
22 RULES IN MOBILE APP TESTING

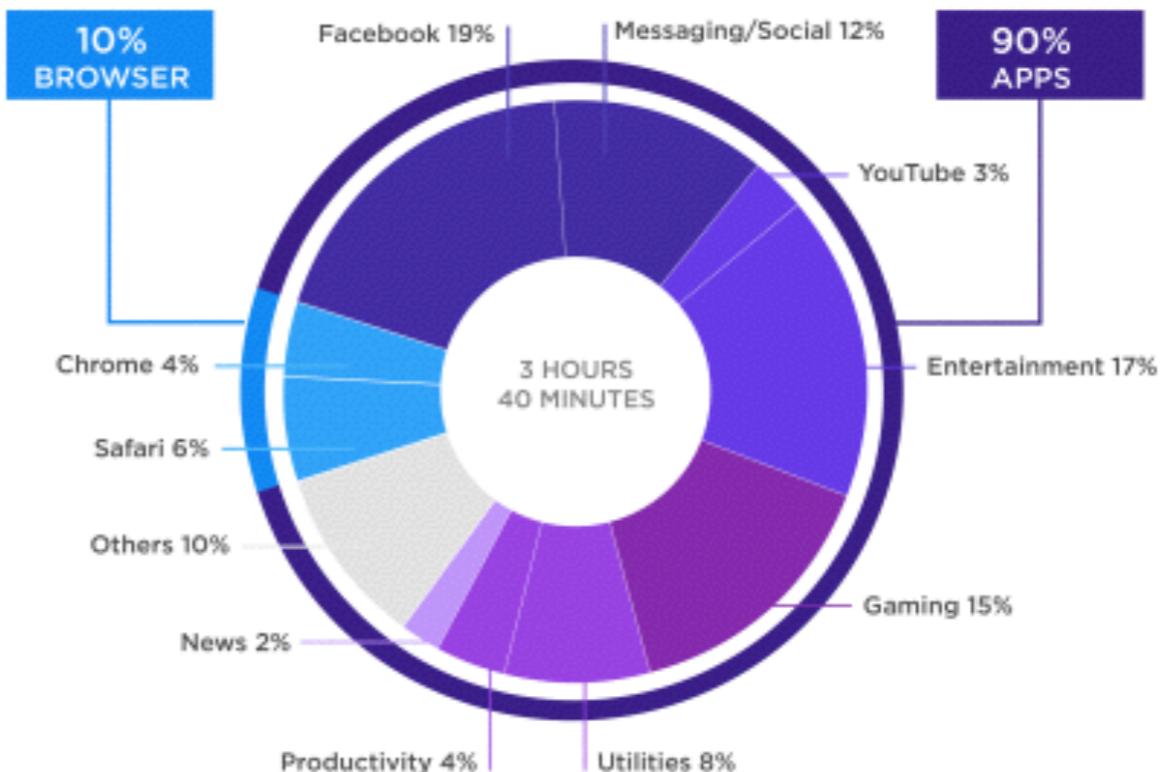
by HuangYong



中国工信出版集团 人民邮电出版社
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90% of Time on Mobile is Spent in Apps

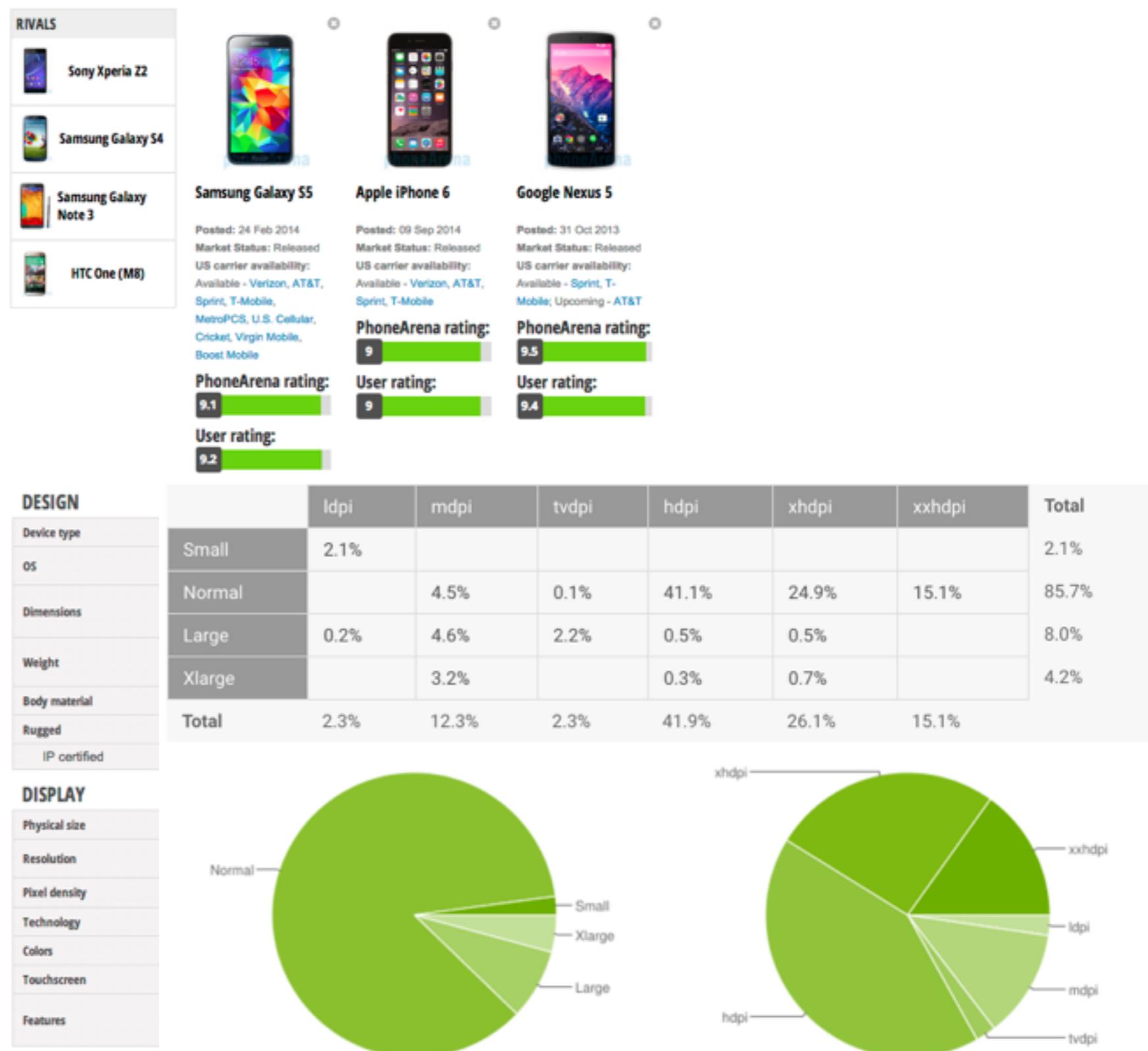


© FLURRY

Source: Flurry Analytics, comScore, Pandora, Facebook, NetMarketShare. Note: US Jun 2015

1. Device & Platform

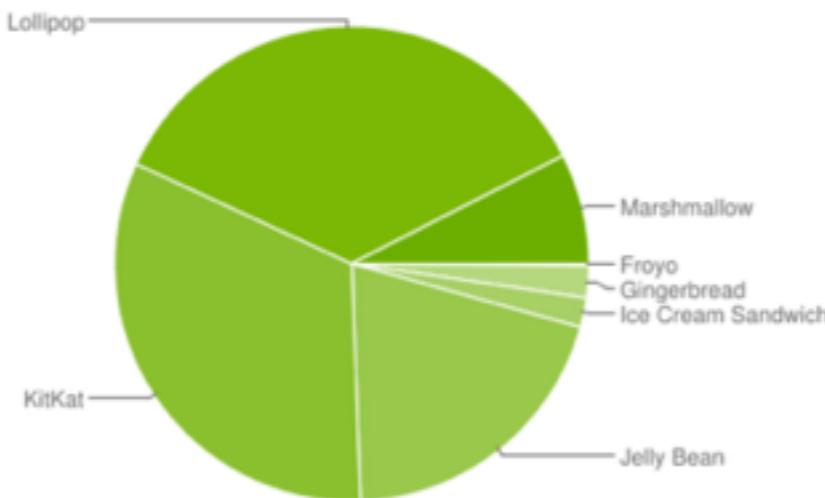
- OS
- Device Hardware
- Screen Size
- Resolution
- Pixel density



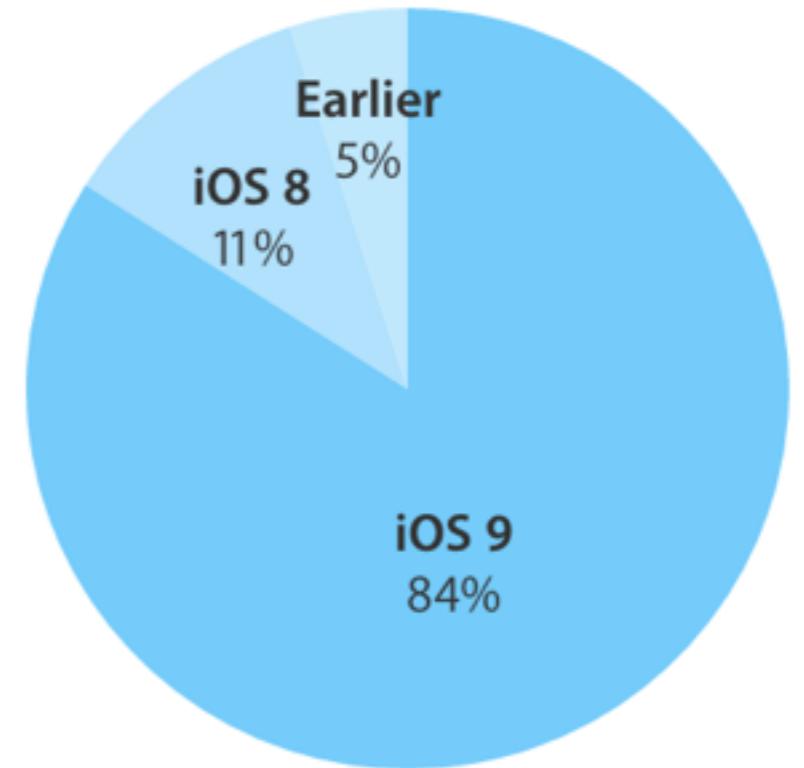
1. Device & Platform

- Google Analytics
- Adobe Omniture
- iOS market share
- Android market share

Version	Codename	API	Distribution
2.2	Froyo	8	0.1%
2.3.3 - 2.3.7	Gingerbread	10	2.2%
4.0.3 - 4.0.4	Ice Cream Sandwich	15	2.0%
4.1.x	Jelly Bean	16	7.2%
4.2.x		17	10.0%
4.3		18	2.9%
4.4	KitKat	19	32.5%
5.0	Lollipop	21	16.2%
5.1		22	19.4%
6.0	Marshmallow	23	7.5%



