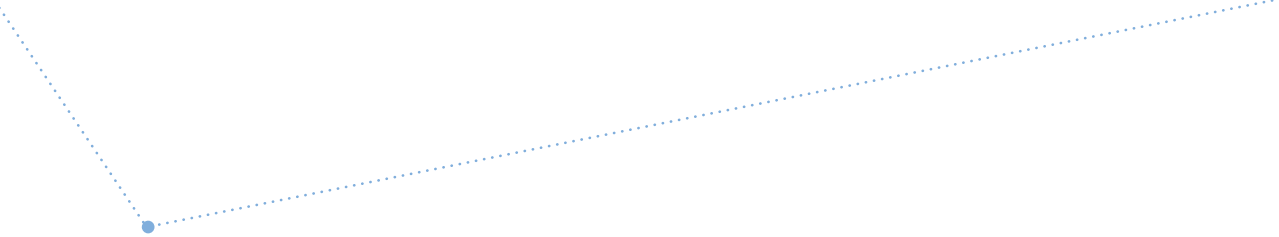

5 Ways to Win With Mobile Automation

How to succeed from the start

BRIAN ROCK



Test Automation provides reliable, repeatable results that don't rely on human manpower and should be a key part of any company's app quality strategy. However, devising and executing a successful automation strategy is a daunting task that leaves many companies asking 'where's the ROI'. Test Automation is not a cure-all, but rather part of a well-balanced testing strategy. This eBook will help you build the foundation for a successful automation strategy.



THE NEED FOR AUTOMATION IN MOBILE APPLICATION TESTING IS HIGH, AND IS BEING DRIVEN BY AGILE DEVELOPMENT PRACTICES AND A DESIRE TO DRIVE QUALITY AND FEATURES BASED ON USER ANALYTICS. THIS PACE, COMBINED WITH A BROAD AND CHANGING DEVICE ECOSYSTEM, CREATES A TEST EXPLOSION THAT WITHOUT AUTOMATION WILL END UP CRUSHING ALL BUT THE MOST TRIVIAL APPLICATION EFFORTS.

THOMAS E. MURPHY, JOACHIM HERSHMANN

MARKET GUIDE FOR MOBILE APPLICATION TESTING, GARTNER

PLAN - DO YOUR WORK UP FRONT

FOCUSING EFFORTS •• It is critical to begin with establishing objectives and success criteria. 'Have automation' doesn't count...and automating everything is rarely effective nor worth the investment. Your objectives should align directly with the business drivers of your company. Without identifying exactly what you want and how you will get there, automation will never become a net positive. Garbage in, garbage out.

TEST CASES •• Your automated tests will only be as good as your test cases. Assuming you have manual test cases written (start there if you don't), these should become the basis for your automation strategy. Make sure they contain clear and concise steps, expected results, and data requirements. Focus on automating the best bang-for-your-buck items; first concentrating on breadth then depth:

- » Unit test/API
- » UI - smoke/acceptance
- » Full regression

RESOURCES •• Many an automation program has failed due to improper staffing and underestimation of the effort and the complexity involved. Figure out your methodology, tools, staffing, and environmental requirements before writing a single line of code:

- » Who is going to write the scripts?
- » Will we use open-source or proprietary tools?
- » Can we integrate with our bug tracking system?
- » Where will we get our mobile devices/browsers?
- » What is our timeline?

*AS YOU WORK THROUGH THE PLANNING PROCESS KEEP THESE WORDS IN MIND - **REUSABILITY, REPEATABILITY, MAINTAINABILITY.***



UNDERSTAND THE LIMITATIONS OF AUTOMATION

REALITY CHECK •• It would be a wonderful world if every aspect of mobile app testing could be automated. Unfortunately, that's not the reality.

