

## Specialist Testing Support for Acceptance Testing

### Introduction

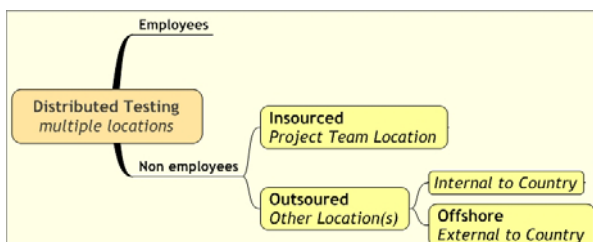
Is acceptance testing best undertaken by the users of the IT systems being implemented? Is the concept of software testing inherently difficult for business stakeholders to understand? Is *Offshoring* of acceptance testing the best way forward in terms of maximising value for money from software testing?

*This paper will argue that the answer to all three questions is No.*

The traditional divide between the business and IT communities, and within the IT community between developers and testers, underplays the vital role test analysts can have in building understanding and trust so that an objective decision can be made as to whether IT systems are fit for purpose.

The role of the test analyst is more important than ever with the advent of *Distributed Testing*, and most recently *Offshoring*. Too often, software testing is not understood by the business and development communities, with the focus being predominantly on driving down testing costs rather than ensuring that high quality testing delivers value for money.

We distinguish between the terms *Distributed Testing*, *Inourced Testing*, *Outsourced Testing* and *Offshoring* as indicated in the diagram below. These terms will be contrasted in more detail later.



For many major IT projects, particularly where software testing is distributed across multiple

locations, we argue that insourcing key aspects of acceptance testing to expert testing services providers results in:

- better acceptance testing,
- better understanding by the business stakeholders of the fitness for purpose of their IT systems, and
- better value for money where quality is a high priority in addition to time-to-market and cost considerations.

### Inourced Acceptance Test Analysis

Representatives of the user community need to be satisfied that they will be able to perform their job role when new software is implemented.

However, they may not have sufficient understanding of IT projects in general, and software testing in particular, to be best placed to undertake this user acceptance testing without expert support. There are also other forms of acceptance testing that need to be undertaken.

#### Forms of Acceptance Testing

These include:

- User Acceptance Testing;
- Contract and Regulation Acceptance Testing;
- Operational Acceptance Testing;
- Alpha and Beta Testing.

User Acceptance and Contract Acceptance Testing are compared and contrasted below.

What they have in common is their relative formality over preceding levels of testing, and their emphasis on switching away from focussing on identifying software failures towards building confidence that the software is ready to deploy.

## Specialist Testing Support for Acceptance Testing

---

Their contrast is profound, and the debate surrounding the approach being taken to acceptance testing runs through most projects.

Some IT project personnel will defend the idea of users running any tests they wish to undertake, whereas others will be insistent that the users restrict their testing to demonstrating that agreed business requirements have been delivered. Such IT projects have usually failed to subdivide this testing into User Acceptance and Contract Acceptance Testing.

### *Different User/Contract Acceptance Test Teams*

So to avoid this argument, is it sufficient to have two teams with different objectives?

Contract Acceptance testing would test against agreed acceptance criteria drawn from the agreed business requirements. Part or full payment to the software supplier would be made on successful completion of this form of acceptance testing.

User Acceptance testing would then proceed with confirming that business users could perform their job role. In theory, should issues be identified at this stage, everyone would agree that this is additional work and cost as a result of requirements not being correctly agreed between the user and IT communities. In reality, neither party will be happy with such a misunderstanding; this situation is perhaps the most common reason for high profile disputes when IT projects fail one, or both, of these two forms of acceptance testing.

