

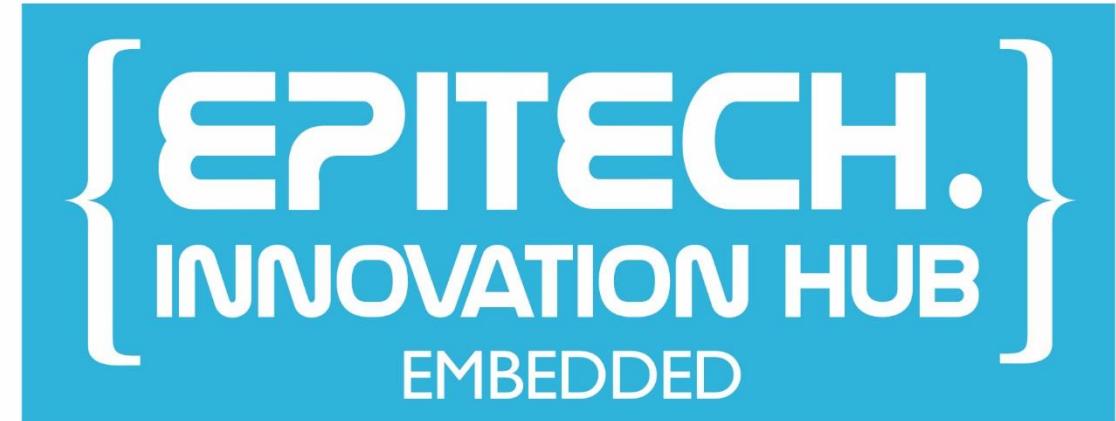


Mobile Application Development



Steven MARTINS

- DPRA at Epitech Nancy since 2012
- An Epitech Alumni
 - martin_6
 - Promotion 2013
- Develop on :
 - IOS / Objective C since 2010
 - Android since 2012
- mart_s@epitech.eu





Seminar

Thursday morning	Conference
Thursday afternoon	Practical works + Teams formation
Friday morning	Technical conference on Android
Friday afternoon	Project bootstrapping



Project

- From 2 to 4 people
- ~6 topics, including a « free » subject
- 3 weeks
- An oral defense as correction
- Native SDK only : Android, Ios, (Windows phone)...



Rating

- Your mark will be composed of 4 parts:
 - 20% - The quality of the presentation
 - 30% - Percentage of covered functionalities
 - 30% - Code review aka the quality of your code (good usage of frameworks, design patterns...)
 - 20% - Graphical design (notation obtained with the help of the other groups)



Oral defense

- The session has been thought to be purely online.
- Each group is expected to defend their project with a presentation (PowerPoint style) and a demonstration.
- The expected duration of each presentation is:
 - 5 minutes (presentation + demo)
 - + 5 minutes for Q&A.
- You are expected to be present during the entire session of defences (~1 hour per session) : A pair notation will be used for 40% of the grade : The quality of the presentation and Graphical design, 20% each

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Subjects



Cartoon view

- Principle: An application which allows you to take picture or videos with a cartoon effect (edge enhancement).
- Main goals:
 - Taking pictures with a cartoon effect. The duration of the processing should be short: 1 second with a nexus 4 seems reasonable.
 - Your app should be intuitive and graphically attractive
 - Pictures and videos must be accessible with others applications
 - Real-time preview (without effect)
- Bonuses:
 - Taking short videos (about 10 seconds)
 - Real-time preview with the cartoon effect
 - Publishing your app on a store (Google play, App store ...)
 - Implementing different algorithms



Retro pictures

- Principle: An application which allows you to take picture and videos with a retro effect.
- Main goals:
 - Taking pictures with a retro effect. The duration of the processing should be short: 1 second with a nexus 4 seems reasonable.
 - Your app should be intuitive and graphically attractive
 - Pictures and videos must be accessible with others applications
 - Real-time preview (without effect)
 - Taking short videos (about 10 seconds)
- Bonuses:
 - Real-time preview with the effect
 - Publishing your app on a store (Google play, App store ...)
 - Implementing different algorithms



Secured messenger

- Principle: An encrypted text messaging application
- Main goals:
 - Your app should be intuitive and graphically attractive
 - Manage a contact list
 - Using PGP algorithm (or RSA, AES)
 - Notifications
 - Self-destruct message
- Bonuses:
 - Using NFC to share keys
 - P2P key management
 - Sending file and picture (encrypted of course)
 - Publishing your app on a store (Google play, App store ...)



