

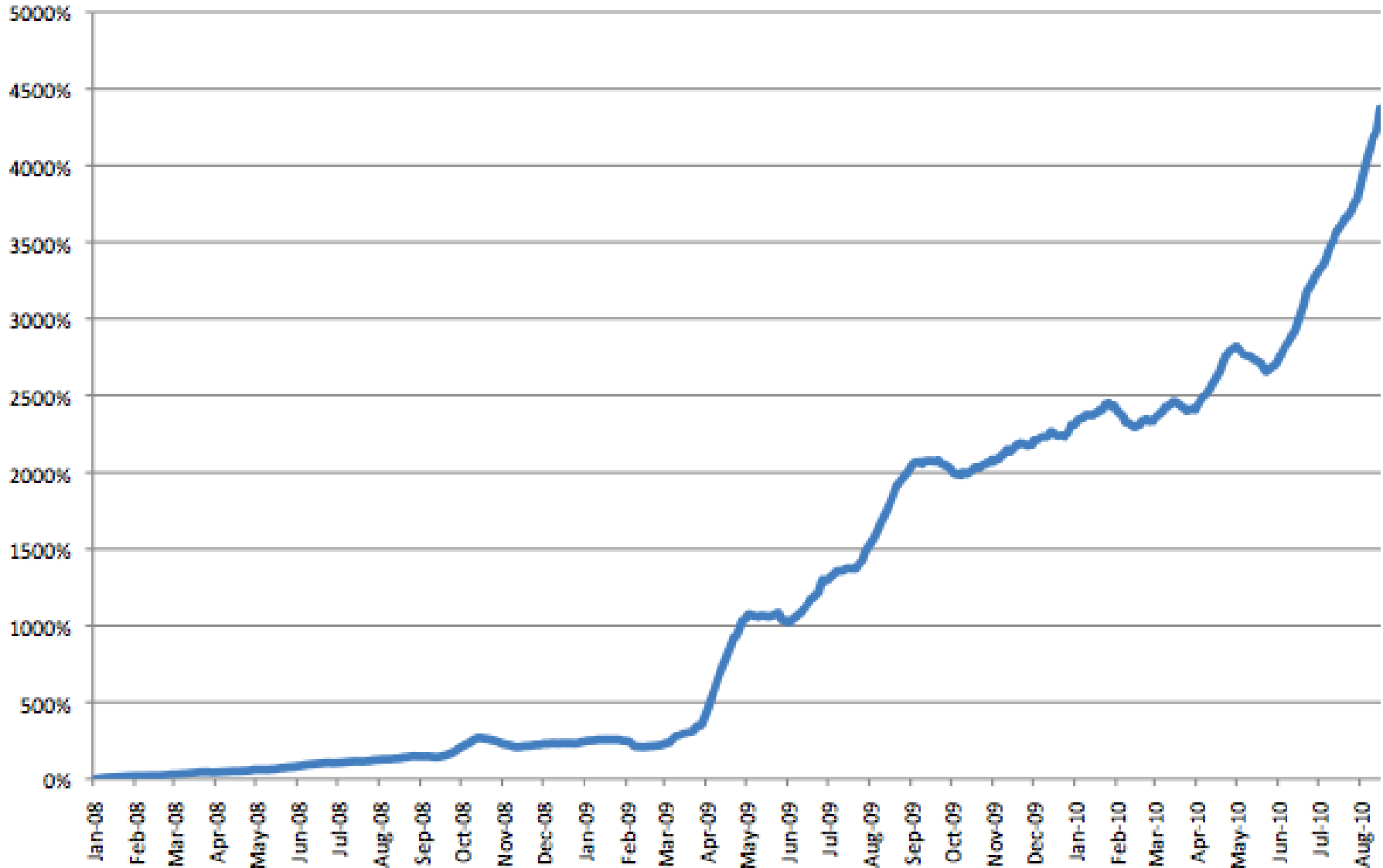
# Mobile in Africa

January 18, 2011

Richard Ngamita  
Developer Relations (Africa)



# Why mobile?



# Internet grows

## Mobile internet grows faster

- > **Dramatic improvements during last 12 months**
  - Multiple fiber cables (East + West Africa)
  - More bandwidth, less latency
  - Falling bandwidth prices
  
- > **Mobile internet grows faster than desktop!**
  - In certain countries: Several **times** faster

# Half of your users are mobile

- > Now: Mobile usage up to **70%** of desktop
- > Soon: Mobile usage **equal or more than** desktop
- > That is a unique to Africa!

