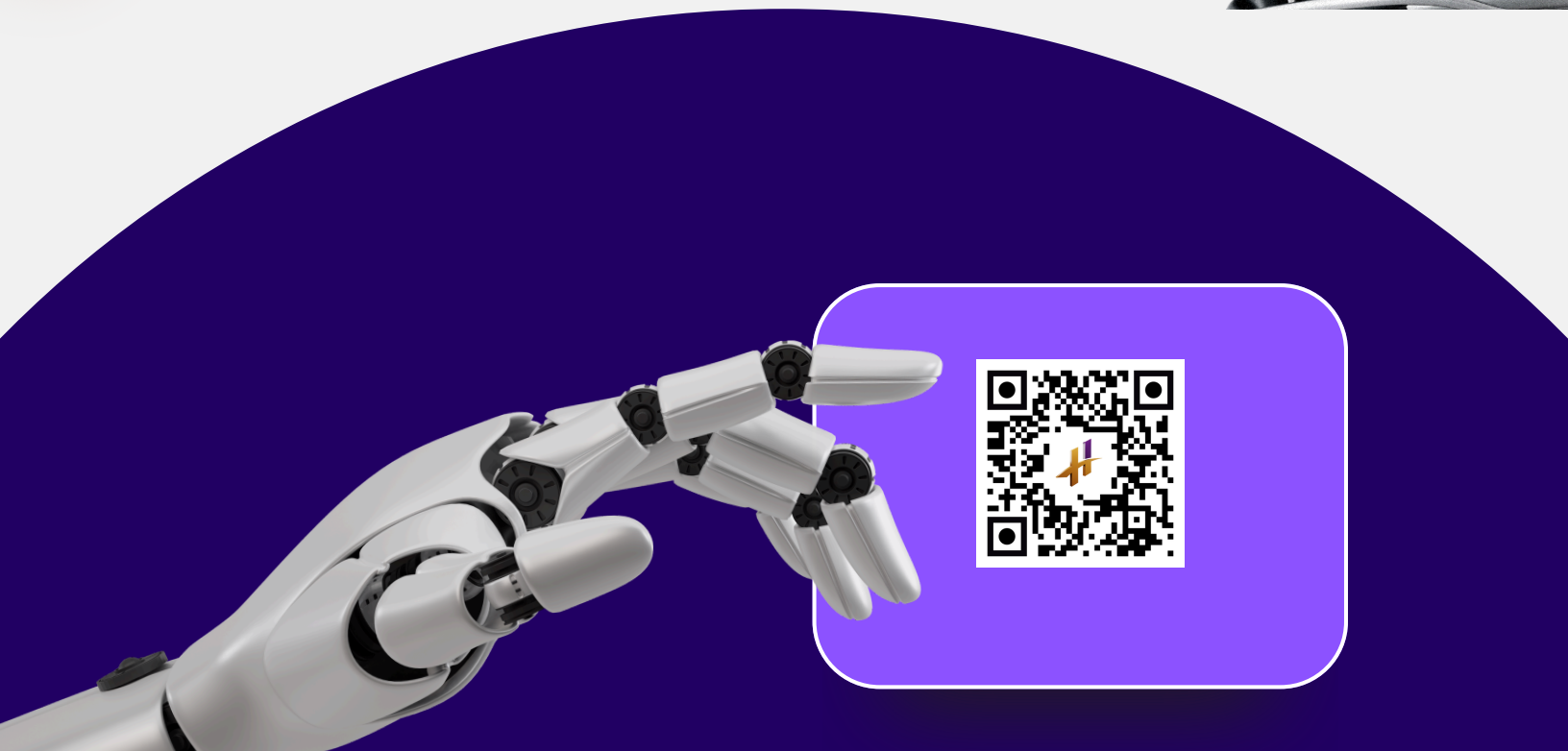


Software Testing & Quality Engineering Services

*Deliver Reliable,
Secure, and High-
Performance Digital
Products*

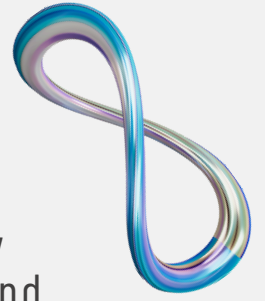


Software Testing & Quality Engineering Services



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Introduction

In today's fast-paced digital environment, software quality directly impacts customer experience, brand reputation, and business growth. A single critical bug in production can cost thousands in lost revenue, damage customer trust built over years, and create technical debt that haunts future releases.

