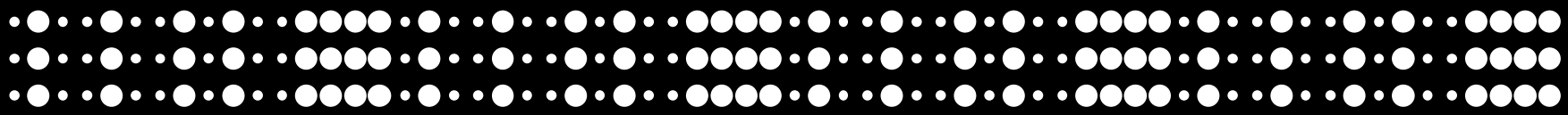
GOOGLE
I/O

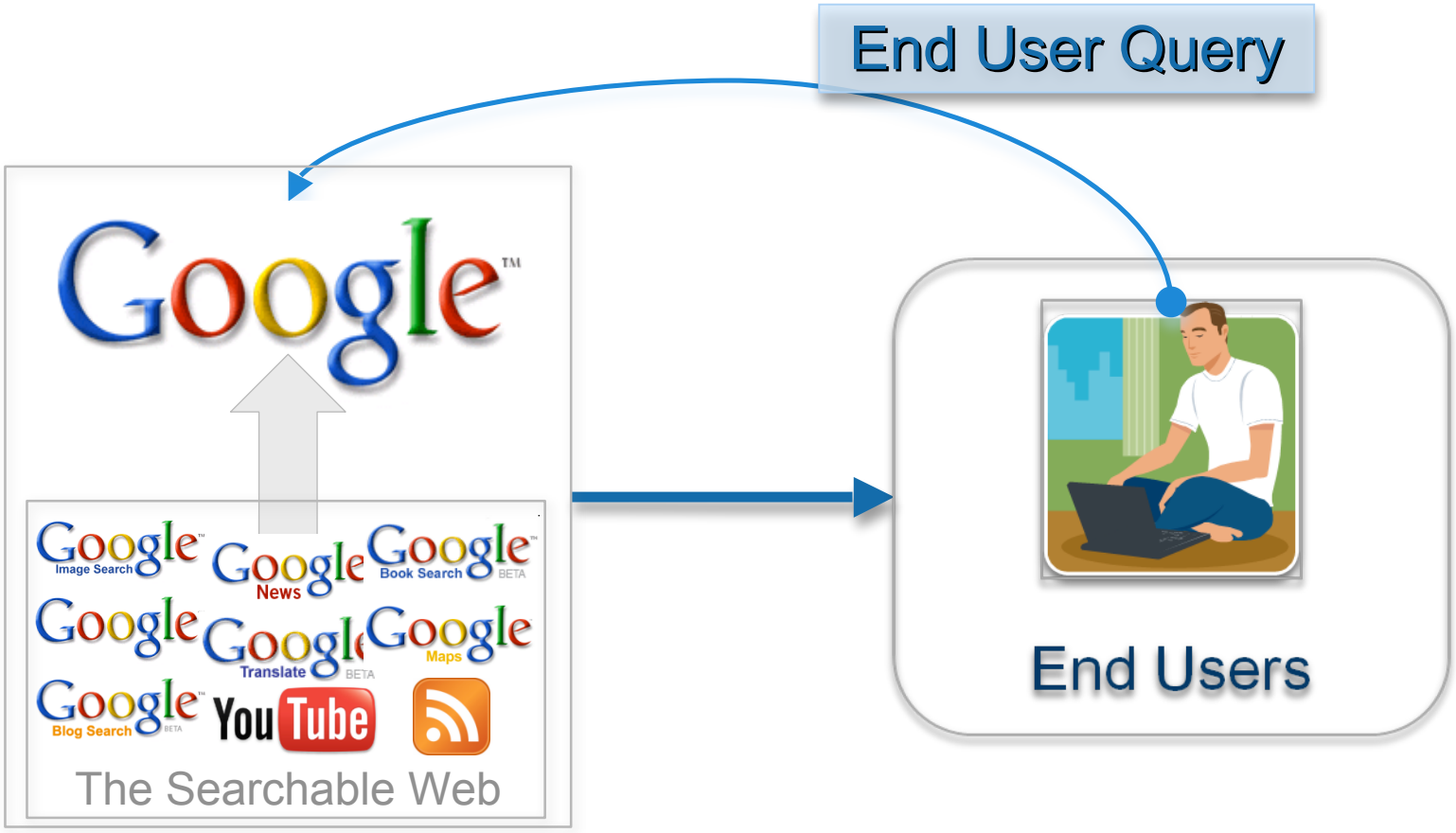


Google AJAX APIs

Mark Lucovsky

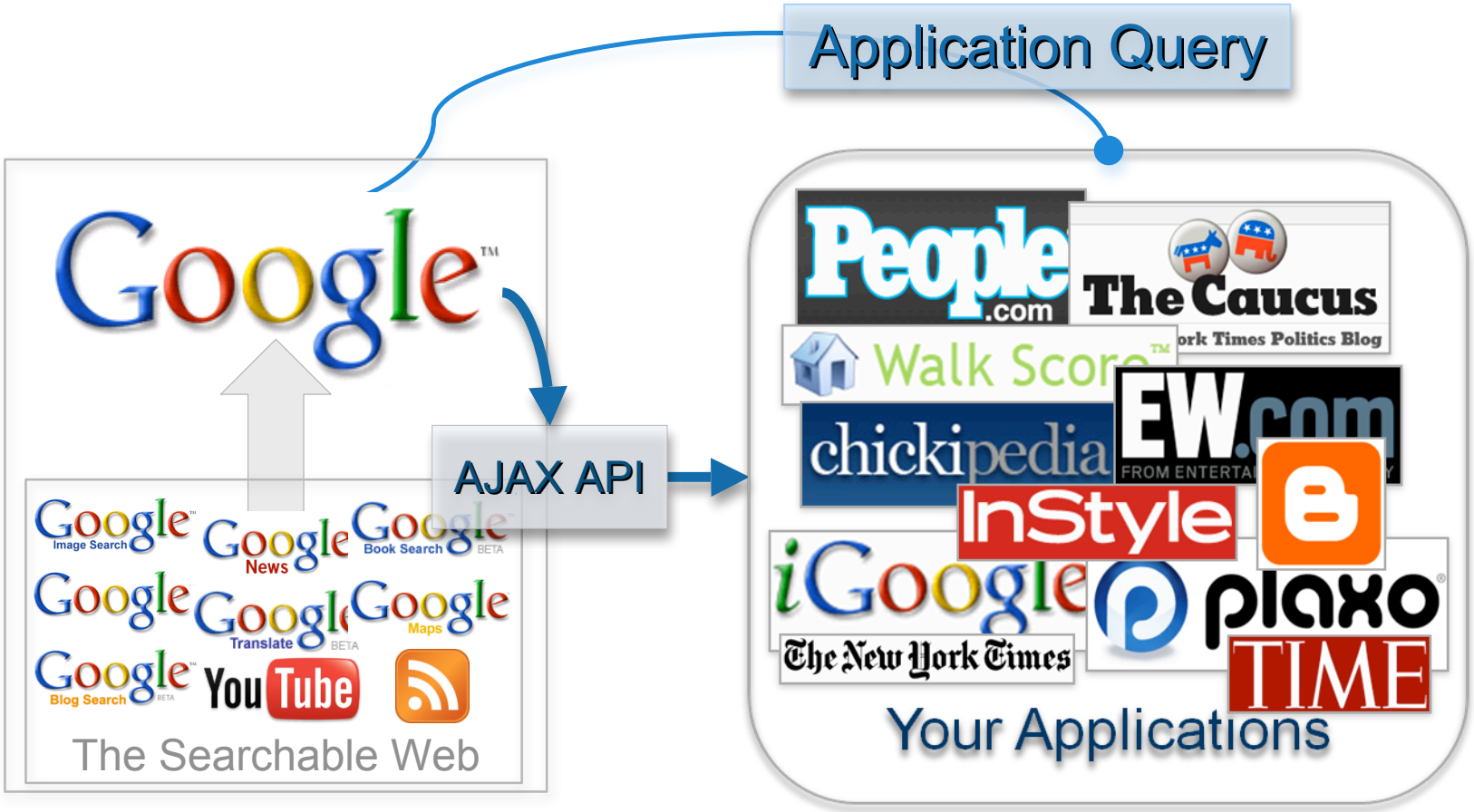
Google

Delivering the Web to End Users



Google AJAX APIs

Delivering the Web to Your Applications



Google AJAX APIs

Delivering the Web to Your Applications

- RESTful data access layer
  - JSON/JSON-P
- JavaScript Runtime
  - Designed for ease of use
- JavaScript Controls and UI elements
  - Custom integration and styling

