

THE NEW NOTFNESS: CSS3/JS BASED ANIMATION

“Things Learned While Playing With Fire”

Seattle Interactive Developer Meetup

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Simply Measured HQ

Yo Dawg!

- ★ I'm Jon Culver
- ★ Product Engineer at Simply Measured
- ★ @bahoo on the Twitters.
- ★ We are hiring like crazy:
<http://simplymeasured.com/careers>
- ★ come work on awesome stuff we can't talk about
at Seattle ID. :D

[show awesome web site here]

What do we have here?

(Buzz word bingo!)

- ★ HTML 5
- ★ Modernizr
- ★ CSS3 effects & transitions
 - ★ jQuery fallback
- ★ Bezier curves.
- ★ ... with assistance from WordPress and Grunt.



★ WTF! we had this stuff back in '09! what is this
“new hotness” you speak of?

html5

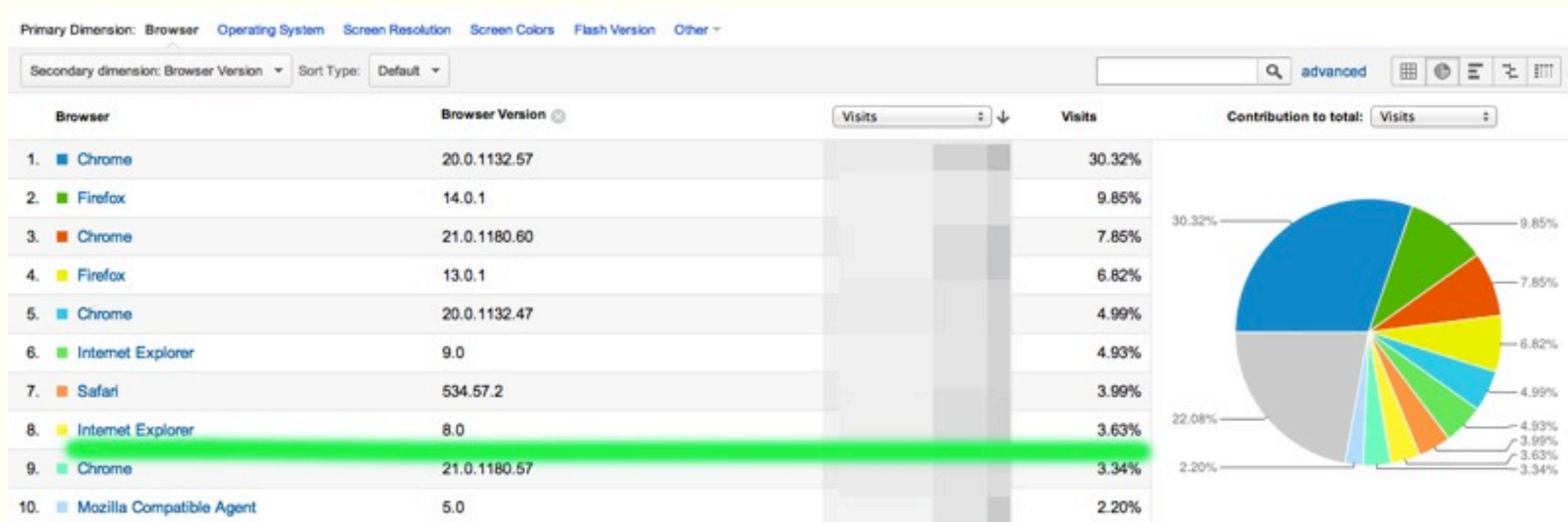
- ★ only a dabbling. Non-essential, but good idea.
- ★ `<!doctype html>`
- ★ `<header>`, `<nav>`, `<footer>`, etc.

Gotcha!



- ★ IE < 9 doesn't know how to style that ish!
- ★ use Modernizr (or html5shiv)
- ★ More on this later.

Quick side note about Internet Explorer...