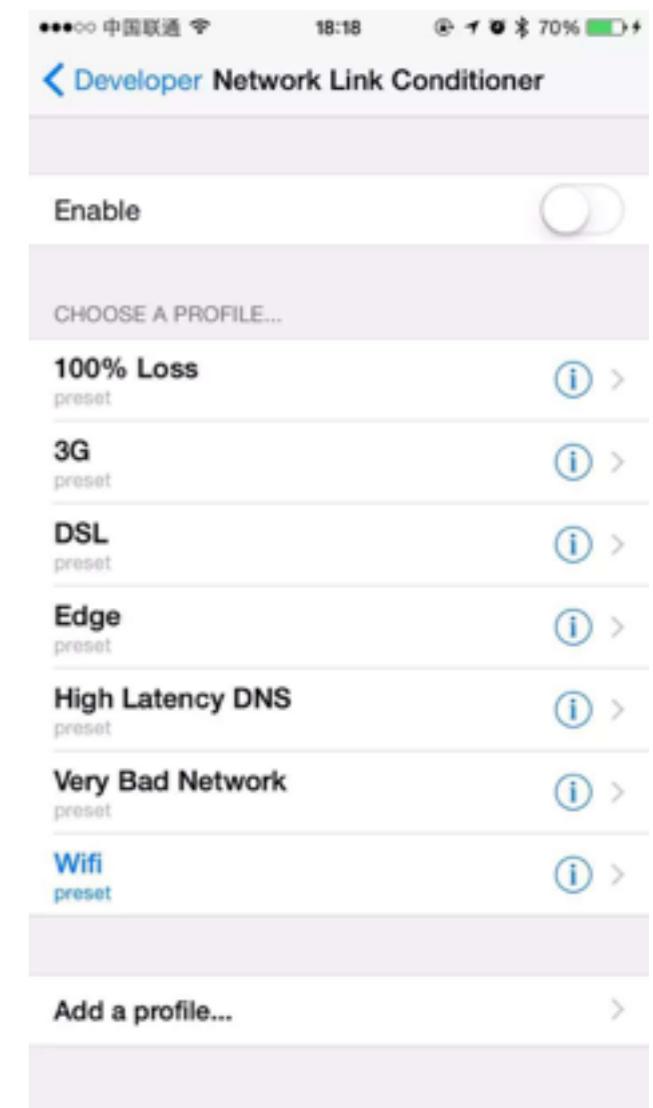
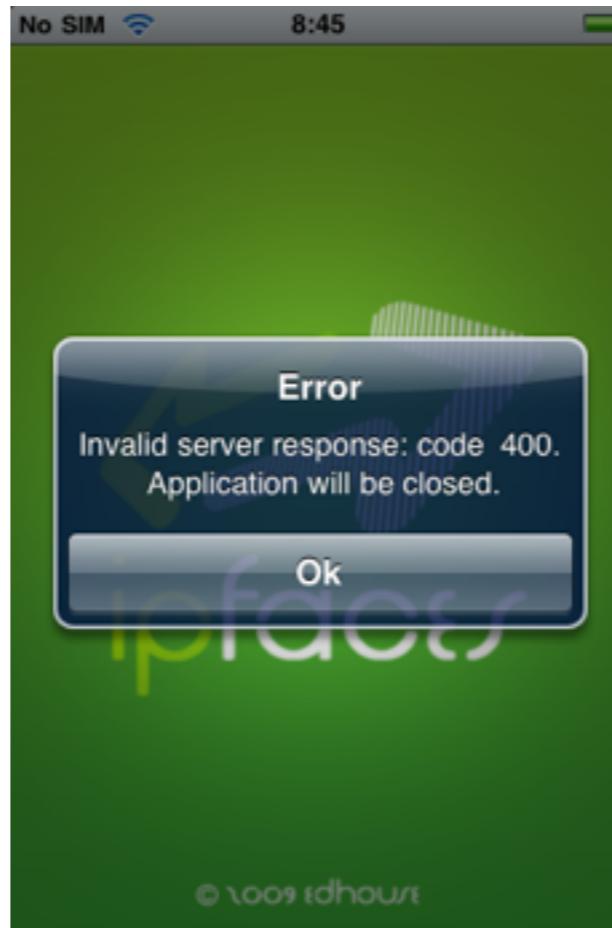
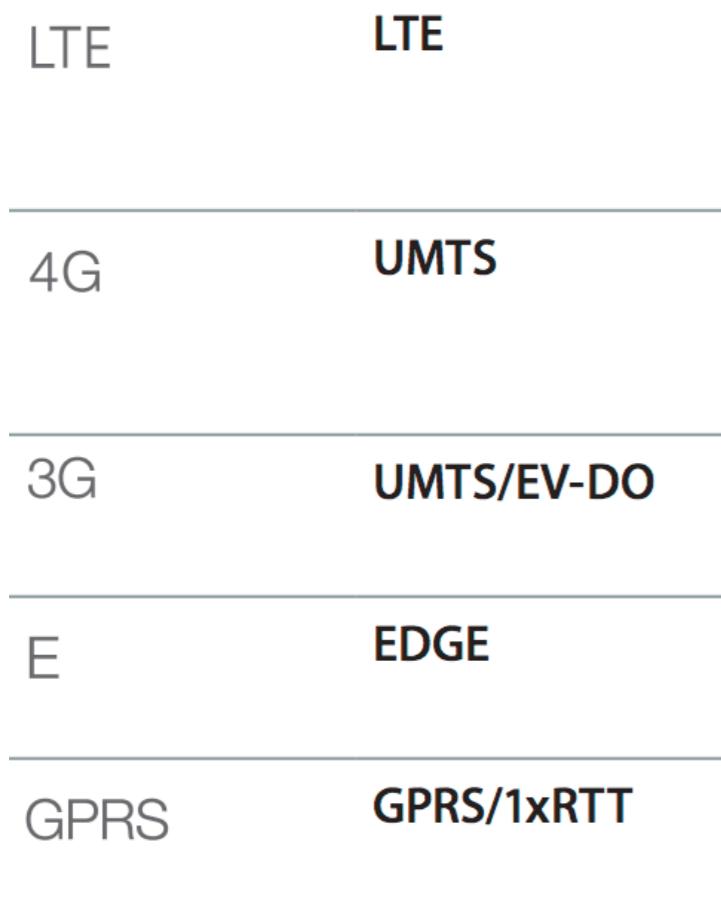
84% of devices are using iOS 9.



As measured by the App Store on May 9, 2016.