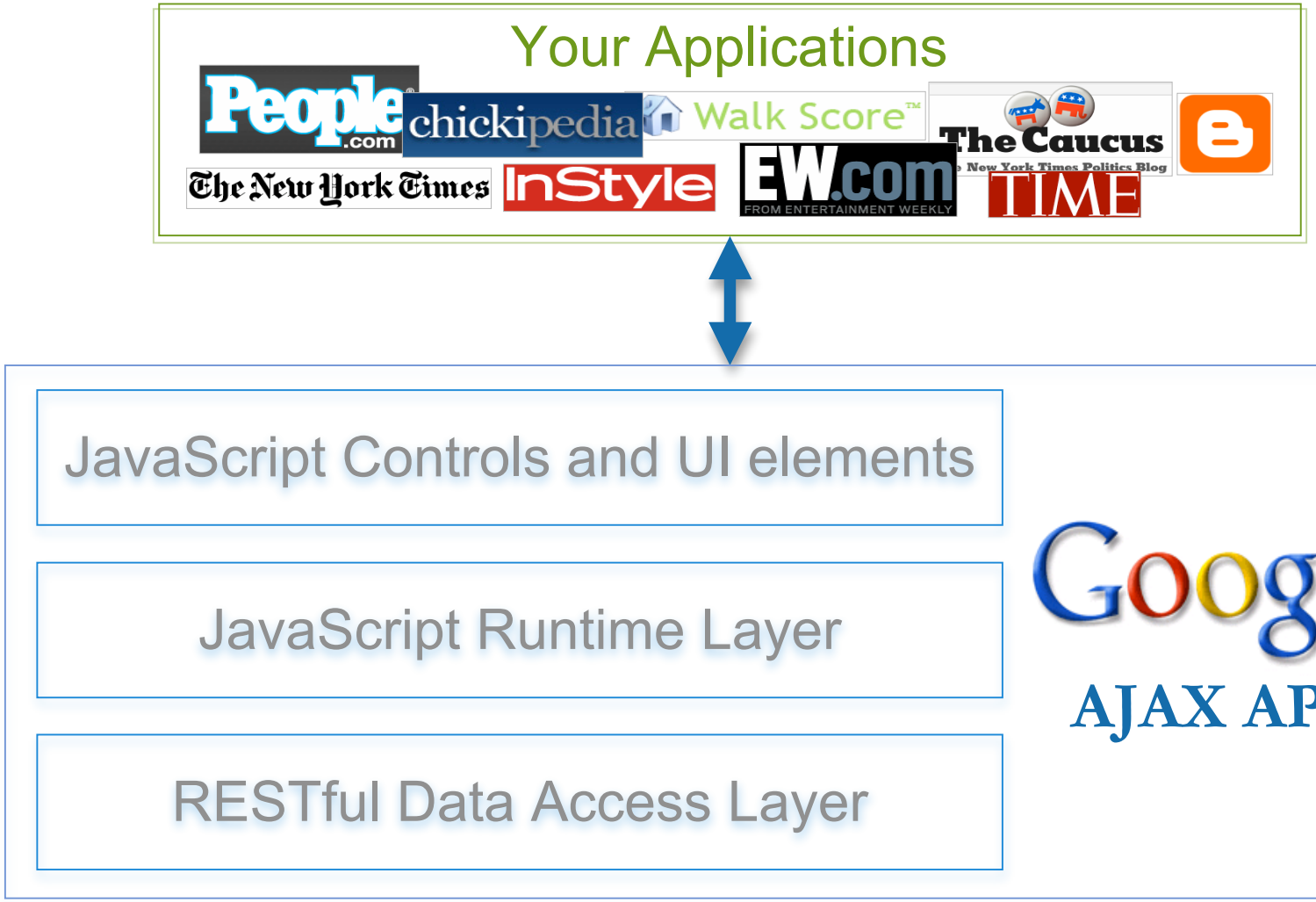
Demo

http://www.time.com/time/global_business/united-states

Agenda

- Intro to the API Stack
- Recent Launches
- Current Status
- More Info

The Basic Blocks



RESTful Data Access Layer

http://ajax.googleapis.com/…/search/web?q=Google*

*optional &callback= results in JSON-P response

```
{“responseData” : {
  “results” : [
    { “url” : “some-url”, “title” : “the site”,…},
    …
    { “url” : “some-url”, “title” : “the site”,…}],
  “cursor” : {}
 }, “responseDetails” : null, “responseStatus” : 200}
```

RESTful Data Access Layer (cont)

- Learn More:
  - Vadim's Talk Tomorrow Afternoon
  - API Documentation

- A World Beyond AJAX: Accessing Google's APIs from Flash and Other Non-JavaScript Environments Thursday @11:30, Room 9

http://code.google.com/apis/ajaxsearch/documentation/#fonje

http://code.google.com/apis/ajaxfeeds/documentation/#fonje

http://code.google.com/apis/ajaxlanguage/documentation/#fonje

JavaScript Runtime Layer

- Simple JavaScript Objects for each API
  - Search API
    - Searcher Objects
    - Search Control Objects
    - Result Objects, and assorted static methods
  - Feed API
    - Feed Object
    - Feed Control Object
    - Result Objects, and assorted static methods
  - Language API
    - Result Objects
    - Assorted Static Methods, e.g., google.language.translate();

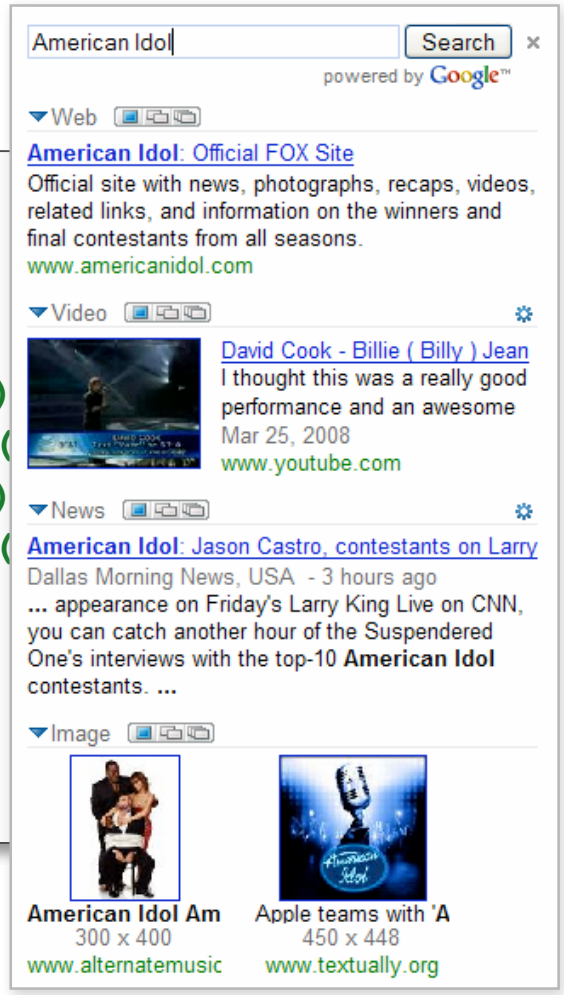
Hello World of The AJAX Search API

The Search Control Object

```
google.load("search", "1");

function init() {
var sc = new google.search.SearchControl();
sc.addSearcher(new google.search.WebSearch())
sc.addSearcher(new google.search.VideoSearch(
sc.addSearcher(new google.search.NewsSearch()
sc.addSearcher(new google.search.ImageSearch(

sc.draw(document.getElementById("scNode"));
sc.execute("American Idol");
}
google.setOnLoadCallback(init, true);
```



Raw Search Processing

Execution and Completion Processing

```
google.load("search", "1");

function init() {
  var ws = new google.search.WebSearch();

  // bind to a completion handler
  ws.setSearchCompleteCallback(this, this.searchComplete, [ws]);
  ws.execute("google");
}

// search complete handler
Foo.prototype.searchComplete = function(s) {
 if (s.results && s.results.length > 0) {
   for(var i=0; i< s.results.length; i++){
     alert(s.results[i].title);
   }
 }
google.setOnLoadCallback(init, true);
```

Hello World of The AJAX Feed API

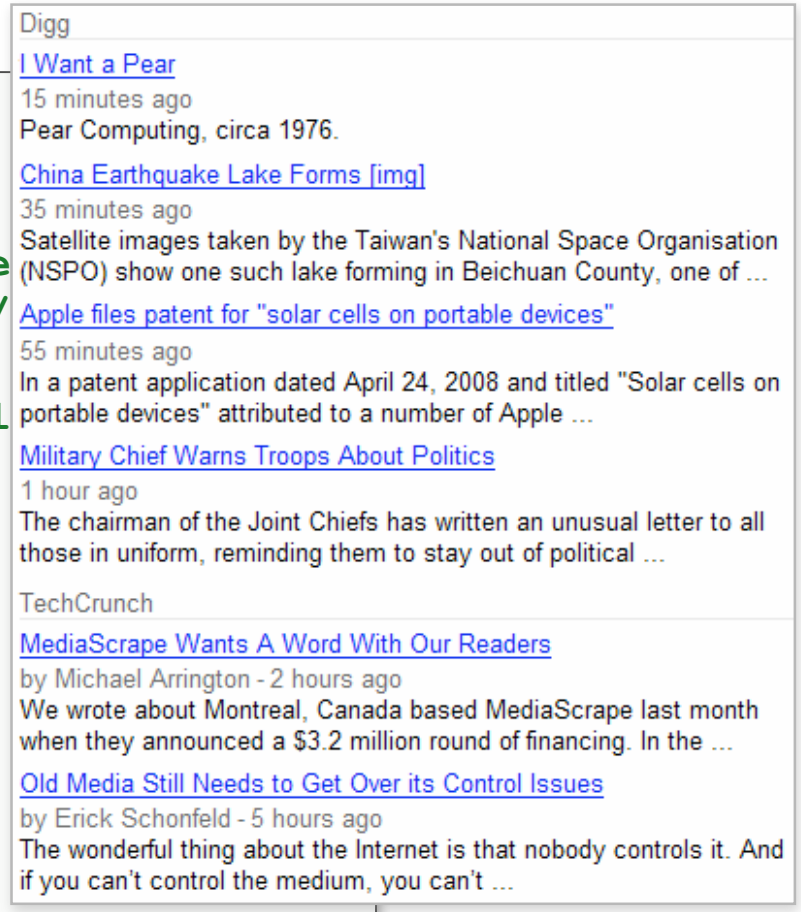
The Feed Control Object

```
google.load("feeds", "1");

function OnLoad() {
  d = 'http://www.digg.com/rss/inde
  t = 'http://feeds.feedburner.com/

  fc = new google.feeds.FeedControl
  fc.addFeed(d, "Digg");
  fc.addFeed(t, "TechCrunch");
  fc.draw(container);
}
google.setOnLoadCallback(OnLoad);
...

<body>
 <div id="container"></div>
</body>
```



Raw Feed Processing

Processing a load completion

```
google.load("feeds", "1");

function init() {
  var feed =
    new google.feeds.Feed("http://www.digg.com/rss/index.xml");
  feed.load(
   function(result) {
     if (!result.error) {
       var container = document.getElementById("feed");
       for (var i = 0; i < result.feed.entries.length; i++) {
         var entry = result.feed.entries[i];
         var div = document.createElement("div");
         div.appendChild(document.createTextNode(entry.title));
         container.appendChild(div);
       }
     }
  });
}
google.setOnLoadCallback(init, true);
```

Hello World of The AJAX Language API

Translate with auto-detect source language

```
google.load("language", "1");

function init() {
  var text = document.getElementById("text").innerHTML;
  google.language.translate(text, "", "en",

    // handle translation completion
    function(result) {
      var translated = document.getElementById("translation");
      if (result.translation) {
        translated.innerHTML = result.translation;
      }
    });
}
google.setOnLoadCallback(init, true);
```

