

And... LOD?



◆ LOD = Linked OPEN Data ?



Example



- ◆ **Freebase**
- ◆ Data offered as ***N-Triple RDF***, also with endpoints





How much data?

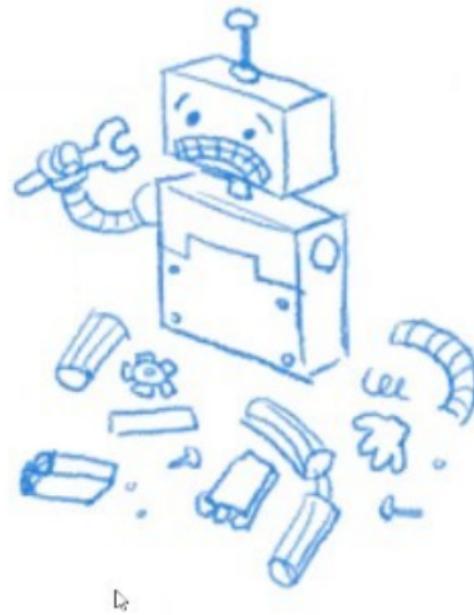
- ◆ Size in **2013**: 585 milioni di triple
(circa 47 Gb di dati)
- ◆ Size in **2014**: 2,5 miliardi di triple
(circa 200 Gb di dati) !
- ◆ Size in **2015**: 3,1 miliardi di triple
(circa 250 Gb di dati) !





404. That's an error.

The requested URL / was not found on this server. That's all we know.



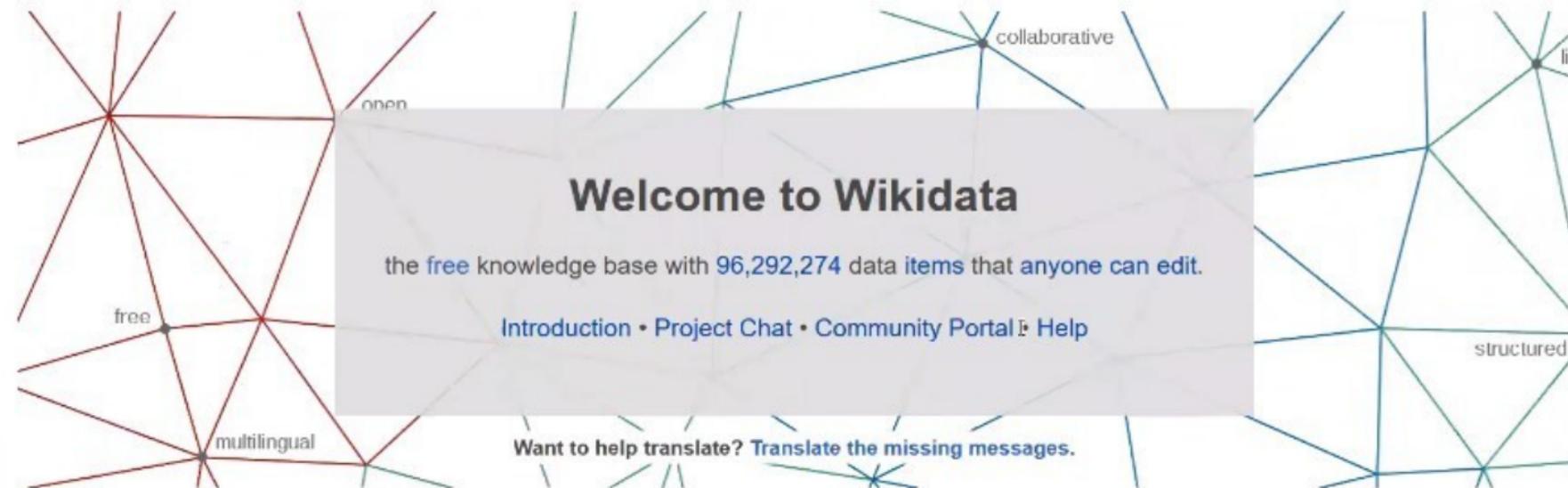


Main page
Community portal
Project chat
Create a new item
Recent changes
Random item
Query Service
Nearby
Help
Donate

Lexicographical data
Create a new Lexeme
Recent changes
Random Lexeme

Tools

What links here
Related changes
Special pages
Permanent link
Page information
Wikidata item



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Let's now talk...