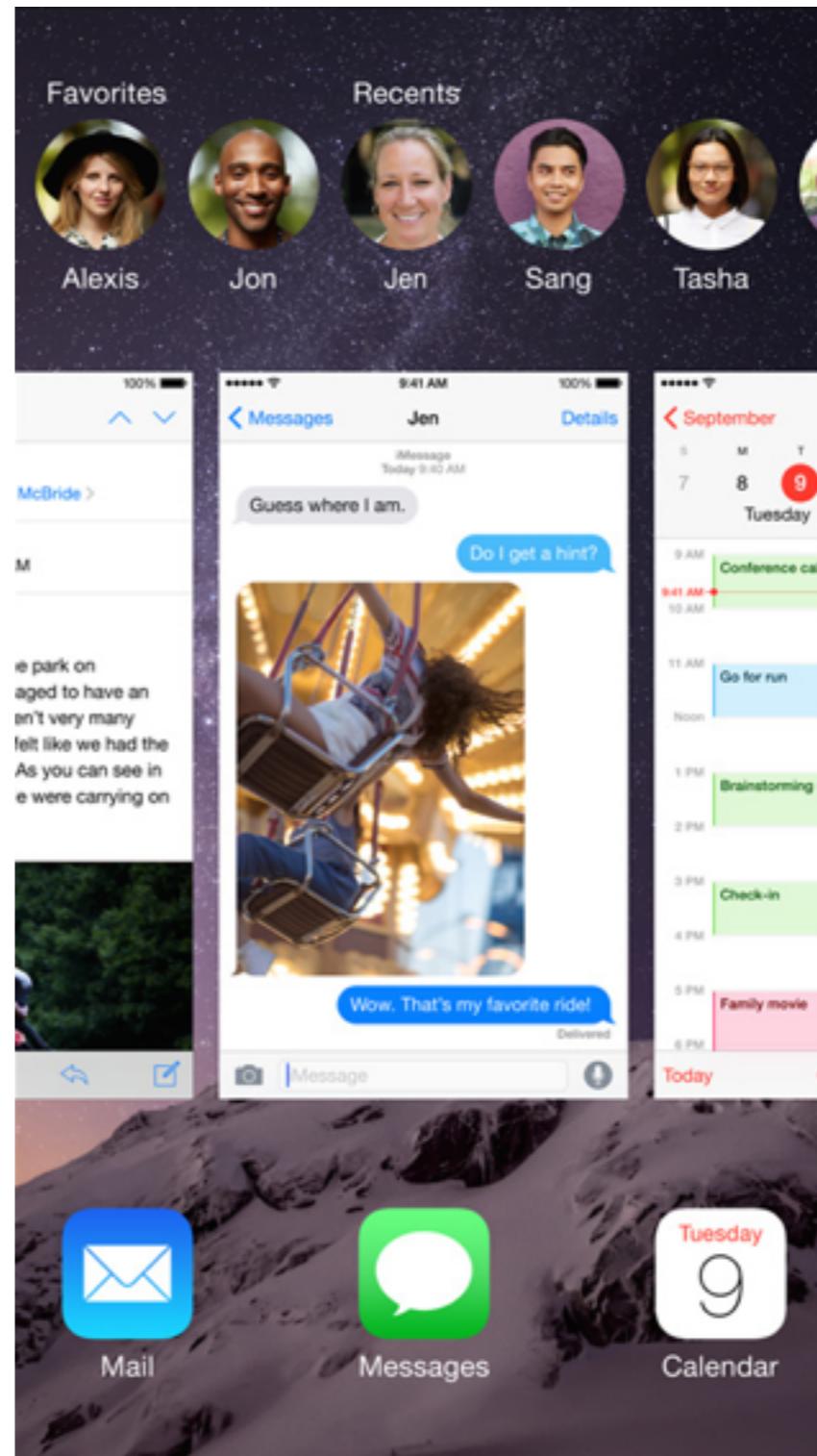
2 "Mobile" Testing

- Network switch
- Error message when issue happens
- Network Link Conditioner



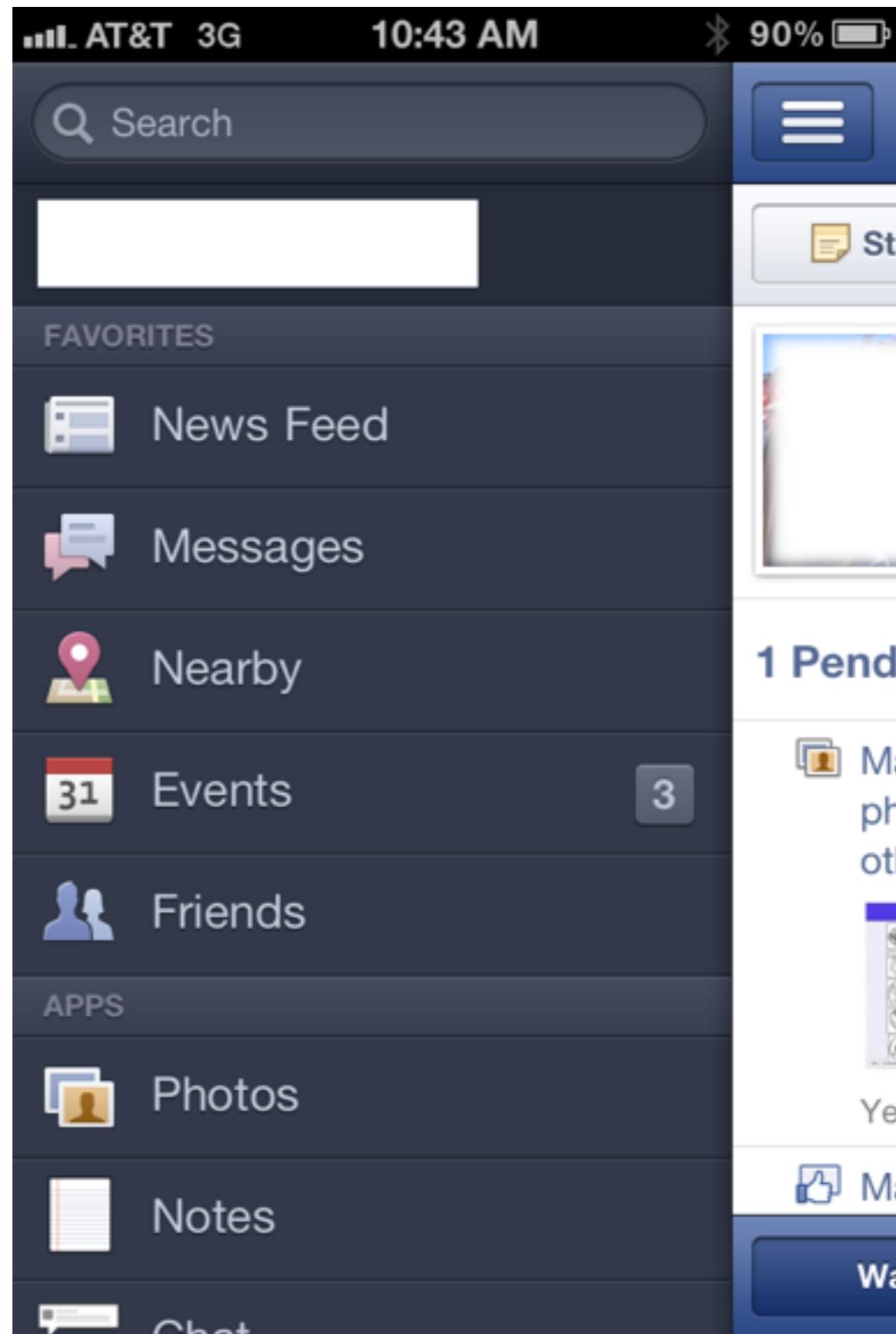
3. Multi-Tasking

- Switch between apps
- Restore app
- Fluency of switching



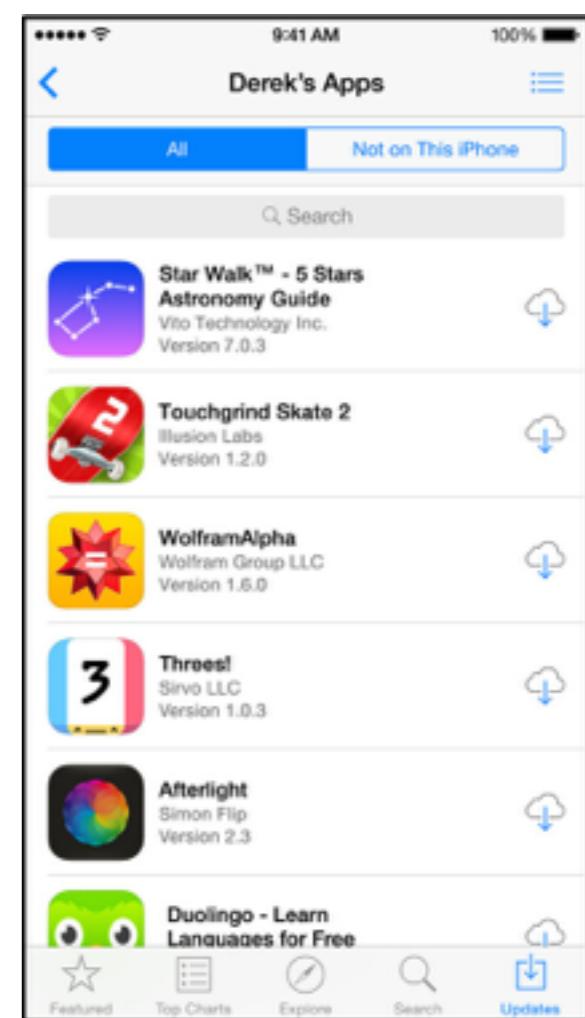
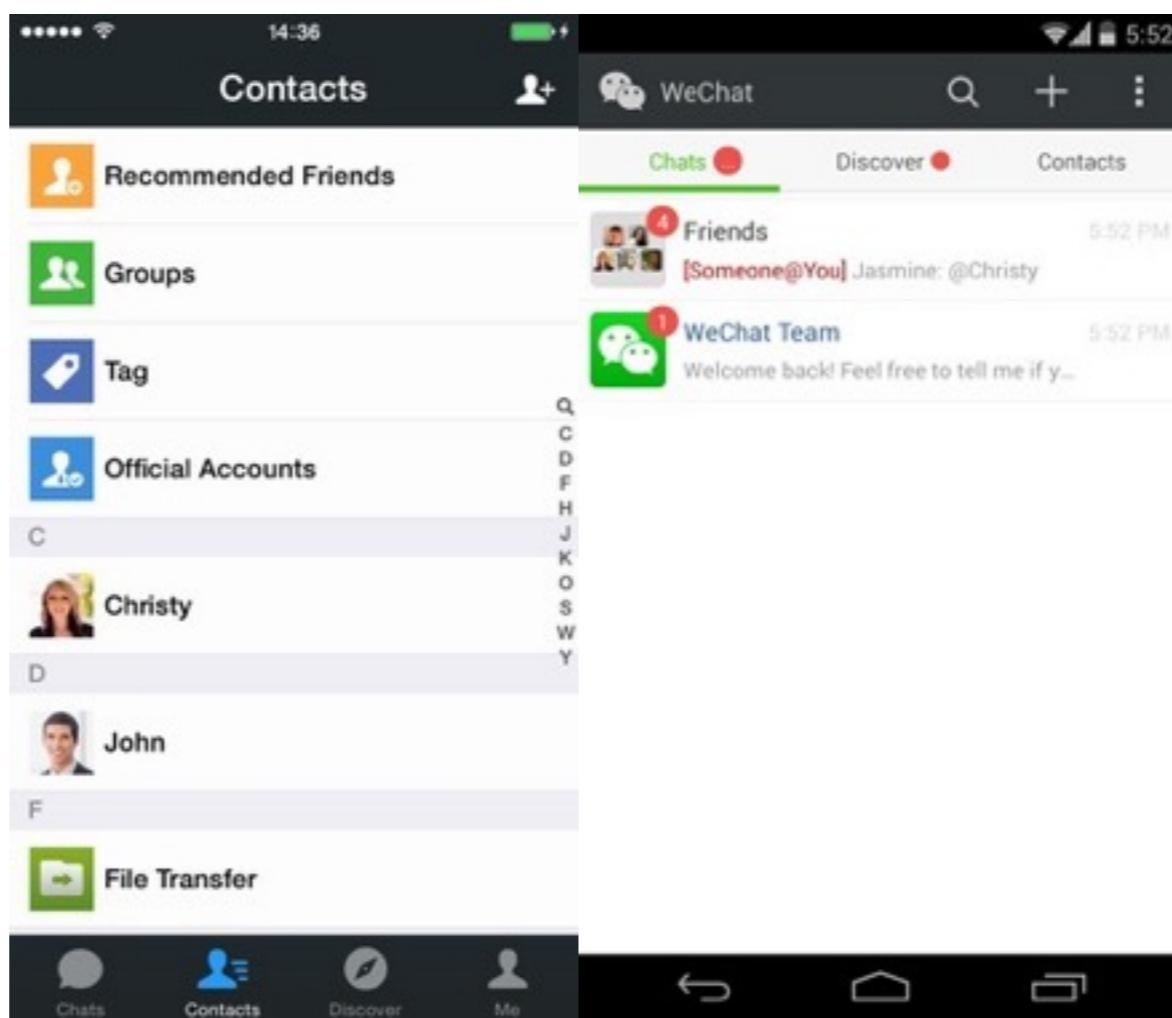
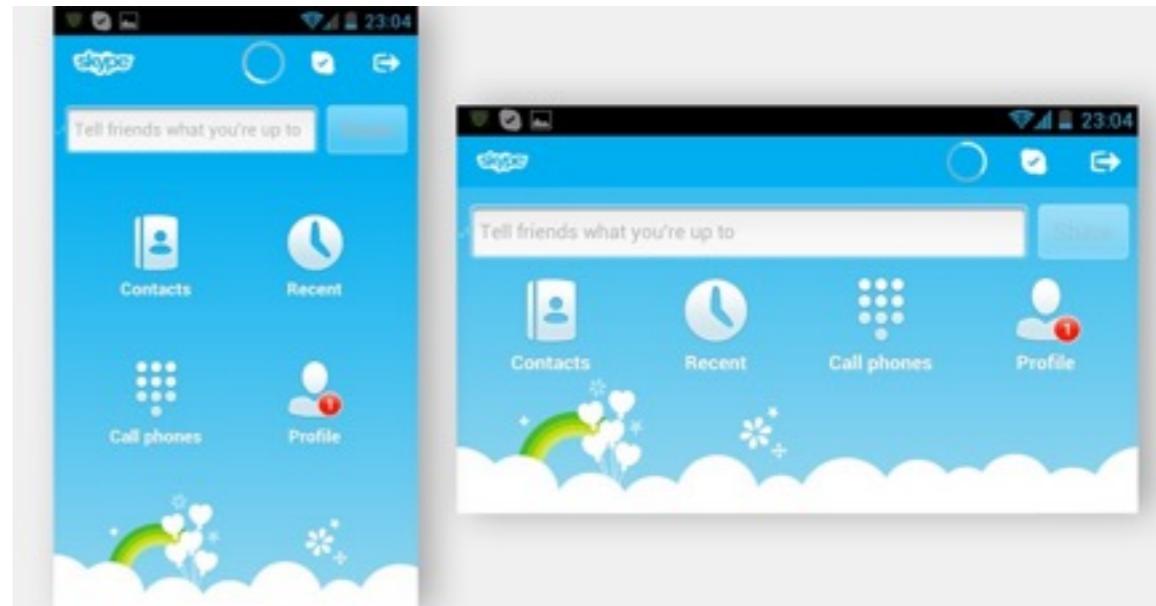
4. Avoid Gesture Conflicts

