



Understanding App Store Analytics

How to monitor – and make sense of – mobile app metrics.

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How monitoring mobile app metrics post-launch can improve user satisfaction and loyalty.

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“Nothing is more terrible than activity without insight.”

- Thomas Carlyle
Philosopher

Introduction

Testing doesn't end when an app launches. If you want your app to be successful, you need to continuously monitor post-launch metrics to see how users are responding. Understanding how they are responding – and why – will help you refine your app. Post-launch mobile metrics can be divided into two categories: **Hard metrics** that you may already be monitoring, testing and adjusting – such as performance speed and security; and **intuitive metrics** that give insight into how users feel about your app.

Many companies already provide valid and valuable insight into usage-based metrics. By analyzing metrics like downloads, traffic, session duration and successful monetization, developers try to infer what users are thinking and feeling. But without supplemental information, this data can only lead to implicit assumptions and hopeful but unsure actions. Adding explicit insights to the post-launch data collection – quantifiable information on what users are thinking – will allow developers to make highly informed and refined decisions.

The best place to collect this explicit post-launch data that touches on both hard and intuitive metrics is in the app stores. Reviews, in particular, will help you get a sense of user opinion so you can pinpoint specific issues.

These metrics work hand-in-hand and will help you make sure users are happy with the app and continue using it. App abandonment has become a major pain-point for brands – and ignoring post-launch metrics is a surefire way to see your app fall by the wayside.

This whitepaper will review the hard and intuitive post-launch metrics that are vital to continued app success. Understanding what to look for and where to find it will help developers refine their apps to better fit end-users wants and needs, resulting in happy customers and more app hype.

Hard Metrics

These traditional metrics are factors app developers and testers have been struggling with for years. There are many tools that will help teams monitor these factors from a technical standpoint, but it is also worth visiting them through the eyes of users. Address these metrics with a two-pronged attack in a way that combines technical tools and user reviews. Monitoring reviews will help you focus your time and resources by identifying a specific device, OS or version as the cause of an issue, rather than simply inferring that there is a problem somewhere. Listen to your users, they'll tell you exactly where the problem is.

Performance

Question at Hand: Is the app reasonably fast at loading and basic operations? Is it responsive to user clicks, swipes and data entry?

Losing users? Your app may be slow. A survey conducted by Appigee found that 98% of respondents were concerned with app performance. Slow responsiveness caused 59% of respondents to submit a bad review. If your app doesn't load quickly, odds are users will move on.

Many of the causes behind performance-related complaints can be traced to a system response issue. There are a lot of factors that play into how quickly apps respond to commands. Nexcess, a web hosting company, recommends paying attention to these specific factors:

- **Payload:** Total size in bytes sent to the application, including all resource files
- **Bandwidth:** From client to server, the minimal bandwidth across all network links
- **AppTurns:** Number of components (images, etc) needed for the app to render
- **Round-Trip Time:** Amount of time it takes to communicate from client to server
- **Concurrency:** Number of simultaneous requests an app will make for resources
- **Server Compute Time:** Time it takes for the server to parse the request, run application code, fetch data and compose a response
- **Client Compute Time:** Time it takes for the app to render client-facing features

Monitoring system response and performance post-launch is imperative. Testing does not always account for real use factors that can drastically increase the time it takes actions to complete from the user's perspective.

Another important performance factor to remember is the number of different devices the app will be running on and the commands each of those devices use. Be sure the app performs well with clicking motions, taps, finger swipes, zooms, the occasional hard button and any other device-specific command action.

Performance is a wide-reaching metric. Reviews will help you determine (on a broad scale) which aspect of the app's performance is lacking.

What to watch for: Watch for words like “doesn't work” and “slow/fast.”

Stability

Question at Hand: Does the application crash, hang or freeze with standard, recurring use?

According to the same Appigee survey, freezing and crashing apps are worse than slow load times. Freezing caused 76% of respondents to write a bad review while 71% formally complained about crashing apps. While these issues will upset any user, they are a major problem if users pay for your app.

