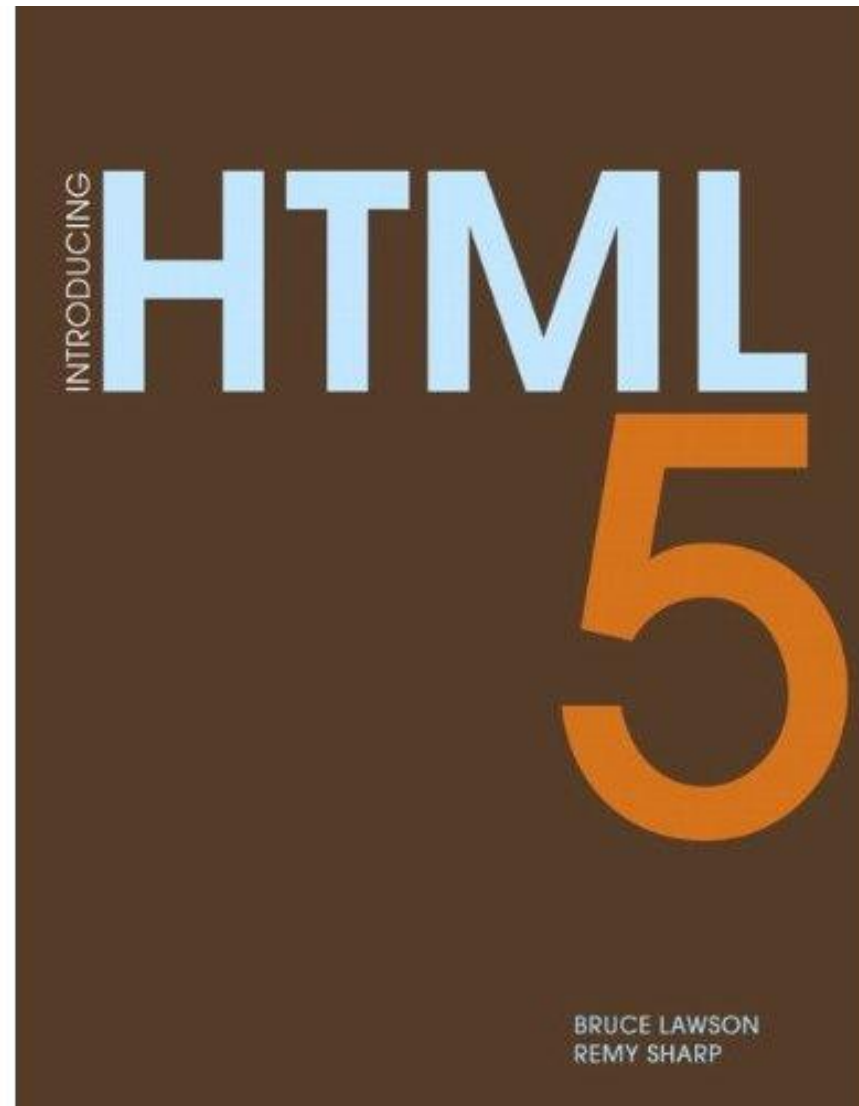


Web Anywhere

Mobile Optimisation With HTML5, CSS3, JavaScript





introducinghtml5.com



Opera – one browser on many devices

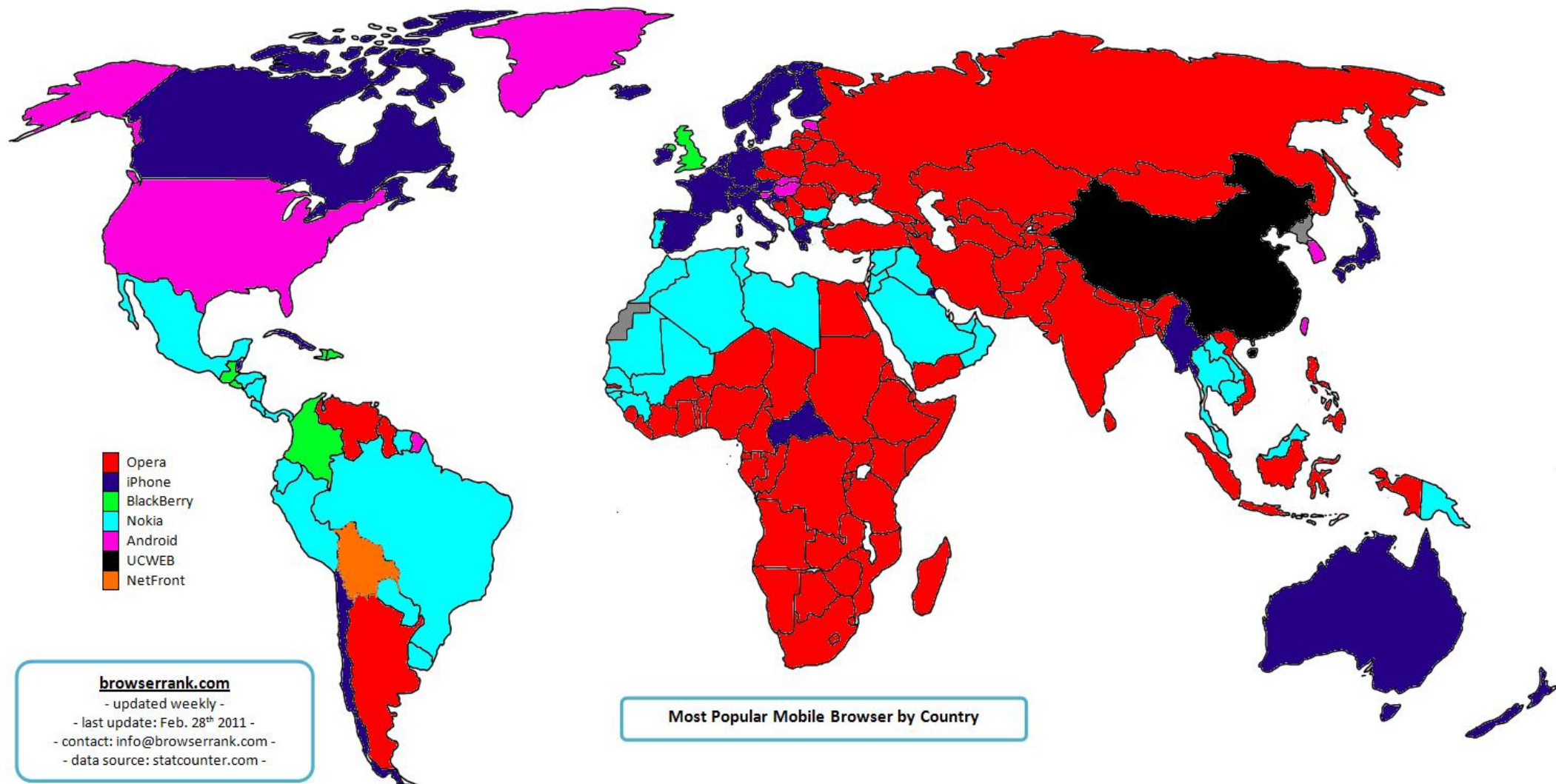
"Our goal is to take the **one true Web** and make it available to people on their terms."

