Testing Services

Providing World Class Services in Implementing QA Practices

This document describes the different areas of Testing Services that we can help an organization in implementing to get the maximum benefit through best practices

Introduction

We normally do not realize how important is Software Quality and what could be the impact of a badly developed application. Software bugs cost the US economy an estimated $59.5 billion annually which is roughly 0.6% of US GDP. Although US economy is only a part, a major part, of world economy, this gives us an idea of the magnitude of the problem. QA and Testing are still a highly neglected area and not practiced in a systematic manner. Currently, global market size of outsourced QA and Testing Services constitute around $6.1 billion. It is predicted that the independent application testing as a separate business segment will grow at 50-60% rate per year. It is a common perception that the QA activity of an application starts after the application is developed. No doubt the post development testing is the major part of QA activities but as we know if we can catch the defect early it costs less. Therefore ideally the QA activity should start right from the beginning using review/ walkthrough techniques which is also called Static Testing.

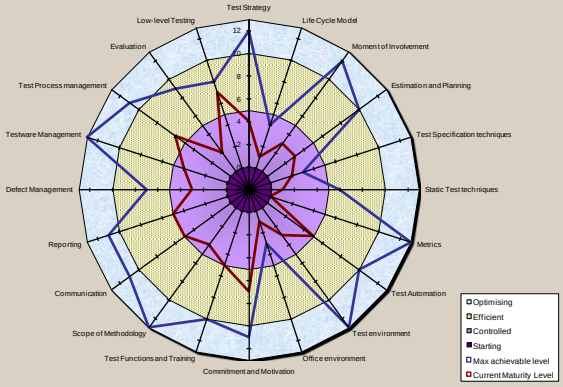
BS 7925-1 defines System Testing as "testing an integrated system to verify that it meets specified requirements." This means the system is tested as a whole after the components are fully integrated. System testing performed by the Test Team, and at the start of the system testing the complete system is configured in a controlled environment.

Implementing Testing Organization

System Testing is becoming a separate discipline which requires an organization to define the strategy, develop a well-defined process that follows a specific methodology, provides the right resources that include rightly skilled people and the tools. It also requires a major change in the understanding of people about how testing should be done and how it should be managed. We have the experience in establishing the testing practices in different sizes and complexity of companies starting from large mainframe shops with complex legacy application to smaller companies practicing Agile development methodology.

Assessing Organizational Capability (TMM)

One of the first things that we suggest is assessment of organizational capabilities in delivering system testing as a service. We use the Test Maturity Model, developed in line with CMM by University of Illinois that evaluates the organization's maturity from "Repeatable" to "Optimizing" considering twenty factors like "Lifecycle Model", "Test Environment", and "Metrics" etc. that determines the organization's commitment towards this discipline.

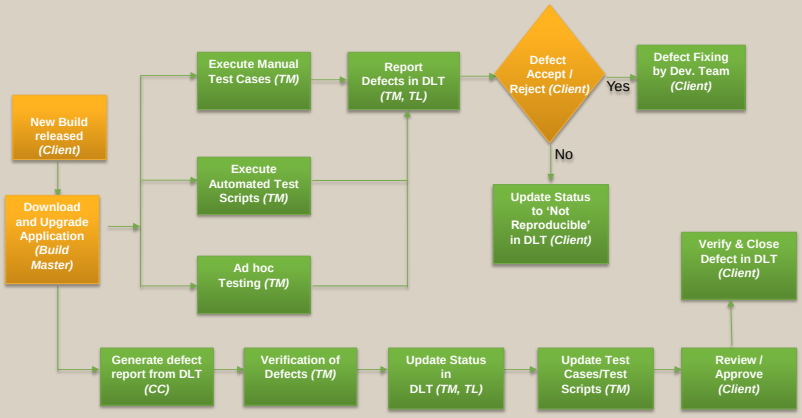


Assessing Testing Requirement for the Application System

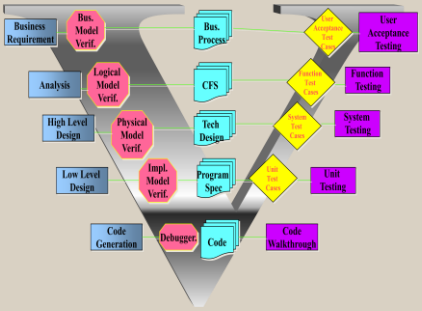
Testing Requirement of an Application System depends on the development methodology, the system complexity (interdependency), the computing platform used, the skills of people, the release methodology followed, availability of System Documentation, the Tools used for different services and many other parameters that can significantly impact on the cost effectiveness of system testing.

