



The Business Case for Test Automation



Agenda

- » Why Automation
- » What & When to Automate
- » Where to Start the Automation
- » Anticipated Costs & Savings
- » ROI (Case Study)
- » Q&A



Why automation

- » **Reduce Time** : Faster time to release for new versions of an existing product
- » **Reduce Cost** : Avoid cycle cost and more testing with same resources
- » **Increase coverage** : Increased confidence in product release
- » **Better resource Utilization**: Cost reduction and better management and control

Benefit	Automated Testing	Manual Testing
Productivity	Builds Confidence: new functionality has not changed the behavior of the existing code.	Very Time consuming
Repeatability and consistency	Exactly reproducible	Error prone
Speed of Execution	As fast as AUT will allow	Human Testers are bit slower
Maximizing Machine Resources	Tests can be run out of hours at no additional cost.	Expensive to employ team of testers out of hours
Results Recording	Automatically Recorded	Manual activity – again time consuming and error prone
Ad Hoc and Exploratory Testing	Not suitable	Ideally suites
Dynamic Applications	Automated scripts need a high level of maintenance for highly dynamic applications, although this can be minimized by the use of modular, reusable scripts and functions.	Easy to adapt to dynamic applications, but diligence is needed to ensure that the manual scripts are updated Accordingly.

What & When Automate

- » **Smoke Testing (Build Verification)** : Quickly determine the stability of a new build before committing test resources to testing it
- » **Configuration Testing**: Run similar tests on variety of system configurations
- » **Regression Testing**: Easily verify that stability (non-functionality) remains working between releases
- » **Others**: Performance and Security, Test design Automation, Test Data Generation
- » **Reports & Defect management**

- » **Pre-Conditions (When to automate)**:
 - » Clear business goals and objectives that can be linked to the test process
 - » A stable test process
 - » Functional Test Automation
 - » Automatable test cases
 - » Controlled changes to the product/system
 - » Minimized number of changes to UI
 - » Test Environment is stable and under control
 - » Tool that works on your technology

Where to start the automation

- » Business Drivers:
 - » Increase revenue & Market Share, Cost reduction ,Better Control
 - » Value from Test:
 - » Improved quality, On time delivery, Effective use of test resources
 - » Routine Repetitive Mechanical Tasks:
 - » Mundane , tedious, prone to error
 - » Unit and regression testing
 - » Data and Environment Management
 - » Tasks that don not require human intervention
 - » Special Testing tasks:
 - » Performance, Stress and load testing
 - » Security testing
 - » Interface testing (SOA, Web Services)
 - » Defect Management , Report generation
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Anticipated Costs and Expected Savings

» **Anticipated Costs:**

- » Automation Software and Support
- » Automation Environment hardware
- » Training resources
- » Effort to automate and execute
- » Result analysis and interpretation of results
- » Maintenance of Automation environment and scripts
- » Increased/more expensive head count for test automation skills

» **Expected Savings:**

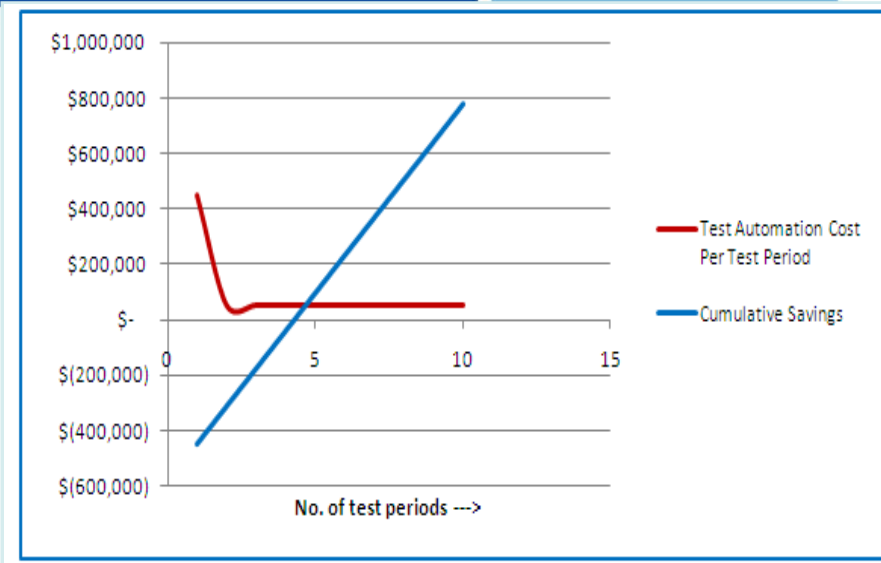
- » Time Saved from manual testing
 - » Speed, Parallel execution and configurations
- » Benefits from new Testing
 - » More effective use of manual testing
- » Benefits from more frequent execution of tests:
 - » Costs saved by finding issues earlier

ROI

» **ROI = Value or benefit of investment / initial cost**

Depends on:

- » Goals or objectives for automating
- » Value automation provides to overall effort
- » Each type of automation has its unique return
- » Both tangible and intangible benefits



	Test Period 1	Test Period 2	Test Period 3	Test Period 4	Test Period 5	Test Period 6	Test Period 7	Test Period 8	Test Period 9	Test Period 10
Manual Testing Cost Per Test Period	\$ 192,000	\$ 192,000	\$ 192,000	\$ 192,000	\$ 192,000	\$ 192,000	\$ 192,000	\$ 192,000	\$ 192,000	\$ 192,000
Test Automation Cost Per Test Period	\$ 449,200	\$ 55,720	\$ 55,720	\$ 55,720	\$ 55,720	\$ 55,720	\$ 55,720	\$ 55,720	\$ 55,720	\$ 55,720
Savings Per Test Period	\$ (449,200)	\$ 136,280	\$ 136,280	\$ 136,280	\$ 136,280	\$ 136,280	\$ 136,280	\$ 136,280	\$ 136,280	\$ 136,280
Cumulative Savings	\$ (449,200)	\$ (312,920)	\$ (176,640)	\$ (40,360)	\$ 95,920	\$ 232,200	\$ 368,480	\$ 504,760	\$ 641,040	\$ 777,320
ROI Per Test Period (%)	-100.00%	-61.97%	-31.51%	-6.55%	14.27%	31.90%	47.03%	60.14%	71.63%	81.76%

Factors for success

- » Careful and collaborative planning
- » Commitment from management
- » Focus on key areas with your partner



no doubt about it

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