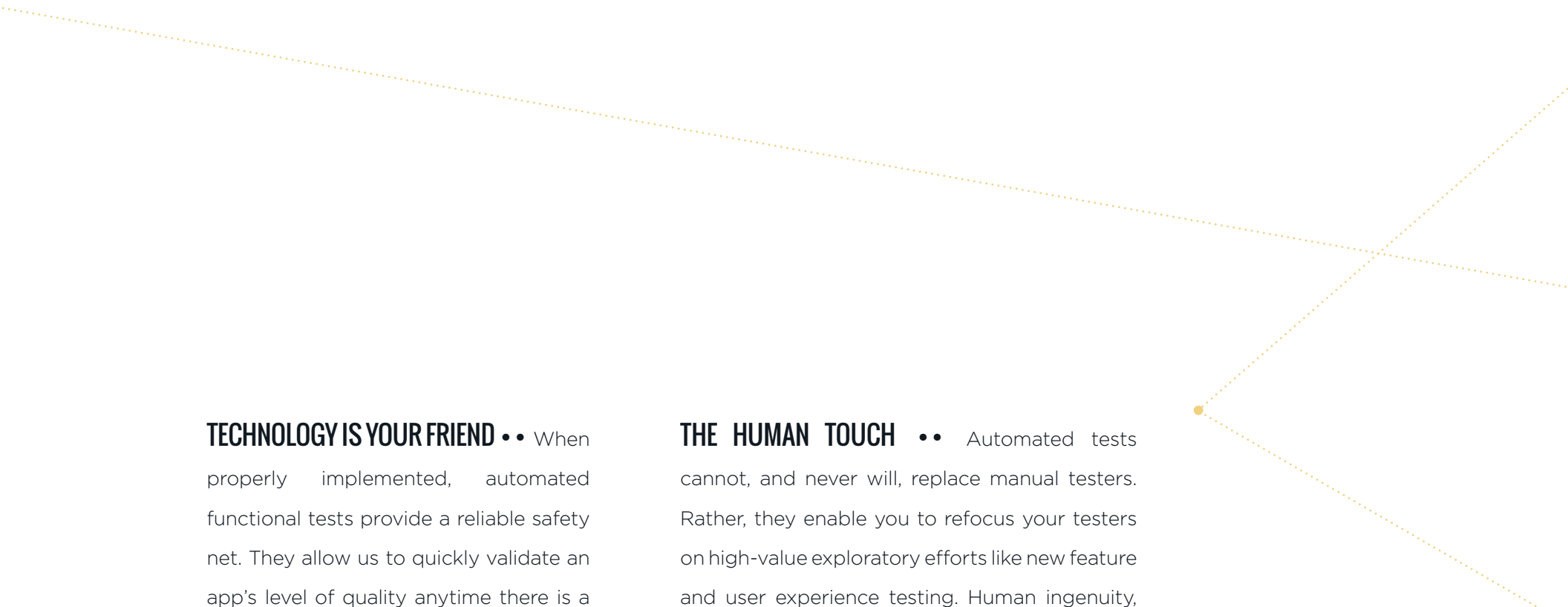


TESTING MUST BECOME A PRACTICE SIMILAR TO THAT OF FORMULA 1 RACING TEAMS: TEST EVERYTHING CONTINUOUSLY IN ORDER TO BRING PIT STOP TIME DOWN TO 3 SECONDS TO CHANGE FOUR WHEELS AND ADD FUEL! MODERN FUNCTIONAL TEST AUTOMATION TOOLS ARE THE APPLICATION DELIVERY EQUIVALENT TO ACHIEVE FASTER DELIVERY WITHOUT SACRIFICING QUALITY.

USE EXPLORATORY TESTING TO DOUBLE-CHECK HIGH RISK AREAS. MANUAL TESTING WILL NOT AND SHOULD NOT GO AWAY. MOST MANUAL TESTING WILL BE DONE IN AN EXPLORATORY TESTING APPROACH THAT FOCUSES ON HIGH BUSINESS AND TECHNICAL RISK AREAS.

DIEGO LO GIUDICE

*THE FORRESTER WAVE™: MODERN APPLICATION
FUNCTIONAL TEST AUTOMATION TOOLS, Q2 2015*



TECHNOLOGY IS YOUR FRIEND •• When properly implemented, automated functional tests provide a reliable safety net. They allow us to quickly validate an app's level of quality anytime there is a code deployment, infrastructure change, or integration change...with limited to zero manual intervention.

