Google Play:

The Android App Store Developer Perspective

Mobile and Ubiquitous Games

ICS 163

Donald J. Patterson

Android Market

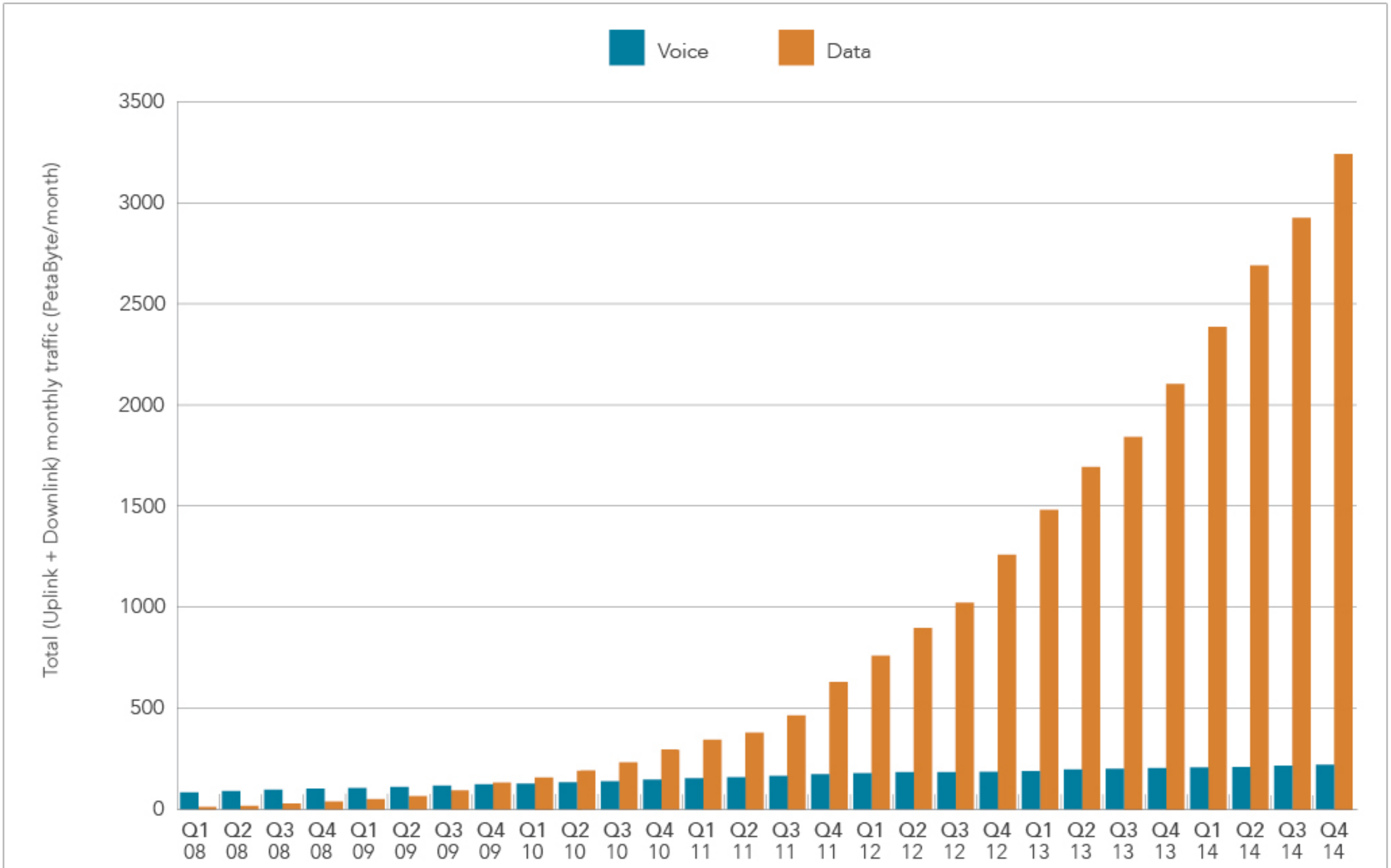


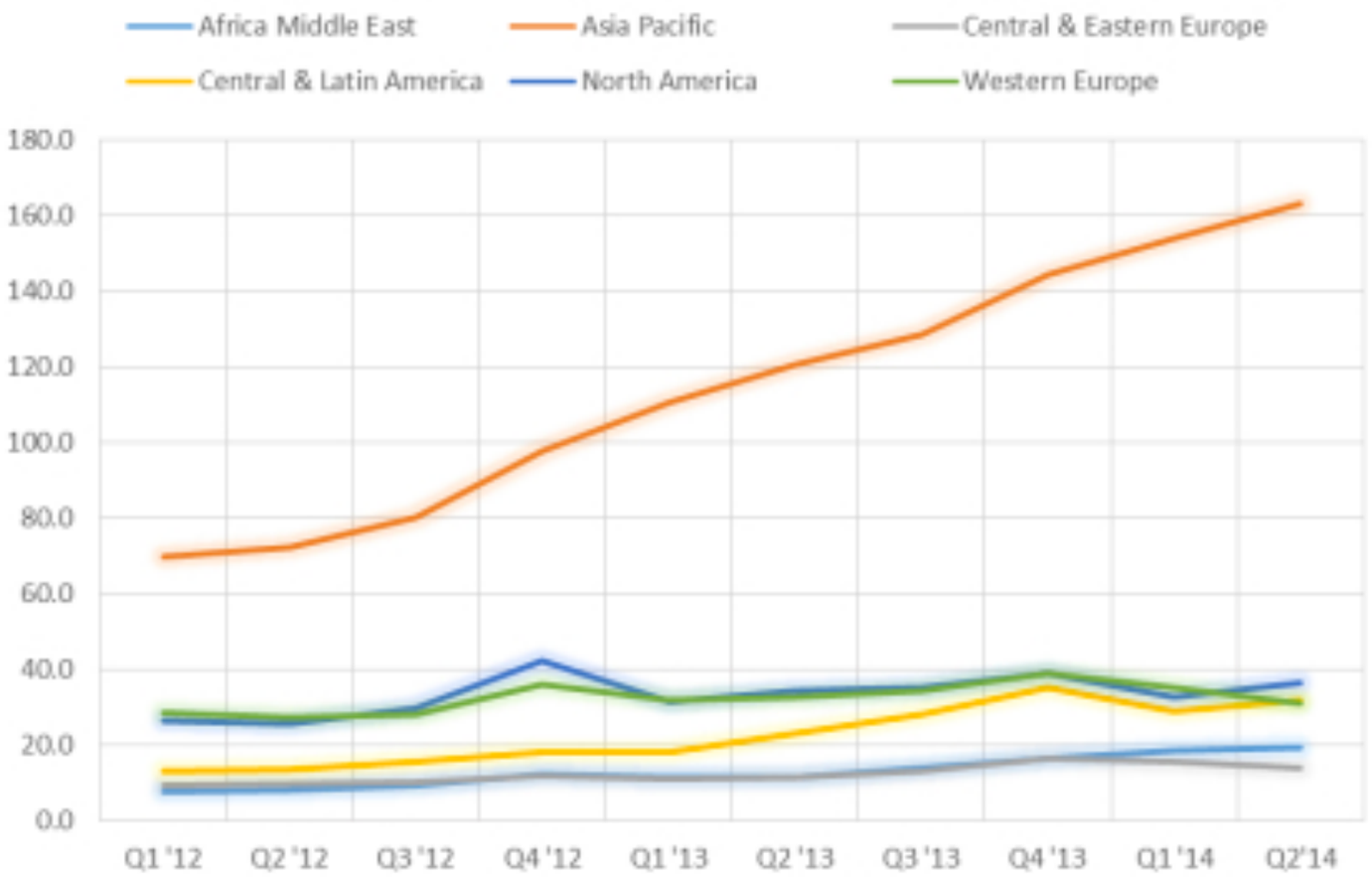
Figure 39: Total Monthly Mobile Voice and Data as Measured by Ericsson

Akamai FASTER FORWARD
www.stateoftheinternet.com

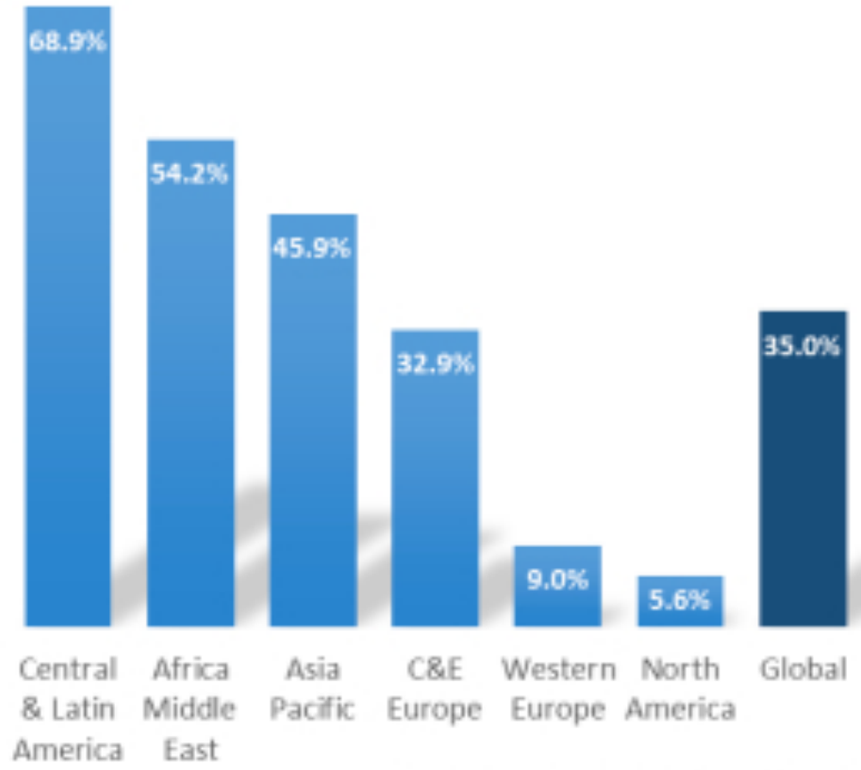
Source:Akamai

Android Market

REGIONAL SMARTPHONE SHIPMENTS (MILLIONS)

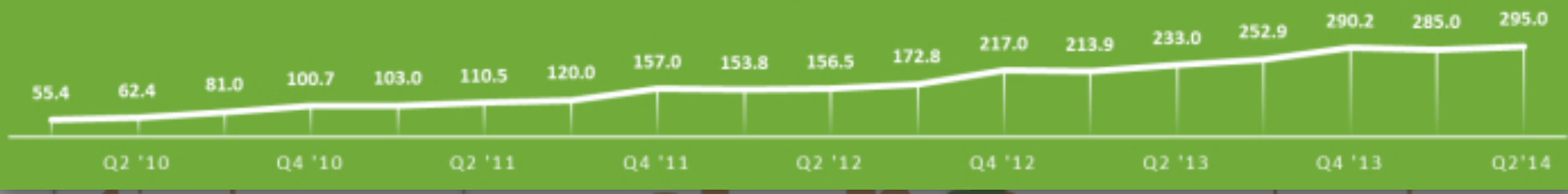


YOY GROWTH (AVERAGED)



ANDROID AUTHORITY

GLOBAL SMARTPHONE SHIPMENTS (MILLIONS)

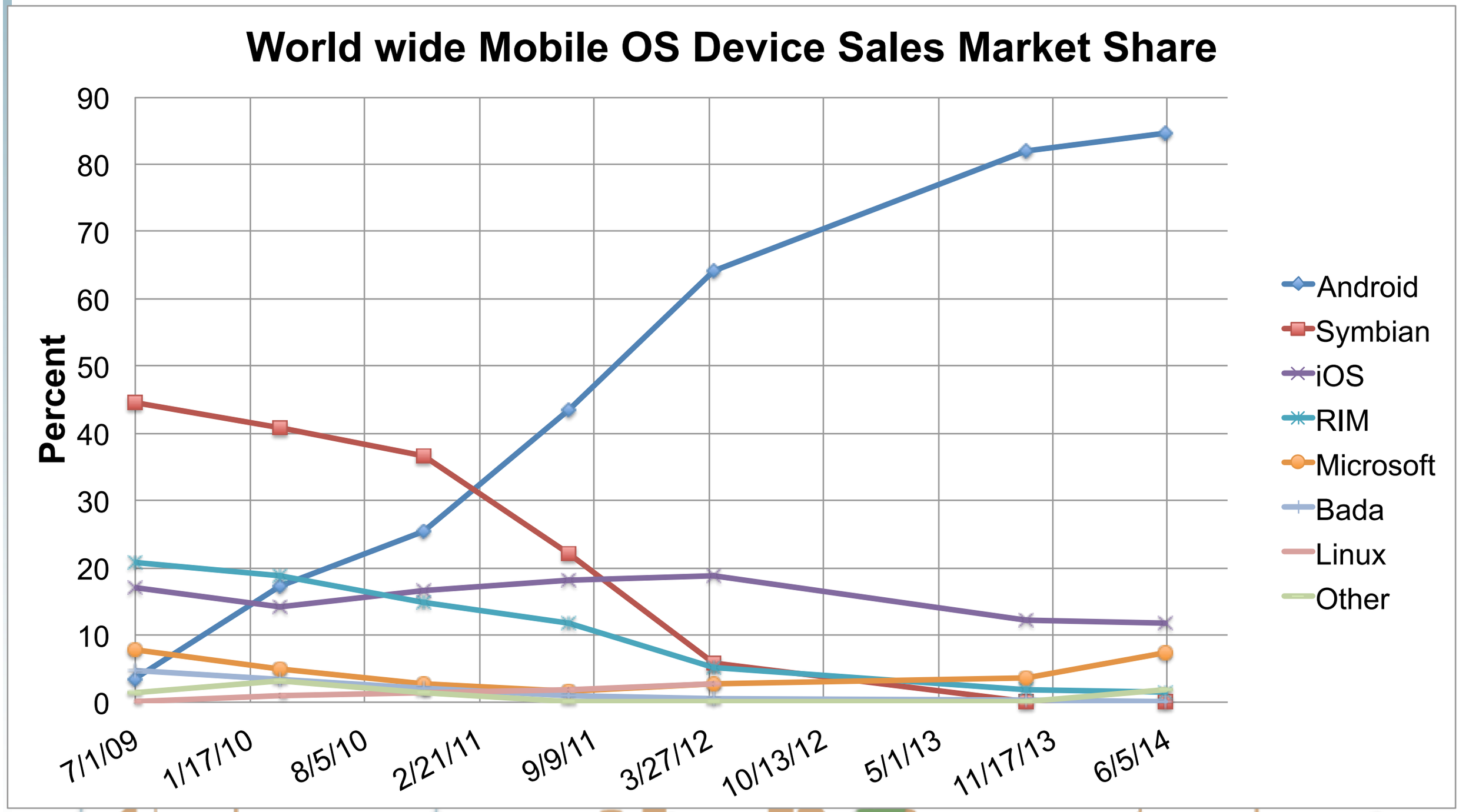


Source: http://www.androidauthority.com/state-smartphone-industry-2014-527300/

Google Play vs Apple iOS

- When counting installs there is a difference between OS installs and handset sales
  - Android separates the two
    - Android can be on many manufacturers devices
  - Apple unifies them
    - iOS is only on one manufacturer
- Android is installed on many more devices
- But Apple holds the most market share by manufacturer

