

# Effectiveness of UAT

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The development and deployment of new software solutions to the end business user often stumbles at the final hurdle. This can occur even when development, IT and sometimes the business sponsors have invested their time and expertise and feel comfortable they have the target solution ready to roll out. Unstructured UAT often occurs when development or a vendor engage the end user in training to use the system but get feedback that the solution has problems or worse still is not what was expected. This of course may be a worst case situation but Insights experience in the business suggests it is far more common than one would expect.

In world class organizations we see some common traits that lead to successful deployments of new software solutions and enhanced Return on investment. Insights experience suggests that effective UAT management will have some or all the Traits of a good UAT;

- Users review and sign off
- Requirements, Function Specification
- Users are involved at as many stages in development as possible
- The vendor test strategy includes UAT
- UAT strategy is agreed with the customer
- UAT test cases are developed and agreed on before the end of system test
- UAT entry, suspension and exit criteria agreed on by vendor and customer before the end of system test
- An installation phase is planned before UAT
- Expectation on UAT is that there are no critical defects
- Time is assigned and resourced to UAT

**The business users (Representative Sample) participate interactively at all stages of the development lifecycle**

- A full life cycle based test strategy and plan are used which is normally risk based.
- Iterative type development methodologies are used a structured and integrated UAT phase is planned from day 1

### What are the objectives of UAT?

For each organization there may be a slightly different emphasis for UAT depending on their unique business conditions, but most UAT projects have one or more of the following objectives:

1. To confirm that the system carries out the business functions as intended in the original requirements and reflects any changes through learning during the development cycle.
2. To confirm that the system will perform in the end user environment, production systems, standard access means, fits with day to day processes and organization
3. To confirm the development of a defined solution has completed
4. To confirm the system may be moved into productions
5. To confirm that contractual commitments have been achieved, often triggering payment and the start of a warranty period or hand over to the help desk/support centre for day to day support.

## What should be expected from UAT?

UAT is primarily about confirming that the software is fit for purpose for the end user and the production environment. UAT assumes the development organization has fully tested the solution through its life cycle and they are satisfied it meets the contractual and documented entry criteria to go into production.

- UAT is not as extensive as systems test, if it needs to be there has been an issue earlier in the process.
- UAT is the system used as all the different types of users will use it in day to day operations.
- UAT should expect that the application is of good quality and it should not be expected to find any serious defects.
- UAT is a separate phase to installation testing and back up and recovery testing, which normally precedes it.
- UAT is ideally run by end users and should be building their confidence in the system.
- UAT is based on the user requirements

## What UAT choices are available to an organization?

Most organizations make these choices based on their level of expertise, past experience, available resources, influences from 3rd parties, influence from Development and Business Users and perceived level of risk. The choices are:

1. Do not have a UAT phase – Risky, Buy in of users is low, rework costs.
2. Have the development group do UAT (or 3rd party developer) – Independence and objectivity is an issue, buy in of users is low.
3. Have IT group complete UAT – will tend to be more technically focused and not on the business process and user needs.
4. Have a 3rd party complete UAT – They are unlikely to know the business as well as the users
5. Throw a few users at the system for a few days before it goes live – It is better than nothing, but how will they know what to test and how to test.
6. Have a well structured and managed UAT phase – It can be adapted to allow for level of involvement and testing early in the lifecycle, it can avoid deploying a system that does not meet user requirements and can ensure users are well motivated towards the system when in production

## What UAT challenges are faced by most organizations?

Some of the challenges faced by organizations that have procured complex IT solutions as regards UAT are as follows:

- Business User availability, motivation and test knowledge
- Lack of a structured process to guide UAT to success
- Visibility on 3rd party level of testing
- Discovery of non functional defects (Performance, Stress, Load, Volume, Security, Usability and accessibility)
- Discovery that IT processes is not available or robust enough to support the system in UAT or in production | (Test case management, Application Management, Configuration and Release Management, Defect and Fix Management)

- Efficient deployment of business users in team for both test preparation and execution
- Lack of Entry, Exit and Suspend criteria
- Poor Management Information & Metrics on progress and How UAT is going in particular to risks that have been eliminated and latent risks.

## Best Practice UAT

Insights experience suggests that the critical success factors for UAT are as follows:

- A mixed team of professional testers and business users
- A risk based UAT strategy and structured process/framework
- Training of users on the system and on UAT
- Efficient planning of User involvement in preparation and execution of tests
- Good understanding of vendor test plan and performance to plan
- Management of processes, systems, people and environment
- Professional tester leadership
- Defined interface and Corrective Action processes with vendor
- Entry, Exit and Suspend criteria in place Insight normally recommends a 3 Phase approach to UAT.

