



Virtusa's Pegasystems QA Offerings

Validating and verifying complex Pegasystems implementations

"Poor software quality costs over \$60B per year. Finding, repairing defects = approximately 35% of project budget."

– Forrester Research

Industry challenges

IT organizations implementing Business Process Management (BPM) solutions face significant challenges across the product life-cycle, specifically in the software quality life-cycle. Much of the complexity encountered in a BPM project lies in software quality assurance, including implementing an appropriate test strategy, automating rules-based testing, conducting accurate and usable performance tests, and compatibility and internationalization validation. Managing workflows, rules-based configuration verification, and ensuring compatibility with updated versions all take significant time and effort due to the large range of test cases and outcomes for robust BPM solutions. This is coupled with and complicated by the general nature of Quality Assurance (QA) programs with limited budget, time, and resources.

To meet these objectives, organizations often turn to IT service providers who understand the industry domain, the BPM product, and the unique requirements of BPM quality assurance requirements. Virtusa has unmatched expertise in Pegasystems' BPM platform, emanating from our strategic product engineering and testing relationship with Pegasystems itself. This enables our clients to achieve faster time-to-market, increased return on investment and high reliability in their Pegasystems' projects. We combine our long history as a design, engineering, and QA partner of Pegasystems with our philosophy towards a pragmatic and production-profile based QA strategy for BPM.

Virtusa's Pegasystems ISQ expertise

Virtusa's comprehensive Independent Software Quality (ISQ) practice offers QA services that assure organizations a high level of software quality. Our Pegasystems' PRPC Center of Excellence (CoE) maintains a large pool of technical and business consultants. They specialize in banking, financial services, healthcare, insurance, communications and other industries, with skill profiles ranging from domain specialists to test managers and test specialists.

With extensive knowledge in PRPC, we have executed over 50 BPM projects for Pegasystems' clients. Our testing experience includes:

- The PRPC core platform
- Customer Relation Management (CRM)
- Exception management
- Case/Dispute & investigation management
- Domain specific Pegasystems frameworks
- Integration to Pega BPM, Directly Capture Objectives (DCO), and Test Management Framework (TMF) capabilities

With our proven tools, methods, and accelerators, our CoE ensures that customers get robust BPM implementations, faster rollouts, timely upgrades, dependable production support and effective testing. Our world-class ISQ experts follow our mature QA methodology and utilize state-of-the-art test labs and automation tools to ensure high software.

Key differentiators

- Experience in more than 50 Pega implementations
- More than 335 consultants deployed worldwide
- Over 185 PRPC certified architects
- Supports Pegasystems recommended iterative development methodology
- Focus on reusable assets and proprietary processes and tools reduces the time to test and the costs involved in BPM testing
- PRPC upgrade QA assessment
- Proven Pegasystems performance validation experience

Experience with PRPC frameworks

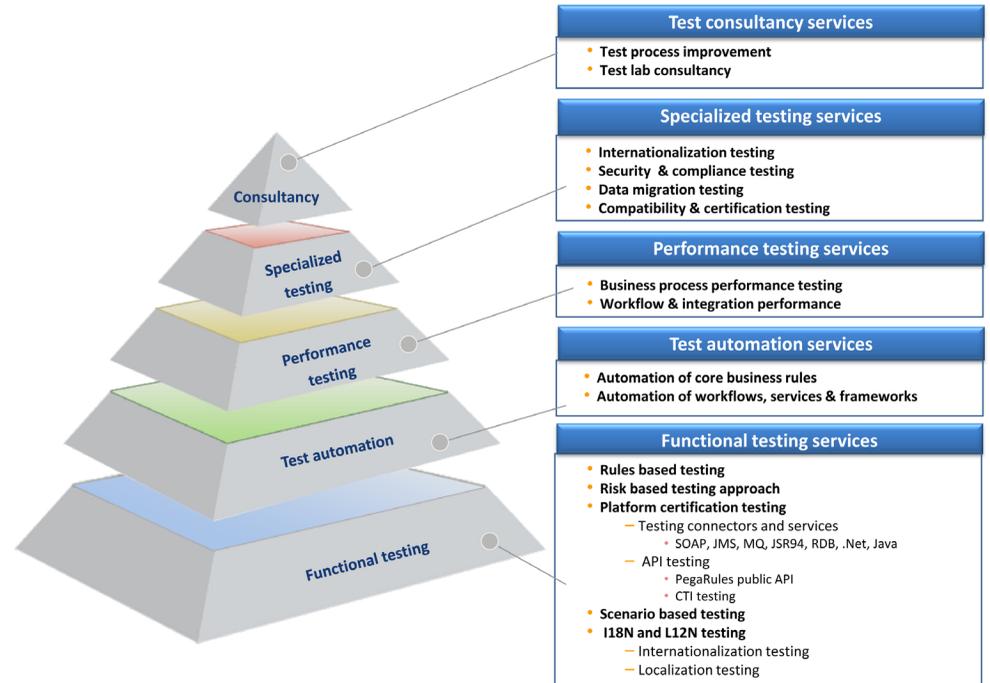
- Smart Adjust, Smart Dispute and Smart Investigate
- Customer Process Manager (CPM)
- Product Configuration Framework
- Test Management Framework and its integration into enterprise QA
- Financial Services Industry Foundation
- CPM for Financial Services
- Healthcare Payer Industry Framework
- Healthcare and Evolution Tools

Our PRPC QA service offerings

- PRPC platform certification
- PRPC solution performance profiling
- PRPC solution testing
 - Scenario-based tests of PRPC solutions and customized frameworks
 - Functional and rules-based testing
 - Test automation

Virtusa's ISQ service offerings for Pegasystems

Our ISQ services for Pegasystems customers are tailored to specific needs and focused on delivering high business value.



