

07

March 2004

THE TESTER

N E X T C O N F E R E N C E

Testing, Actually

Thursday 4 March 2004

- What is success for a tester?
- Achieving software quality through teamwork
- Remote team building
- Tracing back to requirements
- Global test solutions for business resilience
- How do we assess the ability of testers?

FUTURE

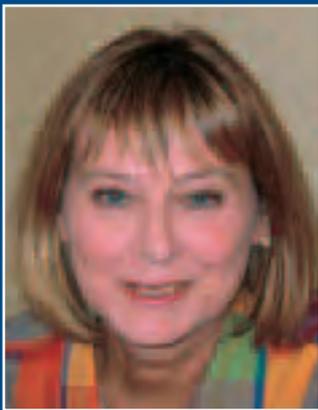
SIGIST CONFERENCES

Friday 18 June 2004

Friday 3 September 2004

December date to be advised





FROM THE EDITOR

Happy New Year!! We hope that you had a great time over the festive season and are now refreshed and ready for whatever testing opportunities 2004 will bring!

The December conference finished the year very nicely. Your assessment forms and the packed conference said it all. Very positive and lively speakers, with a couple of parallel Special Sessions giving the attendees a choice of programme.

It has been noted that a number of you were disappointed not to be able to attend some Special Sessions because of the limit on numbers. We are trying to do something about accommodating more attendees, however it will always be a case of first come first served, so the best way forward is to get your bookings in as soon as you can. There is also the benefit of having controlled numbers in that this promotes greater interaction between the speaker and the audience.

If you haven't been to a SIGIST conference for a while then maybe it's a good time to put our future dates in your new diary – see our cover page. It's always good to network with others in the same profession, and it is amazing how quickly your number of contacts will increase with regular attendance.

We look forward to seeing you in March!

Pam Frederiksen
 Communications Secretary
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 email: pam@leysen.com
 BCS SIGiST website:
www.SIGiST.org.uk
 SIGiST Standards Working Party:
www.testingstandards.co.uk

BCS SIGiST – TESTING, ACTUALLY

Thursday 4 March 2004 – London Marriott Hotel, Grosvenor Square, London W1

09:00	Coffee & Registration, Exhibition opens	
09:25	Introduction and Welcome – Philip Trickey, Chair	
09:30	Featured Speaker What is Success for a Tester? <i>Isabel Evans, Testing Solutions Group Ltd.</i>	
10:15	Coffee & opportunity to visit the exhibition	
10:45	Remote Team Building <i>Susan Windsor, IBM Business Consulting Services</i>	Special Session 1 How Do We Assess the Ability of Testers? Some Proposed Test Techniques <i>Paul Gerrard, Systeme Evolutif</i> Advance booking see below Ends 12:35
11:30	Global Test Solutions for Business Resilience <i>Andy Redwood, Buttonwood Testing Ltd</i>	
12:15	Book Review	
12:30	SIGiST Best Presentation 2003 Award	
12:35	Networking session and commercial break	
12:50	Lunch & opportunity to visit the exhibition	
14:00	The Future of Software Testing Certification <i>Andy Redwood, Buttonwood Testing Ltd</i>	Special Session 2 Get Your Message Across! <i>Isabel Evans, Testing Solutions Group Ltd</i> Advance booking see below End 15:00
14:20	TBA	
15:00	Tea & opportunity to visit the exhibition	
15:30	Tips for Testing	
15:45	Featured Speaker Achieving Software Quality Through Teamwork <i>Isabel Evans, Testing Solutions Group Ltd.</i>	
16:30	Closing Remarks	

The SIGiST committee reserves the right to amend the programme if circumstances deem it necessary.

Special Session 1

This Special Session at 10:45 is a 90 minute workshop with Paul Gerrard, Systeme Evolutif. It is limited to the first 20 applicants on a first-come, first-served basis. There is no additional fee. If you would like to take part, then please tick the box for Special Session 1 on the enclosed registration form.

Special Session 2

The Special Session at 14:00 is a 60 minute workshop with Isabel Evans, our featured speaker. This is limited to the first 20 applicants on a first-come, first-served basis. There is no additional fee. If you would like to take part, then please tick the box for Special Session 2 on the enclosed registration form.

Top 10 SIGiST Library Loans 2003

This is a list of last year's most popular books in the SIGiST library. Please see our web site for a comprehensive list of our books and a loan form.

No	Title	Author(s)
1	Art of Software Testing, The	Myers, Glenford J
2	Software Test Automation	Fewster, Mark and Graham, Dorothy
3	Automated Software Testing	Dustin, Elfriede; Rashka, Jeff; Paul, John
4	Complete Guide to Software Testing, The	Hetzel, Bill
5	Black Box Testing	Beizer, Boris
6	Practical Software Metrics for Project Management and Process Improvement	Grady, Robert B
7	Web Testing Handbook	Splaine, Steve and Jaskiel, Stefan P
8	Testing IT: An Off-the-Shelf Software Testing Process	Watkins, John
9	Managing the Testing Process	Black, Rex
10	Integrated Test Design & Automation	Buwalda, Hans; Janssen, Dennis, Pinkster, Iris

Abstracts: Testing Actually

Isabel Evans

Testing Solutions Group Ltd

Author: Achieving Software Quality Through Teamwork



What is success for a tester?

When we think we have been successful as testers, our customers and colleagues may not agree!

Abstract: What is success for a tester? If, as the ISEB Foundation Certificate in SWT says, "A successful test is one that finds a fault", does that mean that a successful tester is one who finds faults? Is that the only measure of our success? It should not be! So how should we regard ourselves and how should others regard us?

Should we be engineers, architects, or craftsmen? Are we professionals and should we be? Can we identify the attributes of success for a tester, for ourselves and our colleagues and customers?

This presentation, first given by Isabel at EuroSTAR 2003, asks the audience to reflect on the status and aspirations of testers, including:

- A way we testers might define success for testers - defining when we think we are successful
- Understanding the view of our customers - the customers of the test group (for example business managers, IT users, developers, project managers) and what they view as success for a tester
- The aspirations of software testers and our customers.

Achieving software quality through teamwork

We cannot achieve software quality unless everyone in the team agrees on what quality is - this does not always happen!

Abstract: Why is IT so often disappointing? Why isn't software built correctly? One reason is quite simple; IT systems are built by people, and people make mistakes. Some of these are technical problems, and most of the emphasis for IT and test groups seeking improvement is on technical process. Many problems are to do with people, their ability to communicate well and understand each other, their ability to learn from each other and from experience. This presentation is based on Isabel's forthcoming book, *Achieving Software Quality Through Teamwork*, and discusses:

- who should be involved and who is

involved in development and deployment of software - people are going to work in teams to provide the software so we need the right team

- the differences and similarities between these people, especially in their assumptions about quality - to achieve quality the team needs to agree what quality is
- ways of understanding communication preferences and how conflict can arise from differences between these preferences - teamwork requires mutual understanding and tolerance in communication
- how understanding may be improved by providing opportunities for communication within and around the IT processes and organisational processes - processes can encourage teamwork and communication in order that we achieve quality
- organisations, whether not for profit or commercial businesses, need their IT suppliers to understand the organisation's goal and how it measures success - quality for IT suppliers must include an understanding of the quality framework used by its customers - IT teamwork means including the customers
- how testers and test trainers might address these areas.

Workshop: Get your message across!

Does anyone read our reports? Can we get anyone to listen to us?

Abstract: When managing testing we need to report progress (or a lack of it!). Our reports inform management and help in decision-making and risk assessment. We also need to provide our colleagues and teams with the information they need in order to understand progress and priorities. Do our reports add value for their audience or are we just supplying "chart junk" that will not be read? Are we providing teams and managers with information they need or just providing them with what we have? Do our reports and charts emphasise or hide our message? Are our reports clear and to the point or do they contain "chart junk"?

This "beginners" session is for new testers and new test managers to discuss how best to put across our message clearly. It is based on the work of information designers such as Edward Tufte (who coined the phrase chart junk) and on the presenter's experiences. We will discuss what types of information different audiences need, how to display

information using charts, diagrams and text to best effect, and what reporting cycles are required for different audiences. We will discuss how to predict future progress from past reports.

Following a presentation of this topic at EuroSTAR 2002 and the February 2003 SIGiST, many people asked for an opportunity to explore it further, so here is your chance; a practical workshop for a small group based on that presentation.

Susan Windsor

IBM Business Consulting Services



Remote Team Building

Abstract: Everyone knows that a service is only as good as the knowledge, experience and the skills of the people who deliver it. This is as true for testing as any other type of service.

People are more effective when they feel motivated by their work, understand how they fit in, are comfortable with the direction their organisation is taking and feel safe and secure in their job.

So, in today's testing services market, where job security isn't a given, increasingly work is being sent offshore, remote working is thought of as normal, pressures to deliver ever more value are increasing and you may never even have met your work colleagues - how can you feel part of the team, know your value to your organisation and progress your career?

Everyone is being encouraged to be proactive about acquiring knowledge, investing in their personal development and building up their network of contacts to improve their career prospects, but is it really enough? What can employers do to support effective communication, personal development and ultimately achieve a motivated team that delivers the required business objectives?

In this presentation, Susan shares her experiences as a manager responsible for the motivation and growth of a large pool of testing professionals, working at multiple locations, with a wide range of skills and experience. She will share the process and results of a communications and team-building programme undertaken during 2003.

Andy Redwood

Buttonwood Testing Ltd



Global Test Solutions for Business Resilience

Abstract: 'Test' is a four letter word - for some organisations who have embraced



the technology to work on behalf of the Business – those four letters spell ‘sexy’.

The Business has been the last bastion for the constant reinvention of IT solutions, at some significant cost, leaving the Business exposed to the risks associated with change programmes.

It is possible to use the available infrastructure, technology, tools and process to help ensure Business Resilience.

Using a case study, some facts and figures and some hindsight, I’ll share some ideas of how you may be able to reduce your costs, reuse your assets, get the best from the tools, bestshore your testing resources into a 24/7, on-demand, enterprise wide transformation process, for the benefit of the Business.

The Future of Software Testing Certification

Abstract: The UK is a member of the International Software Testing Qualifications Board. What does this mean?

- Who is the UK Software Testing Group and what do they do?
- What do ISEB do for the Software Testing Group?
- What initiatives are currently on-going?
- What is the future for ISEB Foundation

and Advanced certificates and what is coming next?

- How can you help?

I’ll tell you what’s going on and why and answer any questions you may have.

Paul Gerrard
Systeme Evolutif



Workshop: How Do We Assess the Ability of Testers? Some Proposed Test Techniques

Abstract: Many of us have had to hire testers for our teams. We write a job description, and document the specific skills, experience and aptitudes needed. Based on the CVs received, we select a number of candidates to interview. Usually, we hire or reject on the basis of an interview, which is a structured discussion of the job and environment, and the candidate’s background. However, we rarely get an insight into the real capability and aptitudes of the candidate in an interview. We tend to rely on gut feel, a perception of the intelligence of the person and how we get along with them. There’s nothing wrong with interviews, but do they give us a real insight into the ability of the candidate to test?

This workshop explores the possibilities of testing our candidates to find out how good

a tester they might be. Surely it’s easy to give the candidate a specification and some code and let them get on with it. This is one possibility, and an example of how this might be done is presented. However, there isn’t usually time to do this thoroughly enough to be meaningful. So, we have to resort to psychometric tests. Of the many types of questions that could be asked, which are the most appropriate? In the workshop, Paul Gerrard proposes a syllabus for “tester psychometric testing” and shows some example questions. Be prepared to sit a short test yourself.

When we interview and select employees, we place great emphasis on their personality, but we don’t use objective methods to assess personality. We rely on gut feel again. We know that the mental approach of testers is different from developers, for example, but does personality have any bearing on ability to test well? For many years, the Myers-Briggs personality type indicator (MBTI) test has been used to assist employers to understand the personality of job candidates. The workshop introduces a simplified MBTI test and we ask you to assess yourself. Is there a pattern of personality types amongst testers? Let’s ask some testing-related questions and see if there’s a pattern to be found. We expect this session to be fun, but you might also learn something about yourself.

Advertising in The Tester

The Tester is distributed to the database of the Specialist Interest Group in Software Testing (SIGiST), which is part of the British Computer Society (BCS). With over 2,500 professional testers and IT professionals, we are the largest group of specialist testers and they need to know about your products and services. Additionally the The Tester is downloadable from our web site www.sigist.org.uk and is accessed by IT professionals looking for testing related information.

The Tester can now offer you the opportunity to place your organisation in front of these specialists at a very affordable price as we can allocate 2 extra pages of the magazine to you.

The costs are £300 for a half page advertisement and £200 for a quarter page. To book your space for the next issue, please contact Claire Mason on 01422 836431 or email SIGiSTregs@aol.com. The advertising space will be allocated on a first come first served basis. The closing date for confirmation is 31 March 2004 and the artwork will be required by 7 April 2004.

If you require any help with artwork, this can be provided for a small charge. Technical details for the material will be provided when your space is confirmed. All costs exclude VAT.

Membership of the SIGiST

The committee decided in February last year that we would no longer run a membership scheme. If you are on our database, then you will automatically receive details of our events and regular copies of The Tester. You can add or remove yourself from the SIGiST database, it will take seconds - follow the link below.

<http://www.sigist.org.uk/register.asp>

Alternatively, if you wish to receive information by post, please email your name and address to SIGiSTregs@aol.com and we will put you on the postal list.

Tracing Back to Requirements

In today's tough economic climate many businesses are looking to invest in IT projects that deliver benefits in short time frames. This has led to CIOs and IT directors asking their development teams to produce high quality software much faster. This presents development and testing teams with a dilemma. How do they develop more quickly without making quality and reliability sacrifices? This is an important issue for the development and testing teams, after all they are blamed if projects fail or systems fall over after a few months of use. Time to test is short, and growing shorter so developers and testers need to find ways to overcome these challenges to enable them to continue producing quality software that meets initial business requirements. So how can this be done?

Many of us in the testing arena become so immersed in the tests we are performing, that we end up only thinking about the part of the project we are working on, and almost forget that it forms part of a much larger initiative. Although this is a problem we are all aware of, it is a trap that we can all too easily fall into. This is evident when we look at testing. Many people working in our field will perform a test, but only trace the results of it back to the specific part of the application they are testing – this isn't

good enough, tests and defects should be traced back to requirements as this will enable them to assess the true impact the issue has on the project overall.

Definition

Requirements need to be defined at the outset of a development project to enable testers to track back to initial requirements. This definition process has to include everyone involved in the project from customers, to business sponsors and technical developers. Once defined the requirements will form a key part of any project, with all development and testing work stemming from them. However this isn't always the case as often a requirements document will be drafted and agreed, and then filed away never to be seen again. This is a bad practice – without referring back to initial requirements, how will developers know they are writing code that meets the project specifications? How can testers know if their test plans provide adequate coverage against the original requirements?

One way to ensure that requirements are always at the heart of a project is to use a requirements management tool. All work carried out on the project should stem from the requirements that are set within the tool. When setting requirements, business analysts and project managers should include all associated data in order to assist the tester in tracing tests back to requirements later in the project. This data should include information like the priority of the requirement, its status, information on the business

sponsor who requested it, and the particular software release the requirement is associated with. Essentially it is very important to spend time and effort defining and prioritising requirements as they will not only feed into test plan generation, but also shape the whole development project.

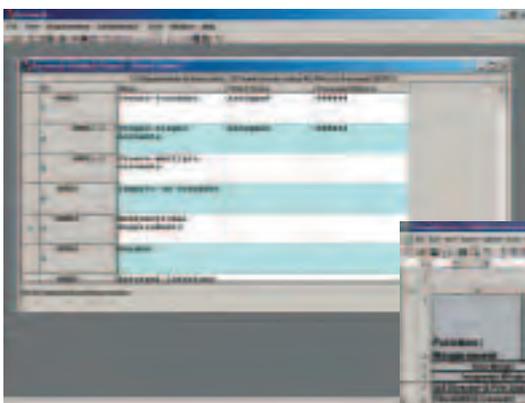
Risk analysis

Risk analysis is the next logical step to take - this process highlights areas of an application that would have the largest impact on business operations if they failed. Once risk analysis is complete, the test strategy can then be developed which concentrates testing efforts on the higher risk elements to the application, the mission critical defects. This means that you are then able to gauge which defects are acceptable and which aren't, rather than taking a blanket approach and saying that a certain amount of defects can be tolerated without knowing which part of the application and more importantly what business process they might effect. For example, if you consider an e-commerce application, a risk analysis would show you that defects or bugs in the payment and ordering part of the application would seriously impact the bottom line of the business, whereas a defect in the product catalogue might not be so critical to turnover.

