

Agile Testing Practices in an Off-Shore Development Center

Rosey Baruah
MindTree Limited,
West Campus, Phase-1, Global Village, RVCE Post,
Mysore Road, Bangalore-560059
Rosey.Baruah@gmail.com

Abstract:

This paper throws light on the challenges of testing in an offshore software development center (ODC) and how it can be met by using agile values, principles, and practices. First the article will present some of the challenges in offshore development, then it will investigate how agile principles and practices is going to help offshore development in becoming more competitive by eliminating the challenges usually found in traditional offshore development. In this paper I am going to touch upon the subtle points which are actually quite critical to the overall effectiveness of the project. Here, the ODC is a combination of both onsite and offshore teams. The on site team directly interacts with the customers. They will do requirement studies, design and development, while interfacing directly with customers. The offshore team will interact only with the onsite team and will provide additional crucial support, thereby reducing costs and implementation time. Agile testing practices is concerned in empowering to self organize, to sit together and engage in face to face communication, includes the customer and includes all the necessary skills to make its own decisions and take immediate action. Because agility gives us amongst many benefits, the processes, tools, roles and change rather than regret, control or suffer from change.

1 Introduction

An agile testing practice in an offshore development center promotes the rapid delivery of value to customers. This practice challenges the testing team to stay continuously synchronized within every release. To keep up with the fast pace, the team must be creative, smart, and efficient with their verification and validation testing activities." Offshore development center" here means the senior management from the customer being responsible for project management and deliverables. Customer representatives engage with the vendor company for recruitment and selection of the technical staff for the project. The ODC then adopts business practices, processes, methodologies, quality management, and technology expertise from the customer. This can be achieved by customer's management representatives' visit to the ODC or ODC's senior management visit to customer location to facilitate requisite knowledge transfer. ODC's senior management then conducts the necessary resource ramp up as per customer requirements. The on site team will directly interact with the customers and will serve as consultants depending on project requirements. They will do requirement studies, design and development, while interfacing directly with customers. The offshore team will interact only with the onsite team and will provide additional crucial support, thereby reducing costs and implementation time.

Most offshore vendors have very little experience delivering successful projects. The level of maturity of the test process should be a part of a repeatable, measured process. The Testing Process should cover the procedure to be followed for all formal verification and validation activities starting from project kick-off to the product /project certification, at the ODC. Main objectives are to setup an effective offshore testing process, to define the roles and responsibilities of offshore testing team members, to define the communication channels between onsite and offshore, to detail the testing release cycle, to define the Reporting mechanism from offshore, to detail the expectations from onsite team, to minimize the defects in the final delivery, by following a formal testing procedure and to identify and track till closure, any defects in the software developed/modified so as to ensure conformance with the customer's requirements specification.

2 The Challenge

Offshore testing projects can fail for many of the same reasons as any other IT Project: poor planning, inaccurate estimates, ineffective management, loosely defined requirements or objectives, etc. Offshore development, so simple in theory, is tough to execute well. The challenges can range from problematic project management to cultural miscommunications. The hunt for reduced costs, scalability and improved quality comes at a price: risk. In most cases, companies fail to anticipate what they must do to minimize the dangers of integrating with an overseas vendor. Here are some of the greater challenges faced in an ODC:

2.1 Opacity of the developments at the offshore site because of lack of formal and regular communication;

Opacity of the offshore developments results in communication gaps. Lack of visibility into the project status creates inability to react quickly to problems found late in the cycle and this in turn increases the chances of failure and/or the cost of fixing them. If this communication gap is not managed effectively then it can quickly result in an inability to communicate the right things to the right people at the right time. It is important to establish effective communications prior to starting an offshore outsourcing project. Here we need to identify the effective modes of communication and we need to consider how the communication should take place. The modes can be emails, conference calls and video conferencing. Establishing the communications infrastructure is also a challenge. If there is no ease of communication then sometimes people tend to lose information.

2.2 Insufficient level of control over offshore development team;

Insufficient level of control over offshore development team may sometimes result in duplication of efforts.

2.3 Poor or lack of local acceptance tests those results in supplying deliverables in which the customer finds many defects;

2.4 Poor IT management and environment at the offshore site;

The primary concern here is infrastructure in the broad sense, i.e. “the underlying foundation or basic framework” of the project. This can include the regulatory and legal environment and location factors as well as the more common issues of facilities, hardware, etc. The offshore outsourced project will require additional planning and management to resolve issues surrounding privacy, licensing, intellectual property rights, trade agreements, etc. The goal is to ensure that all project team members have the appropriate tools and access to accomplish their work.

