

IBM Rational Introduces New Quality and Requirements Management Offerings Which Extend the Value of the Jazz Platform

Abstract

On Tuesday, October 21st, 2008, IBM's Rational division announced multiple offerings aimed at improving the efficiency, quality, and discipline of software development projects. Three new Test Management and two new Requirements Management products, all of which leverage or extend IBM's new Jazz Team Server platform, will be generally available (GA) on October 28th. The announcements also include enhancements to multiple domain-specific products, including Rational Tester for SOA Quality and Rational Performance Tester.

The ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) team sees these announcements as being timely for several reasons. The platform architecture facilitates collaboration and provides a foundation for product extensions and integrations. In addition, today's unsettled economy is forcing IT organizations to examine ways to stretch budgets. Building quality control into the early phases of the application lifecycle can drive significant Return on Investment (ROI) downstream. Finally, such products help IT organizations mature the development process by adding support for best practices and a disciplined approach to building and maintaining custom software.

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IBM Rational's Software Quality Focus

In October, 2008, IBM Rational announced impressive additions and enhancements to an already broad portfolio of products that manage the Software Development Lifecycle (SDLC). The new solution offerings, built on the Jazz collaboration platform, provide centralized management of software requirements definitions and testing. They also feature product enhancements that introduce quality management earlier in the application lifecycle, accelerate time to market, provide better visibility to software assets throughout the SDLC, and offer a framework for development processes based on industry best practices.

Originally announced in June, 2007, IBM's Jazz platform provides a common set of services that reduce administration costs and enable team collaboration. These qualities make it an ideal platform for today's distributed development teams and projects. At the time, IBM indicated that Jazz technology would eventually be incorporated into the entire Rational line. IBM Rational Jazz Team Concert was introduced in June 2008, demonstrating, along with the current announcements, IBM's continued commitment to that vision.

The new offerings leveraging Jazz Team Server include:

- Rational Quality Manager Standard Edition
- Rational Quality Manager Express Edition
- Rational Test Lab Manager
- Rational Requirements Composer

In addition, Rational RequisitePro provides the bridge to integrate requirements and test activities.

Enhanced domain-specific testing products include:

- Rational Software Analyzer
- Rational AppScan Tester Edition
- Rational Performance Tester
- Rational Functional Tester
- Rational Tester for SOA Quality
- Rational Test RealTime

EMA research conducted in mid-2008 found that the most commonly deployed enterprise application type is custom software. 80% of companies surveyed had custom software in production, a higher percentage than Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), or any other application type.

Software Development: A Risky Business

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Regardless of the fact that custom software is so common, software development has traditionally been an ad-hoc activity at best. The norm has been to collect all requirements at the start of the software lifecycle, create and unit test software in a single drawn-out project, then integration test as an afterthought before deployment to production. Requirements definition was hit or miss at best, and development teams often found, late in the development process, that key stakeholders had been omitted from the process. Test cases and test data were created and re-created for each new project, and often omitted testing for key requirements and objectives. The result was that over 60% of the time, software development projects fell short of expectations.

If the failure rate is 60%, this means that only 40% of budget dollars invested in software development yield business value. The other 60% is essentially wasted. The natural conclusion is that reversing this trend can yield very rapid ROI.

Multiple research studies testify to the advantages of early, comprehensive, and iterative software testing. One of the best known studies, conducted by the U.S. National Institute of Standards and Technology¹, defined the success of a software project as one that is delivered on time, on budget, and that meets all initial requirements. It quantified the effect of better testing, citing research findings indicating that, while software problems discovered during the requirements specification phase cost 1X to fix, the same fix once the software is in production can cost between 470 and 880X.

¹ Software Errors Cost U.S. Economy \$59.5 Billion Annually: NIST Assesses Technical Needs of Industry to Improve Software-Testing, downloaded October 27, 2008 from http://www.nist.gov/public_affairs/releases/n02-10.htm

New Methodologies and Tools Help to Reverse This Trend

From the process perspective, many development organizations are turning to Agile and related methodologies to help reverse this trend. These newer development techniques emphasize collaboration, frequent communication among team members, projects divided into consumable “chunks,” and iterative development with frequent testing. Agile enthusiasts claim much higher rates of success. They also find, however, that successful project completion relies on tighter overall control of the SDLC, along with better collaboration and communication among team members.