News beautifier

- Principle: An application which aggregates the contents of your news feeds and displays them beautifully and optimized for mobile (small screens).
- Main goals:
 - Your app should be intuitive and graphically attractive
 - Fetching multiple feeds (not hardwired)
 - Approaching the display of Feedly
 - Optimizing the display of articles for small screens
 - 2 different views : Phone and Tablet (Fragments)
- Bonuses:
 - Personalise the home screen by adding, removing and re-ordering feeds
 - A widget (like: <https://play.google.com/store/apps/details?id=bbc.mobile.news.ww>)
 - Push notifications
 - Publishing your app on a store (Google play, App store ...)



Mario-like

- Principle: an arcade game based on Mario or Donkey kong
- Main goals:
 - Your app should be intuitive and graphically attractive
 - Many levels ($>=2$)
 - Full control: forward, backward, jump ...
 - Mobs (computer controller non player character)
 - Scoring (experience points)
- Bonuses:
 - Lives
 - Coins
 - Breakable boxes (« crates »)
 - ...



Another Application (or Game)

- Principle: Develop your own application (or Game)
- You have to present your subject and your objectives during the seminar (best case scenario: before Friday afternoon, worst: Sunday 23h42) :
 - Procedure:
 - Present a draft with the your team during a conversation
 - Send me an e-mail (mart_s@epitech.eu) with the final subjet and objectives
 - My consent is compulsory

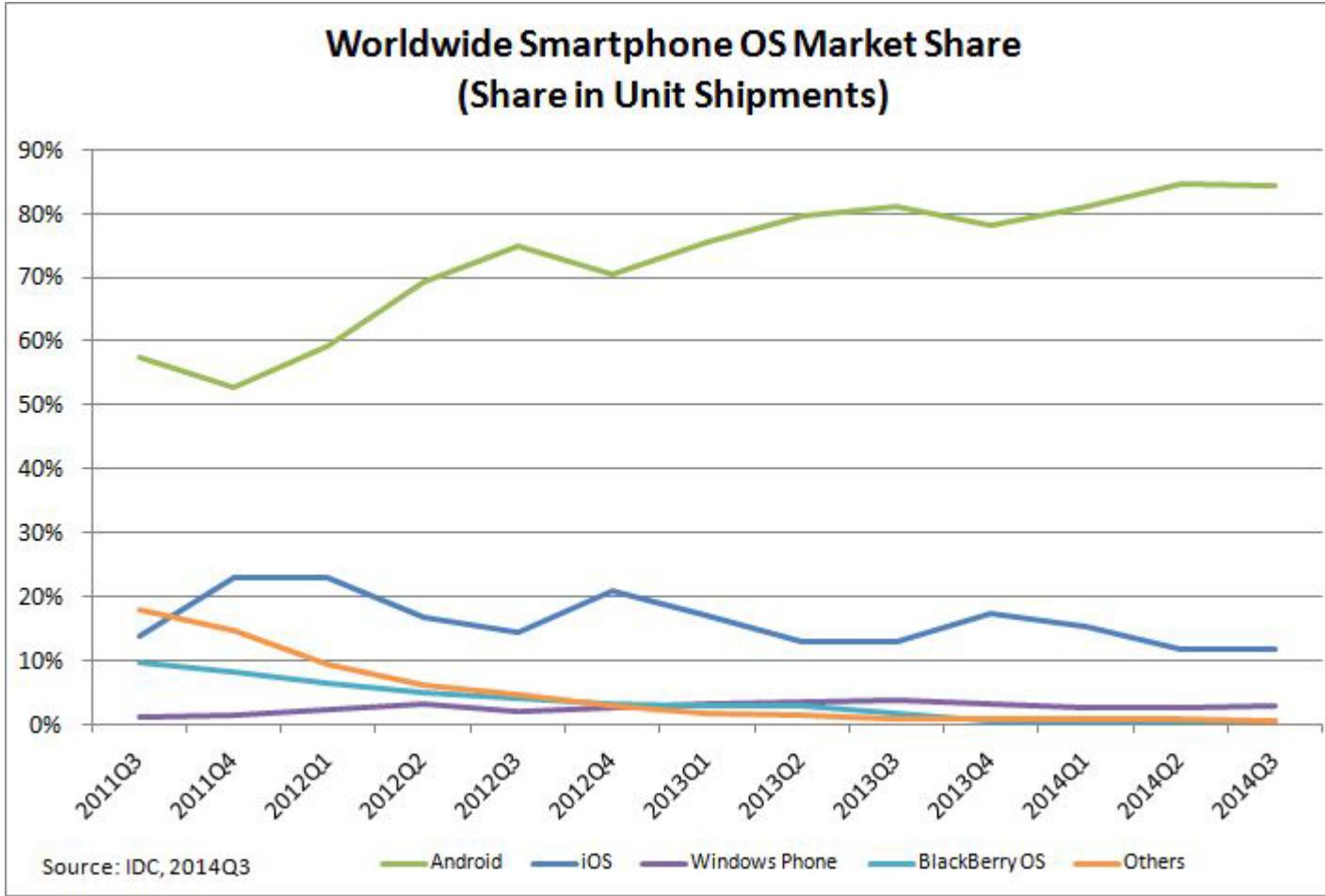
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Market



