Test Automation – Building Your Business Case

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Thinking Through Testing

Goals of Automation

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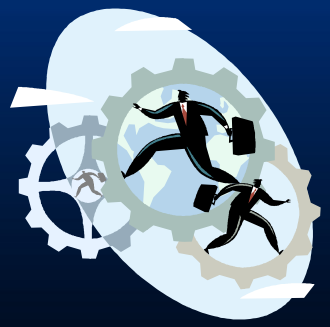
- Desire to improve testing productivity, reduce costs, and improve product quality is often expressed as:
  - Discover defects earlier
  - Increase test speed, accuracy, repeatability
  - Increase test availability (rapid and unattended)
  - Extend test capability and coverage
  - Increase test accumulation
  - Increase tester effectiveness
  - Formalize testing and enable measurement

Let's Automate!



Common Automation Scenarios

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- Build Verification (Smoke Testing)
  - Quickly determine the stability of a new build before committing manual test resources to testing it
- Compatibility / Configuration Testing
  - Run similar tests on a variety of system set-ups
- Regression Testing
  - Easily verify that stable (non-changing) functionality remains working between builds/releases
- Others…?

Mature Functionality
vs.
New Development

Talking in Dollars and Sense

What is the return for the investment?

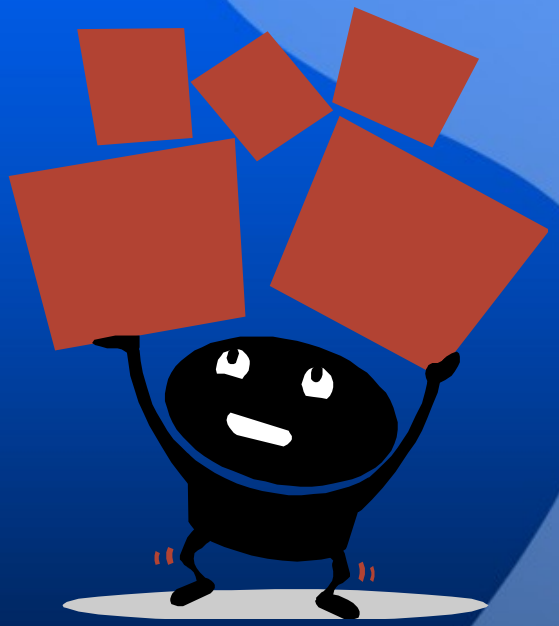
Treat Automation as a Project

- Why should we do this?
- Why should we do it this way?
- What is the return on investment?
- When is the investment paid back?
- When do I start to save / profit?

- Need to go through the same cost justification process as you would any other project

What are the Anticipated Costs?

- Automation software & support
- Automation environment hardware
- Effort to automate and run the test cases / test scenarios
- Results analysis / interpretation of results
- Maintenance of automation environment, data and scripts
- Increased / more expensive head count for test automation skills



What are the Expected Benefits?

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- Time saved from manual testing
  - Speed, parallel execution, configurations
- Benefits from new testing
  - More effective use of manual testing
  - Previously infeasible manual tests now automated
  - Tests added by non-testers
- Benefits from more frequent execution of tests
  - Costs saved by finding issues earlier

What is the ROI?

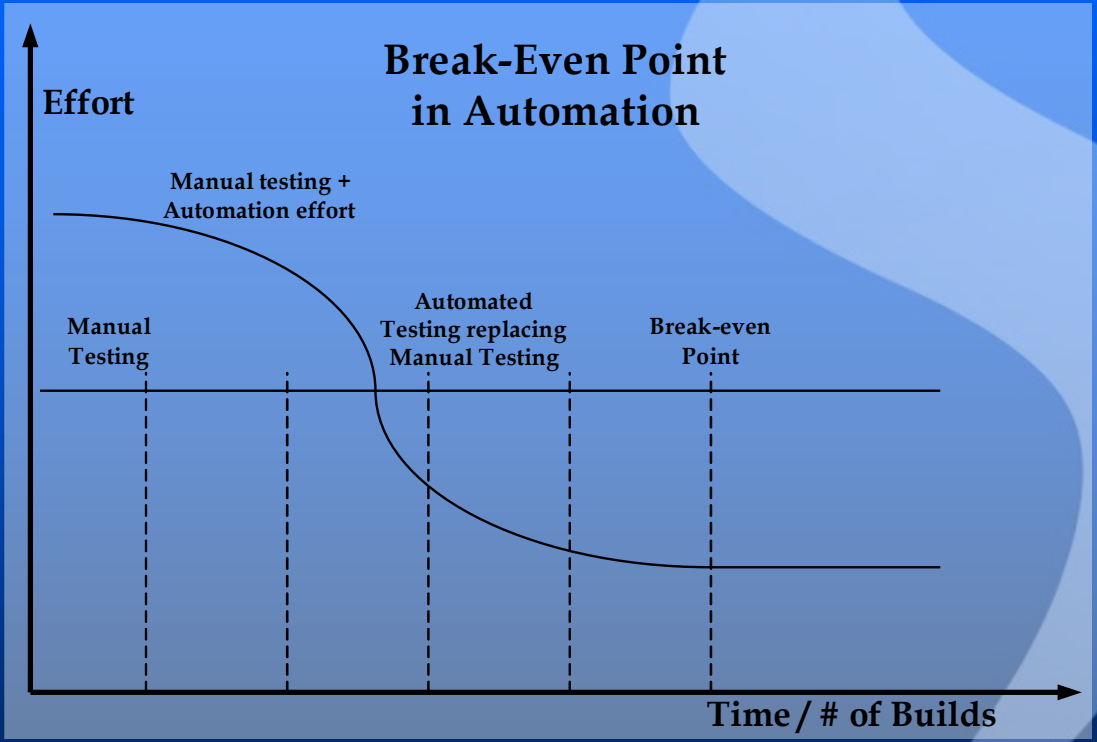
- ROI = Net Benefit of Investment / Investment

