MOBILE APP DEVELOPMENT - INTRODUCTION

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AGENDA

- Introduction
- Git / GitHub
- Overview of Android
- Layouts
- Menus
- Material design
- Lists
- Maps
- SQLite
- Firebase
- Kotlin
- Project & Exam

WHAT DO YOU KNOW ABOUT MOBILE DEVELOPMENT?

WHAT PHONE(S) / TABLETS / WEARABLES DO YOU OWN?

WHAT APPS DO YOU USE?

Mobile technologies

- SMS
- MMS
- Bluetooth
- QR codes
- NFC (Near Field Communication)
- Beacons
- Native applications (Java ME, Java for Android, Objective C, Silverlight, Python, C, C++…)
- Web applications (CSS, HTML, JavaScript, HTML5…)
- Mobile web sites (CSS, HTML, JavaScript, HTML5 …)
  - See http://m.pace.edu
- IVR (Interactive Voice Response)
- USIM
- USSD (e.g., #123#)
- Mobile TV
- etc

So many of them!

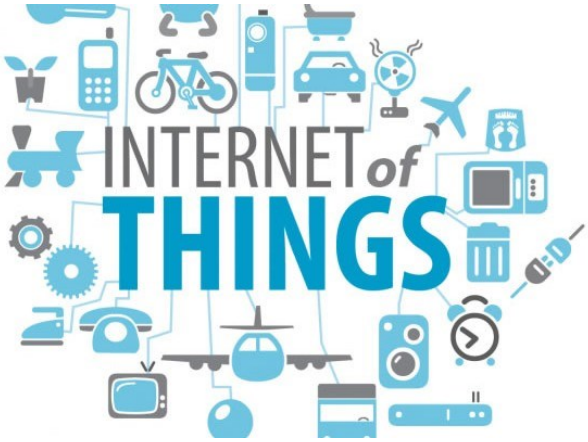
Mobile platforms

- **Android**
- **iOS**

The future


GLASS


28:56
4.08mi
PACE
7:05
min/mi
twelve
thirty
five
TUE 27


INTERNET of
THINGS


DATA

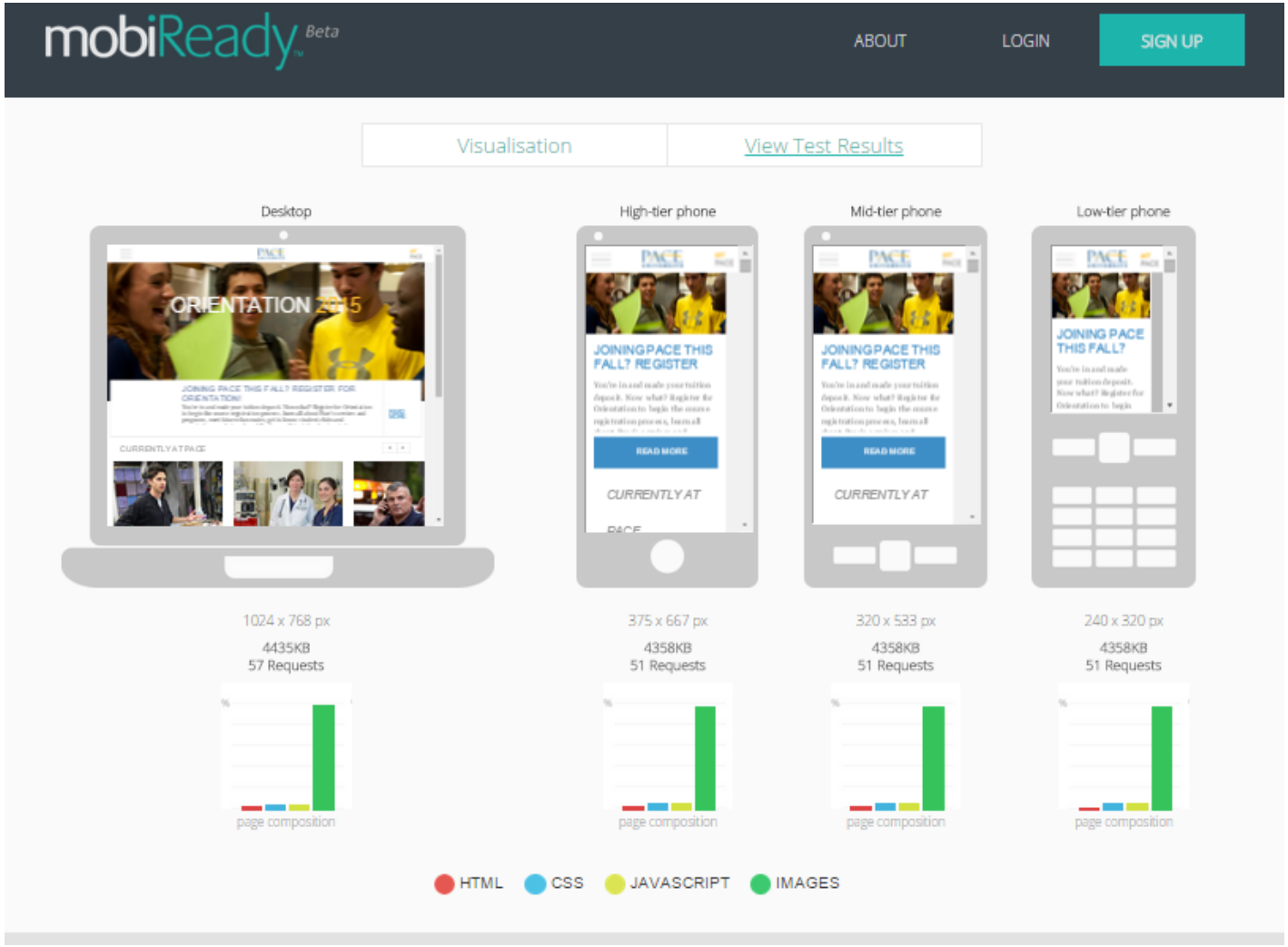
QR code

- QR codes are codes that can stock 7089 numerical characters and 4296 alphanumeric characters
- QR codes store data, addresses and urls in magazines, signs, buses and business cards
- QR codes are common forms of mobile messaging in Asia
- Require phone equipped with the correct software
- QR code generator
  - http://qrcode.kaywa.com/

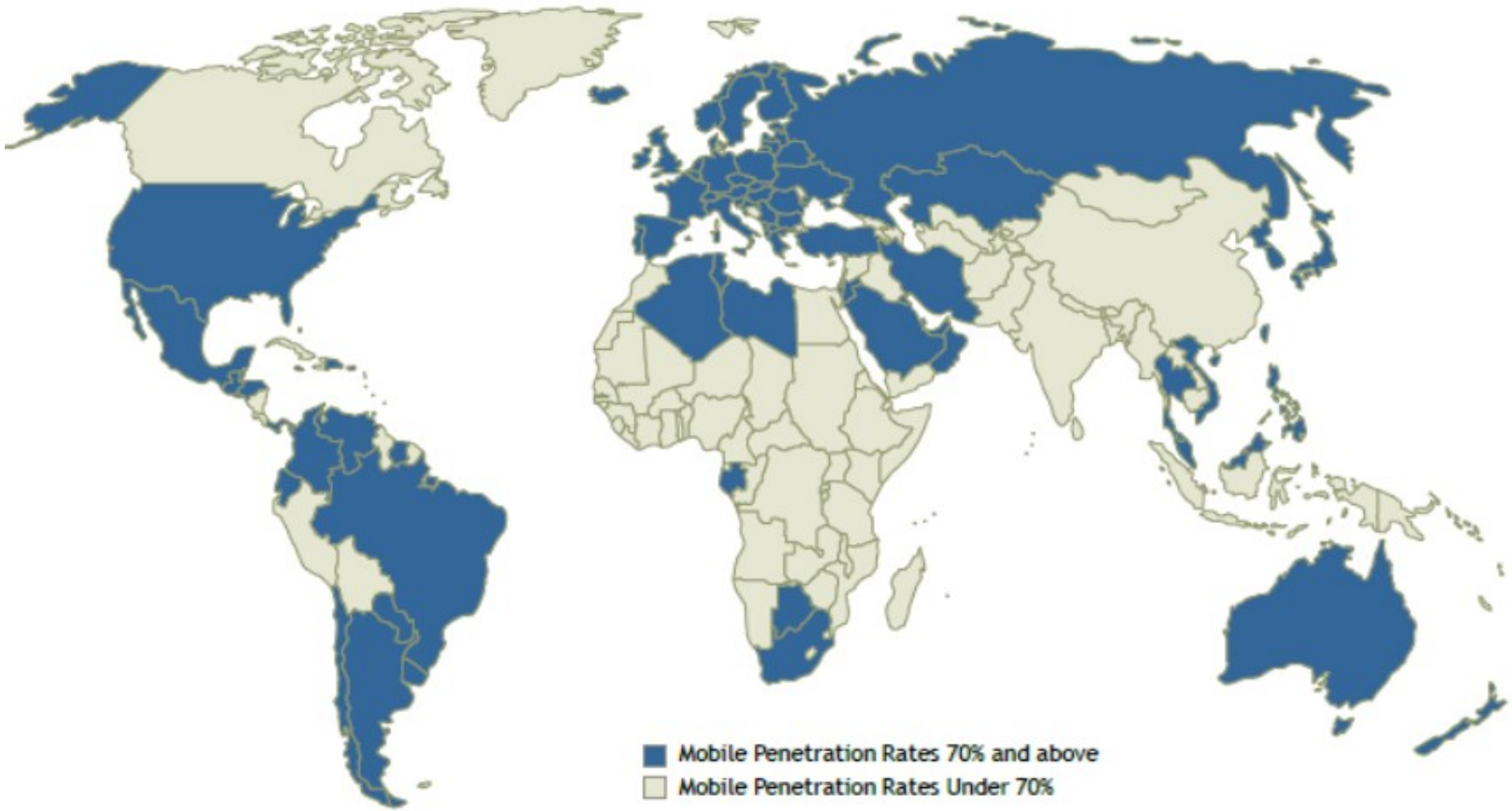
NFC

- Near Field Communication
- Set of standards to establish radio communication with each other by touching them together or bringing them into proximity, usually no more than a few inches [wikipedia]