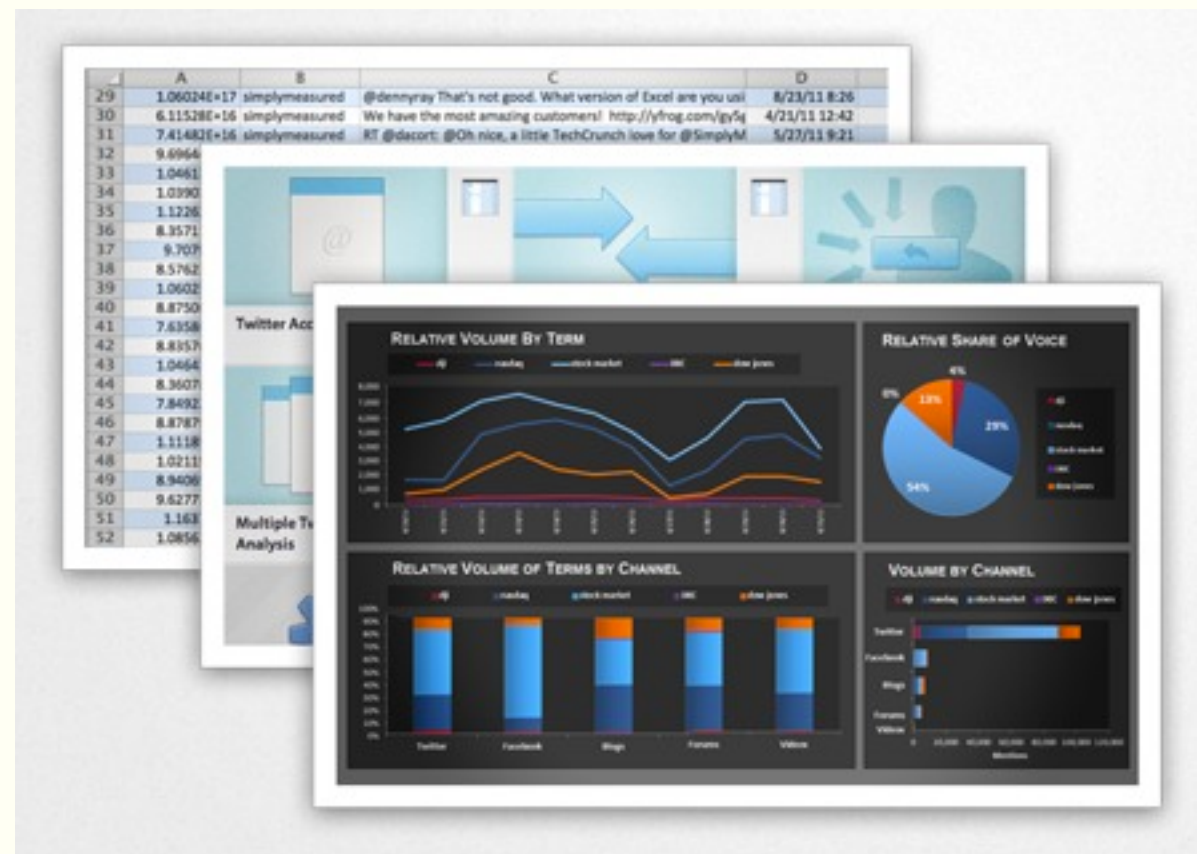
★ 3.6%! Gosh that's nice.

★ Time to balance what's acceptable to display to these folks.



Animation!

- ★ But first things first. We need something delightfully boring for folks without JS.
- ★ Good ol' absolute positioning to the rescue. Bam.



CSS3 Transitions

- ★ Slight rotation.
- ★ X-axis translation.
- ★ Sooo much smoother than jquery.
- ★ hardware acceleration FTW!
- ★ Latest chrome, Safari, FF, IE...



Effective preloading

- ★ Problem -- we need to hide these elements before they fade in.
- ★ can't use `display: none`; then the images don't preload :(
- ★ Also need to respect non-JS folks and show the elements fully by default.

Workaround: staging class

```
★ /* global.js */
$(function(){
    $slides = $('.slides li');

    // stage some animation goodness.
    if(Modernizr.csstransitions){
        $slides.addClass('staging');
    }

    // ..
});
```

```
★ /* style.css (prefixed rules omitted) */
.slides .staging{
    visibility: hidden;
    transform: translate(-800px,0);
}

.slides .staging img{
    opacity: 0;
}

.slides li.animate-in{
    visibility: visible;
    transition: 0.7s transform ease-out;
}

.slides .animate-in img{
    opacity: 1;
    transition: inherit;
    transition-property: opacity;
}
```

★ Swap 'staging' class for 'animate-in' once the assets fully load -- \$(window).load() BAM!