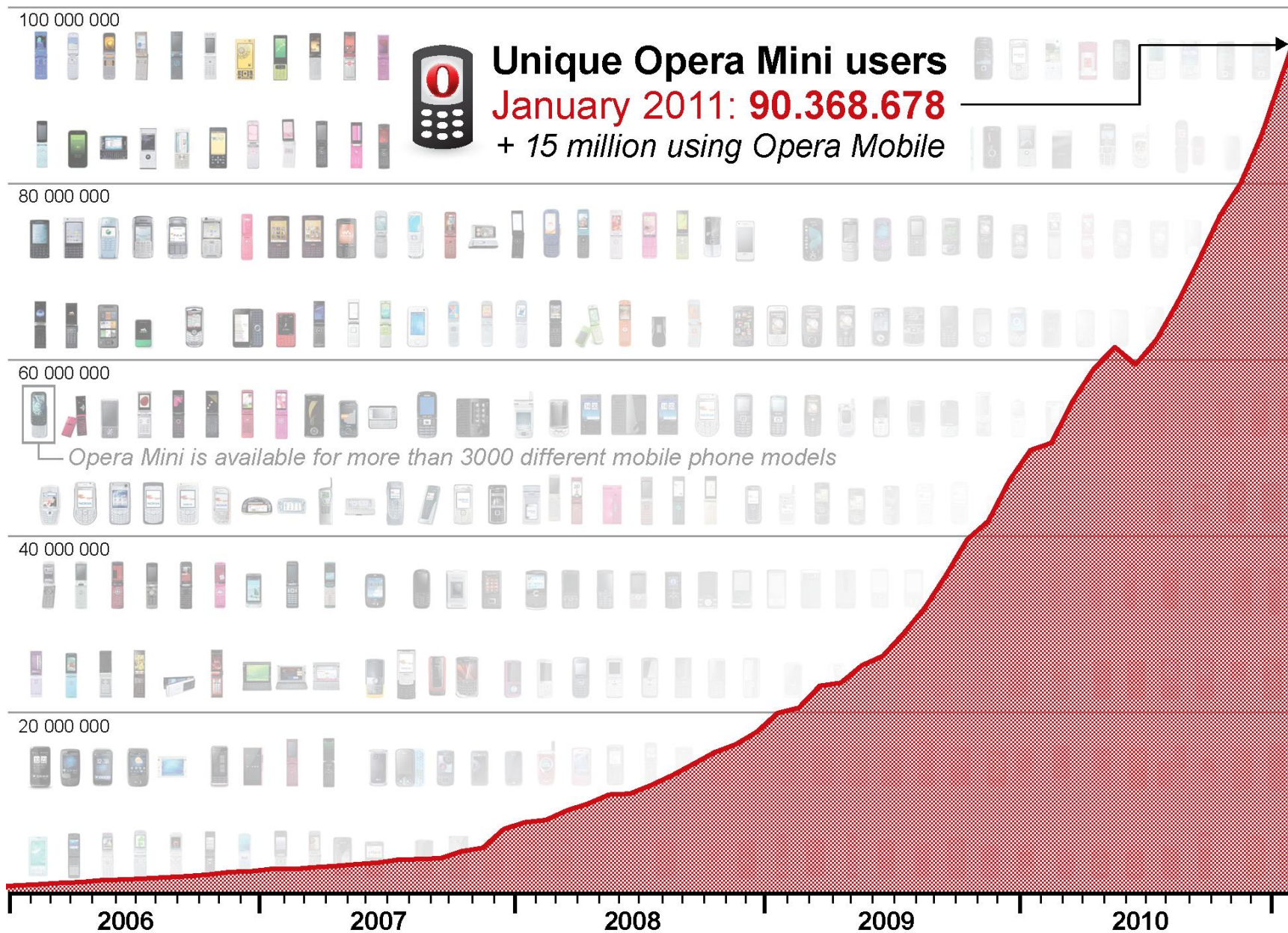
Jon S. von Tetzchner, Opera Co-founder

"All I ask is access to the full Web, for everyone, everywhere.
And some more beer."

Me

Most-popular mobile browsers (**Opera=red**)





Total page views (Opera Mini)

Last month we had **52 billion page views**.
 That is Reddit, times 52.



Data transfer (Opera Mini)

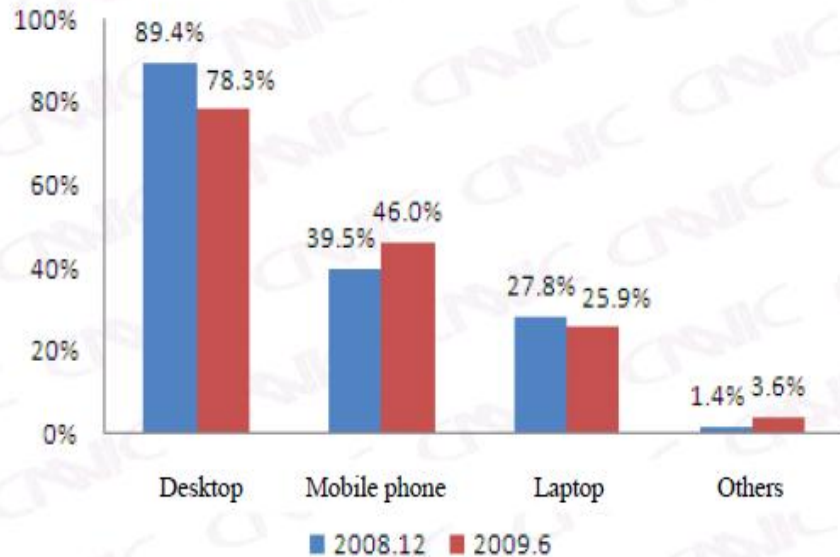
Last month Opera Mini **transferred 804 million megabytes of data**. That is approx.