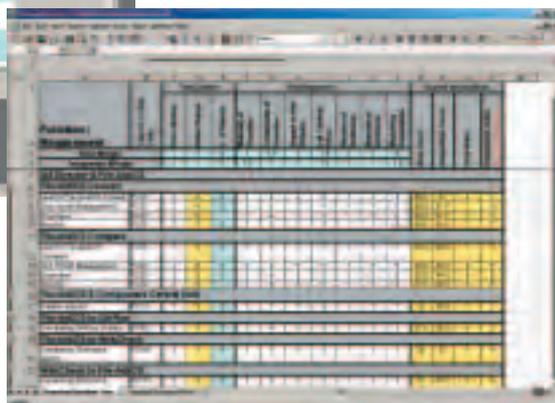
Not only does risk analysis allow you to make more informed decisions about criticality to risk, but also it allows the IT department to be more effective in dealing with pressure from other parts of the business to go live with applications. Once risk analysis is complete, you can go-ahead and begin to generate your test plan.

Test plan generation

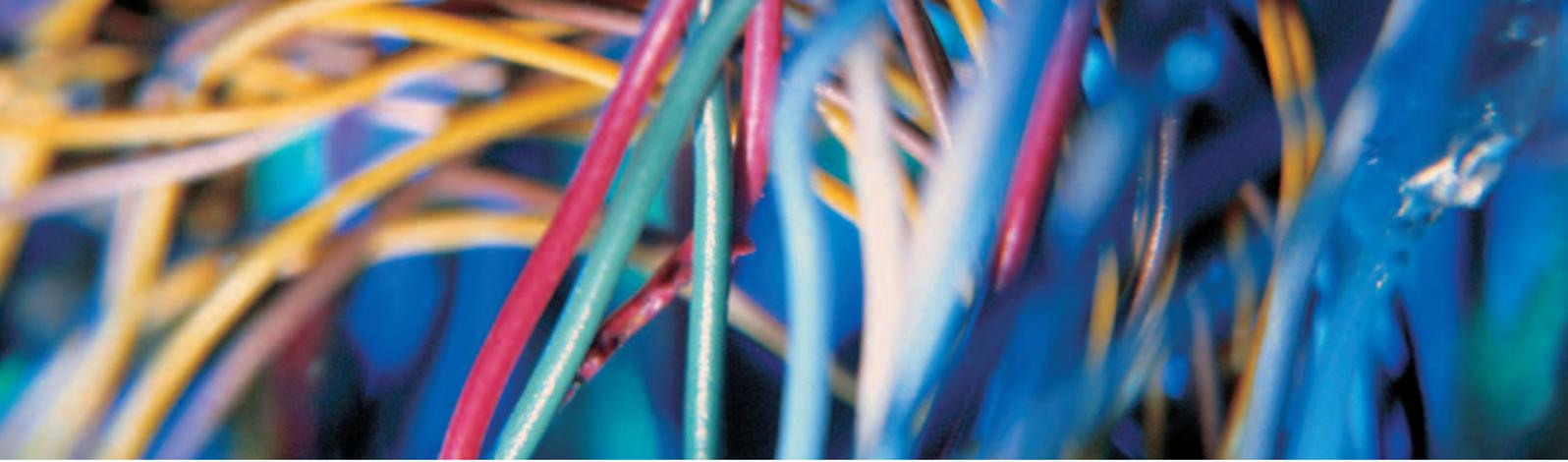
Test plan generation can often be difficult, especially with large-scale development projects. With many different facets to an application, deciding where to start testing can be tricky. Do you start by testing the customer facing part of the application, or do you start with the numerous reports and interfaces? This is a dilemma that test managers face day in day out; where should their test plan start and where



Tracing requirements with Reconcile



Risk analysis during test planning

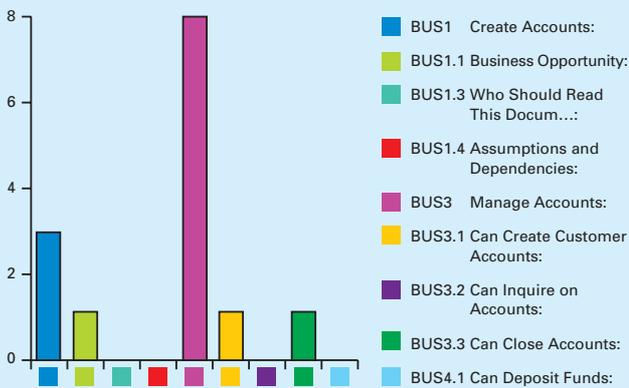


should it end? The answer is simple, the test plan should be generated from the prioritised risk requirements which have been weighted to take into account the associated risk of

failure at the start of the project. Test managers should look at the highest priority requirements and build their test plans around them. The test plan should place a high degree of effort on these high priority requirements to ensure their reliability and stability.

not considering the impact of the defect they have found on the whole project. By tracing back to the requirement and looking at the priority/risk information, testers will be able to understand whether there is an urgency to resolve the test failure. If they are using a requirements management tool they will also be able to analyse whether there are any similarities to defects found by other testers. By tracing a path back to the requirement, the testers will be able to see what impact the failure will have on other elements of the project. The tester can then feedback this information to the project manager and developer responsible for the requirement, so that they can make adjustments to the code written or maybe even revise the initial requirement.

Tracing defects to requirements



Issue/defect generation

Once a test plan has been generated and is being executed it is almost inevitable that issues and defects will arise. This is often the point at which testers make mistakes by

Are your applications leaking money?

64% of IT Executives say Yes... having experienced material revenue loss as a direct result of application failure*

In today's competitive environment, IT Departments need to release increasingly rich feature sets across complex distributed infrastructures. To reduce the risk of costly errors, analysts such as Forrester Research and Patricia Seybold, recommend an Automated Software Quality (ASQ) solution.

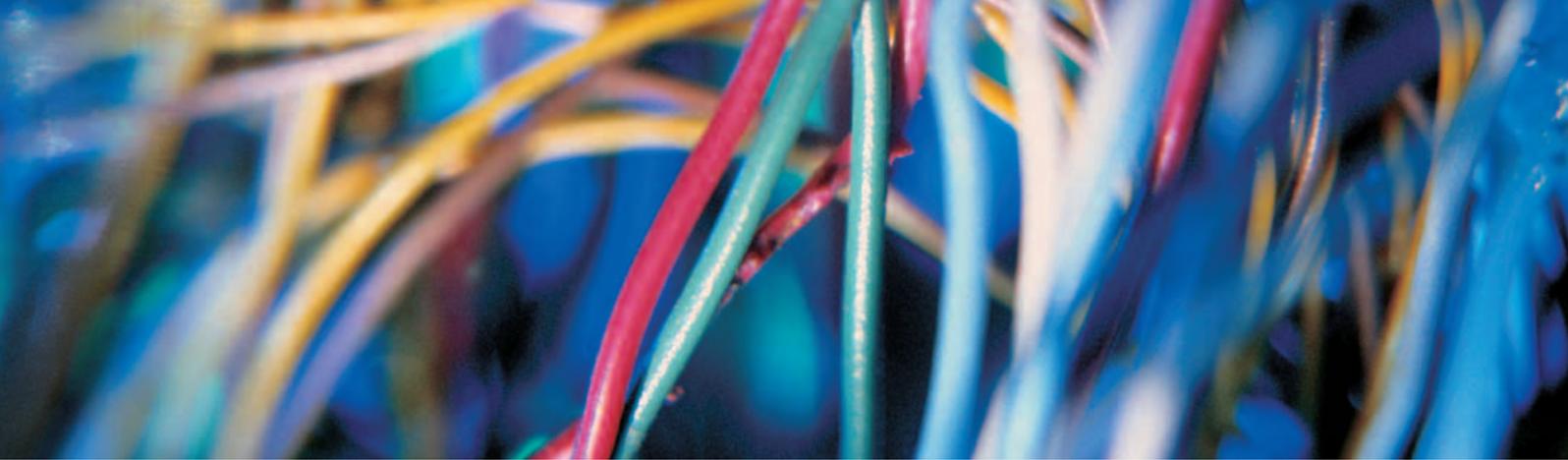
To learn how your software projects can be a third less expensive** and to download your ASQ information pack with Patricia Seybold white paper, visit:

www.compuware.co.uk/money

01753 44 44 44

* Forrester Research - 2003
** Patricia Seybold Group - 2003





Impact Analysis

Once a defect is found, the development team will make changes to the systems and code in order to rectify the problem. The development team will then pass this 'fix' to the testing team, to run tests to prove its reliability and stability. It is at this point that tracing test defects back to requirements really shows its worth. By tracing both the defect and the 'fix' back to the original requirement the team can gain a thorough understanding of the impact the 'fix' will have on the system. The test team can then prepare and run tests on all impacted parts of the system. Without tracing defects and fixes back to requirements it is very difficult

for testers to ensure that they are testing all parts of a systems that have been impacted by a fix.

Conclusion

Having identified risk, with the relevant parties (who have been involved from the outset) and implemented a test strategy, organisations can deploy applications with the confidence that they have been thoroughly tested and the risk of downtime has been significantly reduced. Also, by tracing test defects back to requirements and by putting requirements at the centre of any development project you can ensure that your test teams think more laterally about the impact of the tests they perform. Tracing back to the requirement not only

ensures that you keep the project focused on meeting the goals agreed from the outset, but also that testers analyse how a test defect can impact a number of requirements due to their interdependent nature.

There have been many high profile failures in recent times, with some stemming from developers trying to rectify a small problem without considering the over impact that 'fix' will have. By carrying out risk analysis and requirements traceability, test teams can help developers ensure they don't try to solve one small problem and create another much larger one.

Sarah Saltzman
Compuware.



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Leysen are sole distributors of a CD ROM based self study course for the ISEB Foundation Certificate in testing. This has been written by an experienced accredited trainer of both the Foundation and Practitioner's courses. £100 and p&p, plus VAT. See an evaluation copy on:

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SPECIALIST INTEREST GROUP IN SOFTWARE TESTING

Next conference:

Testing, Actually

Thursday 4 March 2004 – London Marriott Hotel, Grosvenor Square, London W1

see page one for Conference Agenda

Registration Form

PERSONAL DETAILS

You may register by

Fax 01422 836 096 or 01422 839 472

Post SIGiST Conference Registration,
Marshwood Events Management,
PO Box 445, Triangle, HX6 3YF

Tel 01422 836 431

Email SIGiSTregs@aol.com (giving all details required below)

Title _____

First Name _____

Family Name _____

Invoice and Joining Instructions to be sent to (please indicate company name):

Company _____

Address _____

Postcode _____

Tel _____

Fax _____

Email _____

If you haven't heard from us by 26 Feb, please contact us on 01422 836 431

SPECIAL SESSIONS

Please indicate with a tick, one parallel session for each time slot (see programme for further details):

10.45	14.00
<input type="checkbox"/> Paul Gerrard	<input type="checkbox"/> Isabel Evans
<input type="checkbox"/> Susan Windsor/Andy Redwood	<input type="checkbox"/> Andy Redwood

FEES

Including morning coffees, afternoon refreshments, luncheon, full set of presentation materials, and entry into the tools and services exhibition.

	Ex Vat	Inc VAT
Ordinary Delegates	£195.00	£229.13
Full Time Student* and Academics	£85.00	£99.88

*please inc copy of student ID (VAT @ 17.5%)

PAYMENT

By cheque made payable to 'BCS SPECIALIST INTEREST GROUP IN SOFTWARE TESTING', by bank transfer (await details on invoice) or by credit card.

VISA Mastercard Access Switch

Name on card _____

Expiry date _____

Issue number (Switch only) _____

Card Number _____

Amount _____

Billing address if different from first column: _____

Signature: _____ Date: _____

PURCHASE ORDERS

Does your company use Purchase Orders? Yes No

If so, please put the Purchase Order number here so that we can process your registration more quickly. If you tick the box above but do not know the Purchase Order Number we shall wait until we have one before processing.

Purchase Order Number: _____

CANCELLATIONS

Cancellations must be received in writing prior to 26 February to qualify for refund of fees (less £10.00 administration charge). No-shows are liable for the full cost of fees. Substitutions may be accepted at any time.

VEGETARIAN MEALS/SPECIAL DIETARY REQUIREMENTS

I am a vegetarian

I cannot eat: _____

CPD

The meeting is worth 5 hours CPD
(Continuous Professional Development)

Vat Reg No GB 618 1687 24. In the unlikely event of cancellation, our liability will be limited to the refund of fees.

Please tick this box if you DO wish to give permission for your name and address to be passed to a third party for mailings on related matters

08

June 2004

THE TESTER

- Critical Testing Processes
- Stranger in a Strange Land
- Lost in Translation
- NLP for Testers
- Platform Specific Risk Based Tests
- Testing Maturity Model
- Testers for Testers roles
- The People Aspect of Test Management

N E X T C O N F E R E N C E

The Passion of Testing

Incorporating the SIGiST AGM

Friday 18 June 2004

FUTURE

SIGiST CONFERENCES

Wednesday 22 September 2004

Tuesday 7 December 2004





FROM THE EDITOR

Everyone I spoke to at the March conference said how much they were enjoying their day. The quality of the presentations, as ever, was very high and Isabel Evans was presented with the SIGIST Best Presentation 2003 Award. By coincidence she was the Featured Speaker for the day and exhibited the reasons why she is such a popular speaker – right down to the little dance which amused us all. Sorry, you had to be there to know what I'm talking about!!

I hope that you are one of the over 15,000 candidates who have sat the ISEB Foundation Certificate in Software Testing. It is now an expected accreditation by most companies, however experienced you are. There are lots of training courses available, or you can just sit the exam although the pass rate is much lower. For more information, please visit www.bcs.org.uk/iseb. There have now been over 500 candidates for the Practitioner exam and the Foundation Certificate is a pre-requisite for this.

At the March conference Andy Redwood outlined the future of software testing certification. There now exists the International Software Testing Qualifications Board (ISTQB), the mission of which is to provide 'uniformity and compatibility of the teaching and exam content' for all countries involved. See www.istqb.org to find out more about how the exams are going to be internationally recognised.

Please book now for the June conference to keep up to date!

Pam Frederiksen
Communications Secretary
Tel: **01483 881 188** (Leysen Associates)
Fax: **01483 881 189**
email: pam@leysen.com
BCS SIGIST website:
www.SIGIST.org.uk
SIGIST Standards Working Party:
www.testingstandards.co.uk

BCS SIGIST – THE PASSION OF TESTING

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08:30	Coffee & Registration, Exhibition opens
09:00	SIGIST AGM (see website for agenda and details)
09:25	Introduction and Welcome – <i>Philip Trickey, Chair</i>
09:30	Featured Speaker Critical Testing Processes: Plan, Prepare, Perform, Perfect <i>Rex Black, RBCS Inc.</i>
10:15	Featured Speaker Lost in Translation <i>Colin Cherry, Global Testing Services Pty Ltd.</i>
10:55	Coffee & opportunity to visit the exhibition
11:20	NLP for Testers (a brief introduction) <i>Alan Richardson, Compendium Developments</i>
12:00	TBA
12:40	Networking session and commercial break
13:00	Lunch & opportunity to visit the exhibition
14:00	Birds of a Feather and Table Talks <i>(see below and page 4 for choices)</i>
15:00	Tea & opportunity to visit the exhibition
15:30	Book Review
15:40	Platform Specific Risk Based Tests <i>George Wilkinson, NDS Ltd.</i>
16:10	Featured Speaker Stranger in a Strange Land <i>Rex Black, RBCS Inc.</i>
16:55	Closing Remarks

Special Session 1

Testing Maturity Model: An Introduction to Step-Wise Assessments
Brian Wells, Tesnet Group
Andrew Goslin, Marks & Spenser
Advance booking required, see below. Please tick the relevant box on the registration form.

Special Session 2

Mastering Your Domain
Rex Black, RBCS Inc.
Advance booking required, see below. Please tick the relevant box on the registration form.

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This Special Session at 11:20 is an 80 minute workshop with Brian Wells of Tesnet Group. It is limited to the first 20 applicants on a first-come, first-served basis. There is no additional fee. If you would like to take part, please tick the relevant box on the registration form.

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The Special Session at 14:00 is a 60 minute workshop with Rex Black, our featured speaker. This is limited to the first 20 applicants on a first-come, first-served basis. There is no additional fee. If you would like to take part, please tick the relevant box on the registration form.

