

Browser, Mobile, Cloud, Social, Geo Portrait of the developer as a kid in a candy store

Patrick Chanezon
Developer Advocate, Google
<http://twitter.com/chanezon>

January 27, 2010
Stockholm
#ifokus

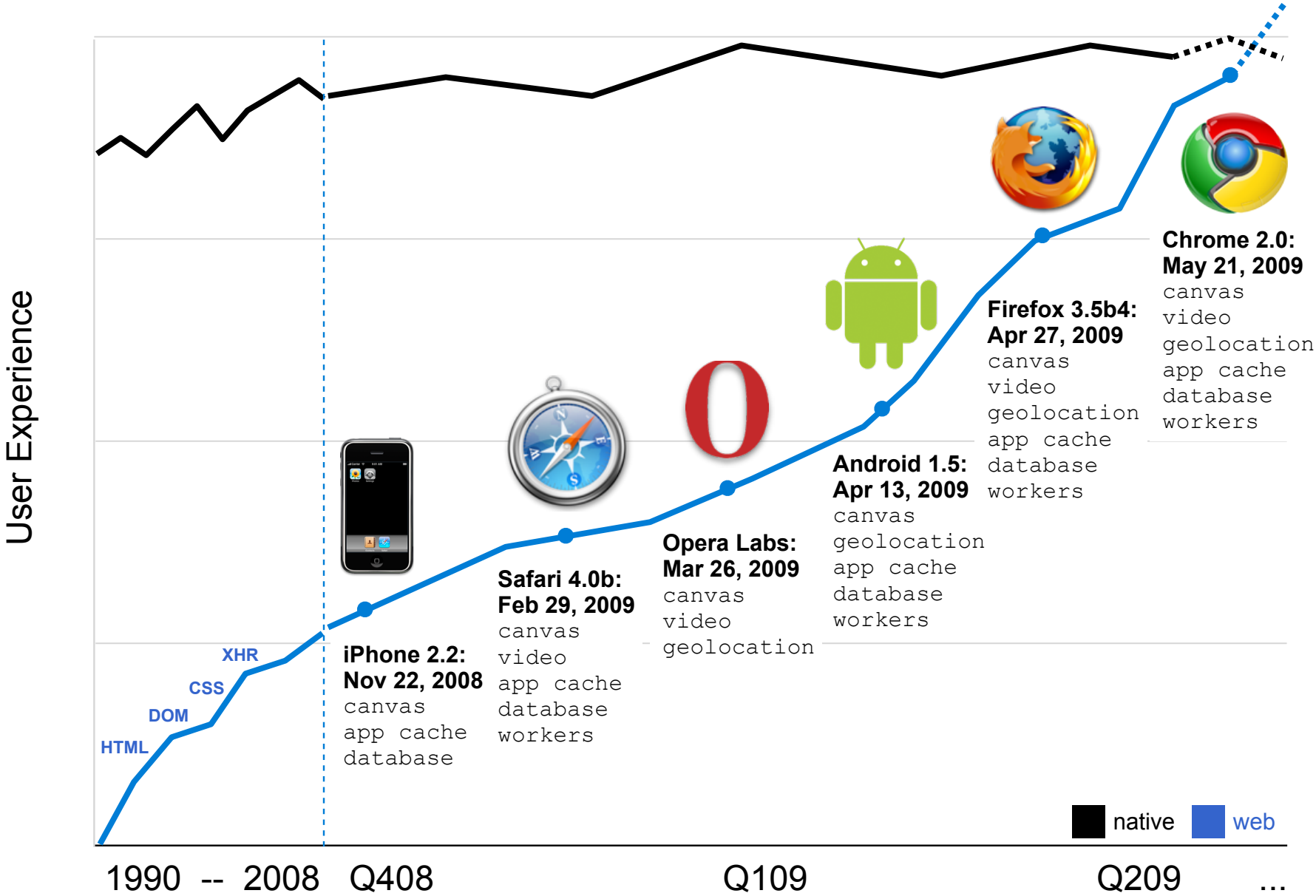


Google™

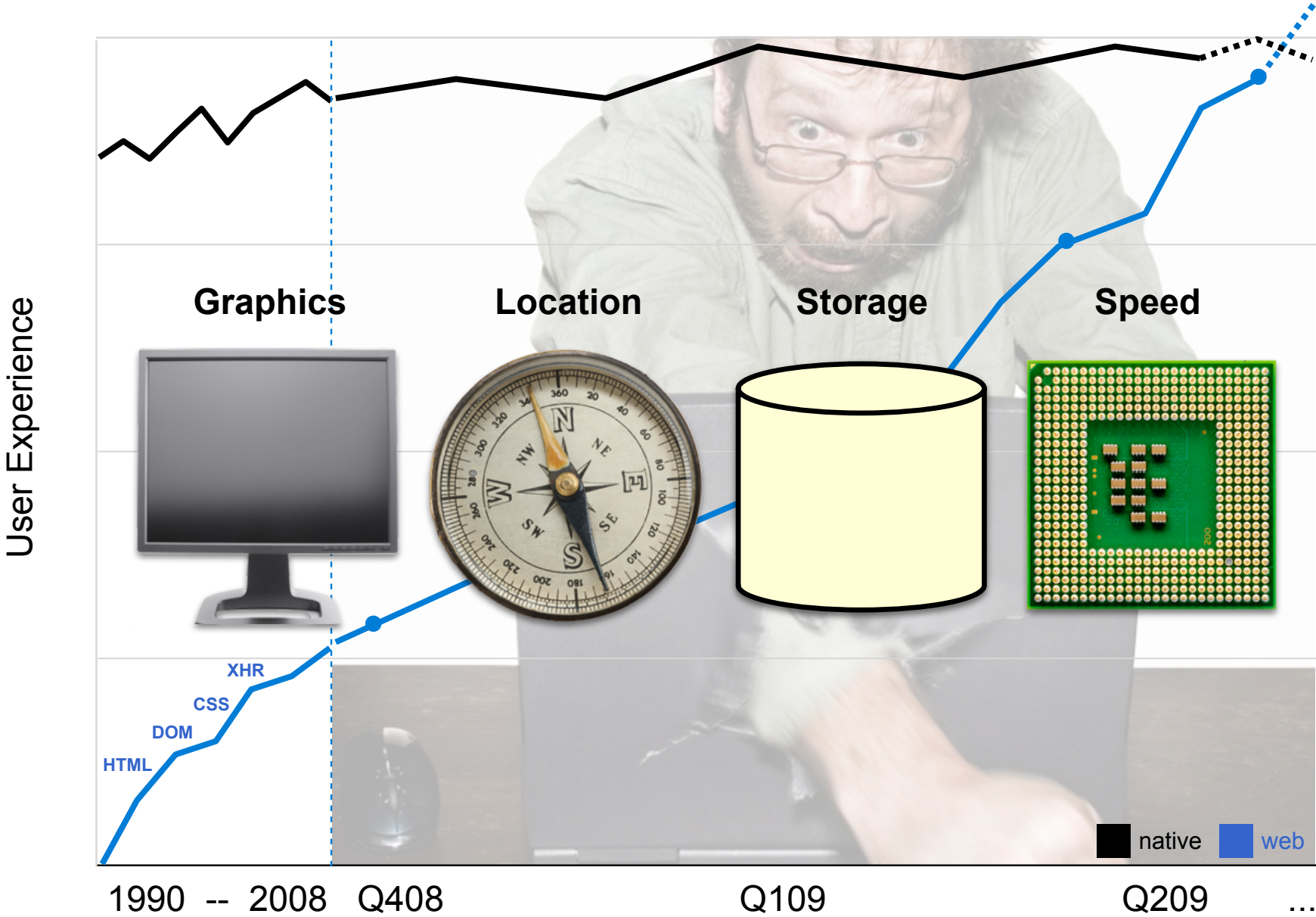


Source Marshall Astor http://www.flickr.com/photos/lifeontheedge/711086777/sizes/l/#cc_license

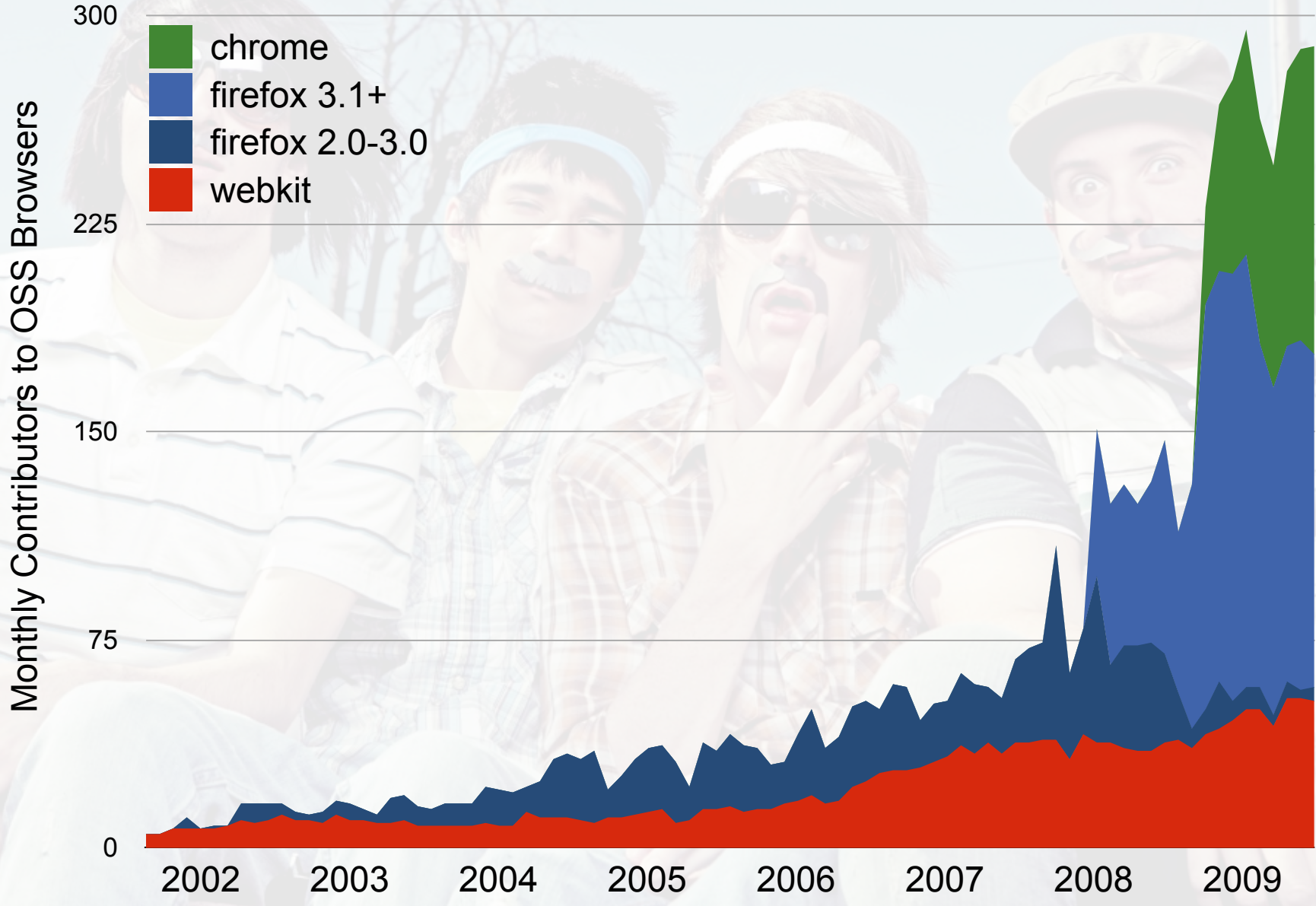
The Web Platform is Accelerating



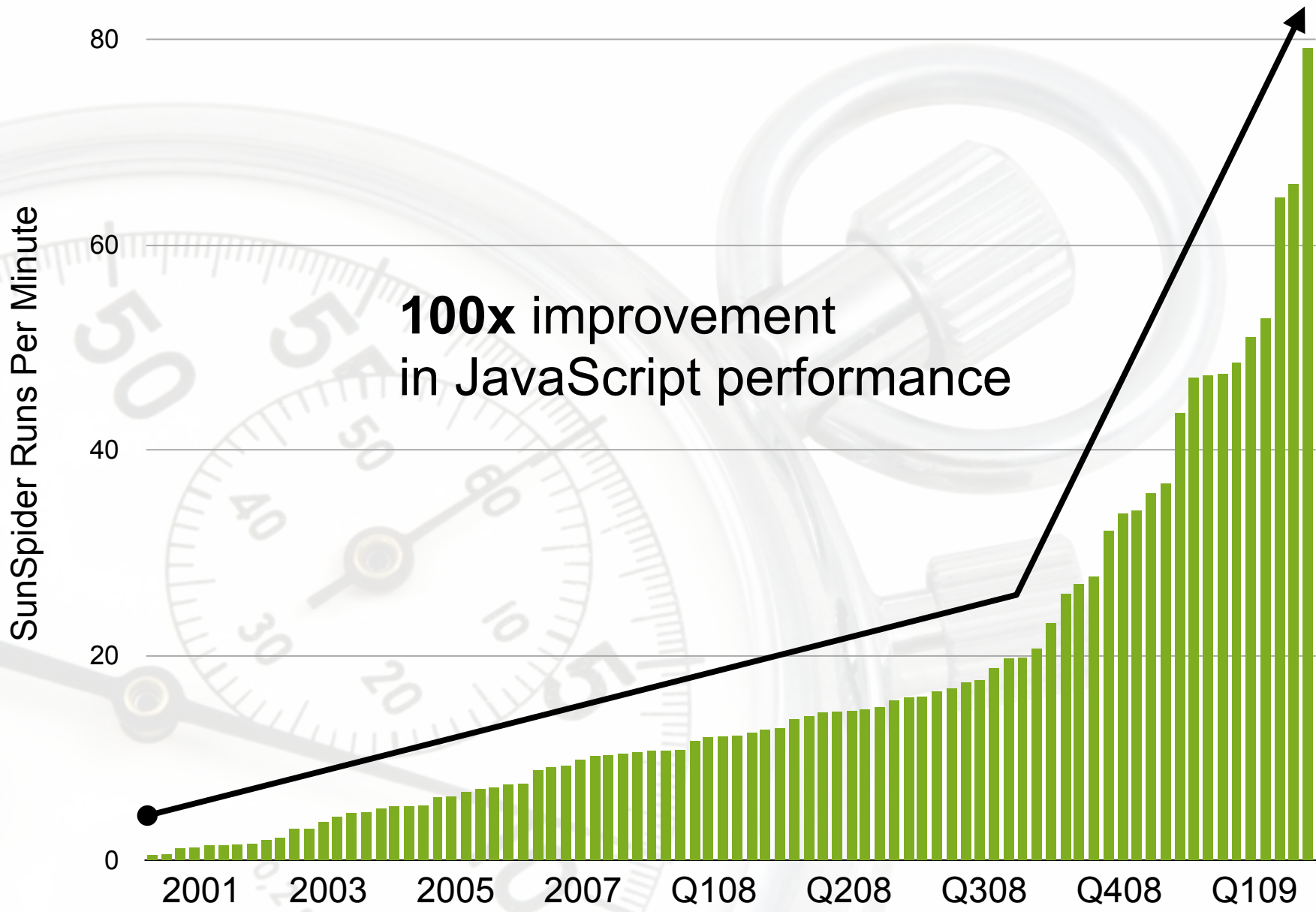
And It's Solving Key Developer Challenges



