# IO Lab:
# Mobile Web

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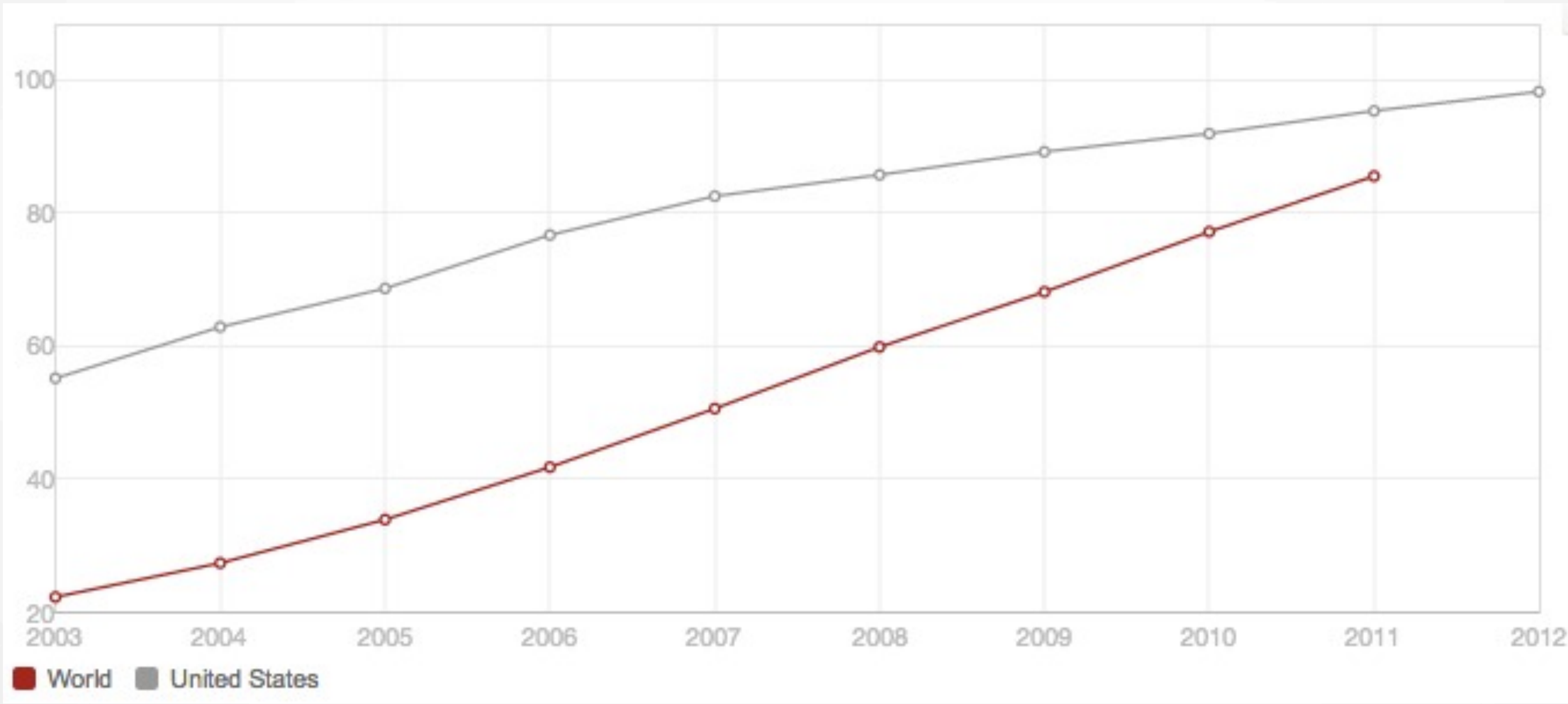
# Project 1
# Grade & Feedback