Table Talks

At a Table Talk a topic is presented by an expert to a small audience seated around a table (each table will be limited to a maximum of 10 people). This is like the Birds of a Feather groups but here one person will be doing most of the talking. The format and content of each Table Talk will be left to the individual giving the talk but it is expected to be informal. Choose from the topics listed below (please indicate your first and second choices of these topics on your registration form).

1. **Influencing management with project intelligence**, Paul Gerrard, Systeme Evolutif
2. **How to build, motivate and retain effective test teams**, Lloyd Roden, Grove Consultants
3. **Bugs & bug reporting**, John Watkins, IBM Software Group
4. **Outsourcing**, Susan Windsor, IBM
5. **An introduction to test techniques**, Stuart Reid, Cranfield University
6. **Influencing managers: cost & time scales**, Fergus McLachlan, Aqua Computing

Abstracts: The Passion of Testing

Rex Black
RBCS Inc.



Author: "Managing the Testing Process" and "Critical Testing Processes"

Critical Testing Processes: Plan, Prepare, Perform, Perfect

Abstract: Users, customers, and stakeholders want systems that provide the needed functions, delivered on time and for a reasonable price. They also want quality systems that work correctly, reliably, securely, and quickly.

Everybody knows that to deliver quality systems, solid testing is a must, right? If everyone knows that, then why did a recent study by the US National Institute of Standards and Technology estimate that inadequate testing cost the US economy \$60 billion?

In his new book, *Critical Testing Processes*, Rex Black identifies twelve processes that testers, test managers, and development organizations must master to go from knowing they need solid testing to actually doing solid testing. In this talk, Rex will summarize the key ideas of the book for you and give you some ideas and tools you can put to work on your next day back in the office.

Rex will show you why testing matters, in dollars, euros, pounds, or whatever currency you use. Far beyond a hypothetical discussion of how bugs are cheaper when fixed earlier, Rex will show you a real case study from a real project.

Workshop: Mastering Your Domain: When Factors Collide

Abstract: Sure, boundary value analysis and equivalence class partitioning are useful techniques. But what do you do when you are dealing with many, many factors or fields that interact and influence each other's values?

For example, if you have ten integer input fields from that accept a number from 0 to 99, you have four boundary values for each field. The illegal values are easy, because we only have 20 tests for those. However, to test each legal combination of fields, you have 1,024 test cases. But do you need to do so? And would testing combinations of boundary values necessarily make for good tests? Are there smarter options for dealing with such combinatorial explosions?

In this workshop, Rex Black will lead you through an alternative technique called domain analysis. The workshop will

include the theory, the terminology, examples, and a group exercise.

Domain analysis is an effective and efficient test technique for complex situations.

In this workshop, Rex will cut through the jargon and complexity. You'll end the hour ready to add another useful and powerful test technique to your tester's toolbox.

Stranger in a Strange Land

The Test Professional in the Outsourced Project

Abstract: More and more test professionals work on projects where some or all of the development is done by third-parties, often overseas. While cost savings make such arrangements attractive to executives, individual contributors and managers on such projects face some significant challenges. What does outsource mean for testers?

In this keynote speech, Rex Black offers insights from his extensive involvement in outsource projects – both successful and not-so-successful.

- What are the challenges involved?
- What critical logistical issues must we address to succeed?
- Should companies outsource the testing as well as the development?
- What does a company's adherence to good processes – perhaps through certified ISO 9000 or CMM compliance – mean for test professionals?
- Does certification of the outsource firm's staff matter?
- How can we mitigate risks?
- How can people focus on the important matters and not get lost in minutiae?
- How does outsourcing affect system development lifecycles?
- On international projects, how can knowing the culture help reduce the risk of project failure?

Colin Cherry
Global Consulting
Services Pty Ltd.



Lost in Translation

Abstract: I work on major projects, you know, the ones that cost millions and impact large numbers of customers and employees. The ones where we integrate a myriad of systems, convert a large customer and account database onto new software and then roll out the solution to 12,000 branches nationwide. If we ever have a problem on these major projects it's always the same one - communication.

What I learnt from a very early stage was that most of what we produce isn't read or understood, so I set about developing an approach that ensured that anyone who was interested in what we do could at least get an inkling of what we are up to and how we are progressing.

I use pictures - lots of pictures. I don't write large documents or long reports. I provide concise and (hopefully) clear messages that keep people informed and up to date.

This presentation will provide some useful tips about communicating what we do. This will not be "death by Powerpoint" either but a concise and colourful presentation that you'll be able to use back at the office.

Alan Richardson
Compendium
Developments



NLP for Testers (a brief introduction)

Abstract: The 'Meta Model' is a simple to understand, and incredibly powerful, model of the communication used by psychotherapists, which is also enormously practical for testers. This presentation will provide an overview of the 10 communication violations identified by the 'Meta Model' and how testers can apply them. The presentation will also provide an introduction to Neuro-Linguistic Programming™ (NLP™), the branch of psychotherapy that constructed the model.

NLP is defined as "the study of the structure of subjective experience and what can be calculated from that". Back in the '70s, the developers of NLP studied the most effective psychotherapists that they could find, to identify how those psychotherapists were able to achieve amazing results with their clients. NLP makes accessible the techniques of psychoanalytical luminaries such as Virginia Satir, Milton Erickson, Frank Farrelly and Fritz Perls.

The initial study of these therapists resulted in a model of language and communication called the 'Meta Model': the questions (or challenges) that therapists used and the client responses that resulted from, or led to, those questions being asked.

The Meta Model provides testers with a simple model of 10 communication violations that can be applied to software development documentation and help identify ambiguity, missing information, distortion, and potential defects. Testers can apply the model to their own documentation to communicate more effectively with project staff outside the test team.

The 10 violations identified by the Meta Model provide a useful framework for thinking about the context of testing.

As well as providing an overview of the application of the Meta Model to testing, this presentation will provide a number of tips for learning more about NLP and applying what you are learning.

George Wilkinson
NDS Ltd.

Platform Specific Risk Based Tests



Abstract: At the end of 2002, businesses remained steady within NDS, but a lot more business was about to come our way. As a result of this extra business and customer pressure, we had to re-think our testing strategy. We were suffering from one major issue - we were testing on multiple platforms with a generic test approach.

This talk introduces a process that was

devised to make the test selection of our test approach to multiple platforms more risk based; and to lay the foundations for platform specific tests.

Brian Wells
Tesnet Group



Andrew Goslin
Marks & Spencer

Testing Maturity Model: An Introduction to Step-Wise Assessments



About TMM

The Capability Maturity Model (CMM) is often regarded as the industry standard for software process improvement. Despite the fact that testing often accounts for 30-40% of the total project costs, only limited attention is given to testing in the various Software Process Improvement models. The testing community has created a complementary improvement model:

Test Maturity Model (TMM).

Just like the CMM, the TMM also uses the concept of maturity levels for process evaluation and improvement. Furthermore process areas, maturity goals and key practices are identified.

The TMM consists of 5 maturity levels. For each maturity level, a number of Maturity Goals/key process areas are defined. A key process area is a cluster of related activities within the test process, e.g. test planning or test training. When these activities are performed adequately, they will contribute to an improved test process which, support an organisation to determine the maturity of its test process and to identify the next improvement steps that are necessary to achieve a higher level of test maturity.

The TMM Workshop

Marks and Spencer identified the need to be able to evaluate the testing process within



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its overall process improvement initiatives programme.

The workshop will be based on the experiences of Tesnet Magic Software Testing Ltd and Marks and Spencer plc in developing a TMM assessment workbook and process which follows the definitive "text book".

In the first part, we will cover the investigative effort on deciding on adopting TMM, our approach in developing for TMM assessments and work so far in developing this for TMM levels 2 & 3 (common levels to achieve).

The workshop will have a practical session where we will conduct a partial assessment for the maturity goal area of Test Planning (TMM Level 2).

You will summarise findings, decide an overall Level rating, close the assessment and think of what would possibly go into an Action Plan.

There will be a short Q/A session at the end.

Birds of a Feather

The Birds of a Feather Session provides delegates with the opportunity to discuss their hot topic round a table with a small group of like-minded people. One person will facilitate the discussion by encouraging others share their experiences and views on the topic. Choose from the topics listed below (please indicate your first and second choices of these topics on your registration form).

1. **Automation:** Quick wins and the obstacles to avoid.
2. **Influencing Managers:** Helping managers see beyond cost and time scales.
3. **Outsourcing:** Issues to be aware of.
4. **Metrics and Measurement:** Making them work, making them useful.
5. **Assessing Testers:** How do we distinguish the good from the not so good?
6. **Managing Testing:** Hands-on or hands-off? Pros and cons of different approaches.

Please feel free to submit other 'specific questions' (not just general areas) you would like to have discussed in addition to your first and second choices of the above list.

Testers for Testers roles

The title sounds like a political slogan doesn't it? a short sound-byte that is appropriate to both placards and enthusiastic chanting. For an audience of testers, it seems unnecessary to give the message. But it is both apt and timely. This article outlines the rallying call that "testers" jobs should be given to testers; that is individuals who are primarily proficient at testing.

The ICT job market has changed dramatically in the last 5 years. There are significant numbers of both permanent and contract staff unemployed, under-employed, or ill employed, some scanning vacancies as soon as they are posted. Depending upon who you listen to, there may have been as many as 60% of contract staff in the computer industry out of contract early in 2003. The reasons for this have been well documented, and whilst you may not necessarily agree with all of them, there is little point going over the same ground again. All we need to know is that there are many really good people out there who are not working. The testing community is not immune to these forces, although there are signs that more testing vacancies are being advertised.

Scan the job pages, or some of the specialist IT job sites that are available on the Internet. For a "testing" position, what qualities are being asked for? Very often, the hardware, software, business knowledge, and development background are featured prominently. I do not wish to belittle any of these attributes, but sometimes, the ability to TEST is given less prominence than the collective importance of the fabled four just mentioned. These are important, but surely the ability to test has to be pre-eminent.

Many applicants have to get through two or more levels of pre-selection before getting to an interview. If you want testers, then make sure you ask for them, and ask for them by experience or qualification. Some organisations will not even interview an external candidate for a testing

position unless they have obtained the ISEB Foundation Certificate in Software Testing. If you ask for this, get some proof that the individual has indeed obtained it; having asked a candidate to bring his certificate to the interview, I know a test manager who suddenly found the tester could not make the appointment!

Both permanent and contract vacancies can be handled by an external agency. The organisation will only provide candidates that match the stated requirements. So, do you want an ex-developer who has C++, and Visual Basic (version 6 or higher), who can test? Or are you requiring a software tester (exposure to C++ and VB a bonus)? There is a big difference. Applicants have to pass both through the agency, and through the HR department, before even reaching anyone in the IT division (where they may be vetted by the development manager first). If the job agency does not provide candidates that meet the job specification, they will soon cease to be on the "preferred supplier" list. The firm will provide what they are asked for.

I am a tester. I TRY to make a virtue of my varied business background. If someone is asking for a tester, then I am your man. What makes it hard is when someone between the Test Manager and the agency "interprets" the requirements, so that the testing element is less prominent. Do you want a tester? Then ask for one, and don't let company internal politics, or the vagrancies of the HR department, water-down the testing element.

If you are seeking an airline pilot, knowledge of the geography of UK airports is not the deciding factor, is it? [If it is, then perhaps I need to change the companies that I fly with!]

Peter Morgan is a freelance tester. He can be contacted by e-mail at morganp@supanet.com

The People Aspect of Test Management

Susan Windsor

As the span of control for testing projects grows and we operate within a multi-site (and even multi-geography) environment, how can you as a manager ensure your staff are fully aware of your strategic goals and what the opportunities are for them as individuals?

This is a constant challenge and just as important as the testing skills we need, to stay effective and competitive in today's market. Last year, I took a look at this aspect of management within my own organisation (IBM) and learnt some interesting lessons. I now hope my experience can be useful to you, whether as a manager or as a tester. Firstly, let's take a closer look at some specific management challenges I faced - how many of them also relate to you?

Remote management – all operational meetings are held via conference call now rather than face to face. We all therefore miss out on the visual aspects of communication.

Mobile working – location is now driven by assignment, so for most of us it's weeks or months between visits to our IBM base. Much of our internal electronic communication is via our Intranet, so many people miss out on this and can feel "disconnected" as a result.

Multiple skills, knowledge and experience – as we provide testing services across the entire life-cycle, we've got many different types of testers. Plus, assignments vary in size from one person for 2-3 weeks to teams of 100 plus testers that run for two years, so the level of experience in our Test Managers varies considerably. So, there isn't a single community to manage!

Multiple delivery models – although much of our work is delivered via teams working on customer sites, we're moving towards delivering services using IBM Service Centres, in the UK and Globally. These different delivery models require different management and support infrastructures.

Communication, communication, and communication – in my experience you never win with communication, but that doesn't mean you don't have to keep trying to get it right. People absorb information in different ways and you need to use all methods (written, verbal, visual and

auditory) to ensure everyone is up to the same level of understanding.

Sharing information and assets – this is essential to maintain competitive edge. Without this, we will invent new methods of working in pockets that no one else can benefit from.

"Worrying" market trends – the general business climate gives some testers cause for concern. The cost reduction pressure in the industry is taking more and more work offshore, so is there a future career in testing in the UK? The UK testing market generally been very tough for the last couple of years, is it going to ever recover? Most organisations have shrunk their staff numbers over the last couple of years, am I going to be next?

So, I had a community of testers, all working extremely hard, finding it difficult to meet up and share experiences as they'd done in the past because of tight cost controls. Although the general business climate was starting to improve, this message wasn't getting through via all the normal communication channels. IBM is an extremely well structured and mature organisation, and so the existing channels to support staff are extensive and I'll summarise them below. However, I felt this wasn't enough to meet this management challenge.

Every tester has a Manager who helps with career goals, training and development plans. Our Resource Manager provides assignment opportunities based upon our strategic business goals. Balancing personal and business goals is always a challenge, but this system is both fair and effective.

We have extensive technology support. Our Intranet is a vast source of valuable information and it's supplemented by Testing Team-Rooms where Methods and Assets are stored for reference and re-use. Plus we are very heavy users of electronic communications, both email and an internal product called Same Time (a bit like MSN Messenger).

We do a quarterly newsletter that gives information on market direction, updates on the assignment opportunities, feedback from projects, updates on revisions to methods and procedures, customer feedback and information about what's happening inside IBM.

So, even with all this operational support, vast amounts of information available, and existing communication, I still had a problem. When I talked to our staff, it was clear that many people knew little of what was happening within the Test Community, all wanted to know more, but simply didn't have the time to go and find out. We were pushing the business hard, we'd reorganised people into a structure they didn't understand. Bottom line - we weren't investing enough in our people.

Historically we'd had an annual Testing Conference to share information and improve personal networks, and this hadn't happened for two years now. So, I devised a plan for a Road Show, based on the principle that if I couldn't get everyone together, I'd take our leadership team to them. I had three key objectives:

- Provide information on the topics that mattered to the staff
- Share a common vision of market trends and where we were going
- Allow time for some social networking

Rather than visibly run this myself, I asked the Test Community Leader to take the lead, as he is one of the staff he understands the issues.

Getting contributions from the staff of what they wanted to know about was a risk. They could have decided to contribute nothing, which would have sealed the fate of the event. We started by using our network to get word out that we really did want input, and followed this up with a short questionnaire. We had a great response of ideas for content, which we used to construct the agenda.

- What can the Test Community do for you?
- Where is the market going and what does this mean for you and your career?
- What is the future plan for Rewards, Recognition and Career Development?
- How are we meeting the challenge of finding testers with the right skills?
- What assignment opportunities are coming up?
- What can you learn from other projects?



- Question & Answer session
- Networking session – with refreshments

Other important aspects included:

- All presentations to be less than 20 minutes
- Every question raised by staff was included in the content
- The event was timed to be part private and part business hours
- Geographic locations convenient for the staff
- I would attend every event, most people knew little about me as I'd only been Test Practice leader for a year
- Capture of staff perceptions before and after the event

Overall the event proved to be an extremely valuable management tool. We captured information on:

- A list of topics for concern or clarification
- What people felt was missing from their knowledge or role
- How people liked to receive communication
- What worked well and could be improved from the event itself

We set ourselves a very high attendance target of 80% and, although those who registered interest was far higher than this, the actual attendance was in the order of 50%, with people dropping out because of work pressures.