JavaScript Runtime Layer (cont)

- Learn More:
  - Derek's Talk Tomorrow Afternoon
  - API Documentation

- Advanced Gadget and UI Development Using Google's AJAX APIs Thursday @3:15, Room 4

http://code.google.com/apis/ajaxsearch

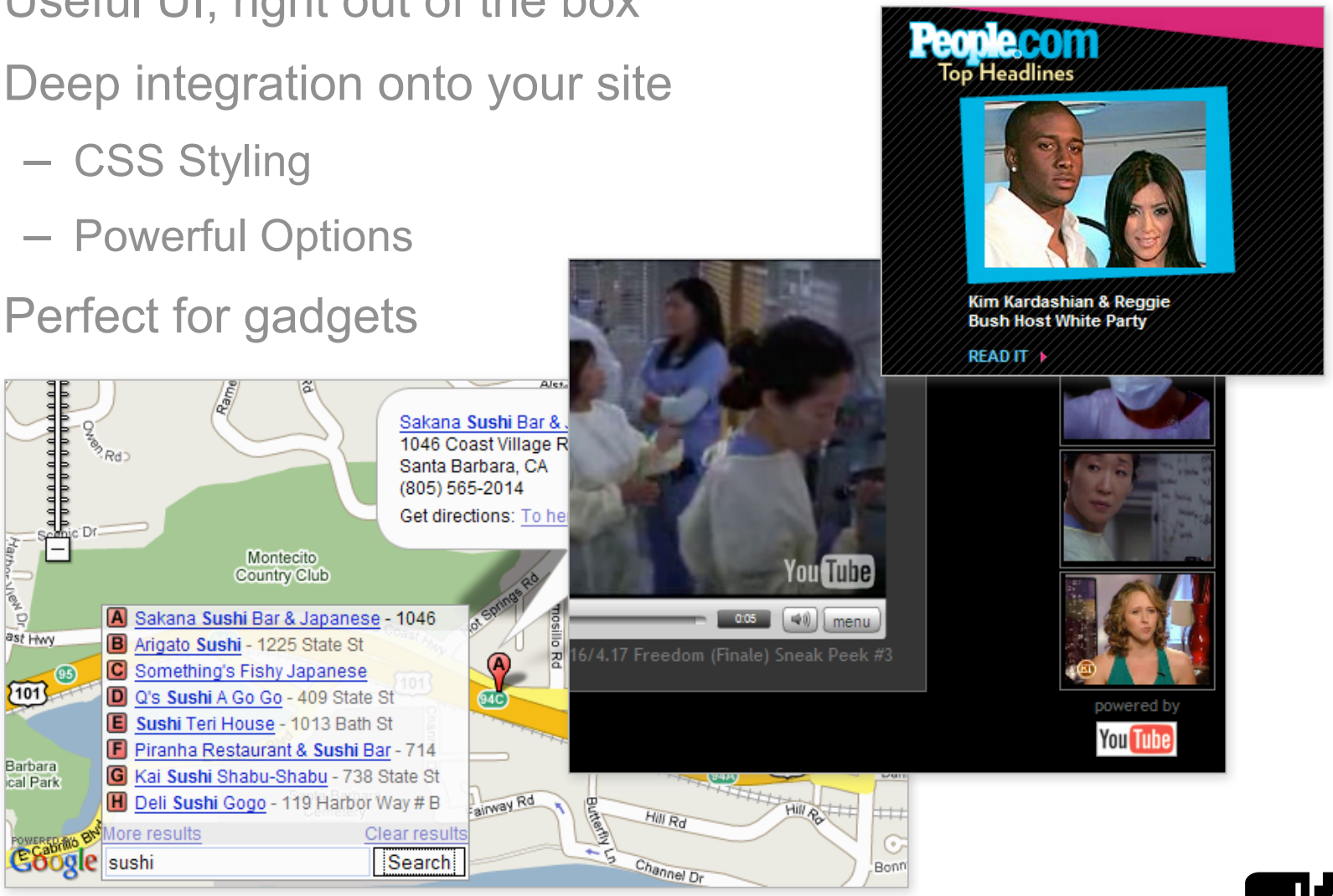
http://code.google.com/apis/ajaxfeeds

http://code.google.com/apis/ajaxlanguage

http://code.google.com/apis/ajaxlibs

JavaScript Controls and UI elements

- Useful UI, right out of the box
- Deep integration onto your site
  - CSS Styling
  - Powerful Options
- Perfect for gadgets



Google News Search Controls

- Multiple form factors
  - Bar, column, block
- Easy to integrate
- Site, topical, and geo restricts

http://www.google.com/uds/solutions/newsbar/

The NewsBar/NewsBox element

Under the hood

["Barack Obama",
"Hillary Clinton",
"John McCain"]

- Supply a list of search expressions
- News element will auto select
- Topical, Site, and Geo Scoping

The NewsBox element

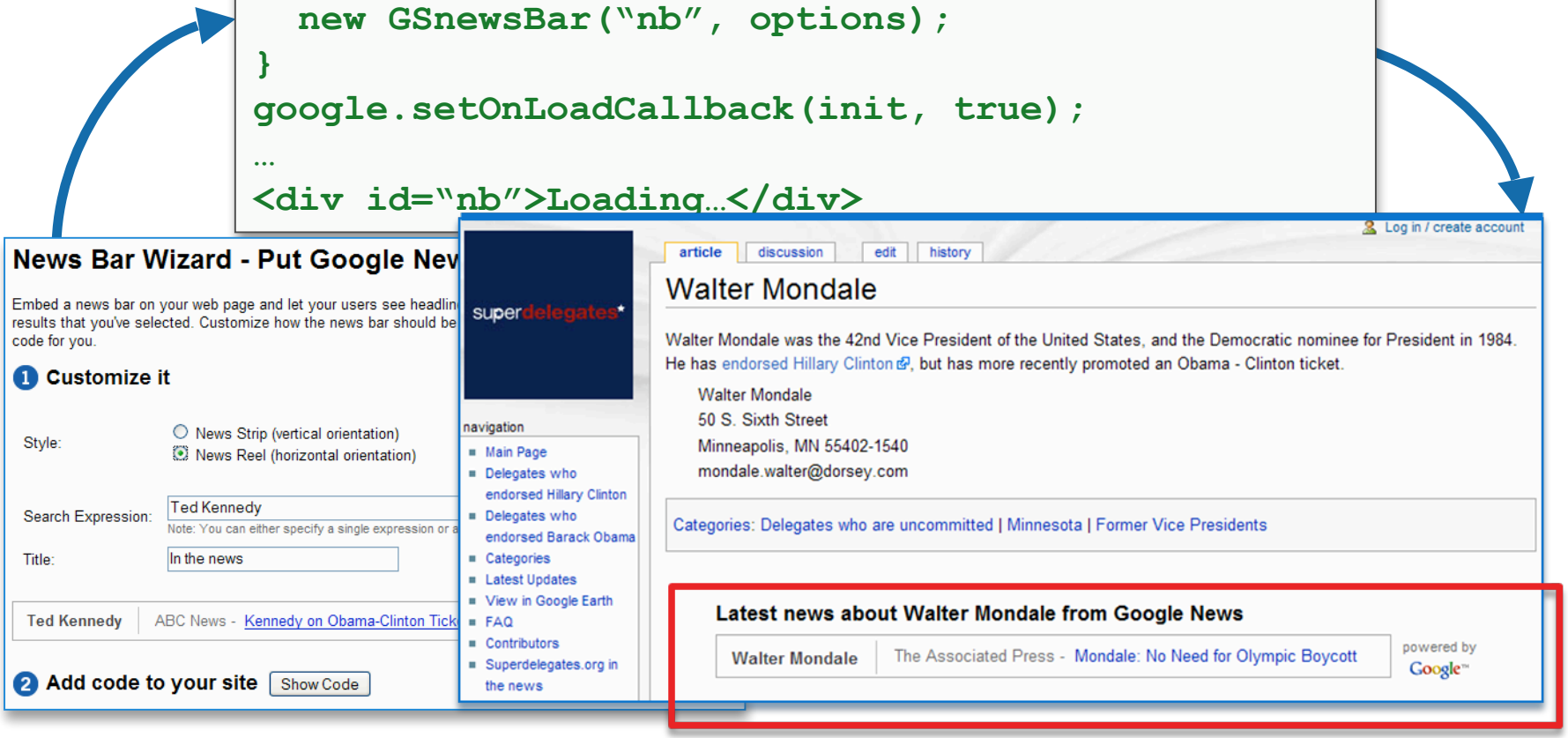
The Code

```
google.load("search", "1");
function init() {
  var n = new google.elements.NewsBox("nb");
  n.loadNewsBox("Israel any_business");
}
google.setOnLoadCallback(init, true);
…
<div id="nb">Loading…</div>
```

The NewsBar element

The Code

```
google.load("search", "1");
function init() {
  options = { horizontal : true,
   autoExecuteList : ["Walter Mondale"]}
  new GSnewsBar("nb", options);
}
google.setOnLoadCallback(init, true);
…
<div id="nb">Loading…</div>
```