- App gestures
- OS gestures



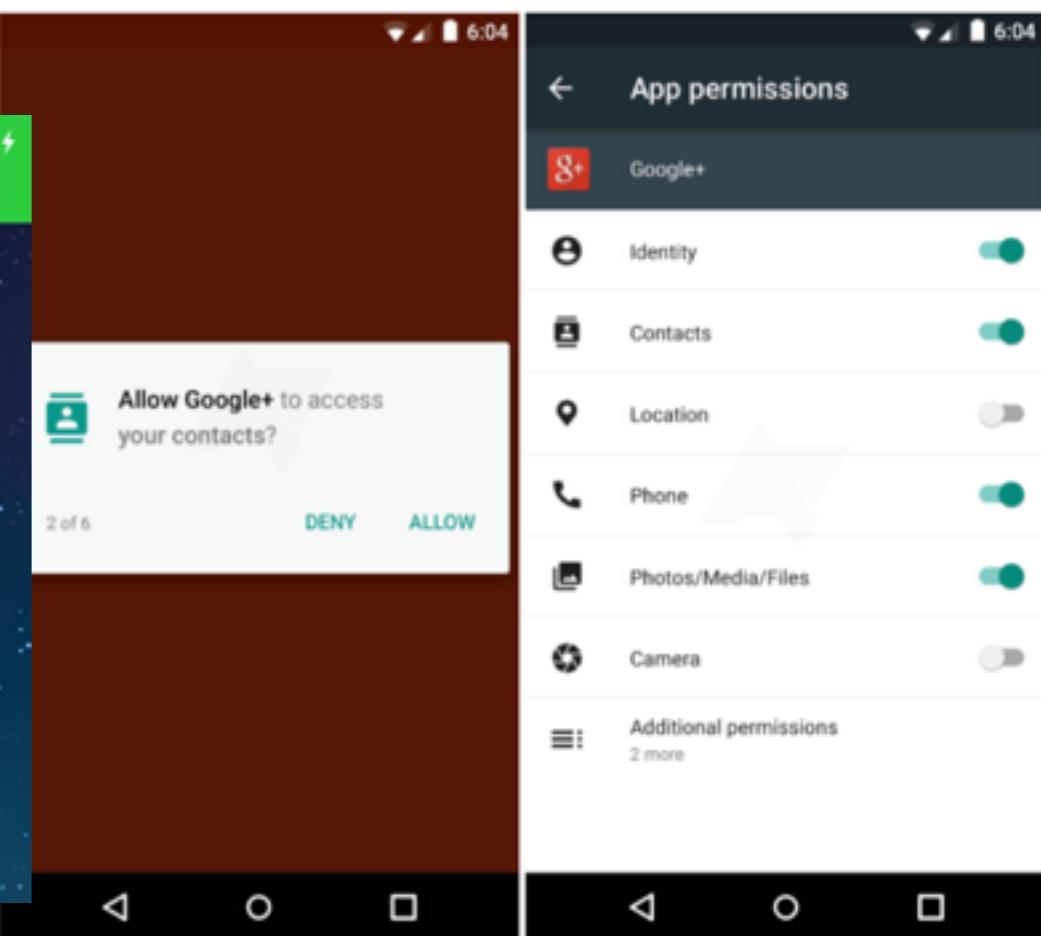
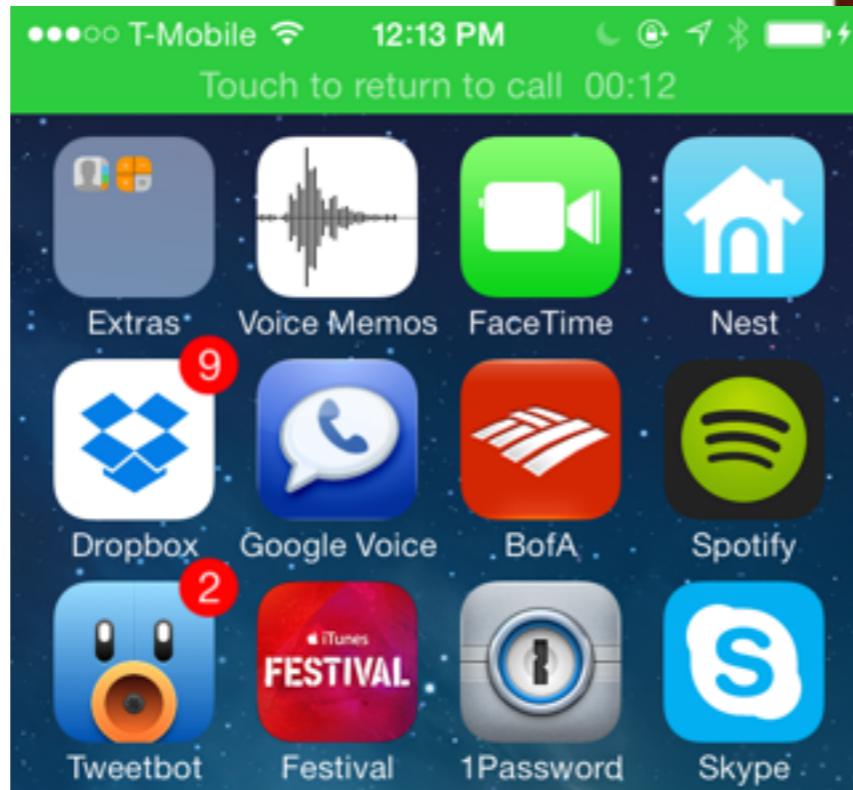
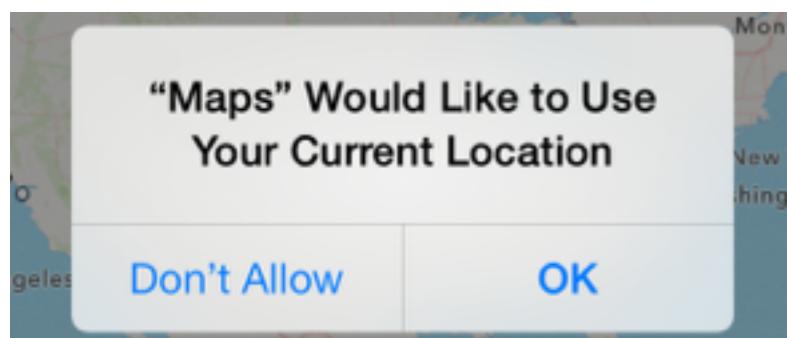
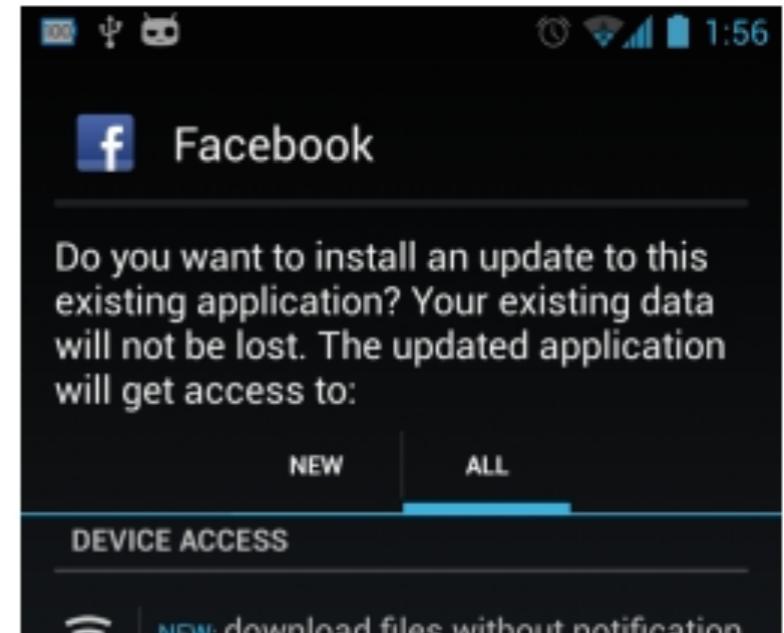
5. Usability

- Landscape and portrait display
- Accessibility
- Continuity
- WebView



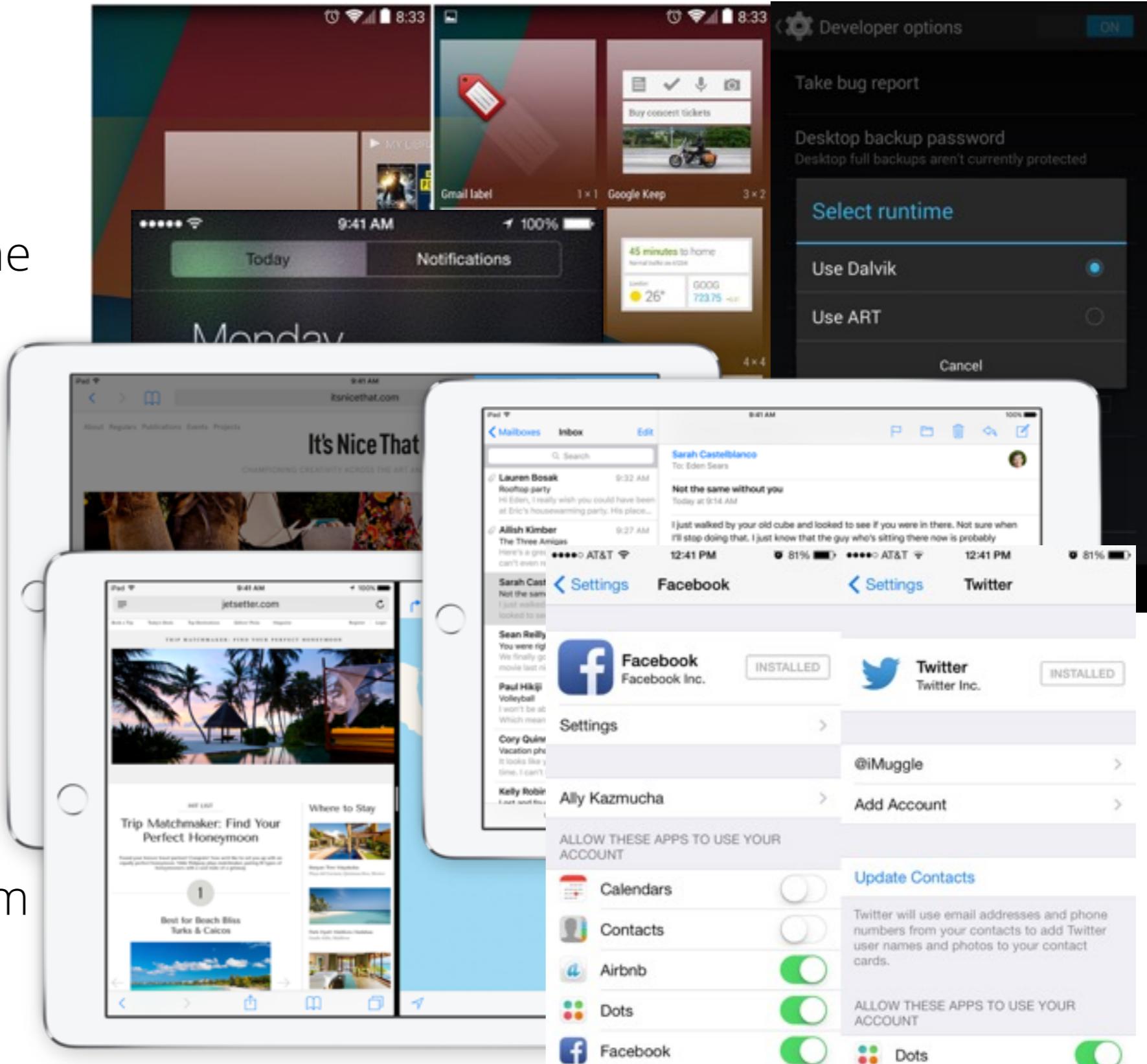
6. Display Message and Notification

- Access rights
- Sensors
- Notification bar
- Push message and notification



7. OS Specified Feature

- Android
 - Widget
 - Dalvik & ART Runtime
- iOS
 - Widget
 - SlideOver
 - SplitView
 - Picture in Picture
 - App setting in system settings



