

Intelligent Mistakes in Test Automation *(or: it seemed a good idea at the time)*

Prepared and presented by

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Intelligent mistakes?

- mistake:
 - an action resulting from defective judgment, deficient knowledge or carelessness, a misconception or misunderstanding
- intelligent
 - exercising good judgment, showing mental resourcefulness, being well-informed
- intelligent mistake
 - action based on a faulty premise, with the best of intentions, but with adverse consequences

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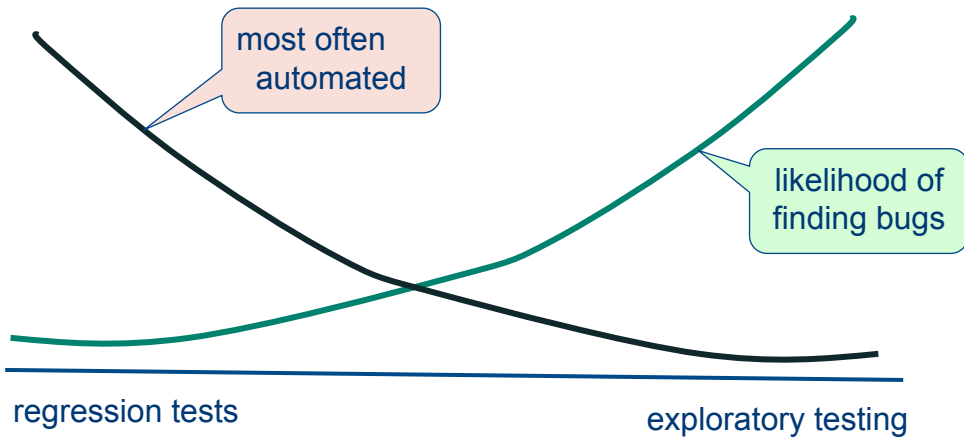
- Automation should find lots of bugs
- Automation comes out of a box (or download)
- Let's automate all of our manual tests
- ROI is essential for automation
- Testing tools are testers' tools

Good idea?

Automation should find lots of bugs

- Seems very sensible
 - we are automating tests
 - tests find bugs
 - automation is more thorough and faster
 - therefore, automation should find more bugs
 - and quicker
- Problems
 - what tests are we automating?
 - what does automation actually give us?

What is usually automated?



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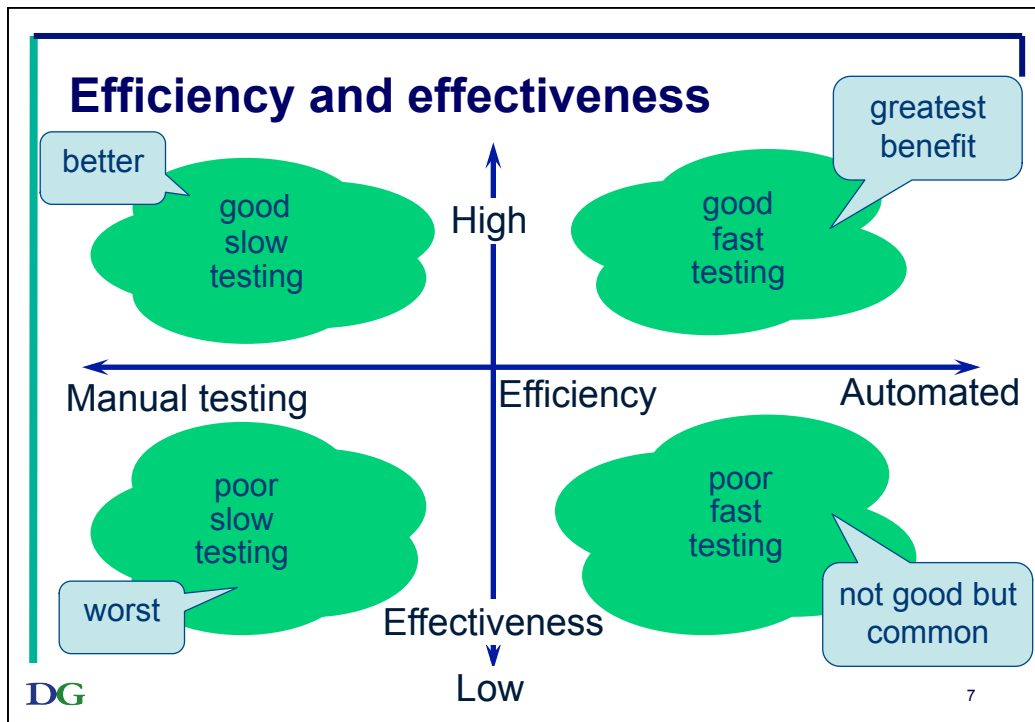
Automation success = find lots of bugs?