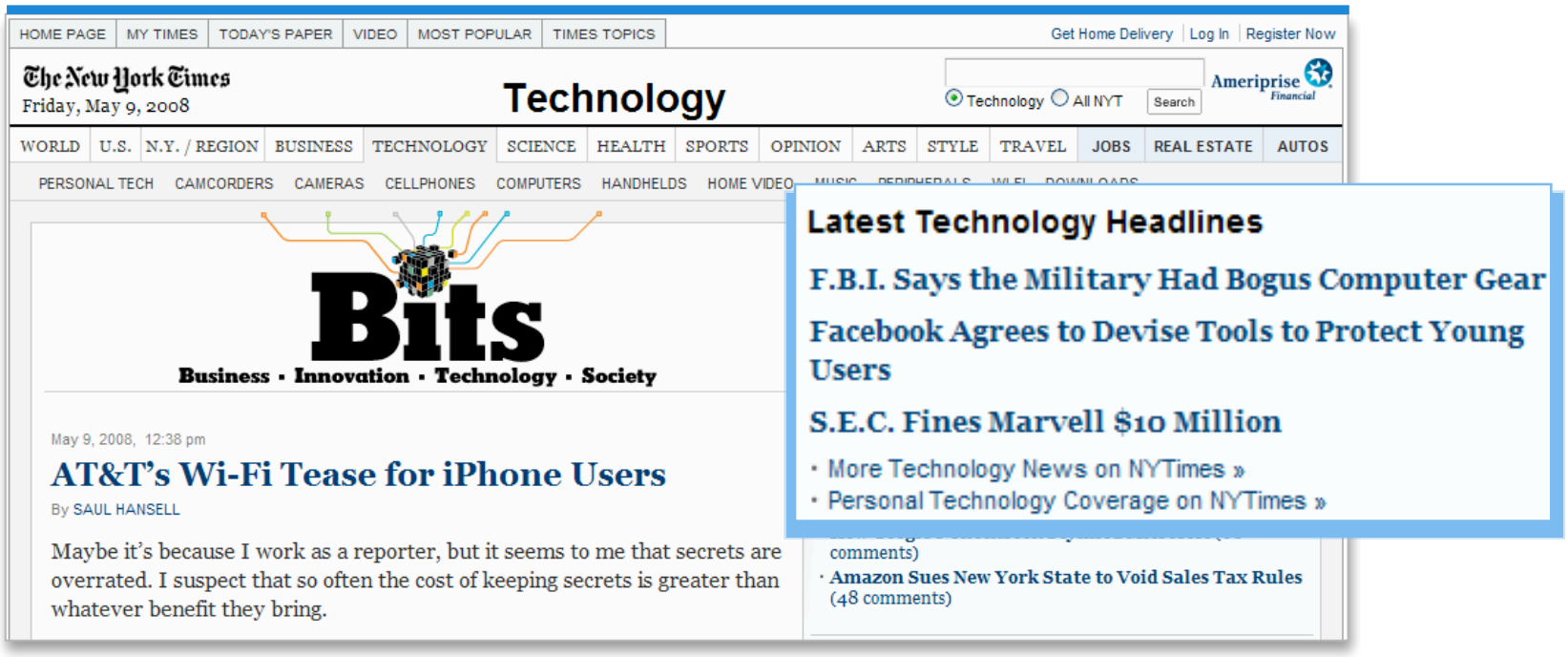


Feed Based Controls

- Very deep custom integrations
- Text and Media Based Feeds
  - SlideShow Control
  - Dynamic Feed Control
  - PartnerBar Control

http://www.google.com/uds/solutions/slideshow
http://www.google.com/uds/solutions/dynamicfeed
http://www.google.com/uds/solutions/partnerbar

AJAX Feed API – The New York Times Blogs



"It works great! Thanks so much."

Jaymin Patel, The New York Times

The Code

```
google.load("feeds", "1");
function init() {
 url_ = "http//www.nytimes.com/...";
 new google.feeds.Feed(url_);
 feed.setNumEntries(3);
 feed.load(function(result) {
  if (!result.error) {
   renderFeed(result);
  }
 });
}
google.setOnLoadCallba
...
<div id="nb">Loading...<
```

Latest Technology Headlines

F.B.I. Says the Military Had Bogus Computer Gear

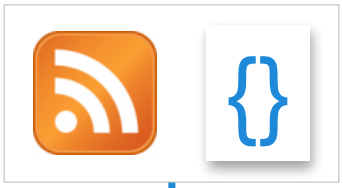
Facebook Agrees to Devise Tools to Protect Young Users

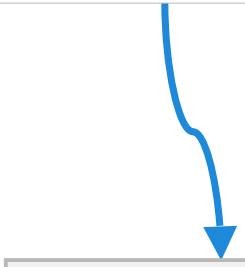
S.E.C. Fines Marvell $10 Million

- More Technology News on NYTimes »
- Personal Technology Coverage on NYTimes »

The SlideShow Element

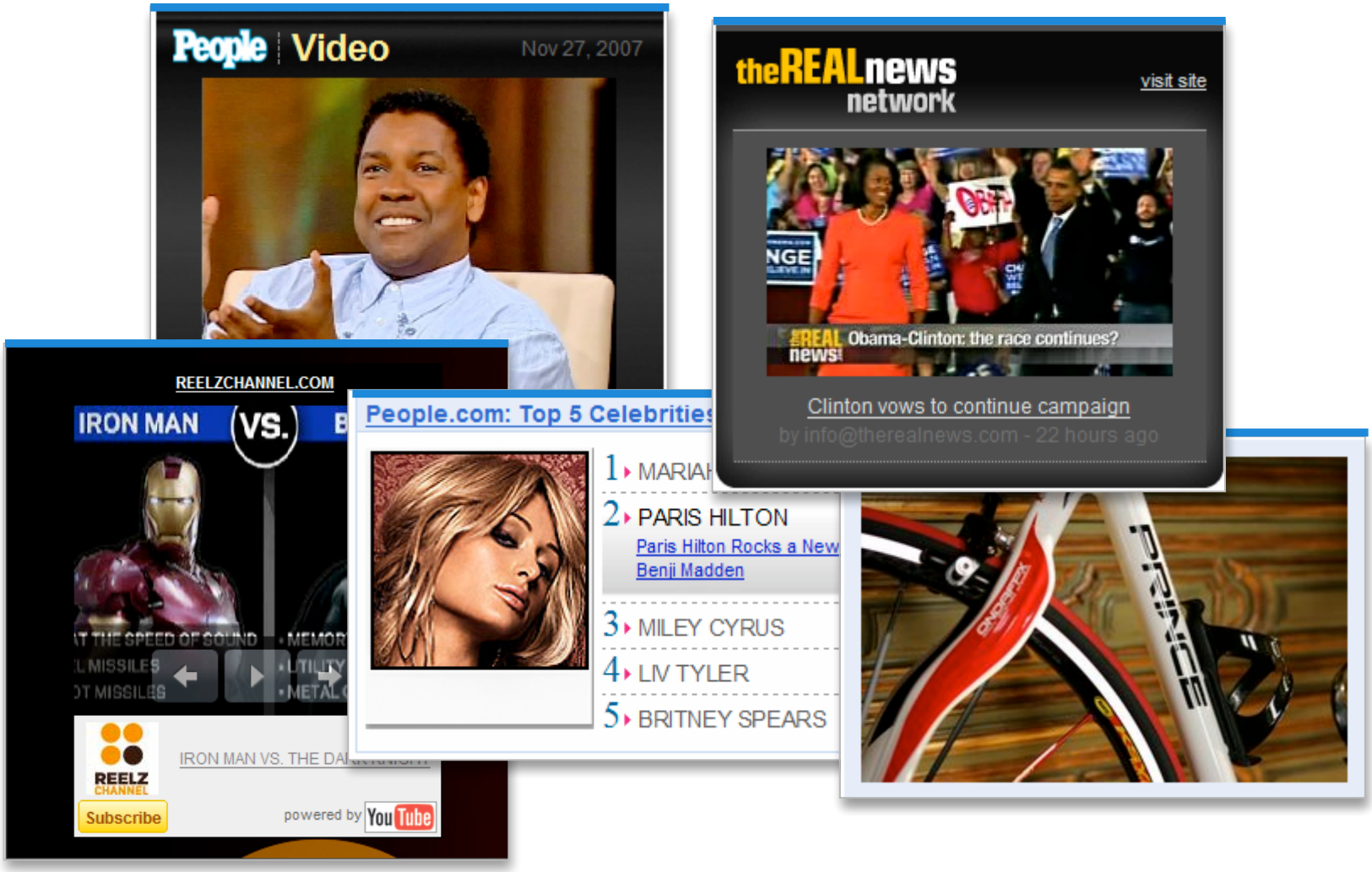
Under the hood





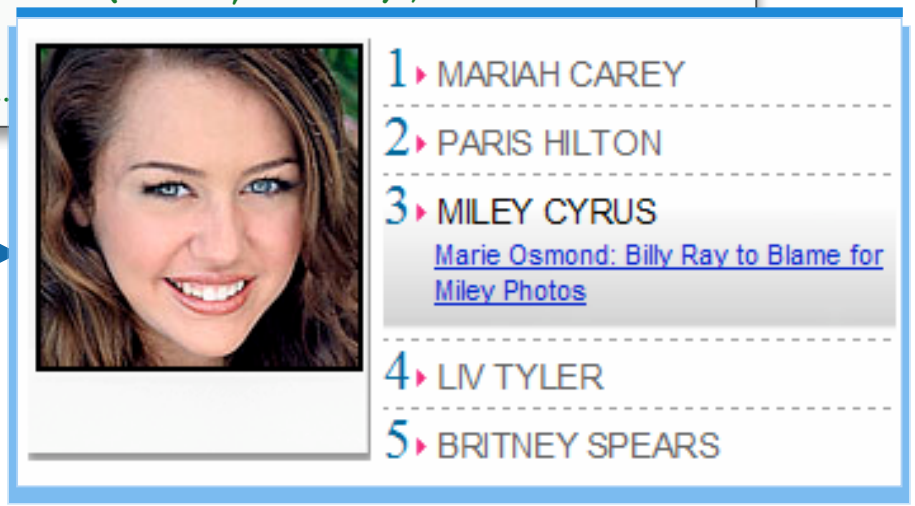
- Supply feed or custom objects
- Several event callbacks
- Auto transition images
- Built in or control panel
- Programmatic Navigation
- Highly programmable

The SlideShow Element



The Code

```
google.load("feeds", "1");
function init() {
  var feed = "http://.../top_headlines.xml";
  opt = { numResults : 5 }
  new google.elements.SlideShow(feed,"nb", opt);
}
google.setOnLoadCallback(init, true);
...
<div id="nb">Loading..
```

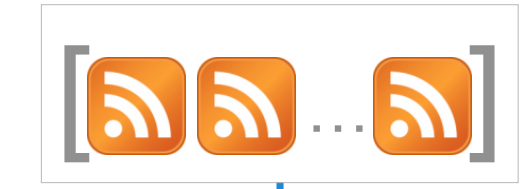


"I love this product. It works great."

