

Are Test Techniques Important?

89% of companies say testing techniques are a significant factor affecting the quality with which testers perform their task.

SQS recently commissioned Coleman Parkes Research to conduct an independent survey of the testing industry.

The findings, from a survey of 250 leading companies, confirmed our long-standing belief that increasing the skills of the tester is key to the success of all software projects.

As well as our popular courses for ISEB Foundation and Practitioner and our HP Software (formerly Mercury) product training, SQS have now released a number of new techniques courses for testers including Practical Test Design, Practical Testing Processes and Applied Testing Techniques.

Practical Test Design: This two day course builds on the principles laid out in the ISEB Foundation Certificate in Software Testing and is aimed at individuals who are involved in the day-to-day activities of identifying and writing tests. Through discussion and hands-on exercises it looks at the process of identifying and designing functional test cases for system testing and / or UAT.

Practical Testing Processes: This two day course aims to give practical experience in planning, designing and implementing tests for system testing and user acceptance testing. Delegates will be taken through a typical development life cycle and test process based on the processes defined in ISO 12207 Software Life Cycle Processes and the test process defined by ISTQB (International Software Testing Qualifications Board). With the emphasis on putting theory into practice, this course is highly practical and attendees will produce real test documentation over the two day period.

Applied Testing Techniques: There are many testing techniques available to the tester, though they are rarely taught from the practitioner's point of view. Rather than provide an overview of as many techniques as possible, this two day course focuses on the most useful techniques that will give a measurable benefit when implemented on a testing project. The techniques are taught using examples and exercises based on real project experience. Testers will return to work with a working knowledge of the techniques taught on this course.

If you are interested in these or any of the other courses we offer please contact the training team on:

www.sqstraining.com/training

or

Email: training@sqstraining.com

Testing Environments

How much time do your testers spend fire-fighting problems with test environments? Worse yet, how long do they have to wait for someone else to resolve the issues for them?

Industry averages of 30% - 40% are frequently quoted. Figures of 60% and more are not uncommon. Can you really afford to lose this large a slice of your testing window? Test environment challenges typically include:

- Excessive time taken to replicate production environments
- Difficulties in replicating defects in test environments
- Manual and non-repeatable processes
- Lack of environmental control
- Minimal re-use of resources

What does SQS offer?

There are four main services that SQS offer in this space. A combination of these services could provide a thorough transformation in a client's approach to test environment provisioning.

1. Test Infrastructure Review

The primary purpose of the review is to establish how the current processes and procedures measure up to best practices relevant to the client's situation. This is done through a series of meetings and interviews with key members of staff. The output of this process is a detailed document of findings and recommendations which is followed up with a presentation that summarises these results.

2. Test Environment Consultancy

SQS' Test Environment Consultancy makes environments more efficient to use and manage - through process improvement and definition and also via the managed introduction of tried-and-tested virtualisation and automation solutions. This is typically driven from the findings from a review as in part 1 above, and SQS can help implement the recommended changes so as to ensure that they satisfy internal standards while delivering the required environments in an efficient manner.

3. Remote Management of Environments

SQS work with our clients' staff to define, create and modify test environments around strict SLAs so that they can be managed remotely and easily by our Environments team.

4. Hosting of Environments

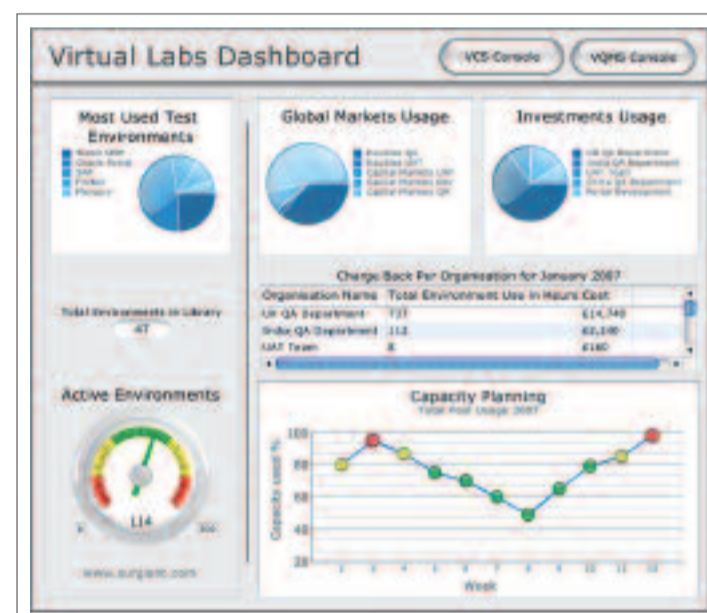
With SQS' hosting facilities and management service, this is a complete outsourced solution, taking the physical hosting and pain of set up and management of the test environments out of our clients' hands.

