



Programming with Android: Module Overview

Luca Bedogni

Marco Di Felice

**Dipartimento di Informatica: Scienza e Ingegneria
Università di Bologna**



Android ... **Why?**

GOALS OF THE MODULE:

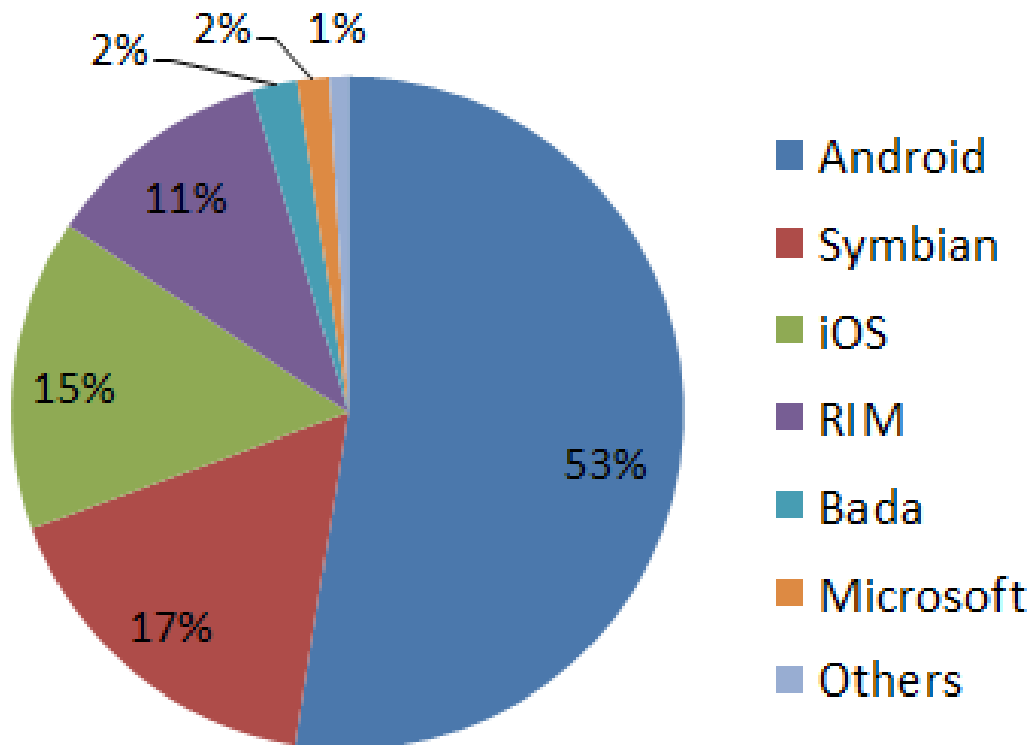


- Introduce the Android architecture
- Implement Android applications
- Think in *Android terms*



Android ... Why?