- ◆ ... of the ***mobile web*** and ***apps***
- ◆ Apps are not «web» but they are anyway related (UI) and a big market



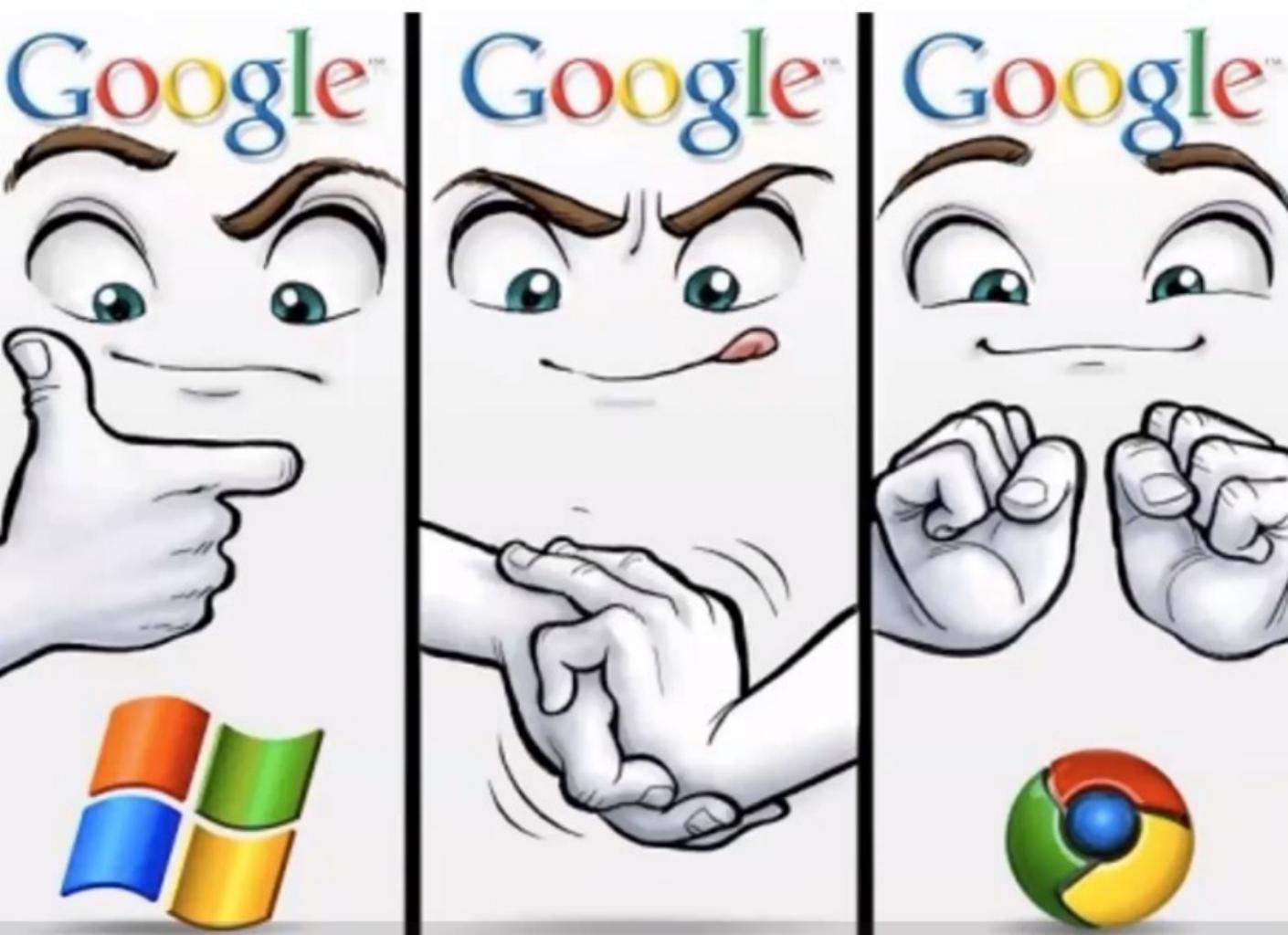
Mobile usability

- ◆ Having seen classic usability and its principles, we can now just focus in the main ***differences***



"Webmaster spam"...