Virtualisation

SQS believe that, in the right circumstances, automation is a key driver of efficiency and quality. When it comes to test environments,

virtualisation is a technology that has become well established to deliver these benefits.

SQS have recently partnered with Surgient, developers of the VxMS solutions. VQMS, their Virtual QA/Test Management System, streamlines the building and management of virtual environments allowing developers and testers to self-provision their own environments on demand. Each user can get their own instance of



environments based on managed blueprints. Instances are discarded when a given task is completed and fresh ones provisioned as necessary.

Full solution

Establishing agreed processes and procedures, implementing the tools to support them, and integrating them into the overall testing process can provide an automated end-to-end testing solution. With their vast experience in testing and their strong partnerships, SQS are ideally placed to provide the services needed to implement such a solution.

In conclusion - why leave your environments to us?

- SQS' services facilitate the rapid build and deployment of test environments saving time and money and reducing downtime
- Processes and tools ensure security and slick control and provisioning
- Potentially improve testing productivity in preparation and execution phases by up to 60%

For further information please email info@sqs-uk.com

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SQS' experience gives us a unique ability to assist migration to Microsoft's next generation operating system.

SQS & SAP

Testing and test coverage are the main pain points for most clients implementing and maintaining SAP systems. 86% of SAP customers are concerned about the risk introduced from ineffective SAP testing. The principal areas within the software delivery life cycle where SAP testing is typically required are:

- Implementation
- Migration
- Upgrades and patches
- Hot fixes
- Customisation

SQS' Structured Systems Testing Methodology (SSTM) for SAP covers the key disciplines in the complex world of SAP testing and has recently been enhanced in line with the recent HP Software (formerly Mercury) upgrade to Quality Center and its integration with the world's most popular ERP system. Our methodology validates testing of SAP both in silos for each module and across silos as a series of business scenarios that verify the integration of the SAP modules into a coherent system.

With experience built up from over 40 SAP projects, SSTM for SAP encapsulates:

- **Test Strategies:** for functional, performance, integration and regression testing of SAP Systems.
- **Performance Testing:** combining deep understanding of SAP's modules and business processes and the technical expertise to identify the bottlenecks within an SAP implementation using HP's LoadRunner and its SAP monitors. As with any implementation, upgrade, change of fix, when conducting Performance Testing our approach ensures that we validate all the tiers of the system:
 - 1) application and data,
 - 2) infrastructure and comms, and
 - 3) the hardware.
- **Functional Testing:** design and structuring of tests to ensure efficient test coverage is achieved. Utilising expertise of SAP modules and testing best practice around both manual and automated tests using HP's QTP tool.
- **Training:** as well as providing training in HP's Performance and Quality Center suites, SQS underpins this with an introduction to SAP to provide the basis of understanding to newcomers around SAP terminology, architecture and data management.
- **Data migration and synthesis:** managing data is one of the most complex parts of a successful SAP project. SQS Environments Engineering team provide skills in the synthesis of testing data required to create the SAP 'world'. This is vital for ensuring 'functionally rich' functional tests or making sure that performance tests are exercising the system with sufficient variety and volumes of data.

SSTM for SAP reduces the cost and issues associated with finding issues later in the life cycle or in live production - aiding in reducing the cost of correction.

For more information or specifics about any aspects of our SAP services please contact Edgar Smith on edgar.smith@sq-s-uk.com

MiFID – Are You Ready?

The Markets in Financial Instruments Directive (MiFID), which replaces the Investment Services Directive (ISD) of 1993, takes effect on 1 November 2007. It aims to improve the 'passporting' of financial products and services across the EU and impacts many organisations that deal in financial instruments, including Retail and Investment Banks, Stockbrokers, Investment Managers and Wholesale Market Brokers.

