Rational®

Industry:
Software

Organization:
Cygent

Description:
Cygent is the leading provider of e-business solutions for the communications industry.

Business Problem:
Cygent needed a flexible tool that supports fast-paced, iterative Web development.

Rational Solution:
Rational RequisitePro

Key Benefits:
• Enhances requirement definitions

• Ensures requirements coverage

• Support iterative Web development

• Reduces risk

• Provides requirements traceability from creation through test

• Shortens software development cycles

• Microsoft Access database integration provides custom reporting options

Rational RequisitePro Helps Cygent Manage Requirements for Fast-paced, e-business Solutions Development

Cygent is the leading provider of software solutions for the communications industry. Headquartered in San Francisco, Cygent empowers customers and business partners with self-service capabilities, creating a revolutionary end-to-end customer experience. Communication service providers — local and long distance phone companies, data and DSL carriers, ISPs, cellular and paging companies — are now enabled to effectively acquire and retain new customers, increase customer satisfaction, create new revenue channels, and deliver new products and bundles — voice, data, and content — to the market faster. Built on leading Internet and open systems technology, Cygent leverages existing systems to integrate every customer touchpoint from marketing, sales, ordering, billing and service into a personalized Web-based interface.

Linda Horne is the director of quality assurance at Cygent. She and her team of QA engineers are responsible for ensuring quality throughout the product development life cycle. Testing is a critical part of the development process at Cygent. Horne's group manages activities related to requirements management, product performance, stress load, Y2K compliance, tool selection, tool use, version control, configuration management, defect tracking, and release management. "Our team ensures that our products work correctly and conform to marketing requirements. We make sure the product is right and it's the right product," explained Horne.

Rational RequisitePro Enhances Requirement Definitions and Ensures Requirements Coverage

Cygent implemented Rational Requisite®Pro for requirements management on the 1.0 release of its e-business Platform, the company's flagship product. The project involved more than 35 resources, including marketing

managers who defined the product requirements, development engineers, QA and testing engineers, technical documentation specialists and a program manager.

The company selected Rational RequisitePro because it allows the QA team to define the requirements comprehensively in Microsoft Word, and then break each requirement down into specific parts that can be viewed, sorted, tracked and analyzed. "We can be verbose when initially creating the requirements, and then look at the individual pieces of each requirement in the centralized repository. RequisitePro provides us with the best of both worlds," said Horne.

Horne and her team use Rational RequisitePro to track how the project is doing with respect to the marketing requirements. Marketing managers maintain and update Word documents contained in RequisitePro. The QA group then ensures that all requirements are included in the software design and are thoroughly tested. "It is very easy to skip over requirements or make assumptions. RequisitePro drives us to make sure we've covered everything," she said.

Rational RequisitePro Supports Iterative Web Development and Helps Reduce Risk

Cygent uses an iterative development process for its Web applications rather than a "waterfall" method. Iterative development means that the entire development process

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is repeated several times before the software is released. This reduces the risk associated with tight-deadlines, fast-moving projects because the higher risk features are implemented first, while the less complicated features are saved for last. The waterfall method, often used for more traditional software development projects, involves finishing each phase of the project completely before moving onto the next phase.

"We use Rational RequisitePro to help identify the high-risk versus the low-risk requirements, as well as track which requirements are to be implemented in each iteration. By allowing us to take the most complicated requirements all the way through the development process first, we are able to reduce risk and meet our deadlines at the same time. RequisitePro is flexible enough to support Web-based, iterative development," she said.

Rational RequisitePro Provides Requirements Traceability from Creation through Test

Cygent also uses Rational RequisitePro to document test cases and test scripts. Each test case is linked to a specific marketing requirement. Individual test cases are also linked together into test scripts that mimic actual business processes. RequisitePro allows Horne to establish a hierarchical relationship between test cases and test scripts. "If I know that a particular test script is being run on a particular day, then I can let the marketing staff know what specific marketing requirements will be tested and invite them to attend," Horne explained.

"With Rational RequisitePro's views, I can quickly determine which marketing requirements have no test cases associated with them. I can then check that a test case is assigned and each marketing requirement is tested. RequisitePro's traceability features helped us to establish effective and efficient testing processes," she added.

Cygent Shortens Software Development Cycles with Rational RequisitePro

Time-to-market is a crucial aspect of Cygent's business. Horne uses Rational RequisitePro to "ruthlessly prioritize" requirements in order to beat the competition to market. She also uses RequisitePro to negotiate with marketing regarding which requirements are implemented in each version of the software.

Their requirements are divided into four categories: strategic, "forward thinking" requirements that the market has not asked for yet; customer-driven, "requested" requirements; technology-driven requirements; and "feature complete" requirements for adding more bells and whistles to existing requirements or providing fixes. Each release has a mixture of the four categories of requirements, and Rational RequisitePro helps Horne work closely with marketing to identify the project scope in order to meet schedule deadlines.

Microsoft Access Database Integration Provides Custom Reporting Options

Because Rational RequisitePro runs on the Microsoft Access database, Horne was able to easily export requirement data from the RequisitePro repository into Access for producing metrics and management reports. One of the custom reports she created in Access is a test coverage report, which includes the number of requirements, how many test cases are included in test scripts, and how many are not.

"We wanted a requirements management tool with both word processing and database options for defining and sorting requirements. We also needed a tool that wasn't too expensive. Rational RequisitePro provided us with the features we needed at a price point that made sense," said Horne.