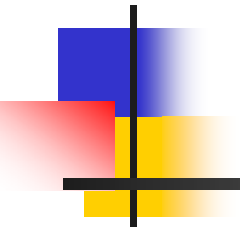


Automation Estimation

A Big Challenge



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Step-In Forum
Test Automation Conference
25th May 2007, Pune

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TECHNOLOGIES

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Agenda

- Thoughts on automation
- Automation estimation challenges
- Recommendations



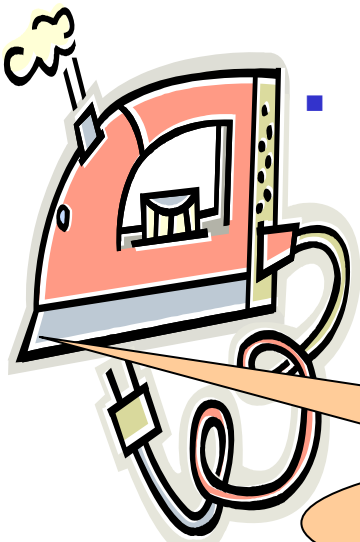
If I did not have this automation tool, It would have been nightmare to dig this much, but I am not undervaluing manual work



Thoughts on Automation

Thoughts on Automation - 1

- Purpose of any automation should be to
 - Reduce tester's burden.
 - 5 languages, 10 different types of products, 7 actors test data.
 - Speed up the testing.
 - 125 test cases, 2 testers, takes 7 days, scripts take just overnight



The difference between manual iron box and automatic iron box is that, automatic iron box is faster, convenient and better

Thoughts on Automation - 2

- Automation scripts when they do not work on specific code, environment.
 - Wastes testers effort
 - Adds to project cost and is an overhead
 - Demoralizes testers and changes focus

Because we expect scripts to work all time and including At Developer Environment



If I do not run when students need me, they would have to walk it up to go school

Thoughts on Automation - 3

- The application has an error but scripts did not catch it, but my brain caught it. Because script design was not right!
 - Increases Test Execution Time
 - Increases debug Time / Scripting Time

Because we expect the scripts to detect any latent defects so testers do more digging by using manual testing

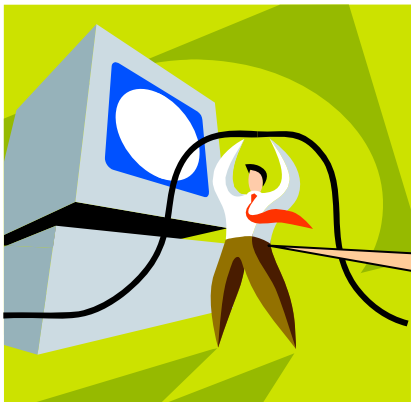


I ran the script 3 times, Script passes but no idea why "Customer" field is not showing up. So, Your Error handling was not right? Wait! Let me test it manually again

Thoughts on Automation - 4

- Automation in any project should do two things and that is
 - “**Add Value**” and
 - “**Increase Productivity**”

Check: The effort and \$ you spent creating automation and the result you got!



It's time to celebrate
Automation really helped
and saved \$ for me



Automation Estimation Challenges

How Automation Projects Start?

Case : 1

“For many projects, Automation exercise starts just as an extension to already existing project”

- There is already a manual testing team.
- Client asks PM to allocate 1-2 manual testers to carry out automation.

You cannot say no!



How Automation Projects Start?

Case : 2

“Automation exercise starts just as a dialogue with the team. Test team is “less placed” with work. So, clients ask

“Can you explore on automation since you have time now?”

In both cases, we just have to go by the client’s advice.



How Automation Projects Start?