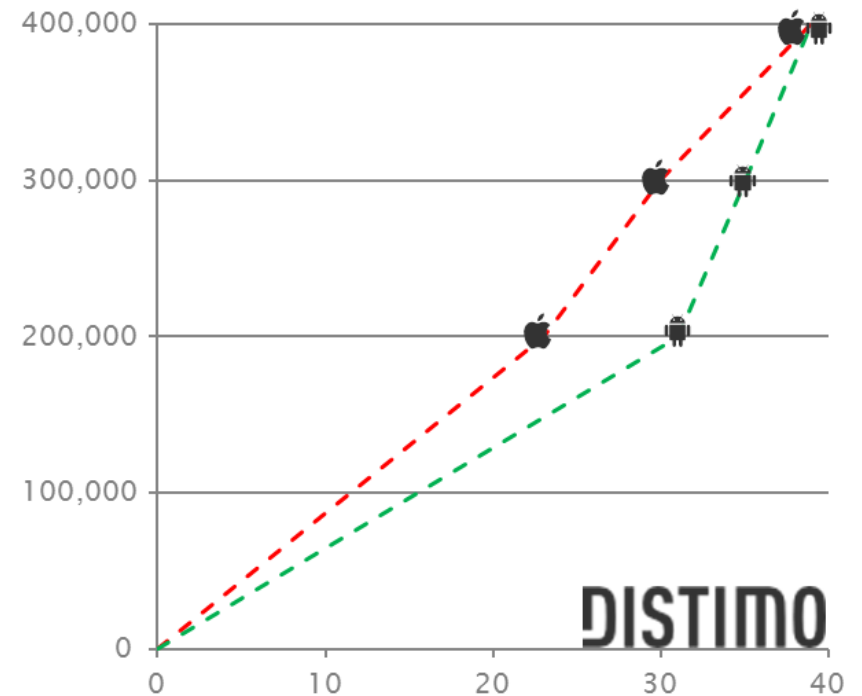
SMARTPHONE OPERATING SYSTEMS



<http://www.gartner.com/it/page.jsp?id=1848514>

ANDROID_MARKET VS APPLE_STORE

MONTHS TO REACH MILESTONES FROM LAUNCH

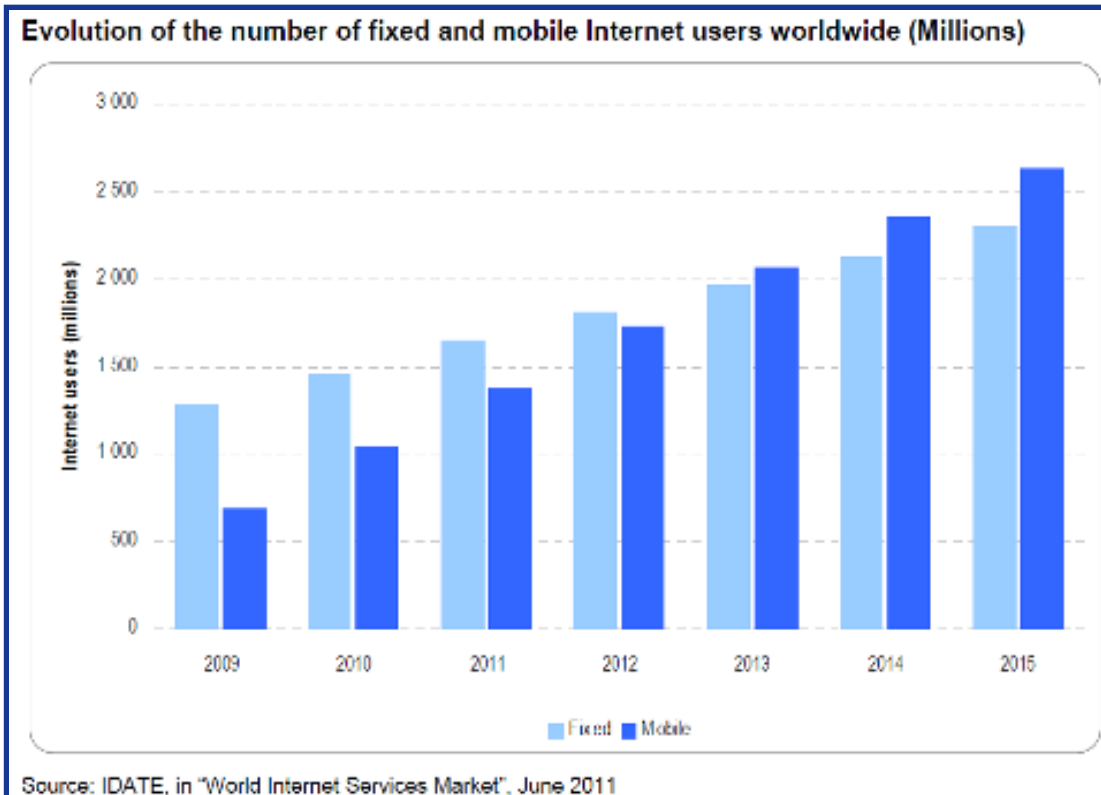


<http://www.email-marketing-reports.com/wireless-mobile/smartphone-statistics.htm>