Mobile web sites - http://ready.mobi



A global and diverse market

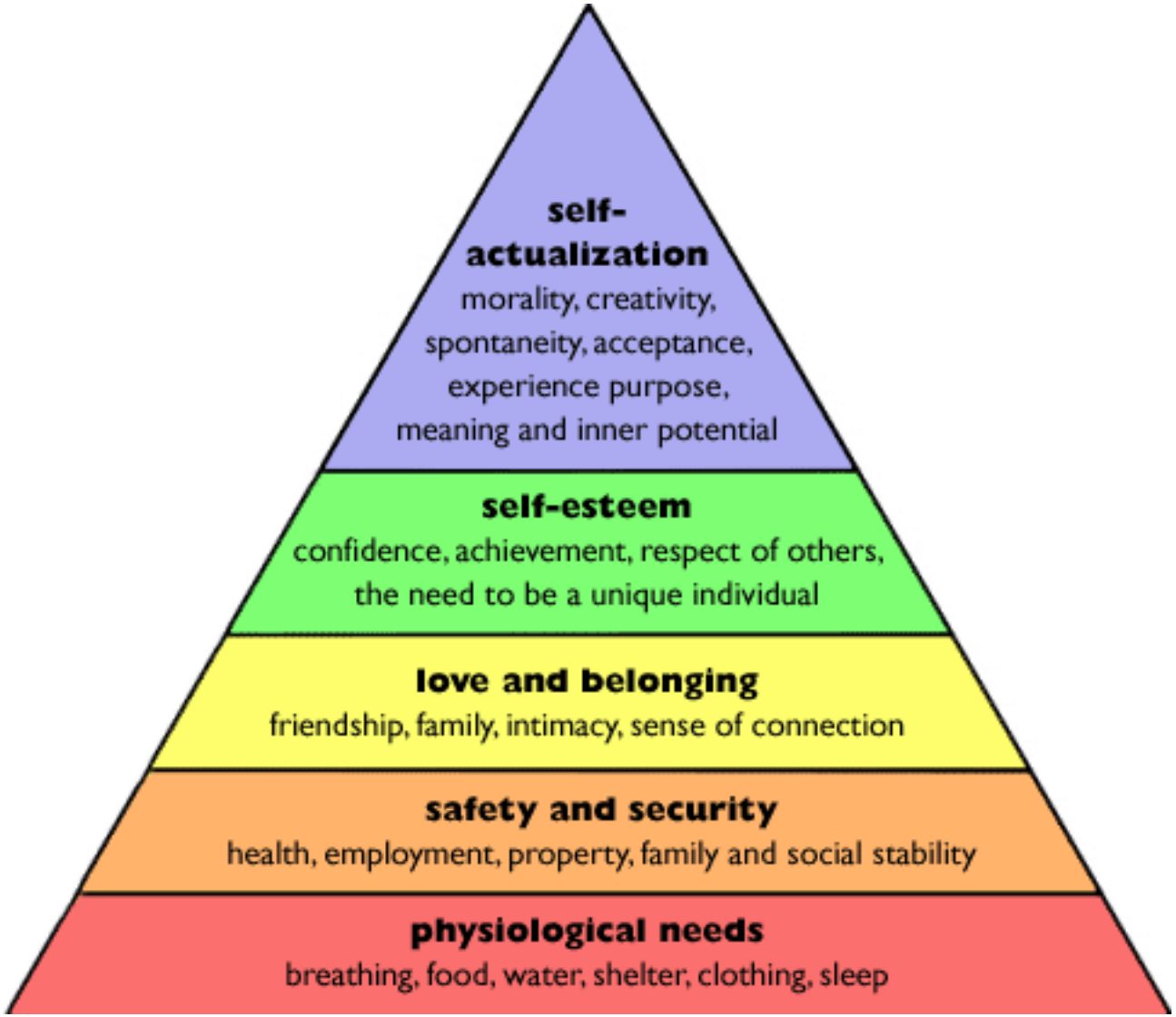


TECH

Why the Vast Majority of Women in India Will Never Own a Smartphone

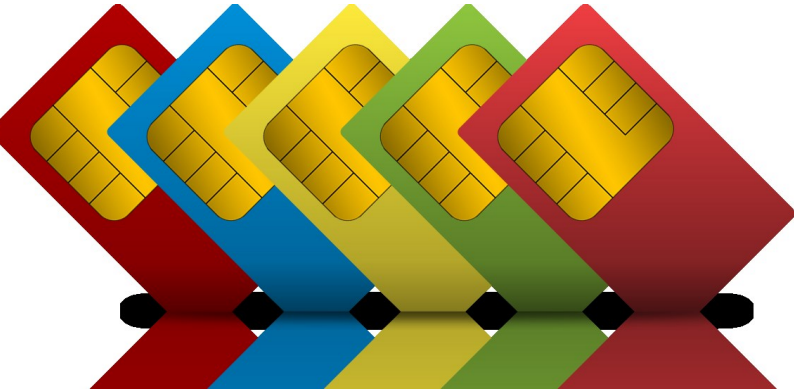
Technology, promoted as a social equalizer, is having the opposite effect in one of the world's largest markets

https://www.wsj.com/articles/why-the-vast-majority-of-women-in-india-will-never-own-a-smartphone-1476351001