Analysis



- ◆ First, we start from the ***causes*** of the differences between the classic and mobile world: a different ***execution model*** due to the...



Three Base Components of mobile



I

First Component

- ◆ Being ***mobile*** (!)





Second component

- ◆ The ***screen size***, which is obviously quite smaller





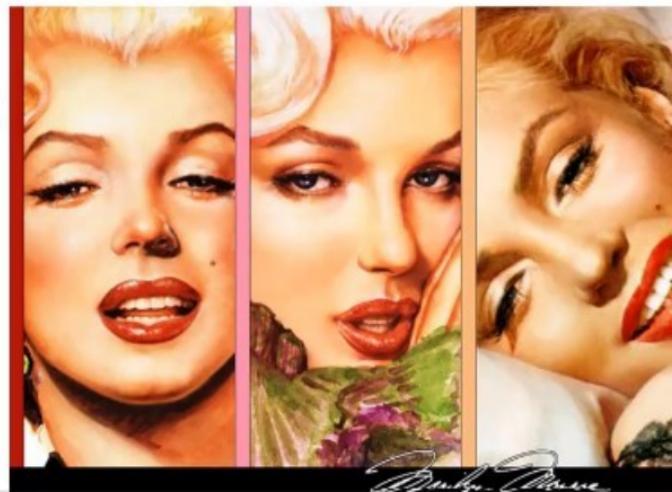
Third Component

- ◆ The interaction mean: **fingers** and not the mouse



Note: beware of the target...

- ◆ Facebook
- ◆ Not so well known fact, Facebook has three mobile versions (!!!):
- ◆ m.facebook.com
- ◆ touch.facebook.com
- ◆ 0.facebook.com



The three Facebooks



- ◆ m.facebook.com is what we think we see when we use a smartphone: instead, internally it's touch.facebook.com :
- ◆ m.facebook.com is actually the non-touch version, whereas touch.facebook.com is for touch-based smartphones

And 0.facebook.com?



◆ Back to that soon.

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I

Let's see the implications

- ◆ Let's start from the first: being **mobile**
- ◆ Mobile has fundamental consequences



The network!

- ◆ The connection type changes
- ◆ Fact: 3G networks are on 40% slower than desktop connections
- ◆ 4G/LTE connections... wildly depends! (-5% -- -40%!)

So...

- ◆ ... Every site pays a ***time price*** when is seen on a smartphone



The «intuitive» answer...

- ◆ We know that already, having spoken about the importance of time for users (timers etc.)
- ◆ So if a page takes 40% more, it takes more time out of any timer

But...

- ◆ ... the problem is more serious:
- ◆ It's not only a matter of session timer or global timer, this is an added delay for every single page
- ◆ And so, users compare that with the average loading times

Local time?

- ◆ In the desktop case, users wait for a maximum time **2 seconds** per page
- ◆ Beyond this time, they have a **delay** perception, and so corresponding discomfort to the site
- ◆ So, local loading time of every page is an important aspect to consider: every page should be fast enough

And in the mobile case?



- ◆ For mobile, users expectations don't change: the limit is always 2 seconds!
- ◆ And so, we have to be careful: adapting the visual layout is not enough, we also have to be careful of the possible penalties of the mobile network

So...

- ◆ ... Always take into account connection speed in the mobile cases: the best way to do it (when possible) is to have ***lighter*** pages for mobile than desktop!



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Beware...

- ◆ ... that the same temporal limits also apply to ***apps***
- ◆ → an app taking more than 2 seconds for an ***action*** is considered slow!

So for the success of an app...

- ◆ ... a fundamental factor is “*responsiveness*”: users should not perceive a delay unless the context clearly justifies that (for instance, photo upload etc).

...



- ◆ We can use a *progress bar*, or a so-called *spinner*



Question...

- ◆ Looks great, but what about the users?
- ◆ Answer: users don't like it!!!
- ◆ Progress bars/spinners are *explicitly* signaling a ***problem***: dear user you have to wait



Metaphorically...

- ◆ Imagine being in a queue at a shop to pay, and somebody would go on and on telling us «you are on a queue, but please be patient!
- ◆ Moral: users ***perceive*** the time delay as ***longer*** when there are progress bars or spinners (!!!)

