**Software defects increase cost of Agile projects**

<http://searchsoftwarequality.techtarget.com/feature/Software-defects-increase-cost-of-Agile-projects>



by  
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**Fixing software defects can increase the cost of Agile software development projects, according to a recent voke inc. survey.**

Fixing software defects, particularly those created by changing requirements, drives up the cost of Agile software development projects, according to a new survey by voke inc. Respondents reported software project increases of $3.2 million in 2008 to $3.4 million in 2012. Overall, the survey revealed that Agile is delivering increased customer satisfaction for more than 40% of companies but isn't doing as well on making development less expensive.

Fixing software defects, particularly those created by changing requirements, drives up the cost of Agile software development projects, according to a new survey by voke inc. Respondents reported software project increases of $3.2 million in 2008 to $3.4 million in 2012. Overall, the survey revealed that Agile is delivering increased customer satisfaction for more than 40% of companies but isn't doing as well on making development less expensive.

Voke surveyed technology leaders of 200 geographically-dispersed, technology and non-technology companies to create two reports: "[Market Snapshot Report: Agile Realities" and "Strategic Brief on the Cost of Rework for Agile and Non-Agile Projects](http://www.vokeinc.com/agile.html)." Voke's research on the cost of fixing defects, or rework, in software projects is explored here, as are voke's and Agile users' advice on reducing Agile costs. The survey's revelations on development leaders' misconceptions about Agile, as well as experts' views on correcting them, are covered in a companion piece, [The Agile method remains confusing for software professionals](http://searchsoftwarequality.techtarget.com/feature/The-Agile-method-remains-confusing-for-software-professionals.).

The increase in project costs is surprising in light of significant drops in [software development team](http://searchcio.techtarget.com/tip/The-right-tools-for-a-distributed-software-development-team) size and project duration, said Theresa Lanowitz, voke's founder and a former Gartner Research analyst and Sun and Borland technologist. Average team sizes dropped from 75 people in 2008 to 30 people in 2012 and project duration from 17.2 months in 2008 to 11 months in 2012. Overall, respondents assumed that these cuts would reduce project costs, but they did not fully evaluate the costs of fixing defects and changes in requirements.

"So, 44% of the people surveyed had no idea what their rework was on a per-sprint basis," said Lanowitz. Rework -- defect removal – is always part of the cost for quality in software development.

"Given that 44% of the people do not really understand what their rework is, how can they effectively measure what the cost of the software is that they're actually building?"

One tenet of the cost of quality, a fairly well-known concept, is that the later in the lifecycle a defect is found, the more expensive it is to resolve or remediate the issue, said Lanowitz. Generally, the more software requirements are identified and clarified prior to beginning development, the less quality costs.

Voke's analysis of rework costs in non-Agile and various types of [Agile projects](http://searchcio.techtarget.com/podcast/Why-agile-projects-pose-challenges-for-enterprise-project-managers) shows the cost of rework is fundamentally different in Agile. Agile project consultants that voke surveyed reported needing customers to have flexible budgets because the end date of a project is unknown when using Agile practices, largely because requirements are not set in place initially. "The practice of analyzing and refining requirements in source code is an expensive practice and could lead to significant schedule delays," said voke's *Brief*.

Organizations surveyed showed little understanding of how the [cost of rework](http://searchsoftwarequality.techtarget.com/tip/Embrace-changing-project-requirements-but-minimize-rework) manifests differently in Agile projects, said Lisa Dronzek, co-founder of voke. "In effect, Agile embraces the fundamental realignment of business ownership of requirements to developer ownership of requirements through frequent changes in source code," she said. By moving the requirements analysis and discovery process into source code, organizations no longer benefit from inexpensive requirements changes early in the lifecycle.

The fundamental nature of the Agile movement is welcoming changing requirements even late in development, Dronzek said. Forty-eight percent of survey participants reported continuously changing requirements based on customer feedback in Agile projects versus 18% for non-Agile projects. Also, 46% reported continuously changing requirements based on new business ideas for Agile projects, compared to 15% for non-Agile projects. Additionally, 30% reported requirements changing within a sprint. Survey participants said that Agile itself adds to an increased level of requirements changes.

One survey participant noted that Agile has been, but should not be, used as an excuse to promote a lack of discipline in agreement on requirements. Effective requirements are the secret ingredient to success of any software project, Lanowitz said. Organizations should not overemphasize a perceived goal of Agile, or any process, in lieu of leveraging the most effective approaches or tools to [identify Agile requirements](http://www.agilemodeling.com/essays/agileRequirementsBestPractices.htm).

Overall, a scenario for hidden software costs is created when adding Agile development's requirements-as-you-go process with the business side's lack of clarity about how to determine the cost of quality estimates. "If you're participating in an Agile project, you really have to understand and proactively manage and measure your rework cost," said Lanowitz.