

Building 5 Star Mobile Apps – Whitepaper



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Mobile Development Practices Focus on Quick Feedback

Shops building great mobile apps simplify their development processes to minimize the time it takes to get actionable customer feedback. This means a focus on Agile principles, simpler development tools, and smaller teams. The need for a minimum viable product usually drives short development cycles. It also facilitates immediate exposure of the app to customers – so you can get their feedback.

Attention to Quality is Critical When Developing Mobile Apps

Curated app stores make it easier for developers to reach customers, but they also introduce an approval step that varies in length. As a result, building mobile apps is more like creating shrink-wrapped software than building web applications. Product defects can kill your app ratings, so make sure you release a quality app from the start.

You're finally ready to build and deploy your first mobile app. But how do you make sure it will attract happy, repeat customers? Deploying an app to public app stores is straightforward enough. Once you do, potential customers can search for and find your app — if they know what they're looking for. But in reality, it's not as simple as it sounds: At last count, there were more than 1.2 million apps in the Apple App Store and more than 1 million apps in the Google Play store. At the same time, the average US smartphone user has an average of 41 apps installed on his/her smartphone.

That math is not encouraging, so you'll need every possible advantage when competing for a coveted space on consumers' mobile devices, and high ratings will significantly help you. User reviews and ratings are important drivers of download and purchase volumes, and the converse is true as well - poor ratings depress download statistics. Its simple math: Five-star apps fly off the shelves; single-star apps sit on the shelf. Which would you rather build?

White Paper Highlights

There are hundreds of thousands of mobile apps out there, and they're all competing for the same mobile users. If you want to reach your customers with a custom mobile app, then you want to make sure you create one that will get high ratings.

In short — stars matter. So what's the best way to structure your development shop if you want to build a highly rated app?

When you search any app store, you'll see the highly rated apps usually have great followings and positive reviews.

Which Development Processes Will Help You Build a Five Star Mobile App?

Best Practices and Valuable Lessons - to building Five-star mobile apps

Building a five-star app requires more than buying the right development tools and adopting a well-defined development methodology such as Scrum. Real success comes when you create a rapid, feedback-oriented development loop that does not scrimp on quality.

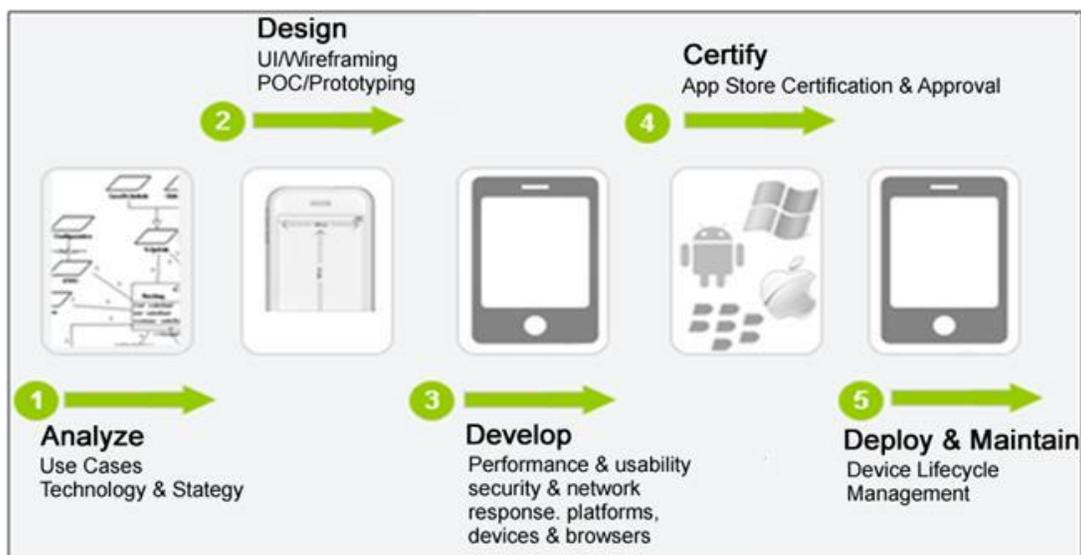
Assemble Small, Focused Development Teams

Mobile applications are called "apps" for a reason; they are generally smaller and less complex than traditional Java, .NET, or web applications. So it follows that when we asked five-star app development shops about the composition of their teams, we found a pattern favoring smaller, more focused development teams. To follow the lead of these five-star development shops:

- Plan for more and smaller teams with two to six developers. Development shops in general should not have more than eight total members working on their mobile apps. It's possible to release a five-star app with only one or two developers - when developers use native platform software development kits (SDKs). It's common

to find an iOS sub-team and an Android sub-team that loosely coordinate their release efforts, but work largely as independent units. It's also common to find front-end teams that concentrate on user experience (UX) and on-client controller code and testing. And also separate back-end teams that focus on integration with systems of record and cross-channel integration.