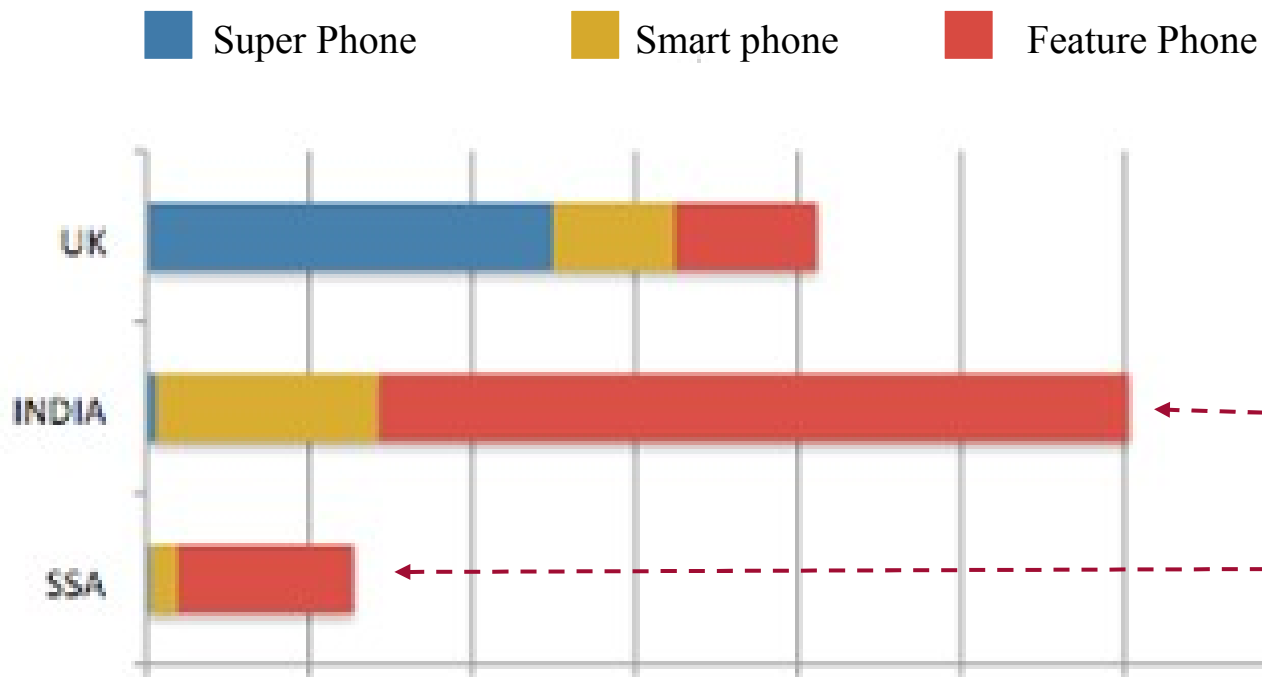
**Who are these people?**

# Devices in Africa

- > The current device mix
  - 40% Entry level - not internet-capable
  - **45% Feature phone (e.g., Nokia Series 40)**
  - 4.5% Smartphone (e.g., Blackberry, Nokia Series 60)
  - < 1% “Super phone” (e.g., Android, iPhone)
  
- > **A huge opportunity exists at the low end!**

# What *Can* Happen in Just One Year

## Regional Comparison of Mobile Query Volume by Phone Type



**Only one year ago, Sub-Saharan Africa had similar query volumes to India; this is how things look today.**

## *Focus on Mobile*

### *Focus on the Feature Phone (for now)*

- > Mobile fast becoming primary access channel
- > Most usage from feature phones
  
- > **If you want to reach young educated Africans, you *need* a mobile web site**



# So what about Android?



Innovation Social Media Mobile Events Startups Web Apps Interviews Podcasts

## Huawei IDEOS U8150: \$100 (KSH.8000) Smartphone Anyone?

31

Posted by [wmworia](#) on September 11, 2010, filed in: [Innovation](#), [Mobile](#)

Saturday, Jan 15th | Last update: 03:55:56 PM GMT | Headlines: New skills

# CIO

EAST AFRICA

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## Safaricom announces Huawei IDE

Written by Dennis Mbuvi

Friday, 07 January 2011 10:31

## \$100 IDEOS Android Phone Launches in Kenya

by HASH on SEPTEMBER 6, 2010

Google and Huawei have [launched](#) a very competitively priced Android smartphone in Kenya today, called the IDEOS. It is being sold for 8,000 Ksh (~\$100).