In the age of social media, users have an extremely wide-reaching platform to announce your lack-luster app. While other factors on this list might not always discourage new user from giving your app a try, no one will download an application with a reputation for freezing or crashing. Frankly, if your app is crashing or freezing, it simply doesn't work.

Remember that different devices can interact with an app differently. If you see a lot of reviews complaining about crashes or freezes, use them to determine if there is a common device or OS version.

What to watch for: Words and phrases like “crashes,” “froze” and “kicked me out.”

Interoperability

Question at Hand: Does the app integrate well with external hardware or services like Bluetooth? Does it have issues integrating 3rd-party functionality into its flow?

If your app works with built-in hardware features, such as the camera or contacts, monitoring reviews post-launch will help you determine if these connections are working properly or causing trouble. Pay special attention after an app update is released or a new OS version is pushed to devices.

If you’re using the API of another third party app, interoperability should be top of mind virtually all the time. A change in the API can break features of your app without you even knowing.

Social sharing interoperability is also becoming increasingly important. If consumers use your app to take a photo or get a new top score, they’ll want to share that across their favorite social networks. Be sure your app properly integrates sharing with the most popular social sites, including any new and fast-rising social media.

Another important factor to consider in the interoperability category is your app’s effect on device battery life. People want their batteries to last all day and if your app is draining the battery they won’t hesitate to delete it. Excessive battery use is a major reason for negative app reviews.

What to watch for: Watch for complaints about battery life, words like “compatible” and “connect,” and comments about external features (like the camera).

Security & Privacy

Question at Hand: Can users log in securely? Is there a perceived risk that there might be security issues related to weak passwords, poor encryption or vulnerable data? Are users comfortable with the app’s terms of service, and how the developer lives up to those terms? Does the app ask for more personally identifiable information (PII) than users are comfortable sharing?

As you can see by the question at hand, there are a lot of factors that go into making sure a mobile app is secure and protects user privacy. Start with in-depth security testing before launching the app. Once the app is public, continue keeping an eye on the “Big 6” security factors:

- **Confidentiality:** Does the app keep private data private?

- **Integrity:** Can the data be trusted and verified?
- **Authentication:** Does the app check to see if you are who you say you are?
- **Authorization:** Does the app properly limit privileges?
- **Availability:** Can an attacker take the app offline?
- **Non-Repudiation:** Does the app keep a record of events for later verification?

Mobile is still a new medium for hackers and they are coming up with ways to compromise mobile apps and mobile data every day. If a clever new attack is created, it is important to catch and patch the vulnerability as soon as possible. Being on top of new issues and threats is the best way to show users that you take their privacy and security seriously.

Poor security and privacy measures can sometimes be inferred from usage metrics. So when you see it spelled out by users, stop dragging your feet and act. You can't get a more explicit signal.

What to watch for: Watch for words like “vulnerable,” “password,” “leak” and “privacy.”

Intuitive Metrics

These metrics are less tangible and harder to measure, but they are just as important. These are the metrics that will largely determine if users continue using your app. More along the lines of user feedback than test results, you'll get a feel for these metrics by monitoring ratings and reviews across app stores.

Content

Question at Hand: Is the data and results displayed in the app accurate and relevant for that user? Is the app localized or translated accurately for that user's location and culture?

Users will be quick to tell you if the information, results or data they are getting from the app is not up to par. When people download an app they expect it to do something very specific, if your app can't deliver accurately they'll move on. Also, don't forget to consider the content of ads that appear in your app – at the very least, be sure it is age appropriate for your target users.

“Many areas of the world are very defensive and loyal to their language and culture, developers have to get a product correct for this audience.”