Android Market



Source: Gartner Research, IDC

Android Market

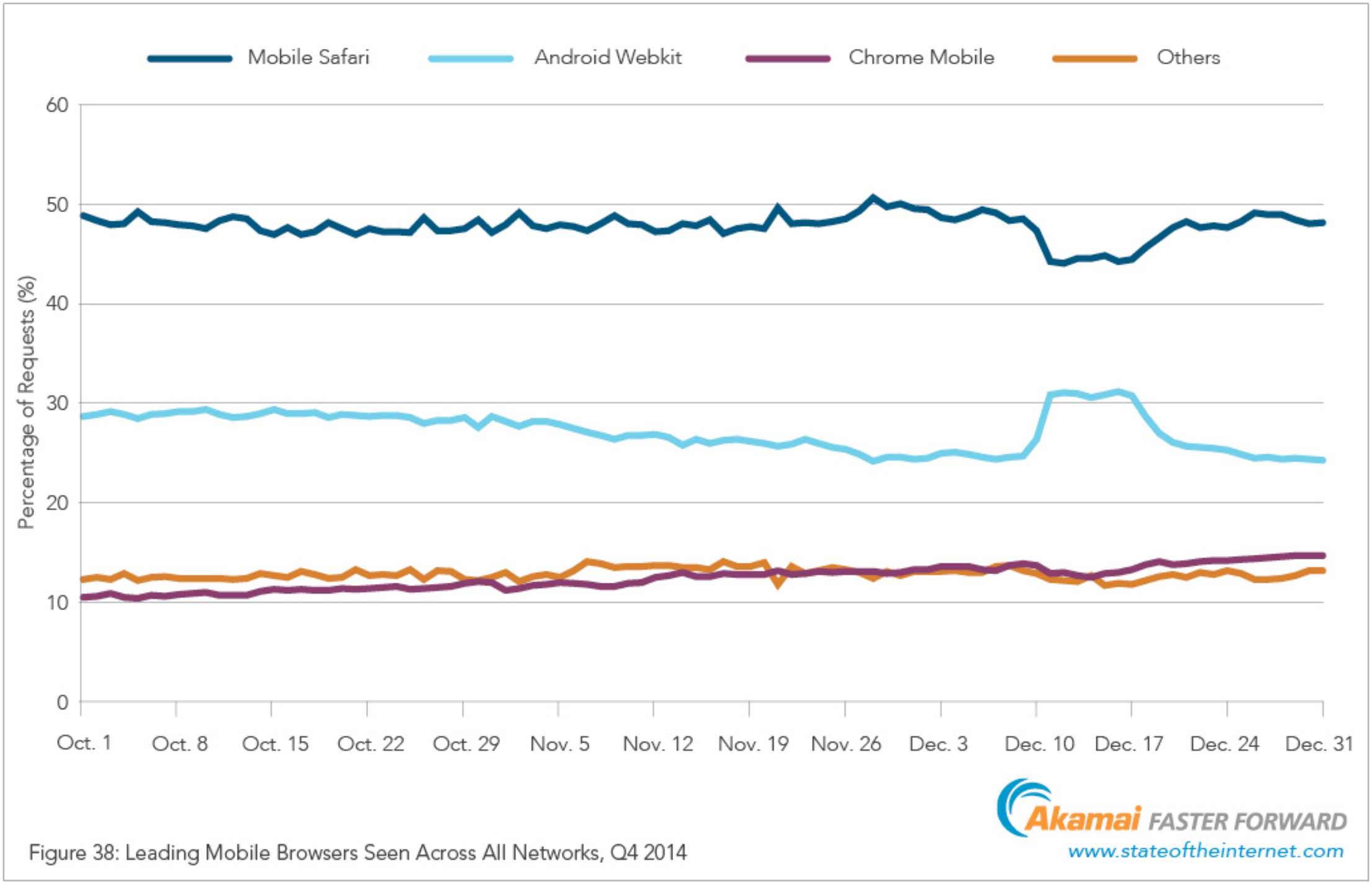


Figure 38: Leading Mobile Browsers Seen Across All Networks, Q4 2014

Source:Akamai

Android Market

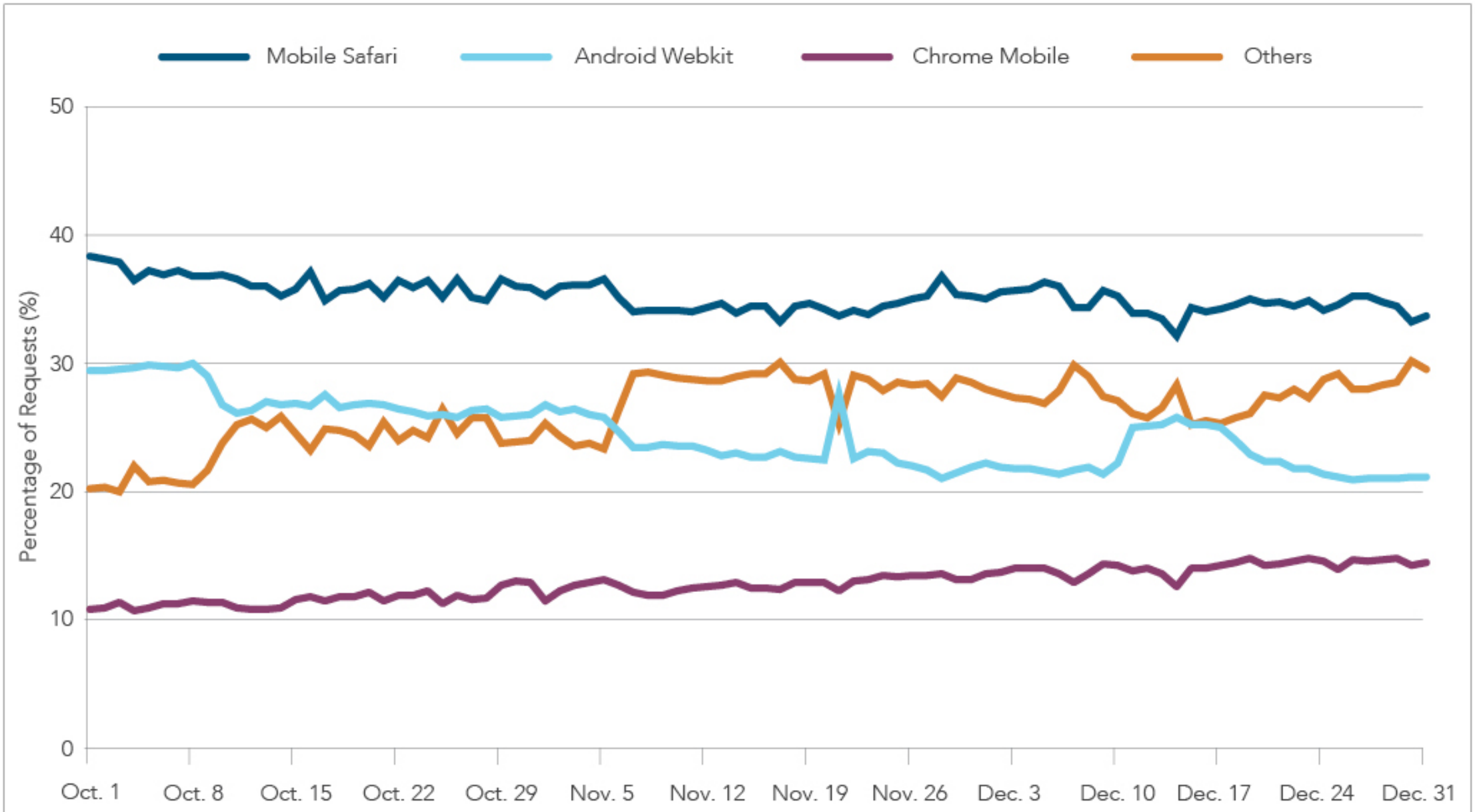


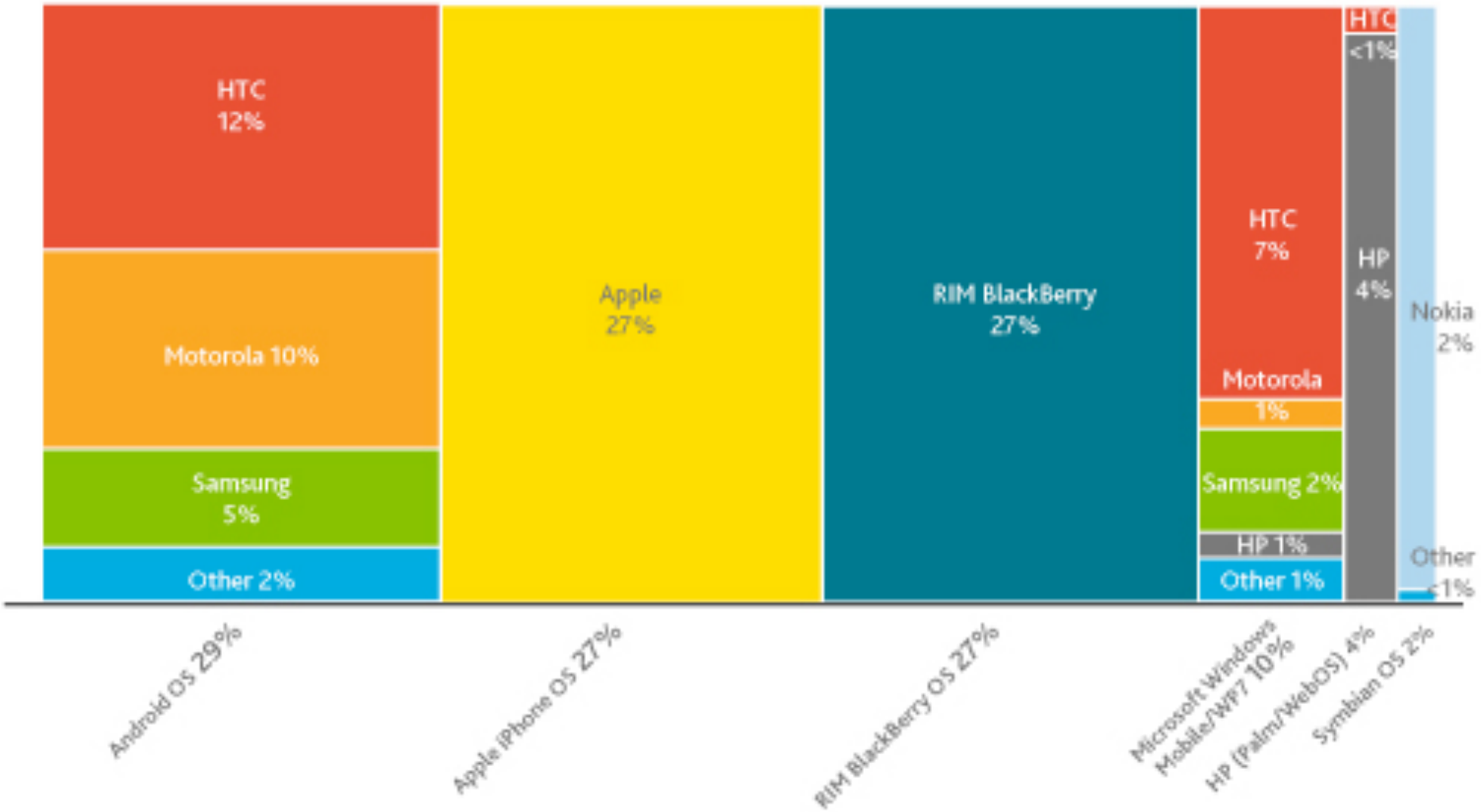
Figure 37: Leading Mobile Browsers Seen Across Cellular Networks, Q4 2014