Marketshare

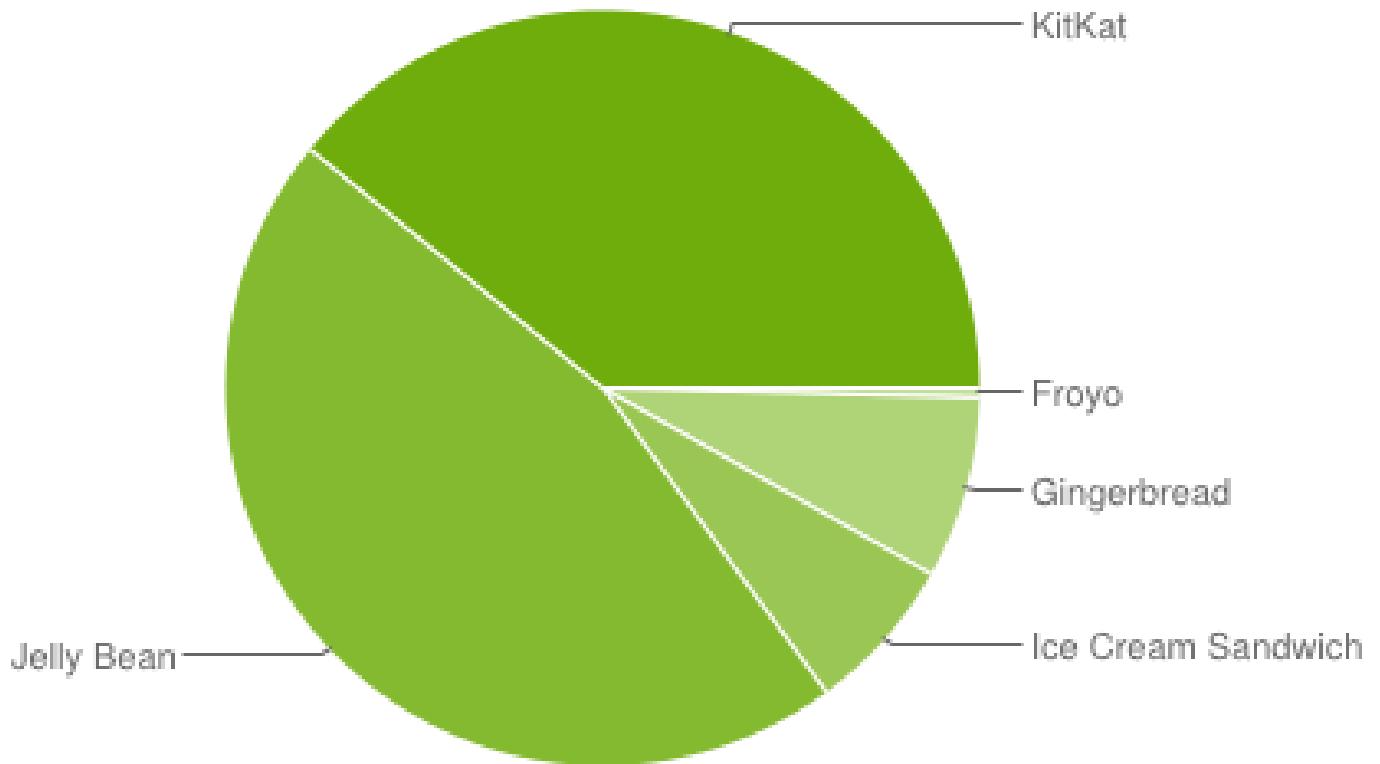


Period	Q3 2014	Q3 2013	Q3 2012	Q3 2011
Android	84.4%	81.2%	74.9%	57.4%
iOS	11.7%	12.8%	14.4%	13.8%
Windows Phone	2.9%	3.6%	2.0%	1.2%
BlackBerry OS	0.5%	1.7%	4.1%	9.6%
Others	0.6%	0.6%	4.5%	18.0%



Android - segmentation

Version	Codename	API	Distribution
2.2	Froyo	8	0.4%
2.3.3 - 2.3.7	Gingerbread	10	7.8%
4.0.3 - 4.0.4	Ice Cream Sandwich	15	6.7%
4.1.x	Jelly Bean	16	19.2%
4.2.x		17	20.3%
4.3		18	6.5%
4.4	KitKat	19	39.1%



Data collected during a 7-day period ending on January 5, 2015.



