



JOURNEYING FROM MANUAL TO AUTOMATED TESTING

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INTRODUCTION

The world has evolved in every sphere, and saying that the digital world is no exception is still a huge understatement! It is no secret that evolution comes with a need to adapt or fade out. 'Survival of the Fittest' is a rule that has stood its ground for billions of years.

In the digital world, the speed of innovation is tremendous! Speed is the need of the hour and when it comes to mobile app testing, speed is what decides the vital question of who gets to the market first. This gains importance because the first mover advantage accrues to the winner of the digital race. With the pace at which innovation happens in this arena, it is extremely important to improve processes and keep pace with the changing times. The winner gets a longer run to make a good Return on Investment (ROI) before innovation outdates the technology used. The timeless rule of 'Survival of the Fittest' is ever so true in the digital world!

One important area that brings speed to help get the app to the market early - is Automated Testing. But the advantage doesn't just stop at speed alone. Automated Testing has an edge over Manual Testing because of its accuracy, cost efficiency, time efficiency, better productivity, higher quality and a host of other strengths. True, Manual Testing has its time and place, but that space is fast closing in and narrowing down. A quick analysis of Manual v/s Automated Testing, will show that the scales are definitely heavily tilting in favor of Automated Testing. If a quick read is needed to make an informed decision, an unbiased article like 'The Tester's Dilemma: Manual v/s Automated Testing' will be helpful.

The paradoxical statement- Change is the only constant - fits the digital world like a hand fits a glove. With fast paced innovation, comes fast paced growth. The truth is that change is inevitable, but growth is optional. It is the Mobile App Tester's prerogative to decide whether to be part of that growth story or not. If the decision is to make the transition from Manual to Automated Mobile App Testing, this paper will be a useful guide.



