SCREEN TIME
USER INTERFACE 19

@lukew

LUKE WROBLEWSKI
IN 1952 AT...

CORNING

800° CELSIUS

Source: http://j.mp/ljlyd8H
GLASS

7,000 LB/SQ. INCH

0317

100,000 LB/SQ. INCH
“Make millions of square feet of ultrathin, ultrastrong glass that doesn’t yet exist.”
# FOOTBALL FIELDS

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[LUKEW IDEATION + DESIGN]
1.5B CONSUMER DEVICES

2013 OVER NEXT FEW YEARS

Source: http://j.mp/LKjpS2
GLOBAL LCD SCREEN SALES (SQ. FEET)

Source: http://j.mp/LKnAgE
“Half a square foot of LCD screen sold for every human on earth.”
“We care about [the display] because we know that’s the window to the software.”

& the Internet!

Source: http://j.mp/1d7NkyP
IN A WORLD OF GLASS...

Online time is **screen time**.
“Wow. Painful, on the whole.”
Global Sales

Source: http://j.mp/Ibq3zt
SMARTPHONE

SMALL  3”  4%
MEDIUM  5”  76%
PHABLETS  11”  3%

2017 Forecast

“Mobile is the first time the consumer tech industry has sold to every single person on earth.”

This takes some adjustment.

Source: http://j.mp/Ibq3zt
1. Know Your Screen
2. Output
3. Input
4. Posture
1. Know Your Screen
2. Output
3. Input
4. Posture
@media screen and (min-width:70em) {
   .BoxRight {
          margin-left: 8em;}
   }

@media screen and (min-width:70em) {
   .BoxRight {
          margin-left: 8em;}
   }
“not just the size but the resolution, the clarity, [...] we care about all those.”
DESKTOP

27"

ULTRA HD (4K)

3840 x 2160

28"

$699
“Mo’ pixels, mo’ problems.”
1. Use CSS & web type whenever possible

2. Use SVG & icon fonts whenever applicable

```css
@media only screen and (min-device-pixel-ratio: 1.5) {
    .class {
        background: url(img@2x.png);
        background-size: 50%;
    }
}
```
North American downstream traffic

50%
New Layouts for the Multi-Device Web

By Luke Wroblewski
May 13, 2013

Most Web page layouts rely on design patterns created for laptop
and desktop computers equipped with a mouse and keyboard. As
the variety of devices being used to access the Web has grown,
these patterns haven’t been keeping up. Designing for today’s
Web means considering single-handed thumb use on
smartphones, two-handed touch interactions on tablets, mouse
and keyboard input on traditional PCs, hybrid devices, and more.
Web layouts have to evolve to support this new reality.

The New Reality
As device diversity increases, so does the number of ways people interact with the
Web. To understand the impact of a specific device on interaction design and layout,
we can look at three things: output as mostly defined by a screen, the input types
available, and common postures or modes of use (strongly influenced by input and
output capabilities). For example, consider the modern smartphone.

Today’s smartphones are defined by palm-sized screens (usually 3-5 inches
diagonally) of varying pixel density, multi-touch input, and predominately one-thumb
use with the device about a half arm’s length away. A recent study of 1,333 people
using smartphones on the street found that about 75% of smartphone use is one
thumb. Web layouts need to take this reality into account.
New Layouts for the Multi-Device Web

by Luke Wroblewski
Mar 13, 2013

Most Web page layouts rely on design patterns created for laptop and desktop computers equipped with a mouse and keyboard. As the variety of devices being used to access the Web has grown, these patterns haven’t been keeping up. Designing for today’s Web means considering single-handed thumb use on smartphones, two handed touch interactions on tablets, mouse and keyboard input on traditional PCs, hybrid devices, and more. Web layouts have to evolve to support this new reality.

The New Reality
As device diversity increases, so does the number of ways people interact with the Web. To understand the impact of a specific device on interaction design and layout, we can look at three things: output as mostly defined by a screen, the input types available, and common postures or modes of use (strongly influenced by input and output capabilities). For example, consider the modern smartphone.

