Tracking Test Automation

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1.0 Introduction

It is a challenge of any manager to track automation in 'real context of automation' apart from the conventional way of answering usual questions as 'how much automation is complete?' or 'is automation effective?' or usual question that commercial tools make IT industry buzz with 'what is my returns on it'? Beyond these conventional questions, there are lots of ways to approach the whole tracking process. This paper is an attempt to propose one such approach to track automation.
This paper in no way discusses any approach to estimate, identify the right automation tool but is more targeted for manager, directors process managers and organizations to tracking their automation processes better.

2.0 The challenge

With the economic slowdown, organizations are being more sensitive to the quality and effectiveness of work done and just a response from manager stating our approach is effective may not suffice. What organizations need to do is understands the process and the effectiveness over a period of time. This needs effective monitoring to generate the right reports.

3.0 Usual approach

The industry and the practitioners always talk about the frameworks, automation success and some obvious numbers are used to gauge automation work and at times the ignorance (may be due to deadlines) by implementers does not yield any effective conclusion on the success or failure of automation.

The following automation metrics might give some insight in conventional monitoring that may or may not be sufficient to conclude on success of automation:

1. Automation target achieved – this can give us a simple number in percentage of target achieved in automation,
2. Coverage – this can give us a number in percentage how much of coverage does automation suites cover,
3. Returns - a number mostly used by 'price conscious' or 'time saving conscious' organizations,

These metrics may give you some idea on your automation but may not be able to address the effectiveness of frameworks and maintenance.

4.0 Proposed approached

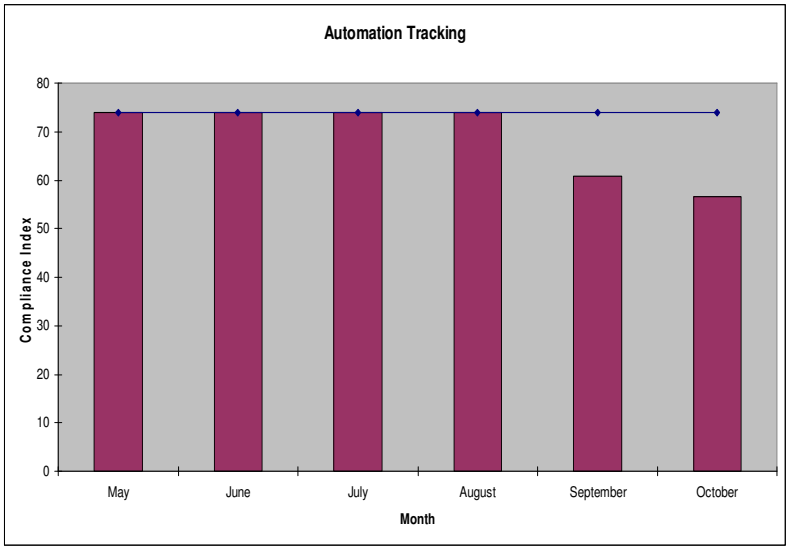
The new approach suggested below helps not only in tracking the automation process per se but also has ways to measure the effectiveness of the framework implemented, measure the maintenance and other parameters as automation target, progress etc.

4.1 Tracking framework

4.1.1 Suggested Approach

1. In the design phase of the automation project life cycle, list all the rules of the automation framework that you plan to implement – make a note to make the list exhaustive but at the same time generic so the rules are tied to the approach e.g. reporting being important aspect, if the conventional reporting is not sufficient then rules should be documented around the same,
2. Document all the rules that you think are best or worst for the framework,
3. Once this is done, mark all the rules that will be implemented and unmark the ones that will not be implemented,
4. This gives the percentage that is being planned to be complied in design phase for automation project,
5. During coding phase of the project, track the compliance of the automation code that is implementing this framework each month,
6. Use all necessary code review to track compliance of code against the framework,

The hypothetical snapshot of data below can details you the variation seen with the planned target of automation framework compliance on monthly basis.



Analysis can yield to conclusion that any major deviation from planned target implies too many coding deviations from the framework rules or too many change requests that

results in deviations. If these changes are intentional then re-calibration of the compliance target for the framework may be required.