Modern quality engineering is different. It's not just about finding bugs—it's about preventing them, automating repetitive validation, and building quality into every stage of the development lifecycle.

At Hanumanta Consulting, we provide end-to-end testing and quality engineering services that help businesses launch stable, secure, and scalable software products with confidence. Whether you're a startup moving fast or an enterprise managing complex systems, we ensure quality keeps pace with your innovation.

Our Software Testing & QA Capabilities

- Quality Engineering Approach
- Functional Testing
- Test Automation Engineering
- Performance & Load Testing
- Security Testing
- Mobile & Cross-Platform Testing





1) Quality Engineering Approach

We embed quality throughout the development lifecycle—not just at the end.

Traditional testing happens after development is "done." Modern quality engineering starts before the first line of code is written and continues through production monitoring.

Our quality engineering process:

- **Requirement Quality Analysis**

Review requirements for completeness, testability, and ambiguity. Unclear requirements lead to defects—catching them early saves rework.

- **Test Strategy & Planning**

Define what to test, how to test it, what to automate, and what success looks like. Strategy prevents wasted effort.

- **Test Design & Execution**

Create test cases that cover functional requirements, edge cases, error conditions, and non-functional requirements.

- **Automation Framework Development**

Build maintainable test automation frameworks that scale with your application. Good automation is an investment, not just a script.

- **CI/CD Quality Integration**

Integrate automated tests into your deployment pipeline. Quality gates prevent broken code from reaching production.

- **Continuous Quality Monitoring**

Monitor production systems for errors, performance degradation, and user experience issues. Quality doesn't stop at deployment.

Why it matters: Quality built in is cheaper and faster than quality inspected in. Catching defects early reduces cost by 10-100x compared to fixing them in production.





2) Functional Testing

Ensure your application works exactly as intended across all business scenarios.

Functional testing validates that every feature, workflow, and user interaction behaves according to requirements—from happy paths to edge cases.

Our functional testing services include:

- **Manual Testing**

Expert testers explore your application from the user's perspective, identifying usability issues and unexpected behaviours that automated tests miss.

- **Regression Testing**

Verify that new changes don't break existing functionality. Critical for continuous deployment and maintaining system stability.

- **Integration Testing**

Validate that different modules, services, APIs, and third-party integrations work together correctly.

- **System Testing**

End-to-end testing of complete workflows across your entire application stack.

- **User Acceptance Testing (UAT) Support**

Help your business stakeholders validate that the system meets their needs before go-live. We design test scenarios, coordinate testing sessions, and manage defect resolution.

Why it matters: Features that work in isolation often fail when combined. Comprehensive functional testing catches these issues before customers do.





3) Test Automation Engineering

Accelerate release cycles with robust, maintainable automation frameworks.

Manual testing doesn't scale. As your application grows, regression testing everything manually becomes impossible. Automation is how modern teams ship faster without sacrificing quality.

Our automation services include:

- **Web Application Automation**

Build reliable test suites for web applications using modern frameworks (Selenium, Cypress, Playwright). Cover critical user journeys, forms, workflows, and integrations.

- **API Automation Testing**

Validate REST and GraphQL APIs for functionality, data integrity, error handling, and performance. API tests run faster and are more stable than UI tests.

- **Mobile App Automation**

Automated testing for native iOS and Android apps using Appium and platform-specific tools. Test across multiple devices, OS versions, and screen sizes.

- **CI/CD Integrated Test Automation**

Embed automated tests in your deployment pipeline. Every code commit triggers relevant tests, providing immediate feedback to developers.

- **Framework Design & Best Practices**

We build maintainable automation frameworks with proper abstraction layers, reusable components, and clear reporting. Tests should be assets, not liabilities.

Why it matters: Automation isn't just faster—it's consistent. Automated tests run the same way every time, catching regressions that humans might miss after the 50th manual run.