More Developers

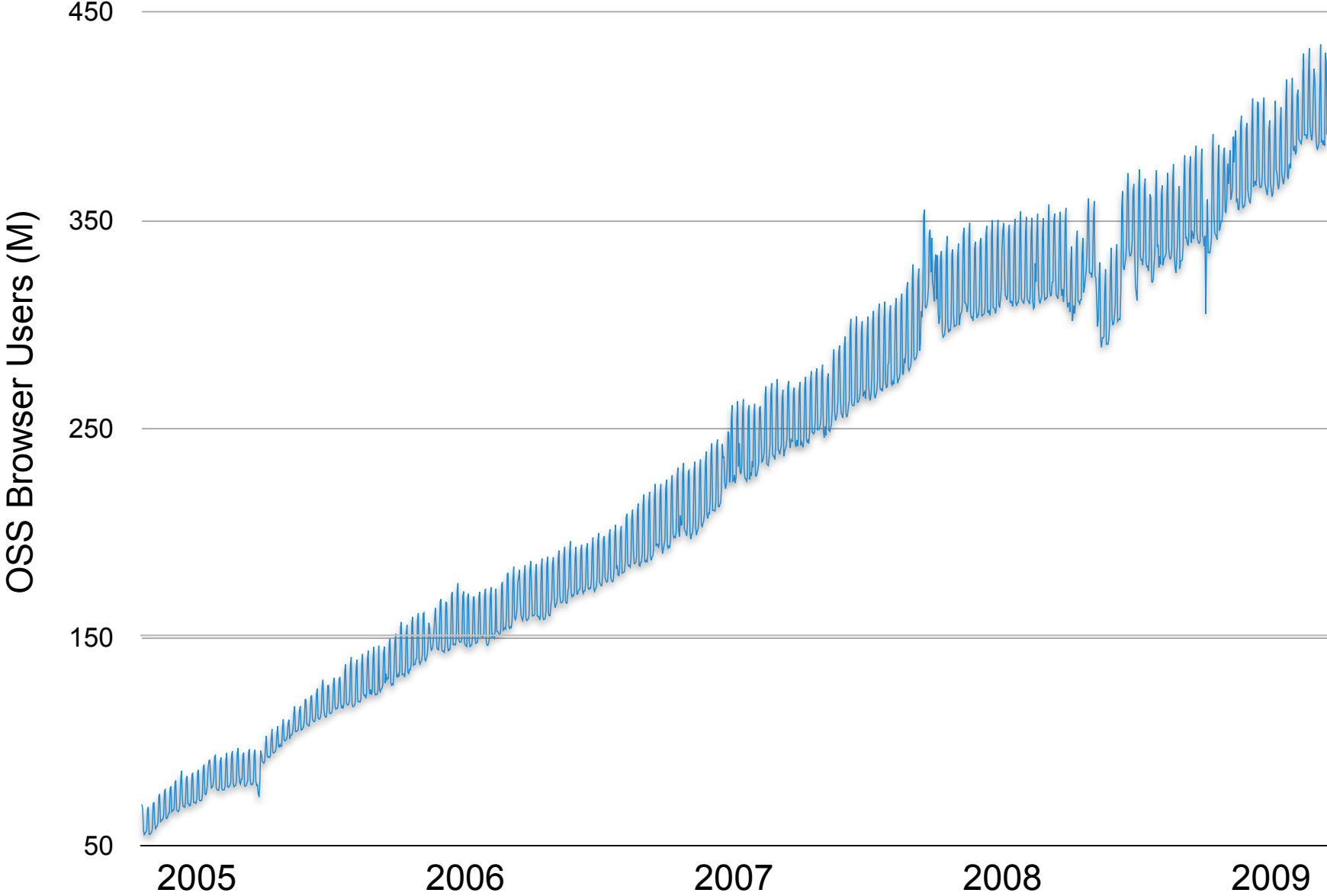


More Speed



100x improvement
in JavaScript performance

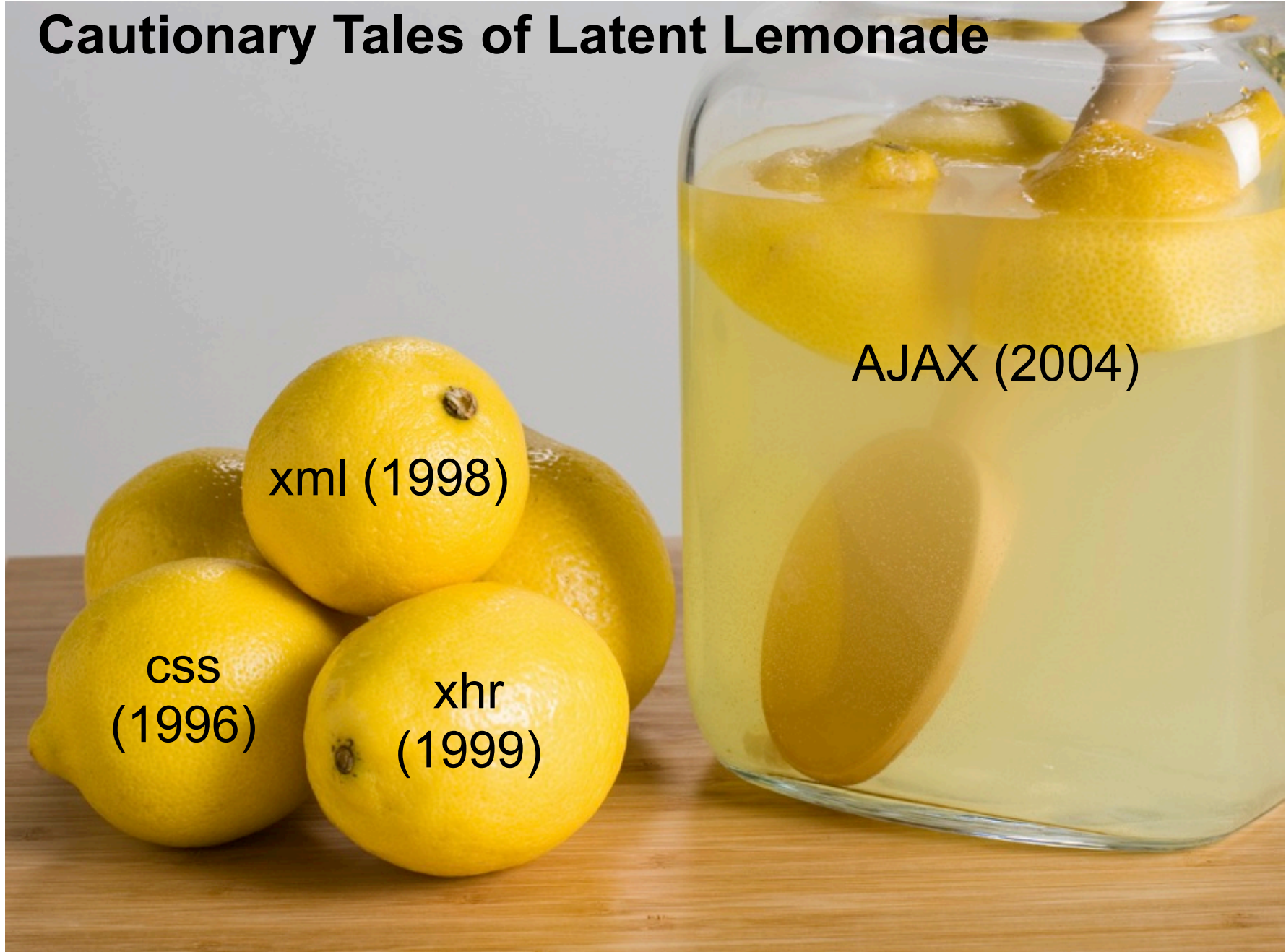
More Users



A More Powerful Web

5 > 2

Cautionary Tales of Latent Lemonade



xml (1998)

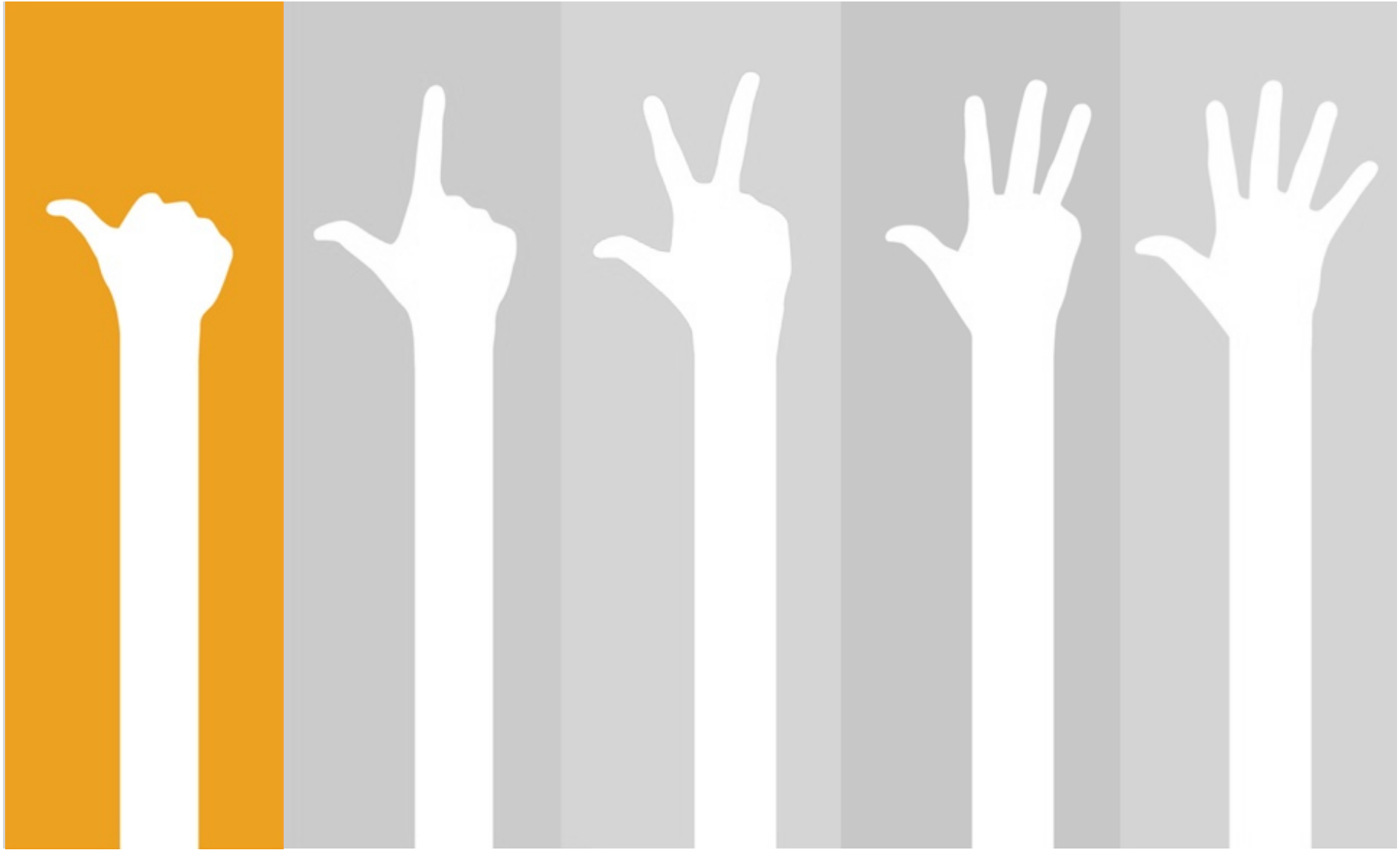
css
(1996)

xhr
(1999)

AJAX (2004)