4.1.2 Comments

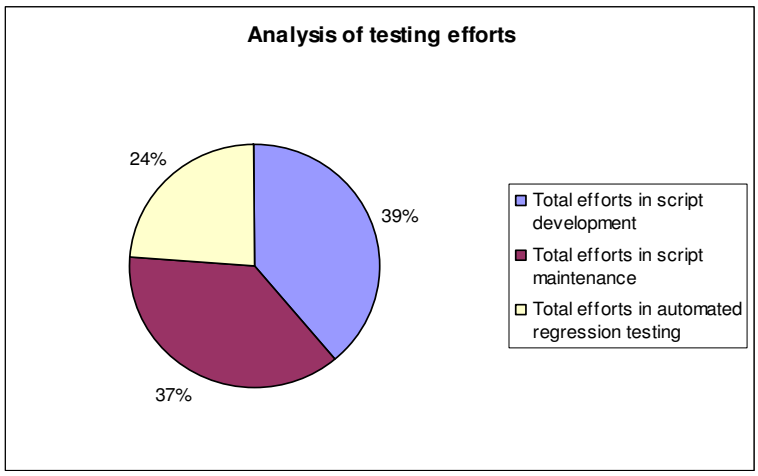
1. A excellent way of analyzing the automation framework – better have something than nothing,
2. If any exploratory means are applied to the approach it is but obvious then the framework is evolving – this might yield incorrect patters and hence this parameter can be eliminated from set of metrics that define the success of automation for the evolving framework,

4.2 Progress

4.2.1 Suggested Approach

1. In the execution phase of project, document the parameters that would indirectly point to efforts spent in various activities,
2. Measure usual parameters as efforts too that are spent in new development, maintenance and execution,
3. Track on monthly basis and evaluate if the progress is in right direction,

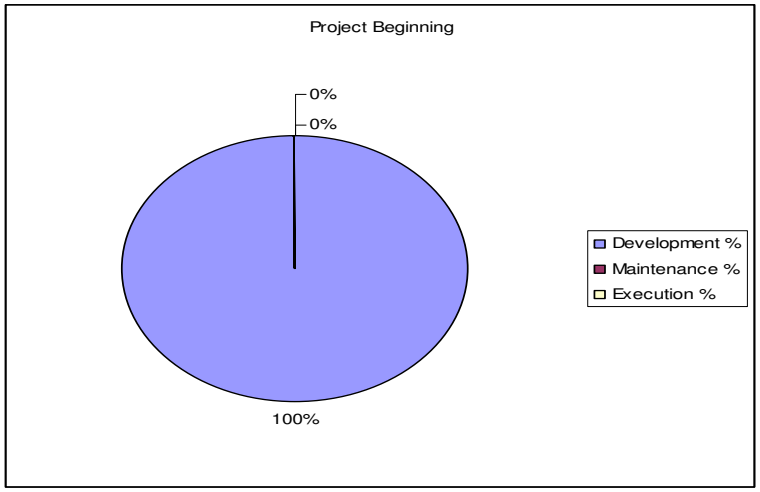
The hypothetical snapshot of data below indicates efforts spend by team in one month.