10 times the amount of data found in the online collection of the U.S. Library of Congress.



Graphic: Tom Byermoen // Opera Software

China



CNNIC

www.cnnic.cn, 2009.06

Fig. 19 Access Equipment

“The proportion of [people] accessing the Internet by mobile increased enormously from 39.5% in late 2008 to 46% in June 2009, while the proportion of using desktops and laptops decreased”. (close to 150 million people).

Statistical Report on Internet Development in China, p25-26, July 2009, www.cnnic.cn



USA - www.opera.com/smw

Top 10 sites (unique users)

1. google.com
2. facebook.com
3. youtube.com
4. wikipedia.org
5. yahoo.com
6. my.opera.com
7. accuweather.com
8. twitter.com
9. espn.go.com
10. myspace.com

Top 10 handsets, Jan 2011

1. Apple iPhone
2. LG VM265 “Rumor2”
3. BlackBerry 8520 “Curve”
4. BlackBerry 9700 “Bold”
5. LG VM510 “Rumor Touch”
6. BlackBerry 8330 “Curve”
7. BlackBerry 8900 “Curve”
8. BlackBerry 8530 “Curve”
9. Samsung SPH-M810 “Instinct S30”
10. BlackBerry 9630 “Tour”

UK

Top 10 sites

1. google.com
2. facebook.com
3. bbc.co.uk
4. youtube.com
5. wikipedia.org
6. live.com
7. my.opera.com
8. bing.com
9. mobile2day.com
10. newsnow.net

Top handsets, January 2011

1. Apple iPhone
2. Nokia C3
3. BlackBerry 8520 “Curve”
4. Nokia 2330c
5. BlackBerry 9700 “Bold”
6. Nokia 6700c
7. Nokia 2730c
8. BlackBerry 8900 “Curve”
9. Nokia 6300
10. Nokia 6303c

Burma

Top 10 site

1. google.com
2. facebook.com
3. bbc.co.uk
4. my.opera.com
5. nytimes.com
6. espn.go.com
7. cnnmobile.com
8. getjar.com
9. topshareware.com
10. zedge.net

Top handsets

1. Apple iPhone
2. Nokia 5730s
3. Nokia 5800d
4. Sony Ericsson W800
5. Nokia X3
6. Nokia X6
7. Sony Ericsson U5i
8. Nokia C3
9. BlackBerry 9700 “Bold”
10. Nokia N8

Menu

- ★ Philosophy
- ★ 3 Methodologies
- ★ Optimisation tips
and tricks
- ★ Future

Mobile Web philosophy



@stephenhay

Stephen Hay

There is no Mobile Web. There is only The Web, which we view in different ways. There is also no Desktop Web. Or Tablet Web. Thank you.

14 minutes ago via web ☆ Favorite ↺ Undo Retweet ↻ Reply

Three **methodologies**

- 1. Special mobile site**
- 2. Do nothing at all**
- 3. Optimise for mobile**

- 1. Special mobile site**
2. Do nothing at all
3. Optimise for mobile

refactored for small screen,
not **dumbed down** for mobile

offer users **choice**:
desktop or mobile?

A photograph of two dogs on a bed of dark brown wood mulch. A large tan dog is on the left, and a smaller black dog with white paws is on the right. They are both sniffing each other. A semi-transparent white banner is overlaid across the middle of the image, containing the text 'beware browser sniffing'.

beware **browser sniffing**

photo: <http://www.flickr.com/photos/timdorr/2096272747/>



@dhh

DHH

Taking your web app mobile just for iOS in 2011 is like taking your business to the web just for IE4 in 2001.

2 hours ago via [Tweetie for Mac](#) ☆ [Favorite](#) ↺ [Retweet](#) ↻ [Reply](#)

1. Special mobile site
- 2. Do nothing at all**
3. Optimise for mobile

not **WAP or text** anymore...

mobile browsers
know how to deal with the Web

JavaScript touch events

```
addEventListener('touchstart'..)  
addEventListener('touchmove'..)
```

CSS 3

font control, text and box shadows,
rounded corners, basic animations

```
-moz-transition: all 0.5s ease-in-out;  
-ms-transition: all 0.5s ease-in-out;  
-o-transition: all 0.5s ease-in-out;  
-webkit-transition: all 0.5s ease-in-out;  
  
transition: all 0.5s ease-in-out;
```

HTML5

```
<!DOCTYPE html>
```


“...extending the language to **better support Web applications**, since that is one of the directions the Web is going in and is one of the areas least well served by HTML so far. ”

Ian Hickson, Editor of HTML5

<http://lists.w3.org/Archives/Public/public-html/2009Jan/0215.html>



<canvas>

canvas = “scriptable images”

`<svg>` or `<canvas>`?

Scalable Vector Graphics:

- Supported in 4 modern desktop browsers, and IE9
- Not supported in native Android browser, fine in Opera Mobile/Android
- Vector graphics, therefore infinitely scalable
- XML so text-based - can be made accessible
- Keeps a DOM
- Can author with Adobe Illustrator or Inkscape

geolocation

find out **your location** via JavaScript

```
navigator.geolocation.getCurrentPosition(success, error);

function success(position) {
    /* where's Waldo? */
    var lat = position.coords.latitude;
    var long = position.coords.longitude;
    ...
}
```



Find owls near you!

Go

e.g. [Brighton](#) or [San Francisco](#)

Use for **progressive
enhancement**

Owls near Wandsworth, London SW11 4AA, UK



4.1 miles away

We think your nearest owl is a [Burrowing Owl](#) at [London Zoo](#)! Spotted 3 times, most recently by [cookieyum](#) 3 years ago.



