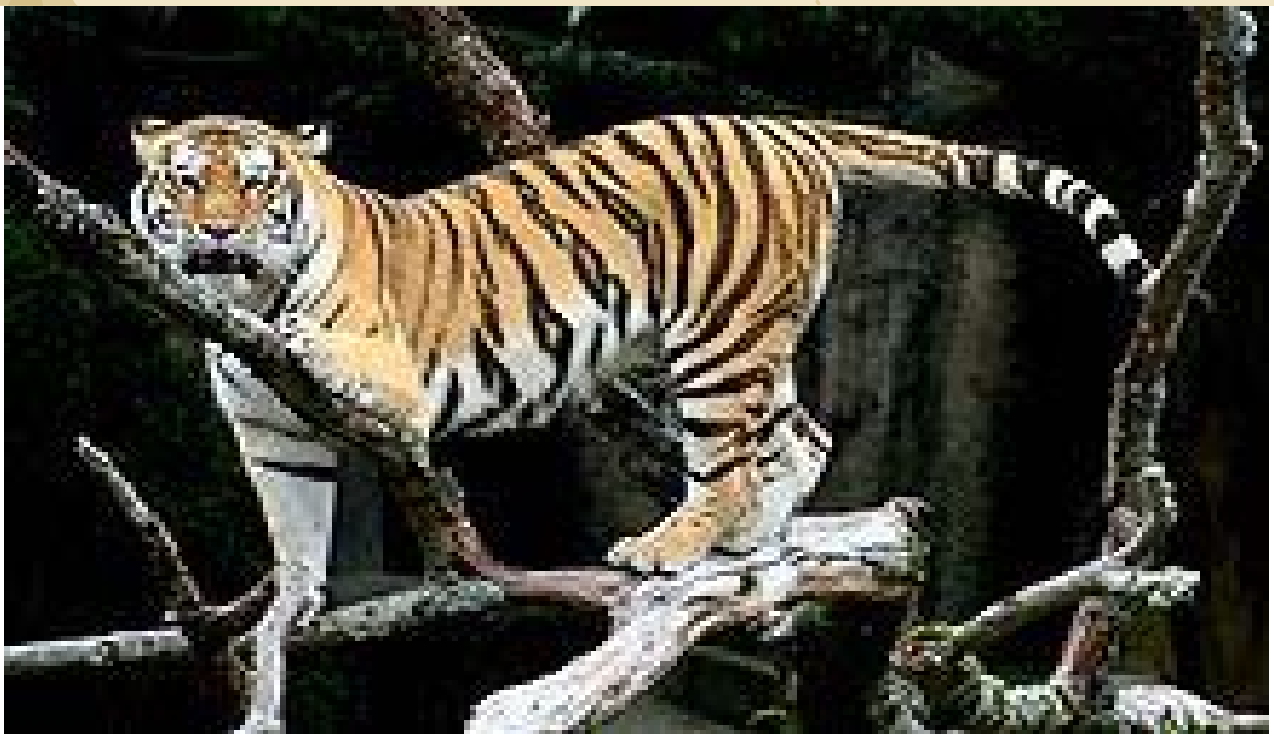
Agile Testing Opportunities

How Good Agile Processes Benefit Testing



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Agile Testing Opportunities

- Agile lifecycles are becoming common
- Every lifecycle affects testing
- I have previously presented talks and webinars on Agile testing challenges
- However, Agile processes, when done properly, also create a number of testing opportunities
- Let's look at these Agile opportunities and how testers can take advantage of them…

Automated Unit Testing

- While limited in defect finding effectiveness, automated unit tests do have the ability to limit regression risk
- They can be run as often as every few hours, or at least over night
- Automated unit tests can be combined with static code analysis and code coverage to maximize effectiveness and completeness
- Many tools are available, including open source tools

Static Code Analysis

- Static code analysis can identify many problems prior to testing
- Some static analysis can identify security and maintainability problems that testing cannot identify easily
- Many tools are available, including open source tools

Code Coverage

- Code coverage tools can tell development what they've tested and what they haven't
- Good code coverage pushes unit testing towards the 50% upper range of defect finding effectiveness
- Many tools are available, including open source tools

Continuous Integration

- Continuous integration allows detection of integration problems immediately after code check-in
- Broken builds can be reduced or even eliminated
- By combining continuous integration with automated unit testing, component integration testing and build sanity testing can be automated and almost immediate
- Many tools are available, including open source tools

Automated Functional Test

- Automated functional testing tools have evolved
- Examples include Fitnesse and Selenium
- These can be integrated into with continuous integration, automated unit testing, code coverage, and static analysis frameworks
- This provides further minimization of regression risk
- Many tools are available, including open source tools

Reviews of Requirements

- Ideally, user stories are reviewed by business and technical stakeholders early in the sprint
- Testers are involved in these reviews
- This results in high quality requirements and test oracles, resulting in early defect removal and defect prevention

Reviews of Tests

- In addition to requirements, business and technical stakeholders can review test conditions (acceptance criteria)
- This reduces the number of false positives and false negatives associated with testing
- Test results are improved
- Quality confidence and insight is also improved

Reasonable Workload

- While not always followed, when it is followed, this Agile principle helps to prevent test team burnout
- Since some testing tasks are outside the sprints (such as test automation), some testers must work outside the sprints on these long-term projects
- Proper estimation during the initial days of each iteration helps to avoid pressure on testers during the end of the iteration
- Proper estimation also includes estimation of testing

Control Technical Debt

- When done properly, Agile teams have a "fix bugs first" approach
- This prevents a large backlog of bugs and long closure periods beyond the sprint length
- Periodic stabilization sprints help as well
- Given proper metrics, testing can help measure and manage technical debt

Maximizing the Test Opportunities

- Many of the Agile testing opportunities arise from technical aspects
- Testers are best positioned when they know how to program in the language being used
- Many of the Agile testing opportunities arise from test automation
- Testers are best positioned when they know how to use test automation tools effectively

Conclusions

- Agile lifecycles, when properly done, present many opportunities to testers
- Testers should embrace those opportunities when they arise, and get involved in the Agile teams
- Maximizing the benefits of these opportunities requires testers to have certain skills
- Agile methodologies promise to increase software quality when these opportunities are exploited

To Contact RBCS

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