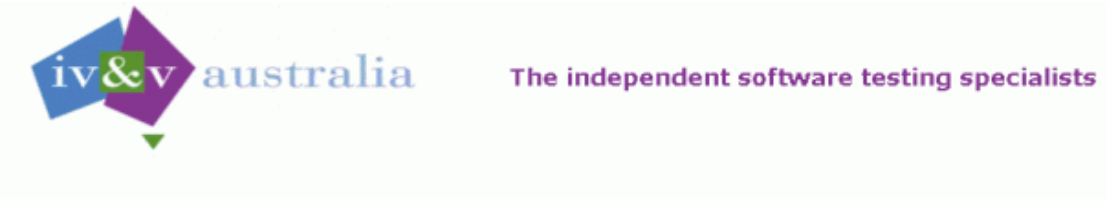

Welcome to IV&V Australia Testing Newsletter

This e-newsletter provides a practitioner's view of how to manage and perform SOFTWARE TESTING in today's world.

IN THIS ISSUE – April 2010

A Fundamental Issue with Automated Testing

The general consensus in Software Testing is that automation can reduce costs if properly implemented and managed. A good automation tester can write tests that follow the UI actions of a user very well. The understanding is actions can be repeated at a much lower cost than if repeated manually with the additional benefit that non-UI actions such as Database interactions can be integrated into the test scripts seamlessly. As project stakeholders, management and test teams recognise this, the move to test automation continues unabated.

However, there is a fundamental issue with automation that is being overlooked. No metrics exist to measure the impact of the issue and it is unlikely that most automation testers have given more than a glancing thought about it. When a software tester follows the script of a test case, the actions they take are based on what they read on the screen of the computer that is hosting the test target. If a test step states "Enter Xyzzy123 in the **Employee Surname** field" the tester will find the text entry box with the label 'Employee Surname' and enter the text *Xyzzy123*. However, an equivalent automated test does **not** do this. The automated test, irrelevant of test tool, will look for an HTML text-box control using the identification filter defined by the tool *Object Map*. If the **Employee Surname** field has a unique Name or Id attribute then that will tend to be used; if not then a combination of methods may be used, depending on the test tool. The key point being that the Automation test does NOT look at the page, find the **Employee Surname** field and use the associated text-box when entering the employee surname.

This is a very crucial point. Automated test scripts trust the developer to have correctly labelled the controls of a Page, or that the filter mechanism used the Object Map has not changed. As an example, a developer working on an iteration of an employee details page may inadvertently swap the Id attributes of the Surname and Firstname fields. If the associated manual test is performed then the error is picked up as the manual tester will enter the surname/first name based on the visual cue of the labels and validation will show that the fields are

swapped. The equivalent automated test ignores the associated labels and, if using the Id attribute of the text boxes to identify the controls, will enter the data into the correct text boxes and the test will register an invalid Pass result.

Example.

An HTML Page is rendered with the following two fields as follows:-

Employee Name:

Surname: _____

Firstname: _____

[Send Name]

The equivalent HTML to render that could be:-

```
<html>
  <body>
    <p>Employee Name:</p><br/>
    <form method="post">
      <p>Surname: <input type="text" Id="emp_surname"/></p>
      <p>Firstname: <input type="text" Id="emp_firstname"/></p>
      <p><input type="submit" value="Send Name"/></p>
    </form>
  </body>
</html>
```

The manual test script would instruct the tester to enter the surname and first name and click the Send Name button. The tester would therefore identify the surname and first name fields based on their preceding texts.

The automated script would probably (depending on the test tool) identify the text entry boxes by the Id attributes. So to enter the data, the automated test would enter the surname text into the control with Id 'emp_surname' and the first name text into the control with Id 'emp_firstname'.

Both tests work equally as well. However, if a developer works on the page and inadvertently gets the html rendering wrong by mixing up the Id's then the manual test would catch the defect, but NOT the automated test:-

```
<html>
  <body>
    <p>Employee Name:</p><br/>
    <form method="post">
      <p>Surname: <input type="text" Id="emp_firstname"/></p>
      <p>Firstname: <input type="text" Id="emp_surname"/></p>
      <p><input type="submit" value="Send Name"/></p>
    </form>
  </body>
</html>
```

The emp_firstname field is preceded by the text 'Surname:' and so the defect is found. However, as the automated test ignores the text and identifies the inputs by the Id, the defect is not found.

There is no easy solution to this. And, as mentioned at the start, no metrics exist to measure the impact – or cost - of this issue. Judging what input control is associated with what text is a role for human perception. In the examples above, there is no physical or logical connection between the inputs and their labels; in fact the labels could be above, below, left or right of the input control! This means there is no reliable way of associating an input with its prompting text and so this is simply an issue the test automation technician – and indeed all members of a development team - should be aware of.

IV&V Sydney End-to-End Software Testing Course

We'd just like to let everyone know our first End to End Software Testing course in Sydney for 2010 is fast approaching: scheduled for June 1st and 2nd.

Who should attend? Software testers and test managers, project managers, business analysts, developers and development managers. It is suitable for all experience levels.

What is included? All catering (arrival tea/coffee, lunch, morning/afternoon tea), course notes, handouts and lots of stories.

If you know of anyone who could benefit from an intensive 2-day software testing lifecycle course, please pass the word.

Alice's Adventures

In this chapter of Alice's adventures, Alice is coming to terms with the start of a new project and she really wants things to run smoothly, especially with all the unknowns a new project can have and 'gotchas' that can crop up... so we pick up the trail of what Alice will do next.

Getting started! Alice is keen and she's been reading up on good practice for testing on a new product (her team doesn't have experience with testing from scratch). Alice decides the best course of action at this stage is a project kick-off meeting, to make sure everyone has the same understanding of what they need to do. They aren't keen on meetings, so how can she convince anyone that this is a good idea?

Alice goes to see her boss, Ursula. Alice knows that Ursula wants the software delivered on time, so she sets about explaining to Ursula how holding a kick-off meeting will help the project teams get focused. It is a chance to establish priorities, responsibilities, discuss project requirements and schedules. Alice wants to get people talking - to establish communication methods and help the development and test teams work together to create an environment of co-operation, troubleshooting and project reporting more quickly. She also offers to bring the Tim Tams. This gets Ursula's attention and she agrees to the meeting! Alice feels this is her first win on the newly established test team.

Alice gets the agenda sorted out, as her reading has told her what should be discussed. She knows that her company doesn't do some of the things listed, but she puts them down anyway. To her total amazement, the Dev Team Leader, Max, is really keen to plug some of the holes in their process and set up a

relationship between the Dev and Test Teams. Now that really is Alice's first BIG WIN!

Next month: Alice goes in search of requirements.

Thought of the day

A developer is at a shooting range, where he is given some instructions, a rifle, and bullets. He fires off several shots at the target. A tester sends a report back from the target area stating that all attempts had completely missed the target.

The developer looks at his rifle, and then at the target. He looks at the rifle again, and then at the target again. He puts his finger over the end of the rifle barrel and squeezes the trigger with his other hand. The end of his finger is blown off, whereupon he yells toward the tester at the target area, "It's working just fine here, the trouble must be at your end!"

FEEDBACK

Have you found this issue useful? We want to hear your comments and suggestions. Email us at info@ivvaust.com.au.
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