We achieved 90.5% satisfaction on the overall value of the event and 98% satisfaction with the presentation content. Everyone was hungry for information and the planning ensured we got the content in line with the need. Everyone got some value out of attending and we got some very constructive feedback on how to improve as a management team. In particular, the information we gained about how our testers like to be communicated with will be extremely valuable in the future and wasn't entirely what I'd expected! The following shows peoples preferred communication method.

Face to face: Only 15% of testers had this as their preference, this was initially a surprise to me, but upon reflection, we typically gain information from using systems and reading documents.

Team Room: At 22% this was a very popular method of communication. This in an IBM Intranet facility but equates to the discussion/information forums you can find on the Internet.

Newsletters: Although this was 21%, I believe this was as a result of testers saying what they thought we wanted to hear rather than because they really value this.

Presentations: Only 3% of testers value this communication forum, a lesson for all managers!

EMAIL: An overwhelming 29% had this as a preference and it clearly an important part of our working lives

Mail Shots: In this context, this refers to long email communication that are regularly sent out by senior management to all staff and only 1% of testers value this form of communication.

Round Table: At IBM we frequently host events where senior managers select a cross section of staff and host a discussion, typically lasting about an hour. Although this can be very effective, it's sometimes used purely to get key messages across and therefore only received 2% in this feedback.

Other: This attracted a 3% preference, which solely related to our Same Time tool. In multi-site projects I know this communications method would receive a much higher percentage, taking over from email as a preferred method.

So, what is the generic value of this experience? I believe that the benefit of operating as a team far exceeds operating as individuals, and remote distributed teams don't remain teams without management investment. A key lesson for me was that email and newsletters won't do this job for you and because a service is only as good as the people who deliver it, investing in people is paramount.

The most frequent quote I've heard since the event has been "at least our

management care about the staff". In addition, I get emails and phone calls from a much wider group of people who feel more comfortable approaching me for advice and guidance. I also get more leads for business, contacts for people to join test, and names of contractors who have proven their worth on projects. Although I've not quantified this business value, I know that it's certainly there.

If you're a manager, I'd recommend that you find out how your own staff prefer to be communicated with and build an appropriate communication plan, visit your teams when you can and be bold and adventurous in trying out your ideas.

If you're a tester, make sure you extend your personal network - you never know when it will come in useful. Ensure you give constructive feedback to your manager, ask questions and make sure your manager knows what information you'd find valuable. Communication is two-way so you need to invest in it too.

Finally, would I do it again? Absolutely!

It was a lot of work to organise but the immediate benefits have been extremely worthwhile. The feedback I've gained has given me more ideas too, which I'll be building into our own communications plan for 2004. In particular, Master Classes to debate our latest thinking, Lunch and Learn to transfer knowledge and skills and more Road Shows, probably with a wider audience to include different specialist skill groups.

People are our greatest asset; lets all do our bit to ensure our working life is as enjoyable as possible.

Susan Windsor

SIGiST AGM

Please check SIGiST web site (www.sigist.org.uk) for the agenda and details of the positions available for election, or email us for further information.

SPECIALIST INTEREST GROUP IN SOFTWARE TESTING

Next conference:

The Passion of Testing

Friday 18 June 2004 – London Marriott Hotel, Grosvenor Square, London W1

see page one for Conference Agenda

Registration Form

PERSONAL DETAILS

You may register by

Fax 07092 811774

Post SIGIST Conference Registration,
Marshwood Events Management,
PO Box 445, Triangle, HX6 3YF

Tel 01422 836 431

Email SIGISTregs@aol.com (giving all details required below)

Title _____

First Name _____

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Invoice and Joining Instructions to be sent to (please indicate company name):

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If you haven't heard from us by 11 June, please contact us on 01422 836 431

SPECIAL SESSIONS

Please indicate with a tick, one parallel session for each time slot (see programme for further details):

11.20

Brian Wells or Alan Richardson & TBA

14.00

Rex Black or

Birds of a Feather 1. _____ 2. _____ or

Table Talks 1. _____ 2. _____

FEES

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CANCELLATIONS

Cancellations must be received in writing prior to 11 June to qualify for refund of fees (less £10.00 administration charge). No-shows are liable for the full cost of fees. Substitutions may be accepted at any time.

VEGETARIAN MEALS/SPECIAL DIETARY REQUIREMENTS

I am a vegetarian

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The meeting is worth 5 hours CPD (Continuous Professional Development)

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THE TESTER

NEXT CONFERENCE

Test 2

Wednesday 22 September 2004

- Increasing the Value of Every Person on Your Team
- A Requirements Extraction and Management Technique for Testers
- An Experience of Iterative Testing
- Defect Management: The Sting Ray Case Study
- Benchmarking Testers
- Bridging the Gaps between Developers and Testers

IN THIS ISSUE:

FROM THE EDITOR

ICSTEST CONFERENCE

NEXT MEETING - PROGRAMME

ABSTRACTS: TEST 2

ARTICLE: PREPARING FOR A SUCCESSFUL SOFTWARE PROJECT



FROM THE EDITOR

We were sorry to hear that Phil Trickey would not be standing for re-election to the committee as Chairman due to work commitments, and his very valuable contribution to the SIGIST over a number of years was noted at the AGM. We welcome Stuart Reid as our new Chair, and also Julie Gardiner in the role of Secretary.

You will have noted that we have left the Marriott venue in Grosvenor Square and our conferences will now take place at the RCOG – Royal College of Obstetricians and Gynaecologists. A bit of a mouthful, but this venue was considered to have particularly good accommodation for the flexibility we need for our various conference sessions, and is at a location with good transport links. It is located near Regent's Park and we look forward to your comments regarding the new venue.

We also hope that you will find very welcome the reduced price which has been possible as a result of this move. We need to have good attendance to be able to keep the cost down to this level, so please book now for the September conference before you forget and continue to support the SIGIST events!

Pam Frederiksen
Communications Secretary
Tel: 01483 881188 (Leysen Associates)
Fax: 01483 881189
email: pam@leysen.com

BCS SIGIST website: www.sigist.org.uk

SIGIST Standards Working Party: www.testingstandards.co.uk

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NEXT MEETING - PROGRAMME

BCS SIGIST – Test 2	
Wednesday 22 September 2004 Royal College of Obstetrics and Gynaecology, 27 Sussex Place, London, NW1 4RG	
08:30	Coffee & Registration, Exhibition opens
09:25	Introduction and Welcome – Stuart Reid, SIGIST Chairman
Featured Speaker	
09:30	Increasing the Value of Every Person on Your Team <i>Randall Rice, Rice Consulting Services, Inc.</i>
10:30	Networking session and commercial break
10:50	Coffee & opportunity to visit the exhibition
Special Session 1	
11:20	A Requirements Extraction and Management Technique for Testers <i>Wayne Mallinson, Test and Data Services</i>
12:05	An Experience of Iterative Testing <i>Christian Hopwood, Xansa</i>
Advanced booking see over	
12:50	Lunch & opportunity to visit the exhibition
Special Session 2	
14:00	Defect Management: The Sting Ray Case Study <i>Andrew Best, BAE Systems Underwater Systems Division</i>
14:45	Tips for Testing <i>Neil Thompson, Thompson information Systems Consulting Ltd.</i>
Advanced booking see over	
15:00	Tea & opportunity to visit the exhibition
Featured Speaker	
15:30	Bridging the Gaps between Developers and Testers <i>Randall Rice, Rice Consulting Services, Inc.</i>
16:15	Closing Remarks

The SIGIST committee reserves the right to amend the programme if circumstances deem it necessary.

Special Session 1

This Special Session at 11:20 is an 80 minute workshop with Chris Comey of Testing Solutions Group. Places are limited and will be available on a first-come, first-served basis. There is no additional fee. If you would like to take part, then please tick the box for Special Session 1 on the registration form.

Special Session 2

The Special Session at 14:00 is a 60 minute workshop with Randall Rice, our featured speaker. Places are limited and will be available on a first-come, first-served basis. There is no additional fee. If you would like to take part, then please tick the box for Special Session 2 on the registration form.

ABSTRACTS: TEST 2

Featured Speaker:

Randall Rice, CSQA, CST, CSTM, FLMI

Rice Consulting Services, Inc.

Co-author with William E. Perry of books:
"Surviving the Top Ten Challenges of Software Testing"
and "Testing Dirty Systems"



Workshop: Benchmarking Testers

Abstract:

A common need for software test managers is to know the abilities and performance of each of their team members. One way to do an evaluation is to benchmark a person's performance against other people whose skills and abilities have been proven over time. In this workshop, Randall Rice will present research information about the feasibility of comparing testers to a standard benchmark. This research, gained from working with test teams and consulting partners, will address questions such as:

- Is it possible to compare people to a benchmark?
- Is it ethical to compare people to a benchmark?
- Is it practical to benchmark?
- What is included in the benchmark?
- How does one get started?

Attendees will have an opportunity to contribute their ideas to the body of research and to discuss the issues around benchmarking testers.

Increasing the Value of Every Person on Your Team

Abstract:

In today's economy, it seems that management is keenly aware of the need to maximize the value of all resources, including human resources. At the same time, it seems that we are living in the land of Dilbert, where people show up for work, deal with bureaucratic systems that make little sense and consume huge amounts of time, and generally give up trying to be creative or to achieve high levels of personal effectiveness.

In this presentation, we will explore how to leverage your current team structure and talents to greatly increase your overall effectiveness, and therefore, your team's value to the organization.

- How Bad is the Problem?
- Another Indicator: Rustout
 - Four signs of Rustout
 - How to Reverse the Situation
- Laws of Teamwork I Have Found to Be True
 - Law of the Niche
 - The Law of the Chain
 - Law of the Bad Apple
- How to Deal with Bad Attitudes
- 7 Ways to Increase the Value of Each Team Member
 - 1. Grow Each Member Cross-functionally
 - 2. Find Each Person's Passion and Focus on it.
 - 3. Make Each Person a Resident Expert on Something
 - 4. Make Each Person on the Team a Mentor
 - 5. Make Sure Each Person Has a Mentor
 - 6. Constantly Work to Build and Reinforce Skills

- 7. Play to Your Strengths, Add to Fill Gaps
- Example – The Combined Effect of Increased Value
- Helpful Questions
- Additional Resources

Bridging the Gaps Between Testers and Developers

Abstract:

In many organizations there exist a variety of areas where testers and developers seem to have different objectives and agendas. This one-day tutorial explores several of these gaps, including:

- The cultural or people gap – “Why do they do the things they do?”
- The communication gap – “Why don’t they understand what we say?”
- The process gap – “What’s a process and why do we need one?”
- The efficiency gap – “How can we get better at what we do?”
- The teamwork gap – “Why do we always seem to have different objectives?”
- The specification gap – “What are requirements and how detailed do they really need to be?”

The nature of each gap will be explored, along with strategies and tips to help close them. Many of the gaps will be reinforced with interactive team-oriented exercises to help you apply the ideas discussed.

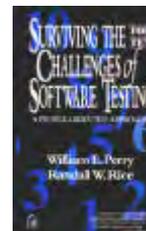
This tutorial is suitable for both testers and developers. The objective of this tutorial is to add value to your organization by showing ways that testing and development can work together effectively.

Biography:

Randy Rice is a leading author, speaker and consultant in the field of software testing and software quality. Rice, a Certified Software Quality Analyst, Certified Software Tester, Certified Software Test Manager and a Fellow of the Life Management Institute, has worked with organizations worldwide to improve the quality of their information systems and optimize their testing processes.

Mr. Rice has over 28 years experience building and testing mission-critical projects in a variety of environments.

Mr. Rice has been published by the *Journal of the Quality Assurance Institute*, *Crosstalk*, *Client/Server Computing*, *Powersoft Applications Developer* and *Enterprise Systems Journal*. He is a regular speaker at international conferences on software testing in North America and Europe, and is also publisher of *The Software Quality Advisor*. He is co-author with William E. Perry of the books, *Surviving the Top Ten Challenges of Software Testing* and *Testing Dirty Systems* published by Dorset House Publishing Co.



Randy served as chair of the Quality Assurance Institute’s International Software Testing Conference from 1995 – 2000 and was a founding member of the Certified Software Test Engineer (CSTE) certification program. As author and trainer of many software testing training courses, Randy has had the privilege of training thousands of software testers throughout North America.

Randy is a frequent speaker at major testing conferences, including EuroStar, StarEast, StarWest, QAI’s International Software Testing Conference, Practical Software Quality Techniques, and the Software Technology Conference sponsored by the U.S. Dept. of Defense.

Mr. Rice has project experience in the following application areas:

Life and Health Insurance - Oil and Gas - Software Companies - Workers Compensation Insurance – Utilities
Telecommunication - Federal Government – Finance – Manufacturing - Production Control - Banking

In 1990 he founded Rice Consulting Services and is a member of the IEEE and the National Eagle Scout Association.

Wayne Mallinson

Test and Data Services



A Requirements Extraction and Management Technique for Testers

Abstract:

The quality of testing on a given project depends on how well testing is started (test planning) and how well it continues (test tracking). The **requirements extraction and management** technique allows for thorough test planning and tracking with documented specifications as the test basis.

The technique has many advantages, including:

- It is easy-to-learn and teach
- It is simple to delegate and review
- It allows testers to have reasonable consistency in test planning, estimation and reporting
- It encourages early defect detection and repair
- It is adaptable to various software delivery schedules (including phased, iterative, or even ad hoc delivery of functionality)
- It is useful for viewing and organising requirements for testing purposes
- It facilitates risk/effort prioritisation of requirements
- It provides measures for test estimation, scheduling, budgeting and reporting
- It provides documented traceability
- It encourages the essential thinking required before creating excellent test plans
- It provides a measured reporting basis for communication and tracking of testing progress through the project.

The **requirements extraction and management** technique follows simple steps to achieve the above benefits. These steps include systematically reading and annotating the specification that the tests are to be based upon. Early specification requirements that are defective are flagged and corrected. Requirements are indexed and mapped to status, functionality, risk, effort, priority, design, test, phase, responsibility and other pertinent test planning areas.

The requirement mappings allow multiple test planning insights and well as mathematical manipulation for quantitative test estimation and reporting. The final test planning choices allow for excellent test plans, coordinated test design and simplified practical test execution and recording processes. Detailed requirements coverage as a measure is systematic, organised and the technique caters for easy and accurate traceability even in manual testing projects.

This technique has been used to successfully plan and track testing on a variety of projects including air traffic control systems, web sites and client server and mainframe financial services projects.

Although the technique does experience challenges under certain conditions, it is usually adaptable enough to overcome these obstacles and often excels in holding together the best of both new and old ideas in a simple structured usable, and friendly way. The whole IT team will love it! All can use it for better testing – Users, testers, business analysts, system analysts, developers, project managers, in fact everyone interested in testing on the project.

Biography:

Wayne Mallinson was born in Pretoria, South Africa in 1958, the youngest of four children. He completed a BSc honours in geology in 1979 at Rhodes University. After practising as a mining geologist, he changed careers in 1988 when he entered the world of software testing. He studied and completed a Diploma in Datametrics through the University of South Africa (UNISA) in 1990.

Wayne has sixteen years of practical software testing experience in industries as diverse as broadcast video, air traffic control, banking, and telecommunications to name a few. He founded Test and Data Services, a testing

consulting, training and services company in 1995, and currently holds the position of managing director of this 120-person organisation.

For the past four years Wayne has been the editor-in-chief of a South African testing magazine, Test Focus.

Wayne has delivered testing talks at the 2003 Starwest conference (San Francisco) and 2003 Eurostar (Amsterdam) conference.

Wayne currently chairs the Special Interest Group in Software Testing (SIGIST) for the Computer Society of South Africa (CSSA).

Wayne is married to Jenny and together they have three teenage children and live near Pretoria.

Wayne spends most of his office hours either delivering testing training, directing testing staff on various projects or strategising for a better testing future. In his private time he enjoys running, reading, gym, music and travel.

Christian Hopwood

Xansa

An Experience of Iterative Testing

Abstract:

A testing manager being drafted onto a project late with no UAT resources and no plans for performance testing may sound familiar, but when it's your first project using an iterative approach it adds a new dimension. The good news is no one else on the project has experience of iterative developments either. – What happened next?

The Co-operative bank was bringing all their internet based sales channels onto the same infrastructure. This required a total re-build of three core web based services. The RUP process was chosen because it allowed refinements based on the experience of earlier deliveries. RUP also encourages implementations at regular intervals. This approach was new to all on the project and required a large amount of learning along the way.

Tools used on the project were a mixed bag of Rational and Mercury.