Therefore, the use of different teams to undertake these two forms of acceptance testing will not necessarily move these issues forward. On the surface the argument is convincing:

*Let the users who best understand the business processes undertake user acceptance testing.*

Testing professionals from the IT community are more likely to be skilled in requirements engineering, and how to test against agreed requirements. That may well make them better

placed to undertake contract acceptance testing. However, outsourcing contract acceptance testing offsite and, particularly, offshoring it, may lead to more rather than fewer problems with ensuring upfront that high quality business requirements and acceptance criteria have been agreed. Without this high quality it is likely that user acceptance testing may fail even if contract acceptance testing passes. Our case is that when undertaking distributed testing across a number of test levels, it is in the user community's interest to insource test analysis support for both these forms of acceptance testing. The insourced testing services provider should be independent of the software supplier and any other test services providers who support preceding test levels. In principle, any acceptance testing personnel should be working solely in the interests of the customer and should not have an interest in the testing of other test levels, or the suppliers of the software being tested.

In the distributed testing model, insourced testers are the one team who are at the same location as the project team. For the purposes of acceptance testing, we interpret this as the insourced testers being located with the user personnel who define requirements and undertake/input into user acceptance testing.

### *Insourced Acceptance is Lifecycle Independent*

This is explained using the V-model and Agile Software Development as examples.

The success of the V-model approach is dependent on high quality requirements engineering, resulting in written business requirements which are specific, measurable and unambiguous. Using skilled insourced testers will help with ensuring that both the requirements that are agreed, and the contract acceptance tests based on these, are of a high quality from a testing perspective. By insourcing these testers, and positioning them as working with the users, their expertise can only help those undertaking user acceptance testing to understand and perform their role better.

## Specialist Testing Support for Acceptance Testing

On the other hand, Agile Software Development places its emphasis on individuals and interactions, rather than processes and tools. With much less emphasis on the discipline of processes and written documentation, it could be argued that the user community will need the support of insourced acceptance testers even more. The point made under the V-model about helping the users to understand and perform their user acceptance role better still applies, and it will be even more important to have testers who are skilled and experienced in challenging unclear, and now perhaps unwritten, requirements in order to define an agreed contract acceptance test.

### Insourced Acceptance Test Management

The way software testing has often been organised as a subset of IT development, its historic lack of profile, and common misconceptions about it, have combined to result in business stakeholders often finding it difficult to understand its nature and its worth.

The mistaken assumptions that testing is easy, anyone can test, and that exhaustive testing is possible, lead to customer dissatisfaction when software failures occur in the live environment. Why did we pay this money for software testing if some failures were not detected before the software was implemented? When failures don't occur in the live environment, questions start to be asked as to whether all the money spent on software testing was necessary!

Explaining software testing to business stakeholders can be summed up with the words 'no surprises'. Exhaustive testing of all combinations of inputs under all operating conditions is unlikely to be cost or time effective, even if it were possible. This leads onto an approach where we need to test based on risk, where software testing prioritises mitigating the highest product risks within appropriate/agreed timescales and budgets.

Insourcing Acceptance Test Management provides business stakeholders with a key manager they can

understand and trust to provide them with an informed choice as to where to invest in software testing and the residual risks on completion of acceptance testing.

It is, after all, the business stakeholders who have to make the ultimate choice relating to which risks to take. For example, is the risk relating to relatively poor product quality the lesser evil than the risk of paying too much for this product, or the risk of being late into the market place?

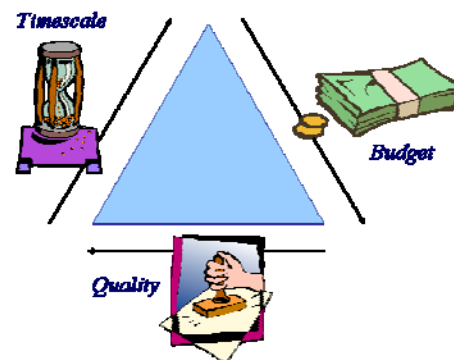


Diagram 1: Devil's Triangle

The diagram above illustrates the concept that there have to be tradeoffs between high quality and the constraints of timescale and cost. Test levels have quality-related exit criteria agreed in terms of defects found and/or outstanding and test coverage achieved. But it is just as important to agree these in the context of exit criteria relating to budget available and timescales for testing to be completed within.