Source:Akamai

Android Market

Manufacturer operating system share–smartphones

Nov '10 - Jan 11, postpaid mobile subscribers, n=14,701

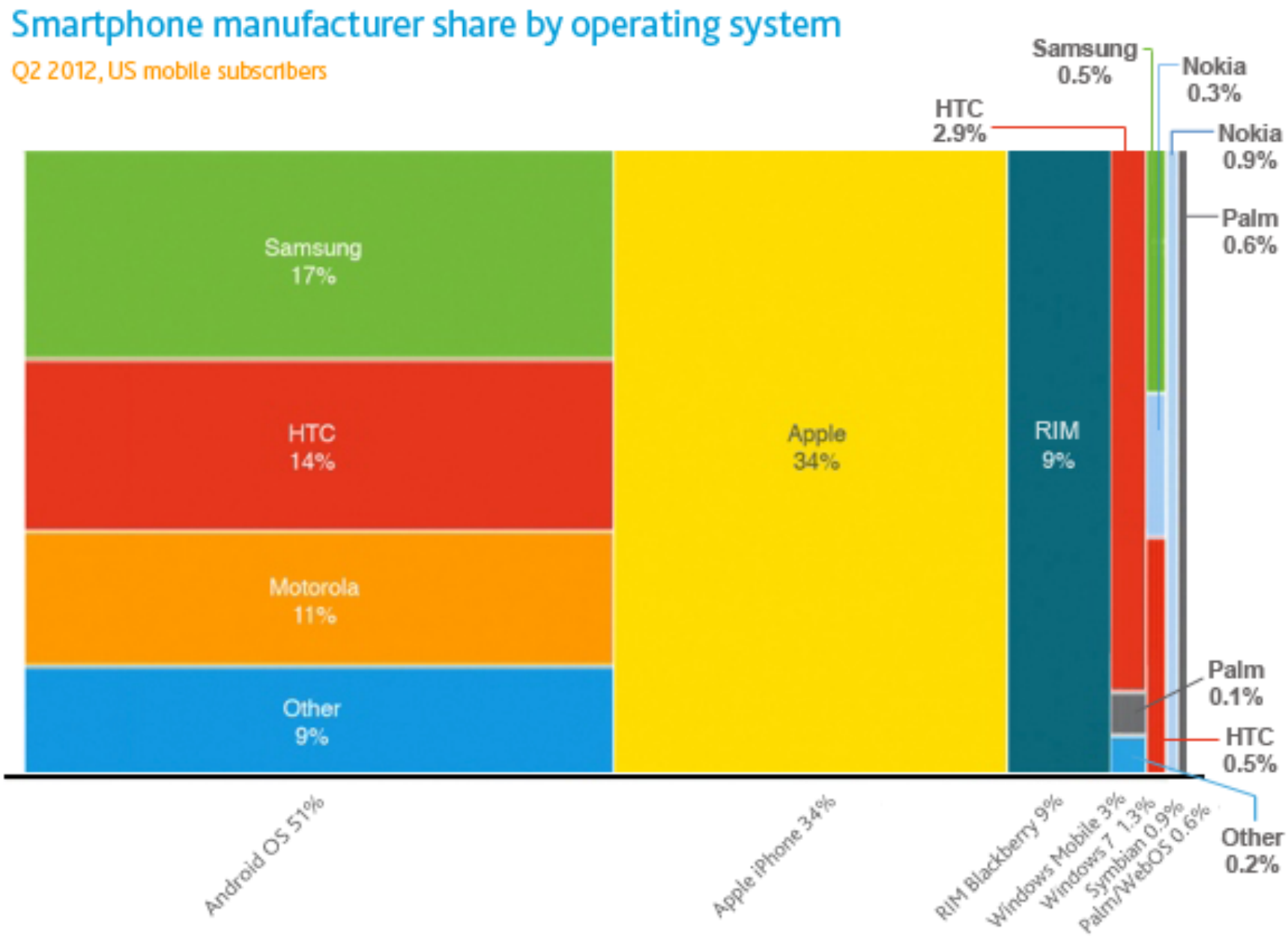


Source: The Nielsen Company.

nielsen

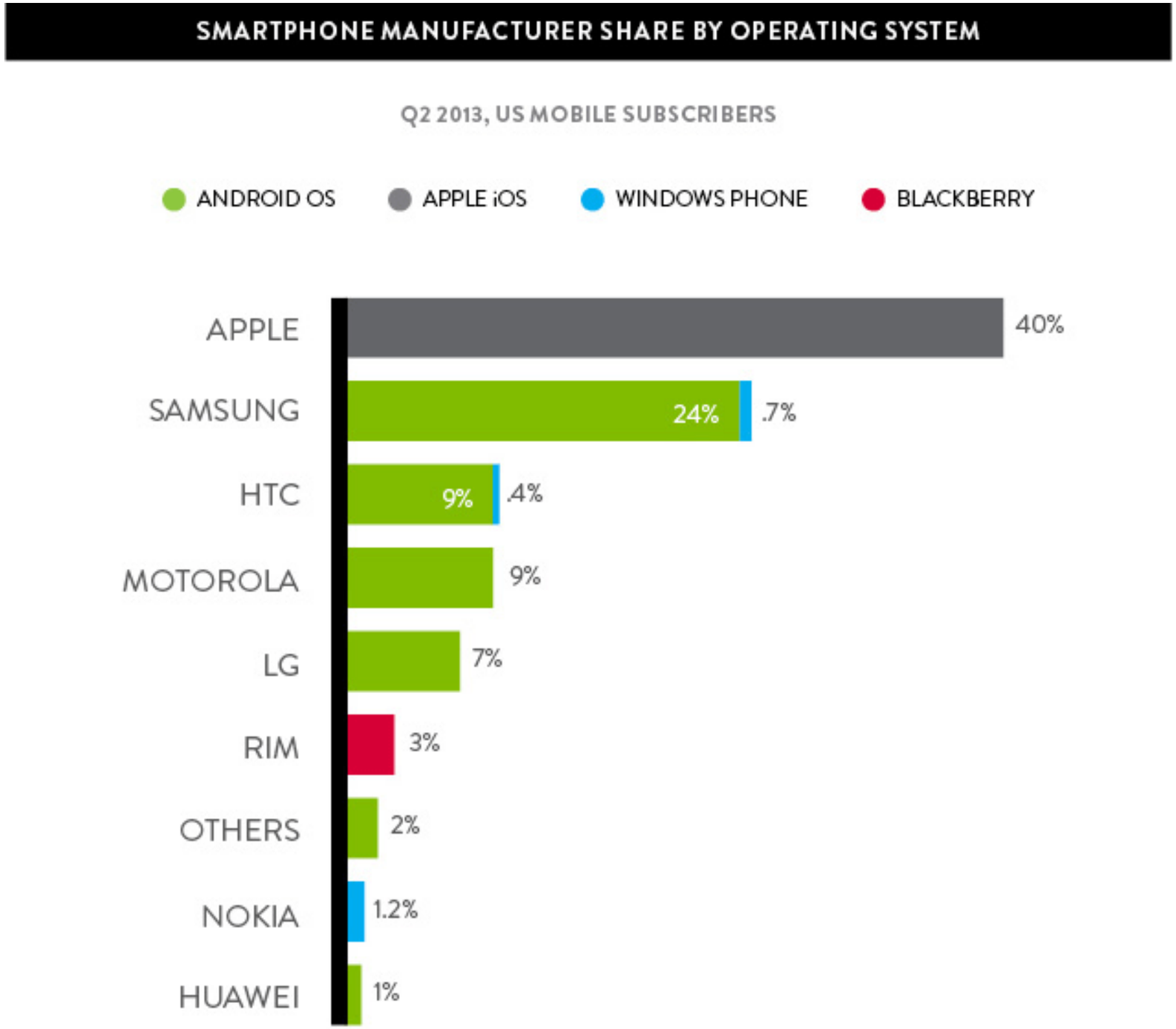
Source: http://blog.nielsen.com/nielsenwire/online_mobile/who-is-winning-the-u-s-smartphone-battle/

Android Market



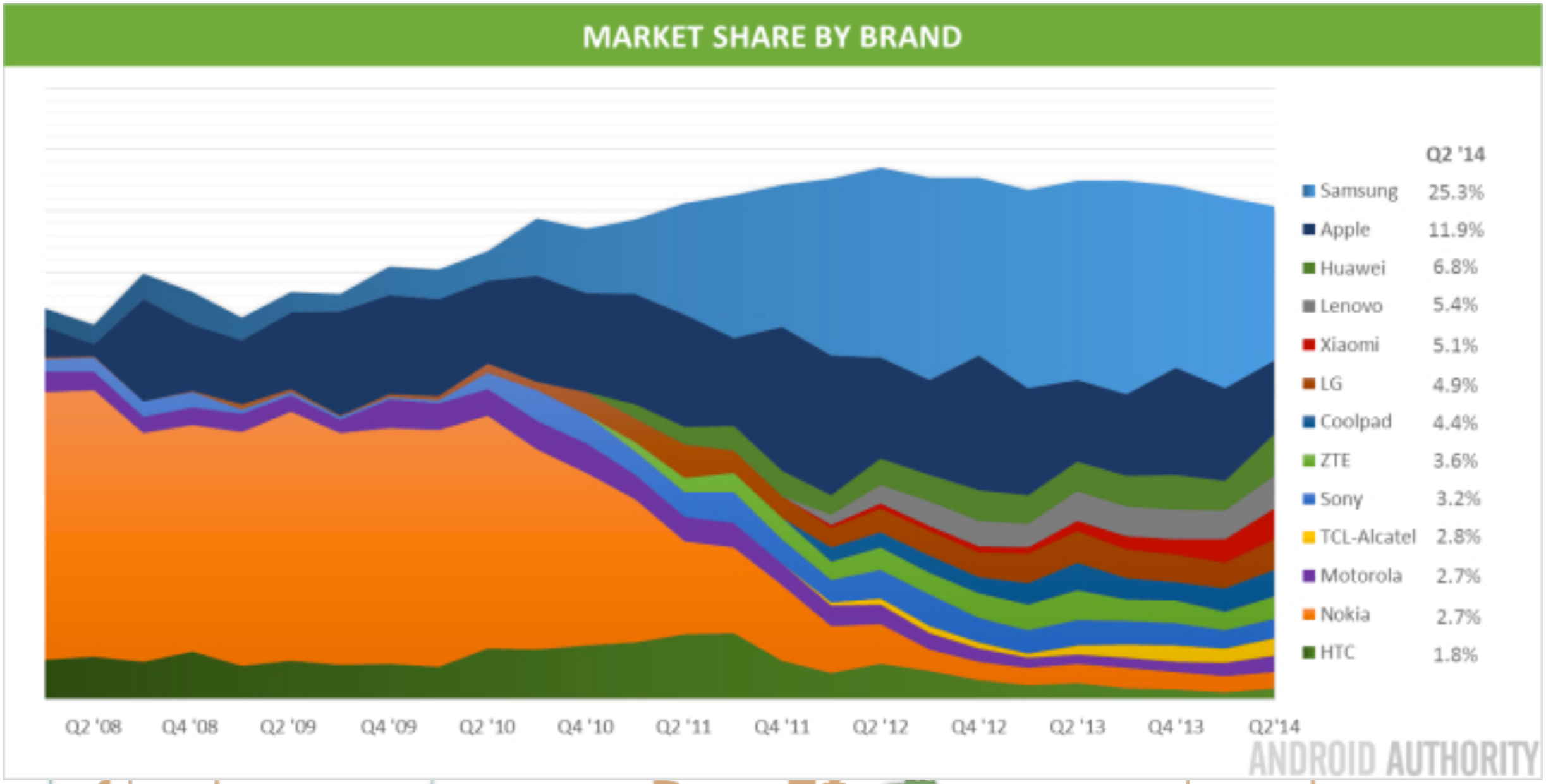
Source: http://blog.nielsen.com/nielsenwire/online_mobile/two-thirds-of-new-mobile-buyers-now-opting-for-smartphones/

Android Market



http://www.nielsen.com/us/en/newswire/2013/whos-winning-the-u-s-smartphone-market-.html

Intro to Mobile Development



Source: http://www.androidauthority.com/state-smartphone-industry-2014-527300/

Issues:

