



Case Study: Helping a Leading US Broker Implement a Streamlined QA and Sourcing Strategy

1. BACKGROUND

The client, one of the United States' largest retail brokers, had recently acquired a small, dynamic company that had developed an advanced technology targeting a new attractive market segment (active traders). The smaller company, with its few clients and small potential impact of negative publicity resulting from potential defects, had never adopted a proper QA process, and had only fourteen testers vs. over 150 developers.

The acquiring company had an internal QA organization; however, it was overloaded with its ongoing responsibilities and could not accommodate any additional workload. Instead of expanding its in-house QA group, the client decided to engage Allied Testing as an external QA partner. The rationale behind this decision was to save some of the costs by taking advantage of offshore resources, and more importantly, to be able to execute required testing tasks quickly by leveraging a flexible resource pool.

The challenge before Allied Testing consistent of three distinct objectives:

- ▶ Help the client define a unified, comprehensive QA strategy, as well as an optimized comprehensive sourcing strategy around quality management
- ▶ Create and implement a transition plan, institutionalizing new QA practices and processes without negatively impacting ongoing development efforts
- ▶ Take over part of ongoing QA work and ensure consistent operation and smooth delivery of services

2. QA STRATEGY DEVELOPMENT

A QA strategy defines, for each stage of the SDLC, what quality controls should be present, what types of testing should be performed, what tools should be used, who the players involved in QA and testing



are and how they interact, and what entrance and exit criteria should be observed to proceed from one stage to the next.

QA strategy covers:

- ▶ Test coverage and scope of testing, involvement of non-QA groups (development, business users, operations, etc.) in the testing process, practices aimed at minimizing or eliminating gaps in test coverage
- ▶ QA processes and controls, roles and responsibilities, checkpoints and handshakes
- ▶ Infrastructure, shared and reused resources (such as test environments, test scripts, automation and other tools) to avoid waste or duplication of effort
- ▶ Applicable QA documentation, governance and reporting practices

During the strategy definition stage, the Allied team consisting of a senior delivery manager, an experienced project manager and a technical analyst worked on the client's site, interacting closely with the business users, developers, operations support group, project managers, and other vendors used by the client. Their first objective was to get a firm grasp of the existing processes, methodologies, tools, release schedules, and other details of the status quo. The Allied team focused on understanding and analyzing business needs of the different groups, the challenges they had been facing, known gaps and issues, budgetary constraints, and technical limitations.

Both Allied and the client understood that for a new strategy to have a better chance of being accepted and followed, it is critical to ensure participation and buy-in of both the top management and the respected leaders in different parts of the client organization. It is important to ensure that all groups that have a stake in the matter are involved in the discussions and feel heard. Allied achieved that by going through several iterative rounds of discussions with all stakeholders.

Numerous in-depth interviews were conducted with senior management, business analysts, developers, testers, project managers, client support and operations support staff, etc. First, exploratory sessions were conducted. This process of carefully capturing opinions and gathering information from various groups within the client's organization was crucial to achieving a comprehensive understanding of the existing situation. Next, a draft version of the QA strategy was presented and discussed across the organization. Finally, an amended version incorporating various stakeholders' feedback was once again offered for discussion.

3. TRANSITION

Once the QA strategy was approved and accepted, Allied started working on implementing the strategy, including the transition of part of QA work to Allied's offshore delivery facilities. This work took place as four parallel streams of activities:

- ▶ Distributing QA roles and tasks
- ▶ Knowledge transfer
- ▶ Technical preparation
- ▶ Governance

3.1. DISTRIBUTING QA ROLES AND TASKS

Working closely with the client's QA management, Allied suggested the order and priorities of the transition, as well as clear and measurable milestones.



One aspect to be decided was which types of testing would remain in-house and which would be transitioned to Allied's offshore teams, and to what degree. For example, Allied recommended that regression testing be the first type of testing to be transitioned, because it provides an excellent way to acquire knowledge of the application, its logic and the details of functionality. Testing of new features normally requires more in-depth knowledge of the product. Another example of such decision was transitioning the UI-based testing offshore (from the very beginning) vs. backend testing (only over a year into the project).

Another important set of decisions had to do with the planning and coordination of the testing effort. When the test management function resides entirely within the client's organization, all planning decisions are made by the in-house test managers, and the vendor's team only receives new builds along with the specific scope of testing tasks and timelines. Allied and the client eventually arrived at a model where the management responsibility was shared between the vendor and the internal staff. Allied's specialists participated in the inception meetings for any new project that required their services, the synchronization of project plans, development schedules and testing plans, the review and sign-offs on testing plans and test cases, the management of requirements, the triaging of discovered defects, the release management, the test environment management, transparent reporting on performed testing, etc.

Another factor to consider is the ratio of the vendor's offshore and on-site resources. This number will vary significantly from company to company. While some QA vendors prefer to keep up to 30-35% of their team on client's premises, Allied recommended maximizing the offshore component (up to 95%) to keep the costs down. Normally, having one or two experienced test managers onsite most of the time is quite sufficient to ensure smooth communication and to participate in the product development planning. It is only necessary for more members of the offshore team to travel onsite at the beginning of a new, large scale project, or when a new portion of work is being transitioned offshore, and training is needed. There are exceptions, of course: testing within an Agile process would certainly require larger onsite presence, as would initiating and planning for a new large project.

3.2. KNOWLEDGE TRANSFER

At the same time, Allied formed the first core teams and initiated the knowledge transfer and training process, which took place both onsite and offshore.

Knowledge transfer required extensive participation of the client's Subject Matter Experts (SMEs).

