

SOFTWARE TESTING SERVICES FOR CAPITAL MARKET



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ABOUT US



SERVICES



WORKFLOW



PROCESSES



BENEFITS



Anshinsoft Overview

Anshinsoft was founded in Silicon Valley (California) in 1998 with an exclusive focus on enterprise software development, leveraging the Java EE platform and best-of-breed open source software technologies. Our state-of-the-art software development center in India has been delivering high-quality, mission-critical software solutions and Software Testing Services (STS) to top-tier customers in many countries around the globe (USA, UK, Japan, Hong Kong, Singapore and Dubai).

Besides having specialized in design, implementation, testing and quality assurance of software solutions for Capital Market back-office automation and delivering large-scale, web-generation enterprise reporting systems, we have also been delivering a wide range of high-quality custom designed software solutions using new generation **Java EE** and **.NET** technology platforms.

Our major focus area has been building solutions for the **Capital Market** industry. Over the last 8 years we have implemented multiple securities trading back-office systems, to help automate the entire post-execution trade life-cycle management for customers in major capital markets around the world. Our customizable back-office solution (**CHAKRA**) helps in shortening the securities processing and settlement life cycle by enabling intra-firm and inter-firm straight through processing (STP), virtually eliminating manual interventions to increase productivity in back office operations, minimizing costly process exceptions, and reducing undesired exposure to financial risks.

Anshinsoft also offers a Java based, Enterprise Reporting Solution (**Repro**) for custom-building high-quality, scalable, secure, web-enabled, enterprise-class reporting systems, at a much lower total cost of ownership. Repro has been successfully deployed in top-tier Wall Street companies, generating thousands of reports in various business areas - client reporting, portfolio reporting, risk management reporting, and regulatory reporting and for other operational reporting purposes.

Our top priority is to make sure that we deliver the highest quality software development and testing solutions, adopting a cost-optimized delivery model and striving towards becoming the preferred long-term, value-adding, strategic solution outsourcing partner to our customers. We are proud of our team of skilled and motivated software development and testing engineers, who are carefully hand-picked and meticulously groomed using our rich knowledge sharing system and engineering process. We also possess the **ISO/IEC 27001:2005 certification**.

Capital Market Domain Expertise

Anshinsoft has helped many top financial services organizations improve their post-execution trade management, clearing and settlement processes for equities and fixed income trades in multiple capital markets around the world by developing comprehensive back office systems for them and assuring the required level of high quality of these solutions. Our Capital Market Back Office solution (Chakra) can help automate the entire trade and settlement management process, along with supporting various housekeeping functions, enabling our customers to achieve STP through the entire post-trade life cycle and increase productivity in the back office operations, which are often complex and inefficient due to fragmented and legacy technology infrastructure. This huge and complex, yet robust, system has undergone the testing processes conducted by the STS for CM group at Anshinsoft and is a remarkable running example of quality.

Software Testing Services for Capital Market (STS for CM): Overview

Anshinsoft Corporation, an ISO/IEC 27001L2005 certified company has launched **Capital Market domain focused Software Testing Services (STS for CM)** to facilitate reliable and scalable deployment of software solutions in financial institutions. The offered services will help meet the challenges of dealing with increasing business complexity while keeping up with the pressure of business growth and ensuring reliability and predictability of post-production system behavior.

During the past few decades major players in the financial industry have developed significant IT assets, and have built large enterprise software inventories, which require careful maintenance, as well as, integration and above all, rigorous regression testing and laborious acceptance testing for each subsequent enhancement cycle.

IT development processes for Capital Market software implementations have become more mature and scalable as a result of working with multiple software partners, often using overseas development centers. However, a significant part of quality assurance has had to be done in-house in order to bring the required Capital Market domain expertise to bear on the process. Typically, acceptance testing has been conducted by subject matter experts drawn from in-house middle office or operations teams, often as work taken on in addition to the regular workload. Such people-dependent testing processes are not easily scalable and may not adhere to formal testing methodologies yielding results that can be unpredictable, impeding time-to-market goals and presenting significant operational risk for post-production failure.

Given the need to deploy technology at a higher speed, to achieve the desired business efficiency in difficult market situations, the testing phase can become the last mile challenge to get a large quantity of software assets deployed in a timely, reliable, factory-like fashion.

With this need in mind, leveraging our considerable depth of Capital Market domain expertise, our track record of successful development project deployments in this domain, as well as, our mature test engineering processes, Anshinsoft is offering Software Testing Services for Capital Market. STS for CM is designed to provide scalability, reliability and cost optimization for the testing life cycle for internal or third-party software projects exclusively within the Capital Market domain.