Today’s smartphones are defined by palm-sized screens (usually 3-5 inches diagonally) of varying pixel density, multi-touch input, and predominately one-thumb use with the device about a half arm’s length away. A recent study of 1,333 people using smartphones on the street found that about 75% of smartphone use is one thumb. Web layouts need to take this reality into account.

![Image of phone use statistics](image)

49% 26%

Tablets also feature multi-touch input but they have larger lap-sized screens (7-10 inches diagonally) that have an impact on how they get used. With a larger screen one-handed use is less comfortable so two-handed use is more common. With two-handed touch interactions, the sides of the screen are the easiest to access with simple finger gestures. As tablets continue to grow, Web layouts also need to take this reality into account.
New Layouts for the Multi-Device Web

by Luke Wroblewski

May 31, 2013

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vertical media query

Vertical Media Queries & Wide Sites
Jan 11th, 2012 — 20 Responses

@media screen and (min-width: 75em) and (min-height: 30em)

This bumps body copy up to 22px for those bold enough to view the site at least 1234px wide. Why 1234px? Just because that’s where, with all % values for widths & container padding, my site hits its max-width.

What’s with the vertical media query? I used min-height to target screens that are wide enough to trigger the change, but not tall enough for it to make sense. As an example, my wife has an 11” MacBook Air that has a screen resolution of 1366px X 768px. With the menu bar & browser window, the screen is not tall enough to trigger that final bump up in font-size unless you enter into full screen browsing, which to me is a good thing.

But maybe vertical media queries could do much more than this. For projects where the fold "gap" is a concern, per-
“[increase font size] on screens that are wide enough but not tall enough for it to make sense.”
v1.5 Sneak Peek 5: Other Features

In this fifth and final installment for upcoming updates, we take a look at a couple of other features that found their way into the new version.

READ →

v1.5 Sneak Peek 4: New & Improved Fieldtypes

In this fourth of our five installments, we look at the new and improved fieldtypes coming in the update, including: color, location, suggest, file, and grid.

READ →

v1.5 Sneak Peek 3: Add-On Architecture

READ →
WIDE

TIGHTEN UP

SHORT
MOVE UP CTAs

SHORT

WIDE
minimal content area

excess menu space
rearrange menus

maximize content
menu access

horizontal orientation
NARROW

OFF CANVAS

REPOSITION

TALL
OUTPUT

1. Trend toward high resolution
2. Trend toward widescreen aspect ratios
3. Media queries know about more than width
1. Know Your Screen
2. Output
3. Input
4. Posture
“Any piece of glass you can’t touch and interact with will feel broken.”
FRONT CAMERA
GYROSCOPE
VOICE
MAGNETOMETER
GPS
MICROPHONE
ACCELEROMETER
CAMERA
BLUETOOTH LE

multi-touch

keyboard
multi-touch

keyboard

cursor (trackpad)

pen
multi-touch

keyboard

cursor (trackball)
“Can’t we just detect input type & change the interface?”
“Don’t attempt to switch between touch and mouse - just support both.”

- MacBook Pro
- iPhone 5
- Xcode iPhone5 simulator
- Win8 Touchscreen PC with keyboard (IE10 browser)
- Win7 PC with keyboard (IE9 browser)
- Win7 PC with keyboard (Chrome browser)
- Win7 PC with keyboard (Firefox browser)
- Kindle Fire (old, Android 2.x, modded)
- Microsoft Surface/Explorer 10 (with keyboard attached)

- Win8 Touchscreen PC with keyboard (latest Chrome browser)
- Win8 Touchscreen PC with keyboard (latest Firefox browser, 18)
- Droid4 with qwerty physical keyboard out (default browser)
- Asus Transformer with dockable keyboard (default browser)
- Microsoft Surface/Explorer 10 (with NO keyboard attached)
- Samsung Series 7 Tab/Explorer 10 (with NO keyboard attached)