HTML 5: A Chance to Do Things Differently





canvas

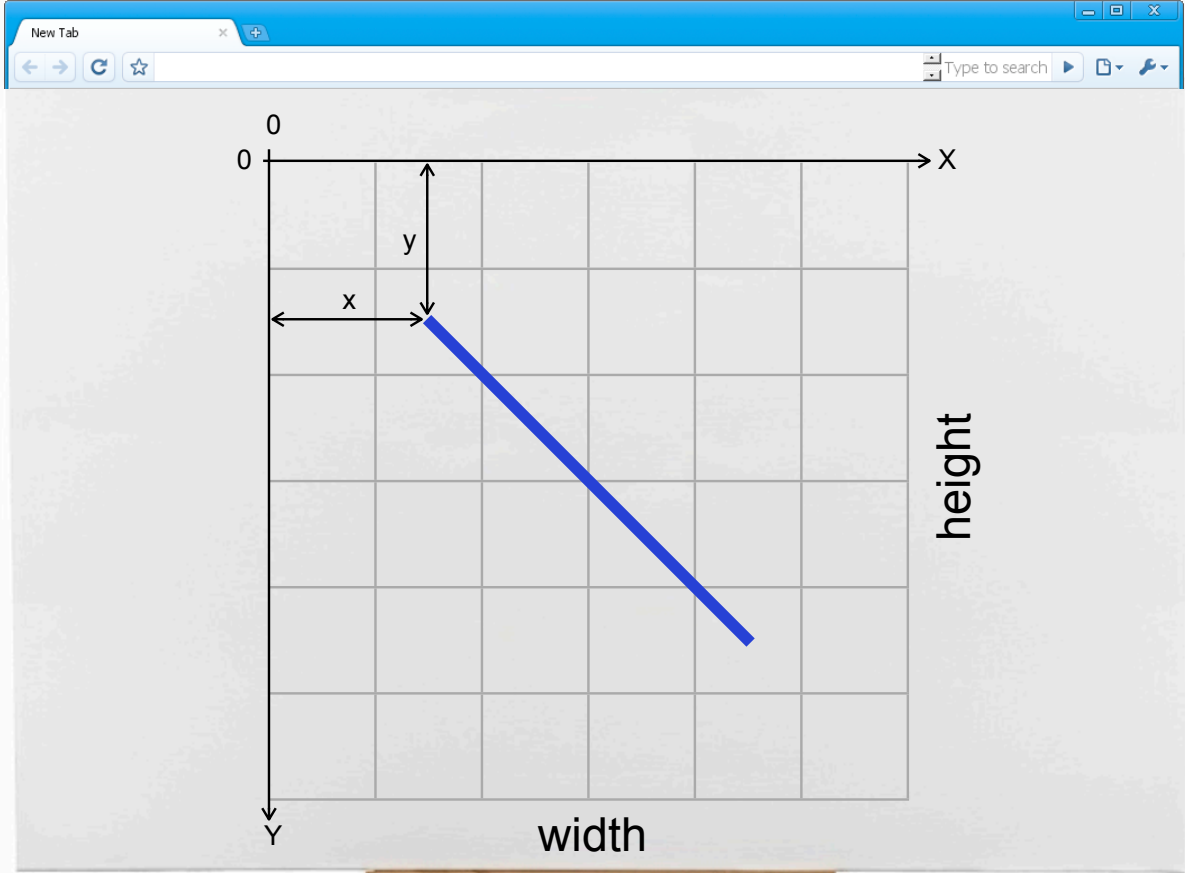
video

geolocation

app cache &
database

web workers

Until Recently, You Couldn't Draw on the Web



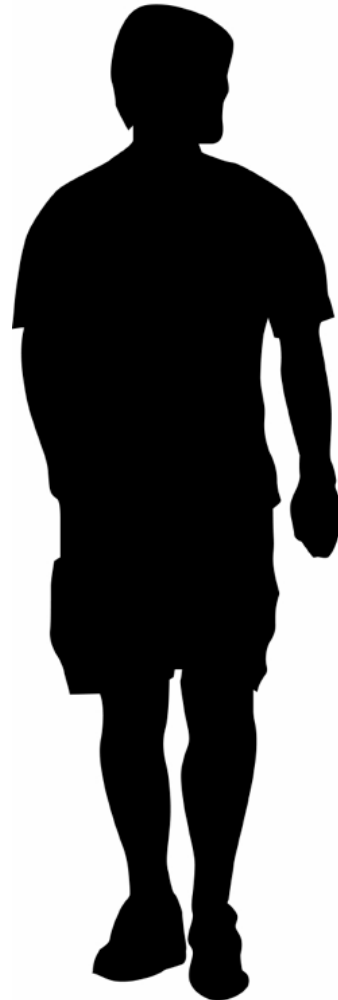
And Graphics Weren't Very Interactive



```
javascript:onClick(Draw());
```

The Usual Options Do This...

VML



Flash



Silverlight



... But canvas is Intrinsic to the Web

Transparent Stack



Document Object Model (DOM) Specification

Original: <http://www.w3.org/TR/REC-DOM-Level-1/>

Latest: <http://www.w3.org/TR/DOM-Level-3-Core/>

Contributors: Netscape, Sun, Microsoft, W3C, IBM, Novell, JavaSoft, SoftQuad Inc., Inso EPS, Textel Research, Arbortext

Hypertext Markup Language (HTML)

Original: <http://tools.ietf.org/html/rfc1866>

Latest: <http://www.w3.org/TR/html5/>

Contributors: T. Berners-Lee, D. Connolly, L. Masinter, MIT, W3C, AT&T, IBM, Microsoft, Netscape, Novell, SoftQuad, Spyglass, Adobe, Lotus, CWI, Reuters, JavaSoft, HP, GRIF, Sun, Opera, Mozilla, Google, Apple

Hypertext Transfer Protocol (HTTP)

Original: <http://tools.ietf.org/html/rfc1945>

Latest: <http://tools.ietf.org/html/rfc2616>

Contributors: UC Urvine, Compaq, MIT, Xerox, Microsoft, W3C, T. Berners-Lee, R. Fielding, J. Gettys, J. Mogul, H. Frystyk, L. Masinter, P. Leach

```
// canvas  
defines drawing  
and animation  
APIs with pixel-  
level control
```



canvas demos



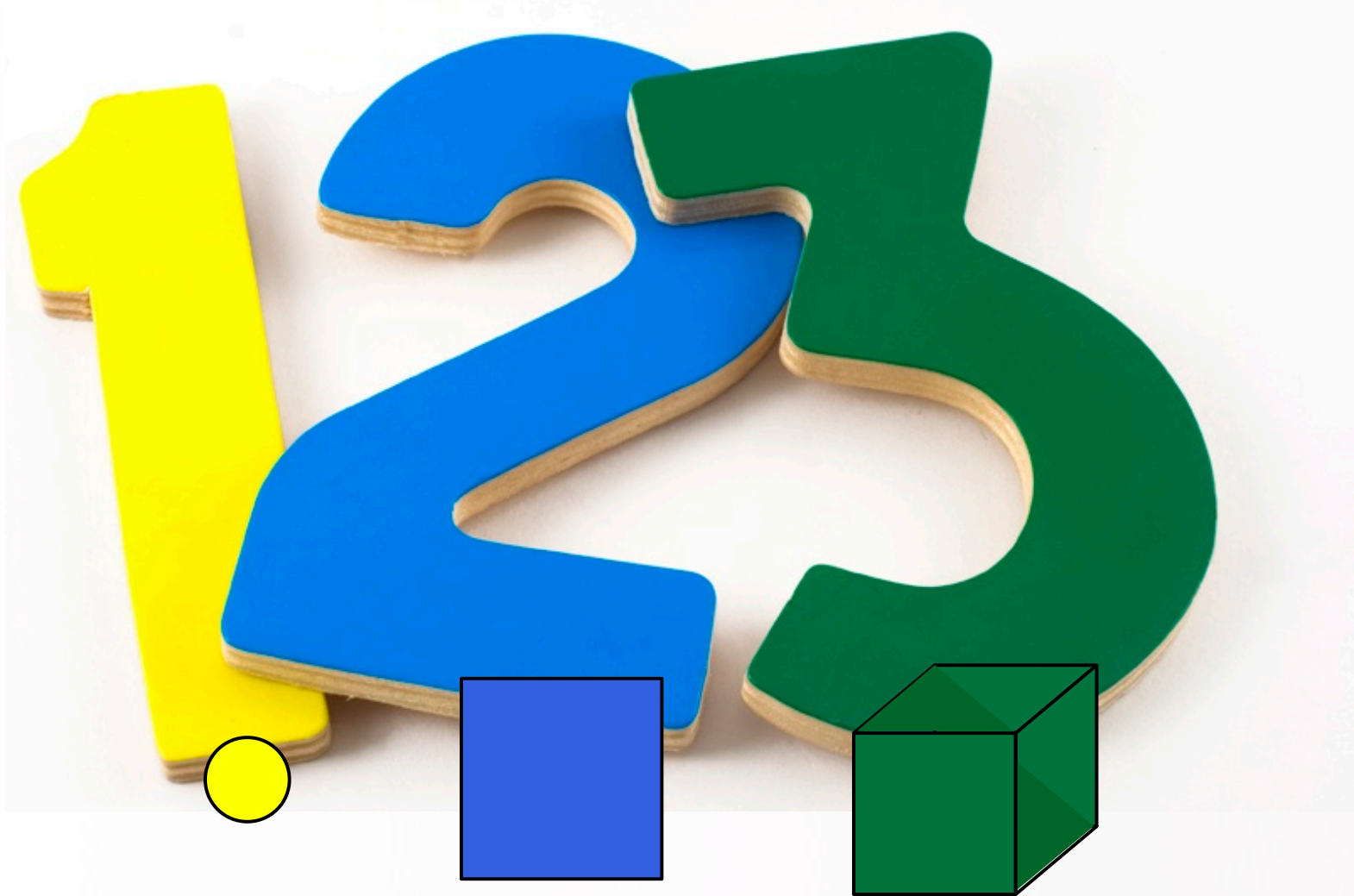
canvas Piggybacks Overall Browser Speed



SunSpider Runs Per Minute

USA 18c

Is the Web Ready for 3D?





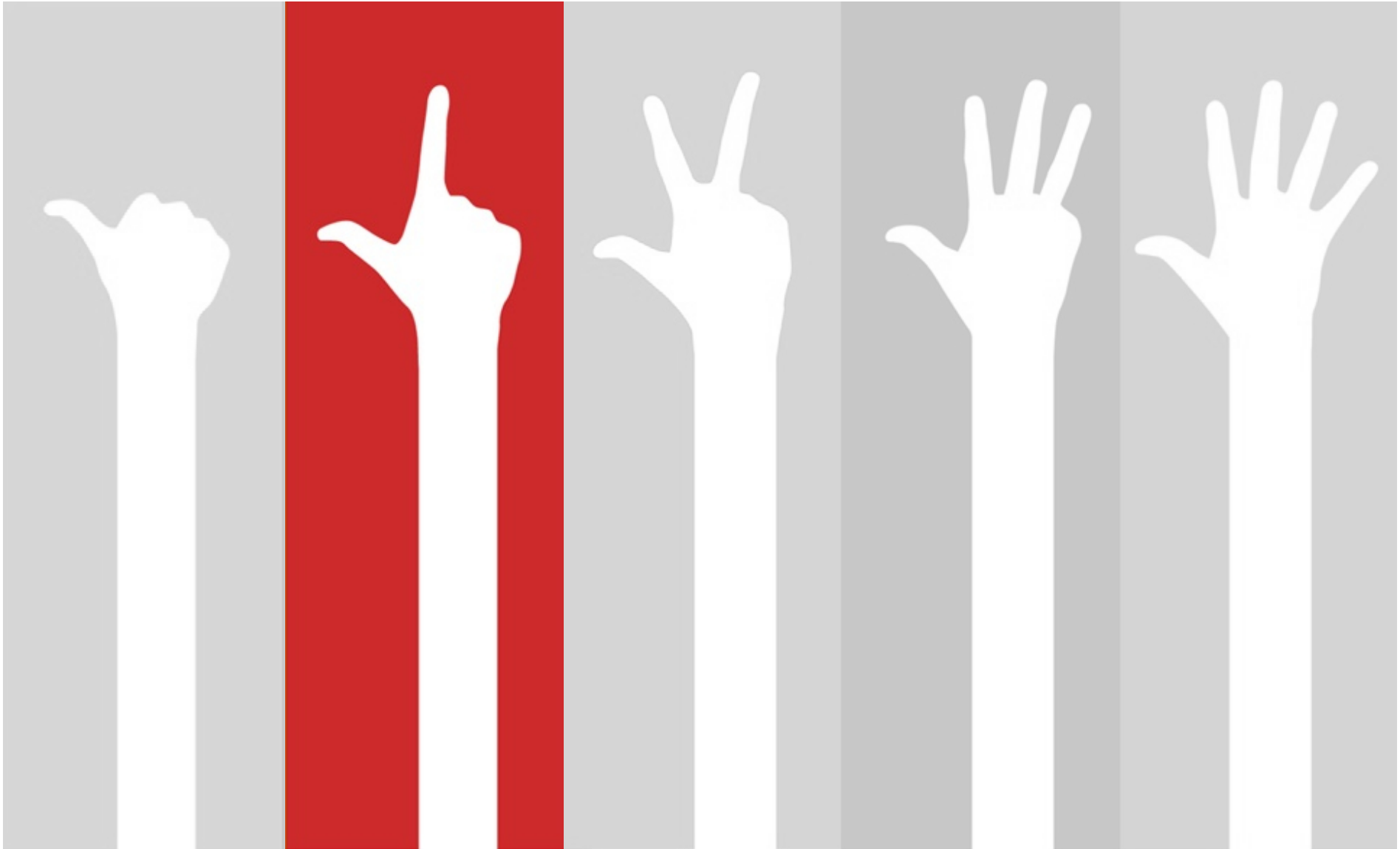
Canvas3D, WebGL

O3D code.google.com/apis/o3d



HTML 5 Support

	Chrome	Firefox	Safari	Opera
canvas	✓	✓	✓	✓
video				
geolocation				
app cache				
database				
workers				