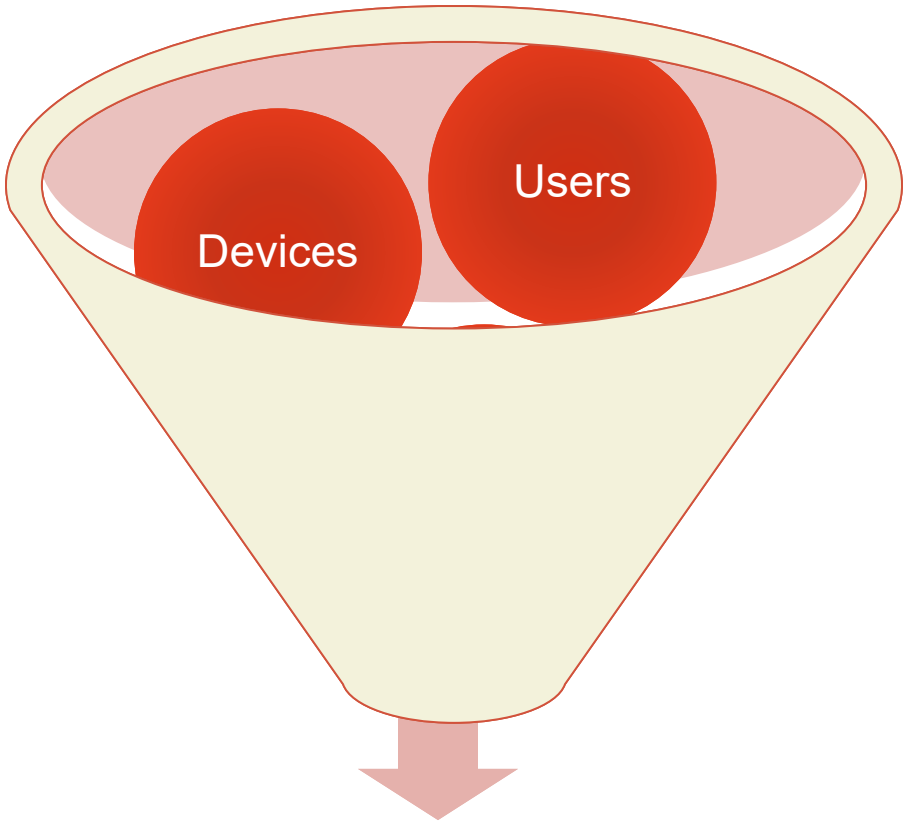

self-actualization
morality, creativity, spontaneity, acceptance, experience purpose, meaning and inner potential
self-esteem
confidence, achievement, respect of others, the need to be a unique individual
love and belonging
friendship, family, intimacy, sense of connection
safety and security
health, employment, property, family and social stability
physiological needs
breathing, food, water, shelter, clothing, sleep