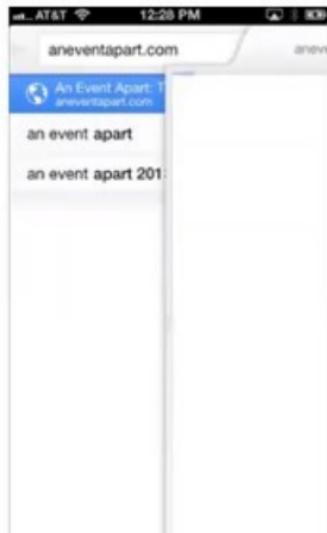
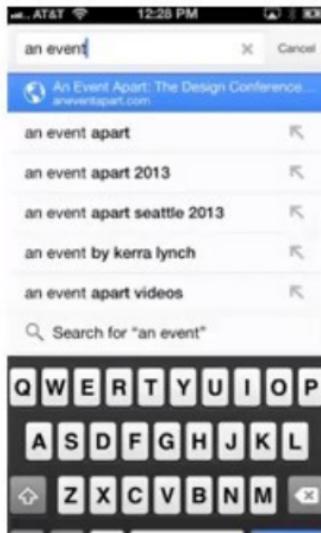


So...

- ◆ In the mobile case (site or app) these solutions are dangerous to use
- ◆ And so what?

Other techniques

- ◆ For instance, ***transitioning***
- ◆ Keep the user busy, for instance with animations and so on

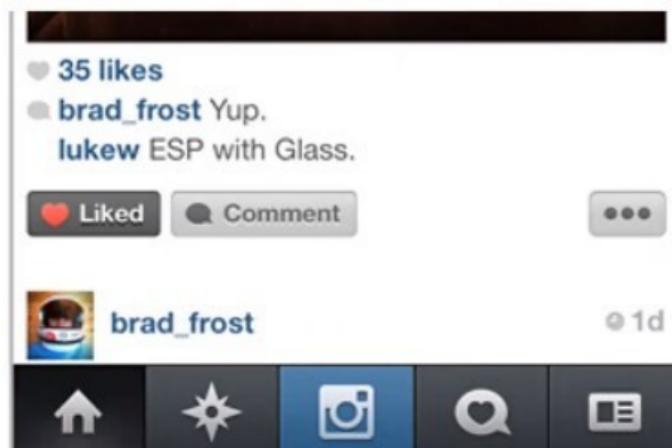
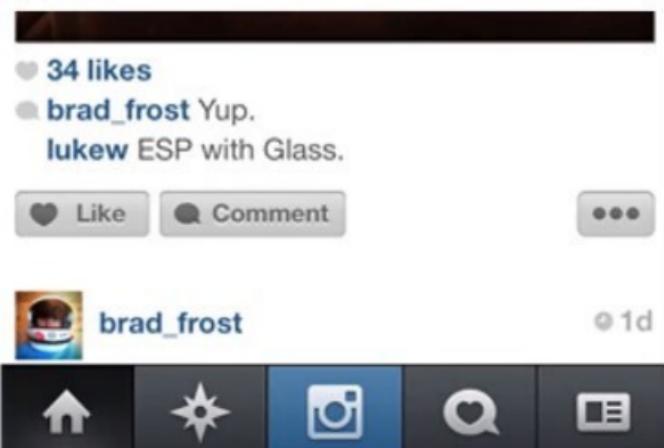


Particular case of transition

- ◆ The *skeleton screen*
- ◆ If I know the final layout of an action, I can start drawing it even if I didn't receive all the data yet

Extreme example

◆ Instagram and the like (followed years later by Facebook...!!)



Other technique: preemptiveness

- ◆ For instance, an app has an «upload photo» action
- ◆ Classic: let the user choose the pphoto, then ask for a description, then upload
- ◆ Better: load the photo as soon as it's been chosen!
- ◆ → almost instantaneous upload, and users super happy!! ☺

Last remark on speed

- ◆ We left pending **0.facebook.com**: what is it?
- ◆ It's a super-fast version, limited-bandwidth, bare-bones functionalities
- ◆ So for instance, images aren't inline, and need an extra click to be seen



What??

- ◆ A super-fast Facebook,
so fast that to speed up it tries to always
use text only
- ◆ So speed is higher, but users are less
happy (more clicks etc)
- ◆ So what is the sense of all this? Why
should I offer this «0» version rather
than the normal mobile version??