## Step 1: Engagement

we respond to client's RFI/RFP by submitting a comprehensive proposal. We propose to carry out a Pilot testing project (at no cost) to showcase our testing and bug discovery skills to the prospective client. Pilot project will help STC understand the requirements, get familiar with the AUT in a broad way. IT will also provide an insight into the training requirements, testing approach to be followed, test environment, nature of constraints and risks, timelines and resource estimation. Pilot project will also help the client, calibrate their expectations on the project deliverables and help define the communication channels and processes between the client and STC. Upon reviewing Response-to-RFP/Pilot-test-result documents, client asks us to start testing their product, requesting specific deliverables.

## Step 2: Knowledge Transfer

Team members are carefully selected with right mix of skills to match the testing requirements. Our domain experts, test engineers will ensure that the critical activity of knowledge transfer - both domain-specific as well as project-specific knowledge - happens smoothly. We assign same testing teams (who have previously worked on the same domain projects) to test new releases to minimize the learning curve. The initial knowledge transfer can occur either in STC offshore Test Lab or in client's location. A walk-through on the application is given by the client. The requirements are thoroughly analyzed and the clarifications raised are resolved. At the end of this phase the Gap Analysis is done and mutually agreed Test Scope is baselined. Test modules are delineated and distributed among the trained test team. The project plan and impact analysis is done

### Step 3: Test planning

The main activities to be done in this stage are planning Strategy, Test ware, Test execution and Traceability. The Test Baselines, clarifications, Project plan and scope are received from the client with signed-off. Based on these inputs STC will propose the approach to testing, test iterations, run plan document, high level schedule and Entry and exit criteria. These will be reviewed by the client. Our project manager located onsite or the assigned QA manager at offsite location (depending on the engagement model), will act as single point of contact for the client to resolve any issues and to get sign-off on the final test cases and test data from the client. After the sign-off STC will prepare Test Strategy and Test ware consisting of Test conditions, Test Scenario, Test Cases, Test Script, and Traceability Matrix.

### Step 4: Test Execution

The test execution is done either in the STC off shore test lab or onsite (or) some times in parallel. Test environment setup will be done by Client and experienced test engineers check the test environments and check the critical functionality for sanity pass. They also execute the test scripts in this step. Test entry and exit criteria are followed at each stage of the test. The test progress is monitored through the Daily Execution Status reports. Defect logs are generated for every defect. Every bug discovered is tested again by senior test engineers. Screen snapshots portraying the bug discovery are maintained for every bug found. Detailed steps to reproduce the discovered bugs are documented as part of the bug reports. Tracking of the open defects will be done through (DRM) Defect Review meetings. Pass logs, Closure Logs, status reports, observations made and defect analyses are also produced. The test management is done using MS office, Test Director and any client specific tool. With daily/weekly telephone/web-conference meetings, up-to-date test result reports and issue resolution reviews - we keep everything transparent to the client and ensure that the client never loses control over the entire process.

### Step 5: Test Closure and Summary

A final test summary report is prepared and the test deliverables comprising test plans, test scripts, summary and detailed test result reports is submitted to the client and a sign off is obtained from the client. Metrics related to schedule and defects is prepared and analysis and recommendations are made. Test process review is done to learn and update the existing test practices, templates and processes. Regression test scripts are analyzed for test automation suitability. Appropriate test automation tools are deployed to automate testing in order to expedite the regression testing of future releases. A process and a stable framework for handling on-going release testing requirements on a long-term basis are implemented.

## Summary

Having a well structured approach and an appropriate level of business user involvement is critical to any projects successful roll out. It strengthens the business user commitment to the success of the system as they are seen as key stakeholders; it ensures that the organization demonstrates its investment in the system roll out success by making time available for UAT, planning the user involvement well and providing training and professional support in the areas of testing that would not be the core competence of the business users. Development and 3rd party suppliers also derive the benefits of having clear visibility of the process and goals of UAT and the link to the requirements and contracts they have been working with. Clear entry, exit and suspend criteria ensure the effective and efficient deployment of resources. The benefits to the organization are as follows:

- Clarity of how the software system will move from development into production.
- A sense of ownership from the business user for the system
- An overall reduction in time and cost of deployment of the system
- An audit trail and set of process documentation that can be re used
- Increased skill set of business users

## About STC

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