Products can help drive the evolution to more effective development methodologies. Rational products provide industry-recognized requirements specification, testing, and collaboration products that support and enable all types of development projects. Designed to improve governance and control throughout the software lifecycle, IBM Rational products are also distinctive in terms of the visibility and collaborative capabilities they enable.

Rational announced the Jazz platform and the first Jazz-based product, IBM Rational Team Concert, at the Rational Software Developer Conference in June of this year. The current announcements add requirements definition and testing to the collaboration platform, giving all stakeholders role-based visibility to requirements and input to requirement changes throughout the lifecycle. In terms of testing, the next-generation products enable tests to be shared among stakeholders and even from project to project, making the most of testing assets and the effort that goes into crafting them. They also provide capabilities to ensure that testing assets keep pace with changing requirements throughout the life of the project.

Key Ramifications

Platform-based

- The Jazz-based products are built on a Web platform, enabling role-based collaboration across iterative development projects. This enables development teams to transcend silos and ensure that delivered products meet the requirements of all stakeholders.
- Jazz provides an integration layer that simplifies linkages to other products within the IBM portfolio, as well as with third-party partners. IBM Rational solutions on the Jazz platform currently integrate with IBM Tivoli, WebSphere Lotus and Information Management products, as well as with Microsoft and HP solutions.

Breadth of coverage

- Few, if any, competing vendors address the breadth of platforms covered by IBM Rational's centralized testing solution. Supported platforms include mainframes, midrange, Java, J2EE, .NET, and SAP NetWeaver.
- Tests can be selected based on platform.

Enriched test plans

- Testing for most competing solutions focuses on code testing only. Rational Test Management centralizes both test-related data and metadata, including project management assets, security and governance mandates, staffing and skills availability, use cases, and sign-off criteria. This provides a single, integrated platform where both tests and associated documentation can be stored and accessed.

- Test plans can be versioned, allowing them to evolve along with requirements and in context to multiple phases of the SDLC.
- Versioning also allows re-use of tests and test data in other projects.

Better support for consistent manual testing

- New provisions for manual testing, to enter input data once and use it repeatedly, yield consistency across the lifecycle and across testing teams
- Expected outputs are stored with test plans

Best practices

- The science of software development is maturing, and the Rational line helps IT organizations to evolve along with industry best practice

EMA Perspective

Best practices in software development continue to emerge and mature. Products that support best practices can help companies maximize software development investments by ensuring against project failures. Current best practices emphasize stakeholder involvement throughout the software lifecycle, delivering software iteratively and often, cross-team communication, and frequent testing. Rational's emerging platform-based approach continues to evolve and mature.

Rational's differentiators are difficult for competitors to equal, and the new Jazz platform foundation may well turn out to be one of the best investments the Rational team has made. It positions Rational for many of the agility benefits of Service Oriented Architecture, as well as for simplified integration with other IBM and partner products. It also offers a compelling management story for IBM by providing for integration of relevant Rational assets with the IBM Tivoli management platform.

Using development-time analysis and artifacts to simplify software deployment and management is today's leading edge, as the lines between development-time and production-time continue to blur. The Jazz platform positions IBM Software to take advantage of this transformation, one that IBM is distinctively positioned to address.

One disadvantage of many of the IBM Software solutions is that, although they can be scaled back to "Express" versions, suite solutions tend to be best suited to large companies. Their power, versatility and the wide range of platforms they address optimize them for the enterprise, and supporting them requires the technology and skills assets that tend to be available in very large IT organizations. The new generation of Jazz offerings reduces administration cost and helps extend their reach to smaller companies.

EMA continues to be impressed with IBM's commitment to growing and strengthening its software product line. For companies seeking to improve the ROI delivered by software projects – particularly mid-sized to large companies – we believe Rational's value proposition is difficult to match.

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