Depending on the size and nature of an IT project, and the lifecycle deployed, the number of test levels will vary as will the formality with which exit criteria are defined and measured.

We would argue however that there are likely to be at least two checkpoints at which exit criteria need to be measured:

- between development and acceptance testing;
- between acceptance testing and live deployment.

## Specialist Testing Support for Acceptance Testing

---

For IT Projects with distributed testing involving multiple organisations and multiple locations, an insourced acceptance test manager who is seen as working for the user community is a vital role in the following respects:

- ensuring business stakeholders can make informed choices about residual risk;
- ensuring that exit criteria are being met, or exceptions are being dealt with appropriately, on both entry to and exit from acceptance testing.

### Insourcing as part of Distributed Testing

The motivation for offshoring software testing is often related to minimising testing costs, and this can be the right choice provided there isn't an unexpected detrimental impact of the quality of the software testing. Care needs to be taken in choosing the offshore option that all stakeholders understand the nature and role of testing, and that they are satisfied that the organisation concerned has the expertise and right approach to deliver the level of testing quality required.

All forms of distributed testing, whether insourcing or outsourcing, and particularly offshoring, need to pay special attention to ensuring that there is clear communication and clear expectations about roles and objectives.

Insourcing at the same location with the rest of the project team and/or users has particular advantages over outsourcing to another location, and particularly to offshoring. It is most likely with the latter that misunderstandings relating to communication and expectations may surface due to time-zone, cultural or language differences. Whilst outsourcing/offshoring can mitigate the risk of communication issues arising through greater emphasis on processes and documentation, for example, deployment of the V-model, this is not the best option if the client organisation and other teams are placing the emphasis on individuals and interactions.

For larger projects, it is more realistic to look at how to combine insourcing and outsourcing within the same country, and offshoring, rather than taking the view that one approach should be chosen to the exclusion of the other two.

### Conclusion

Insourcing the test analysis and test management of key forms of acceptance testing to a major testing services supplier has the benefit of involving an external organisation that will have experience of the emphasis that needs to be put on effective communication. It will also retain the benefits of less formal communication methods that can be exploited when working at the same location.

Trust and good communication are right at the heart of successful IT projects, and the insourcing of contract acceptance testing can provide the following benefits:

- Insourced acceptance test analysts delivering highly effective contract acceptance testing and providing specialist advice and support to user acceptance testers;
- Insourced acceptance test managers fostering trust and understanding between business stakeholders, development teams and other distributed testing teams;
- Insourced testing services companies helping to mitigate communication issues that may arise due to the location of outsourced/offshore companies.

## Specialist Testing Support for Acceptance Testing

---

### About the Author

Fergus McLachlan has worked in IT software development and testing for twenty five years. He founded Aqua Computing – an ISTQB/ISEB accredited training provider, and delivers training courses with SDLC Solutions. He has presented at both Eurostar and BCS Special Interest Group in Software Testing [SIGIST] testing conferences, and is a Director on the ISTQB UK Testing Board.

### About SDLC Solutions

SDLC Solutions is the UK testing solutions specialist.

With a broad portfolio of business solutions, including high-level testing consultancy, network and application performance assessments, test automation, test planning, preparation and execution and the provision of specialised teams of resources during periods of peak testing activities, SDLC Solutions has established an unrivalled reputation for delivering to its many clients which include FTSE 100 companies, government departments and multi-national systems integrators.

[www.sdclsolutions.com](http://www.sdclsolutions.com)

[info@sdclsolutions.com](mailto:info@sdclsolutions.com)

SDLC Solutions  
Wilmslow House  
Grove Way  
Wilmslow  
Cheshire  
SK9 5AG

© SDLC Solutions 2009