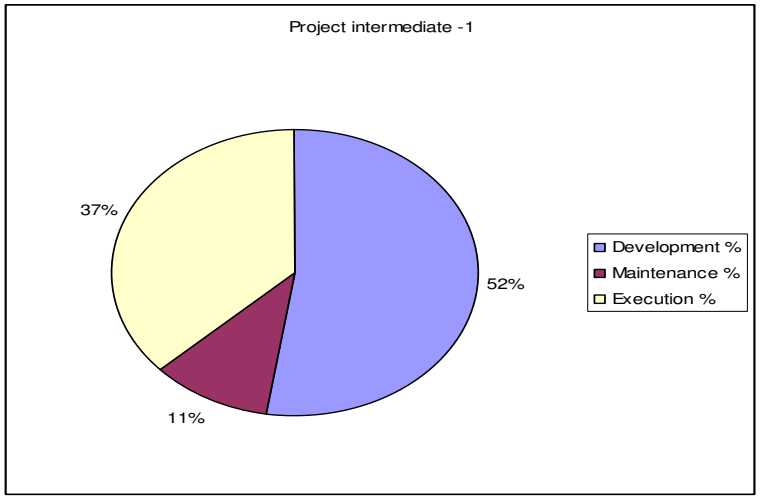


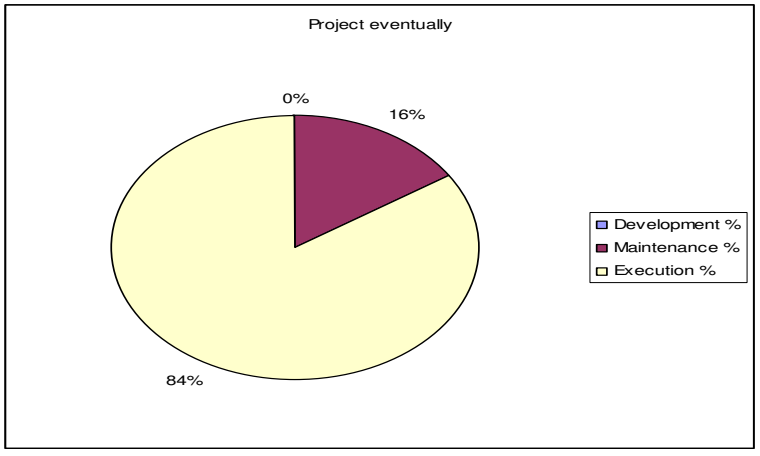
Such monthly data can be collect and trends can be collect to map against the ideal trends observed in automation projects.

Consider the hypothetical snapshot cases below where some graphs across the automation project are detailed for efforts of automation. The early ones denote full fledged development and eventually the maintenance and the execution adds on. The

maintenance as is seen increase but never crosses twenty percentage and the later the efforts are noticeably more for execution.







4.2.2 Comments

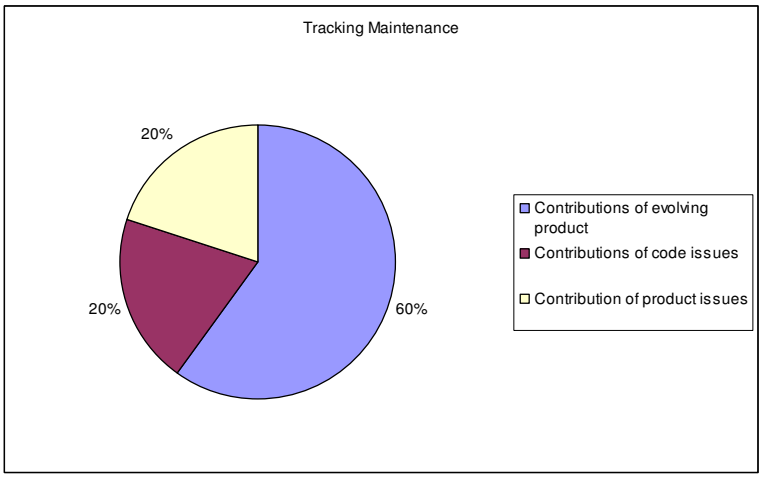
1. The absence of ideal graphs in the industry to match the patterns of graphs generated is a bottleneck. Appropriate precautions needs to be taken in such cases,
2. It is but obvious to assume initial efforts will be more towards development and can either taper or continue growing as the product under test continues to evolve to meet the market needs. The trends can vary based on the needs or goals of the stakeholders and appropriate discretion is advised before reaching any conclusions,
3. The execution and maintenance graphs may start few months later or immediately to track the stability of suite and immediate time saving. The ideal predicted curve for maintenance at least should be gradually increasing and reaching a point to stabilize there. The ideal predicted curve for the execution may increase as the suite bulges but overnight runs can result in saving time,

4.3 Maintenance

4.3.1 Suggested Approach

1. In the execution phase of project, document the parameters that would indirectly point to maintenance,
2. Study how each one contributes to the maintenance of automation,
3. Track on monthly basis and evaluate if the maintenance is high or low,

The graph below indicates hypothetical snapshot of maintenance of the automation project for a specific month. Such monthly data can be collect and trends can be used conclude the stability of the automation suite and coupled with framework tracking can help conclude effectiveness of framework implemented.



4.3.2 Comments

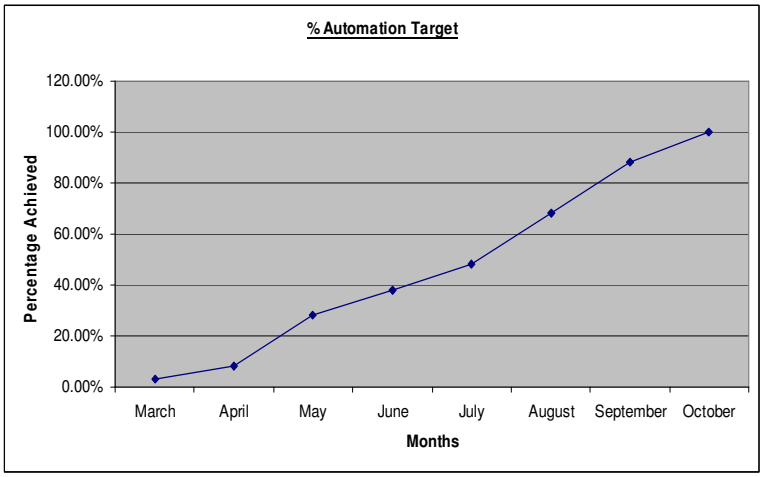
1. Comparison with ideal graphs recommended but the very non-existence of the same in industry should initiate efforts on organizational level to identify trends for comparison,
2. Usual trends should show low contributions of product issues that indicates stability of product and low code issues to indicate effective coding but these numbers can be misleading as they are on the lower edge of formulas and be incorrectly interpreted