- Stores
  - iTunes
  - Android
  - Blackberry
  - OVI
  - Microsoft

Mobile Development

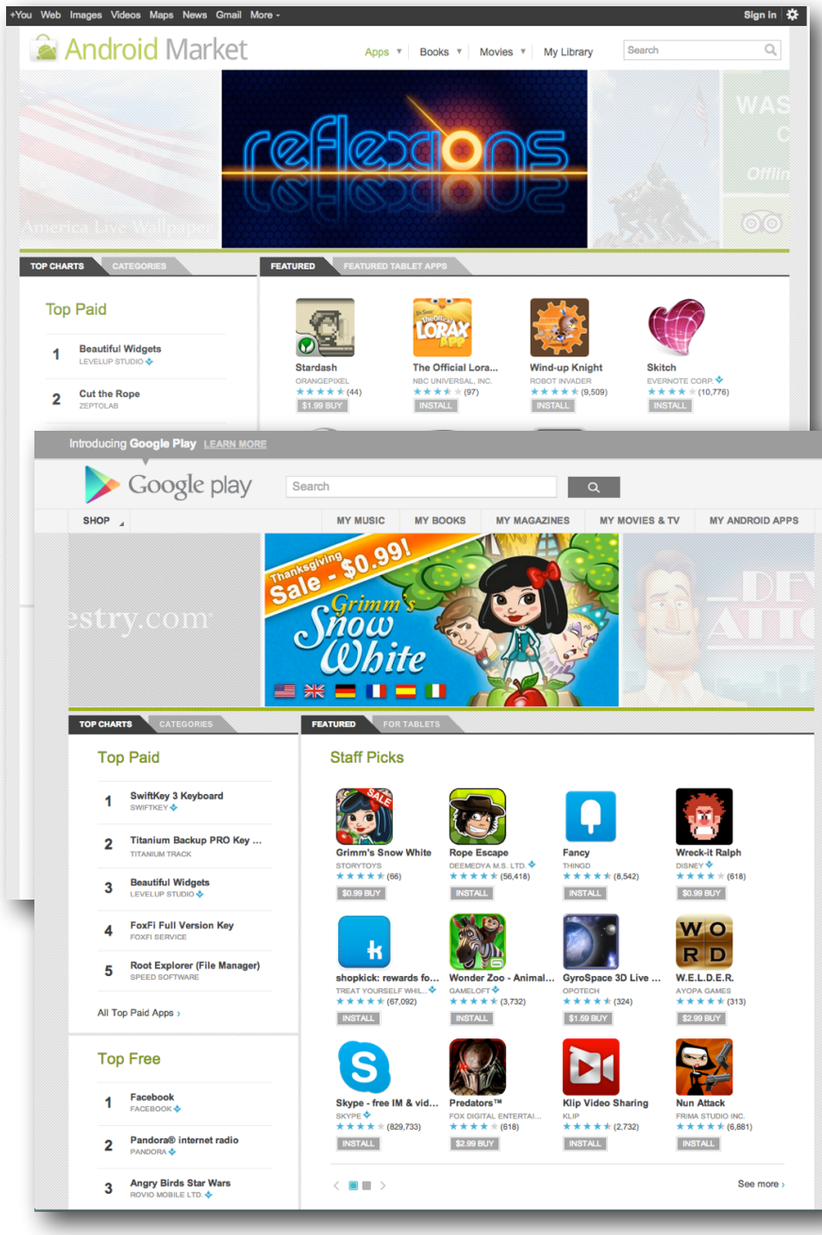
Issues:

- Stores
  - iTunes
  - Android
  - Blackberry
  - OVI
  - Microsoft

Mobile Development

Issues:

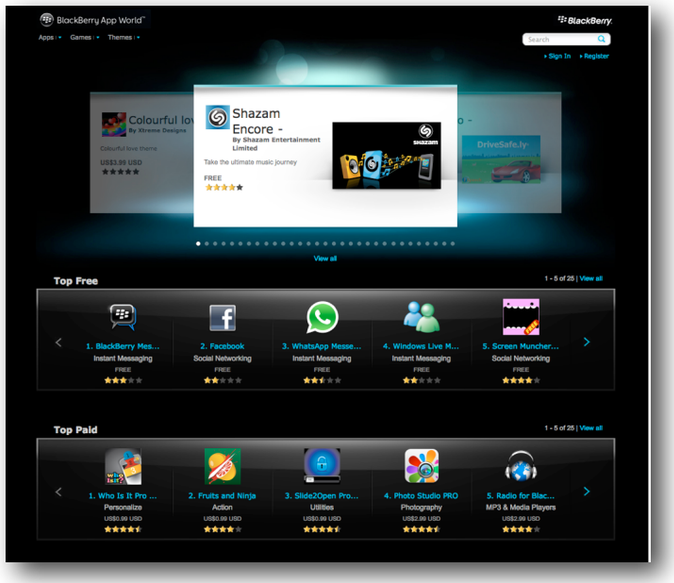
- Stores
  - iTunes
  - Android
  - Blackberry
  - OVI
  - Microsoft

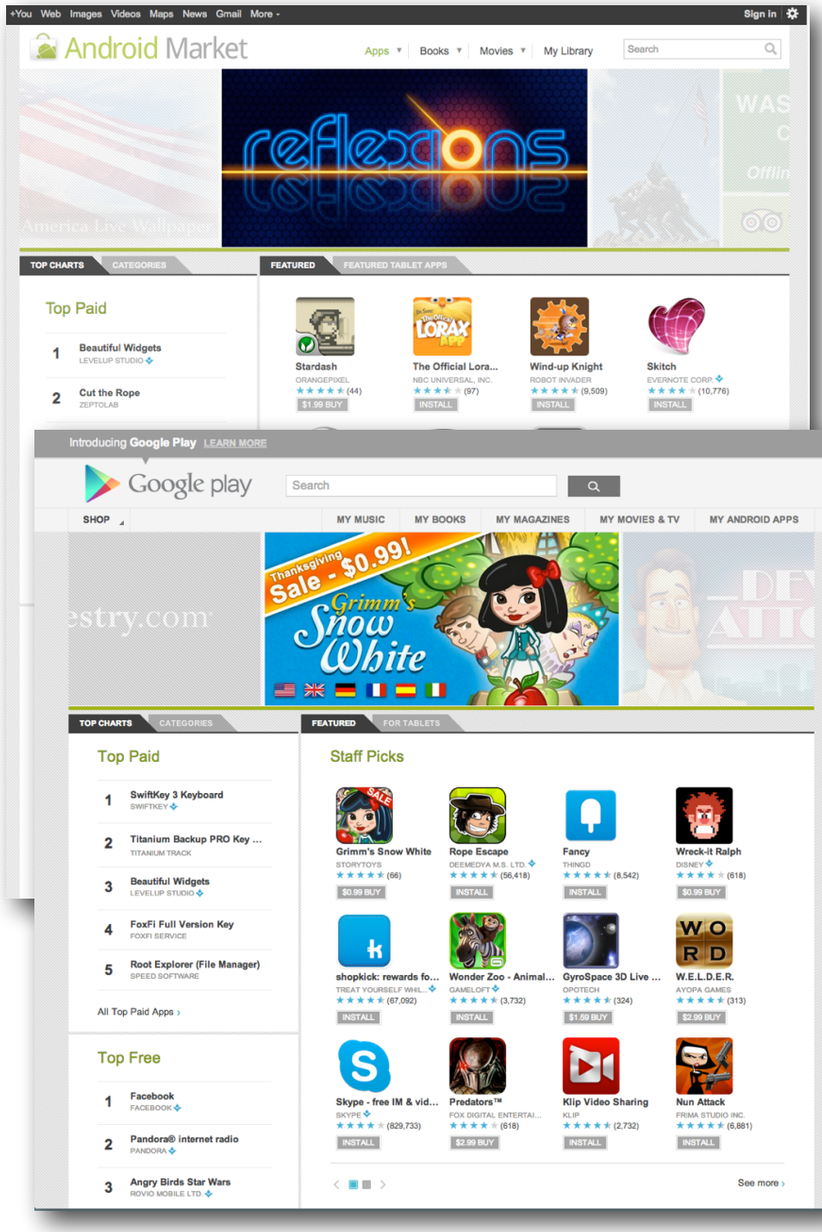


Mobile Development

Issues:

- Stores
  - iTunes
  - Android
  - Blackberry
  - OVI
  - Microsoft

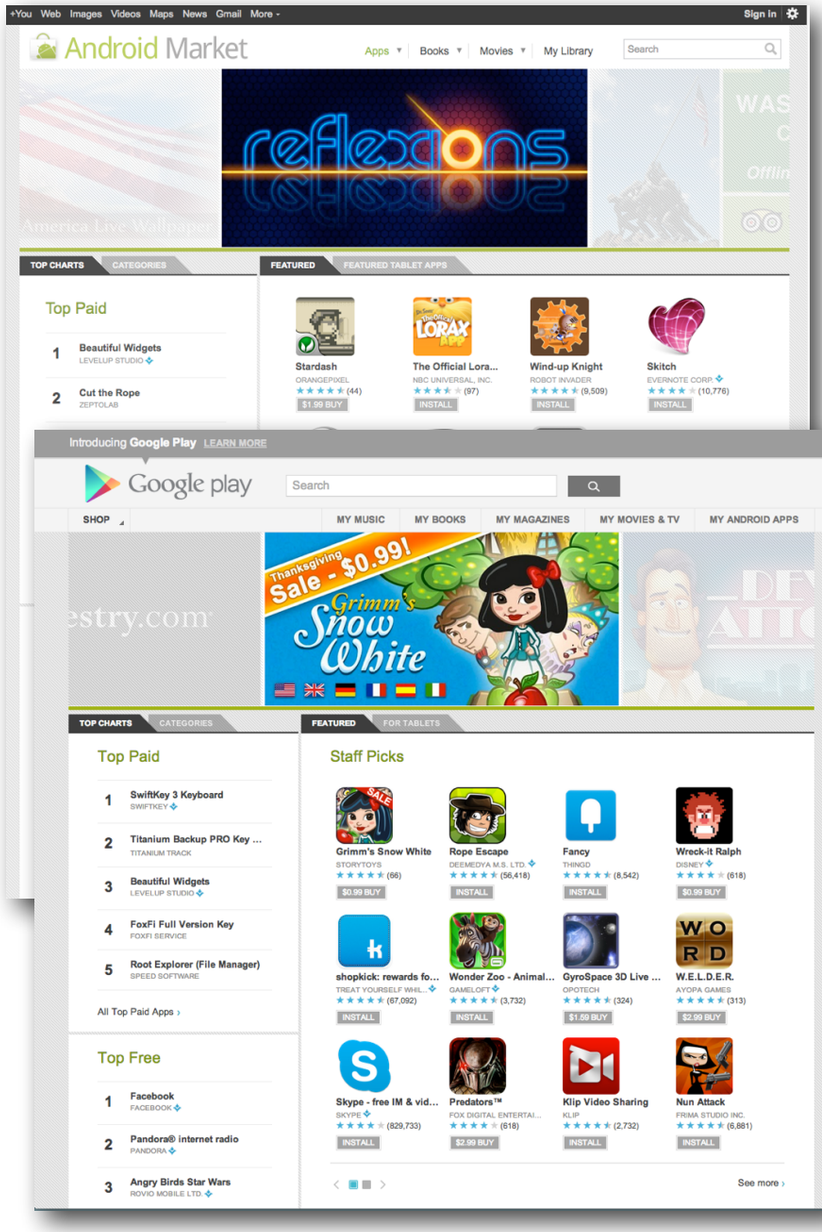


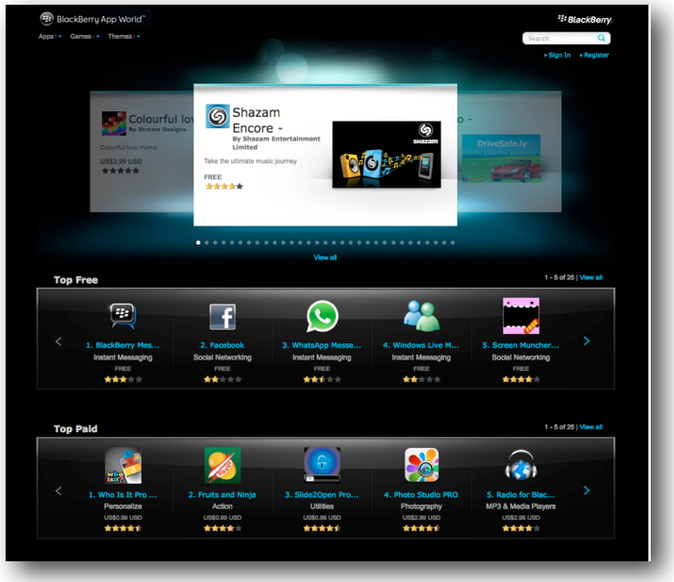


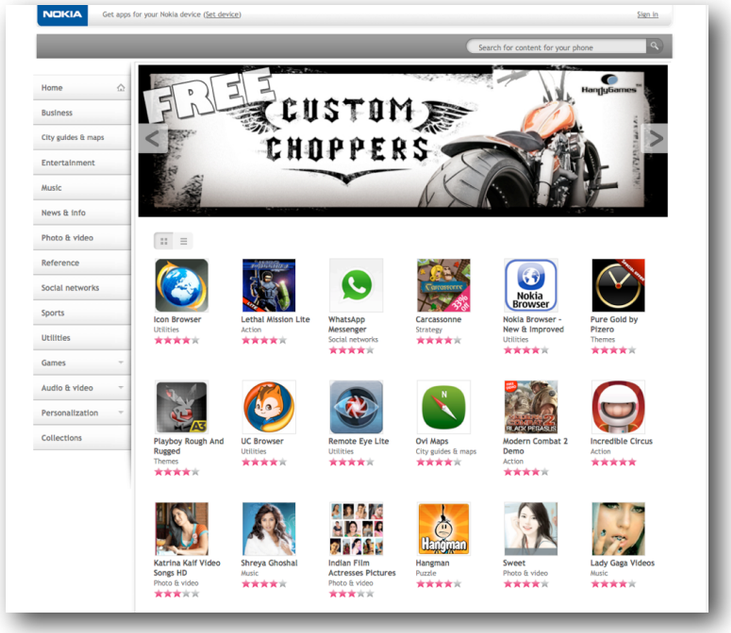
Mobile Development

Issues:

