The web as A PHYSICAL MEDIUM
The web as a PHYSICAL MEDIUM

and what we can do about it
The spread of INFORMATION
The spread of information must overcome physical constraints.
LECTERN BIBLE
INFORMATIONALLY RICH
but not at all portable
LECTERN BIBLE
INFORMATIONALLY RICH
but not at all portable

GIDEON BIBLE
Not a beautiful object, but PORTABLE AND UBQUITOUS
FIDELITY
High information density, at the expense of portability

REACH
Less informationally rich media optimized for wide distribution
## Progression of printing technology

<table>
<thead>
<tr>
<th>Movable type</th>
<th>Printing press</th>
<th>Lithography</th>
<th>Offset</th>
<th>Digital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only text</td>
<td>Text + illustration</td>
<td>B&amp;W photo</td>
<td>Color</td>
<td>Cheap, easy color</td>
</tr>
</tbody>
</table>

Gregor then turned to look out the window at the dull weather. Drops of rain could be heard hitting the pane, which made him feel quite sad. "How about if I sleep a little bit longer and forget all this nonsense", he thought, but that was something he was unable to do because he was used to sleeping on his
Gregor then turned to look out the window at the dull weather. Drops of rain could be heard hitting the pane, which made him feel quite sad. "How about if I sleep a little bit longer and forget all this nonsense", he thought, but that was something he was unable to do because he was used to sleeping on his
The September issue of U.S. Vogue
The September issue of U.S. Vogue

SEPTEMBER 2012

Print edition weighs 4.5 lbs (2 kg)

650 pages (71%) are advertisements
The September issue of U.S. Vogue

SEPTEMBER 2013

Print edition weighs

3.75 lbs (1.7 kg)

662 pages (73%)
are advertisements
Agir sur les grands équilibres stratégiques

INSTITUT

L’Institut Choiseul est un centre de recherche indépendant dédié à l’analyse des questions stratégiques et de la gouvernance économique mondiale. Sa vocation est de favoriser la performance, le rayonnement et l’influence de la France et de ses principaux acteurs sur la scène internationale.

A LA UNE:
PREMIÈRES ASSISES NATIONALES DU

Ces Assises du Vaccin rassembleront l’ensemble des acteurs de cette filière afin de renforcer les échanges, favoriser une
Photography by Ryan Carver
Web pages have DIMENSIONS

Photography by Ryan Carver
Web pages have **WEIGHT**
Web pages have WEIGHT

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site CSS</td>
<td>3.09 KB</td>
</tr>
<tr>
<td>Site JS</td>
<td>117.13 KB</td>
</tr>
<tr>
<td>HTML document</td>
<td>3.92 KB</td>
</tr>
<tr>
<td>Typekit</td>
<td>146.44 KB</td>
</tr>
<tr>
<td>Total</td>
<td>960 KB</td>
</tr>
</tbody>
</table>

Timelines and Profiles from developer tools show various resources loaded and their sizes.
They’re CARRIED over networks that have BANDWIDTH.
The web is a physical medium so why don’t we treat it like one?
The web’s physical context
The web’s physical context
The web's physical context

1024×768px or larger

Around 110 ppi

Millions of colors
The web’s physical context

1024×768px or larger
Around 110 ppi
Millions of colors

Keyboard/mouse interaction
The web’s physical context

- 1024×768px or larger
- Around 110 ppi
- Millions of colors

Keywords:
- Desktop-class hardware
- Keyboard/mouse interaction
The web’s physical context

- Desktop-class hardware
- Broadband internet 2 mbps/sec or greater
- Keyboard/mouse interaction
- 1024×768px or larger
- Around 110 ppi
- Millions of colors

Friday, October 25, 13
Progression of web technology

HTML 1.0
Only text + hyperlinks

Netscape Era
Images, tables, <font>

The photographic turn
Image maps / Flash

Web standards
Same stuff, better code
Web design conventions informed by print

Fixed page width/grid @ 960px

Use of images for type + wayfinding
Web design conventions informed by print

Fixed page width/grid @ 960px

Use of images for type + wayfinding
Web design conventions informed by print
Enter the POST-PC WEB
Users are consuming web content on NEW SCREENS
Users are consuming web content on NEW SCREENS

- Desktop PCs
- Notebooks
- Smartphones
- 10-inch tablets
Users are consuming web content on NEW SCREENS

- Desktop PCs
- Notebooks
- Smartphones
- 10-inch tablets
- E-book readers
- 7-inch tablets
- “Phablets”
- “Convertibles”
Users are consuming web content on NEW SCREENS

- Desktop PCs
- Notebooks
- Smartphones
- 10-inch tablets
- E-book readers
- 7-inch tablets
- “Phablets”
- “Convertibles”
- Smart TVs
- Gaming consoles
- Google Glass
- Smartwatches
Hi-DPI displays
Designing the Hi-DPI Web
Hi-DPI screens show existing artwork
Hi-DPI screens show existing artwork and **ALL ITS FLAWS**
Sample photo @ 1x
1280×486 = 193 KB