Wandsworth, London SW11 4AA, UK

Go

e.g. [Brighton](#) or [San Francisco](#)

Other nearby owls

offline support

HTML5 forms

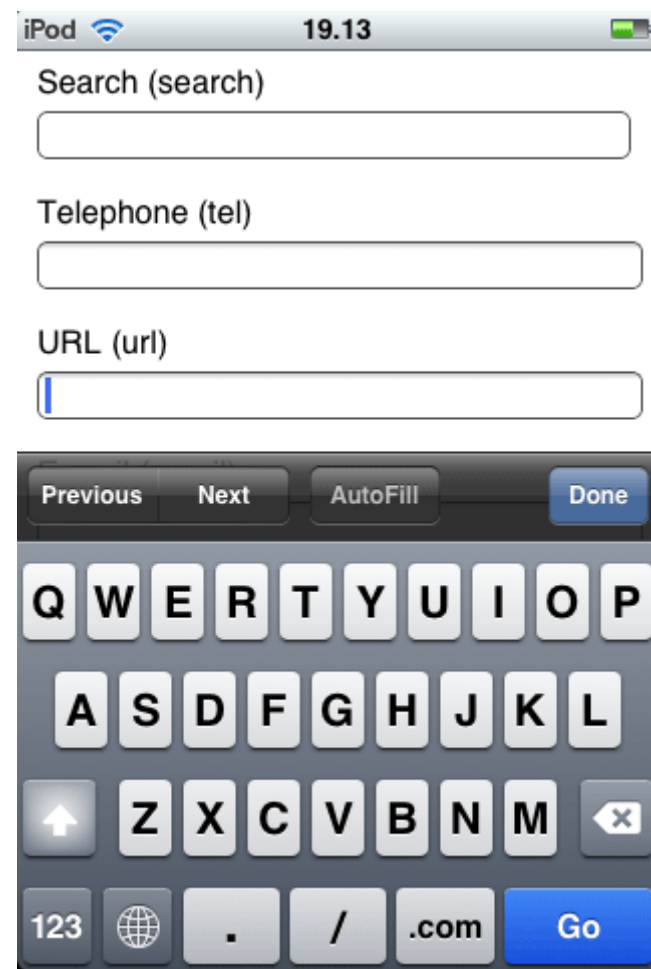
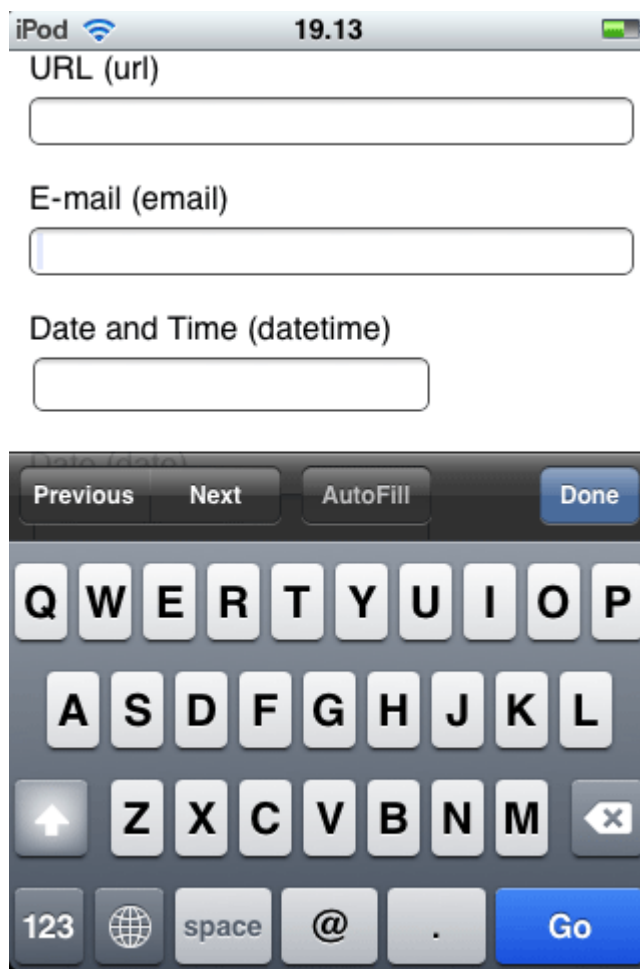
```
<input type=email>
```

```
<input required>
```

```
<input type=url>
```

Submit

This is a required field



detect if a browsers goes **offline**

```
window.addEventListener('online', function(){ ... }, true);  
window.addEventListener('offline', function(){ ... }, true);
```

storage

localStorage/sessionStorage

like cookies...

```
document.cookie = 'key=value; expires=Thu, 15 Feb 2010  
23:59:59 UTC; path=/'
```

```
...
```

```
/* convoluted string operations go here ... */
```


localStorage/sessionStorage like cookies...on **steroids**!

```
localStorage.setItem(key, value);  
localStorage.getItem(key);  
localStorage.clear();  
localStorage.key = value;  
if (localStorage.key == '...') { ... }  
...
```

application cache

cache UI/resource files for **offline** use

```
<html manifest="blah.manifest">
```

CACHE MANIFEST

send this with correct text/cache-manifest MIME

images/sprites.png

scripts/common.js

scripts/jquery.js

styles/global.css

Server-sent Events

Web Sockets

1. Special mobile site
2. Do nothing at all
- 3. Optimise for mobile**

“One Web means making, as far as is reasonable, the same information and services available to users irrespective of the device they are using. However, it does not mean that exactly the same information is available in exactly the same representation across all devices.”