4) Performance & Load Testing

Ensure your systems perform reliably under real-world usage conditions.

Your application might work perfectly with one user. But what happens with 1,000 simultaneous users? Or when traffic spikes 10x during a marketing campaign? Performance testing answers these questions before your customers experience slowdowns or outages.

Our performance testing capabilities:

- **Load Testing**

Simulate realistic user traffic to identify performance bottlenecks, database query issues, and infrastructure limitations before they impact customers.

- **Stress Testing**

Push your system beyond expected limits to find breaking points. Understand how your application degrades under extreme load and how quickly it recovers.

- **Scalability Testing**

Validate that your infrastructure scales properly—whether you're adding servers, users, or data volume. Ensure performance remains acceptable as you grow.

- **Endurance Testing (Soak Testing)**

Run sustained load over extended periods to identify memory leaks, resource exhaustion, and degradation that only appears over time.

- **Performance Monitoring & Optimization**

Identify slow queries, inefficient code paths, and infrastructure bottlenecks. We don't just report problems—we help you fix them.

Why it matters: Performance problems discovered in production are 10x more expensive to fix than those caught in testing. Load testing gives you confidence to handle success.





5) Security Testing

Protect your applications and user data from vulnerabilities and threats.

Security breaches destroy trust and can put companies out of business. Security testing isn't optional—it's essential for protecting your customers, your data, and your reputation.

Our performance testing capabilities:

- **Vulnerability Assessment**

Scan your applications and infrastructure for known vulnerabilities (CVEs), misconfigurations, and security weaknesses.

- **Security Risk Analysis**

Evaluate your application architecture for security risks—from authentication flaws to insecure data storage to insufficient access controls.

1. **Application Security Testing (SAST & DAST)**

- **Static Analysis (SAST):**

Analyze source code for security vulnerabilities before deployment

- **Dynamic Analysis (DAST):**

Test running applications for exploitable security flaws

- **Authentication & Authorization Testing**

Verify that user authentication is secure and that authorization properly restricts access. Test for privilege escalation, session management issues, and insecure password handling.

- **OWASP Top 10 Testing**

Systematically test for the most critical web application security risks: injection attacks, broken authentication, sensitive data exposure, XML external entities, broken access control, security misconfiguration, XSS, insecure deserialization, and more.

- **API Security Testing**

Validate API authentication, authorization, rate limiting, input validation, and data exposure risks.

Why it matters: A single security vulnerability can lead to data breaches, regulatory fines, lawsuits, and irreparable brand damage. Security testing is risk management.





6) Mobile & Cross-Platform Testing

Deliver seamless experiences across devices, platforms, and browsers.

Your users access your application from dozens of device types, browsers, and operating systems. What works on your laptop might break on an older Android phone or Safari on iOS.

Our cross-platform testing coverage:

- **Native Mobile App Testing (iOS & Android)**

Functional testing, performance testing, and usability testing for native mobile applications across different devices and OS versions.

- **Cross-Browser Testing**

Validate that your web application works consistently across Chrome, Firefox, Safari, Edge, and mobile browsers. Different browsers render and execute code differently—we catch these inconsistencies.

- **Device Compatibility Testing**

Test on real devices (not just emulators) across different screen sizes, resolutions, hardware capabilities, and network conditions.

- **Responsive Design Testing**

Verify that your application adapts properly to different screen sizes—from desktop monitors to tablets to smartphones.

- **Usability Testing**

Evaluate user experience, navigation intuitiveness, accessibility compliance, and interaction design across platforms.

- **Offline & Poor Network Testing**

Validate behavior when network connectivity is lost, slow, or intermittent—critical for mobile applications.

Why it matters: Your users don't care that it works on your development machine. It needs to work on their device, with their network conditions, in their real-world context.





