Using a Centralized QA Function to Mitigate the Risks of Outsourced Development

When an IT Organization decides to outsource their software development, they are also assuming some risks. Luckily, there are ways of avoiding critical issues.

Summary

- In a multisourcing arrangement, a failure of one link (provider) may lead to schedule and budget issues of the entire program.
- A strong centralized QA function that drives a consistent, robust testing process across all development teams reduces the risk of failure.
- An external QA specialist firm can bring the expertise in setting up robust testing processes from their previous outsourcing engagements.

Growing Complexity

Organizations in many industries are increasingly outsourcing more of their software development projects to 3rd party firms. Moreover, a greater number now involve multiple providers, often increasing the complexity of these projects. Obviously certain risks are introduced when an outside organization is developing your business critical applications, and these risks are even higher in multi-sourced environments. The role of a strong centralized QA presence can effectively mitigate many of those risks by producing higher quality software, minimizing schedule slippages and budget overruns, resulting in higher customer satisfaction and loyalty. Illustrated below are several scenarios typical to outsourced projects and suggested resolutions based on our experience as a dedicated QA services firm.

Risks of Outsourcing

One risk of outsourcing is that the progress of a project may not be transparent to the client. This scenario limits the client's ability to verify that the project's schedule is moving forward and the correct functionality is being implemented with the required level of quality. This can be exacerbated by the fact that multiple providers are responsible for separate but interdependent pillars of work within the same program, increasing the overall complexity of managing the process over time. In a multi-sourced arrangement, a failure of one link (provider) may lead to schedule and budget issues for the entire program. Another related risk is the difficulty of defining deliverables contractually. It is critical that the requirements are understood fully, interpreted properly by the provider, and that the required levels of functionality and quality of the final code are implemented. Establishing quality-related controls in the contract, based on the QA process and artefacts is the best solution to address both of these issues.

Contractual Quality Metrics

Another risk of outsourcing is second-rate product quality. However, when outsourcing the development of various components of your applications to third parties, it is recommended to shift part of this risk to the providers by including quality controls in the contracts. Metrics often used for this purpose include the number of defects by severity, the number of rejected fixes as well as other parallel parameters. The QA group should be in the position to spell out the specifics of required test coverage for external providers to comply with. This can be difficult if the project's requirements and specifications are not ready when a contract is signed. In that case, the agreement should stipulate that the detailed test coverage would be agreed upon after the requirements have been clarified. Otherwise, outsourcing would leave the quality related risks resting fully with the client.

Monitoring Quality

Another important way of leveraging QA to manage outsourcing engagements is to include in the contracts a process to monitor and verify the deliverables along the way, and not just at the end of development. This would translate into contractual commitments by development vendors to execute certain sets of test scripts at specified times during the project and making the full test results available to the client. The QA function is tasked with developing test scripts to cover the specified functionality, working in tandem with development. QA specialists can help management determine the optimal points at which subsets of those test scripts should be run on the evolving code base in order to verify the progress and the quality of the code. The QA group also monitors the execution of the tests and supports the quality reporting to the project management. In a multi-sourced scenario, writing test scripts and defining which scripts should be executed at which stages of the delivery process is not a trivial exercise. Code is developed in modules and the fact that module A is not finished, may prevent test execution for all test covering Module B. The QA group is expected to perform this analysis before suggesting the scope of testing. When outsourcing development to multiple vendors, such transparency becomes all the more critical to the success of the project. If this process is not implemented, the client runs a greater risk of inconsistency of code quality across different teams, because every vendor uses their own quality control process and approach. A strong centralized QA function that drives a consistent, robust testing process across all development teams reduces this risk of failure.

Interaction between Development and QA

In general, setting up a clear process for the interaction between the development teams and the testing function benefits the entire project. Applying clear and consistent testing criteria helps developers validate their interpretation of requirements and may help uncover nebulous requirements that need clarification from the client. Embedding an outside QA specialist within the development team may help accelerate the testing of fixes. The QA function monitoring the development work will generally improve the quality of testing that is done by developers themselves, e.g. their approach to unit testing. It is also beneficial for the QA group to review development work on a regular basis, especially with multiple vendors involved, because it may uncover requirements that are out of sync.

Costs

Does this extensive use of the QA function incur additional costs to the client? Well, some development vendors may ask to increase costs because of the additional interaction with QA. However, we believe this will in fact lower the overall cost of the project. Development providers are already expected to perform some levels of testing, and QA should develop the test scripts anyway. The additional cost of monitoring periodic test execution and interactions

between QA and development providers is fixed and known, as opposed to unpredictable cost overruns resulting from poor quality or from vendors missing delivery dates.

Using Specialist Providers

Setting up such a comprehensive test process and organization is a daunting task. Since the impact of QA is so critical, it is advisable that firms consider relying on experienced specialist testing providers to help them accomplish this task. An external QA specialist firm can bring their expertise in setting up robust testing processes from previous outsourcing engagements. An experienced QA provider will also help alleviate the 'lumpy' nature of the demand for testing resources that are not spread evenly throughout the course of the project. In summary, engaging a specialist QA provider will help client's lower development risks, increase manageability of complex outsourcing engagements, and improve quality and customer satisfaction.