- tests find bugs, not automation
- automation is a mechanism for running tests
- the bug-finding ability of a test is not affected by the manner in which it is executed
- this can be a dangerous objective
 - especially for regression automation!

Automated tests	Manual Scripted	Exploratory	Fix Verification
9.3%	24.0%	58.2%	8.4%

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Experiences of Test Automation, Ch 27, p 503, Ed Allen & Brian Newman



When do automated tests find bugs?

- when the first run of a given test is automated
 - Test-Driven Design in Agile (& BTDD)
 - Model-Based Testing (MBT), automated test design, monkey testing, exploratory test automation
 - keyword-driven (e.g. users populate spreadsheet)
- find bugs in parts we wouldn't have tested?
 - indirect result of automation
 - direct result of running more tests

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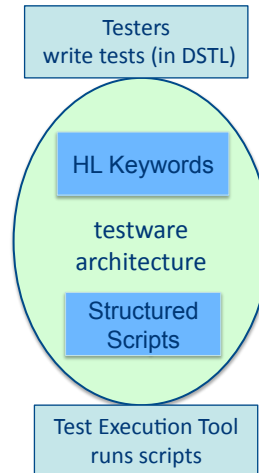
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Good idea? Automation comes out of the box (or download)

- Seems very sensible
 - automation gives great benefit, success stories
 - spending a lot on the tool must guarantee great benefits
 - all we need to do is “get the right tool”
- Problems
 - technical issue: what testware architecture is right for your organisation? (hint: not the tool's)
 - management issues: staffing, support, resources

Automation should fit your organisation

- your own testware architecture is critical
 - a poor architecture gives high maintenance cost
 - most frequent cause of abandoned automation/ shelfware
 - two layers of abstraction
 - technical: for long life
 - human: for wide use
 - using the tool's architecture ties you to that tool [version]

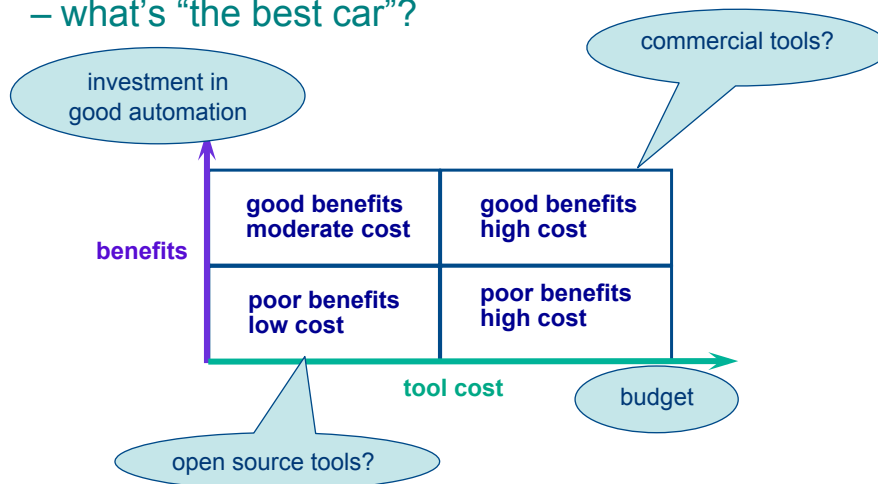


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It's not about the tool

- no such thing as “the right tool” or “best tool”
 - what’s “the best car”?