# Why Mobile?

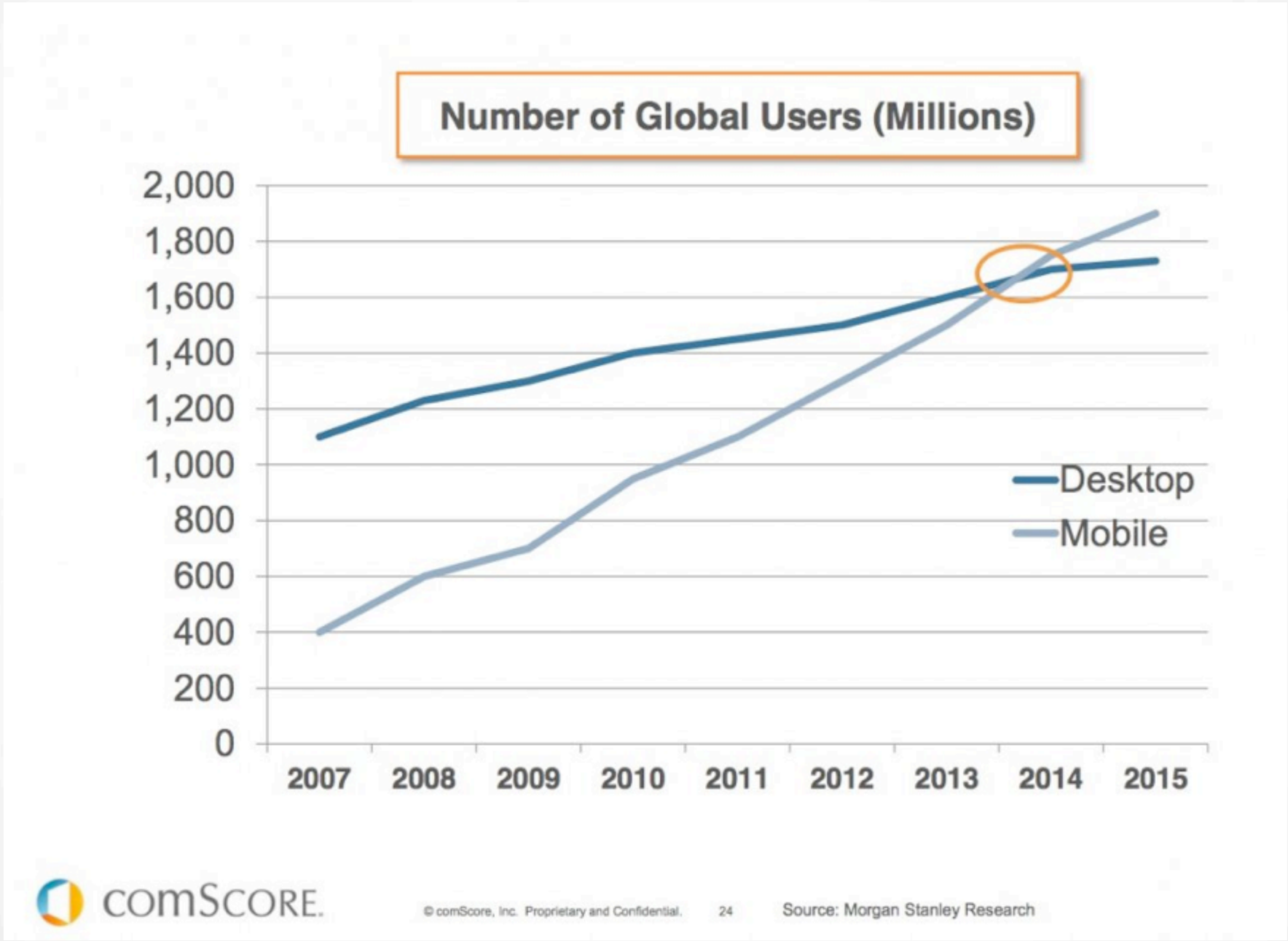
# The Landscape

## Mobile cellular subscriptions (per 100 people)




http://data.worldbank.org/indicator/IT.CEL.SETS.P2/countries/1W-US?display=graph

# The Landscape




http://www.businessinsider.com/mobile-will-eclipse-desktop-by-2014-2012-6

# The Landscape

**6.8 billion**

mobile subscriptions in the world.

**1.2 billion**

people access the web from mobile devices.

http://mobithinking.com/mobile-marketing-tools/latest-mobile-stats
http://www.mobify.com/blog/13-stats-to-convince-your-boss-to-invest-in-mobile-in-2013/

# The Landscape

**15%**

of all global internet traffic is mobile.

**58%**

of all US consumers already own a smartphone.

http://mobithinking.com/mobile-marketing-tools/latest-mobile-stats
http://www.mobify.com/blog/13-stats-to-convince-your-boss-to-invest-in-mobile-in-2013/

# Mobile-Only Users

Many mobile web users are **mobile-only**.

The lack of mobile-friendly content can lead to accessibility issues, not to mention potential loss of business.

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# Mobile-Only Users

## 25%

of US mobile web users are mobile-only.