- Howard Rubin

Localization Testing Expert

Part of delivering good content is ensuring *all* the content featured in your app makes sense to your target users. That means embracing localization testing as you expand to new markets. A few factors to consider when it comes to content localization:

- **Content** – Static & dynamic content like catalogs, search results, metadata, etc.
- **Dates** – Is the date January 1 or 1 January?
- **Characters** – Different languages have different set of characters

- **Postal codes** – In some countries, postal codes contain letters
- **Phone numbers** – Different formats for different markets
- **Direction** – Some languages are written left to right, others are right to left
- **Currency conversion** – Especially important for internet retailers
- **Tax calculation** – VAT, sales tax and others vary from country to country

Pay attention to your users if they notice one of these factors isn't correct. If you missed this one during pre-launch testing, you aren't likely to notice the problem until someone points it out.

What to watch for: If the app has a GPS location component, make sure it is functioning correctly. Watch for words like “accurate,” “data” and “appropriate.”

Elegance

Question at Hand: Is the app just plain ‘pretty’ or ‘cool?’ Does it cause users to exclaim, “Wow, this is a beautiful design/UX!” while bragging to their friends?

If you want the full package – the app that keeps new users flocking in and old users re-engaging – design needs to be just as important as functionality, usability, security and all the other metrics. People love a useful app all the more if it looks good as well. You want to leave an impression that lingers after the app is closed so users remember your app and spread the word. Be sure the app looks awesome on all screen dimensions and resolutions. It'd be a shame for your app to disappoint when users upgrade to more image-intense retina displays.

“Mobile apps are often judged by their icons and interfaces; all it takes to make a bad impression is a dated design, no matter how useful or well-coded your app is.” – *The Next Web*

If you're integrating ads into your app, be sure they fit into the design of the app without ruining the elegance. People don't like ads, but they'll tolerate them in most apps. However, if the ads in your app are particularly obtrusive it could ruin the entire feel.

What to watch for: Watch for the words like “appealing,” “attractive” and “ugly.”

Pricing

Question at Hand: Does the application offer good value for the cost? Are users comfortable with the available decision of an ad-supported app vs. paying for an app that is free of ads or spammy in-app purchases?

There are several options when it comes to pricing your app: free, paid, in-app ads, “free-mium” and in-app purchases. Be sure whichever method you choose matches the quality of your app. If your paid app doesn't work well, users will be angry. Vice versa, if you have an exceptional app users will often be happy to pay for it.

Monitor reviews to get an idea of people’s opinion of your pricing decision. If you see no comments related to price, users are probably fine with the current arrangement. Comments complaining about ads or in-app purchases can give insight into the exact issue (common issues include ad frequency, obtrusiveness and relevance). While it may not be possible to offer the app for free, paying attention to valid user comments will help you find the most viable and successful form of pricing with limited trial and error.

Don’t forget to take into account the pricing practices and cost of direct competitors. This information will help you position yourself for market success.

What to watch for: Watch for words like “ads,” “expensive,” “cost” and “worth/not worth.”

Usability

Question at Hand: Do users find it easy to navigate and fully use the breadth of the app’s features?

Whether your app has many features or just a few, be sure they are easy for consumers to find, understand and use. Usability affects other key metrics as well – according to a Google study, poor usability will actually make your product appear uglier, which hurts the “Elegance” metric. Remember to keep navigation bars large enough for fingers to hit without clicking unintended buttons – this isn’t a computer with a mouse, it’s a smaller touchscreen. Don’t forget to pay attention to usability across the range of potential screen sizes.

As tempting as it can be, resist feature creep and focus on making the app’s features as pertinent and usable as possible.

“On the mobile application front, we can look to the overwhelmingly popular Instagram for clues on defeating the Feature Creep. Its first iteration – a bloated and feature-laden app called Burbn – had the Feature Creep’s fingerprints all over it, and thus had very few users. CEO Kevin Systrom stepped back and cut out the clutter, paring it down into something people could understand and use inside 30 seconds, knocking Feature Creep out of the ring entirely.”
– Matthew May, FastCompany Co.DESIGN

Are there features in the app consumers aren’t using? Is their one feature that’s outshining the rest? Consider tailoring future versions of your app to fit what users are actually doing. Also, always be aware of your target users and plan feature placement accordingly. For example, be careful of placing ads in a children’s app in a location that is easy for them to accidentally click.

What to watch for: Watch for words like “confusing,” “weird” and “easy.”