Testing of Capital Market software applications requires a complex combination of business domain knowledge, formal software testing methodology, tools, an understanding of the underlying solution architecture and deployment-specific system configuration. Anshinsoft has developed these skills and processes from many years of experience in developing software for global financial institutions in the major capital markets, demanding high standards of quality, such as Japan, UK, US, Hong Kong and Singapore.

STS for CM provides a unique capability for the IT project downstream activities to enhance efficiency of the deployment life-cycle and enable worry-free outsourcing of a large part of IT deployment activities for the business operations, by leveraging our specialized outsourced testing units onsite, offsite or in a blend of both. This provides an optimal utilization of internal subject matter expert resources, scalability of project portfolio and higher quality of software testing processes to minimize the operational risk.

We also bring to bear our experience in working within regulatory and governance frameworks, especially in developed markets like Japan, where software testing related operational risk is subject to **regulatory review and control**. In view of current market realities, this trend toward more regulatory review and control is here to stay to mitigate the systemic nature of the risk involved in the global drive towards achieving more and more STP as participating financial institutions automate into the huge IT backbones that major financial markets run on.

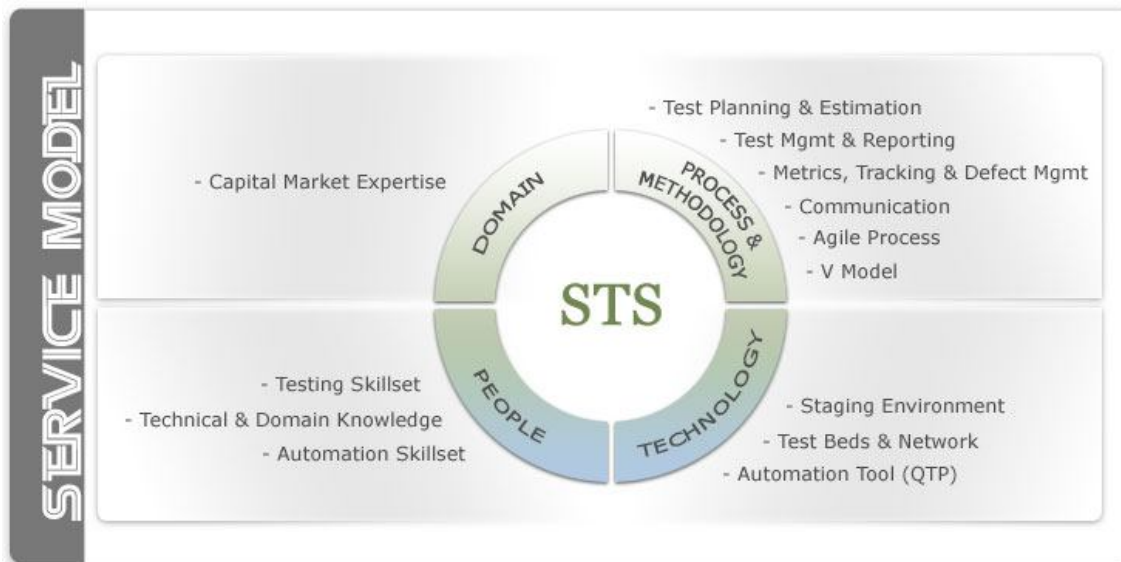
Communication and Risk Management

Anshinsoft has effectively managed the communications process between test engineers, the development team, the user community and the project management.

It's hard enough to get developers, testers and users on the same page while juggling market pressures and tight project schedules. But when a testing project is being outsourced to a vendor company, especially to an offshore vendor, any communication problems can get magnified, offsetting the advantages of this approach and hampering the effectiveness of the entire testing process. The lack of a good communication plan can easily lead to problems like misinterpreted specs, missed functionality, inaccurate specs, or out of scope test projects. These can result in loss of quality with increased potential to miss problems that should have been found in testing.