In addition to increasing firms' abilities to undertake operations in other EU countries, MiFID also sets out rules that govern the way in which clients and their business are handled. For example, firms will need to be able to demonstrate 'best execution' of client trades, taking into account price, cost, speed and venue. Additionally, there is an increased requirement for compliance and regulatory reporting, with records needing to be kept for up to five years. The directive, then, offers up both opportunities and risks; foremost of the latter are presented in the many changes that will be made to IT systems, changes that are predicted by analysts to cost £10m, on average, per firm.

SQS can assist with your MiFID programme in multiple ways. Our unique Requirements Validation service can help to ensure that the changes you are making are the right ones. We scrutinise your requirements documentation to verify its adequacy, ambiguity, consistency and verifiability, and provide targeted recommendations as to how to improve its quality. We can also ensure that it complies with IEEE 1998 standard for Software Validation and Verification. Research and experience show that defects cost up to 20 times more to fix when identified during live usage, compared with being identified earlier during the software development lifecycle. For example, SQS has helped a major retail bank to save over £500,000 by detecting requirements defects early in the development lifecycle using SQS' offshore capability in South Africa.

As the Europe's largest independent software testing and quality management organisation, SQS is ideally placed to help its customers verify that system changes for MiFID have been implemented correctly and have not compromised other functionality. During 2006, SQS helped Lloyds TSB with its Sarbanes-Oxley programme to ensure that it had not compromised its operational capability as a result of extensive changes to IT systems. SQS has a wealth of testing experience in retail and investment banking, and has helped customers such as Barclays, Deutsche Bank, Lloyds TSB, UBS, Investec and Schroders implement successful on-time programmes. SQS understand the importance of ongoing return on investment too, so can ensure that the deliverables, produced to support MiFID, can be re-used to undertake regression testing for Business As Usual.

The deadline for the implementation of MiFID is rapidly approaching and represents a set of major changes in practice for financial institutions. SQS can help de-risk those changes to ensure that your MiFID compliance programme is comprehensively successful.

For further information, please contact Phil Tomblin phil.tomblin@sq-s-uk.com

Software & Systems Quality Conferences-UK 2007

Sharing Knowledge for Best Quality Practices



2007 is moving on faster than any of us care to think about and the first quarter is almost over. Before we know it the autumn will be with us and the UK Software and Systems Quality Conference 2007 will once again be taking place. As in recent years we are holding this highly prestigious conference at the Queen Elizabeth II Conference Centre, Westminster, London. This year the dates are the 2nd and 3rd October 2007.

Software and Systems Quality Conferences (SQC), is the leading conference for Software Testing and Quality Management in Europe. The conference has continued to grow year on year since its inception in 2002. In 2006 we welcomed 450 attendees.

In 2007 we will be extending the Tutorials and Conference to cover the whole week. Delegates will be able to mix and match their attendance to the "Software Quality Week" to encompass a combination of one or two day tutorials and training courses plus a visit to the conference to catch up on all the latest ideas and innovations in our industry. So why not consider joining us as a speaker and take advantage of the benefits we offer?

Call for Presentations

We are now looking for the best original case studies, research and solution presentations and tutorials that will share actual experience and knowledge of Testing and Quality Management projects for the 2007 conference.

In return, you will achieve visibility for your project and achievements at the best-attended conference in the UK as well as being a special free guest of the conference.

Your submission should include a meaningful abstract of your presentation, a short biography of the speaker and full contact details.

Closing date for submissions – 30th April 2007

Notification of acceptance or refusal of submission – 31st May 2007

To register your interest or find out more email uk@sq-s-conferences.com or call us on **020 7448 4624**

Selections of possible topics include:

- Outsourcing of testing, managed services and Test Factories
- Requirements testing, management, modelling and improving content
- Flexible requirements management with agile development and testing
- Test Process Assessment and Process Maturity Improvement
- KPIs and metrics of testing and quality, visualisation and use of metrics
- Vista Migration and Testing approaches and experiences
- Testing for improved Service Management and conformance to SLAs
- Test Management; Managing and Developing Testers' value to all
- Automation of testing and testing processes, new technologies and case studies
- Non Functional Testing, emphasis on load testing and security testing
- Test Environment Management
- Case Studies on Model Based Testing