W3C Mobile Web Best Practices <http://www.w3.org/TR/mobile-bp/#OneWeb>

“responsive” design with CSS Media Queries

Querying device capabilities (width, height, orientation, color, resolution, aspect ratio) **not** browser sniffing

CSS 3 Media Queries:

```
@media screen and  
    (max-width: 480px) {  
  
    // insert CSS rules here  
  
}
```

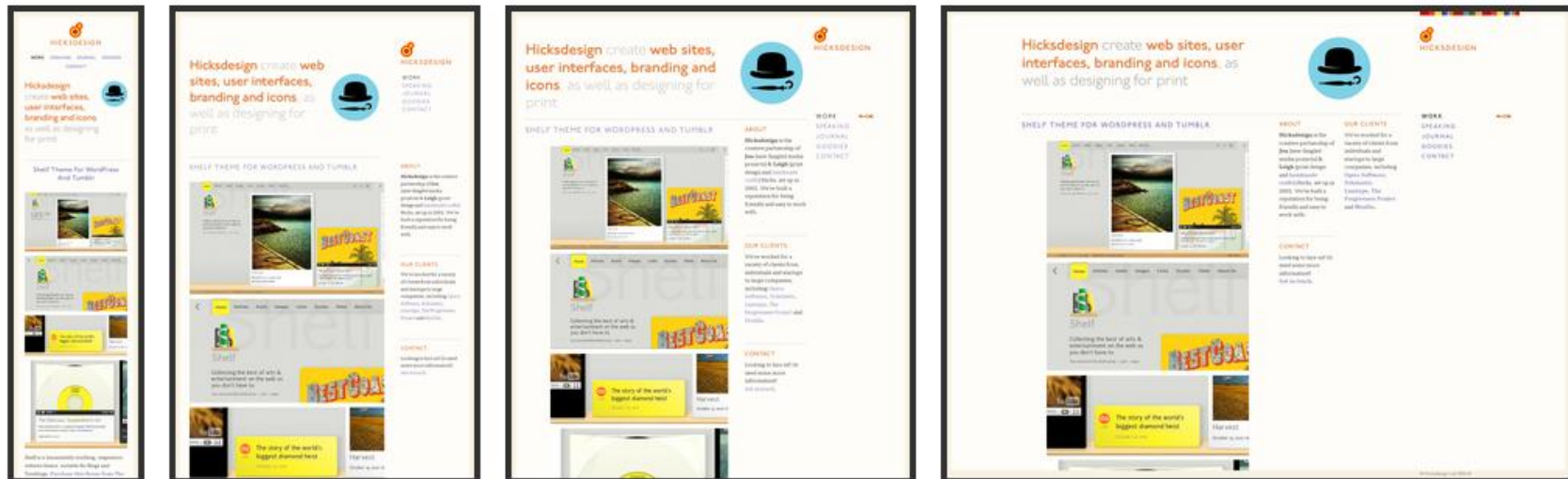
<http://www.w3.org/TR/css3-mediaqueries/>

