

Will it test be more effective with Test automation?

Who am I

- Daniel Andersson
- Test automation for 9 years
- Co founder of Prolore, (Specialists in Test Automation, Performance, and Training in these areas)

Agenda

- What is Test Automation ?
- Test Automation advantages, in theory and real world
- What to automate (and not)
- And what about R.O.I (Return of Investment)?
- The Maintenance Russian Roulette
- Key to Success

© Copyright Prolore 2006.

prolore

All Rights Reserved.

What is Test Automation?

Short introduction to how a automated test works

- A test automation tool runs our, former, manually functional tests (Usually...)
- The automated tests are usually created via some recording mechanism in the tool that will generate some code
- This code will describe what the tool should do, e.g. click buttons, verify fields...
- Short demo...

© Copyright Prolore 2006.

prolore

All Rights Reserved.

What is Test Automation? cont..

- The Mecca of Pitfalls
- The Nirvana of frustration
- The Russian Roulette of Return Of Investment

....in other words: Extremely exciting, fun and challenging!

© Copyright Prolore 2006.

prolore

All Rights Reserved.

What is Test Automation? cont..

The fundamental and attractive characteristics of Test Automation

- Executes tests fast
Will execute tests as fast as the AUT (Application Under Test) can run
(which sometimes generate some strange synchronization behaviors
never experienced in manual testing)
- Tests consistent
A testing tool will never forget to verify a field, will never misspell data
etc. (on the other hand, it has terribly bad imagination and lack all
traces of intelligent initiatives...)

© Copyright Prolore 2006.

prolore

All Rights Reserved.

What is Test Automation? cont..

- Tests constantly
The testing tool will never be tired or hungry and will happily work 24*7 (but will probably appreciate a reboot once in a while...)
- Tests without interaction
A good test automation is robust and will handle the most common issues during a test run (however, it is surprisingly hard to make a fairly complex automated test to run without any disturbances...)

© Copyright Prolore 2006.

prolore

All Rights Reserved.

Advantages (in theory...)

- Getting information faster about the quality of a delivery
- Increase test teams productivity
- Will be useful for the maintenance/post-production projects
- Enable parallel test execution (with more PC:s of course)
- Enable a high degree of test coverage with data driven tests
- Might be able to calculate expected results
- Added bonuses: Useful for data laundry, restore databases, test data generation and population etc.

© Copyright Prolore 2006.

prolore

All Rights Reserved.

Advantages (in practice.)

- Getting information faster about the quality of a delivery, **If you have a stable and solid test environment where you can deploy tests fast**
- Increase test teams productivity, **who will work with other things, decrease of staffing is rare at most...**
- Will be useful for the maintenance/post-production projects, **If you will handle the hand-over with proper care**
- Enable parallel test execution (with more PC:s of course). **I can't think of any cases where this has been a limitation, and the license cost will increase...**

© Copyright Prolore 2006.

prolore

All Rights Reserved.

Advantages (in theory...)

- Enable a high degree of test coverage with data-driven tests. **Which will require a preussisk approach to test data handling and documentation.**
- Might be able to calculate expected results. **And I've seen this in astonishing 2 cases in nine years!**
- Added bonuses: Useful for data laundry, restore databases, test data generation and population etc.

© Copyright Prolore 2006.

prolore

All Rights Reserved.

But will it be better with Automation?

A collection of real life experiences by myself and business colleagues all point in the same direction:

- If your manual functional testing is not running smooth, you will not benefit by throwing a test automation tool into the equation...
- If you do not have the stamina and long term view of test automation you will probably not succeed and run into a blame-game (usually ultimately lost by the tool or tool vendor)
- Do not use test automation as a plain manual functional test replacement. Look for further use of the tool and ways to test not possible before. This tends to pop up after some use of the tools and broadens the way we do quality assurance.

© Copyright Prolore 2006.

prolore

All Rights Reserved.

What NOT to automate

If we want to be more effective, we better know what to avoid

- Tests that require human intelligence and feel
- Applications yet to reach a fair state of stability
- Applications not supported by the tool vendor
- Test cases yet to PASS manually

© Copyright Prolore 2006.

prolore

All Rights Reserved.

What to automate?

- Same basic criteria's as with all manual testing
- Prioritize considering at least the following:
 - Likely to change (-)
 - Estimated (re)runs (+)
 - Number of data driven data sets (+)
 - Test Automation ergonomic
 - Reusability (+)
- And you might think about those tests that you already executed so many times you're dead sick of them...

© Copyright Prolore 2006.

prolore

All Rights Reserved.

So, will we find more bugs?

The quick answer : Probably not!

- We usually do not automate the brand new functions or business processes. We tend to focus our automation efforts to the mature parts of our application.
- The benefit of automation is that it will take care of those repetitive, data intense manual tests so we can focus our intelligent (i.e. manual) resources to new and untested areas and, thus, hunt down more bugs
- 80% of found bugs were identified in manual testing! (James Bach, Windows Tech Journal -99)

© Copyright Prolore 2006.

prolore

All Rights Reserved.

What will impact the ROI?

The ROI will depend on:

- Number of time an automated test case is executed
- Number of data driven data sets
- How simple (or usually hard) it is to automate the test
- Skill and knowledge of test automation personnel
- "Strategic" decisions like "Let's switch from Java to .Net" (or vice versa)
- "Strategic" decisions like "Let's switch from Tool Vendor X to Tool Vendor Y"
- Continuity of the test automation skills (career switch, taking care off little ones etc.)
- To what extent (not IF..) we need to do maintenance work in our automated tests.

© Copyright Prolore 2006.

prolore

All Rights Reserved.

How to calculate ROI?

Estimate:

- number of test cases
- number of test cycles (..with an application lifecycle mindset)
- number of re-run in each build
- number of data sets
- degree of automation
- time to execute tests (TA vs M)
- time for maintenance (TA vs M)

+ Initial investments in: (outside project budget?)

- Knowledge and skill
- Tools and hardware
- Additional automation costs

© Copyright Prolore 2006.

prolore

All Rights Reserved.

Maintenance, ROI killer no 1

- Don't start automation too early in the application lifecycle. One approach is to automate when the manual test case passes.
- Re-use as much automated test cases as possible. Split up the automated code in functions to be re-used by other test scripts. Think about how to automate a use case in a way that the sub flows could easily be created for the common parts of the main flow.
- Create a central library of common jobs, such as database tasks, invoke/kill applications, TE functions, round off rules etc.

© Copyright Prolore 2006.

prolore

All Rights Reserved.

Keys to success

- Choose a tool that supports your strategic platforms and offer decent support*
- Respect the need for training*
- Respect the need for mentors and exchange of experiences*
- Show developers how test automation works*
- Make sure you got executive/management support
- Consider centralization of the test automation skills (personnel)*
- Make sure test automators get the same knowledge in the AUT as your manual testers*
- Make a Pilot, and choose a project that's make an impact
- Hard work, dedication and stamina (takes time to save time!)

© Copyright Prolore 2006.

prolore

All Rights Reserved.

And the brilliant future?

- Make automation automatic
- Genetic Programming, J Kuza

© Copyright Prolore 2006.

prolore

All Rights Reserved.

And you believe in automation?

- "Of course I believe in marriage!, I've been married 5 times!!!" -Unknown

© Copyright Prolore 2006.

prolore

All Rights Reserved.

Questions?



- Download presentation from www.prolore.se
- Mail me: daniel.andersson@prolore.se
or call: +46 (0)703 840 666

© Copyright Prolore 2006.

prolore

All Rights Reserved.