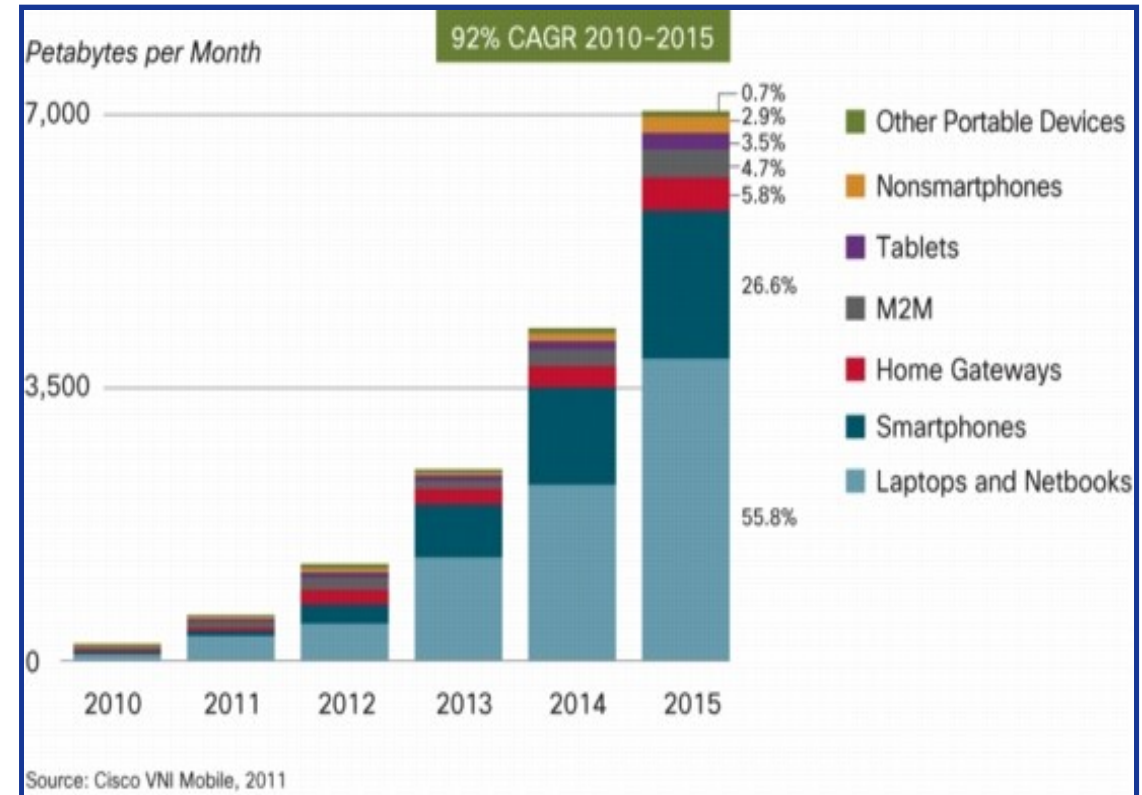


Android ... Why?

