# The *What, When* and *How* of Acceptance Testing

*The purpose of this White Paper is to explain how one can ensure, as part of acceptance test, that documents are in proper shape and software is successfully tested. Decisions involving What to test, When to test and How to test different work products goes a long way in ensuring product quality. The computer revolution has brought about integration of various technologies and several configurations.  It is becoming increasingly important to ensure process quality as a supplement to product quality.*

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The key to leveraging quality is breaking it down into three parts, *What, When* and *How*. *What* is the goal(s) of the exercise. *When* is the timing of various activities involved in the quality process chain that includes testing. *How* is the plan, method and tool that make things happen, the leveraging of technology and techniques.

# Part 1:  The *What* of Acceptance Testing

### STEP ONE

So, the first step is clearly defining a goal, "what do you want to achieve" and then determining what information is critical.  The key to this is clearly defining the goals, quantifiable deliverables that can be easily assessed.  With a defined deliverable, we can now decide what is critical and what is not critical. The goal should be as specific as possible so that everyone focuses on what exactly needs to be achieved. Below is an example of Step One, defining the goals and what information will achieve those goals.

- **GOAL :  An ASP enterprise is hosting a particular application and is in the phase of acceptance testing. The Enterprise has set the following goals**

    - *Ensuring that documents produced during the life cycle of development are in proper shape.*

        Product quality begins by documenting rules and restrictions that define what the software does (the functional requirements). This functional specification has be evaluated using four criteria:

        1. Completeness
        2. Consistency
        3. Feasibility
        4. Testability

- *Design an Acceptance criterion.*
- *Ensure that the all Modules of the product are fully tested and maintainable*.

We know explicitly what we have to do (Goals).  ***The key information required is of course available through documents and Domain expertise.***

Now comes Step Two of the first part, defining what exactly to be done.

☐*STEP TWO*

In Step One, the goals are identified.  Remember more often than not the enterprise owning the product is not competent to achieve the goals with its resources. Now, in Step Two, we bring in (or rather we should bring in) our value add in terms of the following;;

- *Evaluation of the product covering functional and technical aspects*
- *Defining Product Acceptance criteria*
- *System Evaluation against acceptance criteria*
- *Usability evaluation*
- *Document reviews*
- *Data migration and parallel runs*
- *Evaluation of System integration across various third party offerings*
- *Evaluation of various test tools for their Test automation process*

 Further the aspects of managing the project has to be defined.

- *Identifying Coordinators on the vendor and client side who are responsible for the deliverables.*
- *Identifying Milestones and timelines*
- *Delegating the work to other members of the team.*
- *Defining reporting mechanisms*
- *Mechanisms to resolve issues*

# Part 2:  The when of Acceptance testing

The ideal model would be to synchronize the development activity with testing activities. In a good software development process, test planning and design should parallel the steps needed to produce the working code. The test plan should start during the generation of the requirements.
***The key factor is that Acceptance criterion has to be drawn at the Software requirement specification (SRS) stage.***
This is a factor ignored by most enterprises.

Here is an ideal model - popularly known as the 'V' Model  (See Figure 1)

- Validate development work products at each phase for testability.
- Generate traceability matrix between work products created at different phases of software development life cycle (SDLC)