Benefits of being a Speaker at SQC-UK

- Travel and living expenses reimbursed to attend the conference
- Invitation to speakers and programme committee functions at the conference
- Free entry to conference and generous discounts for your own recommended delegates
- Visibility on the conference website and in delegate proceedings
- Presentation and professional details published on the conference website after the conference
- Many good publicity opportunities - Information sent to over 30,000 companies and national promotion campaigns
- Delegate feedback always given and shared with each speaker
- Free invitation to the evening networking events
- Possibility of speaking at several SQC conferences throughout Europe

"It's always better to performance test on the production hardware"

Steve Milsom, Principal Consultant at SQS-UK, highlights, through a personal experience, the dangers of failing to test the performance on new production hardware.



Some time ago I was involved in the performance testing of a new system which was being driven by the need to be first to market. Additional pressure was put on us by seeing the planned launch date being advertised on national TV!

The production hardware (around several £million in cost) wasn't planned to be made available until the end of testing and one week before go-live.

To enable performance testing to overlap with functional testing a separate test environment was built from three spare PCs that were sitting around.

It sounds horrifying but it turned out very well.

The expected number of concurrent connections was 1200 users. By the end of performance testing we'd tuned and optimised the test environment to support 1200 concurrent users! In theory we could have gone live with three PCs (around a couple of thousand pounds in cost), but no one had the heart, or the courage to tell the Director who'd ordered the kit.

The production hardware and software builds went without a hitch, and were delivered ready to go two days ahead of schedule.

At the Friday Morning Team Meeting the last set of performance test results were distributed and the project team went into back-patting mode. There was a general feeling of relief that the system functioned correctly and performed well.

We were ready for the Monday launch in front of the UK's press representatives.

That was when the performance tester's voice could be heard from the far corner of the office in true Oliver Twist style - "please sir, can I have some more?".

"More! Why do we need to carry out any more performance tests?"

I explained that all we'd done so far was indicate the performance that could be achieved, but we hadn't proved anything. After a lot of reluctance it was finally agreed that one last performance test would be executed but this time on the production hardware.

So off I was sent with my load injectors and controller to a machine room on an industrial site in London Docklands. This was before it became the glamorous place it is today. I set up the equipment, donned my telephone headset and contacted the project team back in the office.

There I was in a cold, loud, server room sitting on a cable box in front of the controller, and there they were tucking into a celebratory buffet with champagne, care of the project sponsor.

I started the test scenario and watched the results screen.

Me: "Hey guys! I think we have a problem".

The Development Team: "What are you talking about, we've tested this system on a couple of PCs, and you're re-testing it on £millions worth of server hardware. What problem could there be?"

Me: "Well, at the moment this environment can only support 12 users!"

The stuff hit the fan in a big way.

The investigation into the problem started in earnest and people quickly appeared in the server room to work with me. By the end of a frantic day it became apparent that the problem was network related, so the network team connected up their analysers and we re-ran the test.

The problem turned out to be £5 worth of faulty network cable inside of the Load Balancer, which was replaced and the test successfully re-ran up to 2500 simultaneous connections. Imagine the cost to the company's reputation if I hadn't pushed for that last test.

The press coverage would have been devastating and the embarrassment to the CEO with its ultimate fall out on the project team immeasurable.

As it was all went well and the system was introduced to the world to general applause from the press and consumers alike.

The moral of this story?

- Testing early and often gives real return on investment
- Testing in a low specification environment can still provide valuable results
- Don't let others deter you from what you know is the right approach
- Testing in a test environment is good, but at the end verification against the production hardware will give you the most accurate indication and highest confidence in the performance of your system under load.

The survey of 250 mid-sized organisations across England, Ireland and South Africa, carried out by Coleman Parkes Research on behalf of SQS, showed widespread acceptance of the crucial role testing plays in the IT development lifecycle, but revealed a lack of genuine commitment to the process, particularly when it comes to actual investment.

The survey said this lack of consistency and investment in testing and quality assurance is costing organisations dearly. Over half (60%) reported there have been occasions in the last two years where a lack of testing had cost the company significant money, yet nearly half never set aside budget for testing within the development process.

If you would like to see the full white paper, please contact karen.espley@sqs-uk.com

EDITORIAL

by David Cotterell, CEO of SQS Group Limited



Since the amalgamation of Cresta and SQS half way through last year, we have continued to grow in excess of 20% to maintain our position as the leading UK & Irish pure play independent software testing and quality management consultancy.