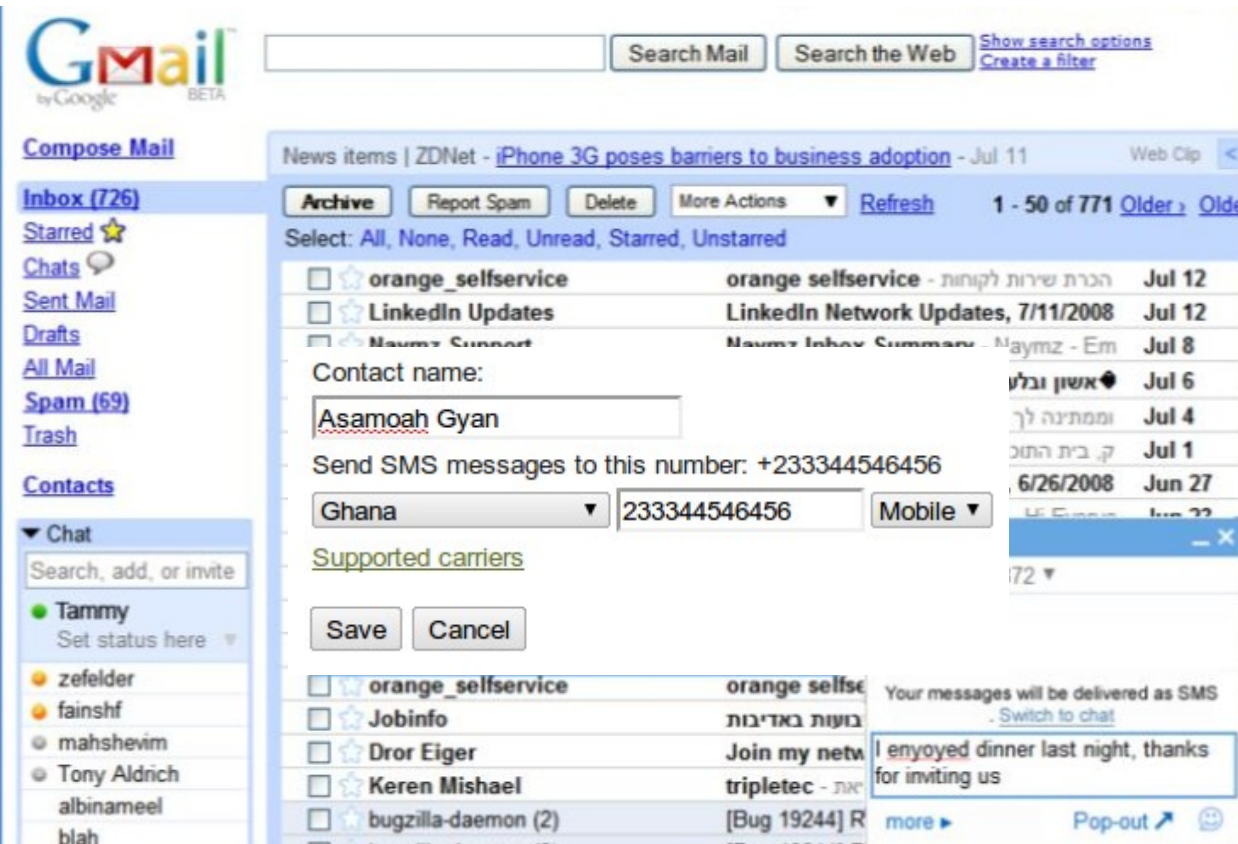
# So what about Android?



- > High end phones with full HTML5 browsers are appearing on the very high- end segment
- > Expect significant usage as prices approach **LESS** than \$100

**And what about SMS?**

# SMS is great for person to person messages



Gmail/Gtalk SMS

# SMS is great for simple, request response or lookup services



## Google SMS Tips

Health and Agriculture tips - Uganda



## Google Trader

Classifieds - Uganda

# SMS – choose your bullets

- > Even with the mobile internet growth, SMS is a useful extension of online services
  - P2P, simple request-response, lookup, alerts, notifications
  
- > But bear in mind
  - Its expensive
  - Its more difficult to scale (e.g. in new countries)
  - It is not a substitute to the internet
  - 160 char. Limit
  - Store and forward nature (failing Point...)