Information Architects



<http://mediaqueri.es>

Hicksdesign



<http://mediaqueri.es>

Think Vitamin

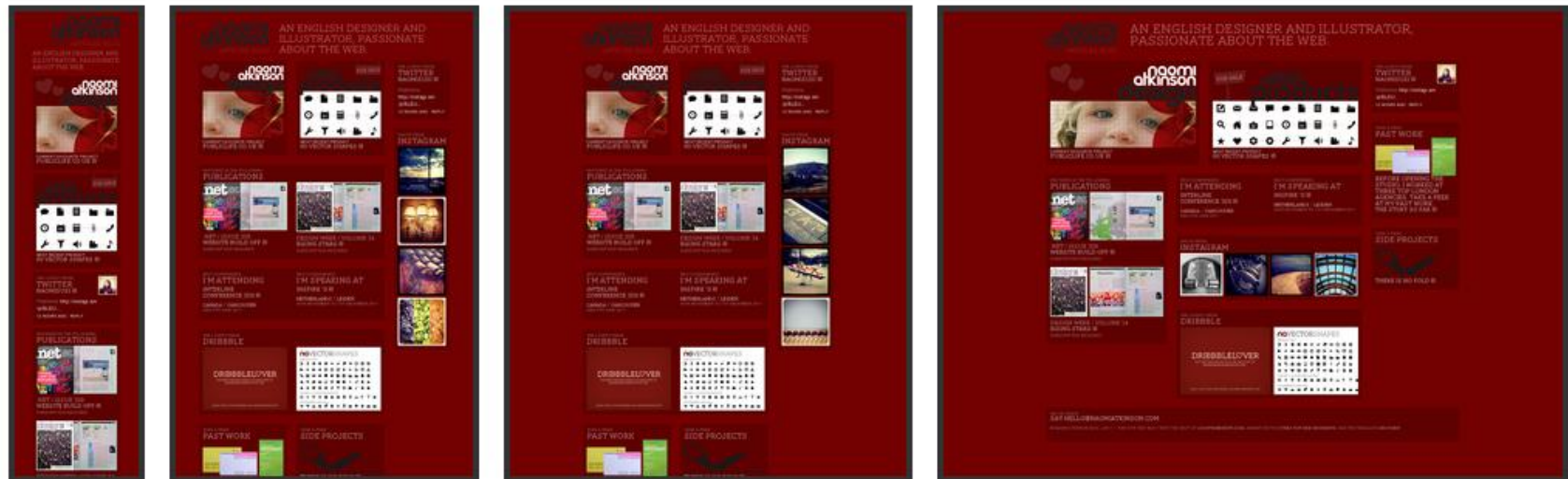


<http://mediaqueri.es>

Naomi Atkinson



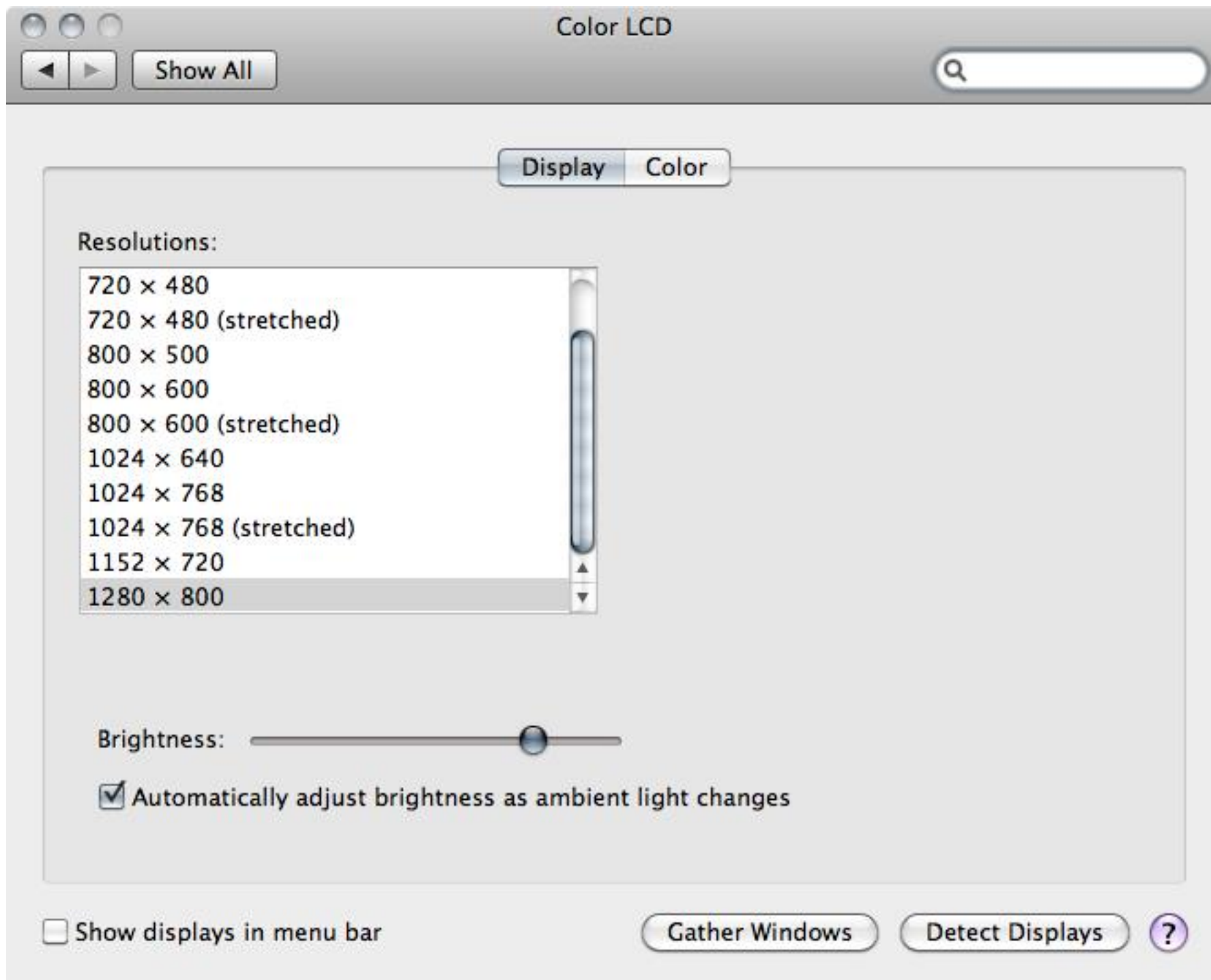
14



<http://mediaqueri.es>

Viewport metatag

physical vs virtual pixels



viewport meta

```
<meta name="viewport"  
content="width=device-width">
```

```
<meta name="viewport"  
content="width=320, initial-  
scale=2.3,user-scalable=no">
```

<http://developer.apple.com/safari/library/documentation/AppleApplications/Reference/SafariWebContent/UsingtheViewport/UsingtheViewport.html>



KAREN LAUKE

SOUND DESIGN AND ORIGINAL COMPOSITION

> NEWS

SOUND KITCHEN - PQ 11

4 JANUARY 2011

A collaborative proposal with **Patrick H. Lauke** for the **Sound Kitchen** project at the **Prague Quadrennial 2011** has been accepted. Planning for the exhibition is now underway.

[> news archive](#)

+ WORKS

MEMORIES UNEARTHED (REDUX)

RESONANCE FM - FRAMEWORK: AFIELD

MEMORIES UNEARTHED

DREAMING THE SILENCE

HIEROGLYPHIC

+ ABOUT

I'm a composer and sound designer primarily interested in creating original experimental music and sound for theatre, installations, live performances and exhibitions.

My music has been performed and exhibited nationally and internationally at festivals, concerts and performance events. You can listen to samples of my work in my portfolio.



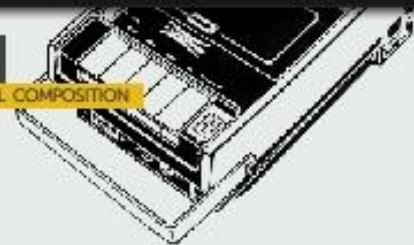
+K Karen Lauke – Sound design an...

www.karenlauke.com/



KAREN LAUKE

SOUND DESIGN AND ORIGINAL COMPOSITION



> NEWS

SOUND KITCHEN - PQ 11

4.3.2012 - 2012

A collaborative proposal with Patrick H. Lauke for the SoundKitchen project at the Prague Quadrennial 2012 has been accepted. Planning for the exhibition is now underway.

[> new archive](#)

+ WORKS

MEMORIES UNEARTHED (REDUX)