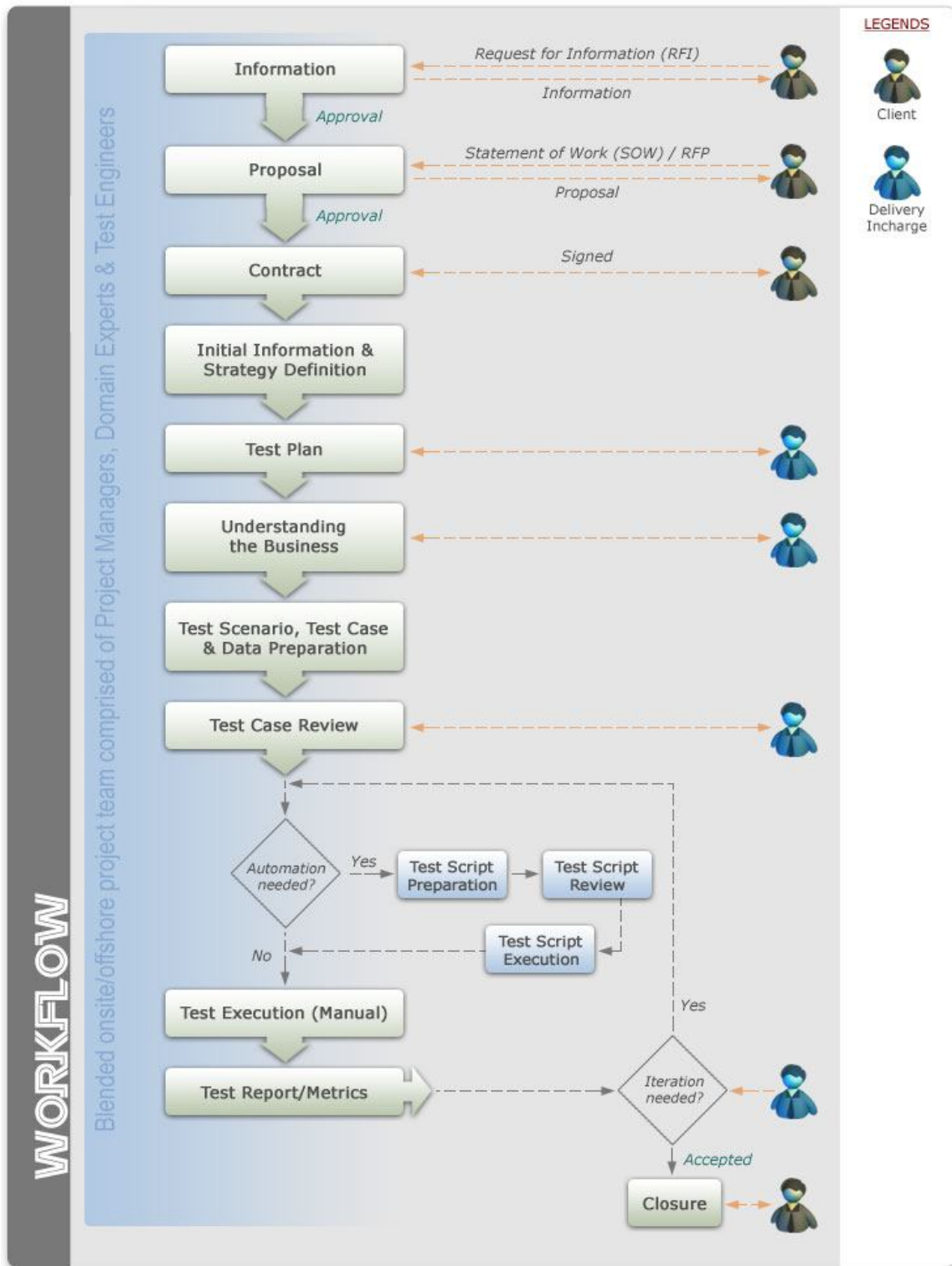
Being well aware of these risks, we at Anshinsoft take extra care to establish a thorough, structured, and up-front mutually agreed upon communication plan. Our test teams communicate with a company's development team and functional experts (via phone, email, and in-person meetings) and review any existing documentation to quickly learn as much as possible about the intended functionality of the product. We use the communications technique of "active listening" to rapidly and iteratively draft test cases outlining our understanding of what we've learned and any immediately raise any questions or concerns we might have. We establish escalation processes, identify tie-breakers and set expected response timeframes for issues for each solution area or module.

The STS for CM Service Model



We believe that effective collaboration between Anshinsoft and our clients is the key to the success of this model. The diagram below outlines the recommended workflow from the initial statement of work that defines your need to the final successful closure.