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- ◆ When for the user the cost/benefit ratio is very low!
- ◆ The «0» version is offered free in all those places where connections are slow and quite costly





The Second Component

- ◆ The *screen size*
- ◆ Main issue: a page will hardly be seen without scroll
- ◆ So the question: how bad is scroll for mobile?
- ◆ And the answer is: it depends



In general...

- ◆ ***Horizontal*** scroll is as bad as for the desktop case
- ◆ The good news: ***vertical*** scroll instead is often not so bad

The reason?

- ◆ Main reason: the physical and mental effort is quite smaller!
- ◆ Scrolling is done via ***gestures***, without the burden of using the mouse in specific zones to manage it (even worst, sometimes using dragging too)

But beware...

- ◆ Vertical scroll may also be bad for users, when it's used to offer choices (for instance menus, list of products etc)
- ◆ In such cases, the user has to keep in mind the content of what above until the choice is completed, and this generates mental fatigue (too much information in a single shot), proportional to the size of the hidden information (!)

Images in lists...

- ◆ Are justified only when it's about final products (for the same reasons already seen for the classic e-commerce case)

Example

AT&T 5:08 PM 44% sportsauthority.com

SPORTS AUTHORITY. STORES CART

SEARCH

SHOP CATEGORIES + SHOP BRANDS +

Home > Athl... > Me... > Training

18 Total Items View:

Filter Your Results Sort: Top Seller: ▾

NIKE Men's Free Trainer 5.0 Cross-Training Shoes

NIKE Men's Free Trainer 7.0 Super Bowl Cross-Training Shoes

AT&T 5:08 PM 44% sportsauthority.com

SPORTS AUTHORITY. STORES CART

SEARCH

SHOP CATEGORIES + SHOP BRANDS +

Home > Athl... > Me... > Training

18 Total Items View:

Filter Your Results Sort: Top Seller: ▾

NIKE Men's Free Trainer 5.0 Cross-Training Shoes

\$95.00

More Colors Available

★ ★ ★ ★ ★

Free Returns on Shoes!**

▲ Top

And the middle way?

- ◆ For instance, text with small images?
- ◆ That's good for general categories/menus, but not for final products: the primary pulsion is always to also *see the product*

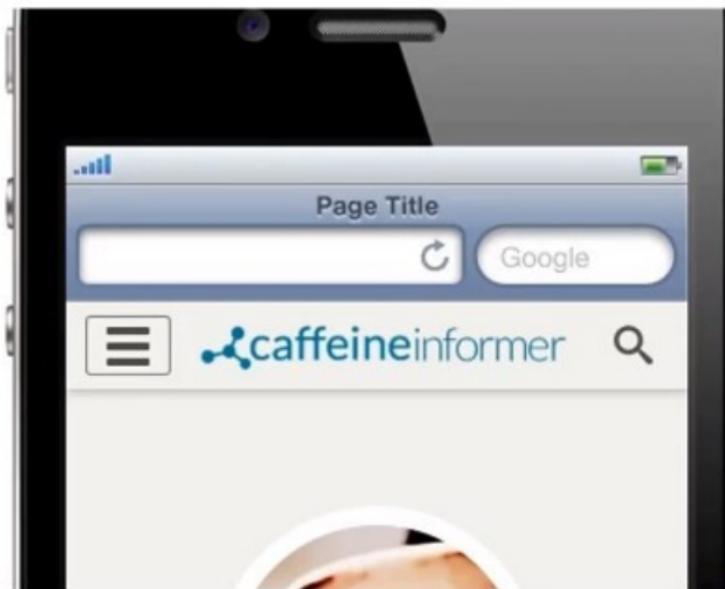
The screenshot shows a mobile browser displaying the Lowe's website at 6:16 PM. The top bar includes signal strength, battery level (59%), and the URL lowes.com. The page header features the Lowe's logo, a menu icon, a search icon, and links for 'my MyLowe's' and 'Cart'. Below the header, a breadcrumb navigation shows 'All Departments' and the current category 'Appliances'. A large button invites users to 'View All 5786 Products'. To the right, there is a vertical list of sub-categories under 'Appliances': 'Appliance Parts & Accessories', 'Beverage Centers & Wine Chillers', 'Cooktops', 'Dishwashers', 'Freezers & Ice Makers', and 'Garbage Disposals'. Each item has a small icon next to its name.