canvas

video

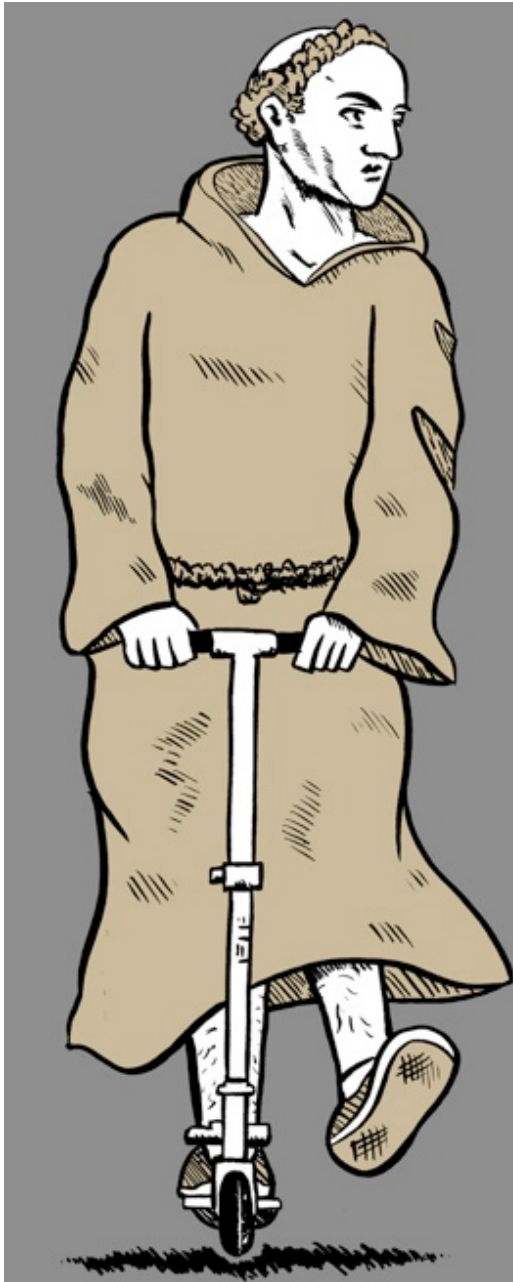
geolocation

app cache &
database

web workers

Video is Complicated, and Outside Your Control





**So What
Would
Occam Do?**

// HTML 5 makes
<video> as easy
as

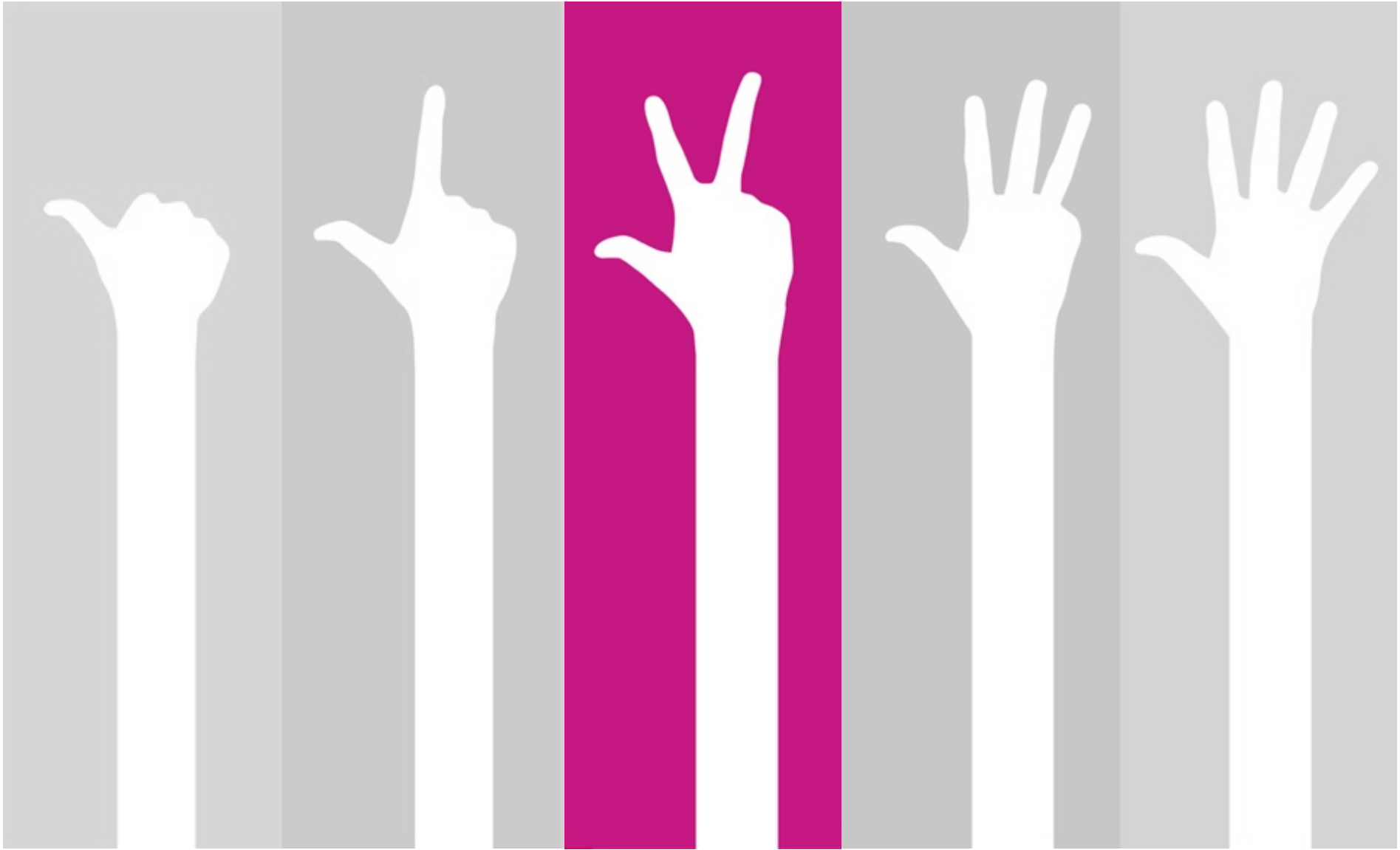


`<video>` demos



HTML 5 Support

	Chrome	Firefox	Safari	Opera
canvas	✓	✓	✓	✓
video	✓	✓	✓	✓
geolocation				
app cache				
database				
workers				



canvas

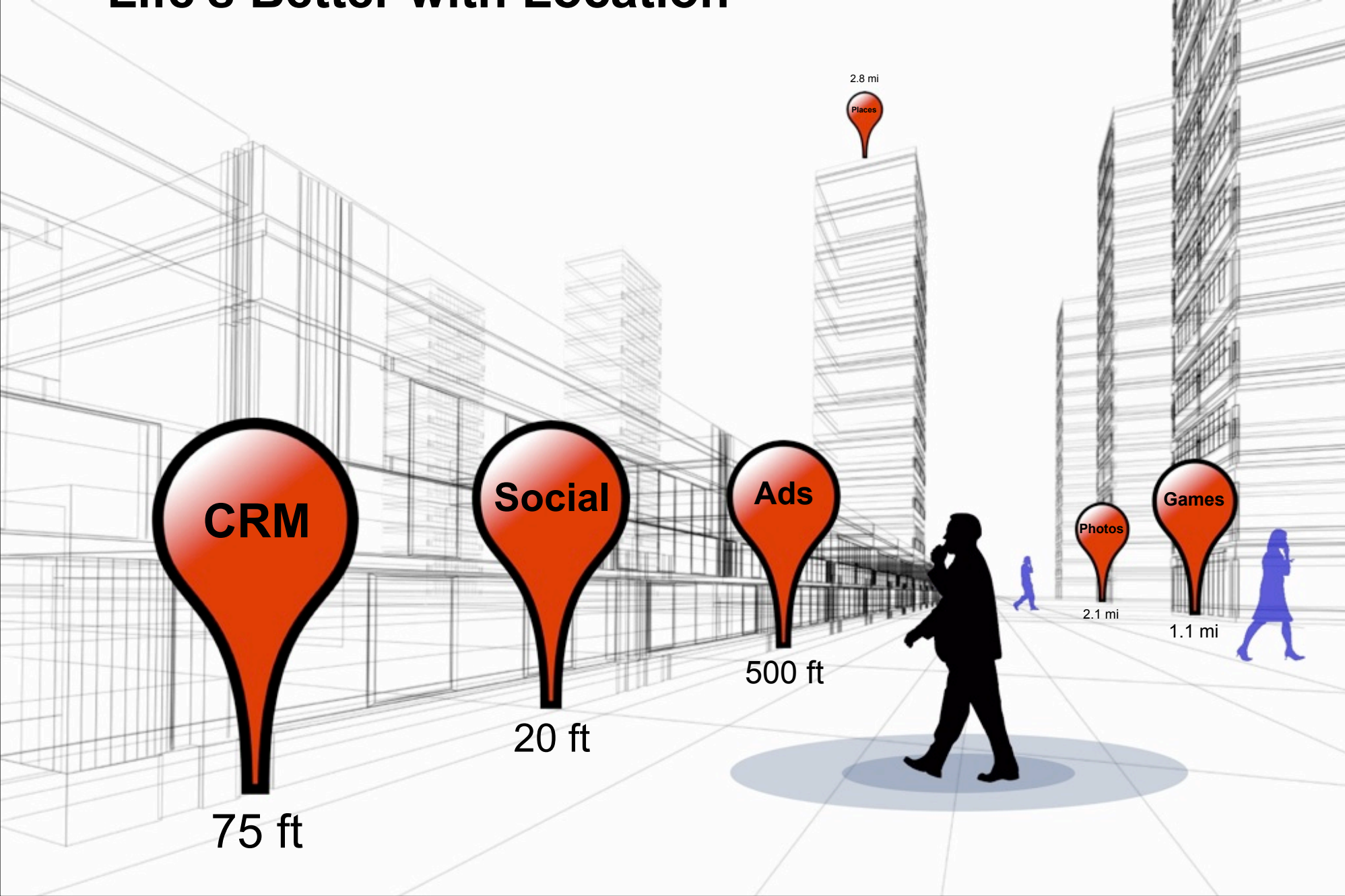
video

geolocation

app cache &
database

web workers

Life's Better with Location

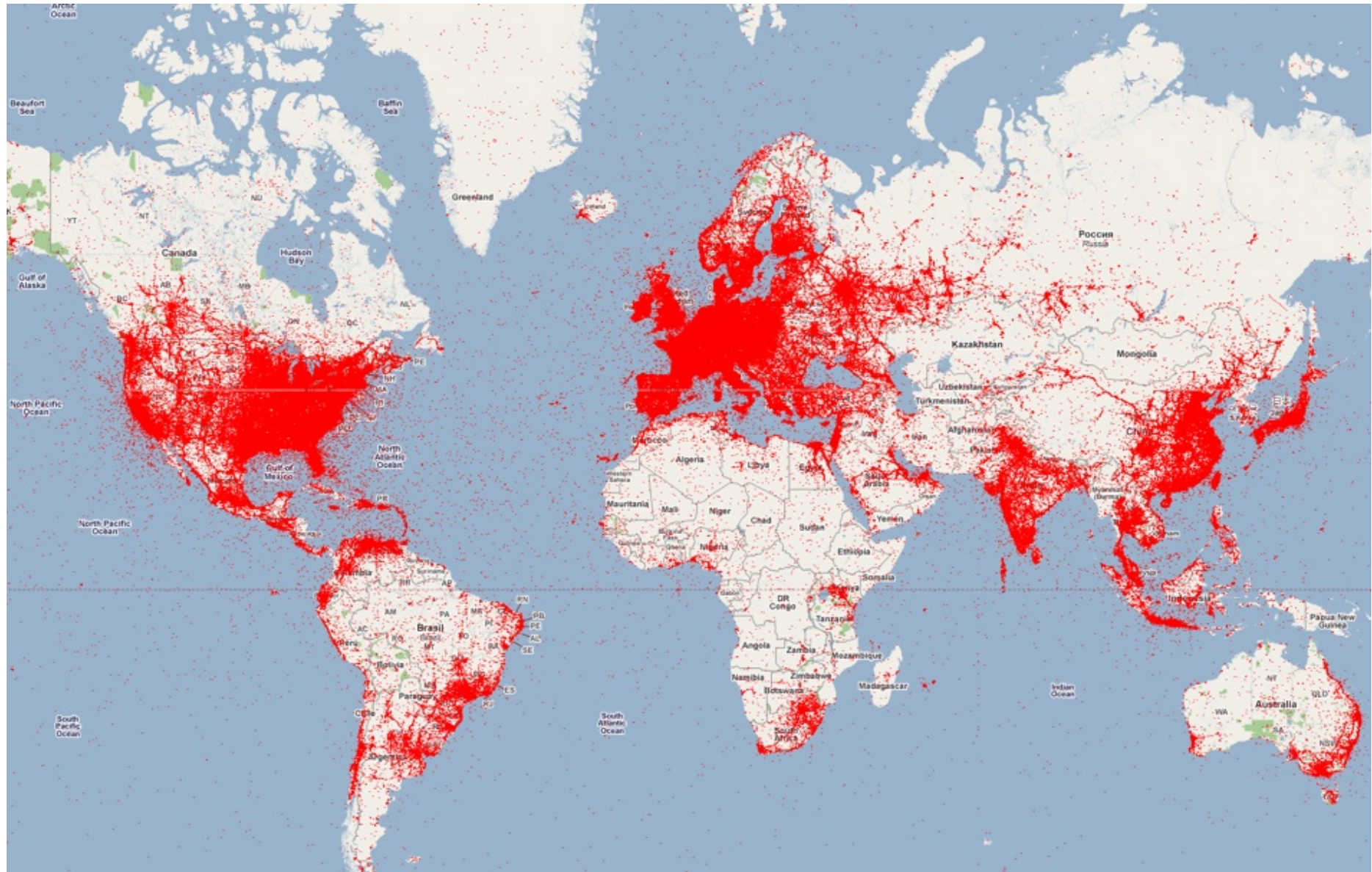


But GPS and IP Aren't Good Enough

- 1. too slow**
- 2. too constrained**
- 3. too fuzzy**

1) Cell ID and WiFi Solve The Data Problem...