African mobile market

> 650 million of subscribers



Mobile development



~~Mobile apps~~

Mobile experience

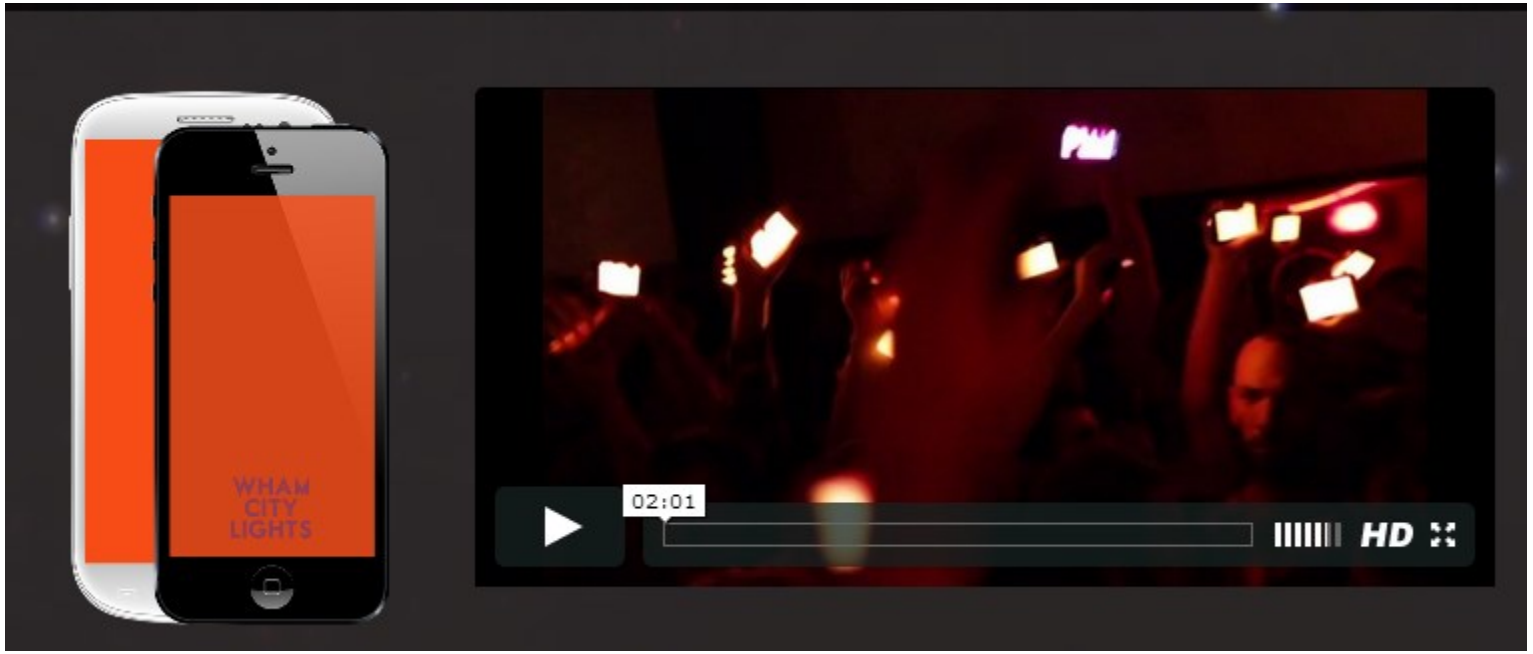
Business models

iButterfly

- http://youtu.be/vEE6M0iW-Nw

Wham City Lights

- http://whamcitylights.com/



Angry Birds

WSA WORLD SUMMIT AWARD MOBILE CONTENT

2014 Senegalese Apps Selection

Expat-Dakar

Teere

SN2TWITTER

DJOBI

Radio m DAKAR MUSIQUE

NE NAFA EXPRESS

WSA WORLD SUMMIT AWARD MOBILE CONTENT

2015 Senegalese Apps Selection

Leebone.com

DAKAR CITY

east ecolesausenegal

SAMA PAPIER

socialnetlink

COINAFRIQUE

Jokko$anté

Sélection des projets mobiles du Sénégal pour le World Summit Award Mobile 2016

Concours WSA pour le Sénégal

Sélection 2017

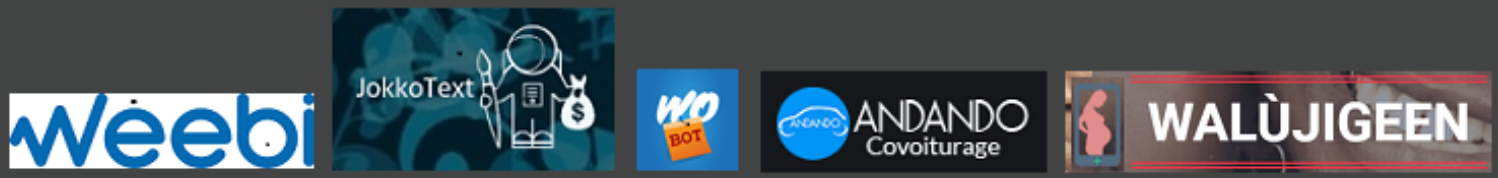
Business - Weebi

Environnement - Andando

Culture - JokkoText

Santé - Walùjigeen

Education - WoboT MWG



Co-funded by the Erasmus+ Programme of the European Union

MOBILE4 SENEGAL

mladi!nfo INTERNATIONAL

Compétition Mobile mYouth 2.0

Résultats

1 2 3

ANO

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MOBILE4 SENEGAL

mladi!nfo INTERNATIONAL

Compétition Mobile mYouth 2.0

MON MENU

samashop

SAMA-DOCTEUR
VOTRE MÉDECIN À VOTRE PORTÉE

ANO

WHAT IS A SUCCESSFUL APP?

MOBILE DEVELOPMENT: HOW IS IT DIFFERENT? IS IT REALLY DIFFERENT?

