Combining the Cost Advantages of Offshore Teams with the Agility of Test-Driven Development

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Test-driven development is increasingly gaining prominence among software development methodologies. For example, a search on Amazon for "test driven development" under the category Computer and Technology brings up 937 books – almost five times more than what a search for "Scrum" brings up under the same category.

And of course, outsourcing to offshore teams is now considered mainstream in IT circles.

How about combining the two? Here comes a surprise: these two trends for lowering the cost of software development have been developing independent of each other, with very little intersection. In fact, many proponents of the test-driven development methodology propose it as an alternative to engaging offshore development teams for cost savings.

However, I don't believe that test-driven development and outsourcing are either-or scenarios. There is no reason why a company can't embrace both and get the compounded benefits.

In my opinion, the primary reason why many people in the software development industry are reluctant to trust their outsourcing teams with test-driven development arises from a flawed understanding that test-driven development does not lend itself to outsourced processes or that offshore teams do not have the maturity to embark upon Lean Agile processes such as test-driven development.

The reality is quite the opposite. In fact, almost all aspects of Lean Agile methodologies in general, and test-driven development in particular – such as the development of unit tests first, development in small increments, continuous integration, very short iterations, and flexibility over rigid processes – are ideal for the outsourcing environment.

In a study done by Vishal Sachdev and Kishen Iyengar, researchers at the University of Texas at Arlington, it was found that Agile practices such as test-driven development are actually very useful for offshore development. The researchers specifically evaluated the adoption of Agile software development in the context of outsourcing development offshore, to countries such as India. In their study, they report that "continuous testing/integration, test-first development, and short iterations seem to be the most important Agile practices which are used in outsourced information system development and show clear benefits to companies."

The authors of the study conclude, "While some communication and documentation overheads are required to compensate for the distance … the end result is more efficient and cost effective than traditional development."

Industry veterans such as Scott Ambler of IBM reinforce this study. Mr. Ambler believes that the use of Agile methodologies in software development outsourcing is "inevitable, particularly if

the buyer of such services wants to optimize its resources spent on such efforts and the seller of such services wants to compete effectively against lower labor-cost countries!"

Of course, test-driven development needs adaptations to address factors unique to offshoring. A big difference arises from geographic distance. This has been overcome by the use of Wikis, to replicate the intense consultative process that is key to test-driven development, and increased documentation.

The increased work requirement for such adaptation is more than offset by the improved productivity arising from the test-driven development methodology. The compounding effects of improved productivity of test-driven development and the lower costs of offshore resources really fit well with the super lean IT budgets of this phase of the economy.