



Enhance Mobile User Experience Through Performance Testing

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by  Neotys





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I like kitesurfing and plant-based cooking



I enjoy supporting projects that promote more participation of women in tech



AGENDA



- 1 - Mobile vs Web
- 2 - Client-side Performance
- 3 - When and How to Test
- 4 - Demo / Q&A





Mobile vs Web



For the first time ever, the number of mobile users is greater than the number of desktop users



54%

Mobile and Tablet



46%

Desktop



Mobile (Web) Performance impact in User Experience



- Slow pages are the #1 issue that mobile users complain about 🙄
- 85% mobile users expect pages to load faster than desktop 😊
- Mobile native apps can run up to 5x faster than websites 🌟



Mobile app or Mobile website?



Higher consumer spending

\$50.1B first half of 2020

Increased first-time app installs

26.1% increase year-over-year

The right choice depends on the business objectives



Benefits of mobile websites



- ✓ Accessible for everyone
- ✓ No need to update
- ✓ Cost-effective



Benefits of mobile apps



- ✓ Better personalization
- ✓ Works offline
- ✓ Intuitive interface, works faster
- ✓ Use of mobile device features: camera, gps, etc.



New technologies to consider



- AMP - <https://amp.dev/>
- PWA - <https://web.dev/what-are-pwas/>





Client-side Performance



- Mobile apps use frameworks provided by the OS systems (Android/iOS)
- Web apps follow a client-server architecture where the clients runs in a web browser



What can we measure on a web app?