THE HUMAN TOUCH •• Automated tests cannot, and never will, replace manual testers. Rather, they enable you to refocus your testers on high-value exploratory efforts like new feature and user experience testing. Human ingenuity, creativity, and even stupidity allow us to find surface-level or in-depth bugs that were never thought of in test scenarios.

DIVERSIFICATION •• Very few companies have the luxury/risk acceptance levels to let automation be the sole determinant of release readiness. Your automated tests will produce the most ROI when they cover repeatable, common scenarios, and let manual test strategies focus on the rest. Automation is not a silver bullet and must be combined with in-the-lab and in-the-wild testing to ensure your apps delight your users.



3

USE THE RIGHT TALENT AND TOOLS

EMBRACE THE FUTURE •• Many companies attack test automation the wrong way – with non-technical or development personnel. This has proven, time and again, to produce ineffective or non-scalable automation results. Specialized automation engineers are worth their weight in gold; use them to architect, develop, execute, and maintain your automation.



BUDGET •• By specializing, the industry has demonstrated significant gains in ROI and speed compared to other approaches. Some companies employ a test team ratio of 3 test engineers to 1 auto engineer, while more agile approaches often use a ratio of 10:1.

THE RIGHT TOOL FOR THE JOB •• There are numerous open-source and proprietary tools and frameworks in the market that can assist you in automating. When choosing which tools and vendors you utilize, consider the following:

- » Does it support web, iOS, and android from the same framework? Can you use one test script across all interfaces without modification?
- » Can it see and interact with each of your apps' objects?
- » Does it utilize native platform libraries (UI Automator, UI Automation)?
- » Using this tool, will it be easy to maintain your automation with limited input from engineers as your apps change?
- » Can it adapt to changes in the market such as new devices/os/browsers/input types?

If the cost and time-required to find of a dedicated mobile automation engineer (or team) is daunting, look to a company that can provide a full service automation solution – just make sure they are using the right people and tools.

4

BUILD A PROCESS THAT'S EASY TO MAINTAIN

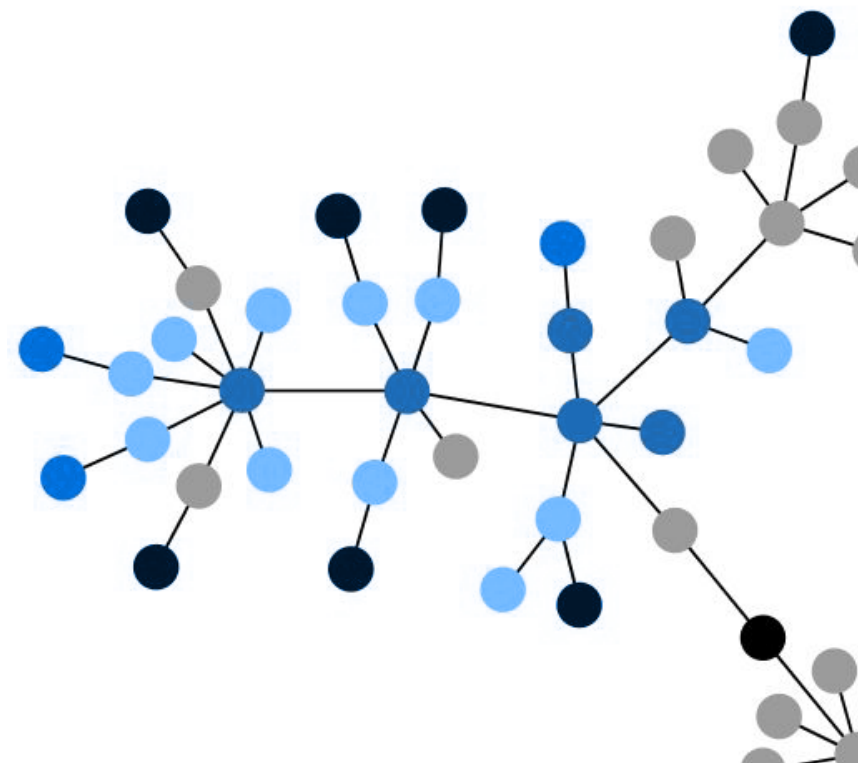
SUSTAINABILITY •• There is no such thing as an automation deployment that is maintenance free. However, there are things you can do to minimize the effort required to keep it running smoothly. This goes hand in hand with planning from item 1 – consider how your automation framework and strategy can evolve as your apps change.