• There’s not a great way to do this in browsers today

• We need a general solution (e.g. navigator.hardware object)

“downplay the keyboard shortcuts when screen size is smaller & touch is present.”
Screen size is a poor proxy for input.
MEDIA QUERIES LEVEL 4

@media (pointer:coarse) {
  input[type="checkbox"] {
    min-width: 30px;
    min-height: 40px;
  }
}
INPUT

1. Support all the inputs
2. Communicate what’s possible
3. Screen size is a poor proxy but it’s all we got for now...
1. Know Your Screen
2. Output
3. Input
4. Posture

how people interact with output & input
“One of Netflix’s mathematicians is known as 10-Foot User Interface Guy.”
“There’s also Two-Foot Guy, who deals with laptops, and 18-Inch Guy for tablets.”
44% LAPTOP/PC
23% SMARTPHONE
17% SMART TV
16% PC TO TV
15% TABLET
15% BLU-RAY PLAYER
13% WII
12% PS3
10% XBOX 360
500 MORE SKUS
POSTURE

83% 10 FT.
44% 2 FT.
23% 1 FT.
15% 1.5 FT.

Source: http://j.mp/1dAQsin
5.25"
**SIGNS MANUAL (VIEWING DISTANCE)**

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<th>Cap height</th>
<th>x height</th>
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<tr>
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<tr>
<td>Size G</td>
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<td>15</td>
<td>38</td>
</tr>
</tbody>
</table>

Source: http://j.mp/1exOoI9
10 FT AWAY 1920×1080

50” HDTV (1080p)

1 FT AWAY 1920×1080

5” Galaxy S4
VIEWPORT: 960PX

Reuters

Tennessee Volkswagen plant votes against union in UAW defeat

DALLAS 67.01 +0.36 (0.54%)

In a stunning defeat that could accelerate the decades-long decline of the United Auto Workers, employees voted against union representation at Volkswagen AG’s Chattanooga, Tennessee plant, which had been seen as organized labor’s best chance to expand in the U.S. South. ...
Tennessee Volkswagen plant votes against union in UAW defeat

In a stinging defeat that could accelerate the decades-long decline of the United Auto...
<table>
<thead>
<tr>
<th>Stock</th>
<th>Price</th>
<th>Change</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAPL</td>
<td>503.73</td>
<td>-16.57</td>
<td>3.18%</td>
</tr>
<tr>
<td>AMZN</td>
<td>274.03</td>
<td>+6.09</td>
<td>2.27%</td>
</tr>
<tr>
<td>GOOG</td>
<td>727.58</td>
<td>-12.41</td>
<td>1.68%</td>
</tr>
</tbody>
</table>

just now
Celtics 101 | Bulls 95

Final Score just now
“More ergonomically accessible.”

Screen size is a poor proxy for posture.
'CATCHES' IN A VERY LOOSE SENSE
Fisherman Catches More Than He Bargained For
Sports

TREAT YO SELF
A Song To Get You Through Valentine's Day
Music
MEDIA QUERIES LEVEL 4

@media (light-level: washed) {
    body {
        background: #ffffff;
    }
}
POSTURE

1. Design to human scale
2. And environments
3. Not just to screen width
1. Know Your Screen
ONLINE TIME IS SCREEN TIME
AND INCREASINGLY MOBILE

2. Output
HIGH RESOLUTION & WIDESCREEN
VERTICAL MEDIA QUERIES

3. Input
SUPPORT ALL INPUTS
COMMUNICATE WHAT’S POSSIBLE

4. Posture
VIEWING DISTANCE
ENVIRONMENT & MORE

IN A WORLD OF GLASS...

media queries don’t help much here... yet.
“What material comes after glass? What’s the disruption?”

Source: http://j.mp/1eUxV6V
Global Sales

SMARTPHONES & TABLETS

complement or disrupt?

Source: http://j.mp/Ibq3zt
“Flexible glass that is thinner than a dollar bill.”

Source: http://j.mp/1nxOAMN
THANKS

@lukew