Clarence Kwei, People.com

The PartnerBar Element

Under the hood



- Supply an array of feeds
- CSS based layout
- Auto subset selection
- Programmable re-select

PartnerBar

People

- Jessica & Tony's Dinner Date in Dallas
- Brooke Hogan Uninjured in Car Accident
- Cannes Film Festival Closes

More from People

CNNMoney.com

- Out of a job and out of luck at 54
- Holiday travelers paid more for gas
- 10 best road-trip cars

More from CNNMoney.com

TIME

- The Value of a Human Life: $129,000
- What the Mars Phoenix Lander Saw
- A New Man for Lebanon's Old Puzzle

More from Time

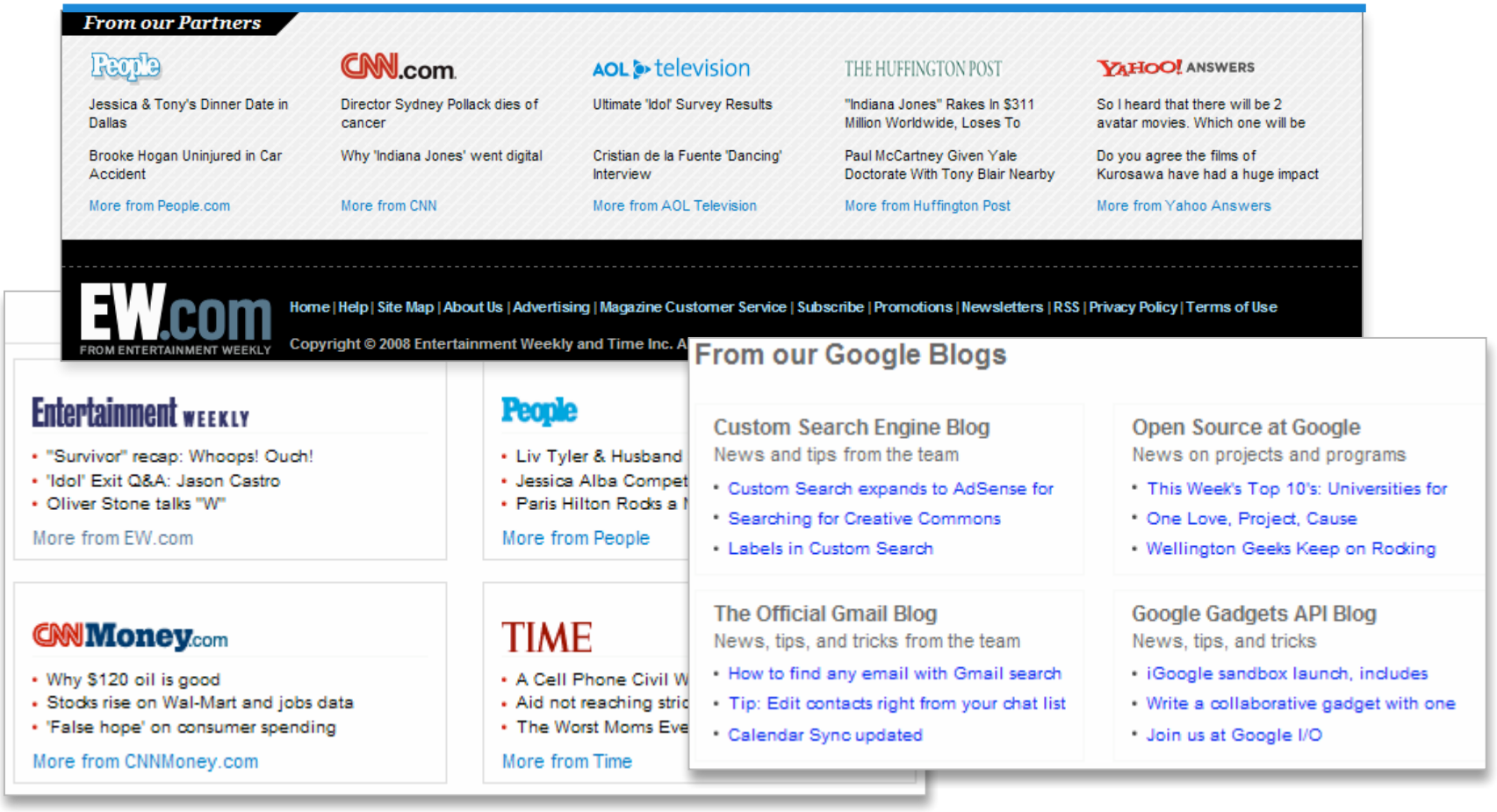
Entertainment Weekly

- 'Indy 4': A blockbuster debut
- 15 rousing battle speeches
- Summer Music: 14 hot CDs

More from EW.com

The PartnerBar element

Selected Screen Shots



The Code

```
google.load("feeds", "1");
function init() {
  options = {
   headerTitle : "From our Google Blogs",
   numEntries : 3,
   randomSelectionCount : 9,
   autoRefresh : true,
   cycleTime : 1000
  }
  new PartnerBar("
       getBlogsByT
}
google.setOnLoadCa
```

YouTube Video Controls

- Styling via Options and CSS
- Search based Video Selection
- YouTube Channel based Selection
- YouTube Custom feed based Selection
- One of our stickiest and most popular controls

http://www.google.com/uds/solutions/videobar

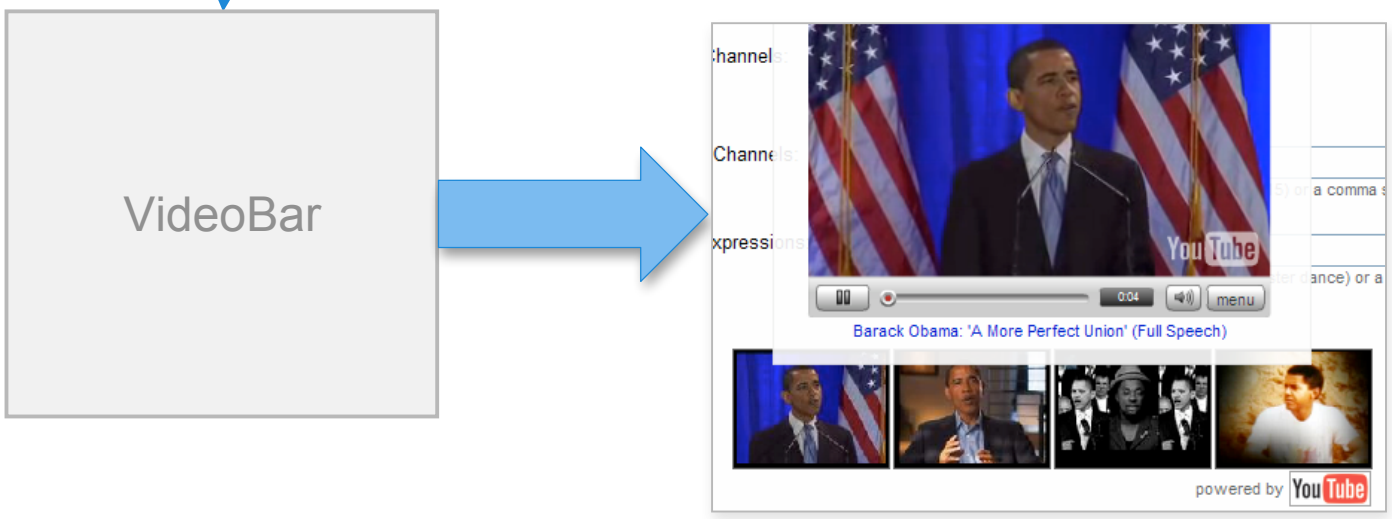
http://www.gmodules.com/ig/ifr?url=youtube.xml&up_channel=cbs

The VideoBar Element

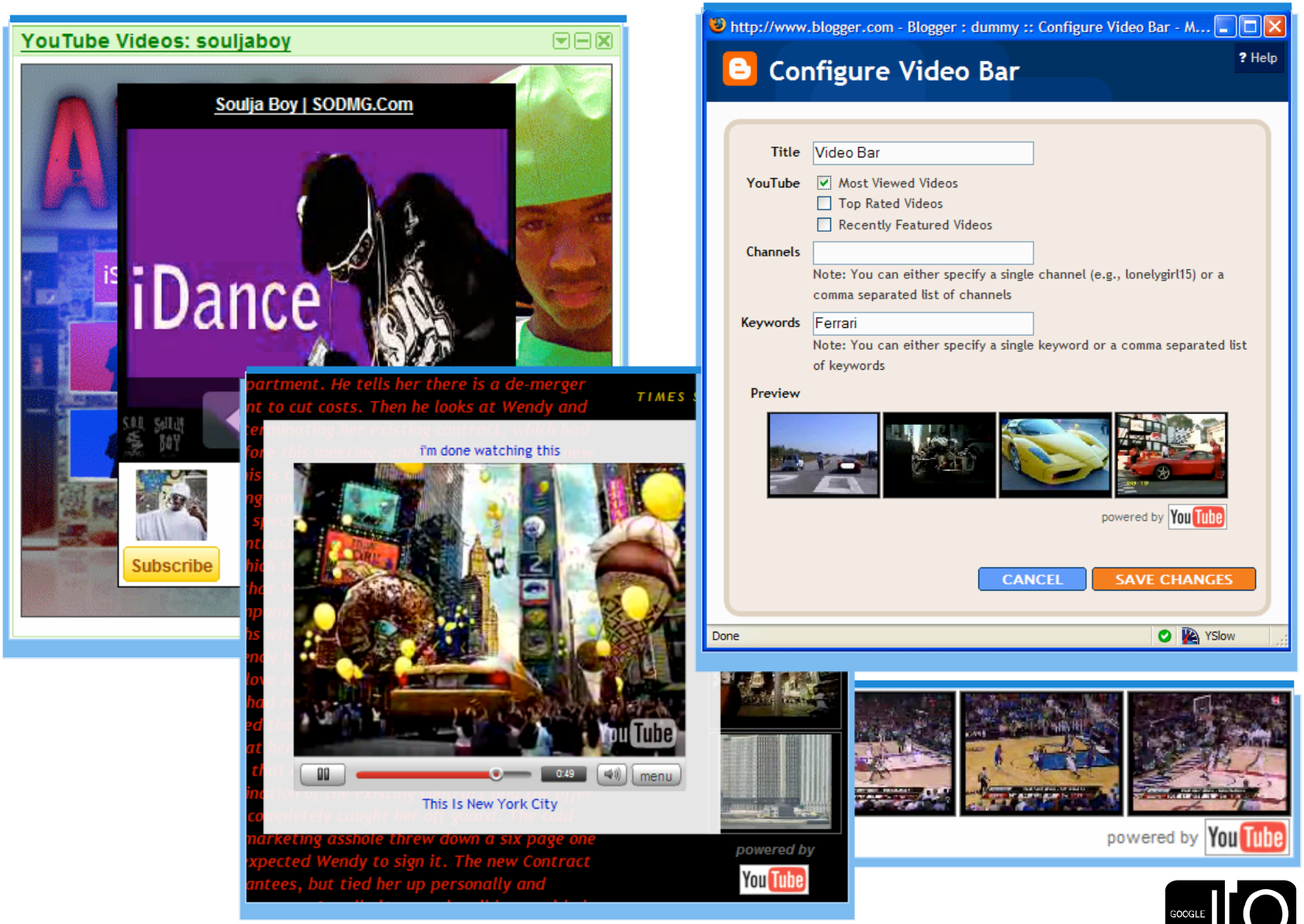
Under the hood

["Barack Obama",
"Hillary Clinton",
"John McCain"]