Satisfaction

Question at Hand: Is the application engaging, fun or even healthily addictive to users? In short, do they love the app?

Overall user satisfaction encompasses all these other metrics and then some. Each of the previous metrics can cause a user to quickly become unsatisfied, but the app must also be engaging, interesting and useful enough to keep users coming back.

With each new version of the app, be sure that you are not overwhelming users with excessive features or bogging down their use in anyway. User satisfaction can take a quick and unpleasant turn with a poorly built and tested update.

App name and description can play into user satisfaction. While using buzzwords may be tempting, make sure the app name and description accurately describe the app and its offerings. If users download your app only to find it's not quite what they wanted or provides sub-par services it will surely be abandoned and could receive a negative review that will warn future users away. Abusing trendy words can also get you penalized by the app store itself. Google implemented some changes after a study found keyword abuse in the Google Play store. The new app ranking algorithm now takes user reviews into account, just another incentive to pay attention to reviews.

“The study found that Google was dealing with a lot of keyword spamming within Android app pages on the Android Market, resulting in inaccurate app results. This caused Google to change the search algorithm used when smartphone user’s search for apps on their Android device or the Android Market website.”
– Shane Ponting, Velositor

Remember, users are fickle and often have other options when it comes to the apps they use. Be sure your app is satisfying their needs.

What to watch for: Watch for words like “love,” “great,” “best,” “amazing,” “doesn’t” and “used to.”

Conclusion

The metrics discussed in this whitepaper are direct, actionable data points gleaned by looking at app reviews. They provide explicit insight into what users are feeling and thinking about an app, in the user’s own voice. Never before has a tool allowed developers to gather and measure metrics that provide such direct, concrete insight into user actions. By combining these different types of metrics, developers will have a more complete understanding of the

“This type of actionable, explicit app analytics fills an enormous blind spot for brands. Until now, companies merely knew how many stars their app had received, occasionally read reviews, or looked at implicit analytics to infer how users felt about their apps. Now, brands can see results of deep data analysis and make informed decisions about where to best direct resources so apps perform as intended, delight their users and, in the process, maintain an edge on the competition..”

- Yvonne Genovese
Managing Vice President, Gartner

end user. They will be able to pin point specific reasons users keep coming back and specific issues that are causing app use to nosedive.

Keeping a careful eye on these post-launch metrics will help developers fine tune their apps and achieve optimal end user results. While some of these metrics may be more important than others (if you're app isn't working, it doesn't much matter how elegant it is) they all work hand-in-hand to ensure users are happy with every aspect of the application. Don't forsake the intuitive metrics; in the end, they are just as useful, insightful and important as the hard metrics. Understanding and acting on both sets of metrics is what will set great apps apart from good apps.

Keep a sharp eye on app store reviews to understand what users are thinking, what they want from an app and to pinpoint in-the-wild issues. Listening to real-life customers is the best way to find success.

About Applause

Applause is a mobile app analytics tool that enables companies to monitor, measure and improve their app quality and user satisfaction. By analyzing more than 50 million reviews from over 1 million apps on the Apple App Store and Google Play, Applause provides the deep app intelligence that brands need in order to win more users, earn greater loyalty and beat the competition.

To learn more, visit www.applause.com and follow [@Applause](#) on Twitter.

About uTest Labs

uTest Labs is the forward-looking research arm of uTest. This group is comprised of equal parts delusional visionaries and digital vagabonds, who are focused on discovering the future of app quality – from the development to testing to monitoring to measurement of apps that delight users.

For more information on uTest Labs, visit www.utest.com/labs.

About uTest

uTest provides in-the-wild testing services that span the entire software development lifecycle – including functional, security, load, localization and usability testing. The company's community of 70,000+ professional testers from 190 countries put web, mobile and desktop applications through their paces by testing on real devices under real-world conditions. Thousands of companies – including Google, USA Today, Amazon, Virgin, Sony, Box and Trulia – rely on uTest as a critical component of their testing processes for fast, reliable and effective testing results.

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