Our service offerings include:

- **PRPC quality assurance, performance, and test automation:** Functional testing (automated and manual), rules-based testing, usability testing, performance testing, test certification, performance analysis using PRPC tools--PAL, DBTrace, AppProfiler, LoFAT (Log file analysis tool), and load, stress & endurance testing using external tools
- **PRPC platform certification testing:** Upgrade, migration and compatibility testing across different PRPC versions, operating systems, databases and application server environments
- **I18N (Internationalization) and L12N (Localization) testing:** I18N and L12N testing for enterprises using internationalization and localization features

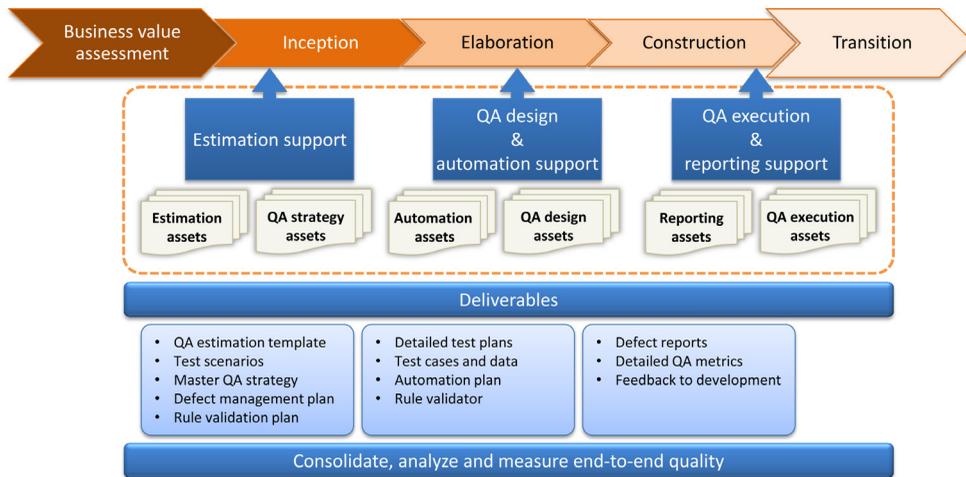
Our point of view

A decade of software quality experience combined with deep knowledge of PRPC and strong domain skills in banking, financial services, healthcare, insurance and communications give us a defined point of view on getting the best value from Pegasystems' solutions:

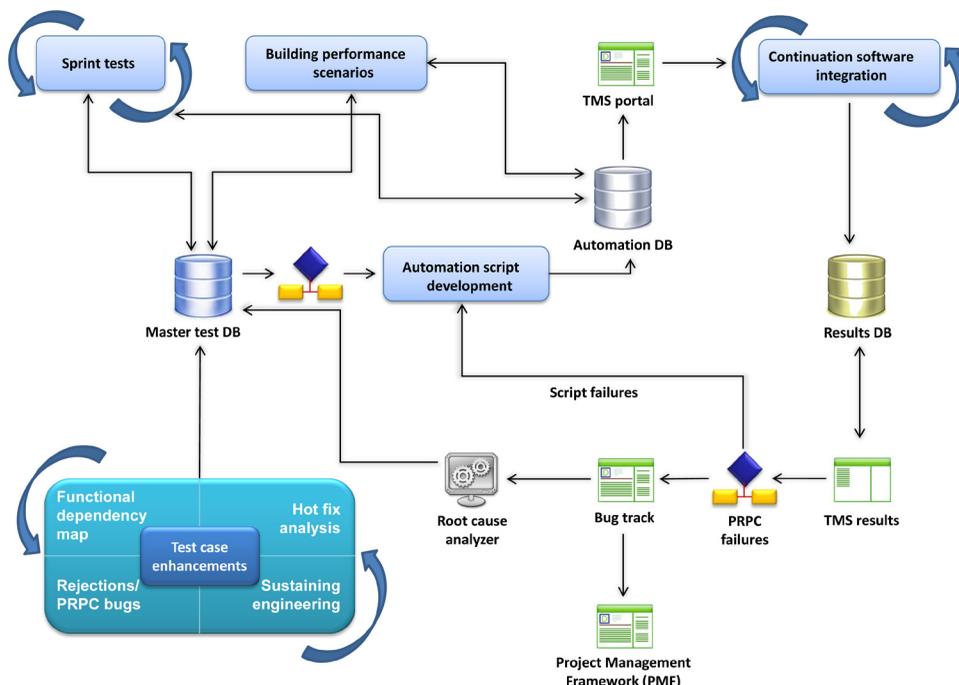
- Testing PRPC workflows is essential with every implementation
- Testing should include PRPC integration with existing applications
- Specific business process component testing, such as rule-based testing, needs to be planned for and executed before starting integration or end-to-end testing
- All customizations should be thoroughly tested
- Application performance testing is critical to ensure that the application scales as required

ISQ approach for Pegasystems' implementation

Our ISQ approach fits into the multi-phase implementation approach suggested by Pegasystems. This is further tailored to support or help mature any enterprise QA capability.