- Ecosystem
- People
- Devices
- Platforms
- Process
- Usage
- UI / UX
- etc

PercentMobile

Android OS - The First 100 Devices

Acer E110 320x480, 3 mega pixels, 118g **Acer E400** 320x480, 3 mega pixels, 125g **Acer S100** 480x800, 5 mega pixels, 135g **Alcatel OT-980** 240x320, 2 mega pixels, 155g **Apad P7901a** 800x480, Non-phone, 388g **Archos 5 Tablet** 800x480, 182g **Archos 7 Tablet** 800x480, Non-phone, 388g **Barnes&Noble Nook** 600x800, Non-phone, 353g **Cincinnati Bell Blaze** 320x480, 5 mega pixels, 113g **Cydle M7** 480x800, 480g

Dell Aero 360x640, 5 mega pixels, 105g **Dell Mini 5** 480x854, Non-phone, 220g **Eken M001** 600x480, Non-phone, 350g **Eken M003** 800x800, 590g **Garmin A10** 320x480, 5 mega pixels, 130g **Garmin A50** 320x480, 3 mega pixels, 0g **General Mobile DSTL1** 240x400, 5 mega pixels, 135g **Haipad M701** 800x480, 350g **HTC Aria** 320x480, 5 mega pixels, 115g **HTC Desire** 480x800, 5 mega pixels, 130g

HTC Desire HD 480x800, 8 mega pixels, 164g **HTC Droid Eris** 320x480, 5 mega pixels, 120g **HTC Espresso** 320x480, 5 mega pixels, 167g **HTC EVO 4G** 480x800, 8 mega pixels, 170g **HTC G1** 320x480, 3 mega pixels, 159g **HTC G2** 320x480, 3 mega pixels, 118g **HTC G2 Touch** 320x480, 5 mega pixels, 135g **HTC Incredible** 480x800, 8 mega pixels, 130g **HTC Legend** 320x480, 5 mega pixels, 126g **HTC Liberty** 320x480, 5 mega pixels, 113g

HTC Nexus One 480x800, 5 mega pixels, 130g **HTC Tattoo** 320x480, 3 mega pixels, 113g **HTC Wildfire** 240x320, 5 mega pixels, 130g **Huawei U7510** 240x320, 2 mega pixels, 105g **Huawei U8100** 240x320, 3 mega pixels, 104g **Huawei U8110** 240x320, 3 mega pixels, 110g **Huawei U8220** 320x480, 3 mega pixels, 130g **Huawei U8230** 320x480, 3 mega pixels, 130g **Huawei V845** 240x320, 3 mega pixels, 115g **i-mobile 6010** 240x400, 3 mega pixels, 106g

i-mobile i858 480x800, 5 mega pixels, 164g **Kyocera M6000** 480x800, 3 mega pixels, 109g **Kyocera Zio** 480x800, 3 mega pixels, 105g **LG Ally** 480x800, 3 mega pixels, 159g **LG GT540** 240x400, 3 mega pixels, 115g **LG GW620** 320x480, 5 mega pixels, 139g **LG KH5200** 320x480, 2 mega pixels, 139g **LG LU2300** 480x800, 5 mega pixels, 128g **LG SU950** 480x640, 5 mega pixels, 135g **Motorola CLIQ XT** 320x480, 5 mega pixels, 131g

Motorola Devour 320x480, 3 mega pixels, 180g **Motorola Droid** 480x854, 5 mega pixels, 169g **Motorola Droid X** 480x854, 8 mega pixels, 140g **Motorola Droid2** 480x854, 5 mega pixels, 169g **Motorola i1** 320x480, 5 mega pixels, 131g **Motorola MB200** 320x480, 5 mega pixels, 165g **Motorola MB300** 320x480, 5 mega pixels, 165g **Motorola MB502** 320x240, 3 mega pixels, 110g **Motorola MB511** 320x240, 3 mega pixels, 120g **Motorola XT502** 320x480, 5 mega pixels, 113g

Motorola XT701 480x854, 8 mega pixels, 140g **Motorola XT720** 480x854, 8 mega pixels, 140g **Motorola XT800** 480x854, 5 mega pixels, 120g **Motorola XT806** 480x854, 5 mega pixels, 165g **Nexian A890** , 5 mega pixels, 0g **Orange Boston** 320x480, 5 mega pixels, 118g **Pantech 630** 480x800, 5 mega pixels, 128g **Pantech IM-A600** 480x800, 5 mega pixels, 128g **Pantech IM-A650S** 480x800, 5 mega pixels, 114g **Samsung Behold 2** 320x480, 5 mega pixels, 119g

Samsung Galaxy S 480x800, 5 mega pixels, 120g **Samsung Galaxy Tab** 1024x600, Non-phone, 3 mega pixels, 380g **Samsung Galaxy U** 480x800, 5 mega pixels, 131g **Samsung GT-I5500** 240x320, 2 mega pixels, 102g **Samsung GT-I5503** 240x480, 2 mega pixels, 102g **Samsung GT-I5700** 320x480, 3 mega pixels, 120g **Samsung GT-I5800** 240x400, 3 mega pixels, 110g **Samsung GT-I8520** 480x800, 8 mega pixels, 156g **Samsung i7500** 320x480, 5 mega pixels, 114g **Samsung M100s** 480x800, 5 mega pixels, 128g