2) ...And Browsers Are Now Location-Enabled




```
// the  
geolocation api  
brings browser-  
based location  
to your apps
```

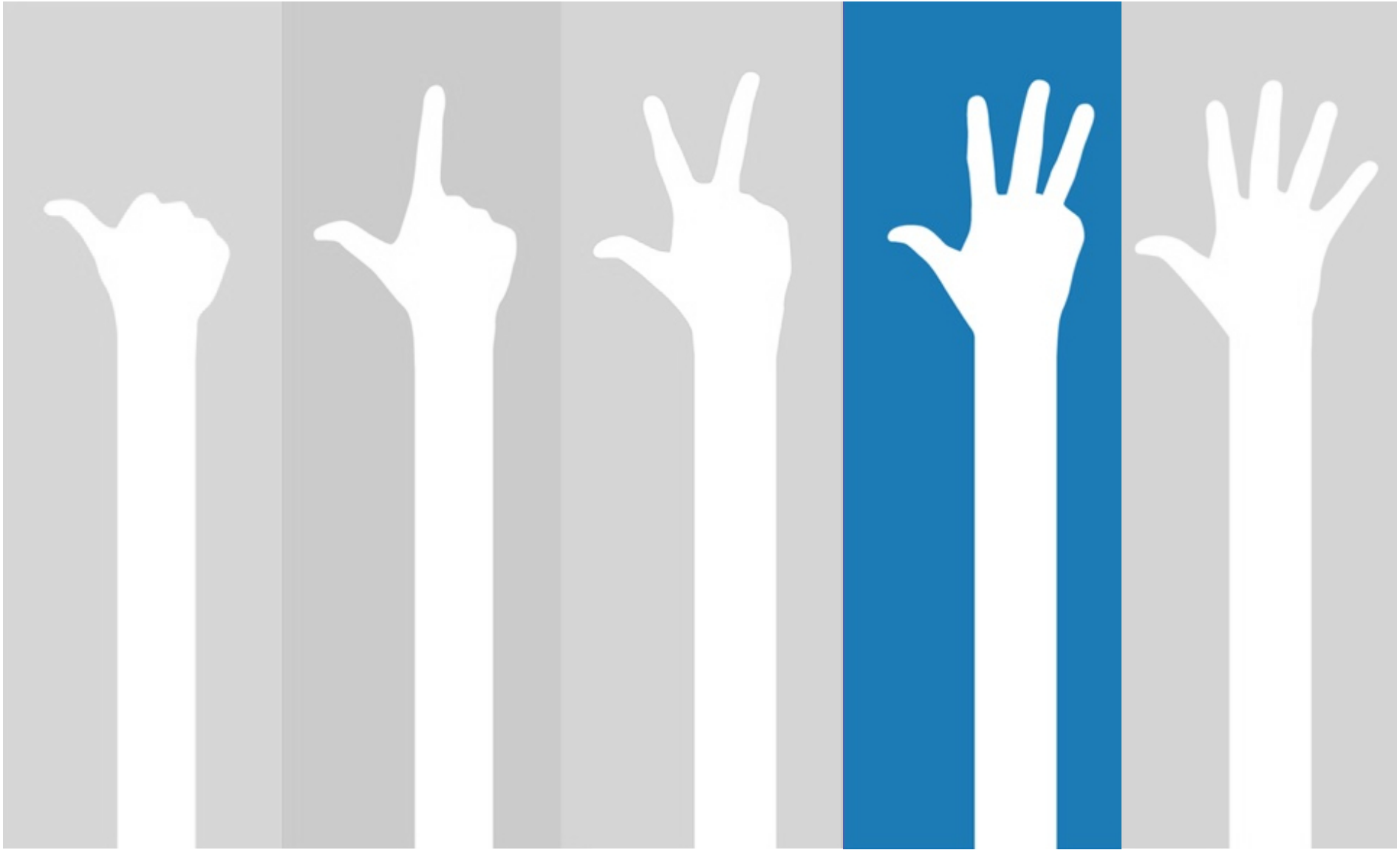


geolocation demos



HTML 5 Support

	Chrome	Firefox	Safari	Opera
canvas	✓	✓	✓	✓
video	✓	✓	✓	✓
geolocation	✓	✓	✓ (iPhone)	✓
app cache				
database				
workers				



canvas

video

geolocation

app cache &
database

web workers

Web Apps Need to Work Everywhere



```
// database and  
app cache store  
user data and  
app resources  
locally
```



app cache & database demos





palm webOS™

palm |



index.html

```
<title>Google Maps</title>
<script src="/usr/lib/mojo/framework/mojo.js"
  type="text/javascript" x-mojo-version="1">
  </script>
<script src="app/assistants/stage-assistant.js"
  type="text/javascript"></script>
```

map-assistant.js

```
this.controller.serviceRequest
{
  'palm://com.palm.location',
  {
    method: "getFix",
    parameters: {mode: "auto"},
    onSuccess: this.goFix,
    onFailure: this.error
  }
};
```

webOS and HTML 5

- **CSS Transformations**
- **HTML 5 database for history & bookmarks**
- **Canvas in calendar application**
- **Extensions**
 - **Accelerometer**
 - ...

webOS Accelerometer API

- **Shake: distinct start, stop with magnitude**
- **Orientation**
- **Raw acceleration**
 - Individual acceleration per axis
 - Individual Pitch, Roll, and Yaw
- **... all available from JavaScript using the DOM Level 2 interface**

Code Snippet

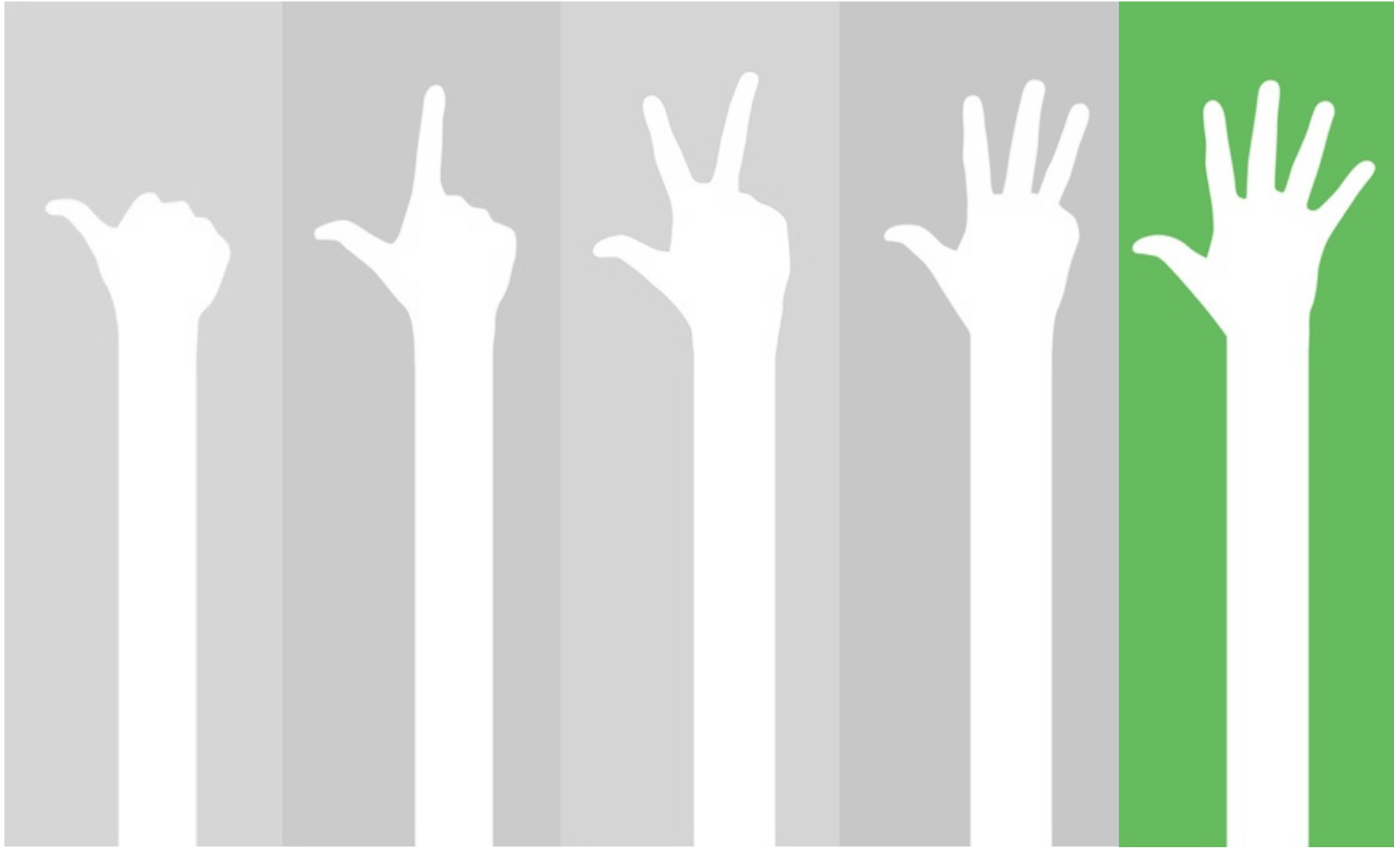
```
<script type="text/javascript">
  // Set up accelerometer event handlers
  window.addEventListener( "shakestart", beginShaking, true );
  window.addEventListener( "shaking", isShaking, true );
  window.addEventListener( "shakeend", endShaking, true );
  window.addEventListener( "acceleration", handleAccel, true );
  function isShaking(event) {
    // event.magnitude
    // ...
  }
  function handleAccel(event) {
    // event.accelX, event.accelY, event.accelZ
    // event.pitch, event.roll, event.yaw
    // ...
  }
</script>
```

webOS and HTML 5

Converge mobile and desktop
web application development

HTML 5 Support

	Chrome	Firefox	Safari	Opera
canvas	✓	✓	✓	✓
video	✓	✓	✓	✓
geolocation	✓	✓	✓ (iPhone)	✓
app cache	✓	✓	✓	✓ (mobile)
database	✓	✓	✓	✓ (mobile)
workers				



canvas

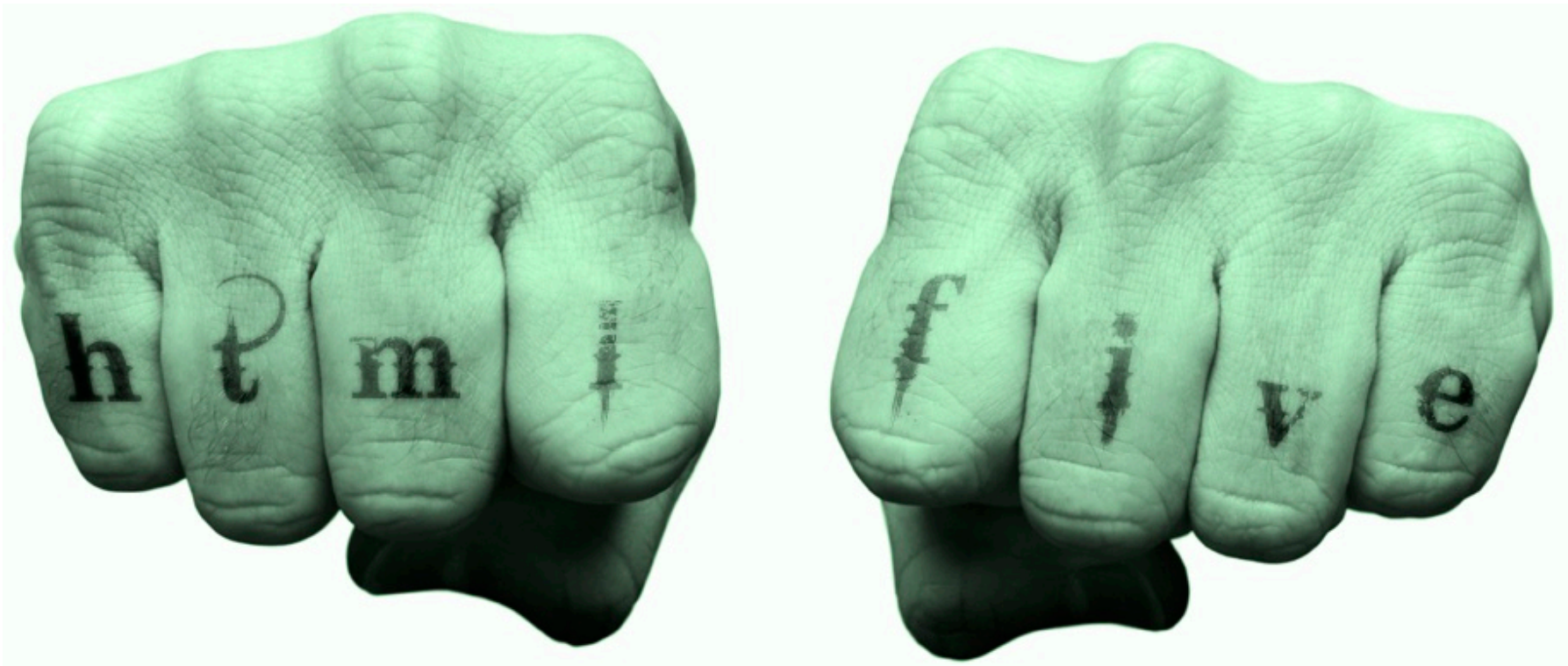
video

geolocation

app cache &
database

web workers

A More Powerful Web == More Powerful Apps



But More Power == More Responsibility

I will not hose the browser with JavaScript

I will not hose the browser with JavaScript

I will not hose the browser with JavaScript

I will not hose the browser with JavaScript

I will not hose the browser with JavaScript

I will not hose the browser with JavaScript

```
// web workers  
defines an API  
for running  
background  
scripts
```



web workers demos



HTML5 Support

	Chrome	Firefox	Safari	Opera
canvas	✓	✓	✓	✓
video	✓	✓	✓	✓
geolocation	✓	✓	✓ (iPhone)	✓
app cache	✓	✓	✓	✓ (mobile)
database	✓	✓	✓	✓ (mobile)
workers	✓	✓	✓	✓ (mobile)

HTML5 and SVG not available in IE?