8. Sync among Different Devices

- Change on one device
- Sync to the others



9. Customised UI Impacts

- Samsung: TouchWiz
- HTC: Sense
- LG: UX
- Sony: Xperia



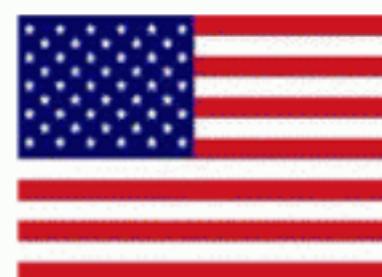
10. Support Files of Different Format

- PDF
- Office: Word, Excel, PowerPoint
- Image: PNG, JPG, GIF, BMP
- Video: MP4, 3GP and etc



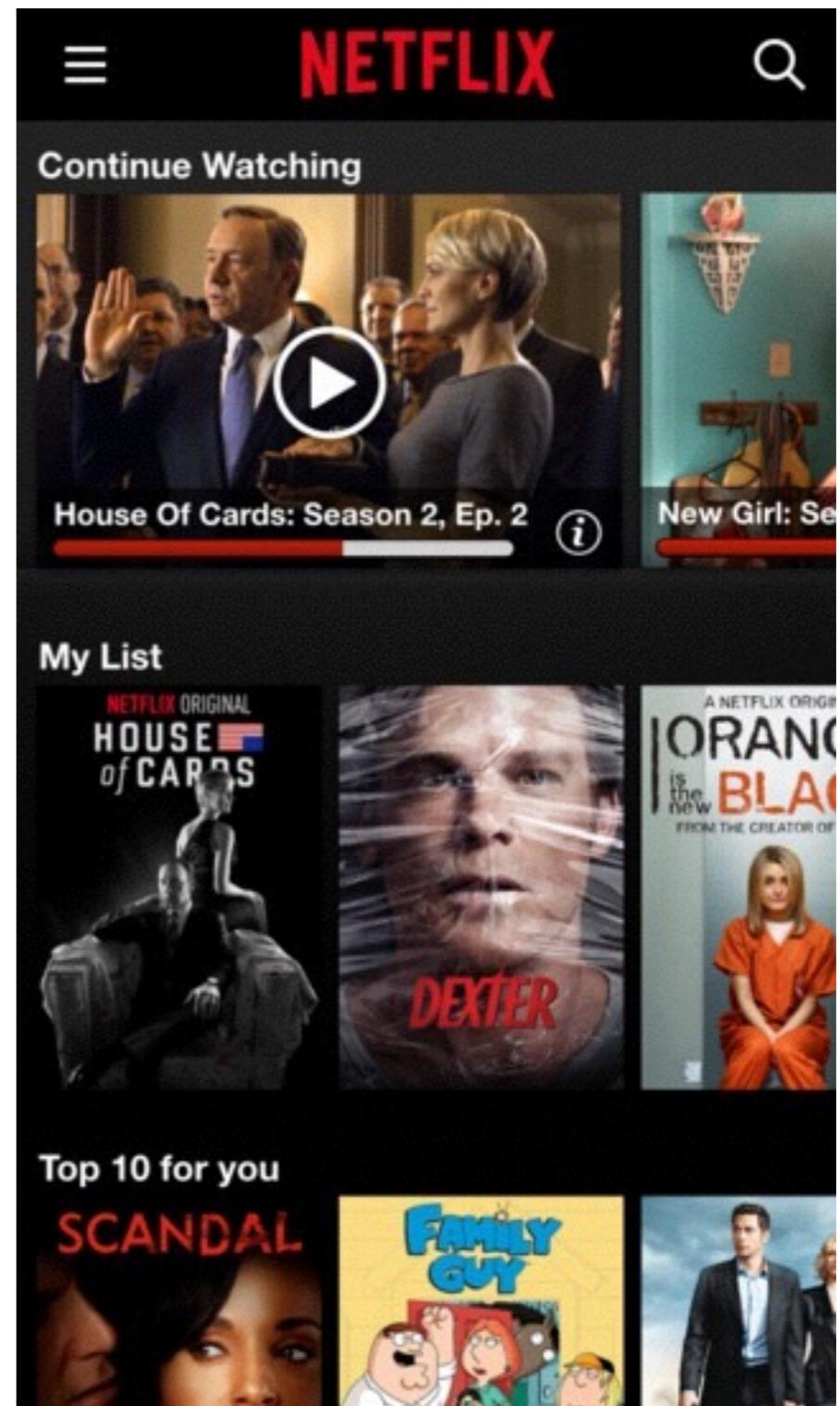
11. Support Different Languages & Locales

- Different languages
- Time and date format
- IME



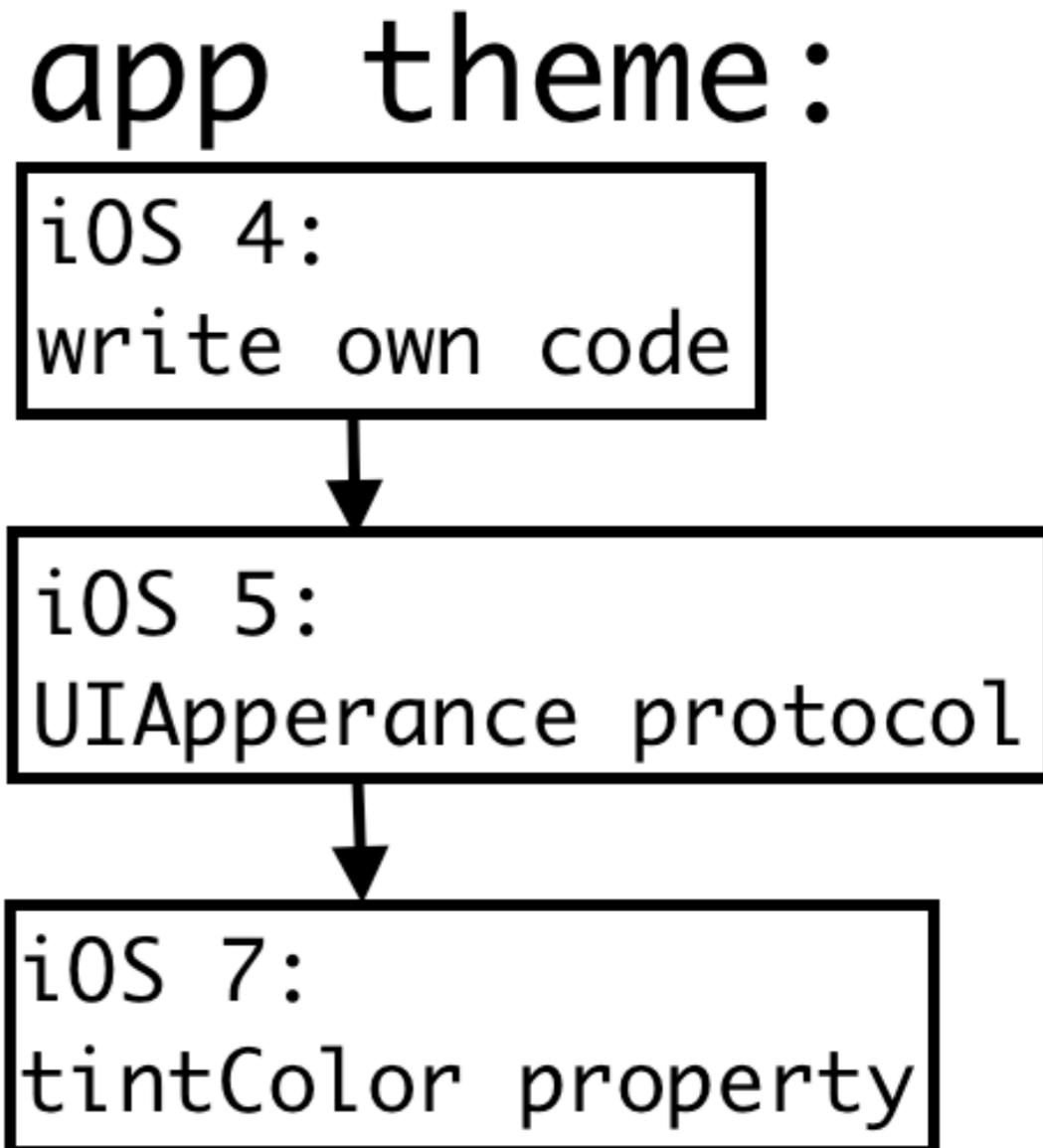
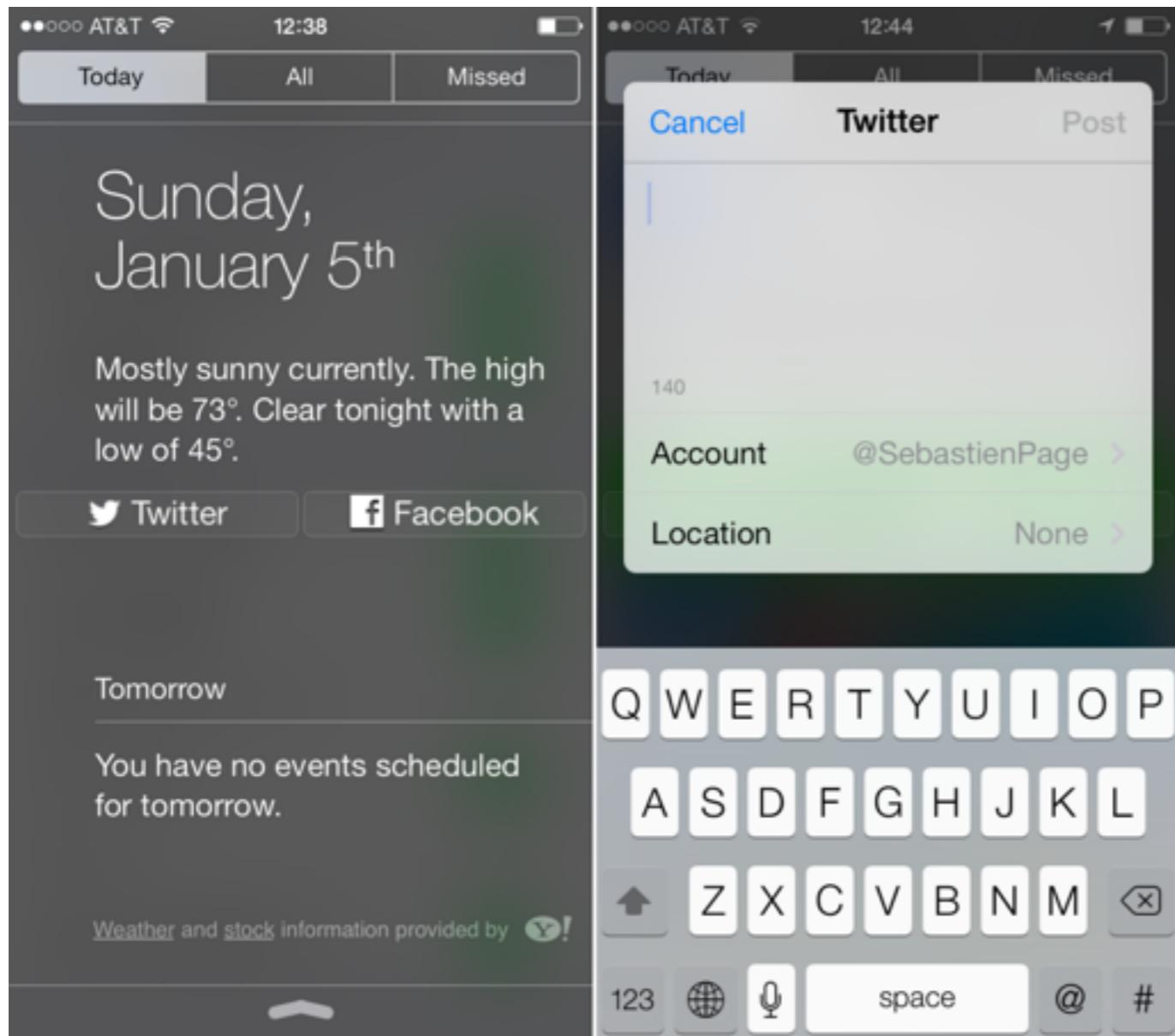
12 High Memory Usage Functions