2.5 Testing can sometimes become ineffective and a problem without effective training for the offshore test team.

3 The Solution

3.1 Process document

There should be a Testing Process document in place and made available to everyone in the project team. Testing Process covers the procedure to be followed for all formal verification and validation activities at the ODC. It would covers all activities starting from project kick-off to the product /project certification. The goal of documenting the test process is to get a clear picture of what is going on in the ODC testing, the good things, the problems, and possible paths to improvement. Fundamentally, a test process document is a data gathering process. To make effective decisions we need data about the current test process. This process document could be authored by a senior tester/lead from the vendor company and be reviewed by the client company. It would document the following important information:

- Roles and responsibilities of each individual in the offshore team
- Types of releases in the project
- All the necessary phases involved in the specific project qualification phase and what takes to call a product release as qualified.
- The test strategy highlighting the QA strategies involved in the different types of releases
- The Co-ordination mechanism with the offshore team should be highly effective. Here QA meetings between the offshore and the onsite teams. The point of discussion would be the QA reports and bug reports. To facilitate communication among team members we can use direct dial extensions; invest in high-capacity, high quality digital data/communications lines. We should create vehicles/mechanisms for communication – this can include everything from status reports to newsletters and Intranets. The goal is to create sufficient mechanisms to increase the flow of ideas and information among the team (both offshore/onsite).
- Metrics should be collected during appropriate cycles.

There should be set of metrics in place, which collectively would provide valuable insight into the following information:

- a) Effort variation
- b) To assess the organizational capability , project phase wise
- c) To know how well the organization meets its commitments on time
- d) Defect detection capability of QA&QC activities, hence control on price of conformance.
- e) Defect leakage across the phases of projects, organization wide
- f) Productivity metrics – a sure input to scheduling

These metrics are easy to understand, implement. The cost of implementation will be minimal, if the basic systems like time tracking and defect tracking systems are in place, and the organization follows a standard method for project size estimation.

- Audit checks which highlights the review of new test cases (if at all), review of defect sheet before logging and configuration management (all specs, test cases, reports, etc)

3.2 Build teams

Build teams around motivated and passionate individuals and build a team environment where people are not afraid to try new things. In large projects with sizeable teams in the ODC, there should be a strong offshore project management system with clear direction and unambiguous set of goals. There should be offshore product champs for the different components and an overall offshore project manager responsible for the offshore deliverables.

3.3 Effective Training

Effective training methods should be used in order to solve technical issues.

A good test lab at the offshore site should be stocked with sufficient software and hardware to keep testers working efficiently and the software and the hardware should be updated to the right release levels.

3.4 Offshore Outsourcing Process

The client company initially starts with small projects. For example, a first project with an offshore partner may consist of executing an 8-week pilot project fully managed internally where the test teams may have representatives from both companies. This gives both companies a good overview of a full cycle offshore development process as it is executed at either end. Here the risk is controlled very well. After one or two pilots, expectations ought to be in place and the teams should be ready to work on larger projects. So it the responsibility of the ODC team to work effectively and get more projects.

4 The Benefits

The Benefits are as follows:

- Substantial reduction in total project costs;
- Flexibility resulting from the ability to attract resources for large projects quickly;
- Compression of project development and implementation time;
- Access to a resource pool of highly skilled and experienced IT professionals;
- World-class quality of developments.

- Beyond a single team and a single iteration, ensure you have ample team coverage over concurrent and dependent development initiatives.
- Customizable notifications keep team members informed of new project developments, defects, build failures and code check-ins to help teams run efficiently in the face of constantly changing requirements.

5 Conclusion

In my experience, software testing is one of the major areas for effective use of offshore resources. An ODC team consists of using the client company's people as leaders who manage small offshore teams, the latter being responsible for doing the actual work. There are many challenges in the way and we can eliminate them by having a strong offshore project management system and having an established well defined process. This is achieved by the agile testing practices where individuals in the team are

accountable, reporting for themselves in daily updates that involve the user/business; Responsibility is shared and the team is responsible together for delivery of the product.

6 References

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