Average revenue per apps

	Google	Apple	Microsoft
Number of users (in millions)	900	600	12
Number of apps (in thousands)	800	1250	160
Number of developers (in thousands)	150	235	45
Number of downloads (in billions)	48	50	.65
Paid to developers (in millions)	900	5000	100

	Google	Apple	Microsoft
Average revenue per app	\$1125	\$4000	\$625
Average revenue per developer	\$6,000	\$21,276	\$2,222

Forbes Aug. 2013

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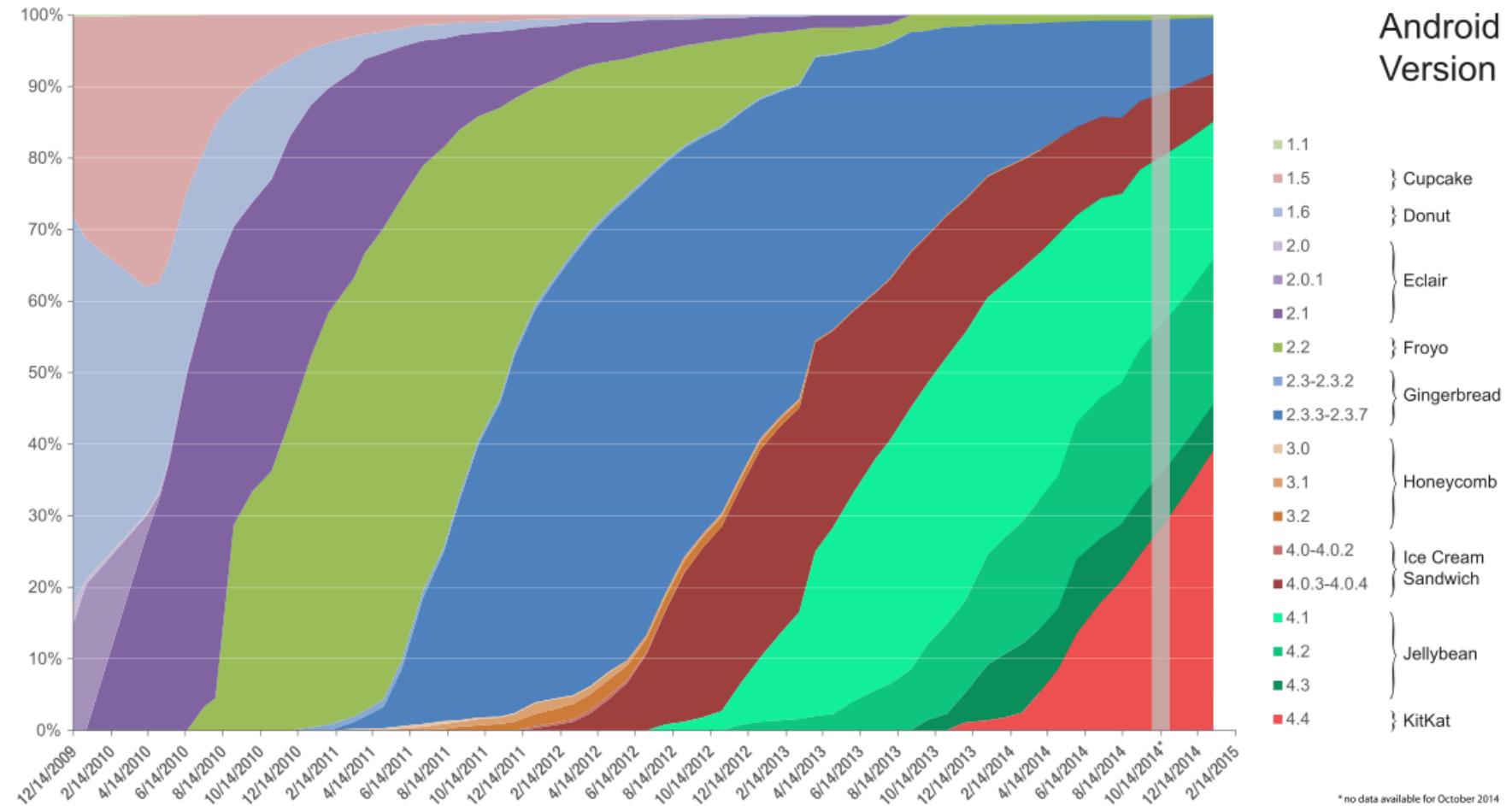


Native or hybrid ?