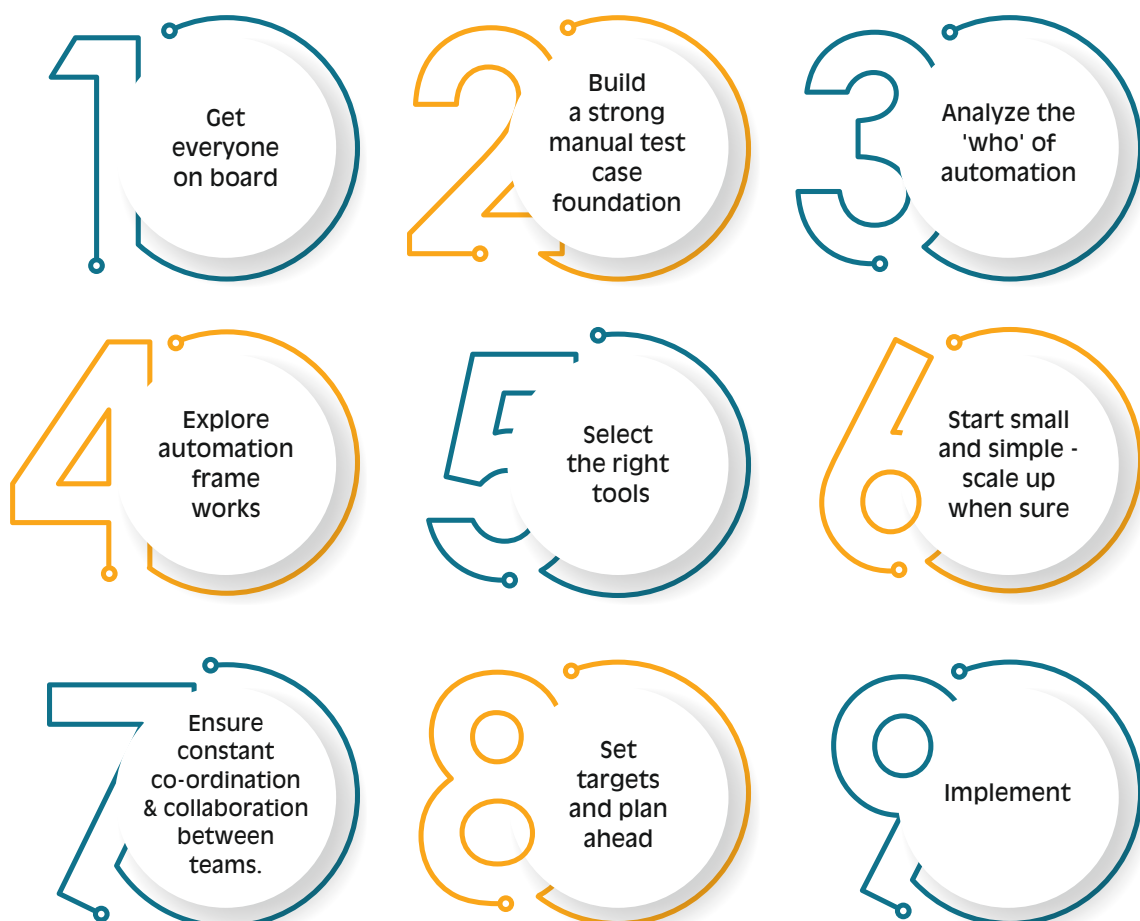
ABSTRACT

In the Manual App Tester's mind, the choice between Manual and Automated Testing may seem like a tug-of-war. For 'Team Manual' it is natural to hold fast to those controls that have held them in good stead for years. As much as it is comforting to sail in the tried and tested waters of manual testing, it's equally important to brace up for the tsunami of digital innovation which is engulfing the mobile app testing waters.

There are many considerations that need to be factored in – Cost of initial investment; Size, skill and adaptation level of the current team; Magnitude and scope of the project; Deliverables and so on. But whatever the issues, there is no denying that Automated Testing is the way forward and the sooner the transition happens, the better the benefits.

Every success story is a tale of adaption, revision and change. The secret of change is to focus all energy on building the new rather than fighting it. It is important to leverage the existing resources and skills to move to where it is necessary to be. There is no denying that transitioning to Automated Testing has its fair share of problems and inconveniences. It is therefore important to plan well, in order to get the most out of the time, money, efforts and other resources that will be invested for making this transition.

This paper therefore puts in place a strategy to make the move from Manual to Automated Testing smooth and successful. Here is a sneak peek into the solution that will aid transition.



STEPS TO MOVE FROM MANUAL TO AUTOMATED MOBILE APP TESTING

A journey of a thousand miles begins with a single step... and so does the journey from Manual to Automated Testing. Each resolute step taken in the right direction, contributes to reaching the destination. So let's embark on this journey that will help testers move from where they are to where it is necessary to be in the world of Mobile App Testing.



01

GET EVERYONE ON BOARD

Any change will always be faced with resistance unless all stake holders are convinced of the need for the change and more importantly how it will benefit them. Therefore the way forward is to convince each stakeholder in his/her own lingo, based on where the interests of the person or group lies.

For the Management there are positive aspects like Return on Investment and negative aspects like damage to reputation and increased costs of down time - that decide what's in or out. The testing speed, accuracy, productivity, test coverage, cost and time efficiency etc. are things that will tilt the Management's decision in favor of Automated Testing.

For the Manual Tester there is always the fear of being replaced by automation and this fear needs to be allayed. The fact is that the manual tester has an important role to play in the automation process. For manual testers, the clincher is that automation will provide that much needed career boost by being introduced to the latest in the industry; it will also bring freedom from repetitive tasks that cause boredom and attention drop, which result in unintended yet humiliating errors; it will reduce stress levels by eliminating the need to constantly strive for superhuman error free testing!

For the Developer's group the buy-in comes from the fact that automation reduces the SDLC, enabling much more to be achieved in a shorter time. Codes get tested early in the process enabling early rectification and reducing the quantum of codes that need to be rewritten as compared to the manual system.