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It takes time and effort to succeed

- management support is critical
 - high level managers need to understand automation capability & limitations, and have realistic expectations
 - building good automation is a learning process
 - “people issues” – people use the automation, people develop the automation

Automated tests/automated testing

Automated tests

Select / identify test cases to run

Set-up test environment:

- create test environment
- load test data

Repeat for each test case:

- set-up test pre-requisites
- execute
- compare results
- log results
- analyse test failures
- report defect(s)
- clear-up after test case

Clear-up test environment:

- delete unwanted data
- save important data

Summarise results

Automated testing

Select / identify test cases to run

Set-up test environment:

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Summarise results

Analyse test failures

Report defects



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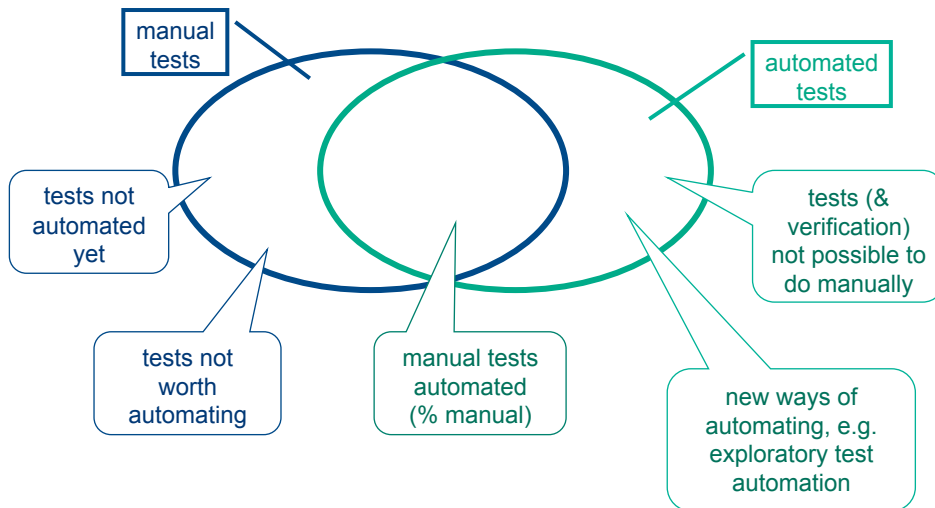
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Good idea?

Let's automate all of our tests

- Seems very sensible
 - we already have lots of tests being done manually
 - automation would be much quicker
 - we can be completely automated, no need for manual tests [testers?!]
- Problems
 - what tests are you automating?
 - what are you missing by automating [only] existing tests?

Automate manual tests?



Tools will replace testers?

- “we can reduce the number of testers once we have the tool”
 - what are your testers like?
 - mindless morons, or
 - intelligent investigators?
 - need more skills, not fewer
 - automation can free testers to do more test design, exploratory testing
 - and find more bugs
 - tools don't replace testers, they support them

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Good idea?

ROI is essential for automation

- Seems very sensible
 - we will be spending time and possibly lots of money on tools – need to be sure it will be worth it
 - a “water-tight” business case will convince our managers to invest in automation
- Problems
 - ROI is not the whole story
 - people are not convinced by numbers
 - calculating ROI is difficult and can be dangerous

Is this Return on Investment (ROI)?

- tests are run more often
- tests take less time to run
- it takes less human effort to run tests
- we can test (cover) more of the system
- we can run the equivalent of days / weeks of manual testing in a few minutes / hours
- faster time to market