- Stores
  - iTunes
  - Android
  - Blackberry
  - OVI
  - Microsoft



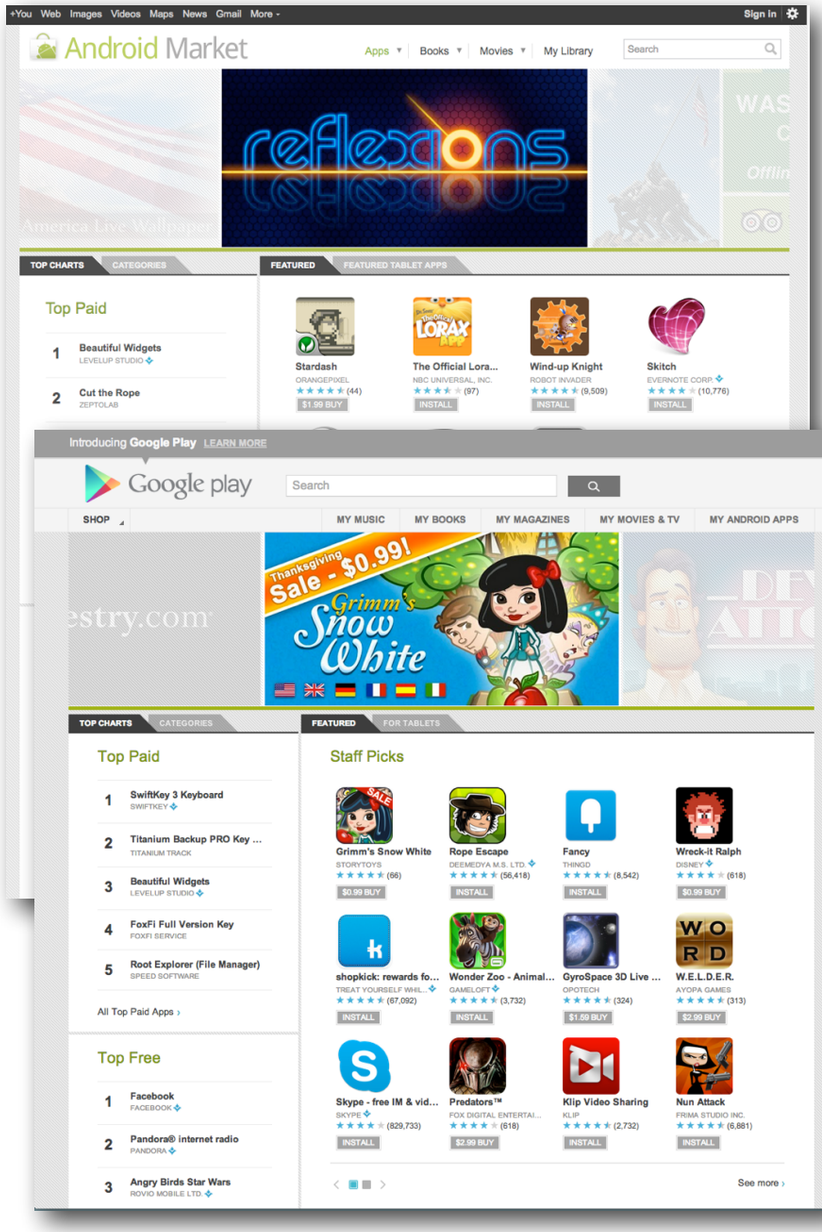


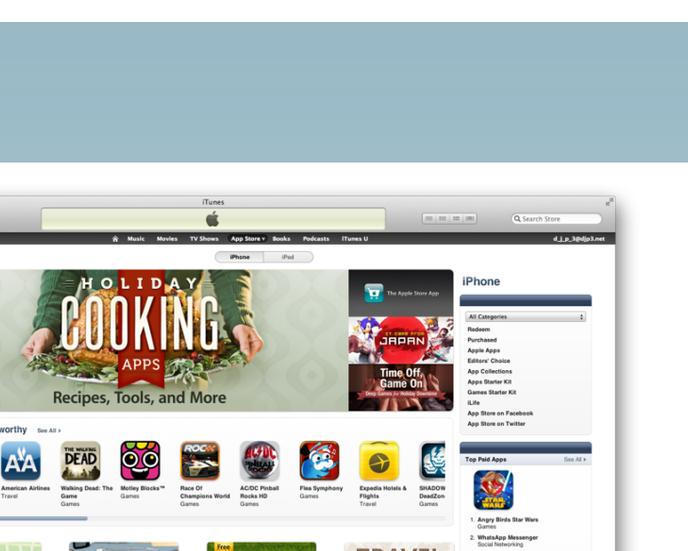


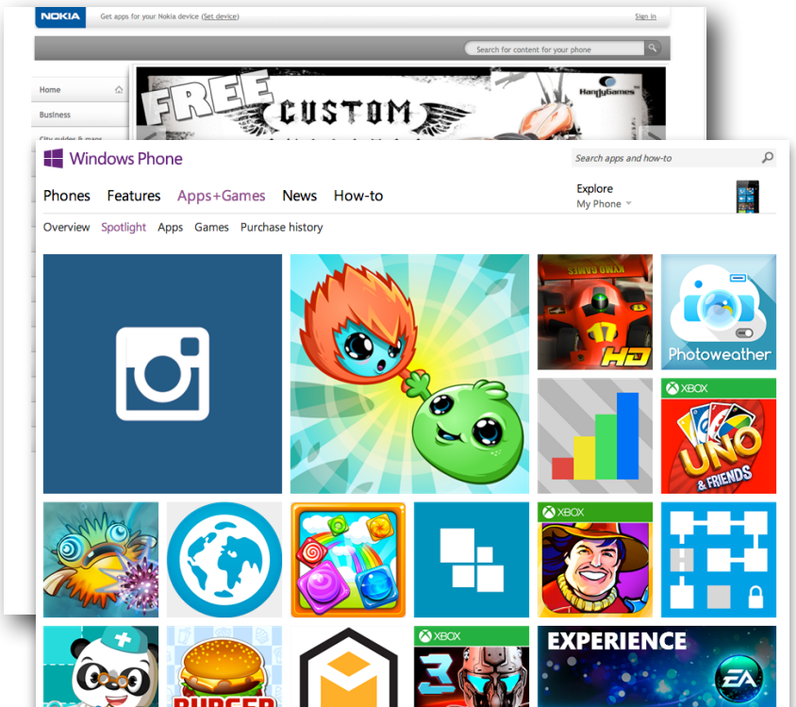
Mobile Development

Issues:

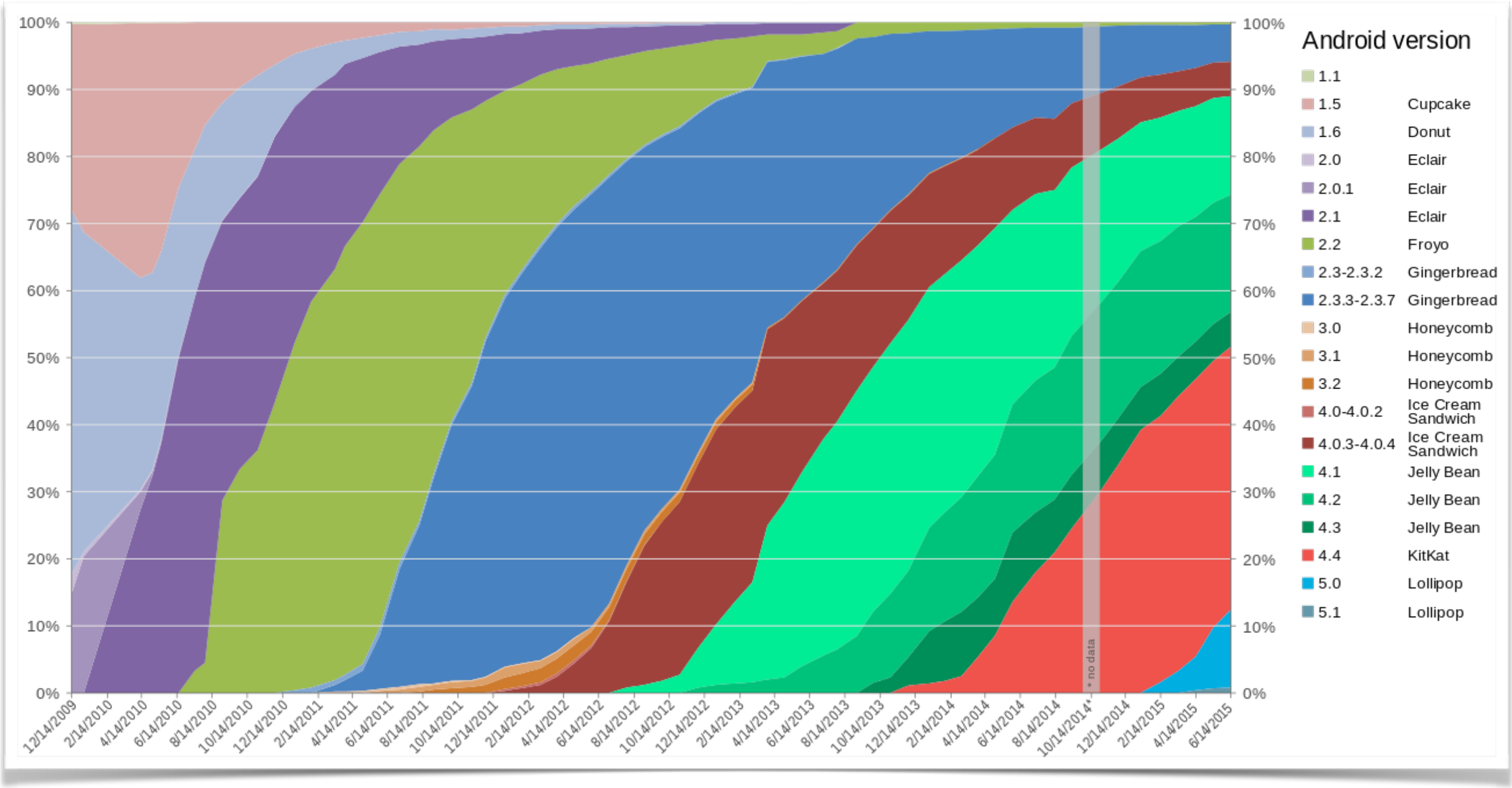
- Stores
  - iTunes
  - Android
  - Blackberry
  - OVI
  - Microsoft