For the client the fact that with automation, the app gets to the market much faster, is a great influencer. Speed and accuracy afforded by automation will definitely attract clients to opt for a team that uses automation in mobile app testing.

02**BUILD A STRONG MANUAL TEST CASE FOUNDATION**

Once all stake-holders are on board, the next step is to build a good manual test case foundation which will form the basis that will help decide which tests are to be automated and which will continue with manual testing. The fact is that every test cannot be automated as Manual Testing is required in areas like Exploratory Testing, Usability Testing, Ad-hoc Testing, User Interface (UI) Testing, also areas where the Application Under Testing (AUT) changes frequently and other such areas where human skill and intuition are important. Manual Testing excels over automated testing in such areas, but in the overall scenario, automation scores far higher.

Let's now understand the reasons why a good manual test case foundation is needed for automation.

When stepping into automation, it is advisable to start off with tests which are easier and repetitive in nature and then steadily move forward in stages to automate other tests. Grouping tests cases according to their ease and urgency for automation is of great help. With this also comes the need to track what has been automated and what is left to be automated.

There will also be decisions pertaining to the storage of test results and test plans – manual and automated. Certain essentials need to take priority like cloud hosting; test plan management; checking the ability to export test cases, results and plans; versioning of test cases and the like.

A good manual test case foundation will enable all of the above by providing the blueprint to analyze, prioritize and keep track of the automation process.

03**ANALYZE THE 'WHO' OF AUTOMATION**

The first step of this paper covered the 'Why' of automation and the second step scanned the 'What' of automation. This paves the way for the third step of tackling the other vital question of 'Who' will be part of the automation team.

Here is where the resources are evaluated in terms of numbers, quality, capability, costs, etc. What is the current team size; what are the skill sets and capabilities vis-à-vis what is needed for the transitioning process? Is there need for hiring an external Software Development Engineer in Test (SDET) for coding and design; does the budget permit this?

These are some of the questions that will give direction to decide who will automate what in the automation process.

04

EXPLORE AUTOMATION FRAMEWORKS

A Test Automation Framework is a set of pre-coded rules or guidelines that have been framed and stored, using corresponding tools for creating and designing test cases. It provides a structure for combining programs, compilers, features, tools, etc. to make software testing more efficient.

For mobile app testing there are various automation frameworks like Appium, Selendroid, Google EarlGrey, Espresso, Cucumber, Robot Framework and Gauge to choose from. If some basic information on these frameworks is required, it would help to browse through an article like 'What are Automation Frameworks'.

Each framework has its advantages and disadvantages. Hence when choosing an automation framework, evaluate well and choose what best suits the testing requirements and the team.

05

SELECT THE RIGHT TOOL

A mobile app test automation tool is software that helps testers define and automate their app testing tasks, which can then be run multiple times without much human intervention. It has predefined inputs and delivers predefined outputs.

Selection of testing tools needs to be done keeping in mind the long term needs of the project. Some of the points that need to be considered are: Ease in developing and maintaining the scripts; Ease of test execution for non-technical users; Cross-browser testing ability; Support to keyword and data driven testing; Level of technical support and assistance; Language support for writing customized scripts; Support for continuous testing; Frequency of tool updates and of course Pricing.

While at this stage, additionally evaluate what hardware requirements are needed to support the tool. Decisions need to be made on the type of servers - physical, self-managed virtual machines, cloud-hosting; Installation and maintenance needs; Backup plans, etc. There will also be decisions on the software: Buy v/s Build v/s Hosted options.

Some examples of mobile app testing tools are Appium, Robotium, Espresso, Xamarin UI Test, and XCUI Test amongst others. With the speed of digital innovation, care also needs to be taken to select a tool that incorporates current technology and keeps abreast of innovation, releasing updates regularly to its customers. Most companies provide a free trial to enable the tester to get a feel of the tool and its capabilities. Take advantage of this to fine tune the decision. A good bet would be a fully automated, AI and ML driven testing tool like BOTm.