The testing approach started off along the familiar waterfall lines. It needed reviewing quickly and putting into the Iterative Development context. This required educating the project team and handling preconceptions from testers who felt timescales were being unnecessarily extended. The plan showed that more effort and cost would be incurred too.

Once underway testing had its usual list of problems, some predictable and some new ones. Some initiatives to overcome them worked, others did not. However by applying good testing practise, learning from experience and applying continuous improvement techniques testing started to go well requiring fewer people and making significant increases in productivity.

Biography:

Following a short service commission in the British Army Christian started his IT career in 1988 developing Retail systems. In 1998 he moved into the Financial services sector with Xansa to concentrate on Testing. For the last 6 years he has been both a test manager and a senior test consultant with Xansa working with a number of their major clients. He lives in the Ribble Valley in Lancashire with his wife and three children.



Chris Comey

Testing Solutions Group

An Introduction to BS7799 Information Security Management

Abstract:

This introductory seminar provides an overview of Information Security Management Systems (ISMS) as defined in BS7799 parts 1 and 2. This 90-minute seminar will include slide presentations and short exercises to help establish and reinforce the key elements of the identification, implementation, verification and management of the ISMS.

Information security involves protection of business assets in whatever form the information takes. It could be data stored electronically, physical documentation, information transmitted by some form of medium or information contained in a spoken conversation. The process involves identification of the business assets, identifying the associated business risks and their relevant priorities, producing a risk treatment plan and implementing the agreed processes and controls relevant to the type of risk and its severity. The process covers all aspects of the confidentiality, integrity and availability of the information and the business assets.

Assets can be categorised into logical categories such as information assets (databases, intellectual property etc), software assets (application software, tools etc), physical assets (Computer equipment, communications equipment etc) and services (Utilities, support by third parties, etc).

Security threats can be categorised into logical categories such as natural threats (earthquake, flood etc), technological threats (software faults, computer viruses, system failures), people threats (fraud, hackers, disgruntled employees, accidents) and business threats (breach of legal/regulatory requirements, customer/financial loss, liability).

Controls can be categorised into logical categories such as physical controls (secure areas, swipe cards, etc), personnel security (roles and responsibilities, recruitment policy, training, 3rd party access) and logical controls (log on and password controls, authorisation rights, audit trails etc).

As can be seen the security requirements cover all aspects of an organisations IT systems and infrastructure, physical implementations, staff, business activities and business processes. A combination of system testing and process audit will be required to ensure that the security policy requirements are being fully met. In order to establish and maintain a ISMS, verification will be required for IT systems that are being developed in house and also for maintenance activities required on existing systems. Any propriety software purchased will also require acceptance testing to ensure that the new products comply with the security requirements

BS7799 clause 8.2.2 "Acceptance Criteria for new information systems, upgrades and new versions should be established and suitable tests carried out prior to acceptance."

Testers are typically experienced in confirming that requirements are met fully during testing. They are also aware of quality and industry standards and are required to remain objective, which is an essential requirement for the audit function. Employing trained ISMS auditors within the test function would allow scope to provide the full range of services required to confirm compliance to BS7799 at all levels.

Biography:

Chris is a Principal Consultant at Testing Solutions Group.

He has been involved in the testing arena for 23 years. Initially from a telecommunications background he has tested computer systems and developments for a number of industries including telecommunications, utilities, financial, banking, gaming, and a wide variety of websites.

Chris has first hand experience in the roles of test analyst, test co-ordinator, test team leader/manager and test consultant, and has tested a range of products from individual components up to the integration of large systems, whilst managing to retain his sense of humour and his sanity (maybe!). He has worked as a testing practitioner using a number of different software development approaches ranging from RAD/DSDM through to the more traditional lifecycles such as the V-model.

Having delivered training courses on VV&T, Fundamentals of Testing, Risk Based Testing, UAT, e-basics and both ISEB Foundation and Practitioner Certificate he has a balance of theoretical and practical skills and understands how to apply the theory in the real world.

Chris has a HNC in telecommunication, holds the ISEB Practitioners Certificate in Software Testing and is a qualified IRCA ISMS Lead Auditor.

Dr. Andrew Best

BAE Systems Underwater Systems Division

Defect Management: The Sting Ray Case Study

Abstract:

This paper will look at the defect management activities performed on the hugely successful Sting Ray torpedo's autopilot software development.

The software's design and development was a six-year programme involving a team of eight engineers and split over six baselines. Each baseline involved design, implementation using Object Oriented Analysis and then automatic code generation into Ada. The resulting software was integrated and tested before being released for "live" trials. The paper will focus primarily on the design activities and integration testing, including the support activities such as metrics and defect prevention.

The design material was generally subject to initial proving on a purpose-built PC simulation and all resulting documentation was subject to Fagan inspection. To support the design activity, templates were introduced and periodically updated; the updates being driven by the process improvement meetings associated with the Fagan inspections and other user recommendations. Unknown to the development team, the design process also changed subtly as the project evolved: baseline one focused on adding new material, baselines two onwards also called for the existing material to be updated.

Data from the Fagan inspections was used to measure the design process's capability. Some 138 inspections, spanning all baselines, had Statistical Process Control applied to their data. A number of process failings were found and once these were removed, clear signals remained which indicated process change. The data was split whenever a template was introduced or updated (defect rate fell) and at the end of baseline one (defect rate increased).

Analysis of the defect rate showed that 200+ mandays rework had been prevented within the design process but 30+ mandays were lost due to the differing needs of baseline two onwards. Including the reduced rework cost due to less defects escaping to implementation and test, and the saving reached 1700+ mandays rework across all teams. In other words, the templates and associated process improvement activities prevented at least a six-month overrun in the software and represented a return on investment of over 38 to 1.

At integration testing, where the design components were pulled together, records were kept of the number of defects found. These were then used to predict the number of defects expected in subsequent baselines with a high degree of accuracy. These "Bug Hunt" metrics were used by senior management to make critical decisions, without which the software would not have been released to trial on time.

The presentation will look at the software production processes, particularly design, the templates supporting design and integration test. It will then look at the metrics associated with both these activities before outlining the key lessons learnt.

Biography:

Dr. Andy Best is a Principal Systems Engineer at BAE Systems Underwater Systems Division, Waterlooville, U.K. . His primary roles are the development and deployment of both a metrics process and the division's systems and software process desktop tool.

Andy is also the chair of BAE Systems' Metrics Focus Group which currently represents around a dozen of BAE Systems groups, divisions and Joint Venture companies.

Previously, Andy was responsible for the design and development of the target tracking algorithms and some of the signal processing and guidance algorithms on the successful Sting Ray torpedo's Life Extension programme. He also played a lead role in integration testing.

Andy has worked for BAE Systems since graduating with a Ph. D. in target tracking and missile guidance from the University of Birmingham, U.K., in 1996.



ARTICLE: PREPARING FOR A SUCCESSFUL SOFTWARE PROJECT

Getting everyone to agree a contract for work

Watts Humphrey remarks that one problem with software schedules is that managers view them as contract-like commitments but software engineers do not view them as personal commitments: "Too often, software commitments are based on little more than hope." [1]. In order for a software project to succeed we need an agreement or contract between all the groups involved; the customers and IT infrastructure groups who will use and support the software in production, the managers for the IT project, the people building products (whether software, documentation or training material) and the testing and quality assurance teams. I am not necessarily talking about the legal contract between a customer and third party supplier, it could be a formal or an informal contract between groups within an organisation, but it is a commitment. Watts Humphrey's Personal and Team Software Processes (PSP [1] and TSP [2]) emphasise the importance of this commitment for software engineers, including test engineers, but how do we reach it? It is my view that it is vital that everyone agrees:

- The aims and the objectives for the work
- The constraints for the work - dates, budget, people, resources, technical, business
- Acceptance criteria that define how we will know the work has been completed satisfactorily.

Aims and Objectives for the Work

A project's *aims* describe why it is being undertaken. They answer the question, "*why are we doing this?*" The answer is not "*to build a web site*" but "*to increase market share*".

Objectives are what you will do in order to reach an aim: "*our aim is to increase market share so one of our objectives is to build a web site to increase our market reach*". Each aim is associated with one or more objectives, otherwise it won't happen. Every objective must meet one or more aims, otherwise - why do it?

We will want to know whether we have been successful in meeting our aims and objectives, and we can use indicators and targets to help us.

Indicators measure the impact that the project has on the business. Did the project make a difference? Were the aims met? Has it realised benefits or mitigated risks? Indicators enable us to assess whether the aims have been met.

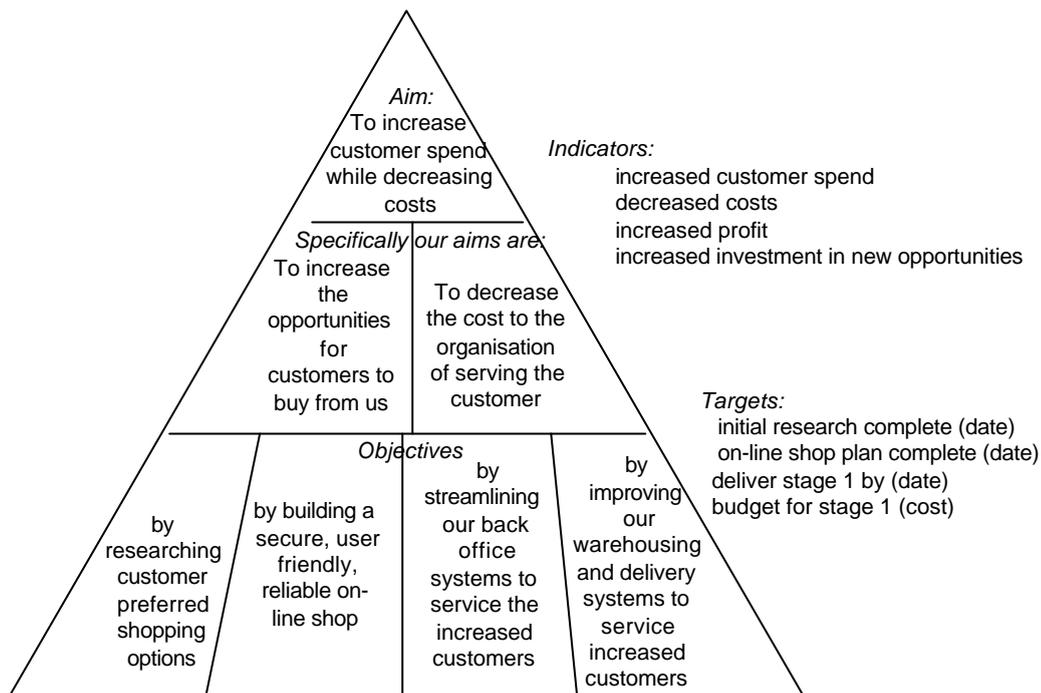
Targets measure project delivery, for example, monitoring whether the objectives have been achieved on time and within budget.

A useful technique to help define and agree aims and objectives is a Weaver triangle [3] (see figure 1) as it provides a picture of the project on one page. *I have used a Weaver triangle with software projects to demonstrate that key people around the project had radically different ideas of the real aim of the project. The reason one project was failing was that there was no agreement about why it was being done. Each team had taken off with different aims, in a different direction.*

In figure 1, we see that the aim of the project is to increase customer spend while decreasing costs. Notice that some of the activities which will contribute to this aim are IT activities (streamlining back office systems for example) and others are not IT projects (the market research to discover customers preferred shopping options). In order for the business to meet its overall aim, all these objectives must be successful. The indicators show the types of measure the business will use to measure its success; the Board will be tracking profit, costs and market share. The target dates and costs show us some of the constraints for our project.

We need to understand these indicators and targets. We need to report against them. Also we must work in a way that helps the organisation meet its aim - in this case including cost cuts. If the cost of the development and testing is greater than the increased profit and cost savings, we have failed the business however excellent the technical solution and testing.

Figure 1 Weaver Triangle (After Weaver and [3])



All the groups participate in defining and agreeing the aims, objectives, targets and indicators, remembering to check that they are SMART (Specific, Measurable, Achievable, Realistic and Time-bound). If the team cannot agree SMART aims and objectives, do not set the contract. Investigate the problem further.

As testers, we need to understand the aims, objectives, targets and indicators for the project:

- They help us set aims, objectives, targets and indicators for the testing
- They help us focus our testing on what is important for the business
- We can test that our understanding of the project matches that of the customer and developers.

Constraints for the Work

We need to confirm that the project can be delivered inside its constraints. These are business constraints; customers and managers will set date and budget constraints against the expected return on investment for the project. The technical teams (development, test and IT infrastructure), must identify technical constraints, for example IT service levels and capacity [1, 2]. Each group needs to understand and agree to all the business and technical constraints. If we cannot agree constraints, at least at a high level (for example the maximum budget) we are not ready to set the contract. We need to investigate further, and perhaps produce prototype plans to see if it is possible to deliver within reasonable constraints. If there is some leeway in constraints, reflect this in the contract:

- "This date must be met - legal requirement" is mandatory
- "Marketing have planned a July launch to meet the build up for the Holiday market November/December, latest launch is August" is mandatory with some leeway
- "Would like to complete work before March next year" is a preferred date and could be re-negotiated.

Setting acceptance criteria is the basis for a successful project

The acceptance criteria are the means by which we know if a product or service is acceptable or not. They describe the attributes of a product or service, and the "pass mark" for each attribute for

acceptability. If acceptance criteria are not defined or they are vague, we are in danger of building the wrong system and we certainly will find it difficult (perhaps impossible) to test because we will not know the outcomes we should expect from our tests. Like the targets and indicators, acceptance criteria must be SMART. Many projects are reasonably good at defining what the software should do (its *functionality*). Very few customers and managers, in my experience, give much thought to *how* the software should function. This is best illustrated by an example. An ATM machine should provide cash - that is its function. *How quickly* should it provide the cash - within 2 hours or within 1 minute? This is a *non-functional attribute* - it describes *how* the software works. They are often taken for granted - with the ATM example it seems obvious that 2 hours is too long to wait for the money. The problem is that people's assumptions about these attributes may differ so that, although one might assume that the non-functional attributes are too obvious to mention, they may be interpreted differently by other people in the team. Software standard ISO 9126 [4] describes attributes of software, and measures for those attributes. If we use ISO 9126 to help us define acceptance criteria, we can improve their SMARTness. This increases the likelihood of the right software being delivered.

ISO 9126 breaks down the functional and non-functional attributes of software into a series of sub-attributes, questions and metrics. Let's take usability as an example; people find it hard to define and measure usability so "give up" on trying to write acceptance criteria or trying to measure whether the software is acceptable. Look at table 1, and you'll see increasing refinement of one aspect of usability until we arrive at measurable acceptance criteria.

Table 1 Making acceptance criteria measurable

1.	I assumed you'd make it easy to use
2.	It must be user friendly
3.	I want it to be as easy as the current system
4.	A new user must be able to use it with 30 minutes training
5.	Based on a sample of 20 typical users, at least 90% must learn to use the system in < 30 minutes. After training, 100% of the sample users must be able to complete the standard "10 typical tasks" sequence without help, 95% of them completing without help in < 5 minutes.

Statements 1 and 2 are impossible to measure. No attempt is made to define "usability". Statement 3 crudely qualifies what usability means but it will be hard to measure, and so difficult to design and build software that meets the customers' usability needs. Statement 4 is a little better; we know that some training will be needed but we have no definition of a new user. Is it someone new to this particular software or to software in general? Statement 5 (based on ISO 9126 metrics under *Usability* for *Learnability*, *Efficiency* and *Effectiveness*) is measurable. Having more measurable acceptance criteria means that it is easier to assess whether they meet other aspects of SMARTness.

Reviewing the Contract

Any contract for further work should be reviewed by walkthrough, for understanding, and then by an inspection or similar review to identify defects. Whereas the walkthrough is mainly for sharing information and understanding, the inspection is a review that is focused on finding defects so both are needed to ensure we have the right contract. Each group will bring a different perspective to the review (table 2) and this can be used to set roles for the review. It is important that the acceptance criteria for the software are reviewed, both for SMARTness and against the constraints, aims, objectives, targets and indicators. If the team cannot set, review and agree the contract, including the acceptance criteria at least at a high level then it is too soon to set the contract.