RESONANCE FM - FRAMEWORK: A FIELD

MEMORIES UNEARTHED

DREAMING THE SILENCE

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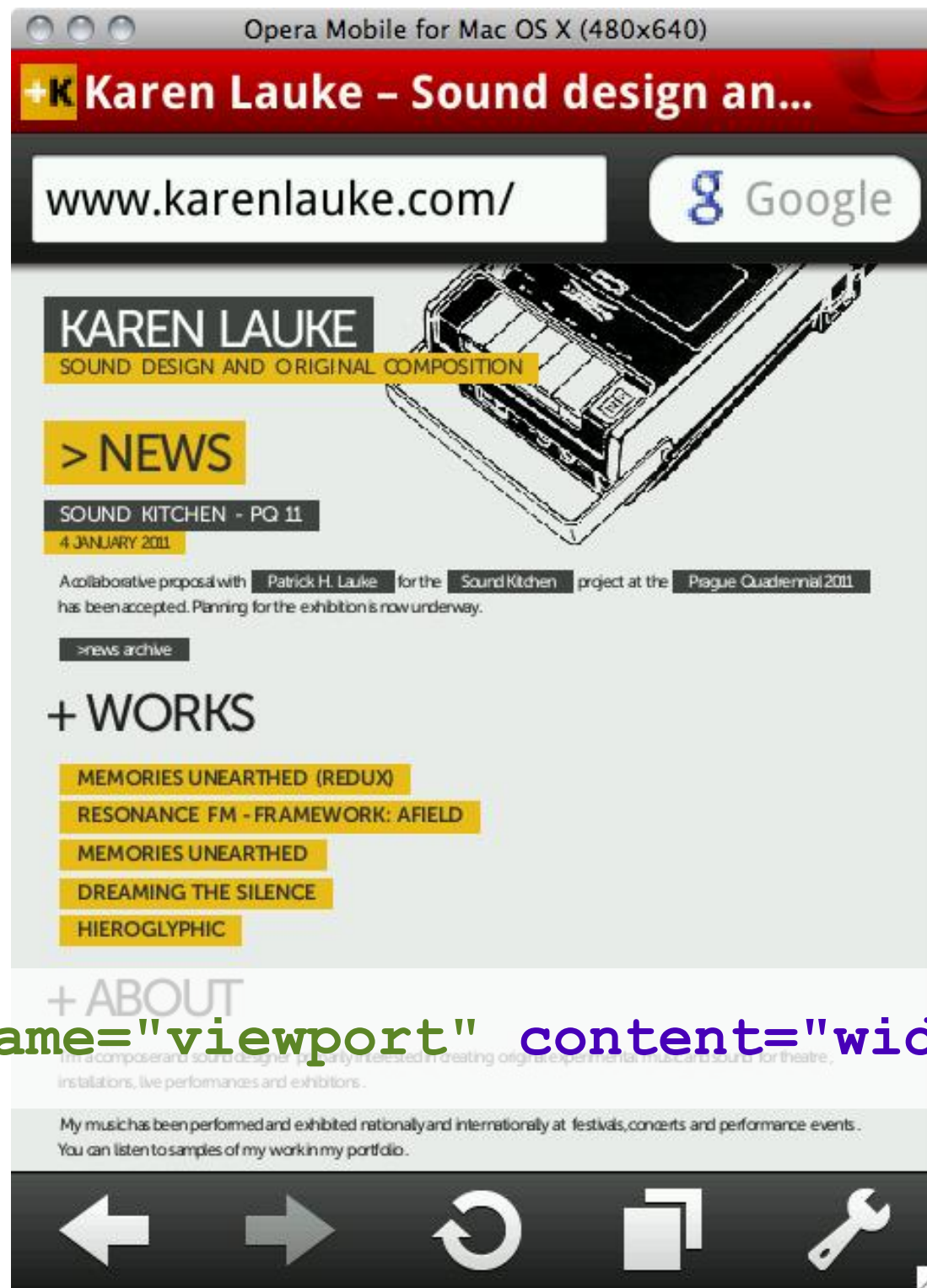
I'm particularly interested in the relationship that sound has with spatialisation, text and visual imagery, whether through live performance, installation or multimedia based work.

[> full list of performances and conference papers](#)

+ CONTACT

info@karenlauke.com





<meta name="viewport" content="width=550">

If you're using Media Queries:

```
<meta name="viewport"  
content="width=device-width">
```

If you have an explicit width:

```
<meta name="viewport"  
content="width=550">
```

Tips 'n' tricks

HTML tips:

- Don't use <table>s for layout (dur)
- Give dimensions of images in HTML:
`<img height=x width=y src=foo.png alt="blah">`
- Consider for phone numbers

Code accessibly:

Lots of similarities with accessibility techniques:
Relationship between Mobile Web Best Practices (MWBP) and Web Content Accessibility Guidelines (WCAG)

<http://www.w3.org/TR/mwbp-wcag/>

Minimise HTTP requests:

- Combine JS into one file. Same with CSS.
- Use CSS sprites to combine decorative images
- Consider SVG or `<canvas>` for images

CSS optimisation:

- ems instead of px for fonts
- Fluid layouts: remember motion sensors
- background-size / SVG background images
- Turn off fancy shadows, transitions etc with Media Queries

CSS sprites

```
#panel1b a:hover {  
    background: transparent url(test-3.jpg)  
    0 -200px no-repeat;}
```

```
#panel2b a:hover {  
    background: transparent url(test-3.jpg)  
    -96px -200px no-repeat;}
```



www.alistapart.com/articles/sprites/

Data URLs



```
data:image/x-icon,  
%00%00%01%00%02%00%10%10%00%0  
0%00%00%00%00h  
%05%00%00%26%00%00%00%20%20%0  
0%00%00%00%00%00%A8%08%00%00%  
8%05%00%00(%00%00%00%10%00%00%00%20%00%00%00%01%00%08%00%00%00%0  
0%00%40%01%00%00%00%00%00%00%00%00%00%00%00%00%00%00%00%00%00%00%00  
%00%00%00%00%FF%FF%FF%00u%7D%8C%00%B1%BF%CF%00%3D%3FG%00%D0%DF  
%F3%00%9E%9F%A1%00%1A%1E%26%00Z%60g%00%D6%D8%D1%00%EC%EC%EB  
%00%B2%B2%AD%00%88%8D%9E%00rpt%00KNZ%00%2C.%3E%00%C2%C2%BC  
%00%C6%C9%D8%00%06%09%14%00%A9%AD%C1%00%9A%9E  
%B6%00%86%88%87%00%7C%80z%00%CF%D4%E3%00%CB%CE  
%C7%00%E2%E2%E1%00%11%14%1C%00%E3%E8%F8%00dht%00(.%2F%00%A5%AB  
%B0%00%F6%F7%F6%00Ttd%00ov  
%80%00%91%93%96%00%B1%B6%C4%00%00%02%0C%00%8C%98%A1%00%C3%C4%CE  
%00%BB%BE%D4%00%7F%81%8D%00lkm%00%D5%DA%E9%00%A6%A6%A7%00AHJ  
%00TVZ%00%96%97%A0%007%3B%40%00%89%8E%93%00%DC%DC%DC%00ip%7B  
%00%C6%C6%C5%00%FC%FF%F6%0015%3A%00%DE%E3%F2%00%85%87%97%00wt%7D  
%00%5BV_%00xy%85%00%B7%BE%C9%0079H%00%A5%A9%BB%00acj%00%CA%CF%DF  
%00%B5%B8%CF%00%CC%D3%EA%00%9E%A8%B1%00jmt%00%BF  
%C7%D9%00%E9%E8%E6%00%85%89%90%00%8B%92%9A%00%7Bz%7D%00%D6%DF  
%F6%00y%81%90%00(*4%00%CC%CC%CD%00%5B%5B%00%BF%C4%D3%00%BE%BF  
%C0%00%F6%F5%F0%00chm%00%AB%B2%BE%00qr%7C%00%D4%D7%EE%00%C3%CA  
%D3%00%BA%BF%CE%00%9E%A3%B4%00%8C%93%A4%00tt%82%00V%5Cg%00BCL  
%00%00%00%07%00%F0%EF%ED%00%3BCJ%00GLW%00%D4%D4%D4%00%B4%BD
```

<http://software.hixie.ch/utilities/cgi/data/data>

JavaScript tips:

- Put `<script>` elements as far down the source as possible
- `<script defer..>`, `<script async..>`
- If it must be in the `<head>`, put it **after** CSS
- Feature detect – e.g. **Modernizr**



@pixi_stix
Colleen O'Banion

Was asked why I "insist on coding JS from scratch" for mobile. jQueryTouch: 100k. jQuery mobile: 160k. Sencha: 400k. My script: 1k. That's why.

