Agile Advocate: The Feedback Loop

Why wait until the end of the sprint to see if development is on track?

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The Agile Advocate is a series of thoughts or musings on the agile movement and DevOps in particular. It was motivated by the seminal work of social philosopher Eric Hoffer, “The True Believer” (1951). It's not meant to be a manifesto, but simply a series of thoughts and reflections coming from over three decades of developing and delivering software and systems of a wide variety — to an even wider variety of users and customers. My aim is not to evangelize or convert, but to provoke and stimulate discussion.

In a prior article, “Top 3 Impediments to Agile,” I listed the lack of a comprehensive continuous integration process as one of the hurdles to IT in achieving an agile posture and delivering at the cadence that supports their organizational objectives.
In particular, I highlighted the need to clearly specify your CI requirements and ensure the implementation provides the functionality and support to produce viable release candidates.

Your CI process and environment needs to support your development teams as they continually develop the functionality for your end user. But effectively getting to the product best for your users takes more than just a comprehensive CI.

The Product of Our CI

So, you’ve done the hard work and you’ve spec’d out the requirements for your CI and the supporting environment. You went that extra yard and ensured the implementation supplied the functionality and operational capabilities that meet those requirements. You’ve diligently tested and validated the CI implementation. It’s provisioned via IaC and scales against load. Unit, integration and even some level of performance testing can be performed. Static code analysis will drive quality and code metrics can be gathered and reported to ensure quality is trending upwards.

Before you know it, your development teams are on board and producing their first builds. The code is being built, compiled, tested, packaged and integrated. The teams are proceeding toward their deliverables based on their interruption of the requirements and acceptance criteria. At the end of the sprint, we’ll have a look at what they’ve produced and see how close they’ve come to what the product owners had specified and envisioned.

Why Gamble?

But why wait until the end of the sprint (or even the release, if you really want to live dangerously) to see if development is on track? What about validating application and the workflow along with testing the functionality as soon as possible? Or as soon as a specific piece of some functionality, something you’re particularly interested in or was responsible for, is available?

Well, with your well-functioning CI process, there’s no reason you can’t. We just need one more thing — a feedback loop.
So, what exactly do we need to do to get that feedback loop?

Well, first we need to establish an environment, where the CI product can be deployed for validation and testing. This new environment should be in addition to any integration environment used by the CI process. If developers are adhering to the practice of regular commits to the code base, then this integration environment will be updated and changing with each commit and prove far too dynamic for POs and testers to properly interrogate and validate functionality. I refer to this new environment as the Release Candidate, or RC, environment as it will host the most recent release candidate generated by the CI process.

**Triggering Reviews**

The decision to deploy an RC should be done by POs when they determine a release candidate is functionality complete enough or some functionality has recently been added that they want to review and provide feedback on to the development team.

But first, POs will need information to even trigger that deployment.

First, there has to be notifications sent out by the CI process upon the successful completion of a build. This is something that should already be in place with your CI, and if not, it’s easy to implement.

Secondly, there must be a comprehensive and continually updated document containing the list of features and bug fixes included with each build, commonly referred to as release notes. These release notes should be created automatically with the CI process by extracting the relevant commits and comments from the VCS.

The effectiveness of this process and the quality of the release notes relies on developers posting not only quality comments but also relating them to a story and/or task identifier. Together, the identifiers and comments will allow POs to better understand what’s in a RC and determine if it’s something they’d like to interrogate and validate.

If it is an RC of interest, it’s tagged and deployed to the RC environment and available to POs and testers. During a review, POs need to record any issues and enter them in the project’s issue tracking system. These issues need to be categorized and easily identified as “RC.x.x.x feedback” and traceable to a specific
RC. It’s this careful review and detailed feedback on the current functionality that provides the crucial input into reviews with the development teams.

**Fine Tuning**

After a review of the application state and recording their assessments, POs and development teams should meet to review and discuss. It’s here POs can provide the critical and timely feedback on where they see the product going and how it may differ from their vision. It also allows the development teams to share with the POs why some functionality and features came out the way they did and offer possible alternatives.

These reviews should not be seen as a witch-hunt, nor as missteps by either party, but as an invaluable opportunity to fine tune and vector the product and guide it to the end state that will best serve the end user.

The outcome of these meetings should produce new tasks and directives to the development teams, which should be reflected in their backlog of work and eventually make it into upcoming release candidates for review.

This process continues until the POs and testers are satisfied the functionality meets the expectations for the release. We can then cut a release branch and start migrating our release candidate down the deployment pipeline to production.

**Steer Early and Often**

Communications is challenging — especially when attempting to convey complex ideas and concepts. You should expect misinterpretations and misunderstandings resulting in gaps in implementations and expectations.

But as any engineer will tell you, the earlier these are identified and remedied, the better off you’ll be in both costs and the end product.
When we marry DevOps processes and practices with agile methodologies to produce an effective feedback loop, we have the opportunity to identify these shortcomings and misinterpretations early and often. It also gives us the opportunity to apply fine-grained adjustments to the development effort and in the process, we stand a far greater chance of delivering the product we and our end users expect.