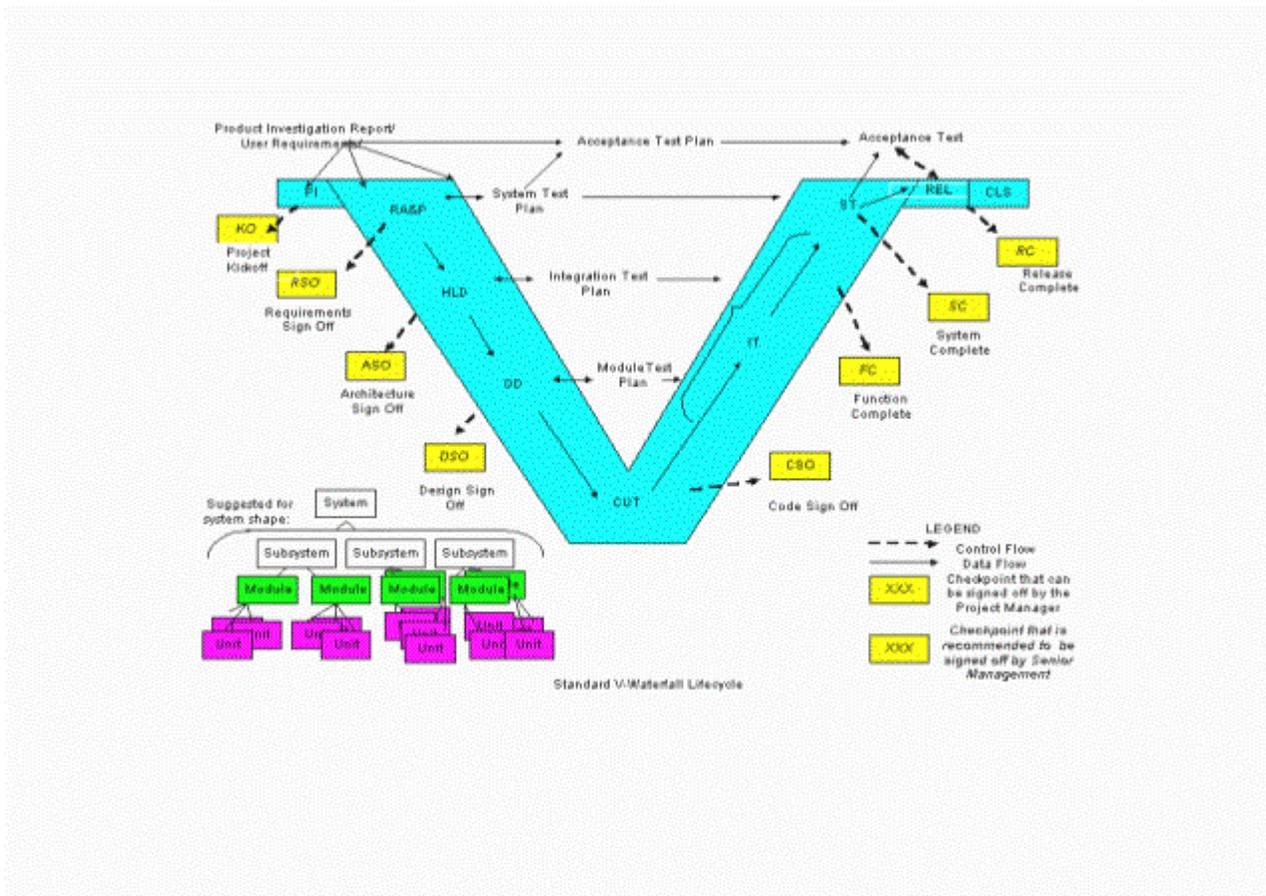- Carry out reviews of documents prepared at each phase.



*Figure 1 : 'V' model*

# Part 3  The *How* of Acceptance Testing

The common problem in testing activities is to decide *how* to test.  Improper planning could lead to chaos and retesting without reaching the end goal effectively. We start with the **GOAL : The Vendor is hosting a particular application and is in the phase of acceptance testing**

If you are doing functional testing the more background you have on your product, its design emphasis, and its customer base, the closer your test cases will be to the real world use. Always remember that every work product has core functionality. Put emphasis on core functionality and have an acceptance criterion for core functionality.  Defective core function of a work product is like a human with a defective brain.  Identify independent modules which are not dependent on core functionalities, this will speed up testing.  Prioritize the testing based on business urgency and cover the testing various phases.  Data generated in testing is a very vital piece of information. Emphasize on reusability of data with proper recording and planning. It is ideal to record and plan the data for tests requiring consolidated data at an early stage of testing.

If you are doing Usability testing treat yourself as an end user. Remember to identify the usability problems sooner than later. There is always a phenomenon of getting used to the environment good or bad.  Therefore it may be a good idea to have a new team to carry out this test.

Recent years have seen the rapid emergence of tools that test software automatically. Automatic testing tools can catch errors earlier in the development process, where they are easier and cheaper to fix and have less impact on schedules. A cost of automation is maintaining the testing processes during the inevitable changes associated with normal software development. Unless properly designed, such changes can make entire test suites obsolete, often resulting in the waste of many staff years.

# *Inference*

We have presented the methodology of Effective testing, acceptance testing in particular based on our experience. This is an honest account of inculcating the ways and means of acceptance testing. One begins by separating the *what* (Goal) from the *how* (technology, techniques) and the *When*.  Don' t worry about the technology define what you want first.  The first part involves management, they decide what it is they want to achieve.  The second part involves the timing. Timing is always crucial; success is all about doing the right thing at the right time.  The third part involves the geeks.  Once management has completed part one, the geeks can develop a technological plan that will leverage the best methods.  The better management has done their job, the better the geeks can do theirs.

This white paper is available in http://www.oaksys.net
For details/clarifications, please contact: testing@oaksys.net