The Tester

Table 2 Review perspectives for a contract to identify risks to product, project and organisation

Group	Identify during the review:	Constraints	Aims, objectives, targets, indicators, acceptance criteria, outline plan
Customers	Impact of failure if product not fit for use	Business, service level, time, cost	Realistic, time bound
Managers	Impact on other projects if project is late Impact on organisation of poor return on investment	Cost, time, skills, resources	Realistic, time bound
Developers	Likelihood of defects and failure, based on technical difficulties	Technical skills, knowledge, infrastructure	Achievable, realistic
Testers	Likelihood of defects and failure, based on previous failures and predictions	Technical skills, knowledge, infrastructure	Specific, measurable
IT Infrastructure	Impact of failure, based on planned attributes, previous failures and predictions	Technical skills, knowledge, infrastructure	Achievable, realistic

Finally...

What happens if this has not been done before your project started? Do it as soon as you can, and make sure you involve representatives of all the groups; if software commitments are to be *more* than just hope, we need to be clear about our aims, objectives, constraints and the acceptance criteria for the delivered software. I have often found myself, as a tester, called late onto a project where none of these steps had been taken. Using these ideas during test planning has helped the customer, IT infrastructure, development and test teams come to a better, if belated, mutual understanding of what has to be achieved for the success of the project. I hope you find them useful, too.

References

- [1] Humphrey, W., "Introduction to the Personal Software Process", SEI, 1997
- [2] Humphrey, W., "Introduction to the Team Software Process", SEI, 2000
- [3] Evans, I., "The Troubled Project – best practice from theory to reality", EuroSTAR 2001
- [4] ISO/IEC DTR 9126 Software Engineering – Software Product Quality (parts 1-4, 2000/2001)

This article is based on material in chapter 9 of Isabel's book "Achieving Software Quality Through Teamwork" published by Artech ISBN 1-58053-662-X

Author Biography

Isabel has 20 years experience in the IT industry, mainly in quality management, testing, training and documentation. She has helped organisations in development of procedures, standards and methods to aid testing of software during development and maintenance projects. She has managed test groups, and performed testing design and development for acceptance and system testing of packages and bespoke systems. She has also provided Quality Assurance Support, Release Management, and Customer Support for IT organisations. Most of her work has been with clients in the financial, communications and software sectors. Isabel worked independently from 1992, running her own company, IE Testing Consultancy Ltd. After working closely with Testing Solutions Group (TSG) from 2002, Isabel joined the company in January 2004.

BCS SPECIALIST INTEREST GROUP IN SOFTWARE TESTING

TEST 2

22 September 2004

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PARALLEL SESSIONS - Please tick one
for each time slot

11.20	Wayne Mallinson	<input checked="" type="checkbox"/>	OR	<input checked="" type="checkbox"/>	Special Session Chris Comey
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14.00	Andrew Best	<input type="checkbox"/>		<input type="checkbox"/>	Special Session Randall Rice
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10 THE TESTER

December 2004

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Cotesteral

Tuesday 7 December 2004

- Managing Test Outsourcing
- NLP for Testers
- Becoming a Trusted Advisor
- The Role and Use of the Time Machine in Testing
- Test Your SOX Off!
- Improving Testing in a Small Organisation
- Monitoring of Test Processes

IN THIS ISSUE:

FROM THE EDITOR

NEXT MEETING - PROGRAMME

ABSTRACTS: COTESTERAL

ARTICLE: AGILE TESTING

ARTICLE: EQUIPPING FOR QUALITY – THE THREE E'S OF QUALITY MANAGEMENT

ARTICLE: A PERSONAL REVIEW OF THE TESTING MARKET



FROM THE EDITOR

Hey – we've won an award! The Tester has just been chosen as the best magazine of all the BCS Special Interest Groups. Many thanks to all the contributors, and keep submitting those articles!

We have also received a terrific positive response to our new conference venue at the RCOG near Regent's Park. As the attendees found, the facilities are superb.

Making this change has allowed us to reduce the cost of attendance, but it has also meant reaching compromises such as having a buffet-style, rather than a sit-down lunch. This was a problem for some people but we are doing what we can to accommodate your concerns at future conferences.

Your opinions are always welcome, and now that we have a more flexible format to The Tester, being issued in soft copy form, this means that we can also include your letters and so from the next edition we will have a LETTERS PAGE. If you would like to make a contribution to this please send me your letter to pam@leysen.com by the first week of January at the very latest.

Don't forget that the reduced cost of the conference is in the expectation of increasing attendance so please register for the 7 December conference NOW so that you don't forget – and to ensure that there will be a spare place for you!!

Pam Frederiksen
Communications Secretary
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SIGIST Standards Working Party: www.testingstandards.co.uk

"AVOIDING THE RISKS OF SOFTWARE OUTSOURCING"

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NEXT MEETING - PROGRAMME

BCS SIGIST – Cotesteral	
Tuesday 7 December 2004 Royal College of Obstetrics and Gynaecology, 27 Sussex Place, London, NW1 4RG	
08:30	Coffee & Registration, Exhibition opens
09:25	Introduction and Welcome – Stuart Reid, SIGIST Chairman
Featured Speaker	
09:30	Managing Test Outsourcing <i>Martin Pol, Polteq IT Services B.V.</i>
10:30	Networking session and commercial break
10:50	Coffee & opportunity to visit the exhibition
11:20	Becoming a 'Trusted Advisor' to Senior Management <i>Lloyd Roden, Grove Consultants</i>
12:20	STANZ Overview <i>Steve Allott, Electromind</i>
12:35	Book Review <i>Peter Morgan, Nicemove Ltd</i>
12:50	Lunch & opportunity to visit the exhibition
13:50	The Role and Use of the Time Machine in Software Testing <i>John Watkins, IBM Software Group</i>
14:35	A Recipe for Disaster (Savoury System Crumble) <i>Peter Morgan, Nicemove Ltd.</i>
14:50	Tea & opportunity to visit the exhibition
15:20	Test Your SOX Off <i>Andy Redwood, Parallel Thinking Europe</i>
Featured Speaker	
16:05	Monitoring of Test Processes <i>Martin Pol, Polteq IT Services B.V.</i>
16:50	Closing Remarks

The SIGIST committee reserves the right to amend the programme if circumstances deem it necessary.

SPECIAL SESSION 1

This Special Session at 11:20 is an 90 minute workshop with Alan Richardson of Compendium Developments. Places are limited and will be available on a first-come, first-served basis. There is no additional fee. If you would like to take part, then please tick the box for Special Session 1 on the registration form.

SPECIAL SESSION 2

The Special Session at 13:50 is a 60 minute workshop with Martin Pol, our featured speaker. Places are limited and will be available on a first-come, first-served basis. There is no additional fee. If you would like to take part, then please tick the box for Special Session 2 on the registration form.

ABSTRACTS: COTESTERAL

Featured Speaker:

Martin Pol

Polteq International Testing Services B.V.

Co-author of the books on TMap[®] and TPI[®]:

“**Structured Testing of Information Systems: an Introduction to TMap[®]**” and

“**Software Testing: A Guide o the TMap[®] Approach**”

Managing Test Outsourcing

Abstract:

Many organisations have outsourced (parts of) their testing processes, sometimes in combination with development or maintenance processes or even as part of a complete business process. There are many varieties in outsourcing. A special, frequently used form is offshoring, where activities are outsourced to low-cost-countries like e.g. India, China or Russia. There are many reasons why outsourcing requires extra attention, especially when it concerns outsourcing of testing. Examples of complete failures are plenty and “back-sourcing” is not rare anymore...

Because testing is representing quality control, many have mixed feelings when talking about outsourcing or offshoring of the testing activities. Testing often is the final means to reduce the risks of insufficient system quality and therefore to reduce the business risks. Can you leave that up to a third party? Test outsourcing introduces specific challenges for organisations that require specific attention. How for example, can the test effort be measured and be paid for? Other aspects that need attention are e.g.: the availability of business expertise, responsibility and costs for the test environment, tools (and licenses) and separation of functions. This demands solid agreements between the demand organisation and the suppliers, especially about responsibilities and accountabilities. Furthermore, the demand organisation will have to take measures to monitor and control the compliance with the agreements and, even more important, the risks for the business. For test outsourcing a certain amount of flexibility is needed in dealing with the contracts and Service Levels Agreements (SLA's). In that sense test outsourcing can be compared to a marriage: appointments will be made about the most important issues, but it is the quality of the relation that in the end determines the success.

The testing process is often outsourced as integral part of a larger development process. Too often agreements on outsourcing are made by people that either have insufficient knowledge of testing or even worse have a wrong image of testing. It is strongly advisable to properly involve testing in the first steps (definition of the outsourcing strategy) in order to prevent disappointments later. Agreements about the services to be delivered will be made in a contract between the demand organisation and the supplier. Apart from regular legal type issues that need to be contained in any contract on outsourcing it is necessary to specify the test services that must be delivered by the supplier. The definition of the required test services must be done by test experts. Buying test services is tricky. How to buy one kilo worth of testing? How can one be sure that the testing is done adequately? How to specify this to the supplier? It appeared that the structure of a Master Test Plan works well for a service level agreement (SLA) for test outsourcing. For the potential supplier experience in testing is a prerequisite. Experience with the related business processes and technical know-how of the infrastructure, tooling and development platforms are important as well. The transition phase in fact deals with the implementation of the agreements. This also requires the implementation of a number of changes for de demand organisation. The transition phase is best managed as a project in itself. Many testing, organisational and people issues need to be worked on. After transition, test outsourcing management and monitoring is required in order to support successful outsourcing. The monitoring function requires a very effective “dashboard” to get a suitable grip on outsourced testing.

This presentation will give an outline of the most important aspects of test outsourcing, following a special route from idea to the actual outsourcing situation and how to manage that.

Martin's Biography appears on page 8 of The Tester.



Lloyd Roden
Grove Consultants



Becoming a 'Trusted Advisor' to Senior Management

Abstract:

Providing good, timely, factual and relevant information to Project Managers and Stakeholders is necessary and essential for projects to succeed. But why do some Test Managers find it difficult to get the message across? And why does it seem as though Project Managers willingly ignore sound advice? At times it seems as though our message is falling on deaf ears. The reasons could be our own making in that we are not providing the right information in the right form at the right time. We must seek to become the Project Manager's "trusted advisor".

Key Points

- How to get from "shoot the messenger" to "Trusted Advisor"
- The Test Report Tool-Kit – seven powerful monitoring techniques
- Controlling Actions – providing solutions not just problems

During testing we can acquire a huge amount of information. This information must be gathered, analysed, processed and presented to management so that right decisions can be made quickly. Some of this information is more useful than others.

I will be sharing my experiences as a Test Manager, communicating with various levels of senior management throughout my career, from Development Managers, Project Managers and Programme Managers to CEOs. I will explain the different types of information that would be useful for the various levels of management and how can we become their 'trusted advisor' rather than the 'bearer of bad news'. It is important as that we contribute effectively to the smooth running of the project and the information we supply is timely, important and understandable.

How can we present the information so that the correct message is being received? How can we assess the testing objectively? This session will equip the Tester and Test Manager to confidently answer both of these questions.

Seven powerful monitoring techniques will be demonstrated during the presentation. Each one of these techniques will report on different aspects of the system, giving the Test Manager an extremely effective tool-kit to enhance and improve their own test reports.

Delegates will be given templates and spreadsheets helping them provide the right information to the right people. Various controlling actions will also be discussed to help the tester, test manager and project manager from losing control, particularly towards implementation date.

Biography:

Lloyd has been involved in the software industry since 1980, studying computer science at Leicester University . He joined Pearl Assurance as a programmer in 1983 and worked there for five years before becoming a Senior Independent Test Analyst for Royal Life. Three years later he joined Peterborough Software where he became project manager for the Product Assurance department. He also set up and managed the Independent Test Unit for nearly 3 years. During his 8 years at Peterborough Software he worked through key issues in test management such as; managing a test team, successfully implementing and using test automation tools and building quality into the testing process. He joined Grove Consultants in April 1999.

Lloyd was chairman of the QARun User Group for three years, and is a lively and enthusiastic speaker at conferences and seminars. He has been a keynote speaker at EuroSTAR and AsiaSTAR and he has also spoken at StarEast, SQE Automation, Test Congress and Unicom conferences as well as Special Interest Groups in Software Testing in a variety of different countries. Lloyd, together with the other members of Grove Consultants, jointly chaired the first SQE Test Automation Conference in 2001.

Lloyd has been Programme Chair for both the tenth and eleventh EuroSTAR conferences. At Grove Consultants, he provides consultancy and training in all aspects of testing, specialising in test management, people issues in testing and test automation.

Lloyd is married to Chris , and when software testing, consultancy and training aren't taking his time and energy – his two children are!

Alan Richardson *Compendium Developments*



NLP for testers, a short introduction

Abstract:

How quickly can you learn to change, for the better, how you approach software testing?

Neuro-Linguistic Programming™ (NLP™) provides a diverse set of techniques and models drawn from a wide range of disciplines; including mathematics, linguistics, psychotherapy, systems theory, cybernetics and general semantics. Techniques that have been used to identify, change, and allow people flexibility in their behaviour to achieve desired goals effectively and quickly.

This workshop will provide a short introduction to a subset of NLP techniques and models, which very quickly can be used to improve, and give you more awareness of, your own software testing and the context within which you test.

I have personally changed how I view and approach software testing by applying the techniques and models of NLP. During this workshop, I will provide practical examples of how I use the NLP techniques to improve my own testing.

Towards the end of the workshop, after you have had a chance to experiment with some of the techniques for yourself, we will discuss what you can do on your own to continue to learn more about NLP, apply it, and improve your own testing.

Biography:

While working as a developer, coding software testing tools, Alan Richardson's interest switched from programming to software testing. Since 1993, software testing has been Alan's professional specialism and he has worked at all levels of the testing hierarchy; test execution and design, test management, strategy and methodology. He is currently an independent test consultant and helps his clients with every aspect of software testing.

Alan holds a BSc in Computing (Hons), and the ISEB foundation certificate in software testing, and manages and maintains a web site dedicated to software testing (<http://www.compendiumdev.co.uk>) where interested visitors can find a number of freely downloadable tools and essays to help in the testing process.

When not being paid to test, Alan is generally reading about testing, beta testing useful tools, writing about testing, programming and studying NLP.

John Watkins
IBM Software Group



The Role and Use of the Time Machine in Software Testing

Abstract:

Using a light hearted approach, this presentation will provide valuable guidance on how to avoid the key quality issues affecting delivered software systems. Specifically, the use of time travel to address the following testing issues will be discussed:

- 1. Failure of software to meet customer expectations.** Far too often delivered software fails to meet customer expectations, leading to dissatisfaction, loss of further business and even litigation. Travel forward in time to when the software is delivered and record all the customer complaints. Now travel back in time, tell the developers what they should be implementing, and know what to test to ensure they did develop the right software. **Key Message:** Make sure that the customers requirements are elicited effectively, and provide access to the requirements for all members of the team from developers through to testers.
- 2. Late Discovery of Defects.** The earlier you detect and correct defects the lower the cost to the project. In this context, the time machine can be used to save massive amounts of project cost; simply stop doing any testing on the project, time travel forward to the acceptance testing phase, and record all defects. Now travel back in time to the development phase and get the defects fixed during unit-testing. This should save 1000 to 10,000 the cost of fixing the defects post delivery! **Key message:** Find defects early and get them fixed with less impact to the project in terms of time, cost and risk of late discovery.
- 3. Poor Software Performance.** Clearly we will be able to dispense with expensive performance testing when we can simply travel forward in time to observe if there have been any problems following live use of the software, returning back to the present to fix any major issues. **Key message:** since we can't really travel through time, the bottom line is that you have to conduct effective and realistic performance testing prior to release.

Biography:

John holds Masters Degrees in both Computer Science and Object-Orientation, has over 23 years experience in the field of software development, with some 18 years in the field of software testing, is a Fellow of the British Computer Society and a Chartered IT Professional.

During his career as a testing professional, John has been involved at all levels and phases of testing, and has provided high level testing consultancy, training and mentoring to numerous Blue Chip Companies. John currently works for the IBM Software Group in the UK.

John is a regular presenter at international testing conferences and events, having recently addressed the ICS Test 2004 conference in Dusseldorf, as well providing the keynote address at the most recent Ohjelmistotestaus conference in Helsinki. John is a published author in the testing field, his book on Testing Process with Cambridge University Press, "Testing IT : an Off-the-shelf Software Testing Process" having been reprinted in both French and Chinese. See www.cup.org/Titles/052179546X.html).

Featured Speaker:

Martin Pol

Polteq International Testing Services B.V.