This leadership position, coupled with our pan-European presence, now totalling more than 800 staff, has allowed us to develop and provide many new services to our clients. Some of these include embedded systems, code quality management, requirements analysis and broader training - some of which are overviewed in more detail in this edition of SQN.

The year has already witnessed clients across all sectors having to make system changes to comply with key business drivers including: Oil & Gas - the Kyoto Protocol, Public sector - technology advances, Telco - broadband, Investment Banking - MiFID. As a testing consultancy we play our full role in ensuring the clients risk is mitigated and cost and timelines are met with each of these specific demands.

Being the largest consultancy in our field brings with it responsibilities. We will continue to host the industry SQC conference (2nd and 3rd October) and recently sponsored independent market research into testing with a white paper subsequently issued in March.

The principal findings of the study from talking with over 250 organisations revealed that most significantly, 70% of organisations placed high importance on independence of testing from development. Overall, eight out of 10 of the IT development or project directors interviewed agreed that testing is an essential investment, but only around half of companies in each country agreed that testing tools add real value in an organisation and between four and five out of 10 view testing as a necessary evil. So whilst companies certainly pay strong lip service to the importance of testing, the evidence suggests that many lack real commitment, especially when it comes to investment in testing tools.

The outlook for 2007 looks healthy as clients continue to seek an independent consultancy practice to sign off their business critical systems. Macro issues carry on a pace, such as the MiFID directive, Microsoft Vista migrations and the deployment of organisation-wide ERP systems, such as SAP to achieve a single view of their businesses. Overlaid on that is a continuing expectation that a consulting practice must offer off-shore economic benefits to complement the on-site activity - but with no dilution of quality. Our SQS off-shore staffed facility is based in Durban South Africa.

Having the strengths of the SQS Group to leverage off, we expect to offer our clients a still wider range of services and initiatives - as ever solely focused around testing and quality management to further establish ourselves as the leader in testing and quality management to underpin our growth in 2007.

Software testing failures cost dear - Survey finds lack of consistency and funding

Three quarters of organisations (77%) claim that testing is an essential investment when deploying new technology, but more than half (55%) admit they do not have a consistent approach to software testing.

Only a further 31% consistently allocate a separate testing budget, according to research by SQS, but 41% feel their testing is inefficient and 46% admit they find it difficult to know when they have done enough testing.

SQS releases public schedule of Mercury tools (now HP Software) training in Ireland

SQS are proud to announce that from April 2007 it will be extending its Testing and Quality Management training to include a public schedule of Mercury tools training events in Dublin. Previously these events were offered on demand or on client sites only. SQS is the only Mercury Certified Trainer Partner now authorised to operate public training in Ireland and the centre will build on the depth of experience gained from running a similar schedule in London for the past four years.

Steve Dennis, Training Director at SQS commented "The adoption of Mercury tools in Ireland has grown significantly in recent years and we're delighted to now be able to offer a local opportunity for Irish testers to expand their skill set. In addition to the stand-alone Mercury tools many in Ireland are familiar with, we are excited by Mercury's ongoing integration into HP Software and we will be offering their new courses soon as they become available. Developing the skills of Ireland's testing community will help build on Ireland's growing reputation as a source of quality software and we're looking forward to playing our part".

Additional dates will be added as we build this centre over 2007.

If you would like to know more, please contact the training team on:

www.sqstraining.com/training

or

Email: training@sqstraining.com



Published and edited by

SQS Group Limited
120 Moorgate
London
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SQS ensures a clear view of migrating to Vista

As organisations gear up to migrate to Microsoft's next generation operating system, SQS' experience of migration testing gives us a unique ability to assist.

Having spent \$20 billion developing Vista, Microsoft and its partners are now fully engaged in educating business customers to the benefits the new operating system brings. There is improved security, Vista is Microsoft's most secure operating system ever. Productivity and user experience are improved through the new Vista user interface and the option to deploy a three dimensional version. However, operating system migrations, impacting every computer user in a business, are substantial undertakings. In particular, application testing and migration consume the greatest portion of cost and time whilst also posing the greatest business risk. SQS has amassed substantial experience of operating system migration testing. This experience has been harnessed to provide tools, practices and expertise to help organisations migrate successfully to Vista.