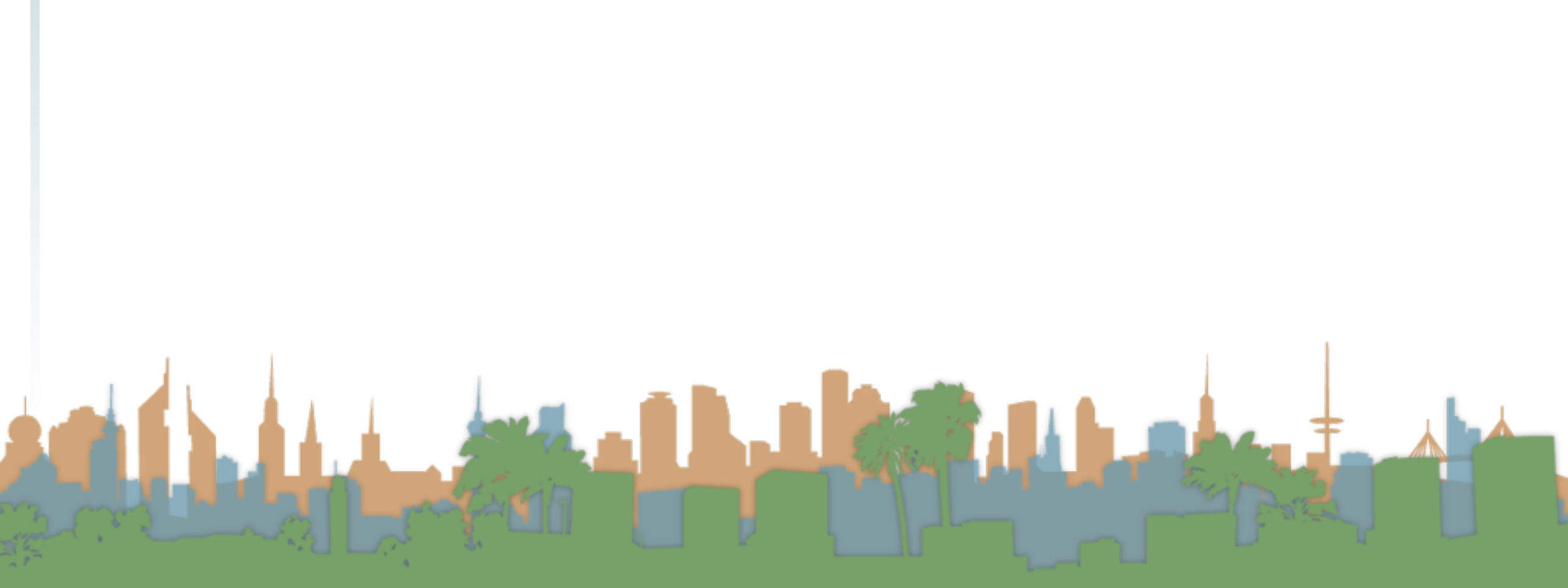


Android Installs

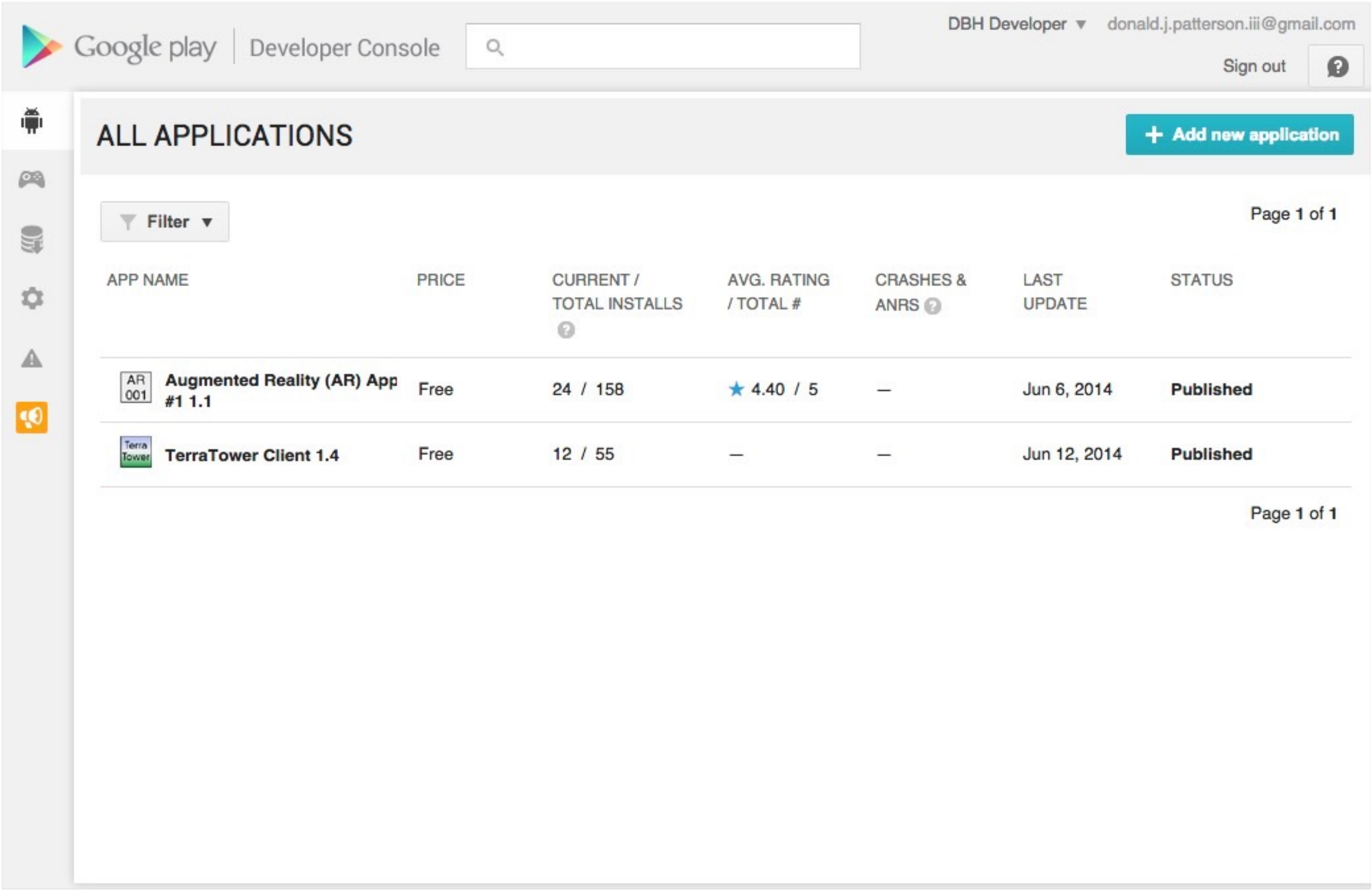


Google Play vs Apple iOS

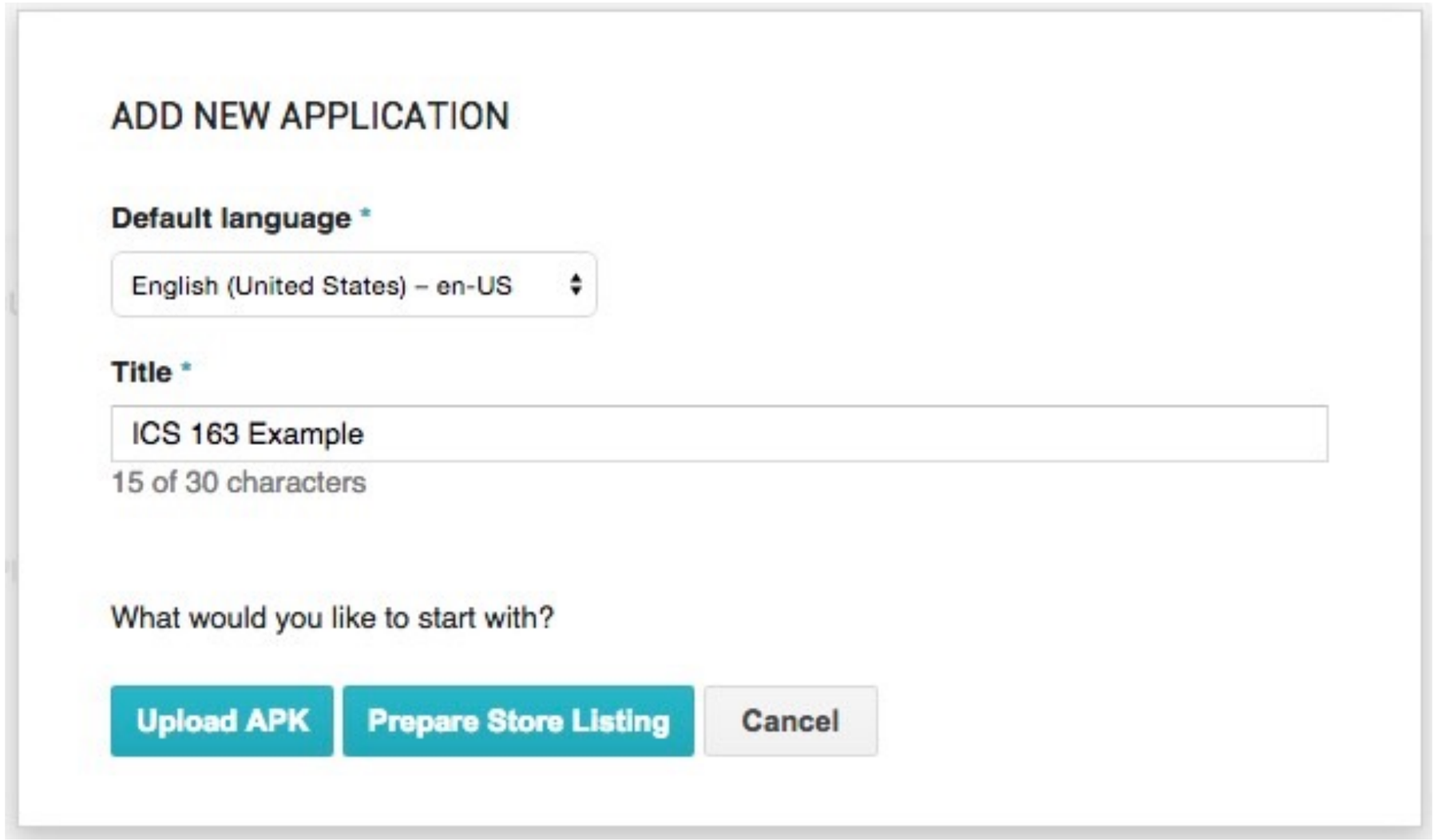
- Cost to submit
  - Google Play: $25.00 one time fee
  - Apple iTunes Store: $99.00 per year



Publishing an app



Publishing an app



ICS 163 Example

DRAFT Delete app

Why can't I publish?

Save draft | Publish app

- **APK**
- Store Listing
- Content Rating
- Pricing & Distribution
- In-app Products
- Services & APIs
- Optimization Tips 1

APK

PRODUCTION
Publish your app on Google Play

BETA TESTING
Set up Beta testing for your app

ALPHA TESTING
Set up Alpha testing for your app

License keys are now managed for each application individually.
If your application uses licensing services (e.g. if your app is a paid app, or if it uses in-app billing or APK expansion files), get your new license key on the Services & APIs page.

Upload your first APK to Production

Do you need a license key for your application?

Get license key

Publishing an app

ICS 163 Example

edu.uci.ics.luci

DRAFT Delete app

Why can't I publish?

Save draft | Publish app

- APK
- Store Listing
- Content Rating
- Pricing & Distribution
- In-app Products
- Services & APIs
- Optimization Tips

APK

Switch to advanced mode

PRODUCTION	BETA TESTING	ALPHA TESTING
Version 1	Set up Beta testing for your app	Set up Alpha testing for your app

PRODUCTION CONFIGURATION

Upload new APK to Production

CURRENT APK uploaded on **Jun 2, 2015, 1:44:46 PM**

Supported devices	Excluded devices
116	**0**
See list	Manage excluded devices

▼ VERSION	UPLOADED ON	STATUS	ACTIONS
1 (1.0)	Jun 2, 2015	Draft in Prod	

APK TRANSLATION SERVICE

Translate your application to target users in other languages?

Publishing an app

ICS 163 Example
edu.uci.ics.luci
DRAFT Delete app

Why can't I publish?
Save draft | Publish app

- APK
- **Store Listing**
- Content Rating
- Pricing & Distribution
- In-app Products
- Services & APIs
- Optimization Tips

STORE LISTING

PRODUCT DETAILS

Fields marked with * need to be filled before publishing.

English (United States) – en-US | **Manage translations** ▼

Title*
English (United States) – en-US
ICS 163 Example
15 of 30 characters

Short description*
English (United States) – en-US
This is the example for 163
27 of 80 characters

Full description*
English (United States) – en-US
This is the example for 163
27 of 4000 characters

Please check out these tips on how to create policy compliant app descriptions to

GRAPHIC ASSETS

If you haven't added localized graphics for each language, graphics for your default language will be used.
Learn more about graphic assets.

Screenshots *
Default – English (United States) – en-US
JPEG or 24-bit PNG (no alpha). Min length for any side: 320px. Max length for any side: 3840px.
At least **2 screenshots are required** overall. **Max 8 screenshots per type**. Drag to reorder or to move betw

For your app to be showcased in the 'Designed for tablets' list in the Play Store, you need to upload at least c
one 10-inch screenshot. If you previously uploaded screenshots, make sure to move them into the right area
Learn how tablet screenshots will be displayed in the store listing.

Phone

+
Add screenshot
Drop image here.

7-inch tablet

+
Add screenshot
Drop image here.

Add at least one 7-inch screenshot here to help tablet users see how your app will look on their device.

10-inch tablet

+
Add screenshot
Drop image here.

Add at least one 10-inch screenshot here to help tablet users see how your app will look on their device.

TV

+
Add screenshot
Drop image here.

Add at least one TV screenshot here to help users see how your app will look on their TV.

Hi-res icon *
Default – English (United States) – en-US
512 x 512
32-bit PNG (with alpha)

+
Add high-res icon
Drop image here.

Feature Graphic *
Default – English (United States) – en-US
1024 w x 500 h
JPG or **24-bit PNG** (no alpha)

+
Add feature graphic
Drop image here.

Promo Graphic
Default – English (United States) – en-US
180 w x 120 h
JPG or **24-bit PNG** (no alpha)

+
Add promo graphic
Drop image here.

TV Banner
Default – English (United States) – en-US
320 w x 180 h
JPG or **24-bit PNG** (no alpha)

+
Add TV banner
Drop image here.

Publishing an app

CATEGORIZATION

Application type * — Applications

Category * — Education

Content rating * — Everyone

Learn more about content rating.

New content rating * — You need to fill a rating questionnaire and apply a content rating.

CONTACT DETAILS

Website — http://luci.ics.uci.edu

Email * — d_j_p_3@djp3.net

Please provide an email address where you may be contacted. This address will be publicly displayed with your app.

Phone — [redacted]

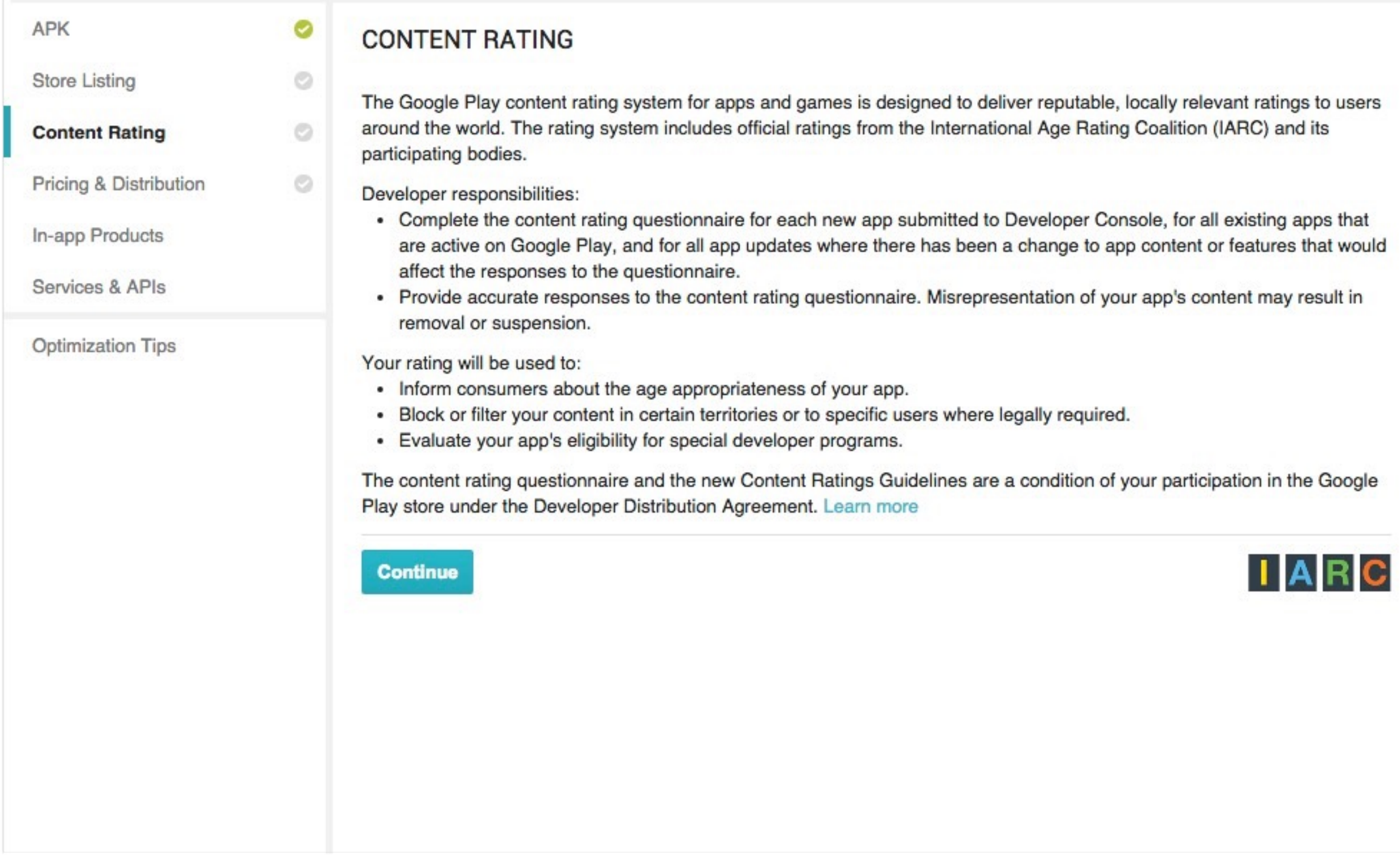
PRIVACY POLICY *

If you wish to provide a privacy policy URL for this application, please enter it below.