Co-author of the books on TMap[®] and TPI[®]:

“**Structured Testing of Information Systems: an Introduction to TMap[®]**” and
“**Software Testing: A Guide o the TMap[®] Approach**”

Workshop: Improving Testing in a Small Organisation

Abstract:

Testing is often seen as a costly and uncontrollable process. Management often says that testing takes too much time, costs a lot more than is planned for and offers little insight into the quality of the system under test. If production systems are of poor quality, testing may be partly to blame. Improving your testing process will solve many of these problems.

There are dedicated reference models available to support test process improvement in a more formal way. TPI[®] and TMM[™] are the most applied models for this. For quite some testing situations these models appear to be too heavy.

Improvement of testing within a relatively small project or department requires an alternative approach. This workshop will start with a brief presentation of the characteristics of small organizations, the reasons for improvement and a general set of pragmatic “What to do’s?”. After this the delegates will discuss one or two real live cases. Results of the workshop and supporting presentation material will be made available.

Biography:

Martin Pol is senior consultant of Polteq International Testing Services B.V. Since 1983 he has been completely dedicated to Testing. He has gained experience by managing testing processes and implementing structured testing in many organisations in different branches. He is still working in the testing practice every day. During recent years he has specialized in test outsourcing and he has developed an approach to successfully deal with this phenomenon. He has supported many organisations to define the test service levels, to organize the prerequisites and to implement test outsourcing management and monitoring.

With exceptional insight and experience in practical testing issues, Martin is a regarded presenter at conferences and training sessions throughout Europe, the Americas, India and Australia. He was responsible for the creation of the structured testing approach TMap[®] and the Test Process Improvement model, TPI[®] and he is the co-author of the books on TMap[®] and TPI[®] which are available in Dutch, English and various other languages. These models have become world standards. Martin twice chaired the EuroSTAR conference and received the “European Testing Excellence Award” for his contribution to the field of testing across Europe.



Andy Redwood *Parallel Thinking Group*



Testing Your SOX Off

Abstract:

The Sarbanes -Oxley (SOX) was enacted in the US shortly after the Enron scandal in an attempt to tighten the accountability and reporting procedures for senior finance executives.

The act does not only affect US companies but any non-US company that trades in US markets. Some of the compliance regulations came into force for European companies with US ties in August 2004. European financiers are considering a "Euro-SOX" act in the medium term to be imposed on all European financial markets. In the UK this act would be regulated by the Financial Services Authority (FSA).

Many financial organisations are reworking their software development life cycle (SDLC) activities to cater for the different compliance SOX regulations. These changes are subject to stringent external audit and require the testing practices to be tight and reusable. Penalties and fines and even imprisonment may await CIO's CEO's and CFO's who's organisations are persistent offenders.

So what is the act and how does it affect your testing method?

I will outline the section of the act and where areas of the SDLC are impacted. I will highlight which sections impact your current testing process and explain what you need to do. I will outline the expectations of the auditors and provide hints and tips to ensure you are able to comply with both mandatory and advisory criteria.

Biography:

Andy has a reputation in the Testing Industry as one of the most experienced practitioners. He has been a **Senior Test Manager** and **Test Consultant** with over **16 years experience**, at the leading edge of complex and global **Finance or Telecom projects**.

Andy is respected by his team for his 'consensus' and 'hands on' approach to mentor the project through to success.

He is regarded as an expert in **Testing Strategies, Test Methodologies, Process and Automation**, frequently being invited to speak at Conferences worldwide and is also a popular trainer.

Andy was Head of Testing Services at Buttonwood Tree Group, but has recently joined as a Director of Parallel Thinking Europe.

Andy was the **UK representative to the International Software Testing Qualifications Board (ISTQB)** for 2003 and Chairman of the ISTQB (International Software Testing Qualifications Board) Advanced Examination Working Party until September 2004. He was Chair of the ISEB International Panel in 2003/4 responsible for managing the transition to the new international standards. He was an active ISEB Software Testing Foundation & Practitioner level examiner between 2000 and 2004 and founded the ISEB UK Software Testing Executive Committee.

Featured Speaker:

Martin Pol

Polteq International Testing Services B. V.

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“**Software Testing: A Guide o the TMap[®] Approach**”



Monitoring of Test Processes

Abstract:

Since outsourcing and offshoring of testing have become popular, dedicated monitoring techniques have been created in order to:

- early detect risks in test projects;
- continuously improve the outsourced process and decrease involved costs;
- measure the performance of testing.

These outsourcing related techniques appear to be very valuable for anyone who carries corporate responsibility for testing projects. They are applicable in both outsourcing situations and in organisations that still take care of their own testing.

A number of specific elements can serve as a source of information for the monitoring task. The testing process itself generates a number of products (e.g. a test plan, test cases), that will give an indication of how the testing is performed. Furthermore, testing will deliver a set of data (e.g. number of test scripts executed successfully, number of defects per severity category) that give information on the testing progress and on the quality of the system under test. This information will be used in the monitoring techniques: controls, metrics and health checks.

The controls exist of a number of checklists about the deliverables of the testing process. The most important products for the controls are master test plan, including the overall testing strategy, detail test plans, test cases, test scripts, progress reports and the end report. The questions in the checklists concern on one hand the content of these test deliverables, on the other hand on the standards according to which the test deliverables are created. The controls need to be performed by an experienced test expert in order to evaluate the test deliverables in a right and meaningful way.

Metrics are another way to get insight in the testing process. A metric processes a number of data into useful information. Test management needs to keep track of a set of data, e.g. number of hours spent, number of test scripts, number of defects per severity category. Based on these data insight can be obtained in the testing progress, but also in the quality of the testing process and the quality of the system under test. Metrics like test effectiveness and test efficiency can be used here. In the end, the most important reason for testing is to get insight in the quality of the system under test, of in fact in the lack of quality and therefore in the business risks when the system is taken into production. The metrics about the quality of the system under test are therefore the most important ones.

A health check basically is a short audit on the testing process. Based on a predefined checklist periodically an audit can be performed on the testing process of the supplier. This audit can be performed by an (internal) test expert or an independent third party. In outsourcing situations the demand organization gets insight in how well the supplier is performing the testing and to what extent the agreements made are fulfilled.

This presentation will cover the 3 techniques for monitoring including deliverables and the use of a supporting spreadsheet-based tool.

ARTICLE: AGILE TESTING

David Putman and Charlie Poole, Exoftware

I was at a customer site not so long ago giving a course on Agile Software Development and part of the course was an introduction to test-driven development (TDD). TDD is a process whereby the requirements are specified as a set of tests and the developers use the number of tests passing, or failing, to measure the amount of progress in the system. In the middle of one of my talks, the head of testing rose from his seat and asked; "So you're saying that we should let the developers know what the tests are before they even start coding?" After I replied in the affirmative he responded with, "That would be cheating! If we did that, the developers would then only write code to pass the tests!"

That particular manager's opinion is one I've found to be reasonably common among testers and it's one I've always found difficult to understand. There seems to be a general rule in some organisations that once the requirements have been captured, there should be no communication between developers and testers until the day the code is finished and ready for testing. On that day the code is signed off by development and handed over to testing only for it to be rejected and returned because of the number of defects in it. Defects the developers weren't even aware were defects in a lot of cases. It's been said that, in many projects, this is where design and coding really start. This is where the developers finally discover what the application is meant to do and, just as importantly, meant to not do.

This is often the point in the project lifecycle where the blame and recrimination wars begin too. The developers insist their interpretation of the requirements is the correct one but the testers completely disagree and so the system fails the tests but each side refuses to admit being in the wrong. Is it any wonder that in many companies, there is no love lost between the two factions?

How does this occur? Both sides have almost completely different views of what the system should do but were both subject to the same set of requirements. A set of requirements that were captured and documented in a manner that was specifically intended to enable them to be understood by everybody and prevent any equivocation or ambiguity in them.

The problem is partly the ambiguity of language. Although we have expressions like "plain English", the English language is far from plain, and I'm pretty certain this is true for every other language on the planet too. Languages and the rules governing their usage are complex. The meanings of words often change depending on the context in which they are used. Sometimes the context is explicitly communicated along with the words, other times it is tacit and the speaker expects it to be inferred by the listener. The speaker may use body language or give emotional clues to give the listener additional contextual information.

In his book, *User Stories Applied*, Mike Cohn uses 'buffalo' as an example of a word that can have many meanings. It is, as he says, a bison-like animal but dictionary.com also defines it as a verb with another two meanings; to bully, intimidate; or to deceive, confuse or bewilder. In addition, Buffalo is also a city in the state of New York, so a valid sentence using these meanings could be "Buffalo buffalo buffalo and buffalo Buffalo buffalo". My grammar checker doesn't like that at all and complains that the word buffalo is repeated too many times. However, it doesn't know English as well as we do and so isn't able to figure out that this is, indeed, a perfectly legitimate statement meaning; "Bison from a city in New York state intimidate and confuse other bison from the same city." We are able to understand it because we are aware of the context surrounding it.

An interesting and somewhat humorous example, if somewhat contrived, but it demonstrates how even a perfectly spelt, punctuated and grammatically correct sentence can be impenetrable without context. Certainly impenetrable to my grammar checker and probably most humans too.

We also see another phenomenon in effect here. When faced with information that is incomplete, we have a tendency to fill the gaps with assumptions based on our own past experiences. We then process the information and use the conclusions for our next set of actions, which may include gathering further incomplete information, filling in the gaps and performing more processing. On and on we continue and with each step we climb further up the 'ladder of inference'. Because the experiences of each human being are unique, no two people will climb the ladder in the same way and so each will reach different conclusions. The more incomplete the original information is and the more gaps that are filled with personal assumptions, the more we become convinced that our, and only our, conclusions are the correct ones. Fortunately, we share a lot of culture and experiences with

our colleagues, so we make similar assumptions and when we climb the ladder our conclusions shouldn't be too different to theirs. Developers and testers though, are not always immediate colleagues. Often they belong to separate departments with separate offices and sometimes even separate buildings. The physical distance between them and the competition between the two factions will make their views of the world even more disparate.

The third part of the problem is that the requirements document is an artefact that forms the basis of a contract. If we're working to a fixed-scope, fixed-price contract it is this very document that defines the extent of the scope. According to Barry Boehm's famous exponential cost-of-change curve, the cost of changes to the specification increases by a factor of ten each time the project moves through a stage in the development cycle. At the very beginning of any project longer than say a month, it is extremely unlikely, if not impossible, for the customer to know what will be required at the end of the project. If the customer or the analyst get any of the requirements wrong or omits them in the requirements gathering phase, there will be a heavy cost to pay for adding or changing them later. Given this set of circumstances, the optimal strategy for the person preparing the document is to couch the requirements in as vague terms as possible. The use of ambiguity gives us the chance to argue the precise detail later when we have more knowledge about the system.

Three problems that lead to failures near the end of the project. Just the place where the cost of change curve says failures are the most expensive to fix and just as we'd planned to hand the project over to the customer. In fact failure often occurs at the very last place we want, or can afford to fail but the causes of failure are inherent in the methods we use to plan and implement our projects. In effect, we actually plan to fail when we are at our most vulnerable!

Earlier in this article, we proposed that the testing phase is often when the developers really start to find out what the project is really meant to do. If that is the case, would it not make more sense to start the testing phase at the beginning of the project? This may sound strange and counter-intuitive to a lot of people, how can we test something that doesn't yet exist, but should make perfect sense to anyone with management training. They will know that quality cannot be inspected into a product after production; it can only be built in. The most important time for any defect is the twenty-four hours after it is created. If the defect is caught within that twenty-four hours the cost of fixing it is negligible compared with the cost of fixing it later after more code has been written on top of it. This can only happen if both the tests and testers are available to the developers.

Testing from the beginning of the project and continually testing throughout the project lifecycle is the basis of agile testing. If we can work with the customer to help him specify his requirements in terms of tests it makes them completely unambiguous, the tests either pass or they don't. If our coders only write code to pass tests, we can be sure of one hundred percent test coverage. Most of all, if we keep our testers, developers and customers (or customer representatives) in constant face-to-face communication with each other, we can eradicate most of the errors caused by us climbing the ladder of inference. Breaking our projects into smaller chunks of work and iterating them will give us frequent feedback on the current state of the project.

There are many teams now using agile testing techniques to improve the quality of their products and having great success. There is some investment in training required and changes to the workspace are necessary to allow customers, testers, and developers to work side-by-side but these are a small price to pay for the advantages gained.

The most difficult thing for most teams is shifting the perception of the test team competing with the developers where their focus is detecting faults and preventing poor quality products from being released. The new, agile testing, paradigm is the test team collaborating with the developers to build quality in from the start and release robust products that deliver the best possible business value for the customer.

References

1. User Stories Applied, Cohn, M. Addison-Wesley Professional, 2004
2. Software Engineering Economics, Boehm, B, Prentice Hall, 1982

About David Putman

David's role as Mentor with Exoftware has taken him to a variety of organisations, where he has acted as an advisor on the management of software development projects to companies in three continents.

His work continues to give him interesting and practical examples of all kinds of management and software development issues.

David regularly presents papers and tutorials on the management and practice of software development at national and international events. He also currently writes the "Models and Methodologies" column for Application Development Advisor magazine and has had articles published in other publications including the Cutter IT Journal. His main interests are the management of people and software development projects, learning organisations, and making work satisfying to all those involved. You can contact David at dputman@exoftware.com

About Charlie Poole

Charlie Poole has spent more than 30 years as a software developer, designer, project manager, trainer and coach. Prior to his work with Exoftware, Charlie had a long career in the government sector. He has managed an independent consultancy in the US since 1995, with clients ranging from government agencies to Internet start-ups.

Charlie's technical background is very broad. In recent years, he has specialized in Windows development using C++ and C#. He is an experienced COM and COM+ developer and has worked with the .NET framework since its inception. He is one of the authors of the NUnit .NET testing framework and contributes to several other Open Source tool projects.

Combining years of experience with traditional approaches with an avid interest in Agile methods, Charlie is a practitioner and coach of Extreme Programming and a certified ScrumMaster. He is a familiar presence at Agile conferences in North America and Europe and participates in numerous panels and workshops. You can contact Charlie at cpoole@exoftware.com.

ARTICLE: EQUIPPING FOR QUALITY – THE THREE E’S OF QUALITY MANAGEMENT

Don Mills, Macroscope Services Ltd

The Quantum Uncertainty Principle of Quality Control

Where do bugs come from?

There are many ways we might approach such a question, but here’s one: Give or take a few, four out of every five software quality failures (80% of bugs) derive from the processes we use when we develop software and attempt to control its quality.

This isn’t news. It’s a phenomenon common to all development processes (not just software) that fail to exercise good process control – which, we might say, is 80% the same thing as failing to exercise good *quality* control. Because most quality failures derive from uncontrolled process variations, even “people-focussed” methods such as XP insist on a rigorous process. Yet even a process *exceptionally* under control will still suffer random variations that result in occasional bugs. We might describe it as a law of nature, a sort of “Quality Control Uncertainty Principle”.

So how many software projects exercise even good *process* control? I don’t have a quantified answer, but there’s a strong clue in what the British QM guru, JM Grocock, wrote a number of years ago: “Any process that’s not being measured is a process that’s out of control.” On this basis, most software development is an “out-of-control” activity.

Three Arms of Quality Management

Quality control is the “measurement arm” of quality management. Alongside it stand quality assurance (“work done to ensure that quality is built into products, not bugs”) and quality improvement (“work done to remove the causes of bugs”).

I’ve been a practising tester, which is to say, Software Quality Controller, for fourteen years, following 21 years in development and technical support. I see it as my job to help prevent quality failures in delivered software products.

But I’ve also been teaching testing for much of that time. One of the things I teach, and fundamentally believe in, is that “the proper purpose of testing is not to find bugs, but to prevent them.” There are various elements to this, but the two main ones are these:

- Testing principles, and some of its practices, should be applied continuously so as to control quality from the start of a project to its end, not just in “the test phase”;
- The main tangible output of testing (i.e., defects) should be analysed to determine why they occurred and to prevent them recurring in future products.

The question is, who should do it?

Three E’s of Quality Control

It’s a truism of quality engineering that, if you want a good-quality job done, the person best placed to control the quality is the person doing the job. But (and this is the important bit) that person must be equipped with:

- E[1]: Enthusiasm: The desire to do a good job.
- E[2]: Enablement: Appropriate knowledge as to what “a good job” really constitutes, appropriate tools to measure whether they’re achieving it, and appropriate skills in performing and interpreting the measurements.
- E[3]: Empowerment: The ability to contribute to solving the real causes of one’s own quality failures, which – 80% of the time – can be attributed to “the Process” (or lack of it), as set up or permitted by ... you guessed it, Management.