Negative ROI means Project No-Go

- Depends on:
  - Goals / objectives for automating
  - Value automation provides to overall testing effort
  - Each type of automation has its own unique return
  - Both tangible and intangible benefits

When Do I Start to Save?

- What is the useful lifetime of a test?
  - Product changes (feature set)
  - Technology changes
  - Stability of application (quality)
  - Robustness of test / framework
- Automation is not always
  - Appropriate
  - Cost effective



Simplistic Business Case Calculation

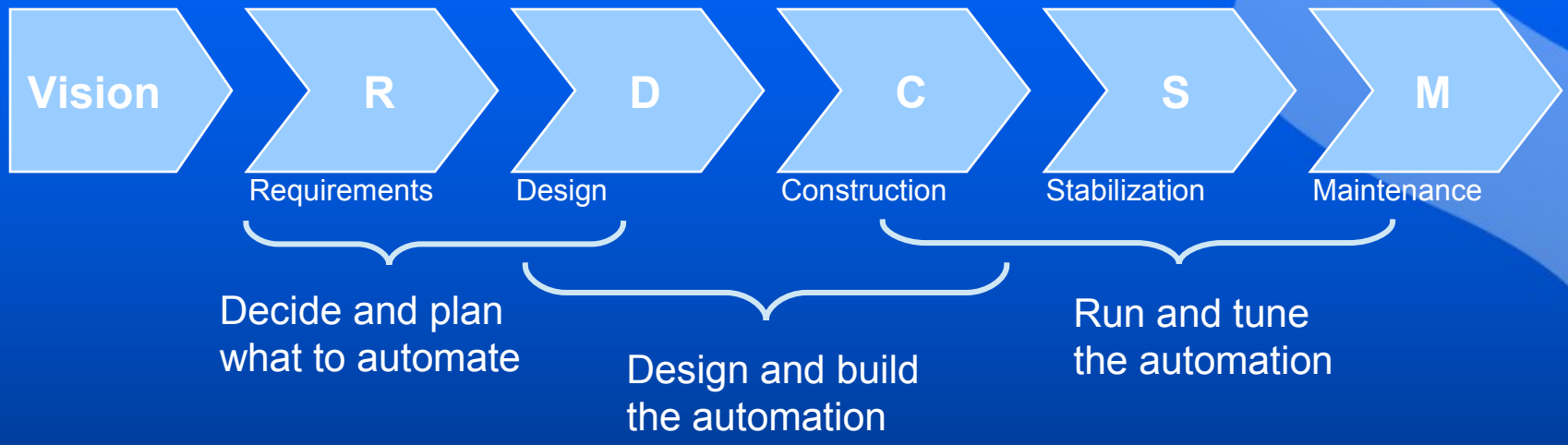
	Manual Testing		Automated Testing	
Costs	**Test Pass 1**	**Test Pass N**	**Test Pass 1**	**Test Pass N**
Test Pass (effort)				
Tool (purchase)				
Training (effort)				
Implementation (effort)				
…				
Other…				
Totals				
			Breakeven on Test Pass #:	
			Savings in Year 1: $	
			Savings in Year 2: $	
			Savings in Year 3: $	

State Your Assumptions:

1. X Test Pass every Y weeks, or Z Test Passes per year
2. License or Service Fee is 20% of original purchase price each year
3. The manually executed tests mentioned above are all automated and run in each Test Pass
4. Failure estimates assume:
    a. X% of tests will fail each time they are run
    b. failed tests are re-run
    c. etc
5. Test Pass N is expected to be a typical snapshot of the cost situation in a year's time
6. X% maintenance of automated tests required each test pass or each year
7. X% increase in functionality and therefore number of tests over a given year

adapted from "Software Test Automation" by Fewster and Graham, 1999

Decide to Automate, or not, Early



- Remember the overall testing goals for the software project
- Gather the requirements
- Manage expectations
- Control the scope
- Use version control
- Test the automation
- Get early feedback

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Discussing "right-fit" approaches for software testing

We are always sharing our ideas on crafting “right-fit” approaches to software testing. We are sure you will find something you can apply to your own projects and organizational environment.

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