Our PRPC test infrastructure has evolved through years of PRPC testing and provides continuous software integration, automation and test regressions.



Success stories

- **Leading bank's credit card division:** We tested workflows for customer service through Customer Process Manager, leading to reduced processing costs of disputes through Smart Dispute
- **Leading mobile telecom group:** We provided internationalization testing (in 10 languages) for a performance dialogue system
- **Leading healthcare provider:** We provide ongoing test engineering services and recently upgraded to version 6.3

Virtusa Pegasystems ISQ accelerators

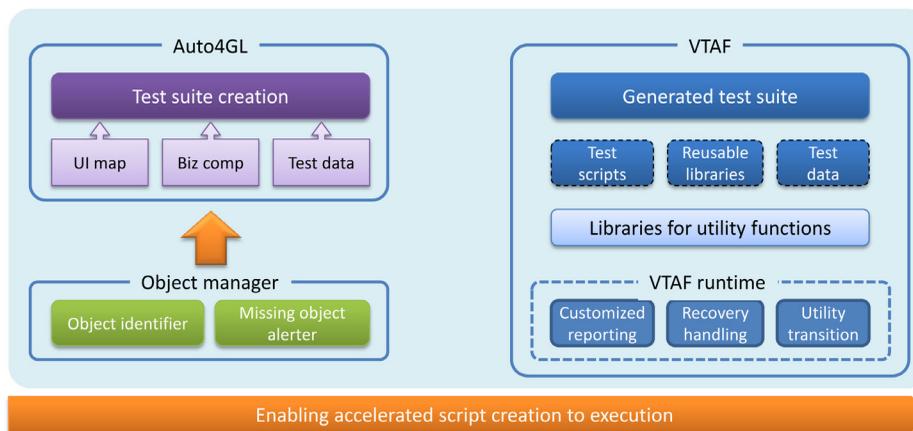
Vrule™ framework

- Enables testing of complex rules-based applications
- Automatic generation of robust test cases
- Minimal test case maintenance time and cost
- Significant increase in test coverage
- Establish traceability to requirements

Rule coverage tool

- Helps early identification of bugs prior to QA, enabling faster testing
- Mapping the rules to specific test case scenarios
- Reporting on rule changes from build to build
- Extracting the best combination of changed rules
- Ensuring full regression within tight deadlines

Accelerate testing using Virtusa Pegasystems test framework:



Virtusa delivers business value through Pegasystems ISQ

Our Pegasystems QA solution leverages our deep experience in enabling BPM projects, strong Pegasystems' product platform skills and our testing best practices to deliver:

- Enhanced customer service by ensuring that the processes are oriented towards supporting business functions
- Reduced cost of development through early and iterative testing
- Reduced maintenance overheads by improving quality of deployed applications

Pegasystems ISQ best practices

- Run a First Use Assembly (FUA) cycle before the actual test. Tune the environment as needed based on pre-test data
- Design load tests to meet the business uses of the solutions. Execute tests that are as close as possible to the real anticipated use of the application
- Design UI test cases with Pegasystems UI components enabling PRPC guardrail compliance
- Follow risk-based test design approach to identify critical issues upfront

Pegasystems-trained QA resources

- Faster ramp-up on Pegasystems applications because of their underlying knowledge of Pega concepts such as worklists, workbaskets, user roles, workflows, etc.
- Enables them to better understand application architecture and use that knowledge to improve test plans and approach
- Use Pegasystems knowledge to use techniques and workarounds to get around any blockers (accessing clipboard to update variables, etc.)
- Familiarity with/Quick ramp-up on Pegasystems Test Management Framework (TMF)

For information on how Virtusa can help solve your business problems, write to salesinquiries@virtusa.com or visit www.virtusa.com

About Virtusa

Virtusa provides end-to-end information technology (IT) services to Global 2000 companies. These services, which include IT consulting, application maintenance, development, systems integration and managed services, leverage a unique Platforming methodology that transforms clients' businesses through IT rationalization. Virtusa helps customers accelerate business outcomes by consolidating, rationalizing and modernizing their core customer facing processes into one or more core systems.

Virtusa delivers cost-effective solutions through a global delivery model, applying advanced methods such as Agile and Accelerated Solution Design to ensure that its solutions meet the clients' requirements. As a result, its clients simultaneously reduce their IT operations cost while increasing their ability to meet changing business needs.

Founded in 1996 and headquartered in Massachusetts, Virtusa has operations in North America, Europe and Asia.