- Limitations of app memory on different OS
- Large images
- Long audios
- Mess videos



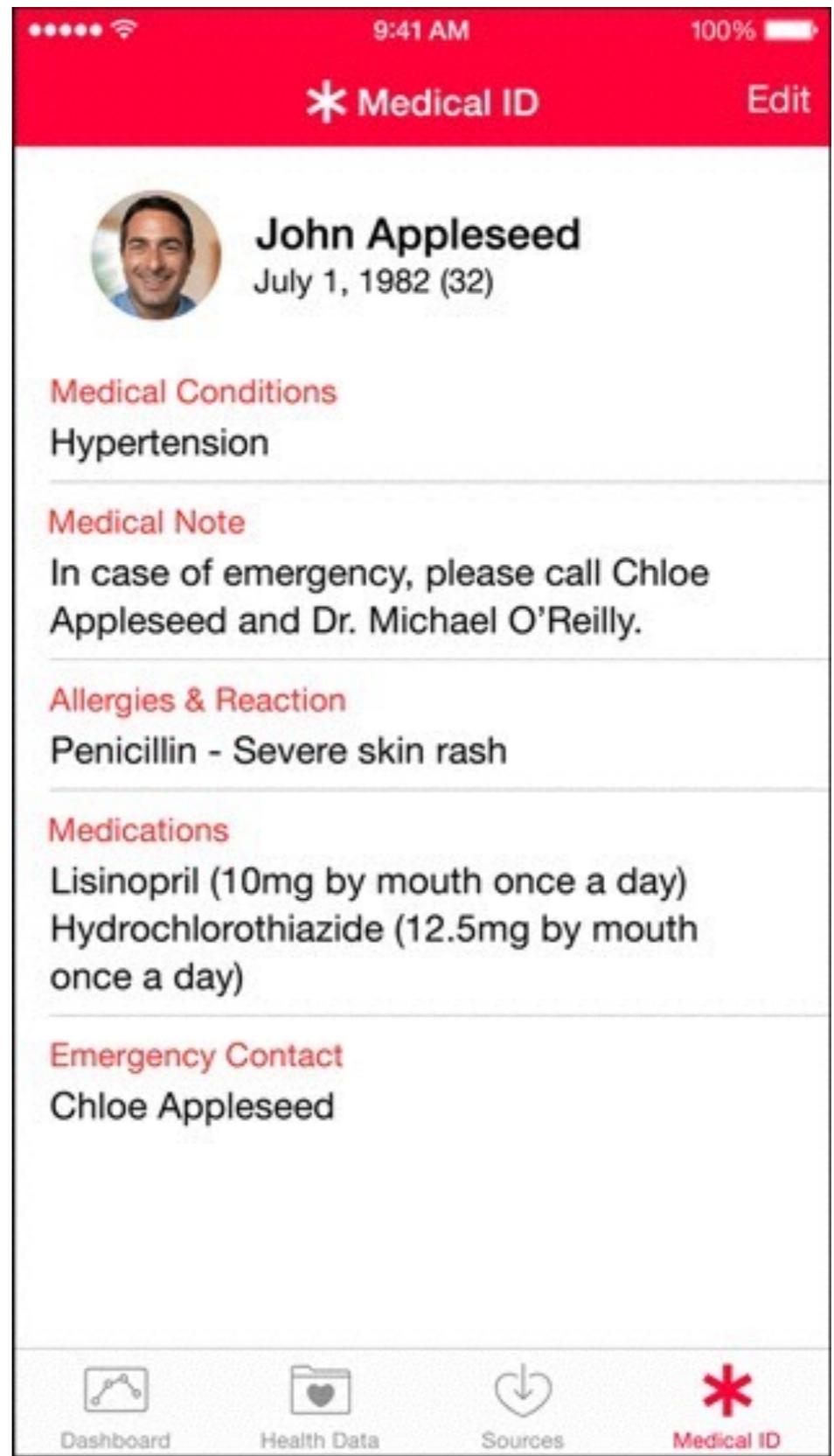
13. Non-standard Controls

- Controls provided by OS SDK
- Controls provided by 3rd party plugin and libs
- Controls implemented in app



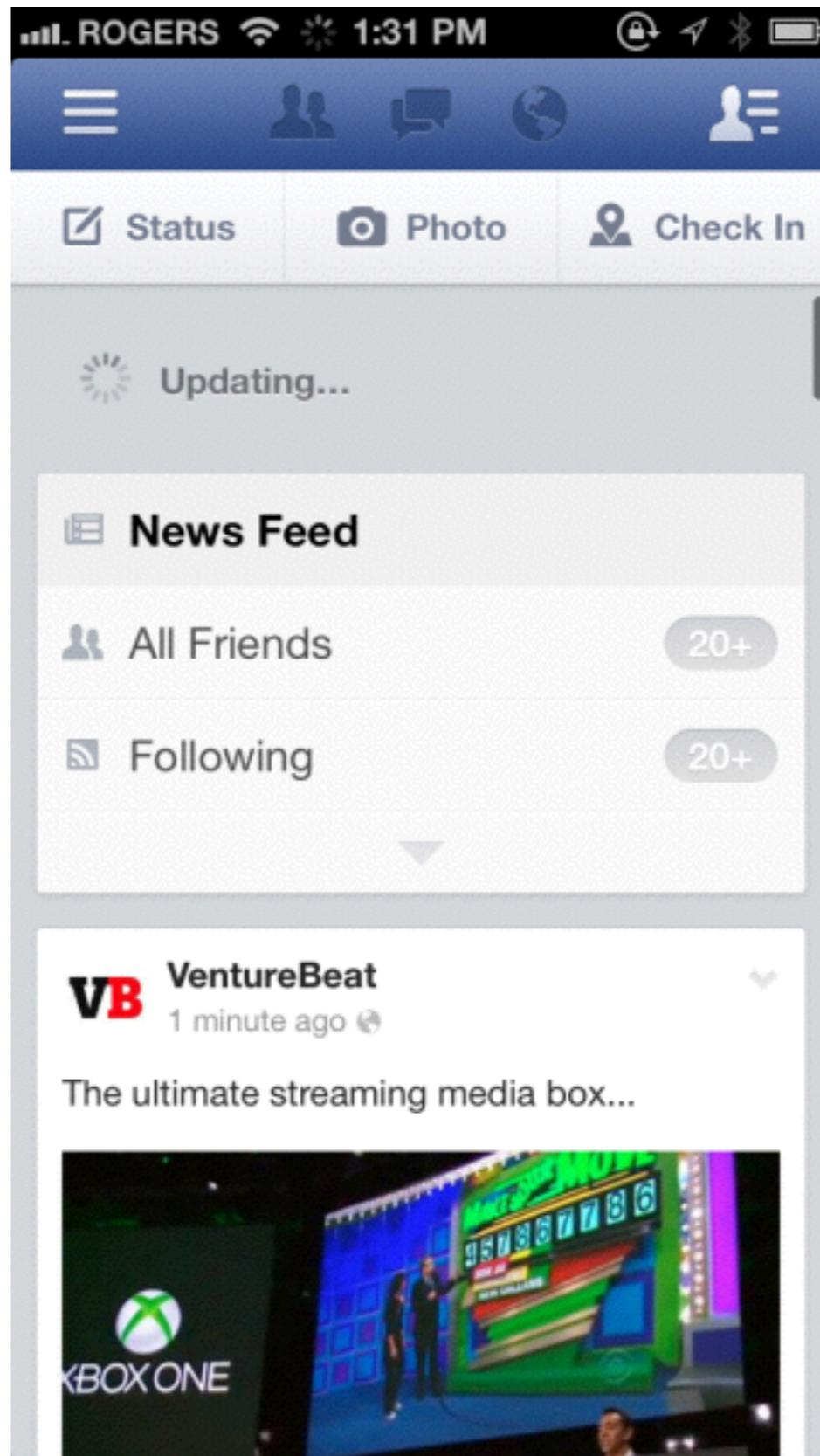
14. App Upgrade

- Overwrite/incremental upgrade
- User information/credential
- Database schema change
- Delete app