Technologies & Platforms We Work With

We work with modern, industry-standard testing tools:

- **Test Automation Frameworks**

Selenium • Cypress • Playwright • Puppeteer • TestCafe

- **Mobile Testing**

Appium • XCTest • Espresso • Detox

- **API Testing**

Postman • REST Assured • Pact (contract testing) • SoapUI

- **Performance Testing**

Apache JMeter • Gatling • k6 • Locust • LoadRunner

- **Security Testing**

OWASP ZAP • Burp Suite • Snyk • SonarQube • Checkmarx

- **CI/CD & DevOps Integration**

Jenkins • GitHub Actions • GitLab CI • CircleCI • Azure DevOps

- **Test Management & Reporting**

TestRail • Zephyr • Allure • ExtentReports • Custom dashboards

- **Cloud Testing Platforms**

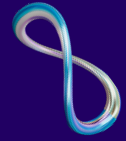
BrowserStack • Sauce Labs • AWS Device Farm



Industry-Specific Testing Experience

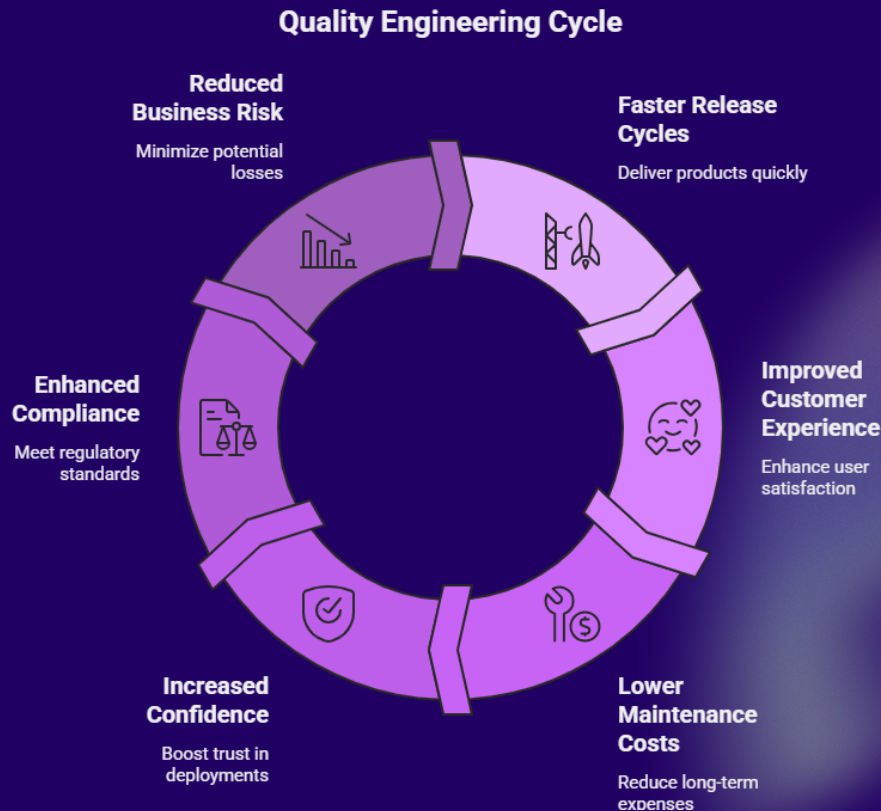
We've delivered quality engineering for:

- **SaaS & Cloud Applications:** Multi-tenant testing, data isolation validation, API testing, performance at scale
- **E-commerce & Retail:** Payment gateway testing, checkout flow validation, inventory management testing, high-traffic load testing
- **FinTech & Banking:** Security-critical testing, regulatory compliance validation, transaction accuracy testing, fraud detection testing
- **Healthcare:** HIPAA compliance testing, patient data security, clinical workflow testing, medical device software testing
- **Mobile Apps:** iOS and Android testing, app store compliance, push notification testing, offline functionality
- **Enterprise Software:** Complex workflow testing, role-based access control, integration with legacy systems



Business Outcomes You Can Expect

Working with Hanumanta Consulting delivers measurable quality improvements:



- **Faster release cycles with reduced defects**

Automation and early testing enable continuous deployment without sacrificing stability. Ship features weekly or daily instead of quarterly.

- **Improved customer experience and product reliability**

Fewer bugs mean happier customers, better reviews, and higher retention. Quality is a competitive differentiator.

- **Lower long-term maintenance costs**

Preventing defects is cheaper than fixing them. Quality engineering reduces technical debt and firefighting.