- Employ specialized developers but not specialized quality assurance (QA) and design. The pixel-perfect experience and full integration with the device platform - are part of providing the best user experience. Companies should employ specialized developers to focus on iOS, Android, or mobile Web. The reason for developer specialization is simple: Each platform may use different programming languages, different programming frameworks, and different platform release schedules. With the frequency of new platform releases, it's difficult to just stay up-to-date on one native platform, let alone three or four. The same doesn't necessarily hold true for design and quality assurance. Although design for each mobile platform does have subtle differences (for example, the placement of navigation bars), non-developers can work across multiple platforms much more easily.
- Hire design talent and invest in information architecture. One of the hallmarks of great mobile apps is design — the screens flow naturally, the most important information is at the users' fingertips, and the app seems to anticipate what users want to do next. Great UX design and task flow don't just happen - and most developers don't know the heuristics of a good industrial design.
- Cross-train developers for emergency maintenance. With small development teams and tight release timelines managing releases can be problematic. Add to it OS or framework platform updates, team member vacations, and unexpected emergencies – and release deadlines can slip past critical “time sensitive” events. Succession planning can also be a challenge, especially when there's so much demand for talented mobile developers. While it's good to let developers specialize on a primary mobile platform, it's also useful for them to back up other developers on a secondary platform to increase bench depth.
- Retire the QA center of excellence. When it comes to testing mobile apps, traditional testing approaches are too slow. The need for on-device testing, quick turnaround times, and specialized knowledge makes a traditional QA center of excellence less useful for mobile development teams.



Favor Simple Development Tools Over Complex ALM

Organizations should employ a minimalist approach to application life-cycle management (ALM). With a focus on time-to-customer-feedback, there's simply not a lot of tolerance for any processes or tools that get in the way. As a result organizations should:

- Simplify and distribute software configuration management. Use Git or Apache Subversion to manage source code. Why? They are simple to use, and most developers have experience with them or are accustomed to similar tools that are more difficult to use. With a tendency toward faster releases, the need for long-running parallel branching, streams or baselines supported by more-advanced software configuration management (SCM) tools - becomes less of a need. And with fewer developers, it's easier for teams to work on a master branch or engage in rapid branching and merging - through distributed version control with local repositories.
- Use visual designs, prototypes, and collaboration instead of textual requirements. It can be as simple as creating bitmap screen mockups with tools such as Adobe Photoshop or OmniGraffle. Others can use more-specialized tools such as Balsamiq for wire-frames and/or mockups. They then capture user feedback generated from these visual designs in lightweight change management tools such as Trello and Atlassian JIRA. A number of the teams we spoke with mentioned that they use file-sharing services such as Dropbox or Google Drive to share screen shots and collaborate on updates.
- Test apps with emulators and personal devices. One of the biggest differences that development teams face when building mobile apps is testing. You can't simply throw mobile apps over the wall to a separate test group or a QA center of excellence. Not only are mobile testing tools new and different, but they are also generally more complex. Setting up an Android emulator or iOS simulator requires installing an integrated development environment (IDE). And simulator/emulator testing is not sufficient; on-device testing remains the best way to assess on-network performance.



The current reality is that teams use personal devices to test beta builds of many five-star apps. These devices may be purchased and pooled by development teams or owned by developers, company employees, or trusted beta testers.

Adapt Agile Principles to Meet the Demands of Mobile App Development

Let's be clear: If you cannot implement Agile practices as part of your mobile app development efforts, you will have difficulty maintaining a five-star mobile app. Sure, you might have a successful initial launch, but if you can't quickly follow it up, then your app will languish, starved for features, or worse — it may stop working when the latest version of iOS or Android is released. Over the past four years, Android has had 23 releases, and iOS is updated just as frequently. You cannot (nor should you want to) prevent your customers from upgrading, so you'll need to plan on a minimum of two to three releases a year per platform - just to tread water.

- Introducing the concept of a minimum viable product helps teams get feedback faster. When you're in a competitive market, it's tempting to add as many bells and whistles to your mobile app as possible. After all, it's got to be better than your competitors' app, correct? Wrong — the more features you add before release, the more time it takes to develop those features. And unless you have a deeper understanding of your customers than most development teams, there's a high probability that you'll miss the mark on your first shot. Instead, ask this question: "What is the minimum feature set we need to collect the maximum amount of information

about customer's use and feedback, with the least effort"? Creating a minimum viable product (MVP) allows you to stop guessing, and start learning about how your customers are using their mobile devices.

■ Using wireframes helps drive feedback and build backlog. Development companies should use wireframe mockups of app screens with potential users, to flesh out basic design concepts and what the service should do. After wire-framing is complete, the team refines its backlog to answer a simple question: "How can we get the minimum viable product out as fast as possible?"

■ Prototyping sets the stage for broad-brush feedback. Wireframes are a good starting point, but they don't necessarily capture the realities of touch interaction or the finer points of UI design. That's where higher-fidelity prototypes come into play. The prototypes are "nonfunctional" in that they have no code and no business rules behind them. What they do help with is screen flow and navigational design. Prototypes answer questions such as, "Should the user tap a button or swipe to the next screen?" and "Is an accordion a better interaction design than tabbed folders?"

■ Personas provide insight into user behavior. A persona helps answer questions about a user's mobile app objectives and can provide clues to appropriate technology decisions.



Conclusion

Building a 5 Star App is achievable by using recently developed methodologies and recent best practices! The traditional development paradigm simply doesn't apply. Short, planned, and well defined cycles ensure immediate feedback and quick updates. Design of the UI is critical. Users demands and expectations of mobile app functionality are much greater than traditional computer systems. An App that is highly functional and fills a need – should be popular and highly rated. However, a great app can be destroyed by a poor design that is viewed as "clunky" or "cumbersome".

A properly designed app anticipates the user's "next move" and strives to minimize user interactions. Using simple Development Tools and Agile Principles will allow quick response to user feedback.

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The Process of Building 5 Star Mobile Apps is Clear!

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