## Egypt, India, S. Africa

have the highest percentage of mobile-only web users
(70%, 59%, and 57% respectively).

http://mobithinking.com/mobile-marketing-tools/latest-mobile-stats
http://www.mobify.com/blog/13-stats-to-convince-your-boss-to-invest-in-mobile-in-2013/

# Mobile Web VS Native Apps

# A Comparison


| Mobile Web | Native Apps |
| --- | --- |
| Less overhead to get started | More overhead, but has access to native functionalities |
| Accessible to more devices | Faster performance |
| HTML, CSS, Javascript | Objective C (iOS), Java (Android) |

# Hybrid Apps

“In-between” web & native.

Frameworks

PhoneGap (http://phonegap.com)

Appcelerator Titanium (http://www.appcelerator.com/platform/titanium-platform/)

# Hybrid Apps

Use web technologies (HTML, CSS, JS).

Which is then wrapped in native code

... to allow access to the device's native functionalities (camera, storage, contacts, etc).

... and can be deployed to multiple platforms simultaneously (iOS, Android,etc).

# Which One to Use?

It depends

... on your users

... on the business requirements

... on resources available

... etc.

For this course, we will be focusing on mobile web.

# Mobile Web

# THIS IS THE WEB.

# Two Concepts

Graceful degradations

Progressive enhancements

# Graceful Degradation

Providing an **alternative version** of your functionality or making the user aware of shortcomings of a product as a safety measure to ensure that the product is usable.

“Big to small”

# Progressive Enhancement

Starting with a **baseline of usable functionality**, then increasing the richness of the user experience step by step by testing for support for enhancements before applying them.

“Small to big”

## Graceful Degradation

## Progressive Enhancement

http://deepblue.com/blog/2013/01/responsive-web-design-and-progressive-enhancement-the-facts/

# Mobile First

## Why not think about mobile first?

Mobile use is exploding.

Focus, focus, focus.

Going “small to big” ensures that you’re not “discounting” experiences or features.

However, “mobile first” approach can be challenging.

# Two Approaches

Adaptive design

Responsive design

# Adaptive Design

# Adaptive Design

Detects if user is accessing the site from a mobile device, then serves content accordingly.

Achieved by detecting the “user agent”, e.g.

```
if(strstr($_SERVER['HTTP_USER_AGENT'],'iPhone') ||
strstr($_SERVER['HTTP_USER_AGENT'],'iPod')) {
    header('Location: http://m.website.com');
    exit();
}
```

Multiple code bases: desktop & mobile (& possibly tablet).

Typically hosted on a sub-domain, e.g. m.website.com.

# Examples

http://www.aa.com

http://www.politico.com

http://www.nytimes.com

http://www.cnn.com

# Responsive Design

# Responsive Design

Adjusts content & layout according to the device's screen size & orientation.

Achieved with client-side language (CSS & Javascript).

The layout may change, but the site/app is serving the same code.

Hosted on the same domain.

# Examples

http://www.bostonglobe.com/

http://worldwildlife.org/

https://www.capitalone.com/

http://www.wendys.com/

More examples?

# Some Key Concepts

Viewport meta tag

Media queries

Fluid grids

Flexible images & media

# Mobile Web: Two Approaches

| Adaptive Design | Responsive Design |
| --- | --- |
| Detects the device you're using and serves content accordingly | Changes content by responding to browser window's width |
| Different code bases for different versions of the site | Same code base throughout |
| The mobile version is typically under a subdomain, e.g. m.nytimes.com | Same URL for all versions, e.g. bostonglobe.com |

# Which One to Use?

| Adaptive Design | Responsive Design |
| --- | --- |
| Code base for each version is likely smaller | Code may get heavy, as you need to take into account multiple permutations |
| Performance benefit (faster) | Performance penalty (slower) |
| Maintenance for multiple code bases, which maybe more time-consuming | Maintenance for one code base |
| Can tailor distinct user experiences on different devices (e.g. simpler & task-oriented for mobile) | User experience on different devices are more similar |

# In Other Words

It depends

... on your users

... on the business requirements

... on resources available

... etc.

# Tips for Mobile

# Tips for Mobile

Real estate is limited. Prioritize your content.

Speed matters **a lot**, but user's bandwidth may be limited.

> Don't make the user "hunt" for information.
>
> 1.0 second is about the limit for the user's flow of thought to stay uninterrupted, even though the user will notice the delay. *

Not everything has to look the same as the "big browser" version.

> Consistent user experience != same look

Fingers, not mouse pointer.

* http://www.nngroup.com/articles/response-times-3-important-limits/

# Next Class

# Next Class

Responsive web development

Reading: “Responsive Web Design”