TAKE A SYSTEMS-APPROACH •• To maximize ROI, its essential to execute your suite of scripts after each build to ensure code changes are not promoted to test or production that would waste the time of QA/engineers/customers.

To accomplish this, utilize:

- » Industry best practices – experts have done this before and made all the mistakes so you don't have to.
- » A framework based on a page object abstraction layer and well-formed locators (Unique ID-based)
 - These are critical to reusability and maintainability.
 - Avoid text, image, or xpath-based locators
- » Integration with your bug tracking system to avoid manual bug logging, and CI to execute scenarios on a triggered basis
- » A resource to monitor/analyze runs and results

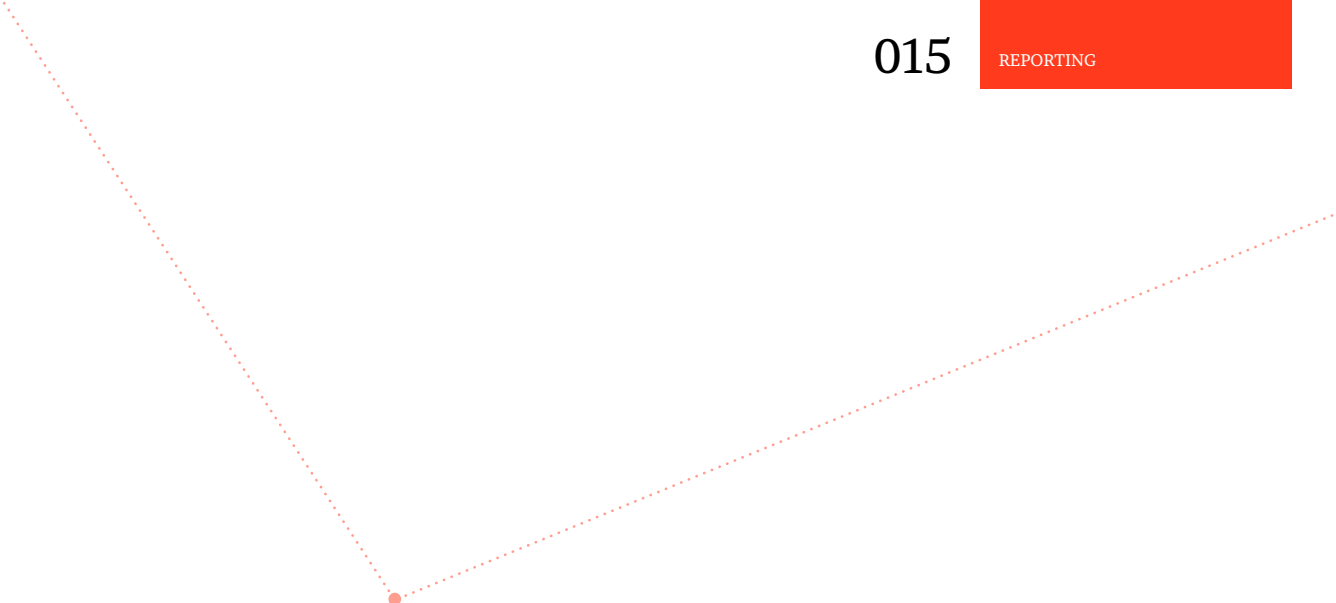
THINK AHEAD •• An automation strategy that was initially successful can be rendered useless as your apps evolve if the framework was not created in a way that makes it easy to maintain.