Samsung R880 320x480, 5 mega pixels, 140g **Samsung SGH-i896** 480x800, 5 mega pixels, 128g **Samsung SHW-M110S** 480x800, 5 mega pixels, 121g **Samsung SPH-D700** 480x800, 5 mega pixels, 155g **Samsung SPH-M900** 480x854, 5 mega pixels, 169g **Samsung SPH-M910** 240x400, 3 mega pixels, 138g **Sharp IS01** 960x480, 0g **Sharp SH-10B** 960x480, 5 mega pixels, 230g **SMiT MID-560** 800x480, Non-phone, 388g **SonyEricsson X10** 480x854, 8 mega pixels, 135g

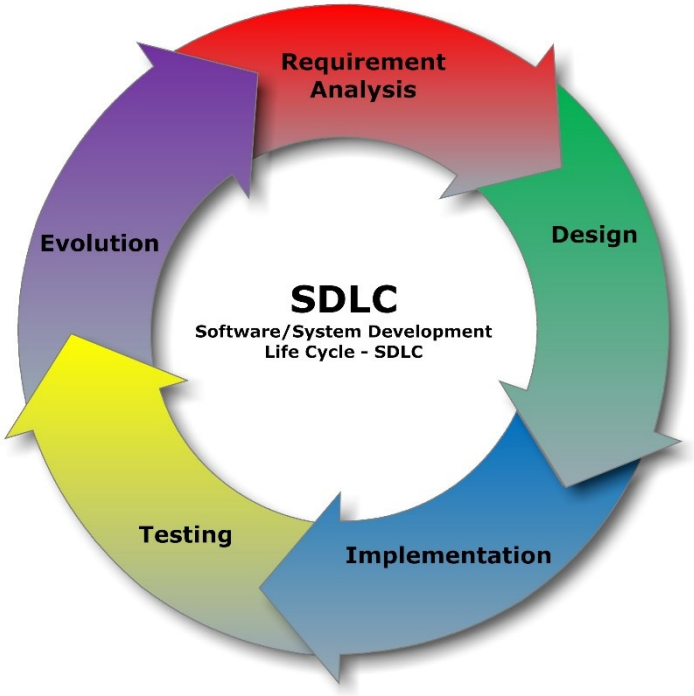
SonyEricsson X10 mini 240x320, 5 mega pixels, 120g **SonyEricsson X10 mini pro** 240x320, 5 mega pixels, 120g **SonyEricsson X8** 320x480, 3 mega pixels, 104g **Spice Mi300** 320x480, 5 mega pixels, 0g **Vibo A688** 320x480, 5 mega pixels, 0g **Videocon V7500** 320x480, 5 mega pixels, 114g **Wellcom A800** 480x800, Non-phone, 3 mega pixels, 0g **Wellcom A88** 320x480, 5 mega pixels, 114g **Witstech A81-E** 800x480, Non-phone, 380g **ZTE X850** 240x320, 3 mega pixels, 100g

