Wipro Meets Exacting Software Quality Standards and Fuels Global Growth through Parasoft's Development Testing Platform

Wipro, a recognized provider of IT services to Global 1000 companies, has always emphasized the high quality of its code. The Bangalore-based company maintains software standards that often are far more rigorous than those that its clients have previously experienced or presently demand. Code testing coverage, for instance, must always reach 80% to meet Wipro's exacting standards.

Reaching these high levels of software quality in a rapid and cost-effective manner is challenging. Wipro's demanding objectives regarding code review and error reduction, led the company to implement Parasoft's automated Development Testing Platform. The move has certainly paid off; Wipro's software quality commitments have helped establish the firm as a leading force in the global IT services market, contributing to its dynamic growth and solid reputation for customer focused excellence.

Objective: Maintaining Exceptional Software Quality

Considering the whirlwind growth that Wipro has experienced in recent years, the challenge of maintaining high quality standards is always a top priority for the company. The constant initiation of new client projects means that code review is a persistent issue.

The firm's clients have stringent quality requirements, but Wipro's demands are often even more exacting. When the company conducts project evaluations, it rigorously tests software code to ensure it adheres to fixed quality standards.

However, rapid growth, intensifying competition, and complexities associated with mixed solutions eventually forced Wipro to find more efficient ways of meeting these standards. "We had to find ways of doing things faster, consistently and more dependably," says Vidya Kabra, Head of the Software Engineering Tools Group at Wipro.

Wipro needed an automated solution that could evaluate the entire code base against a single standard. Automated testing would be critical to ensure code reviewers would always deliver consistent and dependable reports without spending time on activities that could be handled by a tool.

Action: Implementing Parasoft Development Testing Platform

Wipro began exploring automated software testing solutions as a means for reconciling its commitment to software quality standards with its desire to continue driving growth. "Our challenges led us to a tool-based approach," explains Vidya. "It's not only software quality, but requirements, design, integration testing, regression testing, and unit testing that needed to be productively enhanced. We were under pressure to complete projects faster with quality built-in. The tool-based approach represented an automated approach--one that would save time and effort while meeting our quality goals."

Increasing productivity through automation

After a rigorous review of potential solution providers and a series of pilots, Wipro chose to implement Parasoft's Development Testing Platform. "The products were reliable, customizable and cost effective," Vidya adds.

The Software Engineering Tools Group, which is responsible for procuring and advocating key software development tools, initially implemented Parasoft's development testing solution for Java, which enabled Wipro to automate and standardize code review. Parasoft's Development Testing Platform includes comprehensive code analysis for Java EE, SOA, Web, and other Java-based applications. "Parasoft has evolved well to become a comprehensive Java unit testing solution," says Sambuddha Deb, Chief Quality Officer, Wipro.

"Wipro has been using Parasoft successfully for years, and it is an excellent fit for Wipro's enterprise-wide Java development needs. By using Parasoft globally, we can deliver top-quality code to clients faster and more cost effectively."

Gradually, the group also integrated Parasoft's C, C++, and .NET development testing solutions, which enable businesses to automate and enforce their coding policies through static analysis, comprehensive code review, unit testing, and other practices.

Parasoft's Development Testing Platform enables teams to reduce the time and effort by 25% to reach code coverage objectives

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Wipro's Software Engineering Tools Group is responsible for evangelizing the Parasoft Development Testing Platform across the company and across projects. "We showcase features of the products and pilot them," Vidya says. "We work with project teams and provide them with a scope-based usage approach for deploying the tools. Ultimately, the tools and new approaches get embedded in the organization. Our job is to set standards of quality within different project teams throughout Wipro and enable sustained commitment to these standards with code quality tools. Violation reports from these tools are also used as an input to code quality audits, which are run frequently by Wipro's audit office.

Results: Enhancing Code Review Productivity by 25%

Wipro's software quality standard requires projects to have 80% code coverage. Parasoft's development testing platform enables teams to reduce the time necessary to achieve the required code coverage by 25%, estimates Alexis Samuel, General Manager of Wipro's SEPG, Tools Group and Office of Productivity. "Despite the dramatic mix of size, technology and complexity of the projects that Wipro executes today, customer quality expectations are only increasing. Parasoft tools help us deliver a quality product commensurate with the technical depth that we are known for," he says.

Central to Wipro's success in the development process has been its policy of reviewing projects to determine how to drive continual improvement. For instance, a team working on a project in the manufacturing domain made extensive use of the powerful static analysis tools in Parasoft. The team was able to make the following code quality gains:

- Improve code coverage and ensured quality on 27.4 KLOC
- Identify and report 2060 violations; nearly all errors were fixed (230 minor violations were skipped) Automatically generate 1191 test cases, which contributed to overall code coverage.
- Meet customer requirements on code coverage with 23.84% effort savings.

In a separate case that revolved around static analysis, a Wipro team developed a printer driver using Parasoft's development testing solution for C and C++. The objective was to identify coding standards deviations in the development code. Parasoft enabled the team to identify 22,000 coding standards violations against 187 automated coding guidelines. Wipro's team met the customer's objectives in one third of the time that would have been required using manual resources for a coding standards adherence review.

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Wipro has strengthened its position as a provider of high quality software through its usage of Parasoft's Development Testing Platform. "We have automated and standardized our best practices for providing customers the highest quality code," concludes Vidya. "We have dramatically improved the productivity of our testing efforts and this helps strengthen our position as a global provider of IT solutions."

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