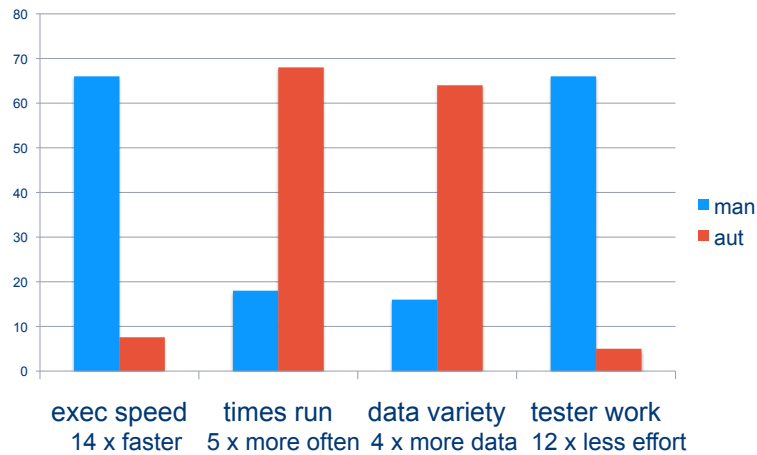
$$\text{ROI} = \frac{\text{benefit} - \text{cost}}{\text{cost}}$$

*these are (good) benefits
but are not ROI*

How important is ROI?

- ROI can be dangerous
 - may give impression that people are replaced by tools (see <http://dorothygraham.blogspot.co.uk/>)
- “automation is an enabler for success, not a cost reduction tool” – Yoram Mizrahi
- many achieve lasting success without measuring ROI (depends on your context)
 - need to be aware of benefits (and publicize them)

An example comparative benefits chart



ROI spreadsheet – email me for a copy

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Testing tools are testers' tools

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Good idea?

Testing tools are testers' tools

- Seems very sensible
 - testers do testing – testing tools help with testing
 - tools will make them better testers, because they will be able to run more tests, faster
- Problems
 - tools are software packages using programming languages; tester skills are different to development skills
 - spending time on / with tools means less testing, not more testing (initially at least)

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Is it the tester's job to automate tests?

- test execution automation is software development
 - needs programming skills
- not all testers want to become developers
 - or would be good at it
- do automators need testing skills?
 - helpful but not essential
- if testers are automators → a conflict of interest
 - do you run tests or do you automate tests?
 - automation is better long-term, BUT
 - deadline pressure pushes you back into manual testing

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Current thinking?

- “Testers, if you want to have a job, you need to learn to write code”
 - so testers who don't write code are now worthless?
 - the only good tester is a developer-tester?
- I see serious consequences (and I don't agree!)
 - for every context? (user/business testers)
 - fine for those who want to, in agile team, dev level
 - pure testing skills are no longer valued?
 - not right to force good testers out of our industry!

Why are these *intelligent* mistakes?

- Automation should find bugs?
 - tests find bugs; automated tests are still tests
- Automation comes “out of the box”
 - you think you buy a solution that will just work
- Automate all manual tests?
 - a starting point for tests to be automated
- Automation has to achieve ROI?
 - can't expect investment without showing some return
- Testing tools are tools for testers?
 - testers write and run tests; tools run tests

Why are these intelligent *mistakes*?

- Automation should find bugs?
 - tests find bugs, automation runs tests
- Automation comes “out of the box”
 - effort and time, e.g. tailor your testware architecture
- Automate all manual tests?
 - not all should be, automate more than manual
- Automation has to achieve ROI?
 - may be dangerous, need to show benefits
- Testing tools are tools for testers?
 - different skills, not all testers should code

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Summary

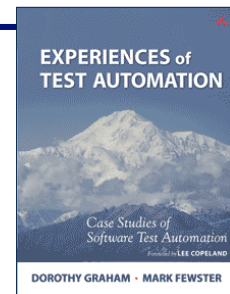
- Many ideas seem sensible at first / on the surface, but have serious problems
 - automation should find lots of bugs
 - automation comes out of a box (or download)
 - let's automate all of our manual tests
 - ROI is essential for automation
 - testing tools are testers' tools
- Recognise these “intelligent mistakes” and avoid them

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More information

- downloads www.DorothyGraham.co.uk
 - articles and papers
- email info@DorothyGraham.co.uk for
 - list of test execution & framework tools
 - automation ROI calculator spreadsheet
 - an invitation to join the new Test Automation Patterns wiki
 - my random newsletter
- blog <http://dorothygraham.blogspot.com>
 - including automation, DDP, certification
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