MOBILE INTERNET USERS WORLDWIDE

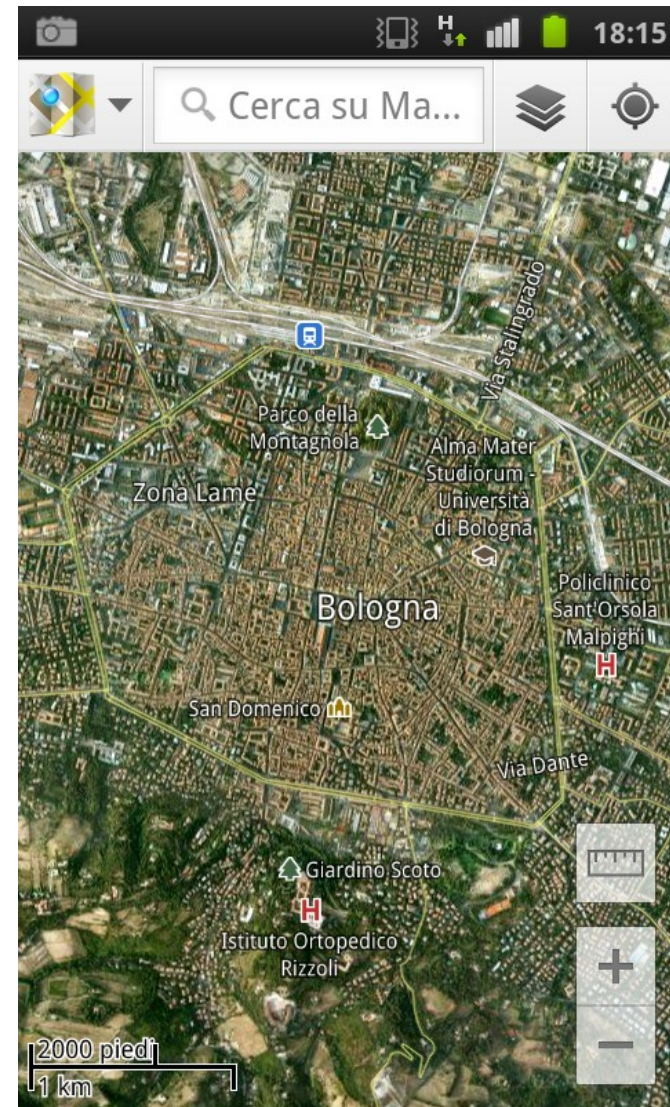
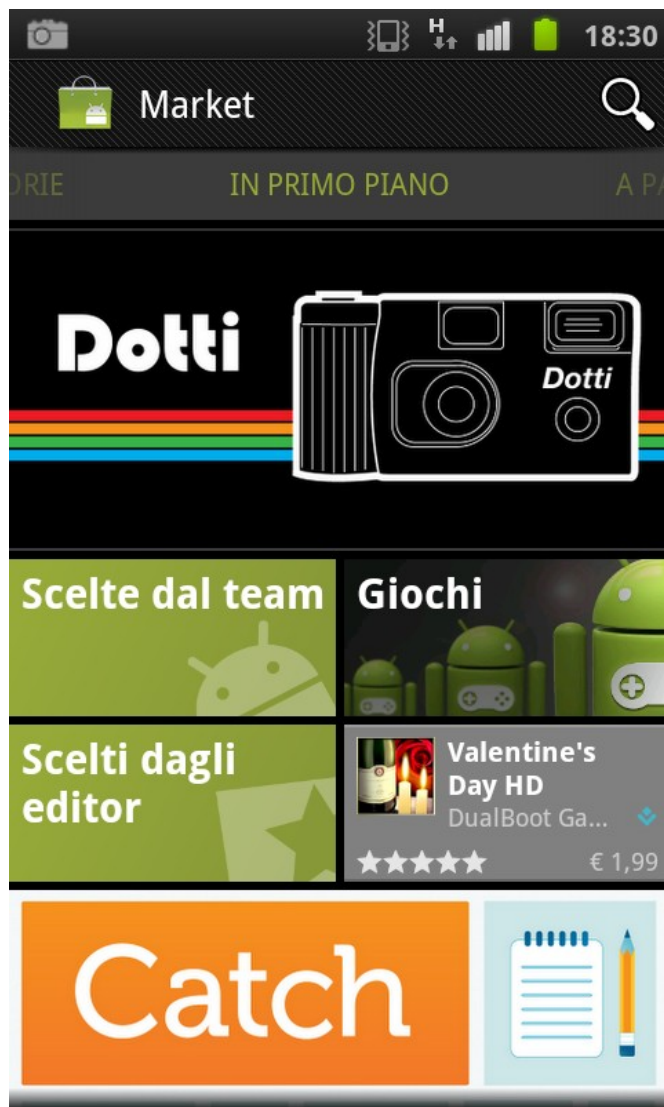


MOBILE DEVICE DIVERSIFICATION





Android: Some Examples ...





Android: **Some Examples ...**





Android: where is the business?

Market

GRATIS PIÙ REDDITIZIE NUO

Rank	App Name	Developer	Price	Rating
1.	Document...	DataViz, Inc.	€ 10,99	★★★★★
2.	SPB Shell 3D	SPB Software	€ 10,45	★★★★★
3.	PES 2012 Pro Evolution Soc...	Konami Digital E...	€ 4,20	★★★★★
4.	NAVIGON Europe	NAVIGON	€ 59,95	★★★★★
5.	Zynga Poker	Zynga	Gratis	★★★★★
6.	Paradise Island	Game Insight...	Gratis	★★★★★
7.	Texas Poker	KamaGames	Gratis	★★★★★
8.	Camera ZOOM FX	androidslide	€ 1,99	★★★★★
9.	Smurfs' Village	Beeline Interact...	Gratis	★★★★★
10.	Quickoffi...	Quickoffice	€ 11,57	★★★★★
11.	Drag Racing	Creative Mob	Gratis	★★★★★
12.	WeatherP...	MetaGroup	Gratis	★★★★★

Applicazioni

DocumentsToGo Full V
DATAVIZ, INC. € 10,99

Slideshow To Go - Presentation.ppt

Second Quarter Widget Sales

Widget	Northeast	Northwest	Southeast	Southwest
Blue Widget	6000	5000	4000	3000
Red Widget	7000	6000	5000	4000
Yellow Widget	8000	7000	6000	5000
Green Widget	9000	8000	7000	6000

★★★★★ 14.314 ottobre 21, 2010
500.000+ download 57,49KB

TOP DEVELOPER

+1 4,1K persone hanno fatto +1.