5

REPORT - GRANT VISIBILITY INTO THE PROCESS/RESULTS

DEMONSTRATE VALUE •• Most automation implementations expose little more than ‘did test X pass or fail?’ Your stakeholders need much more than this to understand the value automation is (or is not) providing. This can be accomplished with access to metrics like bugs found per script, percentage of tests passed in each run, amount of manual test time averted, bug fix worthiness, and maintenance time per build/change.



PUT YOUR USER FIRST •• Ideally, these reports should be graphical and accessible through a dashboard, making them easily presentable to someone unfamiliar with the inner workings of test automation.

THOROUGH ANALYSIS •• Readily available access to this information identifies value, exposes areas for process improvement, and ensures proper investments are being made.

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ADDITIONAL THOUGHTS

HIT THE GROUND RUNNING •• The implementation of an automation program is often a significant investment for any company and must get off on the right foot. Showing ROI in the first two months of the program is essential to its future success. It is therefore important to focus on implementing a toolset that can be quickly established and integrated to your infrastructure and to focus on the most critical tests first. These tests will need to be also the most stable, so more time should be spent ensuring they are robust and can execute successfully in a variety of situations.

BEST PRACTICES •• To make this happen, successful programs are careful to follow the following best implementation steps:

- » Avoid extensive development and maintenance costs of implementing a one-off homegrown solution by using a framework maintained by others.
- » Integrate the framework with your systems early in the process, including your CI, test management and defect tracking systems as possible.
- » Begin with only your most critical cases and refactor them to be easily automated by automation engineers (that may not be intimately familiar with the app).
- » Invest early to create a page object model to act as an abstraction layer between your product under test and your test automation. This will promote reuse and easy maintenance.
- » Involve development to make sure all product objects are uniquely identified, which will enable the page object model to avoid using alternative methods which may yield brittle scripts.
- » Focus the automation team on creating, executing and maintaining scripts. Failures should be investigated to ensure that they are related to a bug, and then passed to the test or development team.
- » Utilize real devices and real networks to catch issues that are not possible to find with simulators.
- » Use time-bound tests to make sure tests can execute within appropriate windows. This will also act as a forcing function to avoid scope creep.

CLOSING/SUMMARY

DIGGING DEEPER •• This eBook only begins to scratch the surface of a very in-depth and nuanced process, but the intent is to simply get you started on thinking about how to be successful. It is essential to do as much research as you can before jumping into automation to make sure you are using the right people, framework, tools, and methodology. It is difficult to pivot from a bad automation implementation without scrapping most of your work, so make sure you put immense thought into what you want and how you are going to get there.

BENEFITS •• With a well-defined and implemented automation program, you can enjoy many benefits, fantastic ROI and ultimately produce apps that delight your customers every time. Some of the benefits include:

- » Faster time to market for new features
- » Less risk when making backend and infrastructure changes
- » Improved employee satisfaction and retention by removing rote work and re-aligning to company/customer needs
- » Faster identification of issues upstream to reduce resolution costs and reduction in time loss due to deployment of bad builds to test
- » Improved customer satisfaction through increased device coverage and product stability
- » More confident development, test and product teams which translates to faster iterations and velocity

APPLAUSE^o

ABOUT APPLAUSE

Applause empowers companies of all sizes to deliver great digital experiences (DX) - across web, mobile and IoT as well as brick-and-mortar - spanning every customer touchpoint.

Applause delivers unmatched in-the-wild testing, user feedback and research solutions by utilizing its DX platform to manage communities around the world. This provides brands with the real-world insights they need to achieve omni-channel success across demographics, locations, devices and operating systems that match their user base.

Thousands of companies - including Google, FOX, Best Buy, BMW, PayPal and Runkeeper - rely on Applause to ensure great digital experiences for their customers. Learn more at www.applause.com.

Americas Inquiries

Applause U.S. HQ
100 Pennsylvania Ave
Suite 500
Framingham, MA 01701
1-844-300-2777

Europe Inquiries

Applause Europe HQ
Kopenicker Str. 154
10997 Berlin, Germany
+49 30 57700400

Israel Inquiries

11 Galgaley Haplada
1st Entrance - 2nd Floor
Herzliya, Israel
+972.74.701.4240