CSS(3) Effects

- ★ Box-shadows
- ★ Thick white borders
- ★ Rotation



- ★ IE8 & pals, sorry man. We're okay with you just seeing unrotated, unshadowed boxes.





Gotcha!

- ★ All of those CSS3 effects (box-shadow, border, rotation) look like dogshit when animated. :(
- ★ Safari and FF were the smoothest, but they'd often flicker and crap out in chrome.
- ★ Decided to bake in the effects with 24-bit transparent PNGs.
- ★ MUCH smoother, consistent animation. Greater visual control. AND works for IE7 and 8.
- ★ For the centerpiece, the bandwidth trade-off is worth it.

jQuery Animation

- ★ Fallback for our IE friends / anybody without CSS transitions.
- ★ Remember our absolute positioning?
- ★ would be rad to re-use / inherit those positions, so that we don't have to duplicate code for animation.
- ★ `window.getComputedStyle` to the rescue!



O.F.F.S.

★ IE ≤ 8 doesn't HAVE `window.getComputedStyle`



getComputedStyle polyfill

(aka “We’ll Do It Live!”)

```
★ /* Particularly for our good friend IE8 */

if (!window.getComputedStyle) {
  window.getComputedStyle = function(el, pseudo){
    this.el = el;
    this.getPropertyValue = function(prop) {
      var re = /(\-([a-z]){1})/g;
      if (prop == 'float') prop = 'styleFloat';
      if (re.test(prop)) {
        prop = prop.replace(re, function () {
          return arguments[2].toUpperCase();
        });
      }
      return el.currentStyle[prop] ? el.currentStyle[prop] : null;
    };
    return this;
  };
}
```

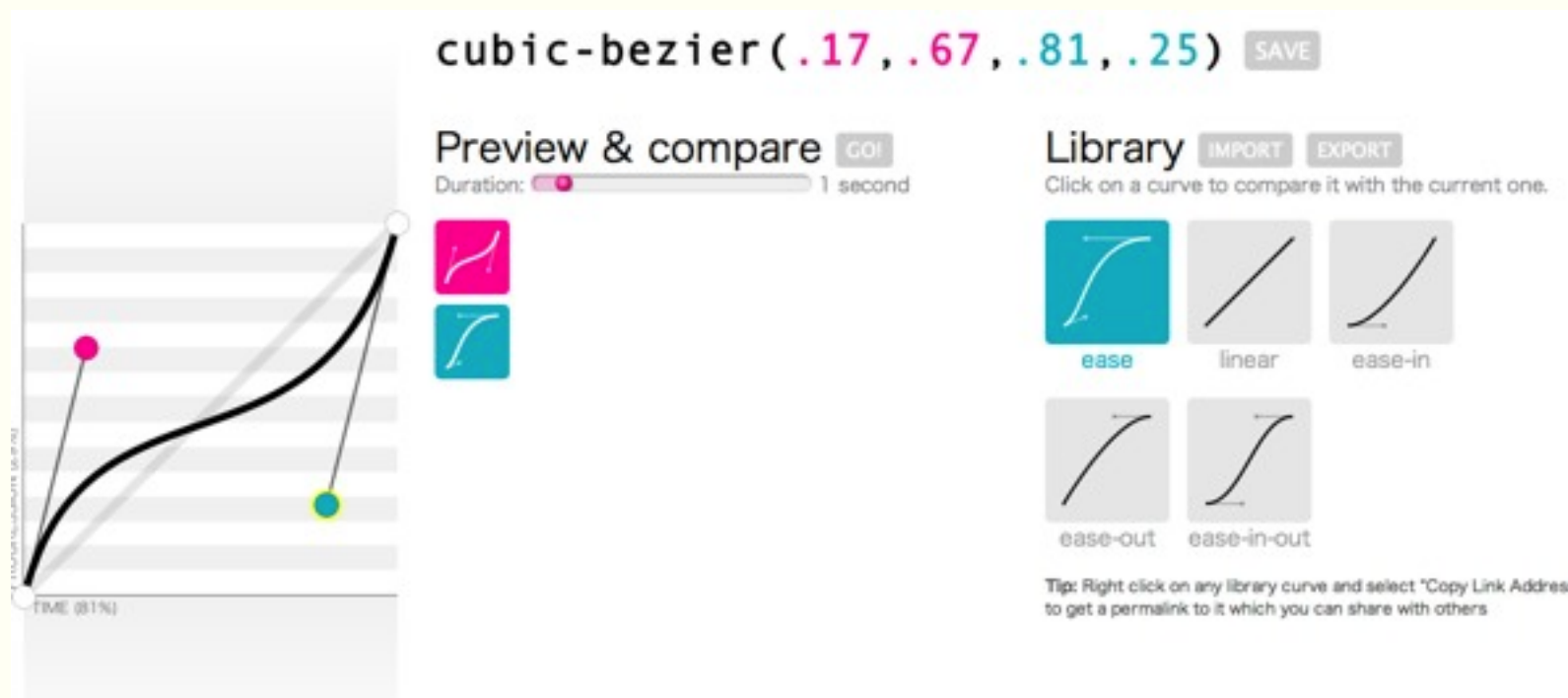
★ Ship it!