- ChromeFrame plugin implements HTML5 in IE
- Shim libraries using Flash or VML to implement features
 - SVGWeb: SVG
 - Explorercanvas: Canvas
 - Video for Everybody: Video

Chrome Extensions

- Programs that enhance Google Chrome's functionality
- Written in HTML, CSS, and JavaScript
- Integrated using a simple API
- Developed iteratively



A More Powerful Web, *Made Easier*



Nubes

“¿Qué son las nubes? ¿Una arquitectura del azar? Quizá Dios las necesita para la ejecución de Su infinita obra y son hilos de la trama oscura. Quizá la nube sea no menos vana que el hombre que la mira en la mañana.”

“What are the clouds? An architecture of chance? Perhaps they are the necessary things from which God weaves his vast imaginings, threads of a web of infinite expanse. Maybe the cloud is emptiness returning, just like the man who watches it this morning.”

Borges, Nubes II, Los Conjurados (1985)



App Engine and Google Web Toolkit (GWT)

Easier to Scale and Optimize Your App



200,000+
Developers



18+ months in review



Apr 2008	Python launch
May 2008	Memcache, Images API
Jul 2008	Logs export
Aug 2008	Batch write/delete
Oct 2008	HTTPS support
Dec 2008	Status dashboard, quota details
Feb 2009	Billing, larger files
Apr 2009	Java launch, DB import, cron support, SDC
May 2009	Key-only queries
Jun 2009	Task queues
Aug 2009	Kindless queries
Sep 2009	XMPP
Oct 2009	Incoming Email

Groovy

NG

Struts

Ruby

Seam

Wicket

DWR
Helma

Scala

Jersey
Tiles

Spring-ORM
Compass

Sinatra

JavaEE

log4j

Rhino

WebORB

Jython

Restlet

Tapestry

Grails

GWT



Java + App Engine demo

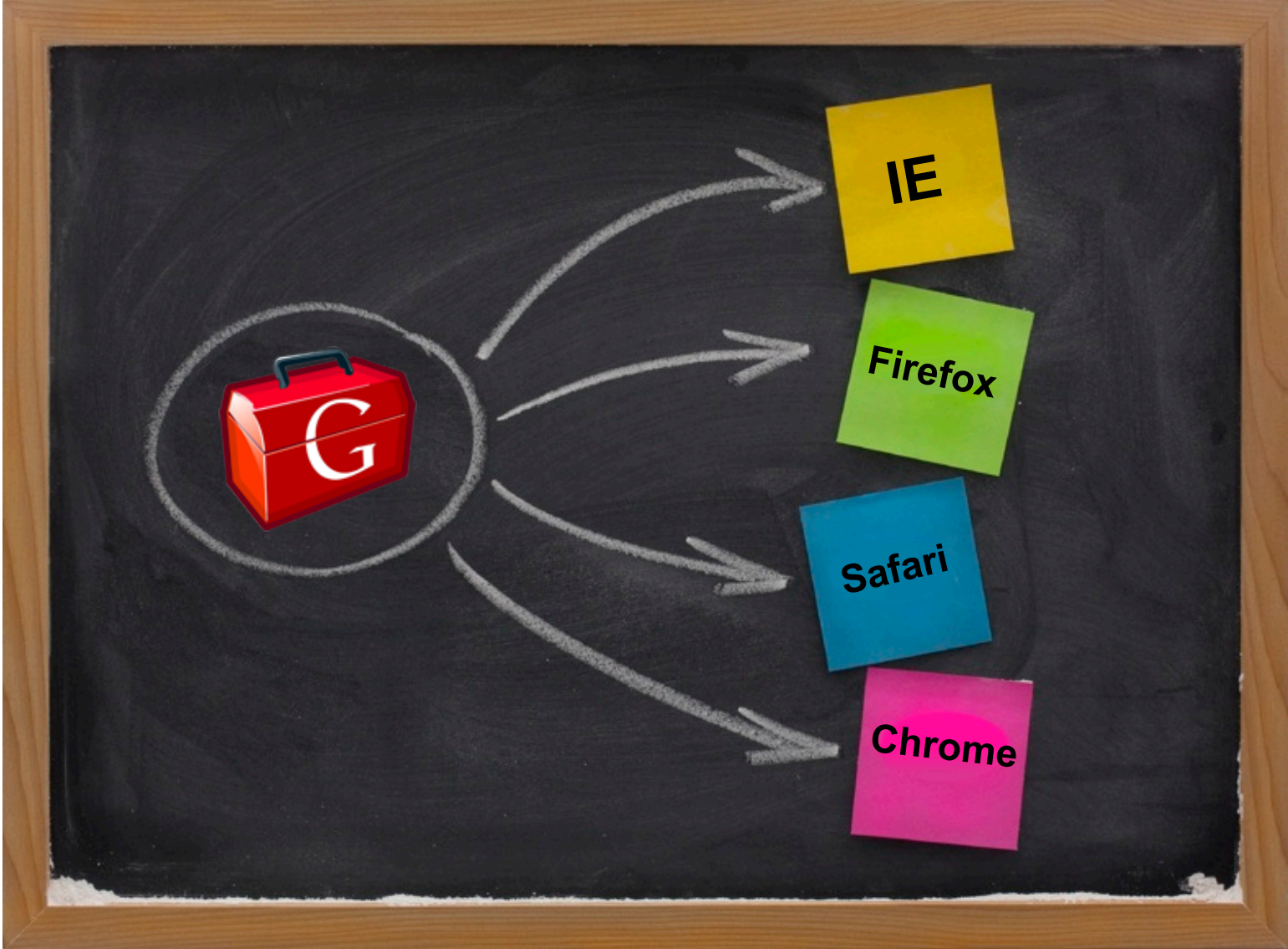


UI in the Front...



...Hosting in the Back

GWT Browser-Proofs Your JavaScript Code...



...But CSS Headaches Persist

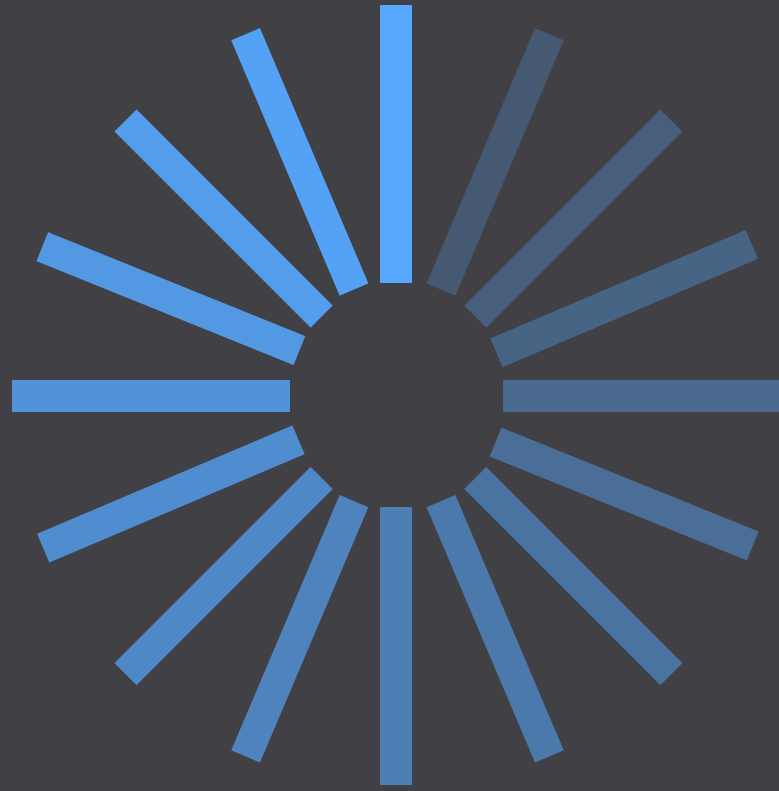


Coming in GWT 2.0: In-Browser Debugging



Rich Applications, Extra-Large Codebases





LOADING

Manual Code Splitting: Not For the Faint of Heart



Coming in GWT 2.0: runAsync()

```
// example

public void onMySettingsLinkClicked() {

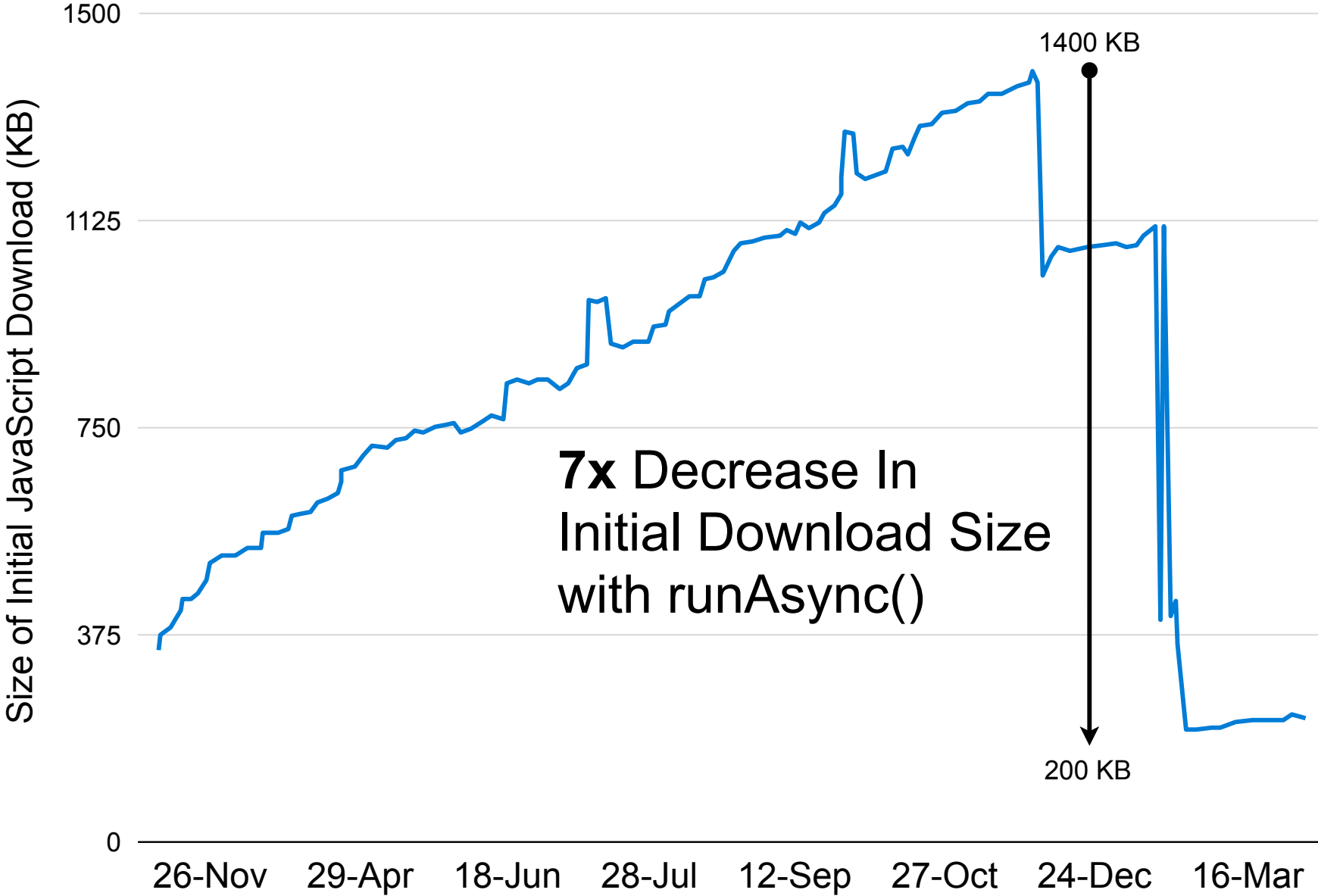
    GWT.runAsync(new RunAsyncCallback() {

        public void onSuccess() {
            new MySettingsDialog().show();
        }

        public void onFailure(Throwable ohNoes) {
            // indicate that something went wrong,
            // usually a connectivity or server
            // problem
        }

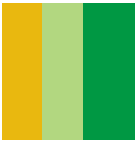
    });
}
```

runAsync() Helps Apps Startup More Quickly





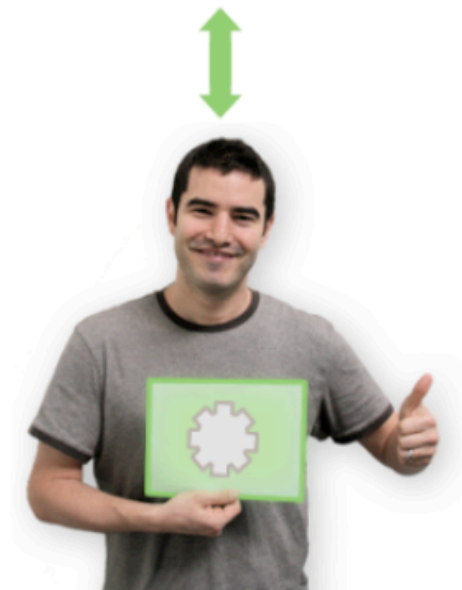
code.google.com/appengine
code.google.com/gwt