Case : 3

“The manual testing team had been working on testing for long time and the testing vendor educates the customer about the importance and benefits of automation”

If client shows interest, he may seek for a detailed estimate, investment and ROI

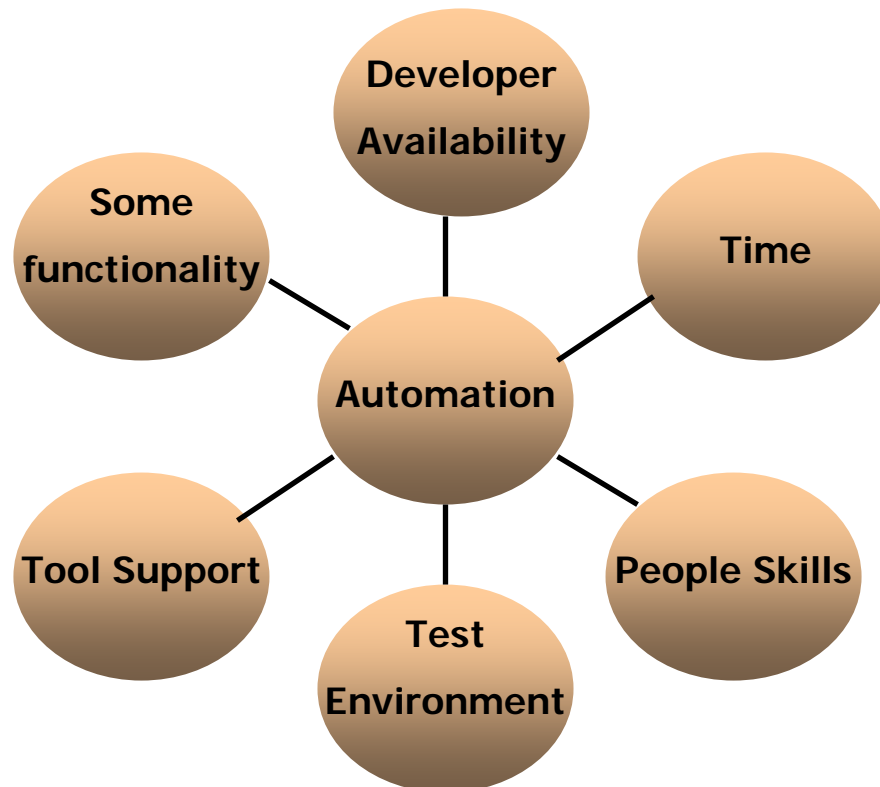


Automation Estimation

Automation estimation is, therefore, done only when we have an exclusive automation project waiting to respond

Also, the case 1 and case 2 may gear up for more work calling for solid estimation.

Automation Estimation Challenge – 1 : Constraints



- The constraints should be known to the PM even before estimation exercise starts. So he can use this info.

What Are The Constraints In New Automation Project?

1	Are we using manual testers to do automation? Or setting up totally a new team?
2	Do the testers have object orientation, XML knowledge? If yes, what level?
3	Do the testers have development experience? Or are they comfortable in scripting language?
4.	Do the testers know enough about the tool?
5.	How many test cases to automate? Is Automation done in phases? What is the exact scope?

What Are The Constraints In New Automation Project?

6.	Are we going to use commercial tool or an open source tool? If it is open source tool how we will get support? Or if it is commercial, how quickly can we get the problems resolved?
7.	Does the application use heavy graphs, maps, charts, frames?
8.	Are we going to automate only for positive test cases or also negative?
9.	Is stable environments available to record script/test?

What Are The Constraints In New Automation Project?

10.	Which build (version) we will use for script development? Is this build working and stable? or we will be given incomplete system going to be provided for automation?
11.	Do we have development team sitting in house or are they with other vendors? If they are with other vendors, how quickly we can expect to get issues resolved?
12.	Which test data we will use? Production like or dummy?

Note: Not A Complete List

Automation Estimation

Challenge – 2 : Resource

- You may get a team which has excellent functionality/application knowledge but very limited coding knowledge.
- You may get a team which has excellent development background but very limited functionality knowledge.
- You may have team which has development experience and functionality knowledge but they may not know how to use the tool / framework.

Automation Estimation Challenge – 2 : Resource

The project managers must know that they may not get A “dream team” of their choice.

In such a case

The best thing you should do is to allow enough room for “training” in your estimation for all the weak parts to bridge.

Automation Estimation – By Analogy Method

“ The basic approach is that we estimate for a new project by comparing the project to a similar past project”

Automation Estimation – By

Analogy Method

■ Estimation by “**analogy method**” have to be carefully used because:-

- Projects differ - in terms of functionality, domain, web or client server, API.
- Tool usage differ – one project may use open source and other may use commercial.
- Scripting languages differ and so is skill set of resources.
- Even though the size of application of new system may be same but , be careful about above points.