- Supply a list of search expressions
- VideoBar will auto select
- Automatic player placement
- Shared players across multiple bars
- Manual queries accepted

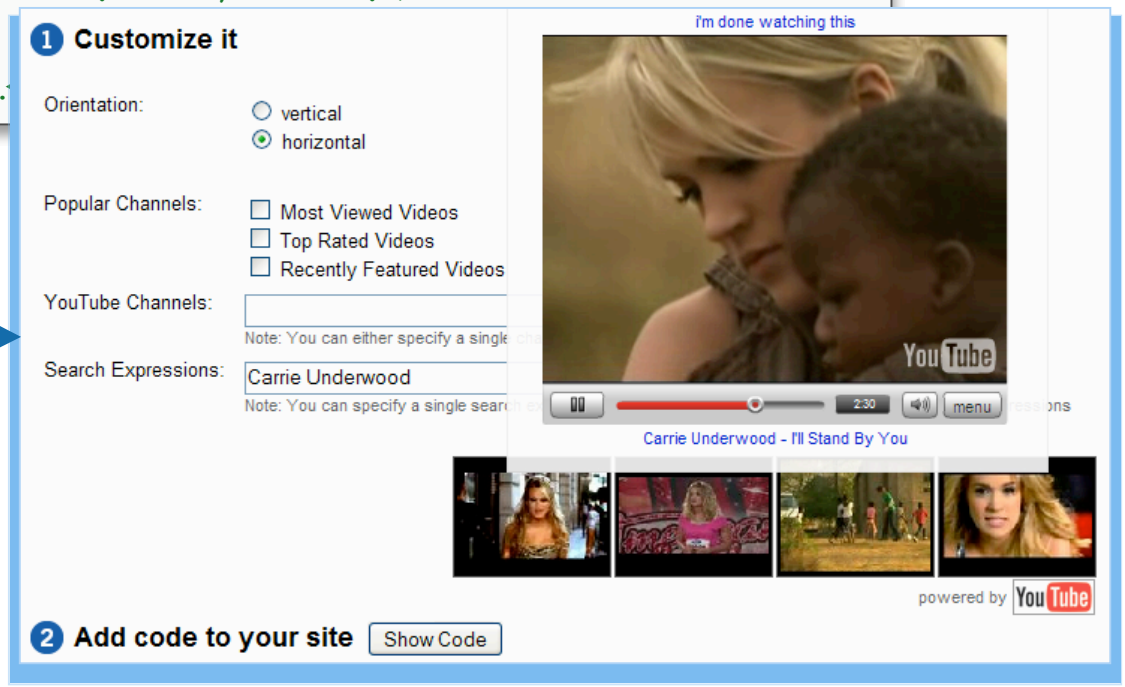


YouTube Video Controls



The Code

```
google.load("search", "1");
function init() {
  options = { horizontal : true,
   autoExecuteList : ["Carrie Underwood"]}
  new GSvideoBar("vb", PLAYER_ROOT_FLOATING, options);
}
google.setOnLoadCallback(init, true);
...
<div id="vb">Loading...
```



GEO Search Controls

- Very deep custom integrations
- Direct integration with Google Maps API
- Support for KML

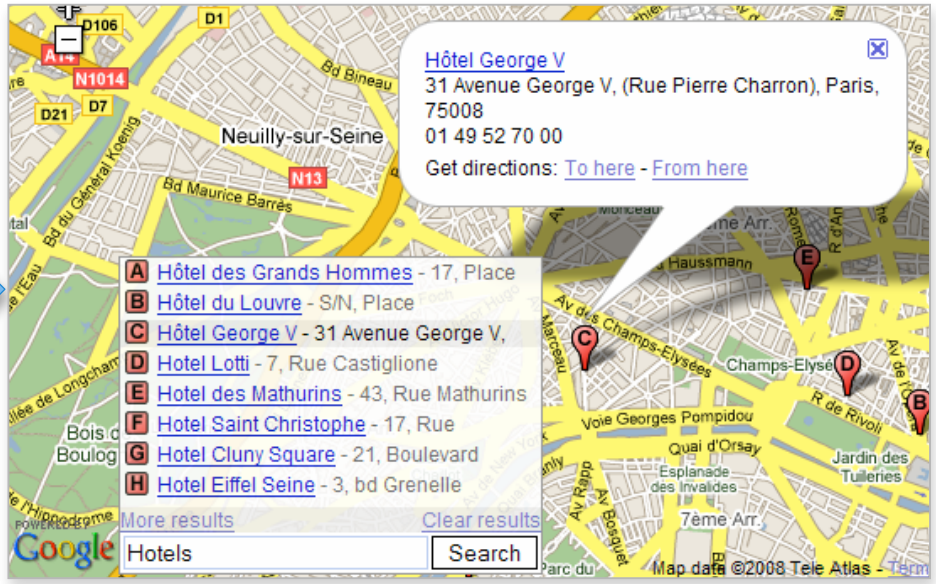
http://www.google.com/uds/solutions/localsearch

The LocalSearch Control for Google Maps

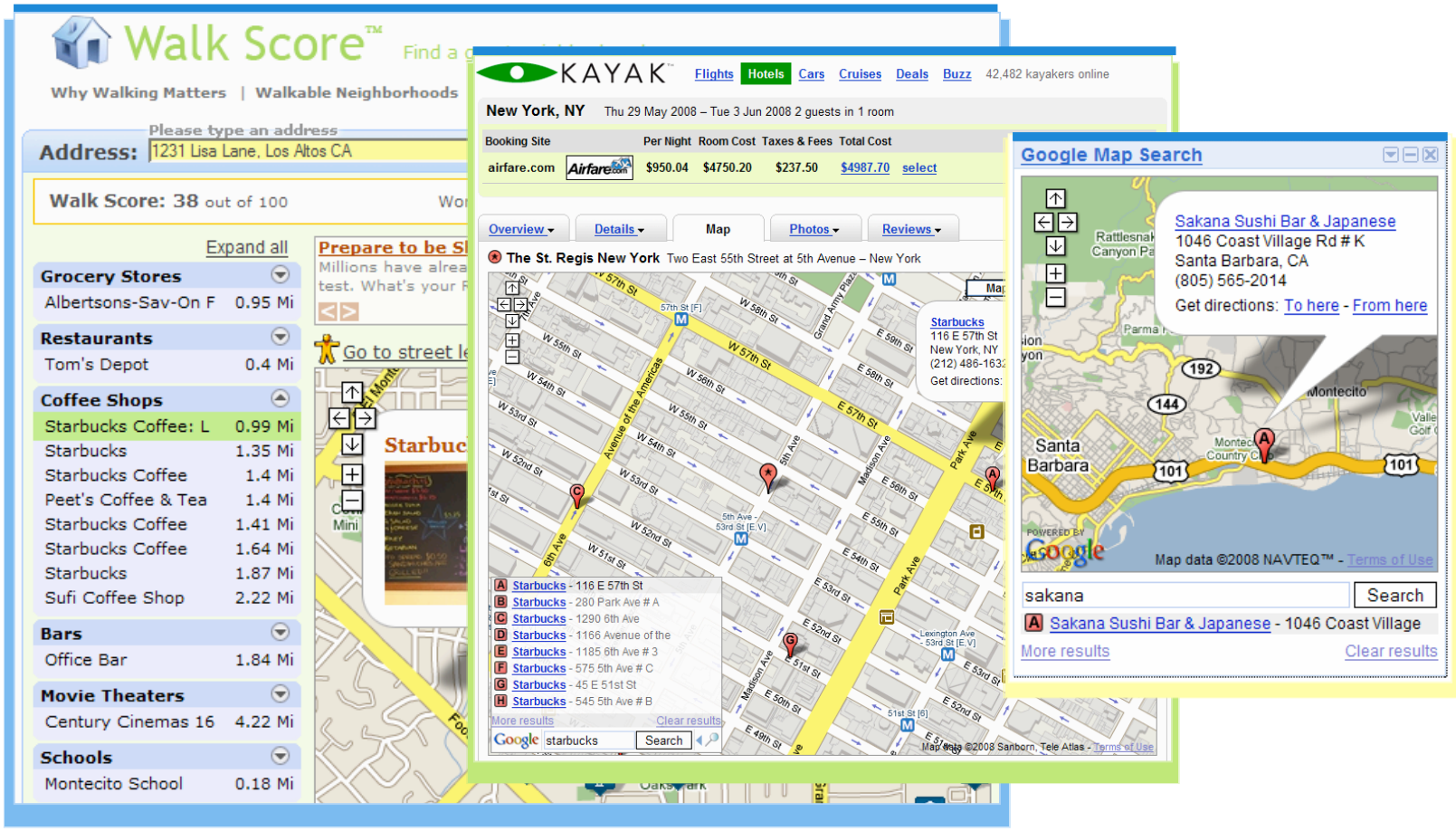
Under the hood

- Supply a Google Map
- Supply a set of options
- End Results is a searchable map

LocalSearch()