Privacy Policy — http://...

☑ Not submitting a privacy policy URL at this time. Learn more

Publishing an app



Publishing an app

- APK
- Store Listing
- **Content Rating**
- Pricing & Distribution
- In-app Products
- Services & APIs

Optimization Tips

CONTENT RATING

Please complete the questionnaire so that we can calculate your app rating.

REFERENCE, NEWS, OR EDUCATIONAL
App is a news, reference, or educational app. Edit Category

VIOLENCE

Can the app contain violent material? Learn more
Please note that this question does **not** refer to user generated content.

◯ Yes ◯ No

SEXUALITY

LANGUAGE

CONTROLLED SUBSTANCE

MISCELLANEOUS

Publishing an app

- APK
- Store Listing
- **Content Rating**
- Pricing & Distribution
- In-app Products
- Services & APIs
- Optimization Tips

CONTENT RATING

APPLIED RATING
Submitted: seconds ago
View details Learn more

QUESTIONNAIRES

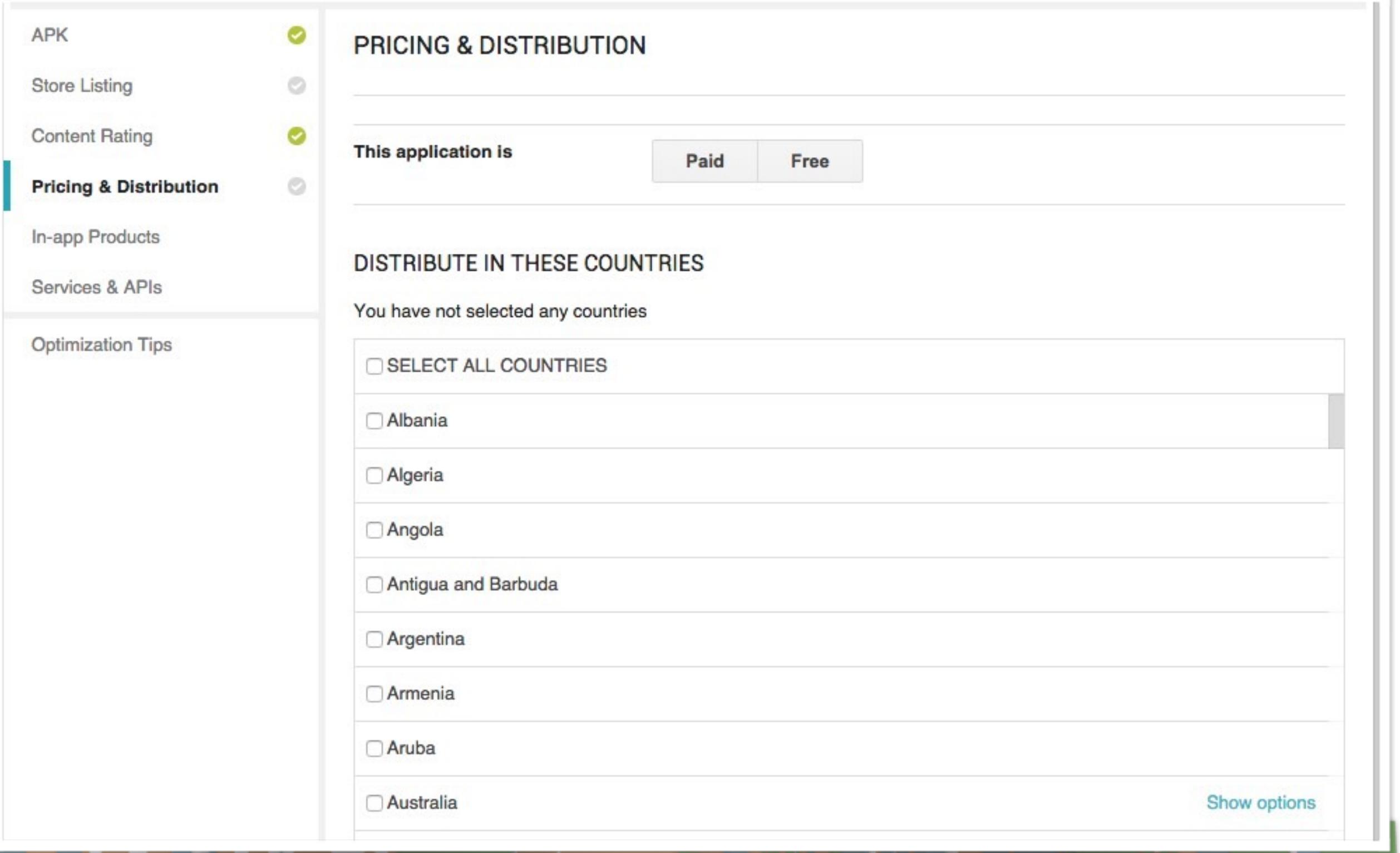
DATE	IARC CERTIFICATE	EMAIL		
seconds ago		d_j_p_3@djp3.net	Edit	View details

Learn more about the content rating questionnaire and content ratings on Google Play here.

Submit a new content rating questionnaire for all app updates where there has been a change to app content or features that would affect your responses to the questionnaire.

Start new questionnaire

Publishing an app



Publishing an

ANDROID WEAR

☐ Distribute your app on Android Wear.

If your app includes Android Wear features, opt-in to have your app reviewed for designation as an Android Wear app on Google Play. Before opting-in, read the Android Wear design guidelines. Learn more

ANDROID TV

Add a Leanback launch intent to distribute your app on Android TV. Learn more

ANDROID AUTO

Android Auto-enabled apps extend the experience of your app to the user's car display and car controls for improved usability and decreased driver distraction. You must accept the terms before uploading an Android Auto enabled APK. The terms must be accepted by the account owner. Learn more

DESIGNED FOR FAMILIES

☐ Opt-in to Designed for Families

This app is not eligible to apply for Designed for Families, a developer program for apps and games designed specifically for kids and family audiences. You may need to update store listing or content rating information before you can opt-in. Learn more

GOOGLE PLAY FOR WORK

Free applications are always available to Android for Work customers through Google Play for Work.

GOOGLE PLAY FOR EDUCATION

☐ Distribute your app through Google Play for Education. Learn more

Checking this box submits this app for inclusion in the "educator recommended" section of Google Play for Education. The final decision on which apps to recommend is made by a 3rd party network of teachers. If your app is selected, we will notify you by e-mail. If not, your app will still be searchable in Google Play for Education.

CONSENT

Marketing opt-out

☑ Do not promote my application except in Google Play and in any Google-owned online or mobile properties. I understand that any changes to this preference may take sixty days to take effect.

Content guidelines *

☑ This application meets Android Content Guidelines.

Please check out these tips on how to create policy compliant app descriptions to avoid some common reasons for app suspension.

US export laws *

☑ I acknowledge that my software application may be subject to United States export laws, regardless of my location or nationality. I agree that I have complied with all such laws, including any requirements for software with encryption functions. I hereby certify that my application is authorized for export from the United States under these laws. Learn more

Publishing an app

SERVICES & APIS

GOOGLE CLOUD MESSAGING (GCM)

Google Cloud Messaging (GCM) is a service that helps you to send data from your servers to your applications. Learn more

To access the GCM stats for your application, you need to link a GCM sender ID that you use for this application by providing your GCM API key.

Once your app is published, you can access the GCM statistics for your application from the statistics page.

Link a sender ID

LICENSING & IN-APP BILLING

Licensing allows you to prevent unauthorized distribution of your app. It can also be used to verify in-app billing purchases. Learn more about licensing.

YOUR LICENSE KEY FOR THIS APPLICATION

Base64-encoded RSA public key to include in your binary. Please remove any spaces.

```
MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAny2LM1xr3qOzmmCkUb/ONu2PBFcdWEmU6QRz08L2pmBj
TJ6ZaYmzoOvPTqDUhCv8eK3DZUpUBtaed3s+ROB5fK2lScWh5a9fyFoyhazhXCma+ShXJnxFWBCIEyMxctNibKuP
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dTKrs0ZhfaXbJnAh5BUaYVD2woYauoy7YwIDAQAB
```

Publish

GOOGLE PLAY GAME SERVICES

Google Play game services let you add social gaming features to your games on Android, iOS and the web. Users can be matched with opponents in their Google+ Circles, view leaderboards to compare their scores with others, unlock achievements, and sync their game progress across their devices. Learn more

Use Google Play game services in this app

Want to know a bit more before you start?

See a step-by-step guide for using Google Play games services

APK TRANSLATION SERVICE

Translate your application to target users in other languages?
Purchase professional quality translation from qualified vendors in 3 easy steps.
(1) Upload your xml resource files (2) Select target languages (3) Pay Learn more

Start or check progress

APP INDEXING FROM GOOGLE SEARCH

Deep link into your app from Google search

Through App Indexing, Google will add deep links to your app in Google Search results on Android. Just like your website, your app needs to be indexed by Google before this can happen. To get started, verify your official website by clicking on the button below.

Verify website

If your app supports HTTP deep linking based on your website, indexing can start after verification completes. Contact your website's Webmaster to complete the verification process using Google Webmaster Tools. Once indexing begins, app errors will be reported in Webmaster Tools alongside website errors in the “Crawl Errors" section.

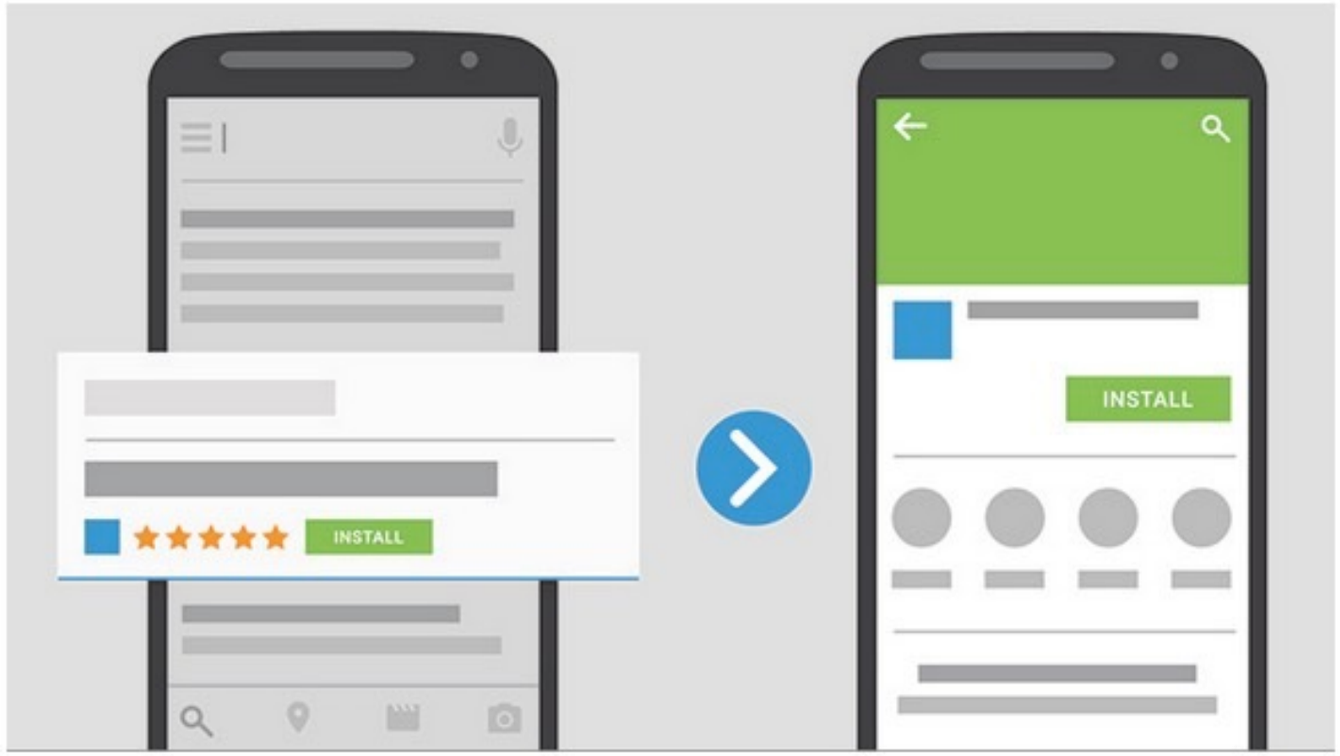
To facilitate the indexing process, you can provide more details on which links your app supports through website markup, your sitemap, or the App Indexing API. For more information on these options, and for instructions on what to do if your app does not support HTTP deep linking, see our App Indexing developer guidelines.