- **Increased confidence in production deployments**

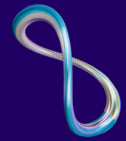
When you trust your testing, deployments become routine instead of anxiety-inducing events. Teams can innovate faster.

- **Better compliance and security posture**

Systematic security and compliance testing protects against breaches, regulatory violations, and reputational damage.

- **Reduced business risk**

Quality issues can destroy startups and damage established brands. Comprehensive testing is risk mitigation.



Testing Services by Development Phase

Software Testing Lifecycle



- **Pre-Development**

Requirements review, testability analysis, test strategy planning

- **During Development**

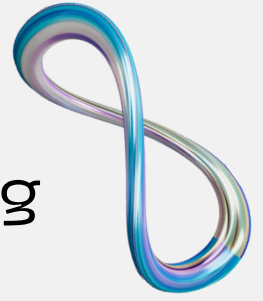
Unit testing support, integration testing, continuous testing in CI/CD, test automation development

- **Pre-Release**

System testing, UAT support, performance testing, security testing, cross-browser/device testing

- **Post-Release**

Production monitoring, smoke testing for hotfixes, regression testing for updates



Why Choose Hanumanta Consulting for Quality Engineering

Quality-first engineering culture

Quality isn't a phase—it's a mindset. We help you build quality into every stage of development, not just test at the end.

Startup agility with enterprise QA processes

We move fast without cutting corners. You get rapid testing cycles with rigorous quality standards.

Automation-first strategy

We prioritize automation for repetitive testing while applying expert manual testing where it adds most value. The goal is sustainable velocity.

Transparent reporting and defect tracking

You always know the quality status of your application. Clear metrics, dashboards, and defect reports keep everyone aligned.

Seamless collaboration with development teams

QA isn't a separate silo. We work embedded with your development team—sharing tools, processes, and goals.

Cost-effective testing solutions

We optimize test coverage to focus on high-risk, high-value areas. You get maximum quality improvement for your testing investment.

Flexible engagement models

Whether you need full QA team augmentation, project-based testing, or consulting to build internal capabilities—we adapt to your needs.



Common Questions About Software Testing

When should we start thinking about QA and testing?

Ideally, from day one. The earlier you involve QA in requirements and design discussions, the fewer defects you'll create. That said, it's never too late to improve quality practices.

Should we hire internal QA or outsource testing?

It depends on your stage and needs. Early-stage startups often benefit from outsourced QA to access expertise without full-time hiring. As you scale, hybrid models (internal QA leads + outsourced execution) work well.

How much test automation is enough?

There's no magic number, but a good rule: automate repetitive regression tests, critical user journeys, and API tests. Keep complex exploratory testing manual. Aim for 70-80% automation coverage of regression scenarios.

How long does it take to set up test automation?

A basic automation framework with initial test coverage typically takes 4-6 weeks. Building comprehensive coverage is ongoing—you add tests as features are developed.

Can you test legacy applications?

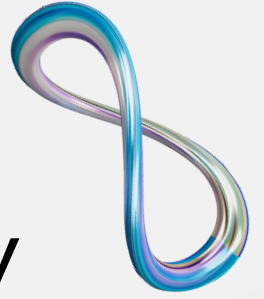
Yes. Legacy systems are often harder to test (poor documentation, technical debt, limited testability), but that makes testing even more critical. We've tested mainframe applications, decade-old codebases, and everything in between.

What's the difference between QA and QE?

QA (Quality Assurance) traditionally focused on testing and defect detection. QE (Quality Engineering) takes a broader view—building quality into processes, automation, CI/CD integration, and production monitoring. We practice QE.

How do you measure testing success?

We track multiple metrics: defect detection rate, escaped defects (found in production), test coverage, automation coverage, mean time to detect defects, and ultimately—customer-reported issues. Quality improves when these trends move in the right direction.



Ready to Build Quality Into Your Software?

**WHETHER YOU'RE
LAUNCHING A NEW PRODUCT
OR IMPROVING AN EXISTING
SYSTEM, WE HELP YOU
DELIVER RELIABLE
SOFTWARE YOUR CUSTOMERS
CAN TRUST.**



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