**JavaScript
parsing times**

Images sizes

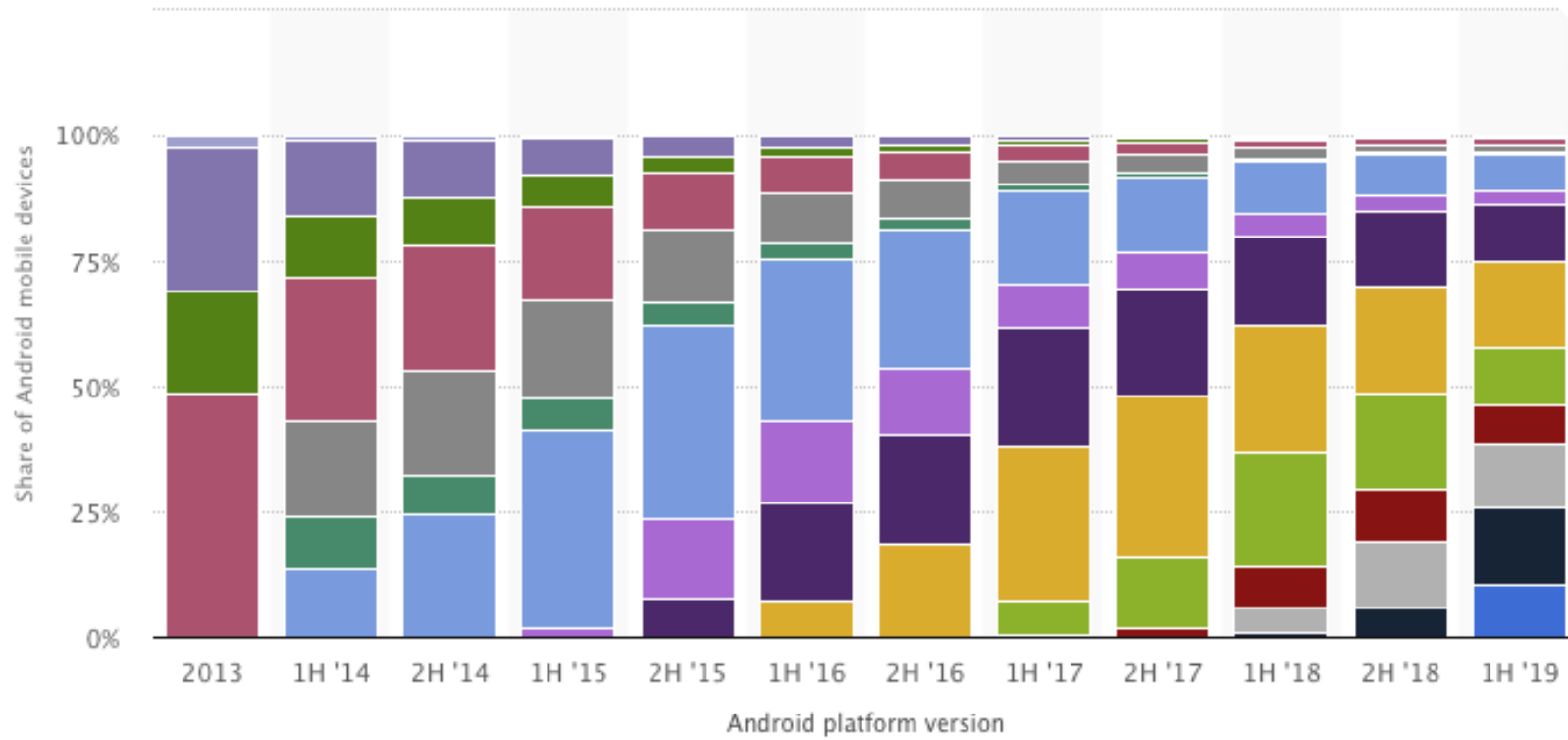


**Loading and
rendering of below-
the-fold content**

Caching policies



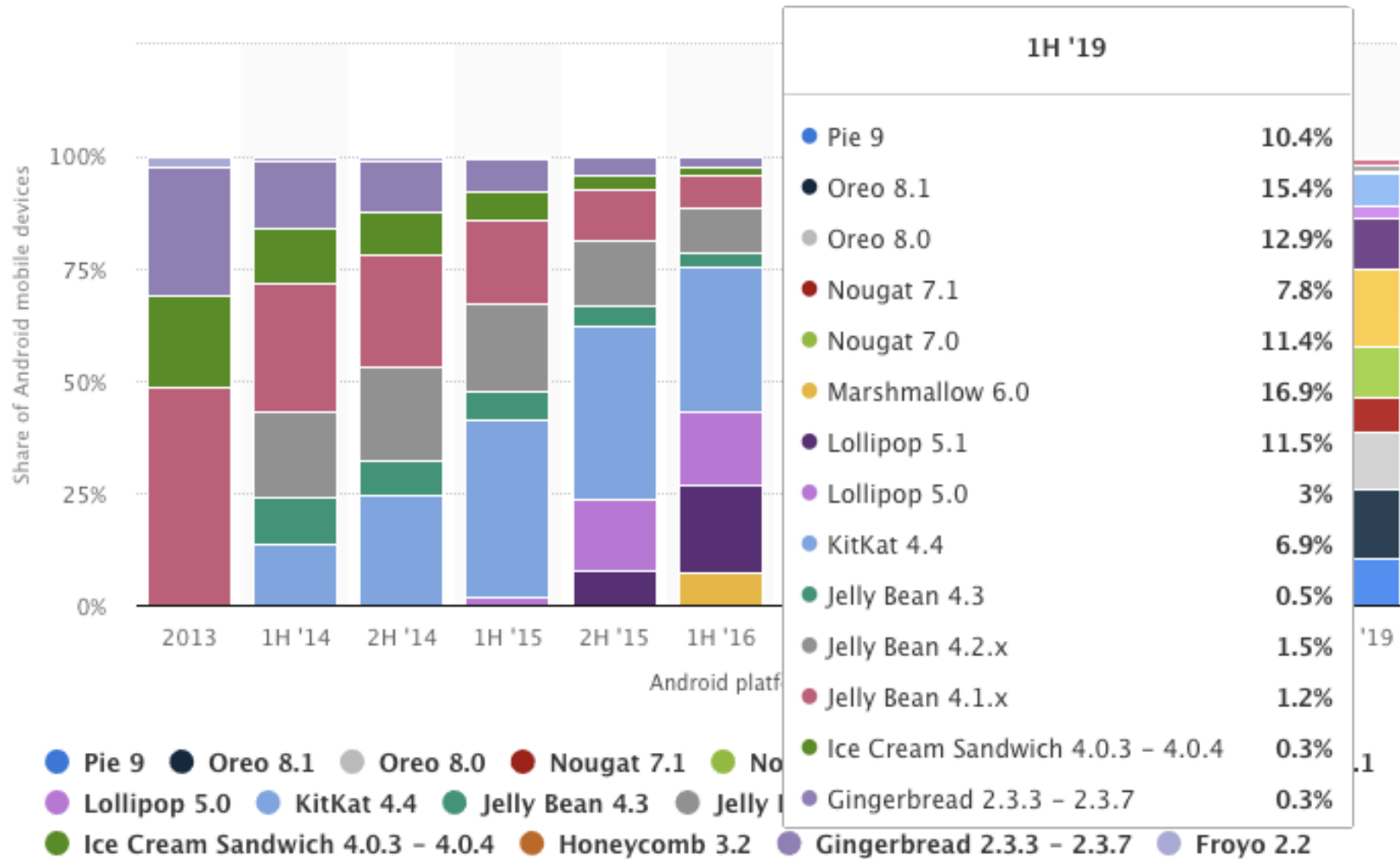
Android versions



- Pie 9
- Oreo 8.1
- Oreo 8.0
- Nougat 7.1
- Nougat 7.0
- Marshmallow 6.0
- Lollipop 5.1
- Lollipop 5.0
- KitKat 4.4
- Jelly Bean 4.3
- Jelly Bean 4.2.x
- Jelly Bean 4.1.x
- Ice Cream Sandwich 4.0.3 - 4.0.4
- Honeycomb 3.2
- Gingerbread 2.3.3 - 2.3.7
- Froyo 2.2



Android versions in 2019



What can we measure on a mobile app?



Resource Usage

- % CPU
- Memory (MB)
- Data sent and received (KB)
- % Battery Usage



Rendering

- Rendering times (ms)
- Frames per second (fps)
- Render lag (janks)

Response Times

- Transactions
- App Startup

Errors

- Exceptions
- ANRs (Android)
- Crashes





What tools can we use?



- Lighthouse (Google)



- Application Performance Management (APM)



- Android Studio
- Instruments (XCode)
- Apptim Desktop





Demo





When should we start testing app performance?



As soon as possible!



This will help you:

- Understand how the app behaves, familiarize ourselves with these metrics and see how they change over time
- Identify early on what changes in the app affect its performance
- Prevent new performance issues from reaching end user





Questions?



THANK YOU!



blog.apptim.com
abstracta.us/blog/performance-testing



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