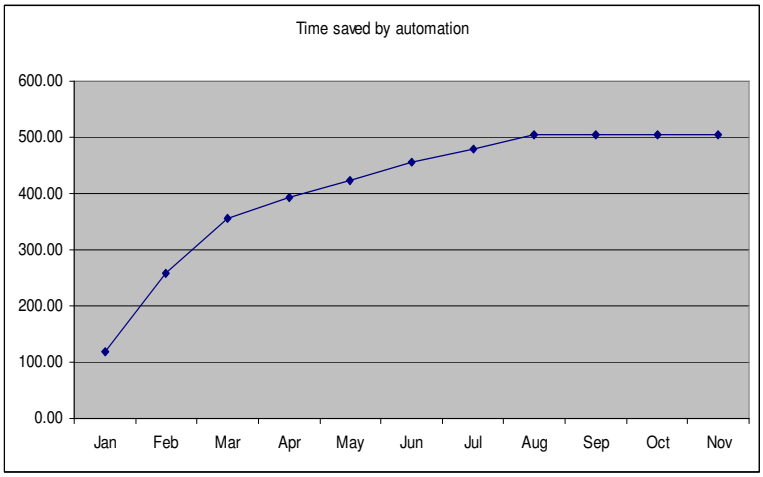
4.4 Additional tracking for conventional metrics

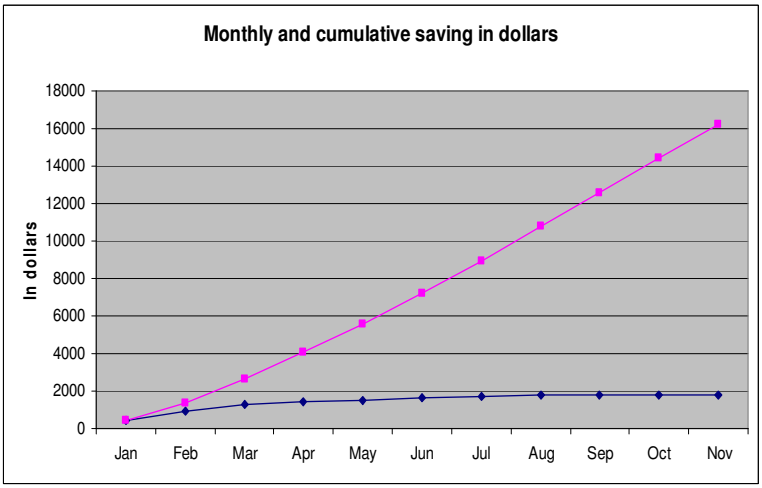
4.4.1 Suggested Approach

1. All attributes as automation target, coverage, time saved by automation, time saving (monthly and cumulative) and returns can be tracked on monthly basis,
2. Trends over a period of time can assist in deriving conclusion,

The graph below indicates a hypothetical snapshot of target achieved over a period of time. As the product has stopped evolving or the project was completed can be assumed as in practice the target will be running target due to the evolving product.







5.0 Conclusions

Well let us face the facts; there is no silver bullet to track 'real context of automation' although this paper presented one such approach. The proposed approaches with the automation metrics when interpreted in relation with each other can help you reach a conclusion on the success of the automation. Metrics again can be harmful if comprehended in the incorrect way or may also have limitations on the edge cases due to the formulas used.

6.0 Continuous improvements

The world is evolving and so will the systems and ways to track the progress. The criteria to conclude success and monitor automation will also have new ways. The only way to face the 'constant in life (i.e. change)' is to adapt to the challenges and theorize & implement new approaches.

7.0 Disclaimer

The approach suggested in here is merely a suggestion to monitor automation better. Any risk due to implementation shall be solely responsibility of the implementer and author holds no liability of any kind what so ever in any situations.

8.0 Feedback to author

Any feedback on the article can be mailed to jcrvs@hotmail.com.