Defining the Testing Process

Ideally, the very first thing that needs to be defined is a well-defined process that is understood by everybody and that can be practiced by everybody without any major difficulties and is manageable by the organization based on the existing practices.



Understanding the Requirements



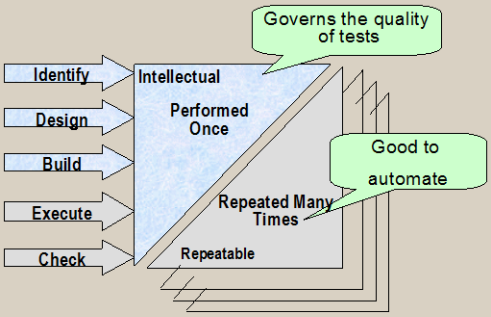
It is required to understand the System Change to find out the impact to the system based on which a Testing Strategy is developed. For example sometimes the organization is limited with resources and has to adopt the Risk Based Testing Strategy. Testing strategy drives the Test Planning where the organization identifies all the testing that need to be done and tries to figure out the resources that will be required for that. It follows the V-Model

Following this the Test Cases are designed and Test Data is created for the Test Execution.

Test Reporting

Test Reporting is a very important aspect of the Testing Process that not only updates the management about the progress of the test but also helps in managing the Test Performance. Finally, the Defect Management is the key to effective QA Practice. This deals with capturing of the defect and managing to its closure in an efficient way. A good Defect Management allows the organization to analyze the defects to perform the Root Cause Analysis that leads to Continuous Improvement

Test Automation



Testing is a repetitive process and therefore all attempts should be made to automate the tests as far as possible. Typically, 80 to 90% of test cases are automated in case of Regression Testing.

Testing Tool Selection

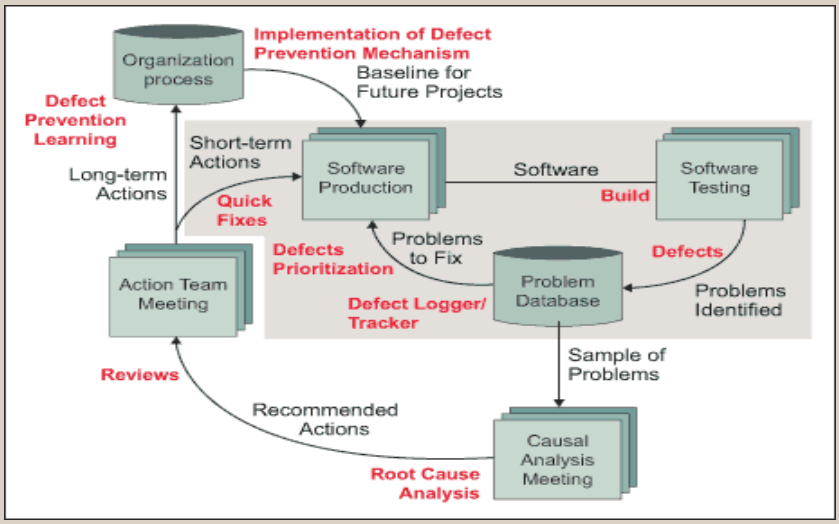
Testing Tool is an essential component of Testing Organization. Test Management and Defect Tracking are the main tools that need to be integrated with the Project Management tool. We have expertise in implementing various market available tools such as Quality Center and Rational.

Training on System Testing

All the personnel need to be trained in testing process, testing tool and most importantly in testing mind-set that is important for successfully implementing the testing organization.

Testing Metrics

Establishing the Testing Metrics is a very critical aspect as this allows the management to measure the benefit gained from the investment made. It is also a good practice that helps in better management of testing initiatives.



The purpose of system testing is to validate an application's accuracy and completeness in performing the functions as designed. System testing simulates real life scenarios that occur in a "simulated real life" test environment and test all functions of the system that are required in real life. System testing is deemed complete when actual results and expected results are either in line or differences are explainable or acceptable, based on client input. These tests are based on the client requirements and include functional and non-functional testing. Functional testing focuses on what the system is supposed to do. (Regression, Configuration, Business acceptance, localization testing etc. are examples of functional testing) Non-functional testing focuses on issues not directly related to the functions or business processes the system performs. Examples of non-functional testing are Usability testing, Performance testing, Security testing and documentation testing.