06

EXPLORE AUTOMATION FRAMEWORKS

The golden principle in mobile app test automation is to first automate a single simple test case. A good place to start is to automate a repetitive task. This will reduce boredom for the manual tester and more will get done with a single test case, considering its repetitive nature. The trick is to set small achievable targets because biting more than one can chew will create digital indigestion and lead to frustration.

Starting simple and small will make it easier to unravel the knots encountered and help to move resolutely forward. Scale up steadily as the team's confidence in the automation process builds up.

07

ENSURE CONSTANT CO-ORDINATION AND COLLABORATION BETWEEN TEAMS

Automated Testing involves a sea change in the testing processes as compared to Manual Testing. In the Manual Testing environment, testers are used to taking over when the developers have completed their job. But under Automated Testing, there is incremental development and testing, which necessitates the development and testing teams to consistently co-operate, co-ordinate and collaborate with each other.

All team members need to be on the same page w.r.t. what is being tested, how it is being tested and what the expected outcomes are. Constant communication between testers and coders is paramount, as clarity and quick feedback are essential for the automation process.



08

SET TARGETS AND PLAN AHEAD

Once the team has gained confidence in the automation process, it is necessary to set targets and plan how to achieve them. The ultimate goal is total automation of all tests that are suitable for automation and this will cover the bulk of the test cases. Setting achievable targets helps move steadily towards that goal.

Speed is the name of the game, but accuracy is equally important. Keeping these two non-negotiable aspects in mind, there should be monthly, bi-monthly, quarterly and half yearly targets, depending on the quantum and intensity of the tests and the confidence of the team. Whatever the capability of the team, there must be a final target date in place for full implementation and smaller target dates that will help get there!

The manual test blueprint will be the basis for setting test coverage targets and additionally there should be qualitative targets related to detection of more bugs, plugging in the errors in automated tests, reducing the number of imperfect results etc.

While it is extremely important to get the app to the market at the earliest and ideally before competitors, yettar gets and plans continue beyond this important milestone. There should be plans in place to keep abreast of innovations not just during the automation stage but beyond, so that updates can be released to customers at the earliest.

09

IMPLEMENTATION

A good idea is about 10% - implementation and hard work are the other 90%!

This paper has progressively covered the why, what, who, which, where, how and when of the journey from Manual to Automated Mobile App Testing. Those closely involved in answering these questions and putting plans in place will be ready for the journey. But for the rest, the proof of the pudding is in its eating. Hence a proof of concept will be the first step in pushing for implementation. Share the detailed findings; Arrange for a live demo; Compare how Manual and Automated Testing score on the two pillars of Speed and Accuracy; Present tangible results that all can understand. This will pave the way for implementing automation. Remember, the secret of success is the speed of implementation.



CONCLUSION

In the Mobile App Testing world, change is a journey – not a destination. Innovation is a way of life and this mandatorily necessitates constant change. If the recent past is anything to go by, it is amply clear that Automated Testing will replace Manual Testing in due course, except in very limited areas where human intuition is required.

Automated Testing itself will keep getting upgraded and refined. Therefore the faster the move to automation is made, the smaller will be the gap between the tester and the real world testing. As mentioned earlier, the journey of a thousand miles begins with a single step! Taking that step at the earliest is as vital as it is scary. But then, staying put is not an option, because change is the heartbeat of growth!

The good news is that there are companies that have done the hard work and keep upgrading to offer the best and latest in the field of automated mobile app testing. One such company that will make the transition from Manual to Automated Testing smooth and easy is BOTm. Visit www.botmtesting.com to experience the power of AI and ML tools. To take that first step, sign up for a Free Trial to experience ease in that vital journey from Manual to Automated Testing.

GET IN TOUCH

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developed for both Android and iOS devices.