# Conclusion

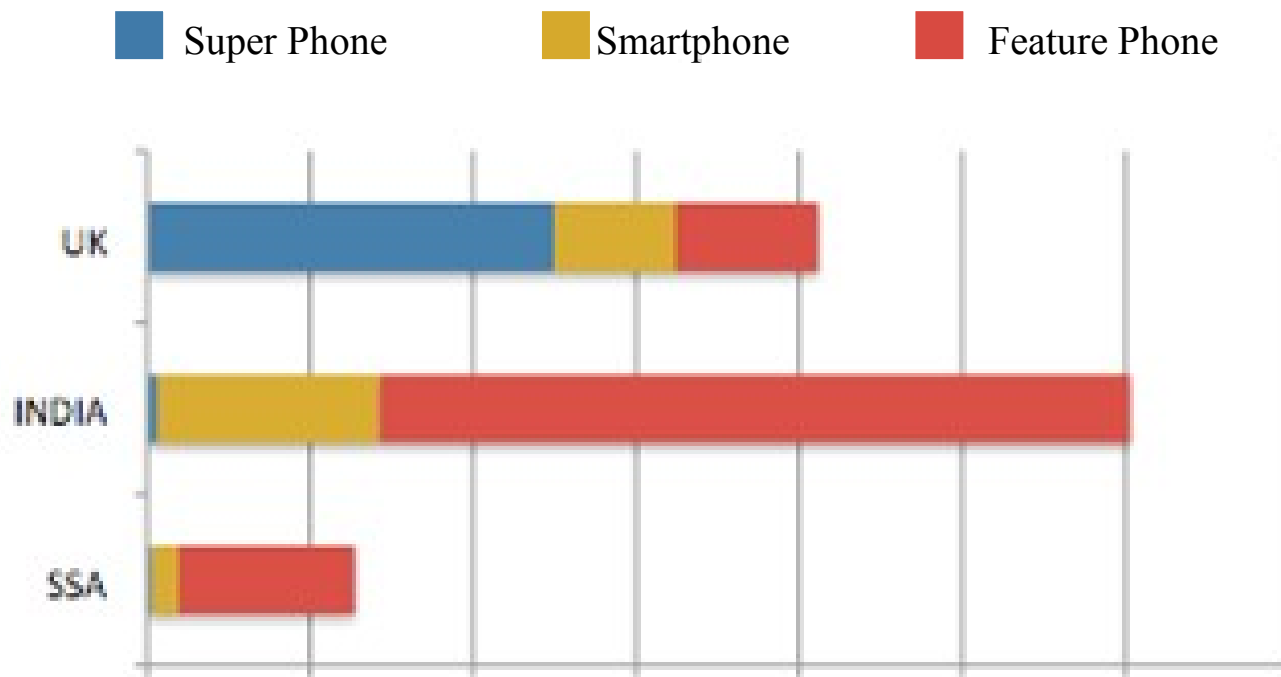
- > Africa is at the beginnings of a mobile Internet revolution
- > It will make a big difference in everyday life
- > And it creates big opportunities
  
- > **Focus on the feature phones** (for now 80%)
  - And be prepared for the growth of high-end Internet capable phones (20%)

# Developing in mobile



# Know your users: regional markets

Comparison of Mobile Query Volume by Phone Type



# Know your users: device comparison

Tier	Description	Examples	Network	Data Usage
super phone	high end with sophisticated web-kit browser	Android, iPhone	3G, Wifi	High data consumption, including multimedia
smart phone	multimedia capabilities but average internet experience	Blackberry, Nokia S60	3G, 2.5G	Very low data consumption; biased towards email, chat, MMS
feature phone	Limited multimedia capabilities; internet enabled	Nokia S40	2.5G, 2G	Very low data consumption; biased towards voice & SMS
Entry phone	Basic device; no data capability			Voice & SMS only

# Native app vs in browser? (The war continues)

- > Is there an offline requirement? (html5 caveat)
- > Native app challenges
  - application signing
  - device profiles (e.g. MIDP)
  - distribution challenges (download / install / discovery)
  - pushing updates

# Mobile browser challenges

- > Limited CSS / Javascript support
- > Various image formats
- > Cache limits
- > Screen dimensions
- > Input mechanisms

## Solutions:

- > User-Agent detection
- > Wireless Universal Resource Files (WURFL)
- > Image transcoding / resizing (appengine support)

# User agents and WURFL resources

## > User agents:

- Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0)
- BlackBerry8800/4.2.1 Profile/MIDP-2.0 Configuration/CLDC-1.1 VendorID/134

## > WURFL download or webservice:

- <http://wurfl.sourceforge.net/>
- <http://wurflws.appspot.com/>

## > Maps user agent to capabilities:

- e.g. `is_wireless`, `is_tablet`, `xhtml_select_as_dropdown`, `viewport_width`, `css_spriting`

# *Fast is better than slow*

- > Minimize bandwidth
  - Can you use gzip encoding?
  - Is your CSS compiled/minimized?
- > Limit your HTTP-requests
  - Do your user agent support multipart?
  - Can you leverage spriting? (minimize that whitespace!)

# Conclusion

- > Know your audience.
- > Target devices based on your target market.
- > Render your content intelligently: leverage existing libraries to know their capabilities.

**Thanks!**



# Let's make the web faster

- > Firebug (for Firefox users)
  - <http://getfirebug.com/>
- > Speed tracer (for Chrome users)
  - <http://code.google.com/webtoolkit/speedtracer/>
- > Extended list
  - <http://code.google.com/speed/tools.html>

# Reference websites

- > AppEngine Image APIs
  - <http://code.google.com/appengine/docs/python/images/usingimages.html>
- > QuirksMode
  - <http://www.quirksmode.org/mobile/>
- > w3c compatibility check
  - <http://www.w3.org/2008/06/mobile-test/doc.html>