DESCRIZIONE

Nota: per sbloccare tutte le funzioni della



Android: **yes, business!**

- (at least) $500 \text{ k} * 10.99 = 5.495 \text{ k}$
- 70% to the developer, 30% to others, such as carriers
- 70% of 5.495k = **3.846,5 k**
- **3.846.500** euro from a single application
- RATIONALE: *Focus on amount of applications sold, not on price of single applications ...*



Android ... **How?**



1. The Android **Project**
2. Android **Architecture** and **Components**
3. Android Component: **Activities**
4. Android Component: **Intents**
5. Android **Resources** System
6. Android **Layout**: View and ViewGroups
7. Android **Event** Management Systems
8. Android **Animation**, **Menu**, **Dialog**
9. Android **Data** Management



Android ... **How?**



10. Android **Network** Management System
11. Android and Google **Maps**
12. Android **Gesture** and **TextSpeech**
13. Android **System** Services
14. Android and **Bluetooth**
15. Android for **Tablets**



Android ... How?



Textbook

Android: Guida per lo sviluppatore

Author

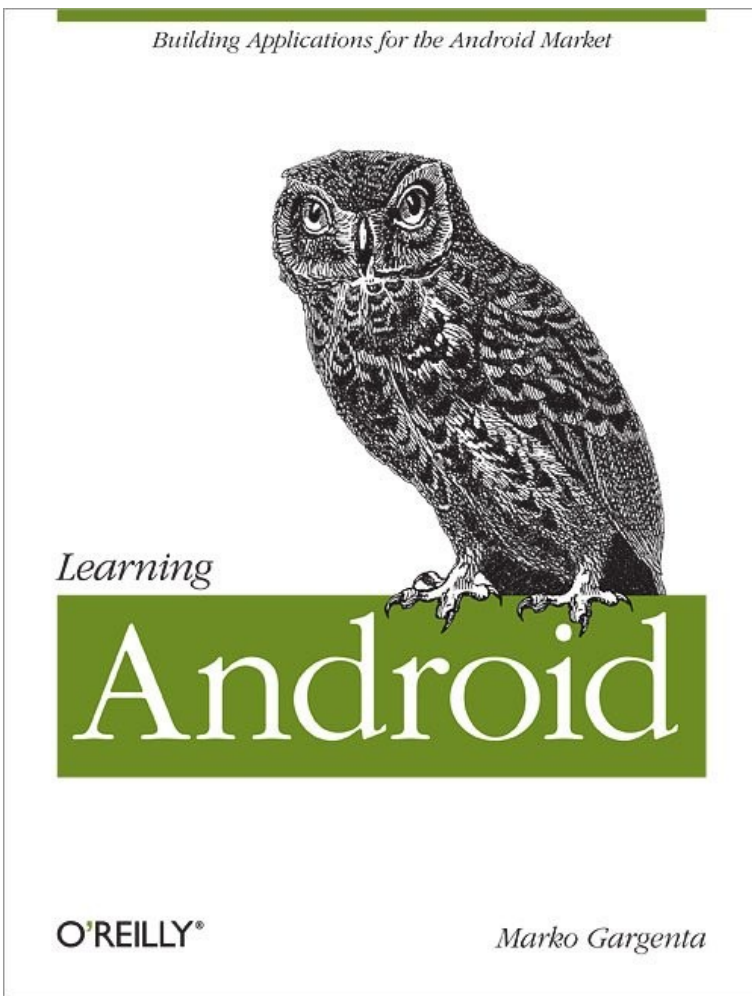
Massimo Carli

Other resources:

- **Slides**
- **Online Tutorials**
- **Newsgroups**



Android ... **How?**



Textbook

Learning Android (O'Reilly)

Author

Marko Gargenta

Other resources:

- **Slides**
- **Online Tutorials**
- **Newsgroups**



Android ... **How?**

PRE-REQUISITES:

- Object-Oriented Programming

(We will use **Java** for Android applications coding ...)

- XML Essentials

(We will mix *declarative* and *programmative* approaches)

- (PREFERRED) Experience with Java SDK Tools (**Eclipse**)

(We will use Android **Eclipse-plugins** for SW developing)



Android ... **Where?**

- Download Android SDK for your platform:

<http://developer.android.com/sdk/index.html>

- Execute (and then select the Android API version):

[android-sdk-xxx/tools/android](http://developer.android.com/sdk-xxx/tools/android)

- Install the ADT plugin for Eclipse:

<http://www.eclipse.org/downloads/>

<https://dl-ssl.google.com/android/eclipse>