Workflow



1. **Information** – We will respond promptly to any **Request For Information** regarding general Anshinsoft corporate information or more insight into our STS for CM capability or with more detail with regard to any specific testing project requirements.
2. **Proposal** – Given the opportunity, we will respond to your **Request For Proposal / Statement Of Work** with a comprehensive project proposal detailing project parameters including solution approach, risks, success factors, costs, overall timelines, etc.
3. **Contract** – Once we have clarity on the overall scope, time constraints, cost, billing methods and other parameters of the project we can proceed expeditiously to contract signing.
4. **Initial Information & Testing Strategy Definition** – This stage kicks-off the project, with our project manager, domain experts and test engineering team working with your functional experts and development team to transfer the required information and finalize the testing strategy.
5. **Test Plan** – Our Test Manager prepares the test plan at the initial phase of the project by taking the inputs from your development and functional representatives. The Test Plan identifies; Prerequisites for Testing, the Test Environment, the Communication Model, Test items, the Scope of Testing, Test automation, Test reports, the Test team, the Schedule, the list of Deliverables, Templates, Exit criteria, etc.
6. **Understanding the Business** – We need the requirement documents such as User Requirements Specification, System Requirements Specifications, Design documents (if possible Low Level Design), Use Cases or any such information to understand the business process in detail. We emphasize most on the communication model to ensure that our tester's knowledge is absolutely clear before the actual test execution.
7. **Test Scenario, Test Case & Data Preparation** – When the test team clearly understands the paths and knows the application, they start preparing the test case document. Our test case documents are mapped with specific features or functions. Having a good knowledge in this domain, our test team members can easily extract the test scenarios and test cases from the requirement and design documents. At the same time realistic test data are prepared as much as possible.
8. **Test Case Review** – Once test cases are prepared and internally reviewed by our test lead(s) and domain experts, they are then sent to your development team for review so that there is no gap in understanding. While this iterative test case review process may be a significant amount of work, it is our experience that the benefits are tangible. It may take two or three submission rounds to get the test cases just right, but it's far better to make corrections up front than two months and 200 written test cases later! The correct understanding gained from a test case increases the odds that test planning will be accurate. Thus the project itself is likely to go more smoothly and deliver the right results, quickly and efficiently.
9. **Test Script Preparation** (if automation is required) – If automated testing is required test scripts are recorded/prepared by the test engineering team members using the preferred testing tool. Although we can work with any of the leading testing tools, Anshinsoft prefers using **HP QTP (formerly Mercury Interactive)** as the testing tool of choice and we have acquired deep expertise on QTP based testing automation. At the outset, we identify common patterns and prepare automation templates using QTP. We then provide these templates to the entire team of QTP developers for production. Thus, we ensure the faster development of automated regression testing.
10. **Test Script Review** (if within scope) – Test scripts are reviewed internally by our Test Automation Lead(s).

11. **Test Execution (Manual and/or Automated)** – Test cases are executed and the test results are logged along with the Pass/Fail status and severity. For ease of reference we log it in the same test case document. We then send it to your development team for resolution. If test automation is being done then we also run all QTP scripts to find the regression bugs and send the generated test results (Test Fusion report by QTP) to the development team for resolution.
12. **Test Report/Metrics** – Once the testing cycle is finished, test results and QA metrics are prepared by the testing team and delivered. This process continues iteratively as needed.
13. **Closure** – Once the target quality is achieved, where bug count is within the acceptable level, or once the mutually agreed upon testing cycles have been executed, and then the project is formally concluded with the delivery of final QA Metrics.

Benefits

Outsourcing your non-core competence

System and integration testing of your software applications and associated quality control, assurance and management may not be your core competence – fortunately, it is ours. Outsourcing the STS work to us at Anshinsoft given our proven capability of the testing/quality processes with all required skill sets at hand and the crucial Capital Market business domain knowledge, would have a very positive impact on your project quality and ROI.

Cost and time advantage

Outsourcing STS to our offshore center here in Kolkata provides you obvious long term cost advantages. Our dedicated pool of available resources with domain and test engineering expertise provides you flexibility in deployment of these resources and shortens the testing timeline. In a tightly scheduled project of creating a software application, handing over the testing/quality processes to objective, experienced, outside professionals where you have a defined set of input/output criteria, does provide better resource leverage and time advantage.

Domain advantage

Capital Market industry has been a primary focus area of Anshinsoft and we therefore have a large pool of development and testing services people who are familiar with the capital market business knowledge and have tested software applications designed for this domain. This dramatically reduces the time taken for knowledge transfer.

Collaborative service model with iterative delivery

We cannot stress enough that collaboration with you is the cornerstone to our working model. In order to ensure complete client satisfaction all stakeholder communication (back and forth) is well defined and delivery is iterative to mitigate the risks.

Pricing Framework

Time & Material

Anshinsoft prepares a tentative man-month estimate for the work from the initial scope and a monthly (could also be daily or hourly) rate for the resources that will be engaged. The rates can either be blended or non-blended (for different categories of resources). Upon basic agreement, a rough plan is prepared regarding the number of resources to be deployed at different stages, the corresponding schedule and the delivery milestones. Upon agreement over the initial plan, Anshinsoft will invoice you monthly. Scope creep is handled smoothly, in consultation with you by modifying the initial plan through our change control process.

Fixed Cost

Anshinsoft assesses the clearly defined scope of the work and accordingly prepares a fixed price estimate. There is generally a plan attached with the price which states the payment cycle against the fixed price associated with a periodic delivery schedule. Mutual agreement between Anshinsoft and you, over the price and plan is necessary before starting the engagement. Any scope creep will require a new contract or a contract addendum.

In general, you will need to bear the licensing cost of any mutually approved third party software products (for example QTP) used by the STS group within the contractual timeframe.

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