All Together Now!

- ★ Position controlled via the stylesheet. DRY.
- ★ Using `getComputedStyle`, we store those left px values as data attributes.
- ★ Then we move all the slides offscreen; to left: -800px or some such.
- ★ Then when the time is right -- `$(window).load()` -- we animate in to those left values we stored as data.
- ★ Booyah achieved for IE!

Get crazy with the Cheez-Whiz.

- ★ Let's add Bezier curves to the logos for nice smooth transitions.



But...



- ★ Safari < 6.0 doesn't support values exceeding 1.0

cubic-bezier(.17,.67,.37,1.21) **SAVE**




This curve contains values out of range. But fear not young padawan! Just use `cubic-bezier(.17,.67,.37,1)` as well for Webkit until the [bug #45761](#) fix propagates to Safari.



Preview & compare **GO!**

Duration: 1 second

Library **IMPORT** **EXPORT**

Click on a curve to compare it with the current one.

 **ease**  **linear**  **ease-in**

 **ease-out**  **ease-in-out**

Tip: Right click on any library curve and select "Copy Link Address" to get a permalink to it which you can share with others

For Safari < 6 / older WebKit

```
★ .brands-drawer.staging img{
    visibility: visible;
    transform: translate(0,200px);
}

.brands-drawer img.animate-in{
    transform: translate(0,0);
    transition: 0.6s transform cubic-bezier(0,1.33,0.66,1);
}

/* Oh, Safari, get on board. Y2 clamped to 1.0*/
.brands-drawer img.animate-in.clamped{
    transition: 0.6s transform cubic-bezier(0,1,0.66,1);
}
```

Then JS side...

```
$(el).addClass('animate-in');
if($.browser.webkit && parseInt($.browser.version) < 535){
    $(el).addClass('clamped');
}
```

★ '535' I admittedly don't understand perfectly, but it works. YMMV.

The time has come to... OPTIMIZE!

- ★ Minify JS using grunt.
- ★ Set up 'recipe' for .JS files to minify / concatenate.
- ★ Run 'grunt min'. Bam.
- ★ We use WordPress which has asset management.
- ★ `wp_enqueue_script(name, path, array(deps), version, inFooter);`
- ★ `wp_enqueue_script('jquery', "jquery.min.js", array(), '1.4.4', true);`
`wp_enqueue_script('modernizr', $skin_url . "modernizr.js", array(), '2.5.3', true);`
`wp_enqueue_script('sm_global_min', $skin_url . "global.min.js", array('jquery', 'modernizr'), '1.29', true);`

Seemingly the last ‘gotcha’



- ★ `html5shiv` (built into `Modernizr`) only works correctly in IE ≤ 8 if included in the `<head>`

```
wp_enqueue_script('modernizr', $skin_url . "modernizr.js", array(), '2.5.3', false);
```

In Conclusion



THANK YOU.