80% of applications will work on Vista. But which applications will fail?

Microsoft predict that 80% of business applications will work on Vista and the remaining 20% will have major problems. The question is how can we determine that 20% and focus on the essential remediation activities? SQS has previous experience of migrating over 2500 applications to XP using a traditional rigorous testing approach. The frustration of laborious testing with relatively few compatibility issues identified led to the search for a more intelligent and efficient approach - for which SQS believes it has found a groundbreaking solution.

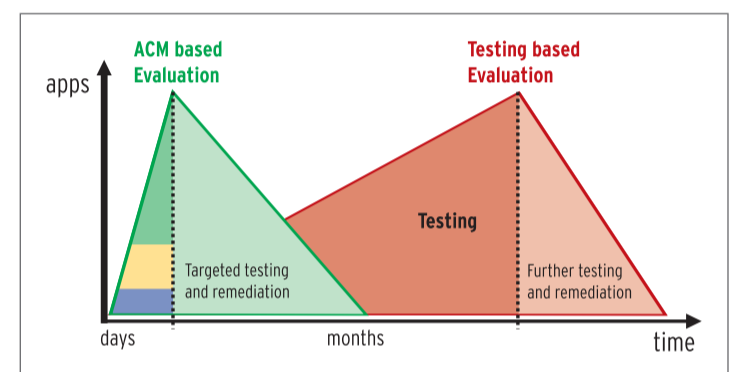
How can SQS reduce Vista migration cost, timescales and business risk?

There are three main components to the SQS migration solution which can be used alone or in combination depending on specific client requirements:

Application Testing Health Assessment - Understanding and validating the ability of an organisation to regression test its applications. SQS works with the customer to assist with the compilation and prioritisation of an application inventory and associated tests and scripts. This is a key

component to any migration activity ensuring the scope is understood and well managed.

Vista Application Compatibility Testing - Determines the likelihood of encountering problems when running applications on Vista. Using automated tools SQS can determine which applications will run without the need for modification, which applications may require some change and which will definitely encounter issues. This information is fed into the delivery of a clear, structured and informed test strategy, the Vista Compatibility and Testing Plan (Vista CAT Plan), focussing on the testing of potential problem areas resulting in immediate time savings (see



graph). SQS' preferred tool is the Application Compatibility Manager tool, developed by Camwood, the UK's leading application migration and management specialists.

Vista Migration Testing Services - SQS can offer a flexible approach to migration testing. Tailored to customer requirements and building on the Vista CAT Plan, SQS will help plan and execute Vista application compatibility testing. SQS capabilities enable the early definition of test resource requirements, test environment needs, the test schedule and overall migration costs. This can also include full testing consultancy extending through to end user functional testing and off-shore testing capability using SQS consultants on a fixed price contract basis.

For more details go to www.migratingtovista.com

Means and Ends – Justifying Test Process Improvement

Justifying a Test Process Improvement (TPI) programme requires examining the process from two perspectives.

As the majority of testing is concerned with supporting the business by the delivery, to time and budget, of IT systems, the primary question is an obvious one: "is what I am delivering good enough?" This 'end result' perspective is the most critical one - as the implications for a negative answer can be terminal for the business. Often this is the measure used to decide if a test function is adequately fulfilling its remit, so it is rightly justifiable for a test manager to use TPI to improve the quality of the end deliverable.

Once a Test Manager has achieved acceptable quality of live systems delivery, they have a choice - they can attempt to continue to deliver adequate releases without too much concern for how that might be done, or they can take the 'means' perspective: i.e. examine and improve the quality of their own processes. Are they as efficient as they could be?

Would they stand up to resource or organisational changes?

Note that the argument of 'the end justifies the means' (aka 'if it isn't broken, don't fix it') only holds water in a static environment. Facing an almost constant battery of technical, commercial and budgetary changes, an effective test manager will always be looking for ways to improve their test effort - to stay ahead of the game and protect their delivery to the business. This behind-the-scenes activity is where a test manager really earns their spurs - finding new ways of delivering better quality earlier, anticipating and pre-empting issues rather than reacting to them.

The pragmatic employment of TPI for the 'means' will always support the 'end' - and enables testing to succeed in the choppy waters that we so often sail.