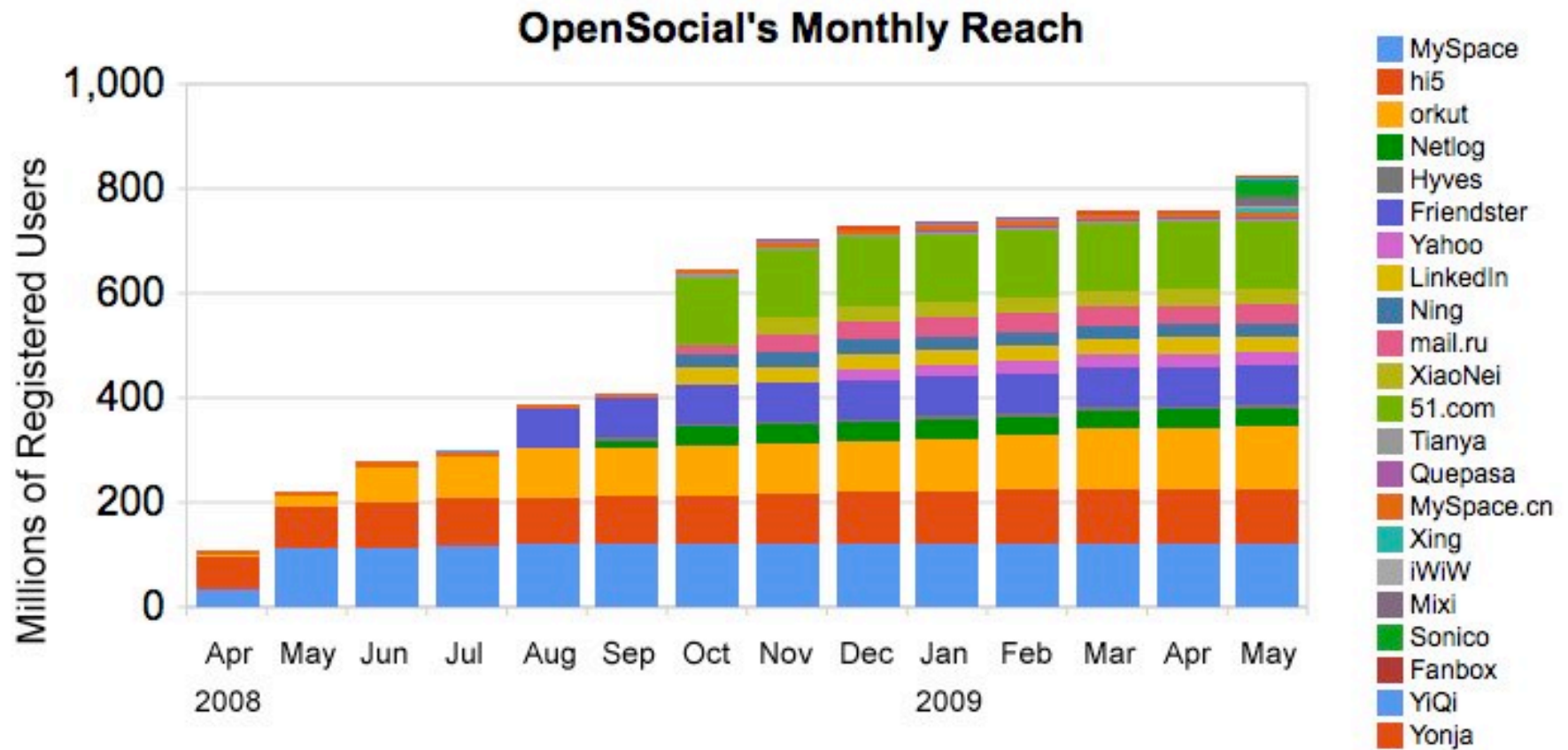


OpenSocial



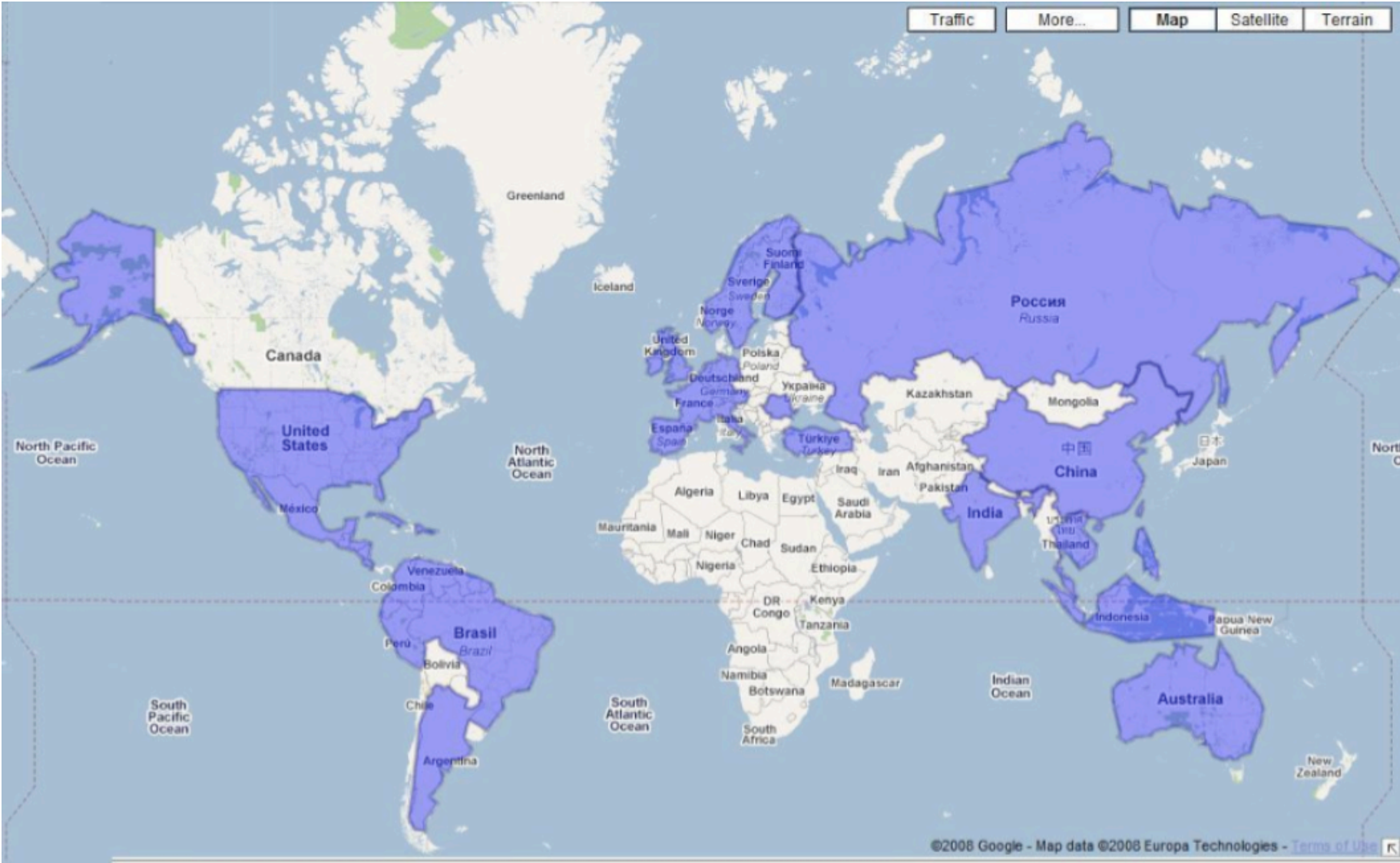


Large Reach



Over 800M in a year – and more to come!

Global Reach



OpenSocial Supporting Products



Under the hood: Usage Stats

- 315M+ App Installs
- 85M+ Canvas Page Views / Day
- 7,500+ Apps
- 20+ Containers



A New Open Stack is Emerging



MySpace
DataAvailability



Yahoo!
Y! OS



Google
FriendConnect



Plaxo
Pulse

Open ID

XRDS

OAuth

PortableContacts

OpenSocial



Google Friend Connect



Google FriendConnect

- Uses OpenSocial (gadgets, REST/RPC)
- Allows site owners to mix in social data to existing sites
- Cut and paste or
- Deep integrations





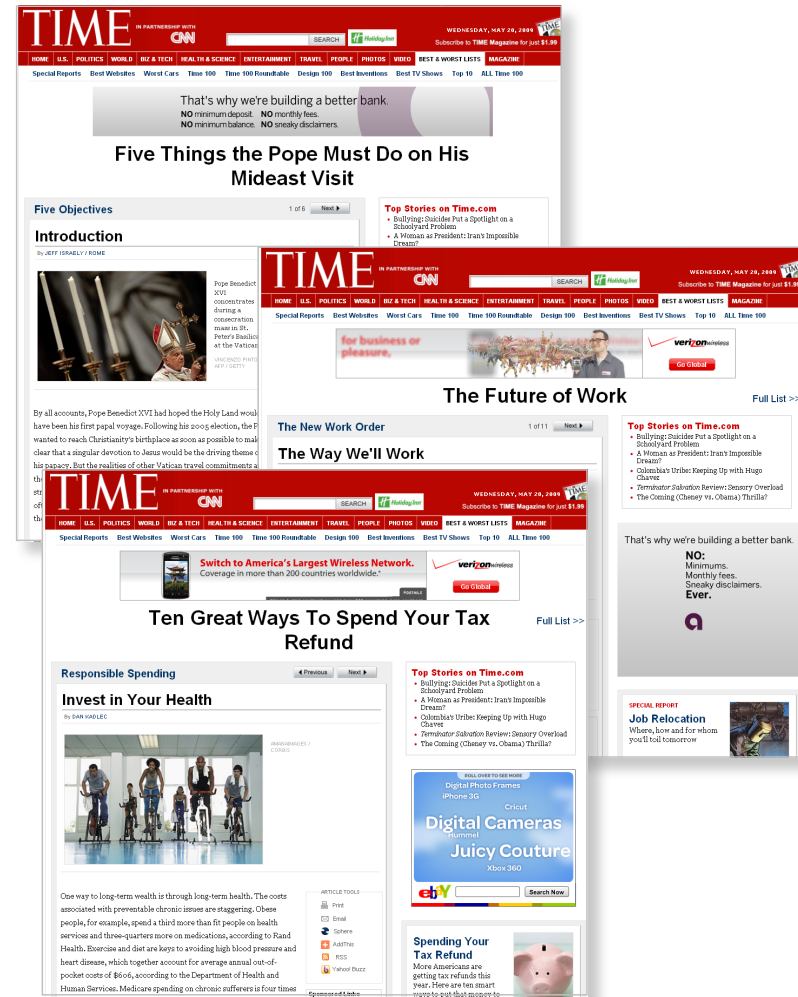
Google Friend Connect Demos



TIME.com Daily Specials

TIME.com's Daily Specials provide a trusted and entertaining perspective on relevant current events.

These interactive specials use photo and video galleries to engage the readers, and topics can range from important international events like the Pope visiting the Middle East) to light hearted topics like the Best iPhone Apps.



Recent Popular Daily Specials Pageviews

- top 10 disastrous letterman interviews - 7.4mm
- top 11 iphone applications - 5.9mm
- 10 things you can like about \$4 gas - 4.3mm
- 10 essential sites - 3.0mm