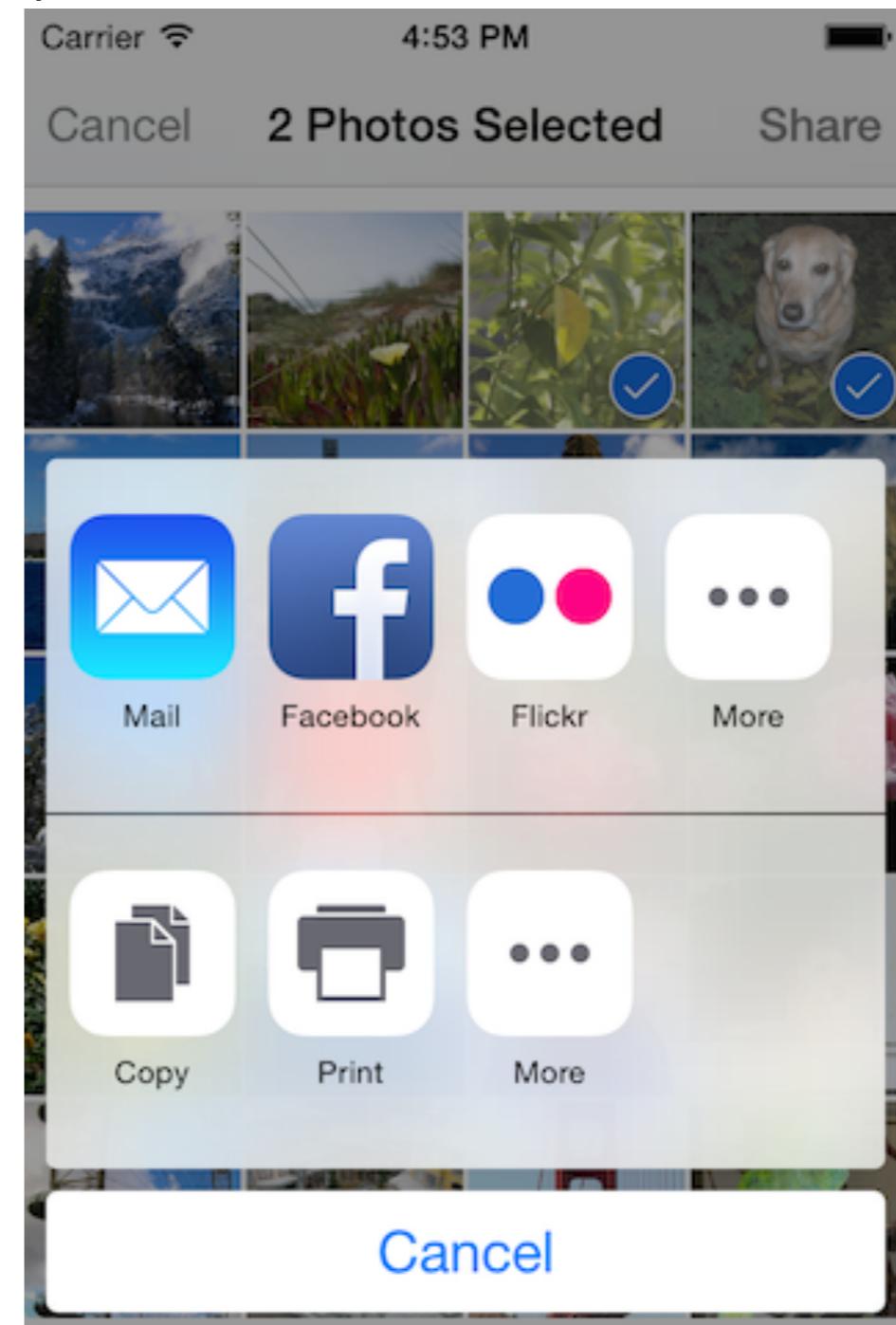
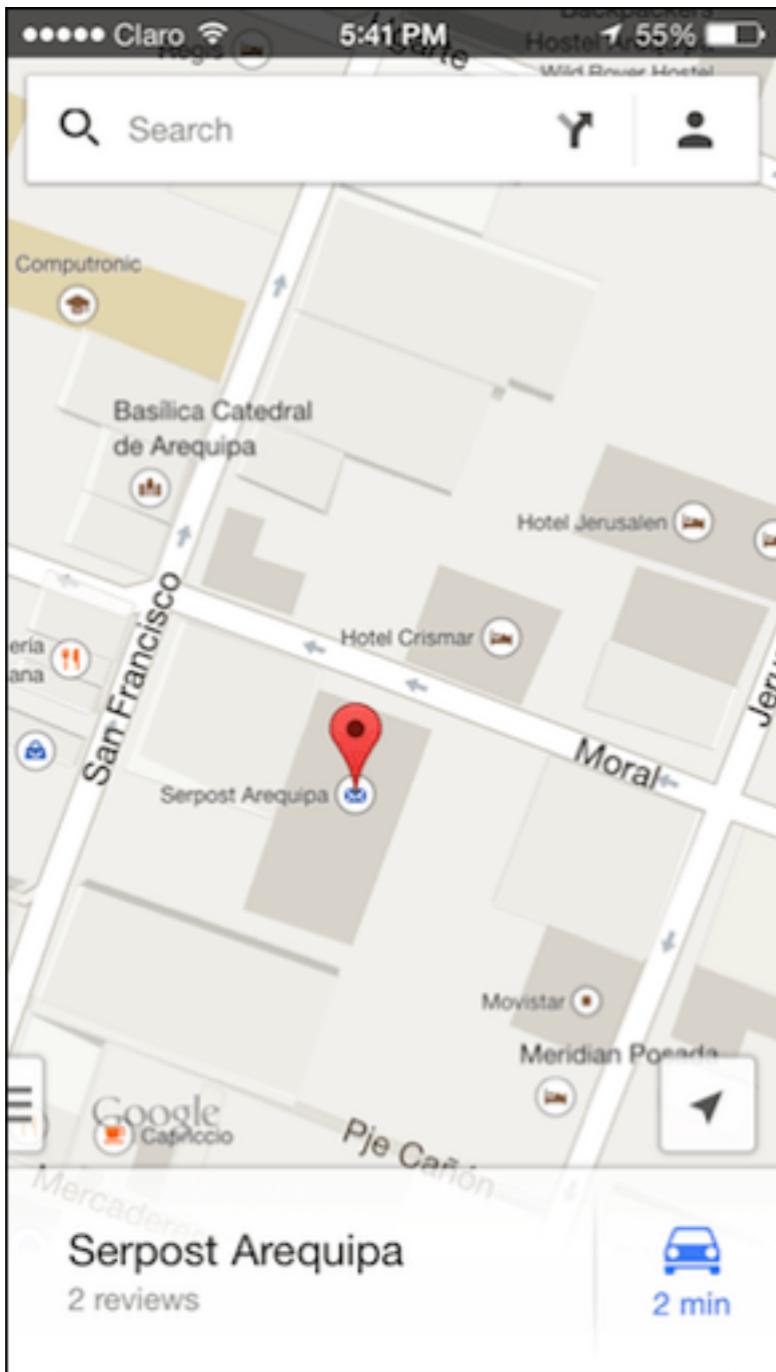
15. App Cache