Category	Icon
Appliance Parts & Accessories	Icon of a wrench and screwdriver
Beverage Centers & Wine Chillers	Icon of a refrigerator
Cooktops	Icon of a cooktop
Dishwashers	Icon of a dishwasher
Freezers & Ice Makers	Icon of a freezer
Garbage Disposals	Icon of a trash can

Other consequence of the smaller mobile size

- ◆ To remedy for the small size, one solution can be to use ***icons*** rather than ***text*** for buttons
- ◆ The problem is the same as for the desktop though: this works if users know that the icon means (so ok for instance to the search lens, but others?)

The Hamburger!



The big problems of menus for mobile

- ◆ Menus are an essential components of sites, but that's potentially so wasteful for mobile: we have to use lot of text in a small screen
- ◆ BUT... if we are strong enough we can «push» in some other way...(!)

Example



- ◆ Firefox changed some time ago its desktop interface, introducing the *hamburger*, on its *right* side (!)



Answer

- ◆ Firefox -> Mozilla Corporation
- ◆ Corporation = “for profit” private entity
- ◆ Financed by whom?
- ◆ Answer: since many years, primarily by Google (with hundreds of millions of dollars...!)
- ◆ This is why for instance Firefox has Google as default search engine (!!)



Back to icons

- ◆ If we want to use icons the best is to also use text (like for desktop), but if we really want to use an icon without text...
- ◆ We should at least respect the **explainability** principle:
- ◆ Keeping pressed the icon the user can obtain textual information on its action



Moreover...

- ◆ A companion principle should also be always used: **escapability**
- ◆ --> a user can always «escape» from an action just by moving away the finger from the icon
- ◆ Principle valid in general for any touch action!
- ◆ (There are then also other factors related to icons and clickable objects due to the Third Component that we will see soon)

Other consequence of mobile size...

- ◆ Having a smaller screen implies also a redefinition of what «invasive» means for an advertisement banner

Advertisement sizes

- ◆ We already mentioned it in the classic case, saying they should be «too big»
- ◆ This is intuitive enough for a desktop screen size, but what about mobile screens?

Interstitial ads

- ◆ Fullscreen,
HTML5-enabled



Smart banners

- ◆ Sizes:
(screen width) x (32/50/90)



Users...?



- ◆ Interstitial ad: generally bad, but something is even worst
- ◆ Smart banners that are implemented in a **fixed** (not scrollable) position

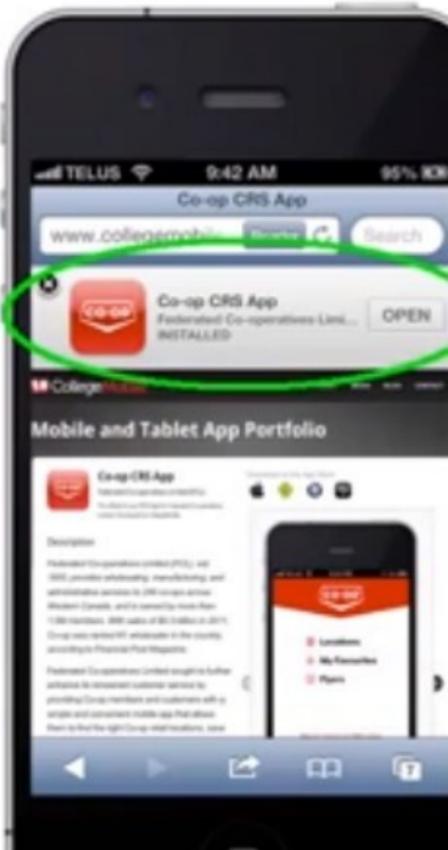
Moreover

- ◆ Small banner → temptation to grab people attention: that's the «Dancing Jesus»!!!



Last but not least...

- ◆ The temptation of the so-called Smart App Banner (publicize the site app)
- ◆ Result: *super annoying* for users (equivalent to the pop-up for the desktop...!)



