team was producing and relied on predominantly manual testing practices to fill key gaps in their testing practices. They could not count on the existing automated tests because these tests were unreliable and the coverage that was in place was not understood. The reliability issue stemmed from the developers' lack of a clear automated test strategy to efficiently and effectively test their product. Additionally, they had written a large number of integration tests that interacted with the application server and database, mistakenly referring to these tests as "unit tests." Despite having the best intentions, developers implemented substandard testing patterns, due to a lack of training and understanding and a legacy of poorly written tests, which were simply replicated from prior patterns. The platform company's ability to continue to release features to market on a regular basis was being threatened by their fragile, long-running, and poorly-understood test suite. Additionally, little automation was done at the functional level, which led to long testing cycles, without an easy way to run a regression.

#### SOLUTION

Coveros was brought on for a short-term engagement to help this platform company improve how they test their software. We decided that behavior-driven de-

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cucumber 

JUnit

## ENTERPRISE AGILE TEST ADOPTION



velopment (BDD) and the complementary practice of test-driven development (TDD) could be used to help them develop a suite of appropriately-scoped tests. Following Coveros' "Assess, Build, Scale" model, Coveros identified two exemplar agile teams (known within the company as squads), and introduced BDD, TDD, and the testing pyramid to them. To support this plan, the engagement consisted of three main parts:

- 1. Training.** A two-day training course during which two of the platform company's squads (including the developers, testers, and product owners) were introduced to BDD and TDD and gained hands-on experience with these techniques.

- 2. Test Automation Coaching.** A six-week test automation coaching engagement where two Coveros subject matter experts worked with these two squads to use BDD and TDD while they implemented features for their upcoming quarterly release. Our consultants also ensured that the execution of Cucumber tests was integrated into their DevOps pipeline.
- 3. Enterprise Adoption Plan.** Coveros laid out a high-level plan for the company to follow in order to scale this process to the entire organization. During the coaching, Coveros worked with the company's Scrum Masters, tech leads, and managers to develop a plan that the company could roll out upon completion of the coaching of the two exemplar teams.

The two-day training course covered the importance of BDD and how to actually develop and test using this technique to address their existing challenges. Coveros followed on with targeted training on how to specify features and scenarios using the Gherkin domain-specific language (DSL), as well as provided training to developers on how to write glue code using the Cucumber BDD framework. Training was concluded by having attendees complete a hands-on exercise where they implemented the glue code for a single feature, and tests to verify their code met the acceptance criteria.

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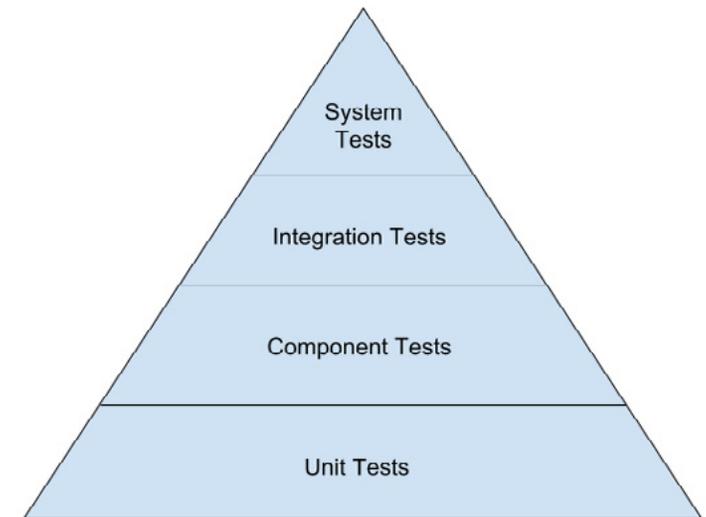
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The second part of the engagement focused on coaching the squads on how to plan work using BDD and how to implement automated tests using existing features and planned stories. Coveros coaches guided the teams on how to properly phrase their Gherkin natural language statements, in order to strike a balance between step re-usability and readability. Quality engineers learned to focus on understanding what was being tested and how that testing was implemented. This allowed for increased confidence in the automated tests and focus of manual testing efforts on difficult-to-automate aspects of the system. Coveros coaches provided technical guidance to the developers as they implemented glue code, built a more balanced testing approach, and helped the team to adopt TDD as much as was possible given the platform company's monolithic codebase and CI practices.

Finally, Coveros wrote a BDD Test Strategy Guide with recommendations on how the platform company should scale BDD to the remainder of their 30 squads.

### BUSINESS VALUE

As a result of this engagement, the platform company's squads found that agreeing to the functionality that was to be delivered for a story helped their development and testing efforts to be more focused, efficient, and sustainable while reducing manual testing. While test scoping, planning, and coverage provided significant value to the squads, additional value was



obtained by helping improve existing test automation practices. Through these practices and larger discussion, the teams (both developers and testers) were able to differentiate between different testing types and what tests belonged where. They were able to turn their testing hourglass into a testing pyramid, and saw effective tests running more rapidly within their pipeline. This led to faster and more effective feedback for the developers, which ultimately led to more confidence in the tests that were being developed. The squads were able to integrate Coveros' automated testing guidelines into their testing practices and their current BDD implementation to start building a better testing culture organically.

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