- Update frequency
- Display updates



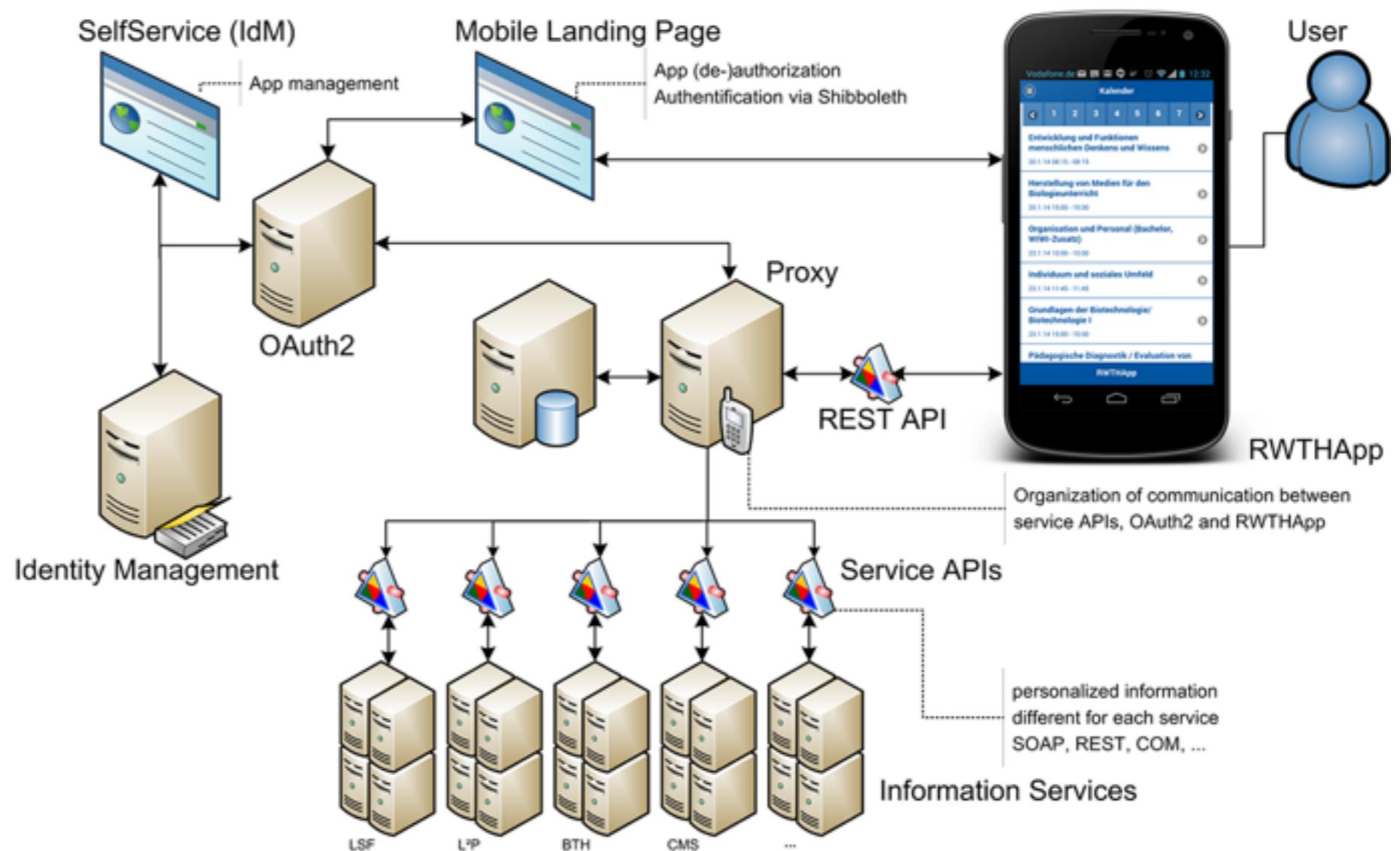
16. Integration of 3rd Party Apps

- Integrate apps
- Use functions of 3rd party app



17. App Dependency

- 3rd party system/app
- WebService
- API testing and integration testing



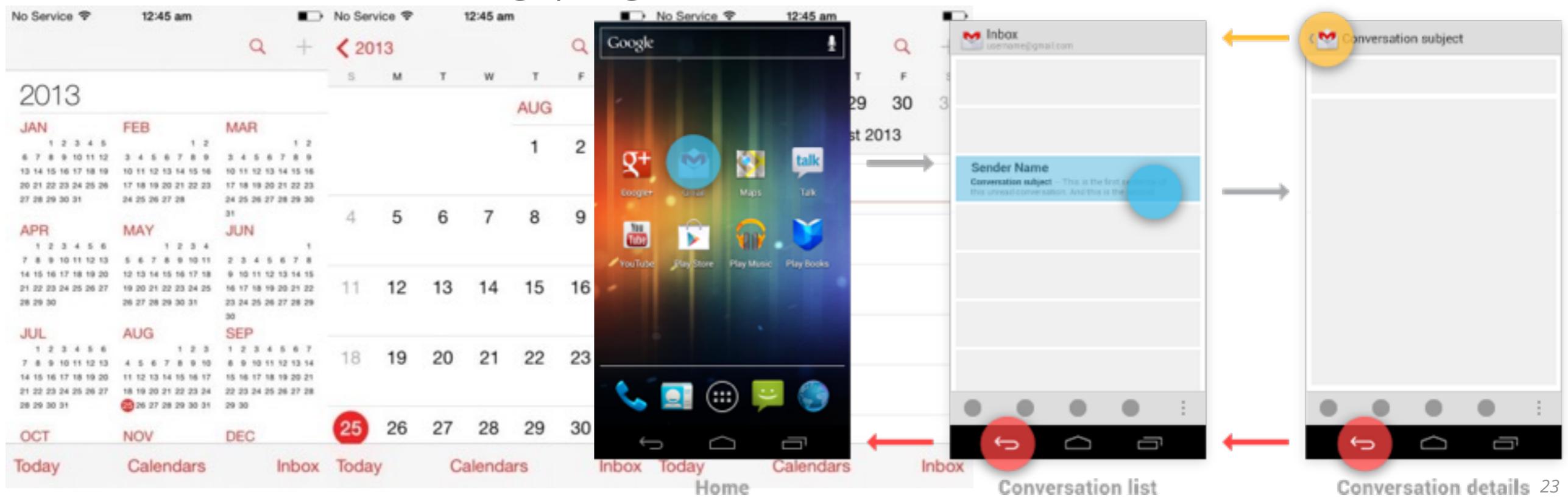
18. Automation and Exploratory Testing

- Automation Testing
 - Unit test / TDD
 - Automation testing for WebService
 - Use simulator/emulator
 - Automation testing based on user journey



18. Automation and Exploratory Testing

- Exploratory Testing
 - Real devices
 - Activity/view navigation
 - Data flow
 - Workflow among pages



19. Security testing

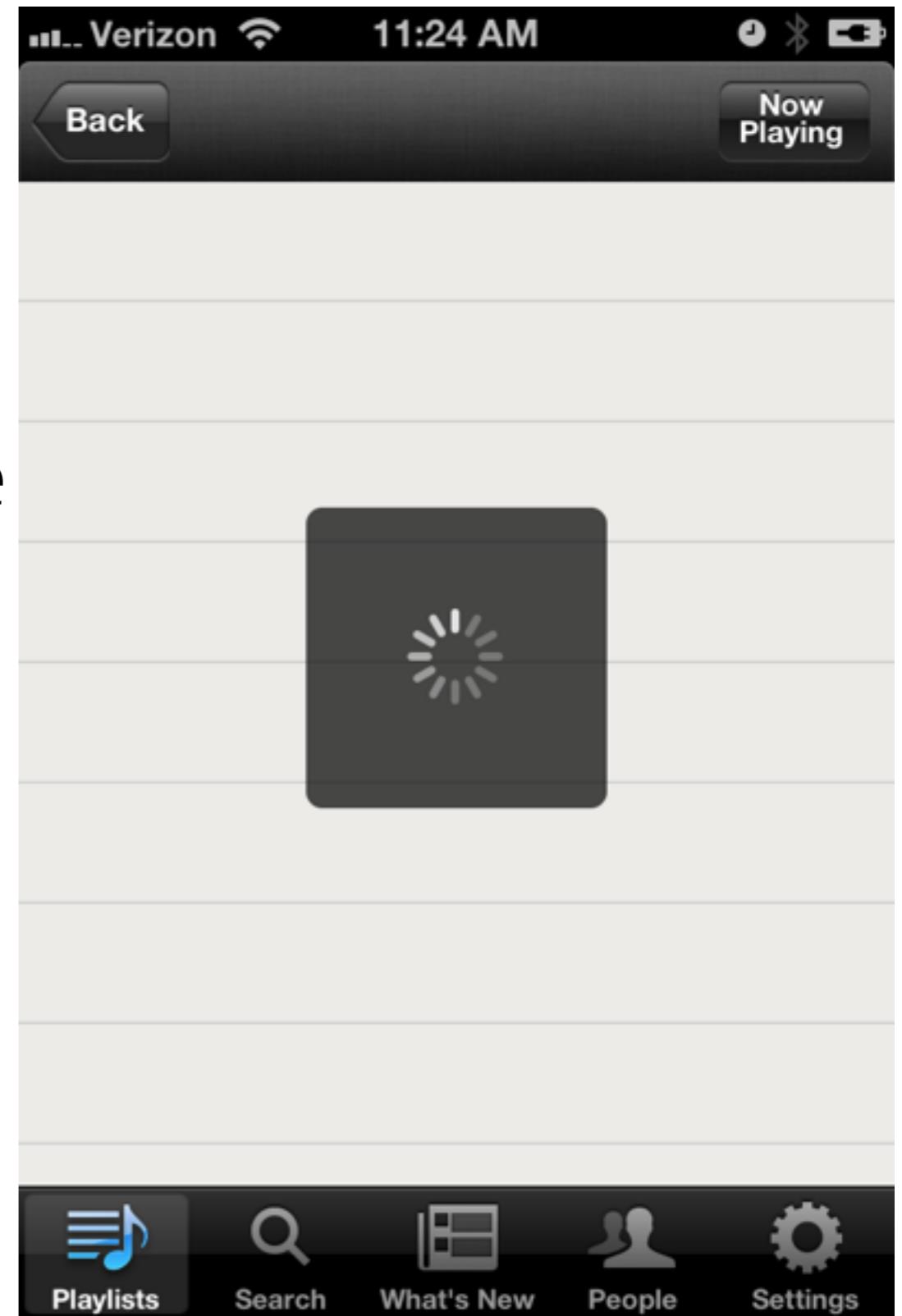
- WebService
- iPhone Configuration Utility
- Android Developer Tools: DDMS
- SQLite database file
- User info in app request



```
C:\Users\nbise\Downloads\adt-bundle-x86_64\adt-bundle-x86_64\sdk\platform-tools>
adb -s emulator-5554 shell
root@generic:/ # sqlite3 /data/data/com.example.caronline/databases/app
sqlite3 /data/data/com.example.caronline/databases/app
SQLite version 3.7.11 2012-03-20 11:35:50
Enter ".help" for instructions
Enter SQL statements terminated with a ";""
sqlite>
```

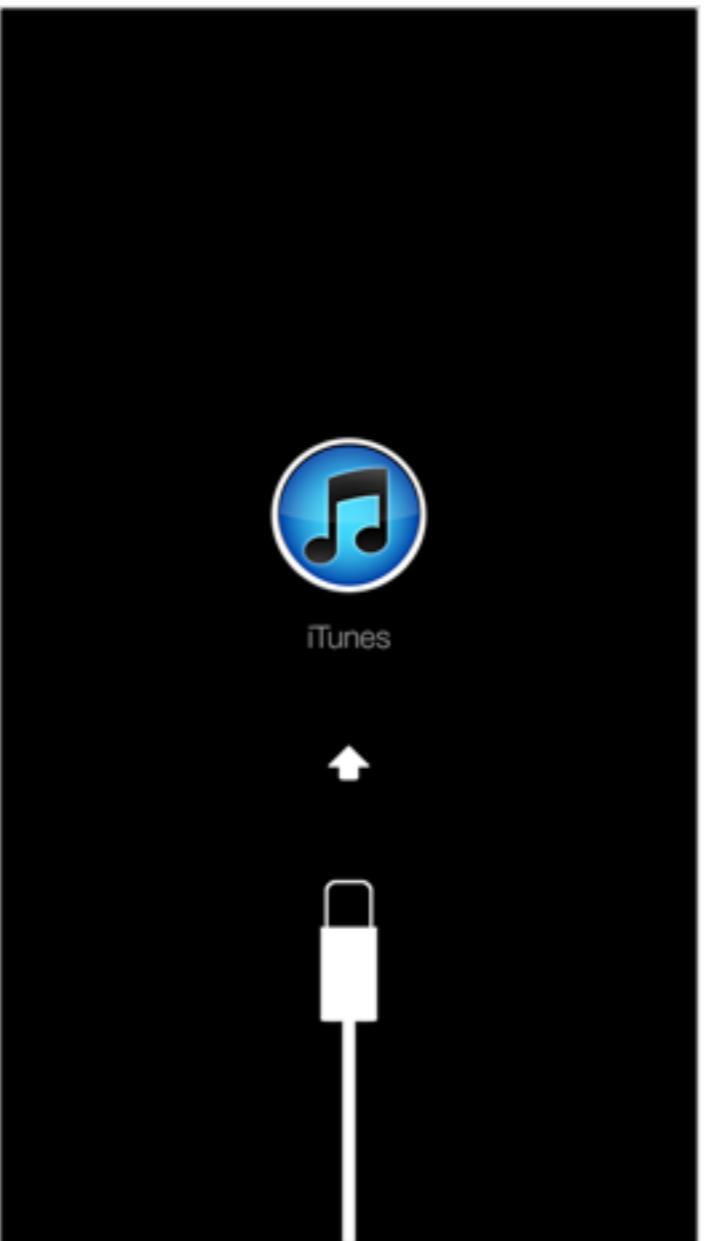
20. Performance testing

- Network connection speed
- Fluency of operations
- Performance of WebService
- Performance of SQLite database



21. OS Upgrade

- New features and guidelines in new OS
- Regression testing on current OS
- Adaptability testing on new OS

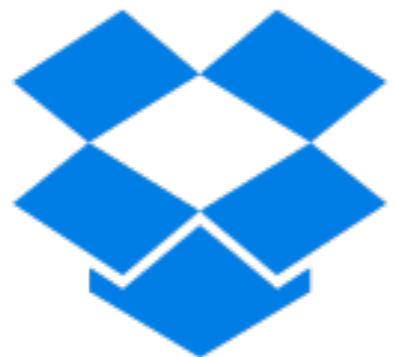


22. Continuous Integration & Continuous Delivery

- App stability
- iOS: TestFlight
- Android: Dropbox



TestFlight
iOS Beta Testing On The Fly



Dropbox



THANK YOU!

Q&A