Sample photo @ 2x
2560×972 = 602 KB
Wireless networks

Mumbai, India

Somewhere in rural Kenya
MORE pixels
MORE devices
MORE places
MORE pixels
MORE devices
MORE places

SLOWER networks
HARDER to develop
HIGHER cost
The web is **A PHYSICAL MEDIUM**

so **what do we do about it?**
The wrong thing
Web pages are SOFTWARE, not printed work
What we deliver is not the rendered work, but INSTRUCTIONS for rendering the work.
We can build the web of the future by giving devices BETTER INSTRUCTIONS
SCALABLE graphics
RESPONSIVE web design
ADAPTIVE content
ITERATIVE workflows
SCALABLE graphics

Use resolution-independent assets for type, decoration, and wayfinding
Erika Hall

JUST ENOUGH RESEARCH

foreword by JEFFREY ZELDMAN

Good research is about asking more and better questions, and thinking critically about the answers. Erika Hall reveals how to do it well so you can save time and money, and reduce unknowns—starting now.

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A Book Apart, Brief books for people who make websites.
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BUY

Mobile First
by LUKE WROBLEWSKI

BUY
Adapt to different screen sizes
Adapt to different screen sizes
Responsive images

SONY DSC-RX1 REVIEW

February 2013
Last updated: October 2013

RX1
Responsive images
Responsive typography

"Something's fallen down could ever happen to polished boots could "Yes, I know", said Grey

Adobe Source Sans Pro Light
Type study: Hi-DPI web typography

May 1, 2013

Our digital world is often a textual world. We take in information via news sites, blogs, and e-books. We communicate with our friends and co-workers via email, chat, Twitter, or Facebook. Some of us even use text to interact with the computers themselves via terminals and source code.

Most of our time using computers, smartphones, and tablets is spent reading and writing, and reading is one way the digital world becomes physical. Our eyes are physical organs that can get tired—especially if the text we spend hours looking at is rendered poorly. Because we read so much when looking at screens, it’s vitally important that the text before us is as readable as possible.

Hi-DPI displays can be a huge boon to readability. At first, high-resolution text can seem like a luxury — after all, modern operating systems are generally capable of producing good-looking text. But even though anti-aliased text on regular displays is much better than what came before, it’s still far more pixelated and “fuzzy” than print—and even the best, most screen-optimized text can strain the eyes over a long day of reading. In apps with hi-DPI support, text is rendered with less anti-aliasing (that is, less pixel “fuzz”) so letterforms are crisper and easier for the eye to
ADAPTIVE content

Attorney General Eric Holder during a news conference Tuesday in Washington, D.C.

NPR.org Text-Only (go to NPR.org graphical version)

By Mark Memmott

NPR.org, May 15, 2013 · While looking for the source of a leak, federal investigators obtained phone records of Associated Press reporters and editors. There's been bipartisan outrage over what many see as government overreach. The attorney general tells NPR "I'm not sure" how many such seizures he's signed off on.

Read More ... (3736 bytes)

As his Justice Department faces bipartisan outrage for searching phone records of Associated Press reporters and editors, Attorney Gen. Eric Holder says he is not sure...
Plan content appropriate for different kinds of reading

NPR.org, May 15, 2013 · While looking for the source of a leak, federal investigators obtained phone records of Associated Press reporters and editors. There's been bipartisan outrage over what many see as government overreach. The attorney general tells NPR "I'm not sure" how many such seizures he's signed off on.

As his Justice Department faces bipartisan outrage for searching phone records of Associated Press reporters and editors, Attorney Gen. Eric Holder says he is not sure...
Designing for use requires **ITERATION**

Prototype/Build  Test  Repeat
Use frontend frameworks for prototypes

PROTOTYPING

No more stalling. Here's what the code looks like.

Our homepage is actually the most complicated page we're prototyping, and it's pretty simple to put together. The grid handles the majority of the layout. We've already seen examples of it, but let's look at one more. Notice the section about Top Swaps, a tab toward the bottom?

We could use custom styles to create the layout in those entries, but with Foundation...
BrowserStack

Generate screenshots at actual device sizes on iOS, Android.

---

David Demaree is a web designer and software engineer in Chicago, USA. (View profile)

All the Valley’s talk about transformation, human potential, life extension, and generally “changing the world” is a bunch of hooey. It’s a myth—in the pejorative sense of that term. It’s a fluffy religion meant to wooer young professionals into giving their embattled everything they have and working their brains down to the bone until they become too old to be relevant anymore.

No, it’s worse than that. They don’t get too old to be relevant. They get too old to be cheap.

— Ayn Rand, Transhumanism, and Silicon Valley’s Cognitive Dissonance

Also love the quote that starts this off, where Zuckerberg implies that young people not having families allows them to “focus on what’s important.”

Nothing else, it’s a shame Silicon Valley has optimized itself for things you can do with, at most, 10 years of experience. I miss a lot of

---

browserstack.com/responsive
Test your designs on real devices
The web is a PHYSICAL MEDIUM
and the future is really exciting
By embracing the web’s DIGITAL nature we can overcome its PHYSICAL constraints and spread INFORMATION EVERYWHERE.
Thank you.

@ddemaree
ddemaree@adobe.com
typekit.com