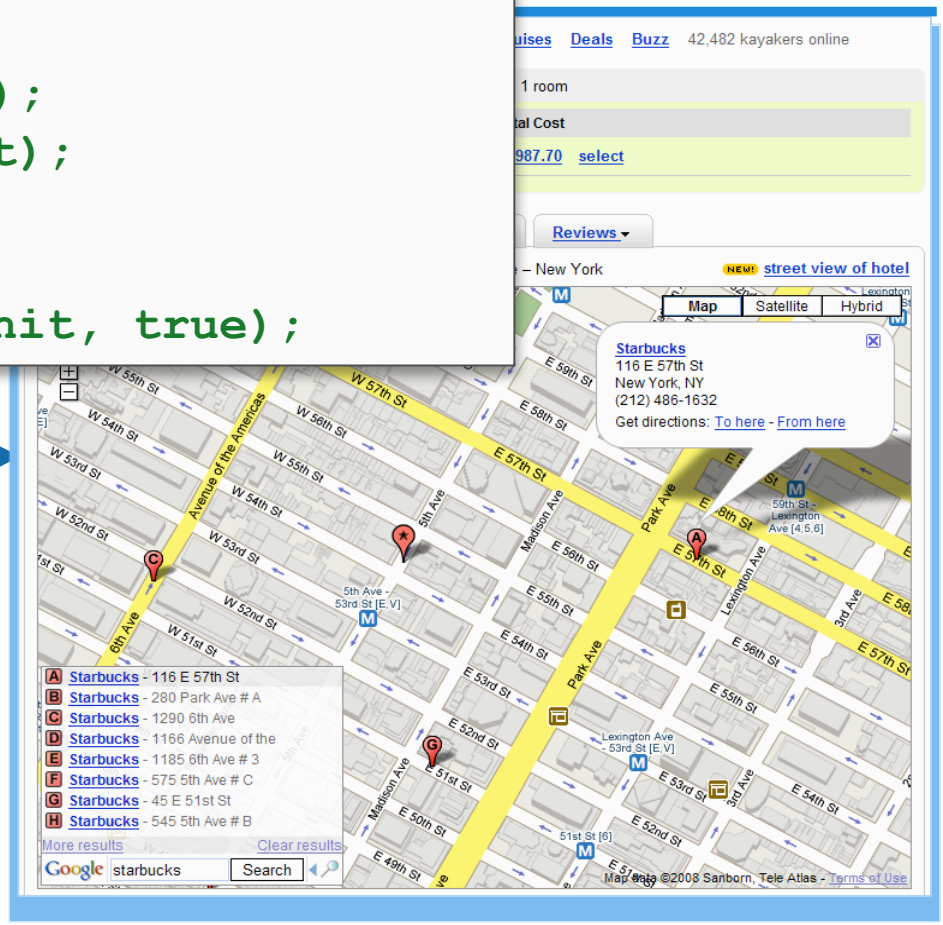


AJAX Search API – Local Search



The Code

```
google.load("maps", "2");
function init() {
  map = new GMap2("mapdiv");
  map.setCenter(centerPoint);
  map.enableGoogleBar();
}
google.setOnLoadCallback(init, true);
```



The AJAX Language API

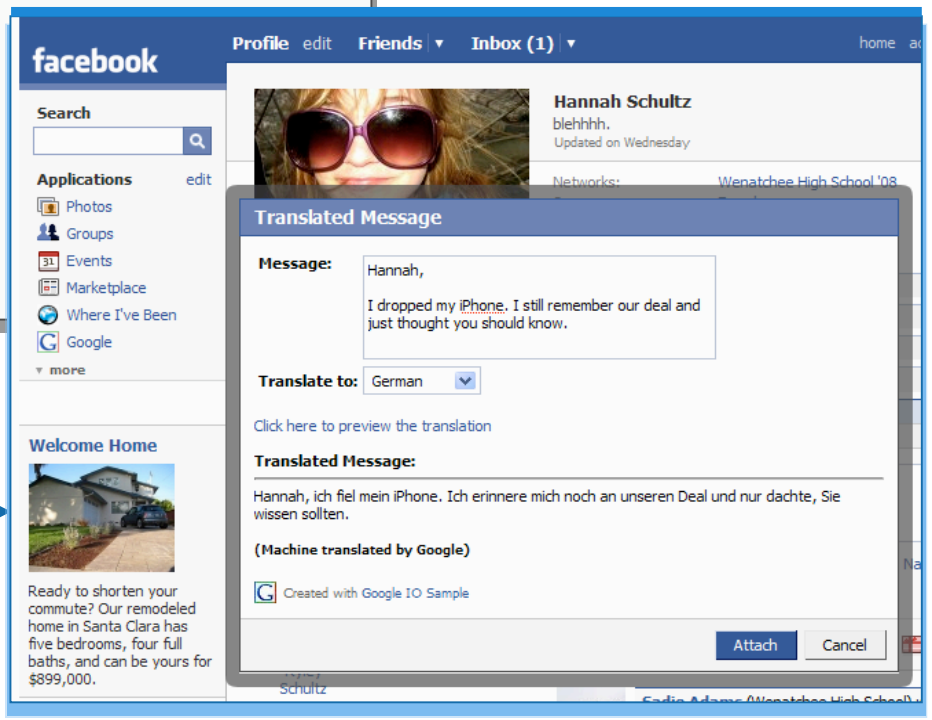
- NxN Translations
- Short snippets of text/html (500 character limit)
- Automatic source language detection

http://code.google.com/apis/ajaxlanguage

The AJAX Language API

The Code

```
google.load("language", "1");
function init() {
google.language.translate(text,"","de"
,
 function(r) {
  if (!r.error) {
   translated.innerHTML =
     r.translation;
  }
 });
}
```



AJAX Libraries API[New!]

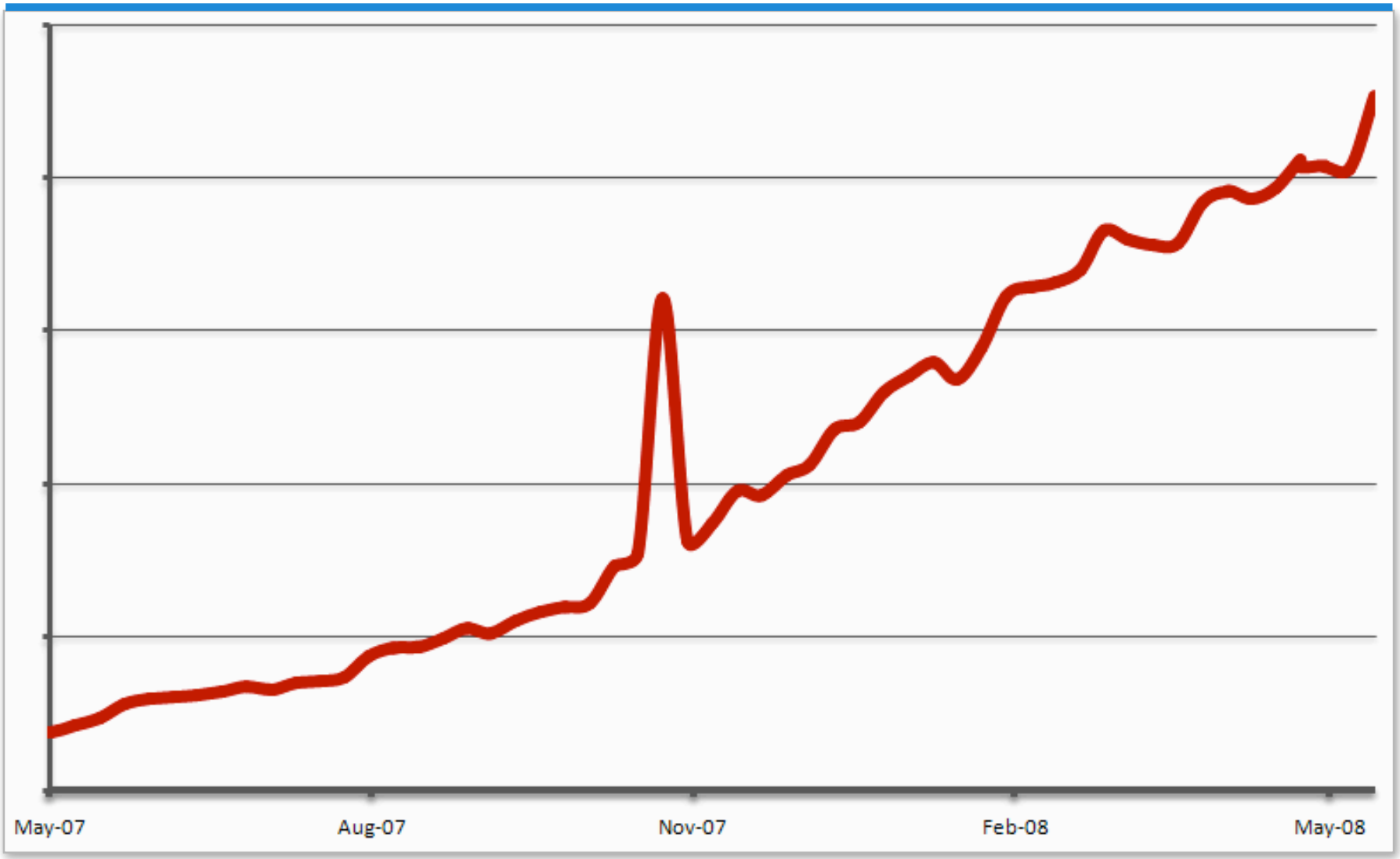
- Load the most popular AJAX Libraries direct from our servers
  - High Speed, Low Latency Access
  - Global Availability
  - Proper Cache Controls, Minified Libraries, etc.
  - Commitment to host old versions indefinitely
- Libraries include:
  - jQuery 1.2.3, 1.2.6
  - prototype 1.6.0.2
  - script.aculo.us 1.8.1
  - mootools 1.11
  - dojo 1.1.1
- Load via:
  - <script src='http://ajax.googleapis.com/ajax/libs/…'></script>
  - google.load("jquery", "1.2");