9 hours ago via web ☆ Favorite ↻ Undo Retweet ↩ Reply

Web or Apps?

widget
there's an ~~app~~ for that...

“...the **browser run-time is perfect**...you're out of writing for Windows Mobile, Android, S60, each of which require testing...we want to abstract that.

All the cool innovation is happening inside the browser – you don't need to write to the native operating system anymore

Mobile Entertainment Market, June, 2009

W3C Widgets – application development filled
with web standards goodness,
using **browser engine as platform**

Anatomy of a widget

`index.html`, `assets` + `config.xml`,
zipped and renamed `.wgt`

The future

W3C DAP

(Devices and Protocols Working Group)

WAC

(<http://www.wacapps.net/>)

Defining JavaScript APIs:

- Contacts (access address book)
- Calendar API
- Media Capture API (programmatic access to camera/microphone)
- Messaging API (email/ SMS)
- accelerometer

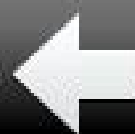
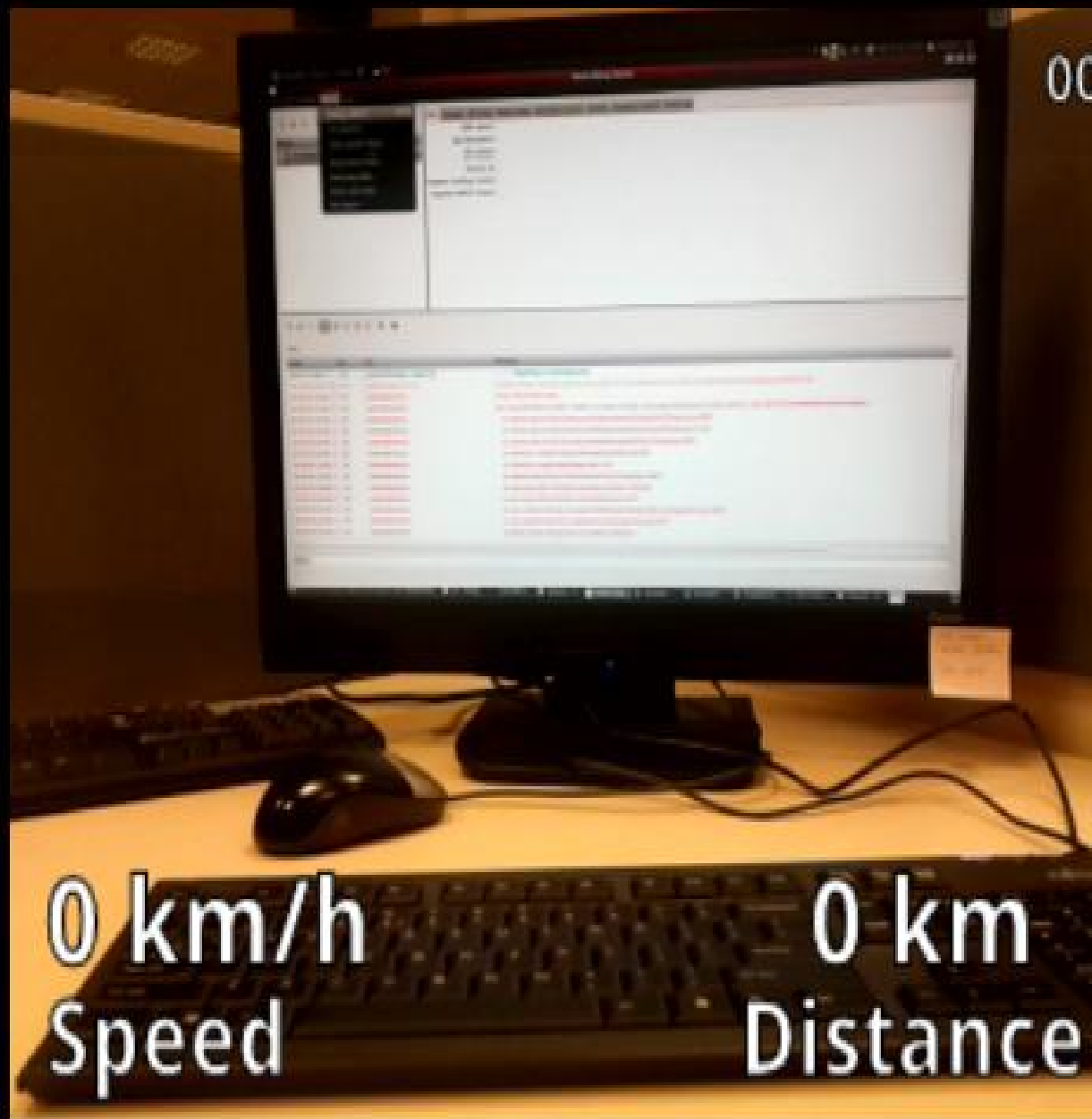
<http://www.w3.org/2009/dap/>

HTML5 <device>



1:38

00:11





Thank you **Patrick Lauke**
www.opera.com/developer
bruce.lawson@opera.com
[twitter.com@bruce1](https://twitter.com/bruce1)



Mobile-friendly: The mobile web optimization guide

dev.opera.com/articles/view/the-mobile-web-optimization-guide/

Opera Mini: web content authoring guidelines

dev.opera.com/articles/view/opera-mini-web-content-authoring-guidelines/

Mobile Emulators & Simulators: The Ultimate Guide

www.mobilexweb.com/emulators

W3C Mobile Web Application Best Practices

www.w3.org/TR/mwabp/