Publishing an app - App Indexing

Get more users for your app

App Indexing helps you get your app found in Google Search. Once your app is indexed, mobile users who search for content related to your app can see an install button to your Android app in Search results. This helps you increase your install base.

LEARN MORE

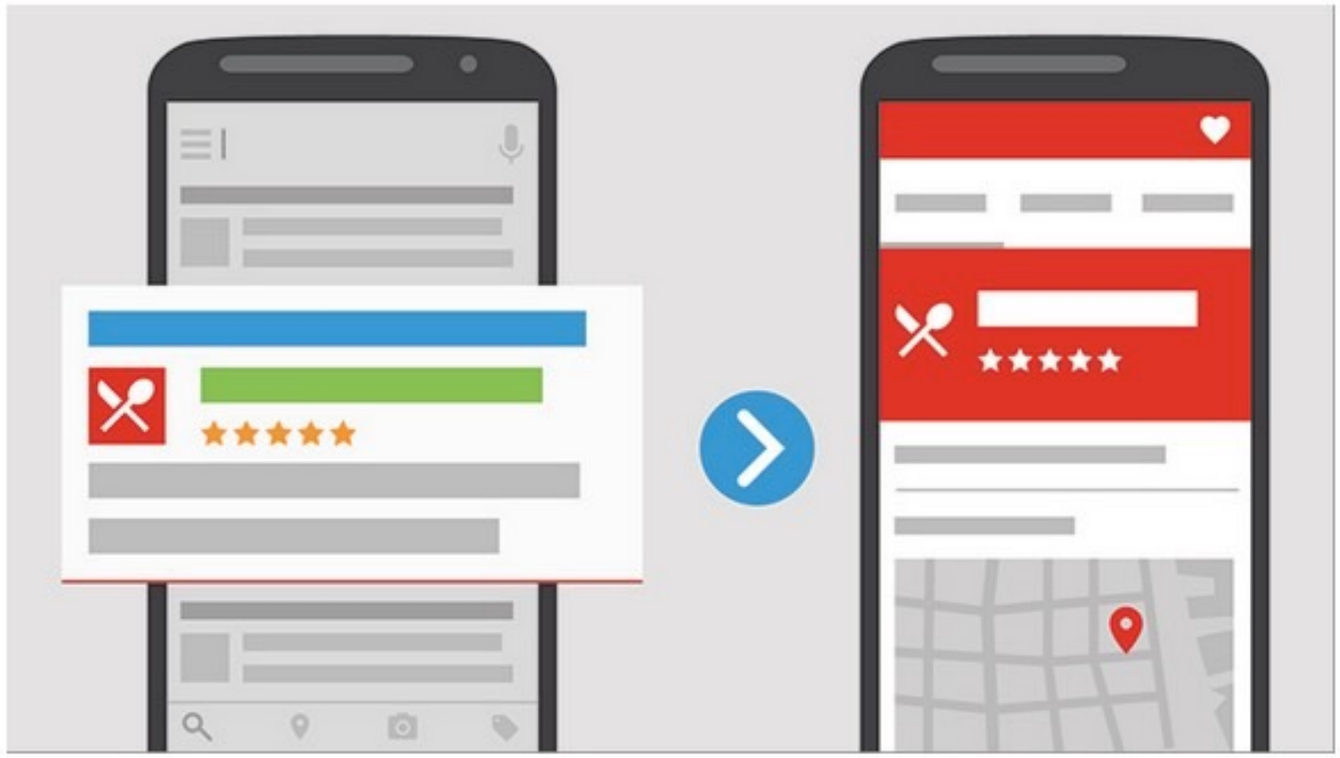


Keep your users coming back

App Indexing also helps you keep your users coming back. When mobile users with your app installed search for something relevant to your app content, Search results can link directly to the relevant content in your app. This keeps your customer base engaged.

APP INDEXING FOR ANDROID

APP INDEXING FOR IOS

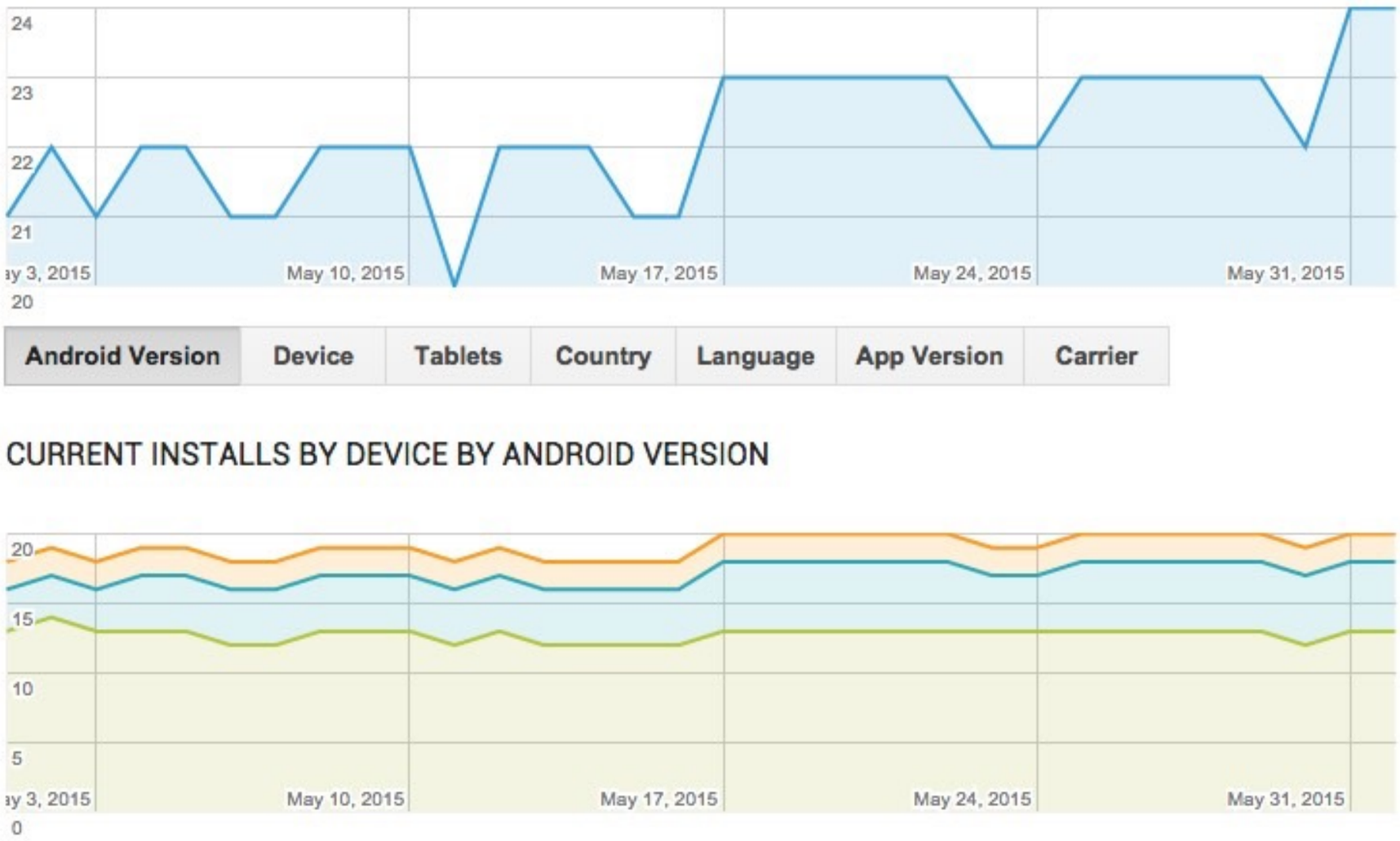


STATISTICS

Current installs by device **for May 1, 2015 - Jun 1, 2015** Export as CSV

Show: **last month** 3m 6m 1y all

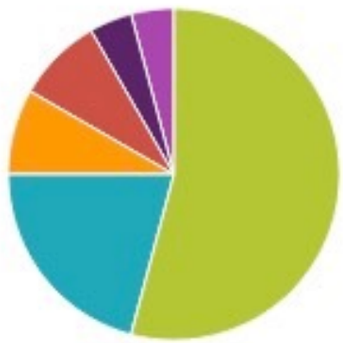
The number of active devices on which the application is currently installed.
Learn more



Android Version | **Device** | **Tablets** | **Country** | **Language** | **App Version** | **Carrier**

CURRENT INSTALLS BY DEVICE BY ANDROID VERSION

CURRENT INSTALLS BY DEVICE ON JUN 1, 2015



	YOUR APP		ALL APPS IN ENTERTAINMENT
Android 4.4	13	54.17%	38.90%
Android 5.0	5	20.83%	12.72%
Android 4.0.3 - 4.0.4	2	8.33%	6.15%
Android 4.2	2	8.33%	13.22%
Android 4.1	1	4.17%	14.43%
Android 4.3	1	4.17%	6.17%

Publishing an app

Statistics

Finance

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Revenue

Buyers

Conversions

Ratings & Reviews

Crashes & ANRs

Optimization Tips

Cloud Test Lab

APK

Store Listing

Content Rating

Pricing & Distribution

In-app Products

Services & APIs

FINANCE OVERVIEW

We don't currently have any aggregated revenue data for your application, please check back soon.

REVENUE	Last day	Last 7 days	Last 30 days
Total	—	—	—
App sales	—	—	—
In-app products	—	—	—
Subscriptions	—	—	—

ARPPU
Last 30 days
—

Avg. value per transaction
Last 30 days
—

BUYERS	Last day	Last 7 days	Last 30 days
Total	—	—	—
New	—	—	—
Returning	—	—	—

All figures on this page represent estimated sales (amounts paid by users including tax). Learn more
This page includes data up to Tue, 2 Jun 2015 00:00:00 +0000. All dates and times are in UTC.

Publishing an app

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RATINGS & REVIEWS

Export as CSV

# of Ratings
5

# of Reviews
2

★★★★★ 3
★★★★☆ 1
★★★☆☆ 1
★★☆☆☆ 0
★☆☆☆☆ 0

Average Rating
4.40

REVIEWS

Filters ▼

Sort by **Last updated**

★★★★★
Xperia Tipo (ST21i2)

mohammad najafi on **Mar 22, 2015** at **5:55 AM**

So good

Reply to this review

★★★☆☆
App version 1.1
Galaxy Proclaim (SCH-S720C)

Shannon Farley on **Oct 5, 2014** at **6:36 AM**

AR crash ! I liked the smokin 57 chevy or whatever it is and the coastguard chopper is awesome but . . . everytime I tried to close the app it re-started my phone. samsung proclaim from straight talk, running 2.3.?

Reply to this review

Page **1** of **1**

Ratings and reviews are also available for programmatic access through Google Cloud Storage and the gsutil tool. Your data, updated daily, is stored in this private bucket:

```
pubsite_prod_rev_16817527299689206566
```

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CRASHES & ANRS

Export as CSV

Type

Crashes | ANRs

Show hidden

YES | NO

Last reported

Last 7 days

Android version

All versions

Application version

Current production (1

Device

Add filter

0 new crashes | 0 total crashes

No crashes found

Crash reports shown here are kept for 6 months. Bulk export of crash reports is available for 18 months.

USEFUL ANDROID RESOURCES

Android Developers

USEFUL TOOLS

Google Analytics

NEED HELP?

Help center

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CLOUD TEST LAB

ANNOUNCING: GOOGLE CLOUD TEST LAB

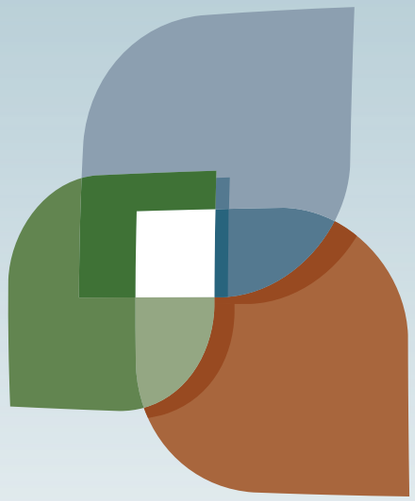
The Google Cloud Test Lab will test your app on a wide range of the most popular physical Android phones and tablets.

As you publish APKs to the Play alpha and beta tracks they will be automatically sent to our device lab without requiring you to make any changes.

The Cloud Test Lab service will install your app and then create user-like interaction with it, tapping and dragging on the screen to explore reliability across diverse hardware. Reports on the test, including screenshots and full debugging traces for any issues uncovered, can be viewed right here in the Play Developer Console.

Sign up below for early access to the Cloud Test Lab service!

Sign up



LUCI