Enablement

Let's start in the middle.

Enablement means that practitioners are given the knowledge, skills, and tools to do a good job, and to measure for themselves, reasonably objectively, how good a job they've done. Let's consider one aspect of this: the ability to test the quality of one's own work.

Historically, about one in ten of my testing students has been a programmer. Every course, I run a quick survey on "testing training received to date", and I can confirm that, in a typical 3-year degree course in Software Engineering or Computer Science, the principles and practices of testing – in fact, the whole topic of quality control – receive almost zero attention: perhaps one chapter in one textbook. At least, that's true for my part of the world, Australia and New Zealand, and I hear it's true also of the USA. I doubt it's different in the UK.

Programmers in their training are rarely given any understanding of what "quality" really is. They are taught little or nothing about how to measure it in the end product (how do you measure "usability"?). Should it even be their job? Well, if you don't know how to measure it, how can you tell if you're building it in? What types of property of program code promote "usability"? What types undermine it? How can you "measure" code to see if it has "usability properties"? These are not rhetorical questions; answers will be provided on receipt of a stamped self-addressed envelope ...

Similarly, business analysts receive little or no instruction in how to specify "usability" in any measurable kind of way – which presents severe problems for developers, not to say testers, when "usability" is a key success criterion. And what about "maintainability"? "Testability"?

With limitations (as noted), nobody is better placed than the enabled business analyst, to specify real quality requirements in a business requirements specification, and to verify by measurement that the specifications themselves are of good quality for downstream use by developers and testers. Nobody is better placed than the enabled programmer, to build quality into program code, and to measure the code to verify that the quality is there.

But (for most projects) both parties are disabled by employment processes that engage staff untrained in quality practices, and that don't provide them with the training and tools they need to do their job. Enablement provides analysts, designers, and programmers (as also testers and managers) with the personal equipment for exercising quality assurance, quality control, and quality improvement in their own work.

Empowerment

Moving on to the last "E" next: There are, as I said at the start, many origins for quality failures. The most obvious is that if programmers didn't write them into the code, we wouldn't have software bugs to begin with.

But why do programmers write bugs into code? Here's one important reason.

Historically, about a third of the attendees on my testing courses have had the title, Business Analyst. Almost none have received any training whatsoever in how to perform professional analysis (for example, how to separate business goals from project objectives from business requirements from product design). Nor have they received training in how to write clear, complete, unambiguous, traceable, verifiable requirements specifications ...

Is this a personal failure on the part of the business analysts? Well, yes, but more importantly, it's a process failure. A hiring process that allows Management to employ and use amateurs (I say this with apologies to any business analysts reading it) is a process that's letting everyone down, including programmers, testers, and the business analysts themselves. Not to mention the customer.

So how's this relevant to Empowerment? Let's move on to the downstream effects of disabled business analysis. Numerous studies of real-world projects show that programmers provided with good-quality specifications can deliver working code more than twice as fast as the average, and with a far lower level of defects. "Enablement" for programmers would mean that they were given objective tools and methods to discover for themselves the defects in their own work, and to analyse their nature and real causes. But "Empowerment" would give them an official mechanism by which to get

something done about defect causes that lie outside their personal control – such as buggy requirements, for instance.

And if you feel that the business analysts (not to mention testers!) could do with a bit of Empowerment too, you're right on target.

Enthusiasm

Which leaves us with E[1], "Enthusiasm". Hands up, those software developers who want to do a bad job ...

I've met so many developers who want to do a better job, but feel they're not allowed to. But as I talk with them about quality management and quality control, I confirm that, in crucial ways, they don't even know exactly what "doing a better job" means, let alone exactly what would enable them to do it. Still, I give them full marks for enthusiasm.

W Edwards Deming observed that most people start out wanting to do a good job – until the environment and processes that are set up and/or permitted by Management knock that sort of nonsense out of them ...

And as long as they want to do a good job, even "average" practitioners equipped with good knowledge, tools, and processes can outperform an excellent practitioner struggling against poor training, inadequate or inappropriate tools, and uncontrolled processes.

Fixing the Process

Numerous resources are available that can help us understand how to provide Enablement and Empowerment (and even to rekindle Enthusiasm). Watts Humphrey's Personal Software Process enables individual programmers to operate as "Level 5" software engineers, even at a site operating at Level 1 of the CMM. The key lies in their learning how to measure the quality of their own work (quality control), how to set improvement goals (quality improvement), and how to plan to avoid repeating their mistakes (quality assurance).

The same author's Team Software Process provides for empowerment mechanisms within the development team. The best-formalised tools for this are Inspection and Root Causal Analysis. The purpose of Inspection, as Fagan originally intended it, wasn't finding defects, but using the information about them to identify process weaknesses and get those fixed. For my money, the resources on Inspection that best present this viewpoint are Tom Gilb's and Dot Graham's classic Software Inspection, and Ron Radice's more recent Software Inspection: a Software Best Practice.

Empowerment via Inspection means that not only the document under consideration gets inspected for possible defects, but everything that bears on the quality of the document – skills, standards, precursor documents, and processes. The practitioners doing the Inspection are empowered to suggest direct ways in which these could be improved, based on the defects they find.

The true payoffs of Inspection are a 50% reduction in bugginess per inspected document from the same author, and a 40% per annum reduction in overall bugginess of an organisation.

Getting the bugs out of the inspected document is a free side-benefit.

The Job of Management

Whoever s/he was, it was a wise person who first observed, "The job of Management is to fix the Process". But to do this, Management need help in identifying where "the process" is broken – or even understanding that it's broken in the first place.

A word of comfort if you're a manager reading this: could be that you've bags of E[1], but you could do with a healthy dose of E[2] and E[3] yourself. A question for you: what needs to be fixed in "the Process" so you can do your job properly?

Whatever the problems are, it's an inescapable fact that enabling and empowering your business analysts, and your programmers too, so that they can reliably manage the quality of their own work, would remove many problems from your shoulders, drastically shorten development cycles, and give you much happier customers. It would probably do a lot for their (and your) enthusiasm, too!

And What About Us Testers?

What are the implications in all this for testers? Here's a couple of thoughts.

1. Testers are just as much in need of enablement and empowerment as programmers, business analysts, and managers. In a typical twelve-week project, we give the analysts and developers ten weeks to insert all the bugs they're capable of, and the test team two weeks to find them and get them removed. That's a major reason why a typical twelve-week project often runs for twenty weeks or more.
2. This is also a process failure: *Enabled* testers would be able to analyse *why* they need to do much more work than there's time for (because the testing job needs as much time and effort as the development job), and *why* the test phase overruns so badly (because of all the rework the developers have to do). *Empowered* testers would have authority to suggest ways to *fix the process*. Like involving them and their special viewpoint in the planning, requirements definition, design, and coding phases, as well as "the test phase".
3. But how can testers contribute to earlier activities that precede coding? With appropriate training and some process rearrangement, testers can be enabled and empowered to critique requirements and designs for testability, and to design minimum-sized but comprehensive test sets that verify the accuracy of requirements before design and construction begin. With their source materials purified of quality defects, programmers can build code twice as fast and 70% less buggy.

"If we insist on truth-in-advertising," wrote Michael Fagan, "'Testing' would be called 'Defect Rework', because in most cases much less than 50% of the effort expended during 'Testing' operations is actually used to [run tests], while more than 50% of effort is consumed doing defect rework." But if we can apply testing principles and practices to verify initial and intermediate work products and eliminate their defects, then we can realign test execution ("the Test Phase") from the discovery of bad work that needs to be redone and re-tested, to the confirmation that good work has been done and needs no rework.

Software quality failure is institutionalised in the traditional ways we develop and test software. The processes that the greater portion of software development and testing operate with (and the environments most software practitioners work in) guarantee large numbers of bugs, frequent schedule overruns, high cost overruns, and unhappy customers.

It's the role of Management to create a development process where quality becomes automatic. One thing that will help is to ensure that all software practitioners are equipped with the Three E's of quality management: Enthusiasm, Enablement, and Empowerment. Process improvement and process control can follow from this.

Author Profile

Don Mills has 35 years' experience in developing (and using) software. With his wife, Margaret Fordyce, he directs a small company that has provided quality control enablement services for New Zealand and Australian business analysts, programmers, managers, and testers for the past twelve years. Recently relocated to London, Don's proud to know that Quality Assurance and Quality Control are different aspects of Quality Management, and to know the difference. (He also knows something about code features that promote or detract from usability). He would welcome debate, even raucous argument, about this article.

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ARTICLE: A PERSONAL REVIEW OF THE TESTING MARKET

Paul Gerrard, Systeme Evolutif

In an industry where change is so fast and frequent, changes in people's attitude to testing have been both subtle and dramatic. Over the past fifteen years or so, project and customer manager's attitude to testing has steadily changed but there is still a long way to go before the value of testing and an appreciation of the discipline is widespread. This is the subtle change. Over the same period, however, the practitioner's view of their role has changed dramatically. A few years ago, there were hardly any "career testers". Nowadays, the BCS Special Interest Group in software testing (the SIGIST), the ISEB Certification scheme and dedicated testing conferences in the UK, continental Europe, America and latterly Australasia provide a huge range of methods, tools and advice. A recognised career structure for testers is evolving and the testing community have increasing influence in the IT industry.

A Brief History

Historically, testing was seen as an optional activity, performed late in a project with little forward planning, haphazard execution and of dubious value. Management perception of testing was that it was boring, repetitive, chaotic and optional. Testers were seen as rather dull individuals doing a dull job. Testing was easy and "anyone could do it" – typically, end-users were moved from their day jobs to pick up the task of test execution.

Today, the attitude of management towards testing and testers has changed somewhat. Most significantly, testing is no longer perceived as optional. Testing is at least seen as a necessary investment of time and resource, rather than an optional overhead. A Test Management role appears in most project plans, even if it turns out to be a part-time assignment of one of the development, user management or business analysis personnel. Testing and the stereotypical tester are still perceived to be boring, repetitive and chaotic by managers, who may nonetheless, appreciate the importance of good testing.

Testers' Progress

Although there are regular SIGIST meetings, UK and international conferences, established and emerging certification schemes and associated training services, and a huge increase in the number of books on testing, few non-testing professionals take advantage of these resources. Essentially, the testing community is a strong, well supported one, but is still isolated in the overall software community.

There is limited overlap between other disciplines, such as analysis, design, programming, technical support, and so on. However, test activities such as reviews and inspections are universal; developers do component and integration testing, users are involved in acceptance testing. System testing and the non-functional specialisms such as performance and security testing are relatively self-contained and there is little overlap with other disciplines. But the testing principles are universal and the most basic techniques should be part of every IT professional's toolkit. They seldom are.

An ongoing challenge for the testing community is to encourage more widespread use of better test practices in the development community, in particular. The perennial problem of poor software quality is to a large part due to poor test practices in the definition and development stages. The economic argument for early testing is overwhelming, but most organisations still rely on late, expensive, time consuming system tests to detect the bulk of software faults.

Testing "best practices" – largely based on the structured and waterfall methods – are well established in the high-integrity software community. Many organisations have adopted, at least selectively, some of the "V-Model approach" to software testing. The V-Model has probably achieved universal recognition, (but not necessarily approval) by the testing community, but, because it is promoted as a testing model it has not penetrated most development organisations.

The Craft of Testing is Evolving

As the testing discipline has matured, a range of alternative testing approaches have emerged. These vary in formality, purpose and cultural background.

Exploratory testing is basically, a heuristic, unplanned, ad-hoc approach which attempts to systematise the most natural way that most testers (and developers) would like to treat testing.

Supporters of exploration have coined the term “Context-Driven Testing” to reflect a flexible and essentially, humane way of approaching the task of testing. The Context-Driven (CD) “school” are led by a small group of testing consultants and practitioners in the US, but their approaches have found support across the testing community. CD testing is largely a reaction against what might be called structured testing in the tradition of the V-Model and other similar waterfall-based approaches.

Needless to say, the academic, high-integrity and traditional testing communities treat these methods with some scepticism. It remains to be seen whether the CD label will outlast its usefulness as a marketing badge. The practices within the CD realm will of course always have application in the field.

Increasing attention is being paid to Risk-Based Testing (RBT) as a means of managing the ownership and uncertainty of the outcome of testing and as a way of prioritising and scoping the right amount and type of testing in projects. The RBT methods draw largely from safety-critical approaches, but toned down to make them useful for commercial environments. Recent developments include the inclusion of risk-based facilities in proprietary test management tools. A recent development is the concept of Project Intelligence as a way of unifying risk assessment, benefits analysis, test process design and test reporting. Testing as intelligence gathering is a useful metaphor that brings together project management, testing and QA and making progress monitoring more accessible for stakeholders.

The Agile methods community is generating a lot of interest and attention and early-adopters make a lot of noise about their successes. Agile methods tend to imply documentation-lite and process-free approaches, neither of which are tester-friendly. The challenge for testers is to find a way of collaborating with teams of enthusiasts without putting the brakes on! It is early days and most large organisations are still experimenting, but this looks like an interesting challenge for the future.

Test Resource Market Dominates

In the testing services space, there are a small number of large (i.e. greater than 100 UK staff) testing services vendors. Some, who are part of larger software development and outsourcing firms, get most of their business from their existing customers. Some testing tool vendors offer services, but these tend to be associated with their tools. Historically, specialist tool vendors have less credibility in the services sector because they tend to rely on “body shopping” partners.

Most of the larger testing tool vendors have partnered with testing services companies. These relationships tend to be very simple. If the tool vendor doesn't provide services, it is convenient to pass leads to their services partners. The services partners pick up a lot of tools-related work in this way. Some of the larger testing firms based much of their early growth and customer base on these arrangements.

The partnering of testing tool vendors with system integrators (SI) is a convenience for the SI firms and offers some kudos and income to the testing tool vendors. The large SI firms “partner” simply to get a good deal on tool licenses. The SI firms get a good price for the products and, where they have a client project using those tools can benefit from prompt support from the tool vendor. But these partnerships are a convenience. If the client of the SI uses other tools, the SI will simply use those tools and promote that partner just as strongly.

The bigger testing services companies work hard to establish relationships with larger clients. They also try and establish partnerships with the larger consulting firms and SI firms. The larger testing companies' growth has been based on working directly with clients, but also by their partnerships with the tool vendors, who have passed on leads.

In some cases, the larger testing services firms have grown by acquisition of smaller outfits. In other cases, SI firms have acquired testing services companies not to get into testing services, but to obtain resources for their own large projects. The larger testing services firms are targets for acquisition because these testing firms are body shopping rather than offering true managed services. Their assets consist mainly of capable resources and a customer base.

Managed Testing Services – on the Horizon

Smarter/more mature clients tend to use the larger testing services firms simply as a testing resource pool. The “services” offered are not “managed” in the conventional sense. However, it remains that there are a large number of organisations that are not smart or mature. In these cases, an unsophisticated service is a step forward for the client. The larger firms may have proprietary methods but few have anything very sophisticated. Their business models, driven by a sale force, and fuelled

by contract agencies cannot support research and development or more senior consulting staff capable of providing customised approaches.

The market is still maturing, in that there is still wide variation in the maturity of clients for testing services and there are few testing services firms capable of offering a managed testing service. As clients' appreciation of testing and the possibilities of outsourcing increase, the demand for more sophisticated offerings will increase. Firms that offer true managed testing services have a significant role to play in the market. Their market value will be based on their intellectual capital and strong relationships with larger clients, wishing to outsource product risk management, project intelligence gathering and resourcing rather than their ability to act as contract agencies. As a consequence, they are less likely to be acquired and have a long term future.

Future Challenges

As a whole, the capability of the testing community is steadily improving. Incorporating a test process, based on a recognised test methodology, is much more common, particularly in larger projects. The number of start up firms entering the testing services market steadily increases. The ISEB Certification scheme is now well established, with over 10,000 testers having taken the Foundation Certificate and is increasingly quoted as a requirement on job specifications.

On the downside, the appreciation of good test techniques and the benefits of early testing e.g. reviews, inspections and early test planning has hardly improved at all. Developers are rarely trained in even the most basic test techniques. Expensive system testing done late in projects will never compensate for a lack of risk assessment, early review and developer testing. The economic argument for better test practices throughout the lifecycle is obvious and well established. The barriers to better test practices are cultural, organisational and, sometimes, political. The BCS SIGIST will continue to preach better practices to the "converted" but must cast its net wider to influence senior customer, IT and project management to achieve real change in the industry.

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