Source: Omniture SiteCatalyst – Past 12 Months

TIME TIME.com

Specials Traffic

176MM

From January – April 2009

Challenge

**How can we make our daily Top 10's
more fun and engaging?**

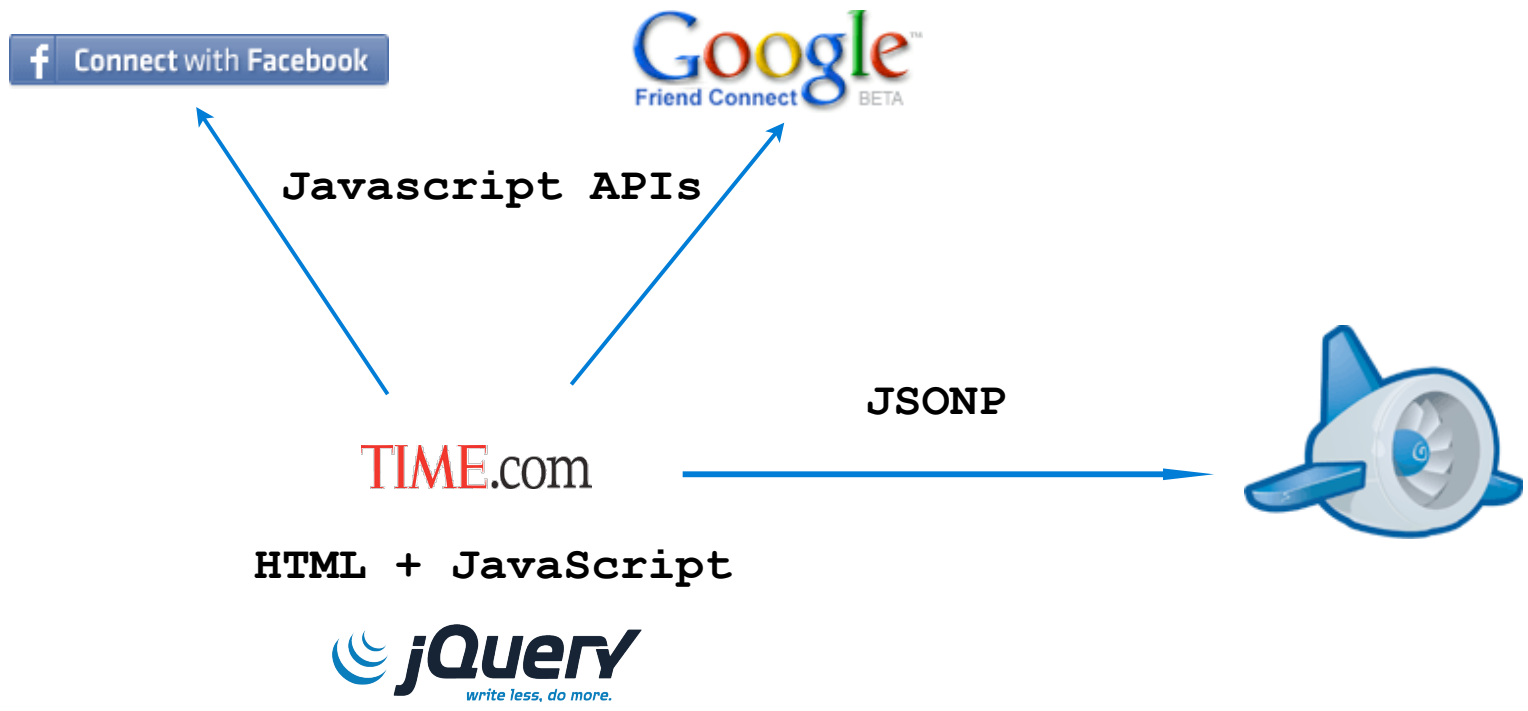


TIME Social Lists Demo



TIME TIME.com

Architecture





Paul Berry, HuffingtonPost



THE HUFFINGTON POST

THE INTERNET NEWSPAPER: NEWS BLOGS VIDEO COMMUNITY

THE

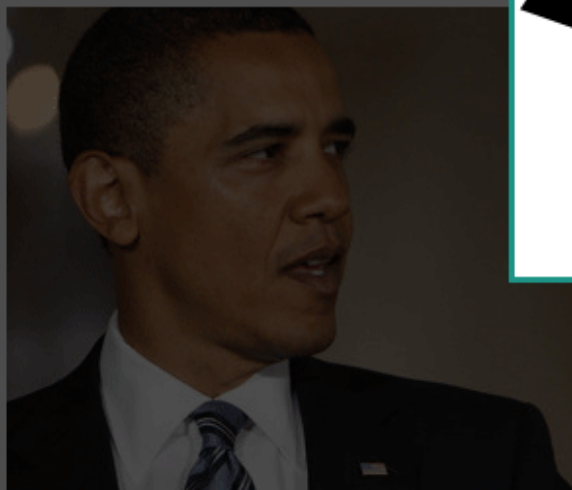
THE IN

[HOME](#) [POLITICS](#) [MEDIA](#) [BUSINES](#)

[COMEDY 23/6](#) [VIDEO](#) [BLOGGER IND](#)

FROM AP: Zambran

White Ho For Cal



OST

TY

[Log In](#) | [Sign Up](#) | May 27, 2009

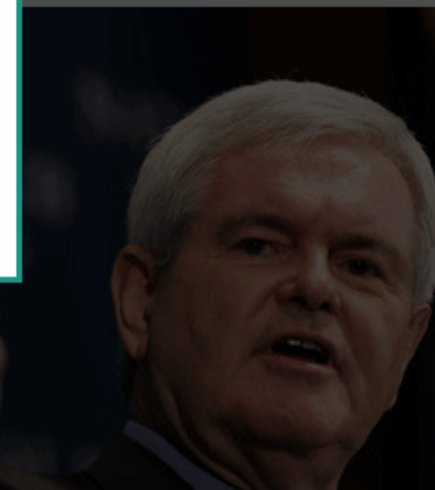
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SEARCH

ingrich Racist



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Login to The Huffington Post

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Login

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[Connect](#)

[Sign in with Friend Connect](#)

Don't have an account yet? [Sign up here.](#)

Choose Your Top 5
I Wouldn't Wear I Would Wear
○○○○○○○○○○○○○○○○
VOTE NOW

HUFFPOST'S USER'S VOTES

CLOSE TO CONTINUE

× CLOSE



Alan Scher's Top 5 Choices



1



2



3



4



5



Google Product APIs

Easier to Add Content and Services To Your Website



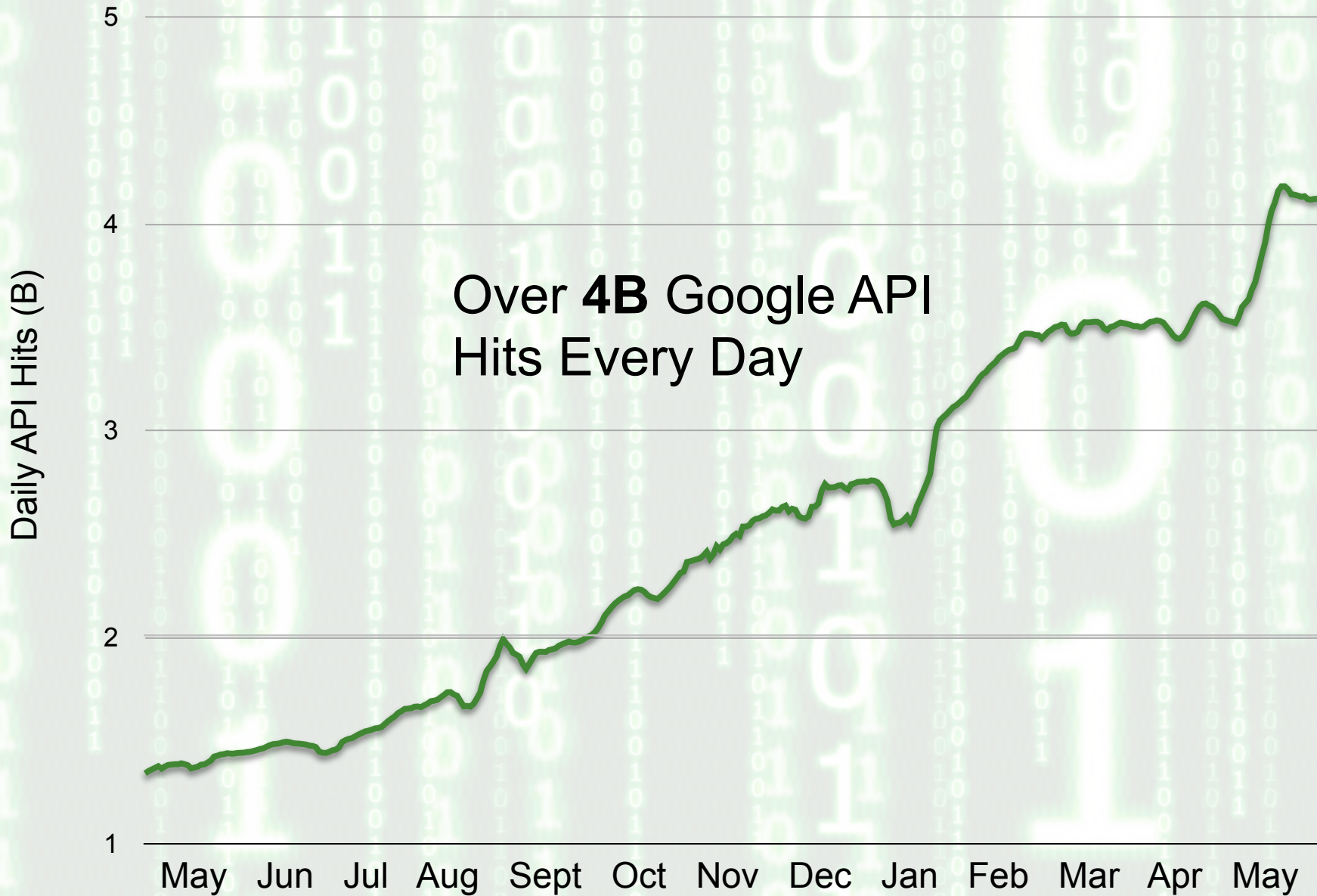
Data Liberation Front

<http://www.dataliberation.org/>



Users should be able to control the data they store in any of Google's products. Our team's goal is to make it easier to move data in and out.

Low-Level API Access Serves Many Needs...



...But Imagine AdSense for Everything Else

The image shows a browser window with several services and their associated AdSense ads:

- Search:** A search results page for "this is a test" with two results. The first result is from the ACLU, and the second is from a Google Mobile Blog. The word "Search" is overlaid in the center.
- Spreadsheets:** A Google Sheets spreadsheet with a grid showing column A and rows 1 through 7. The word "Spreadsheets" is overlaid in the center.
- Video:** A grid of six video thumbnails showing various scenes, including an airplane and a person in a hard hat. The word "Video" is overlaid in the center.
- Calendars:** A calendar view for Sunday, May 24, showing time slots from 1am to 3am. The word "Calendars" is overlaid in the center.
- Maps:** A Google Maps view of a city street grid with a red location pin labeled 'A'. The word "Maps" is overlaid in the center.

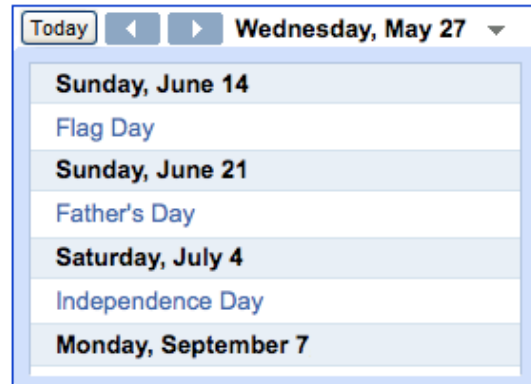
On the right side of the browser window, there are several AdSense ads:

- Major Appliance Repair:** Only \$55 Fee-Waived With Repair. Same Day Repair-Santa Clara County. drdees.com
- Duluth Geothermal Ac Repair:** Local heating/cooling contractors You can't Afford not to. duluthgeothermal.com
- Save Water & Money Now:** Conserve Water, save 30-60% off multi-family property utility bills. www.AmericanWater.com
- Water Heater Repair:** \$10 Off Service Call With Coupon. Santa Clara And San Mateo Counties. thomasapplianceservice.com

Announcing: Google Web Elements

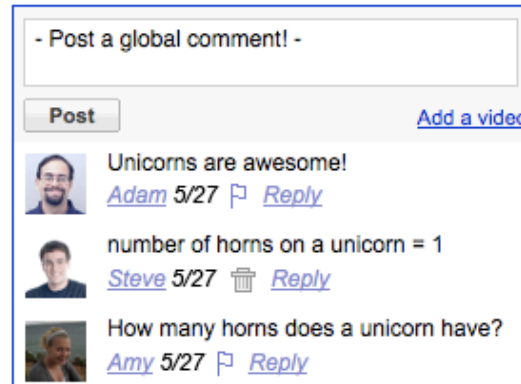
Copy and Paste Website Content

Calendar



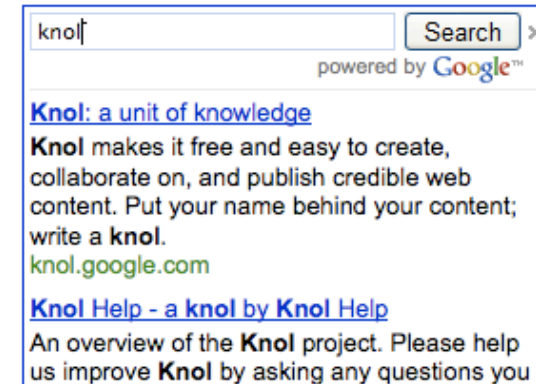
Remind visitors of important dates by adding Google Calendar to your site.

Conversation



Let visitors post comments directly to your website by using the Conversation element.

Custom Search



Harness the power of Google to let visitors search your website and other sites you choose.

Maps



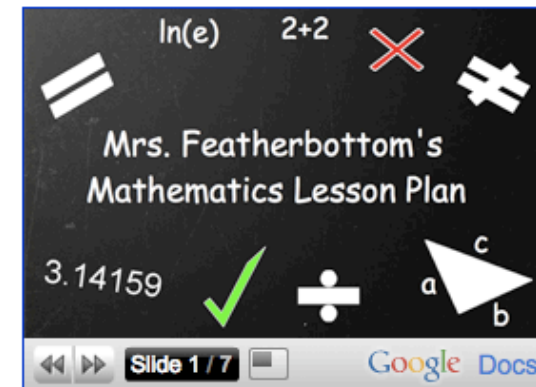
Add Google Maps to your site to help visitors find a location.

News



Show the latest Google News articles on your website, based on topics you choose.

Presentations



Embed Google Docs presentations into your webpage so visitors can watch them directly on the page.



Google Web Elements demo





google.com/webelements



Android: Strong 2009, Growth 2010

- 30+ carriers in 21 countries
- 18-20 devices by the end of 2009
- 12,000+ applications in the Android Market
- 40+ app downloads per user
- #2 in U.S. mobile web browsing
- 4 platform releases, and counting...





code.google.com/android



Google Wave

- Real time communication and collaboration platform
- Rich set of APIs
 - Embedding
 - Gadgets
 - Robots
 - Extensions
- Open Source protocol, Wave federation
- Open Source server





code.google.com/apis/wave



Go language



- A systems programming language
 - expressive
 - concurrent
 - garbage-collected
- New
- Experimental
- Fast
- Safe
- Concurrent
- Open Source



golang.org



Enjoy the candies!

<http://twitter.com/chanezon>

**Browser
Mobile
Cloud
Social
Geo**



Demos at

<http://delicious.com/chanezon/devfest09+demos>



Source Marshall Astor http://www.flickr.com/photos/lifeontheedge/711086777/sizes/l/#cc_license