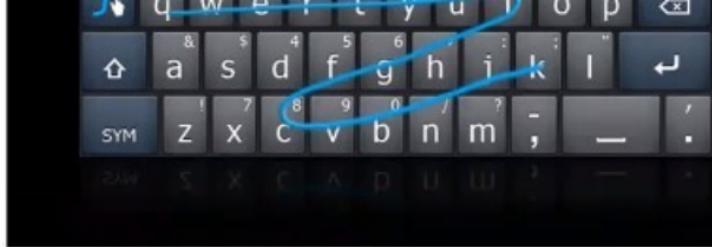


The Third Component

- ◆ The interaction way: **fingers**
- ◆ Fingers have pros and cons



Drag



- ◆ Unlike the desktop case, *drag* is not problematic: there is no muscle effort to keep pressed a mouse...
- ◆ This aspect make gestures particularly appealing to users (remember gestures could after all be done also in desktop with a mouse....!), and related uses (like swype)

Untiming



- ◆ Actions activated by finger pressing should be dependent on duration, but just distinguish between «tap» and «drag» (prolonged press)
- ◆ Some mobile user interfaces/apps instead assign different actions to different press durations: this causes **errors** and high ***user stress***

Let's pass now...

- ◆ To the problem with fingers
- ◆ Major problem: compared to the mouse, fingers are rather rough
- ◆ They are usually referred in the mobile world as "***fat fingers***" (!)

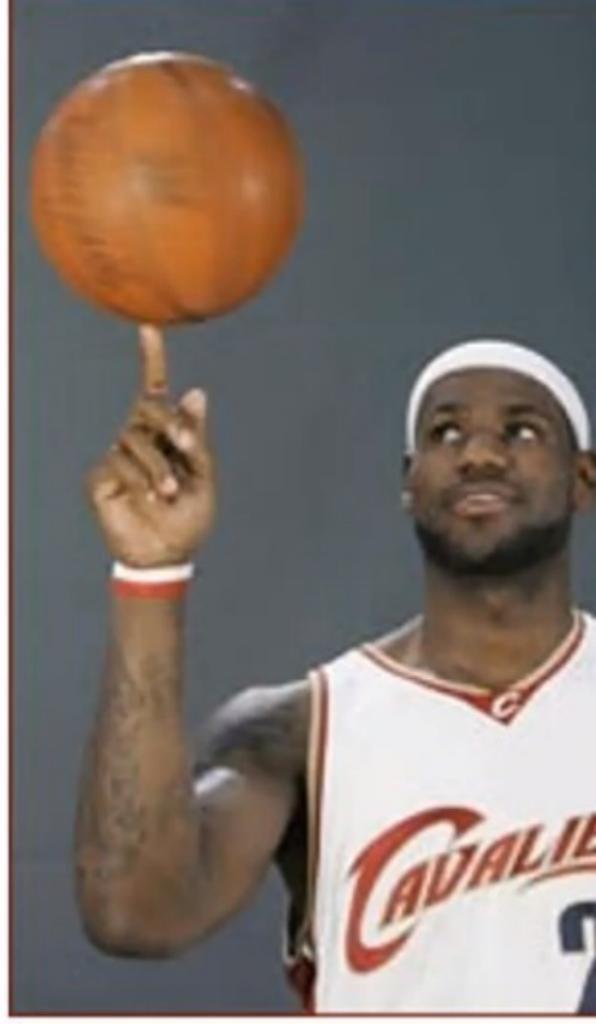
What happens in reality...

- ◆ Is that often fingers are the cause of clicking problems



“Fat”...?

- ◆ To know whether our buttons are too small, we should know how big fingers generally are...



The answer



- ◆ The average finger is 11 millimeters wide (!)
- ◆ Children fingers? 8 millimeters (!!)
- ◆ Big fingers? Up to 19 millimeters (!!!)
- ◆ Moral: any clickable area must be big enough so to be well centered with a finger!

Consequences

- ◆ The ***minimum size*** of any clickable is **7x7 millimiters**
- ◆ Around, we need a «padding» safety zone wide at least **2 millimiters**
- ◆ If we really don't have room, we could go down to **5x5**, factoring a 20% decrease in precision (→ user frustration)
- ◆ If on the other hand we want to make users happier, we can use **9x9 millimiters** and beyond



Reversibility

- ◆ Every action taken should be reversable
(even more in situations of potential errors due to the fat fingers)

Type to compose



q w e r t y u i o p

a s d f g h j k l

z x c v b n m ⌂

?123



Next



Example of epic fail...