Automation Estimation – By Analogy Method

You are lucky, IF you are able to find exactly similar project from historical information to compare with new project.

Sr. No.	Description	Old Project	New Project
1	Tool Used	Mercury	Mercury
2	No. Of Screens	89	Approx 56
3	Productivity	2 Script Per day	
4	No. Interfaces	2	Likely 4

Automation Estimation – Delphi Method

- The basic approach here is that :-
 - Delphi coordinator presents specification of new project
 - Estimators prepare estimates individually
 - The estimators submit the estimation to coordinator anonymously.
 - The coordinator prepares a summary of each of the estimates.
 - The coordinator calls for meeting of all estimators
 - The estimators discuss the variations
 - If every estimator vote anonymously on whether they accept the average estimates then estimates are taken otherwise the exercise of estimation is repeated.
 - Based on the above a single estimate is prepared.

Automation Estimation – Delphi Method

- Invite All The Project Managers Who Have Done Automation Projects Before
 - Using Any Tool
 - Using Any Domain
 - Using Any Technology
- Distribute To Them
 - New Project Specifications
 - Estimation Templates
 - All Possible Constraints In New Project



We All Must
Help Him Come
With Good
Estimate

Automation Estimation – Delphi

Method

Estimation by “**Delphi method**” is most suitable when you have to estimate in a situation like below.

- An un explored tool
- An unexplored domain
- An Unexplored application / technology
- New and junior resources
- Not much aware of the framework
- Too many test conditions, errors to handle

Automation Estimation – Three Point Method

Most suitable method which uses three values

- Best time
- The worst time
- Most likely time

To complete each of the task when the automation project is divided in to several phases

Automation Estimation – Three Point Method

It is better to divide the whole automation work in to several tangible processes and estimate for completing each activity.

Plan

- Estimate
- Understand Scope
- Create A Plan
- Form A Team
- Train A Team
- Create A Schedule
- Check Environment Availability
- Check Functionality
- Do A POC

Design

- Look Manual Test Cases
- Create A Framework
- Review Framework
- Formulate Coding Standards
- Record , Play
- Parameterize
- Error Handling
- Review Code
- Use Test Data Sets

Test

- Code a Little and Test A Little
- Do Thorough Test of Each Script.
- Run it for Several Test Data Sets
- Run It In Several Environments
- Introduce a Defect and check whether scripts catch it or not?

Maintain

- Bring the Scripts in Version Control
- Make changes to scripts as the functionality changes
- Watch for new environments , test data
- Store scripts in a secure location
- Scripts Should Match with App. Release

Automation using commercial or open source tool

Automation Estimation – Three Point Method

Sr. No.	Description	Best (Hrs)	Most Likely (Hrs)	Worst Case (Hrs)
1	Planning	45	60	85
2	Design	75	80	115
3	Test	120	135	150
4	Maintain	27	41	55

Expected = [Best + (4 * Most Likely) + Worst Case] / 6

Helps to come out with estimates for each phases



Recommendations



Recommendations

- A thorough proof of concept.
 - *Find what can be automated? What can not be?*
- What % of test cases cannot be automated? Is it too high? If yes, how can we find work around?
- The test team, the client must know the purpose of automation. Do we want A quick solution? Or we want to save \$, time in the long run.



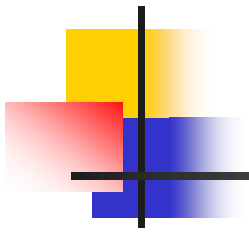
Recommendations

- If client demands to pull aside 2-3 resources to do automation, then it is no big deal, give day wise productivity to complete work or negotiate.
- Spend good time for estimating automation project only when you have a big project to respond.
- When you are asked to estimate. The first step you should follow is to **look at constraints of new project.**



Recommendations

- It is not A good idea to consider “manual testing productivity” with “automation scripting” productivity.
- Consult previous project managers who have done automation project for expert guidance.



I think I should have considered all the constraints before providing estimate to the client so it would have saved lot of hardship and inaccuracy, I feel I missed it and next time I must consider this.



Thanks

Question Answers

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