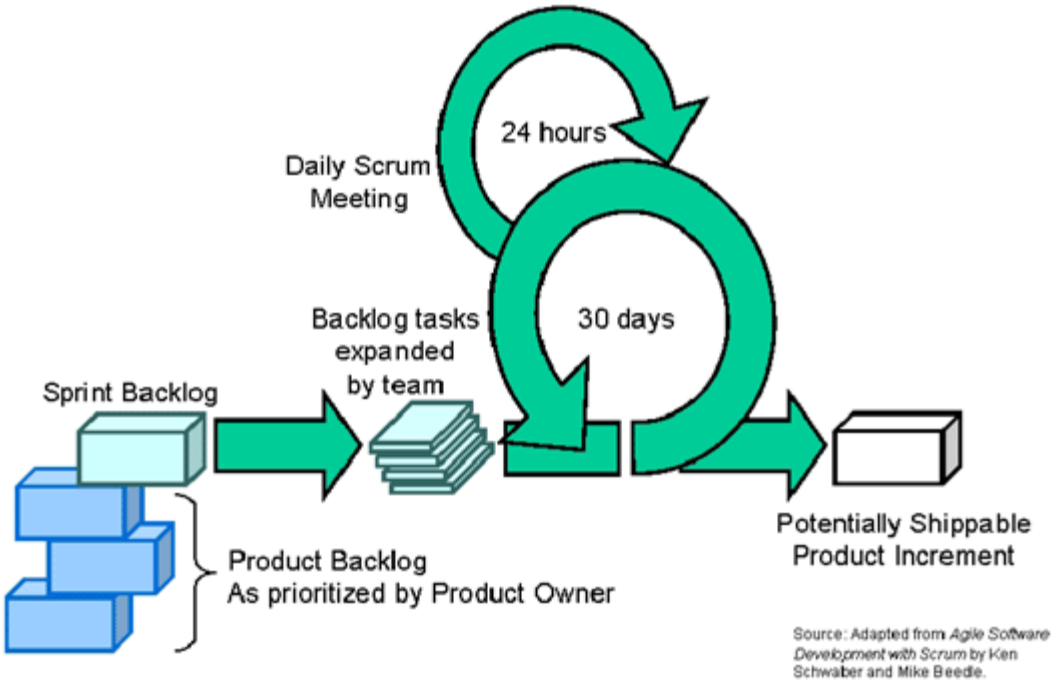
Source: http://percentmobile.com

Software development process

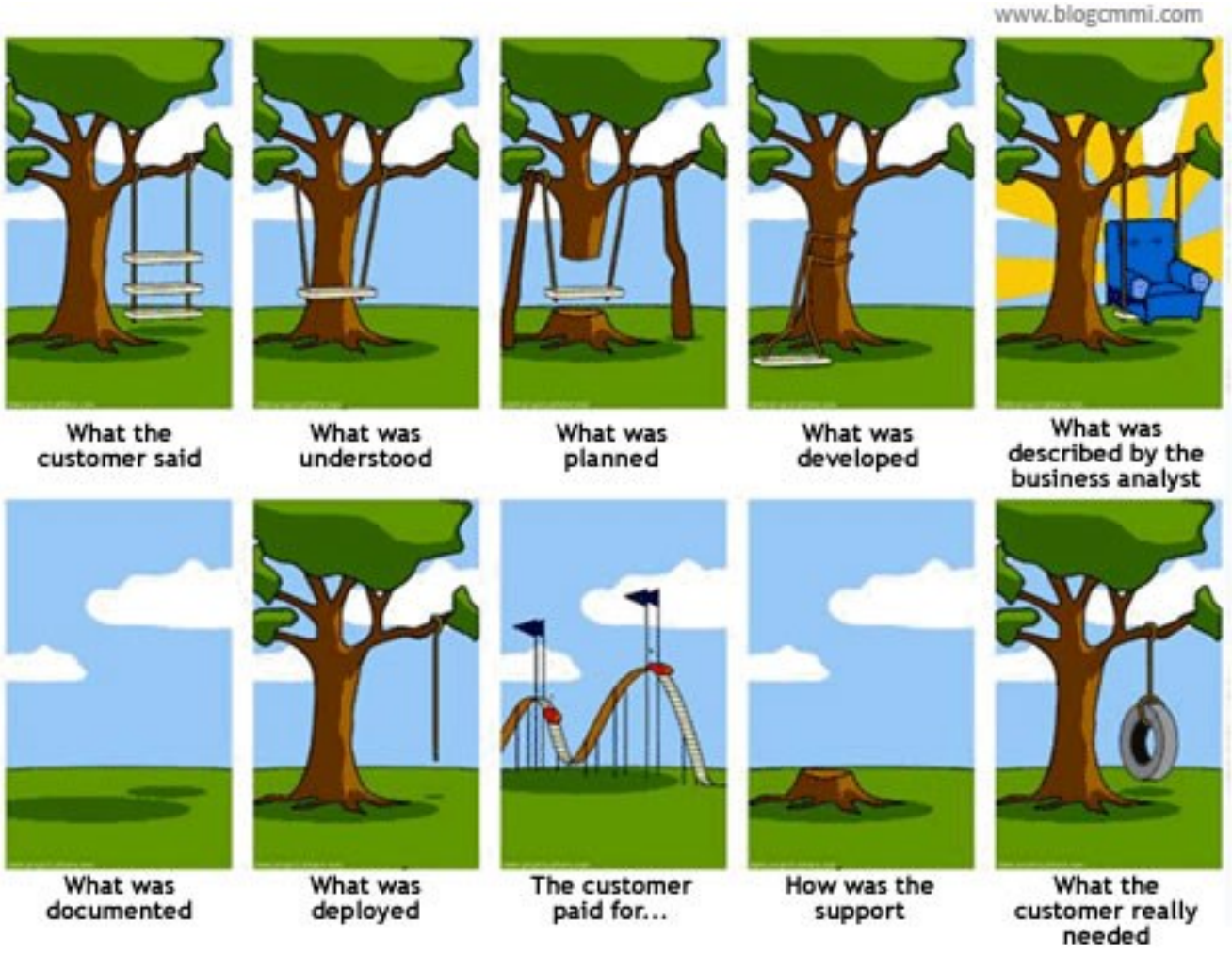
SDLC

Scrum





Communication is key!



Testing and QA

- https://code.facebook.com/posts/485459238254631/improving-facebook-on-android/

NATIVE VERSUS WEB

Native versus Web mobile development

- Native development
  - Develop using languages such as Java, Objective C etc that target a specific platform
  - Broader access to hardware features
  - Faster, more powerful, more integration hardware/platform
  - More attractive (native look and feel)
  - Latest innovations
  - Apps are installed on phones and released on the market
- Web development
  - Based on web technologies (HTML, CSS, and JavaScript)
  - Permits multi-platform development
  - Based on standards
  - Apps need to be packaged to be installed on a phone (e.g., PhoneGap) and released on the market
- Differences of capabilities between native and web apps is decreasing rapidly

The debate of the purists

Native versus Web mobile development

	User experience	Mobile intervention	Cost / time
Native	+++	+++	-
Web	++	++	+++