http://code.google.com/apis/ajaxlibs/

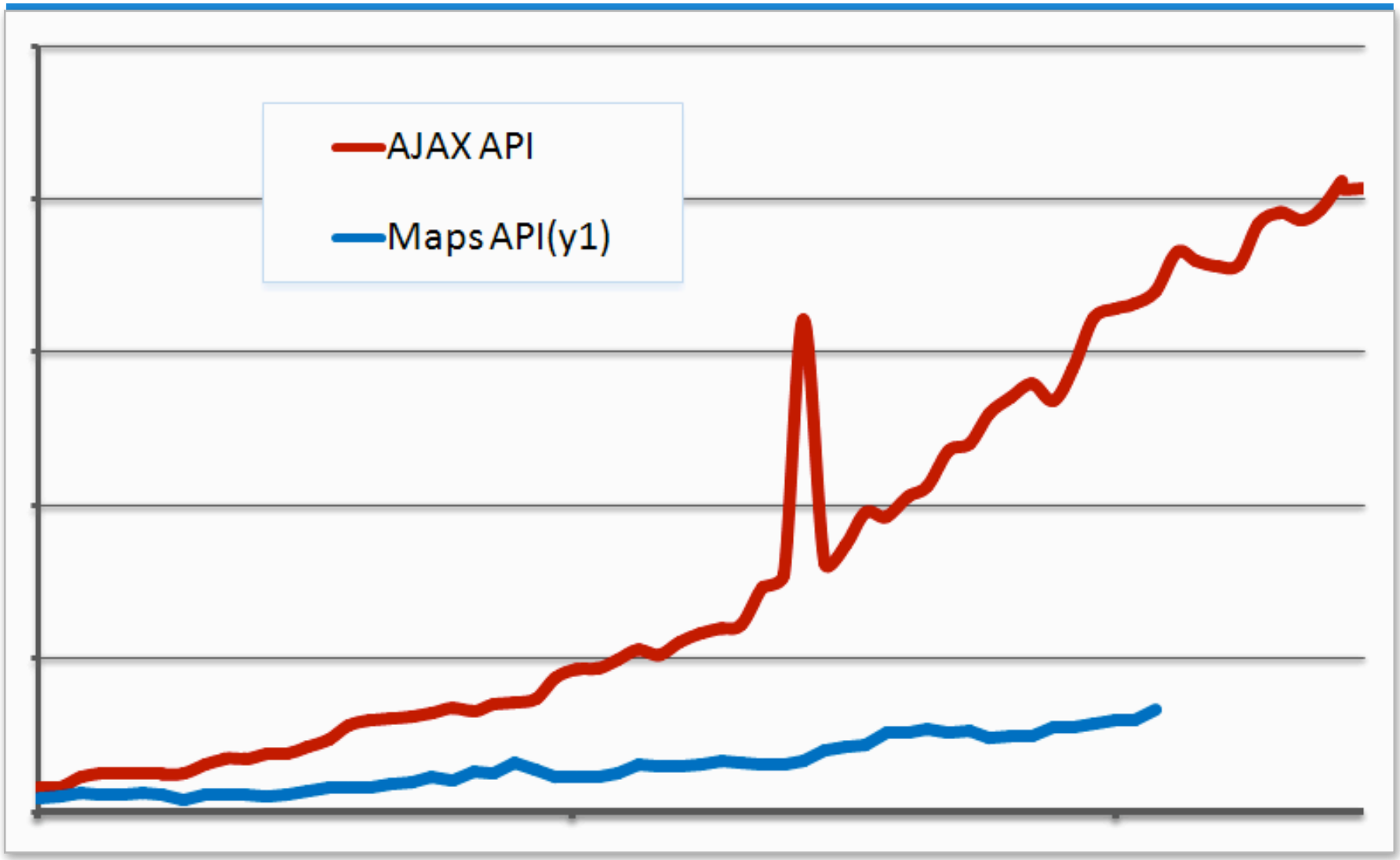
Current Status

- Traffic and Scaling
  - Service is growing and scaling well
  - Typical Search Request Latency, < 100ms
  - Widespread adoption across Long Tail and Short Tail Sites

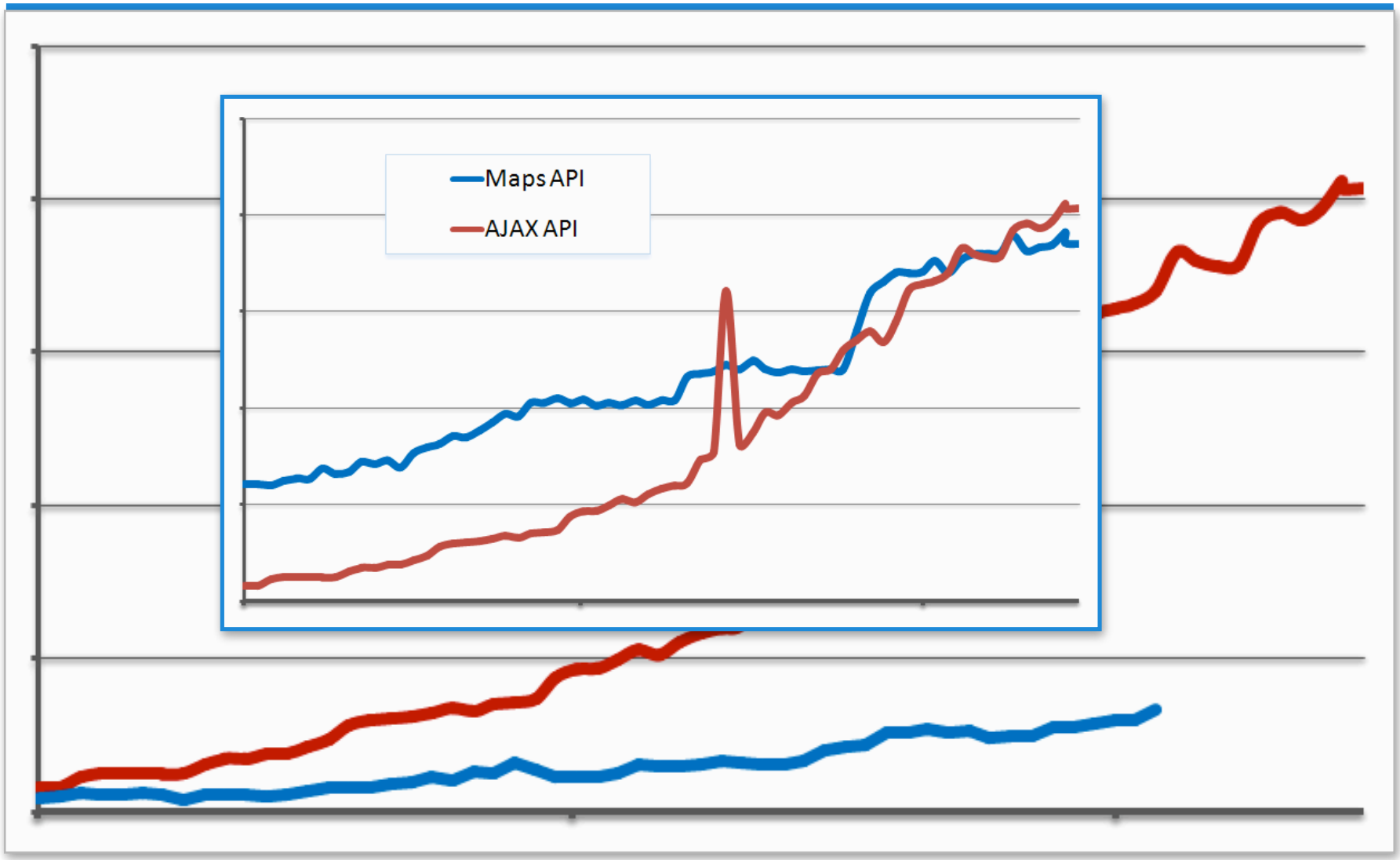
Growing Nicely:



Growing Nicely: Beyond Expectations



Growing Nicely: Beyond Expectations



Current Status (cont)

- Most Popular APIs:
  - YouTube: 33%
  - Google News: 30%
  - Feeds: 18%
  - Web Search: 7%
  - …
- Most Popular Controls and UI elements
  - Local Search Control for Google Maps API
  - NewsBar Search Control
  - VideoBar Search Control
  - SlideShow Control

Learn More

- General Documentation

  http://code.google.com/apis/ajax
  http://code.google.com/apis/ajaxsearch
  http://code.google.com/apis/ajaxfeeds
  http://code.google.com/apis/ajaxlanguage
  http://code.google.com/apis/ajaxlibs

- Upcoming Sessions
  - A World Beyond AJAX: Accessing Google's APIs from Flash and Other Non-JavaScript Environments Thursday @11:30, Room 9
  - Advanced Gadget and UI Development Using Google's AJAX APIs Thursday @3:15, Room 4

Questions

TIME
IN PARTNERSHIP WITH CNN
CSX
THE ROAD AHEAD MAY NOT BE A ROAD AT ALL.
ROLL OVER TABS TO FIND OUT MORE
your environment
your daily life
your commute
HOME U.S. WORLD BLOGS BUSINESS & TECH GLOBAL BUSINESS New! HEALTH & SCIENCE ENTERTAINMENT MULTIMEDIA MAGAZINE SPECIALS
Global Business > United States
SEARCH
DOW 12,550.71 +2.36 +0.02% NASDAQ 2,475.86 -5.38 -0.22% S&P 500 1,385.00 -0.35 -0.03% FTSE 100 6,069.60 +11.10 +0.18% Nikkei 225 13,709.44 -183.87 -1.32%
USD to: JPY 104.1000 +0.6150 +0.5943% EUR 0.6361 +0.0022 +0.3534% GBP 0.5064 +0.0018 +0.3627% AUD 1.0417 +0.0008 +0.0778% CHF 1.0296 +0.0049 +0.4733%
TOP STORIES
MOST POPULAR
UNITED STATES
B2B TeleServices: The 2008 Buyer's Guide
CNNMoney.com - 35 minutes ago
In a first-time, comprehensive research study of the B2B TeleServices industry, Aberdeen, a Harte-Hanks Company (NYSE: HHS), examines the lead discovery and ... MORE
Rockwell Collins names investor relations VP
Bank of America says Countrywide's Sambol to
Web site lets Dell customers apply for restitution
Many, not all, markets improving: Fed's Stern
www.steinerleisure.com Has a Virtual Makeover
APCTODAY.com and Convera(R) Launch Vertical
Banks miss an easy housing fix
powered by Google
COUNTRY NAVIGATOR
UNITED STATES
Capital: Washington D.C.
GCI Rank: 1 What's This?
FEATURED STORIES
UNITED STATES
We Must Stand Up to Japan (Oops, I Meant China)
TOOLS
WEATHER
MARKETS
CURRENCY
5 Day forecast | Current conditions F° | C° © 2008 Accuweather.com
USA
Enter City or zip code
Washington D.C.
GO
Mon. May26 85|66
Tue. May27 84|58
Wed. May28 70|53
Thu. May29 73|58
Fri. May30 79|62
If it's in your life, it's probably on our trains.

GOOGLE
I/O