Security choices by Google... Android <= 4.3 !

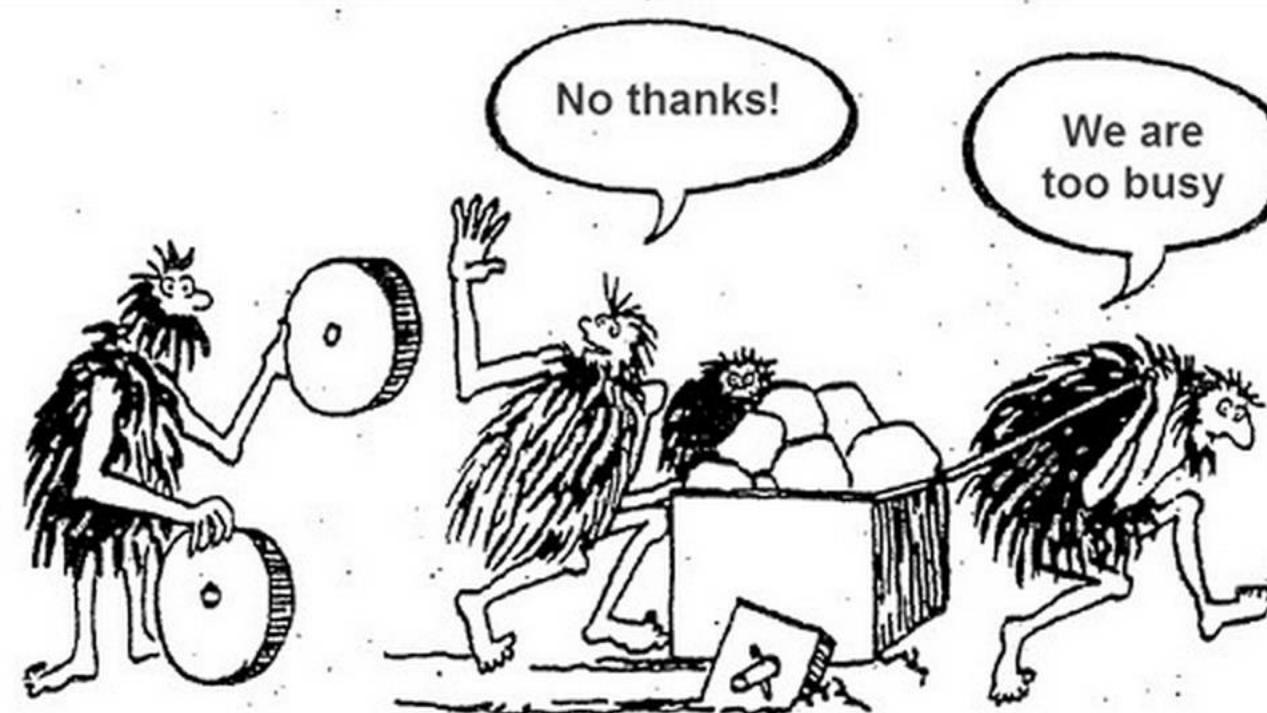
900 millions
of devices





Useful libraries

Don't reinvent the wheel





Android architecture



Libraries	
Ion	Asynchronous network libraries
Jackson / Gson	Json parser(s)
Butterknife	An annotation library @InjectView
Picasso	Image downloader w/ caching
ActiveAndroid	Simple ORM
EventBus	Simplified event bus lib



Ios - architecture

<COCOAPODS>

Libraries	
AFNetworking / Alamofire	Asynchronous network libraries
Mantle / SwiftyJSON	Json parser(s)
Realm-cocoa	Simple ORM
GPUImage	GPU Processing for videos and images
SSToolkit	UI improvement



Game libraries

Android	ios
Libgdx	Cocos2d-x
Cocos2d for Android	GameKit (apple)
AndEngine	(Unity)
Box2d (Physics Engine)	(Unreal Engine)



Tools

- Testflightapp.com
- Crashlytics
- Enterprise & automated deployment
 - Jenkins (w/ Cocoapods / Gradle)
 - Sonar (code quality)
 - JUnit / Kiwi
 - Espresso / KIF



TestFlight
Beta Testing On The Fly



Jenkins





Questions ?