- ▶ First, the SMEs would prepare the material covering a particular area and would also assist in preparing the training plans and defining the criteria and tests used to judge how well the vendor's specialists acquired the relevant knowledge
- ▶ Second, the SMEs were asked to contribute their time to provide explanations and answers to the trainees' follow-on questions after the initial training

The number of questions from a team studying a sophisticated application may easily reach several hundred, and the job of answering them may completely paralyze the work of the SME team. In addition, "soft" or cultural factors come into play, e.g. the way of asking questions, language barrier, etc. Allied eventually recommended scheduling special Q&A sessions with the client's SMEs (in person or by phone) only once or twice a week, and gave the trainees' team the responsibility to document, summarize and send, in writing, all the questions to the SMEs well in advance, giving them ample time to prepare and thus maximizing the effectiveness and value of such sessions.

3.3. TECHNICAL PREPARATION

Technical preparations included setting up test environments, connectivity and security, creating test accounts and test data. The location of physical test environments is one of the items stipulated by the QA Strategy. Creating certain specific environments offshore makes sense in some cases; however, in most real life scenarios, the best solution is to provide the offshore teams with secure remote access to the test environments that are physically located at the client's premises. Allied worked with the client's

management to agree on the necessary set of test environments and to develop the requirements for them.

Transitioning support of the test environments is another best practice that proves extremely beneficial in the long run. It minimizes downtime and significantly increases the overall efficiency of the offshore QA effort. Especially for non-functional testing, this requirement is crucial to achieving the testing objectives.

3.4. GOVERNANCE

Governance and vendor management practices were agreed upon by Allied and the client. A transition from an existing state into the end state described in the QA Strategy needs to be thoroughly planned and agreed upon by all stakeholders in the client and vendor organizations. Many large organizations use multiple vendors, and many of them may be involved in or affected by the changes.

Allied documented all the milestones in the Transition Plan with clear action items, deadlines, and owners. The plan was then reviewed and approved by the client. In this way, Allied ensured the management's buy-in and support necessary to advance through the some stages of the plan, when help was required with scheduling the Q&A sessions with SMEs, planning and conducting onsite training sessions, setting up the connectivity, etc.

4. RESULTS

In the beginning of this relationship, Allied encountered a fairly typical situation with little or no formalized testing process across the organization, and with multiple groups using different development methodologies, planning and coordination procedures, tools (many of them home-grown), suboptimal usage of defect tracking systems, etc. As part of the proposed solution, Allied's specialists developed a set of recommendations specifically around standardization of practices and sharing processes among groups, for a more efficient, transparent, measurable, and cost effective testing process.

Below are some of the improvements introduced in the client's QA organization and process as a result of engaging Allied Testing:

- ▶ **Consistent process** | Every team on every project now followed the same process and procedures with regard to testing and QA, including: coordinating their work with QA efforts at each stage of the SDLC; understanding scope, depths and realistic timelines of testing; creating standardized and informative test plans and reports templates; and complying with the formalized defect life cycle. Additionally, in the past, some types of testing, e.g. cross-platform and cross-browser installers testing and backwards compatibility testing, would sometimes simply be forgotten.
- ▶ **Central test scripts repository** | Allied Testing introduced and implemented a consistent approach to the central test scripts repository for both manual and automated test scripts. Each script was now accompanied by a short description and the up-to-date information about time required for its execution. This allowed other teams and the management to better understand what was executed, analyze risks and improve planning.
- ▶ **Systematic test scripts coverage** | Allied Testing introduced and implemented a systematic approach to the coverage of test scripts. All the available tests created by the in-house testers or by business analysts and developers were reviewed, analyzed in terms of coverage, depth and level of detail, and re-worked. This allowed the client to identify very large areas of functionality not covered with written tests at all. Lastly, the concept of focused limited regression testing and full end-to-end regression testing were introduced and agreed upon with all the parties involved. The systematic approach to the regression testing significantly improved the quality of products and decreased numbers of issues in production.

- ▶ **Requirements review** | Allied’s specialists started participating in the development cycle at earlier stages by reviewing requirements originating from multiple business streams, analyzing them for coherence. This approach allowed for better preparation to the testing phase and made the testing cycle shorter and more efficient.
- ▶ **GUI based test automation** | Allied standardized the approach to test automation by choosing a single platform, creating a methodology and an automation framework consistently used for all GUI-based test automation work. By doing that, Allied was able to significantly reduce the effort required for the support and maintenance of automated test scripts, as well as shorten the time required to add a new script. Essentially, test automation stopped being a management buzz word and became a powerful quality management tool.
- ▶ **Back-end test automation** | The Allied team designed, implemented and maintained the frameworks for automated back-end testing of client’s applications, which uncovered serious defects that could not otherwise be found by manual or GUI-based testing. The frameworks were widely re-used by client’s developers for unit testing.

5. LESSONS LEARNED

This project provided many valuable lessons about the modern QA practices and global sourcing. Some of them are included below:

- ▶ Sometimes organizations invite independent consultants to develop a QA Strategy. However, in our experience, an approach where the same partner that suggests a QA Strategy is also tasked with implementing it leads to greater feasibility, continuity and accountability.
- ▶ Management buy-in and universal participation in the definition of the QA and sourcing strategy by all groups and stakeholders increases the chances of its successful implementation down the road
- ▶ While outsourcing the QA function can save significant time and money, in 100% of cases setting up an outsourcing relationship requires more organizational discipline and better coordination than what the organization was accustomed to prior to decision to outsource. At the same time, that is the reason why engaging a QA supplier is a great opportunity for clients to “put their house in order” by improving process rigor, increasing coverage and quality of documentation, standardizing tools and practices, etc.