Fire Your QA Department and Increase the Quality of Your Software

BY MIKE TAYLOR

For years you've heard some variation of the message communicated by the title of this article. The answer always involved getting developers to change their processes, think harder, use better methodologies, create better architectures, and the like…honestly, how well has that worked for you and your organization?

The challenge of changing human behavior, the complexity induced by far-flung development teams, downsizing, outsourcing, open source, and feature-rich software systems (not to mention the development environments used to create them) all increase the difficulty of building high-quality software systems on time and within budget.

Assuming that you and your development team(s) don't reside on another planet, you already know about the problems induced by the above. What you may not know is how software development technology has advanced to the point where a whole lot of quality and efficiency can be "automatically" built in while your teams do development.

Ever heard of *Continuous Collaborative Code Analysis* (C³A)? No? That's okay since it's a new term we're introducing here. It may be a new term, but the ideas it embodies and the technology to do it are well proven and being used today in leading-edge enterprise development organizations around the world.

A primary objective of C³A is to aid developers in finding and fixing problems in their code earlier in the development process. Pushing the resolution of quality issues into your QA and Testing organizations, or worst case, onto your customers, is at best expensive and can certainly be damaging to your reputation. It's common knowledge that if problems can be found and fixed early in the development process, it will result in better software, lower costs, faster time-to-market, and most importantly, happier users.

C³A uses leading-edge technology to, in effect, put an experienced software quality mentor on the shoulder of each developer, providing expert guidance with respect to the code under development…and it happens while that code is being typed for the very first time. C³A is like an automated, personal, real-time code review. It happens either continuously as code is written or "on-demand" when the developer chooses to activate it.

Continuous Collaborative Code Analysis begins with a powerful set of code standards, quality metrics, and best practices that have been encoded into your development toolset. These "rules" can be based on industry standards, company standards, and/or accepted best practices. A critical aspect is that, in addition to the hundreds of rules that typically come with C³A products, you should be able to create new rules and customize existing rules so they directly meet your organization's specific needs.

Modern software development environments like Eclipse (www.eclipse.org) and IBM WebSphere Studio have a powerful capability called "quick fix" that is linked to C³A systems so that when a problem is detected the developer is automatically offered a corrective "fix." No complex debugging process or searching through voluminous documentation; many problems are corrected totally automatically, long before the code is turned over to your QA group.

In addition to sophisticated analytical capabilities, a key element of successful C³A usage is collaboration technology that enables easy communication of rules to all developers and the automated generation of reports that can be shared with managers and other team members. The most sophisticated systems allow automatic distribution and enforcement of chosen rule sets across a team of developers and projects. Lead developers, and those given the authority, can actually load approved rule sets directly into the development environments of those under their purview, assuring that the latest standards are in use and consistently enforced. Collaboration technology can reach out and unite your developers around a common set of standards whether they are down the hall or across an ocean.

A less obvious, but very important, benefit of C³A is that it teaches developers to write better code. As the automated analysis cues a developer on issues, that developer quickly learns how to write good code the first time and avoid that problem in the future. Whether in Bangor or Bangalore, developers universally are very smart people who quickly internalize advice that leads to increased quality.

So can you eliminate your QA department? Probably not; but by implementing Continuous Collaborative Code Analysis you may be able to refocus it, putting part of its emphasis on defining and developing the rule sets and standards that will result in higher-quality code and lower costs for your organization and more satisfied customers. And you may find that you have some experienced QA people that would revel in the opportunity to join your development team…and that's a win for everyone.

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