# Making California government sites more accessible to search engine users

## Implementing the Sitemap protocol

# Why we're talking today

- Sample search 1: ["richard abbott" california accountant license]

  (http://www.google.com/search?hl=en&lr=&safe=off&q=%22richard+abbott%22+california+accountant+license&btnG=Search)

  – What a search engine user does not find:

  http://www2.dca.ca.gov/pls/wllpub/WLLQRYNA$LCEV2.QueryView?P_LICENSE_NUMBER=2543&P_LTE_ID=781

  – Reason: Database uncrawlable

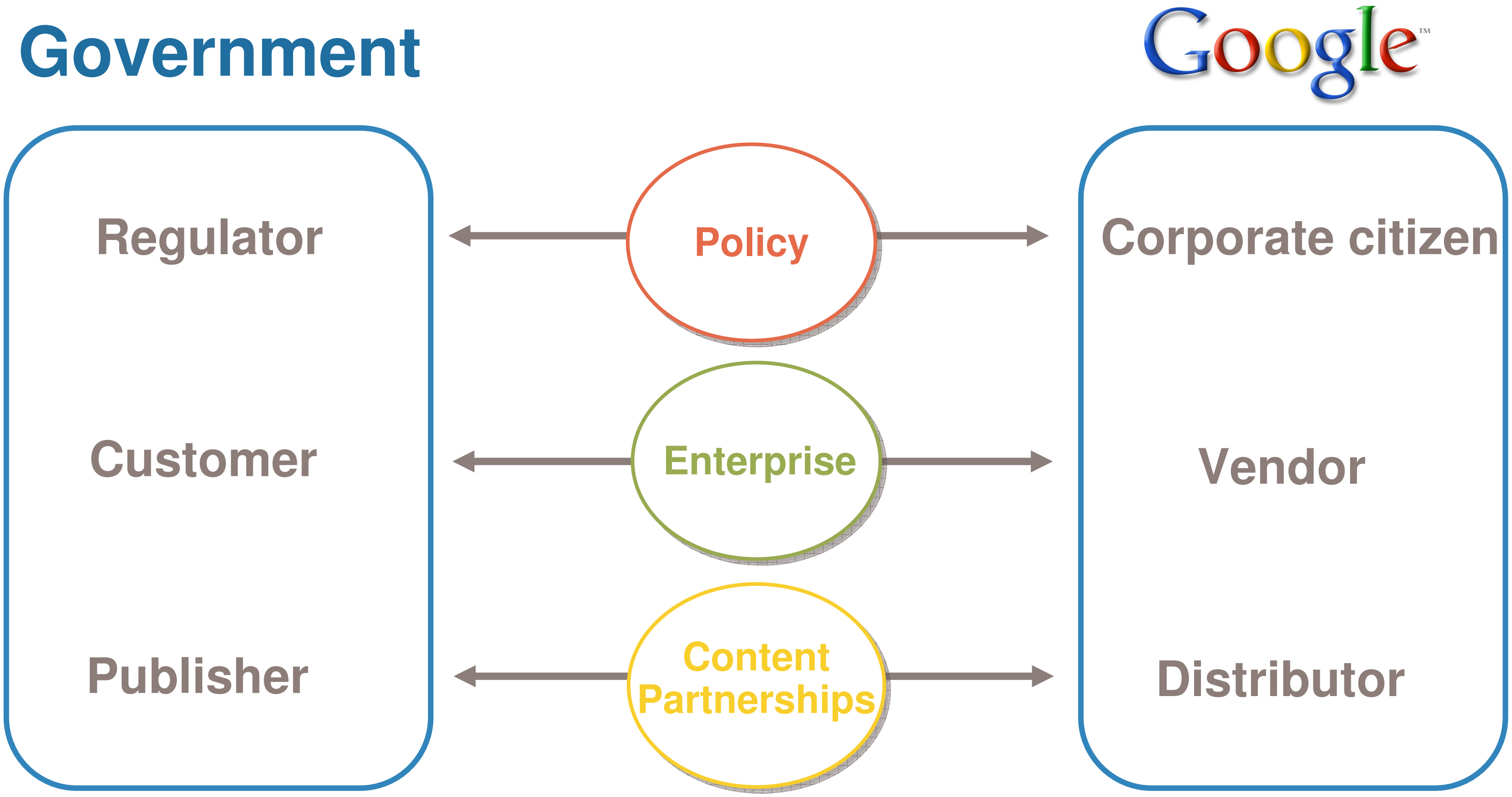
# Why we're talking today

- Sample search 2: [california real estate appraisal licensing courses] (http://www.google.com/search?hl=en&lr=&safe=off&q=california+real+estate+appraisal+licensing+courses+&btnG=Search)
  - What a search engine user does not find: http://secure.dre.ca.gov/publicasp/CEStatutory.asp
  - Reason: Database uncrawlable

# Why we're talking today

- Sample search 3: [cdec station search sensor type] (http://www.google.com/search?hl=en&q=cdec+station+search+sensor+type&btnG=Google+Search)
  - What a search engine user does not find: http://cdec.water.ca.gov/cgi-progs/staSearch; http://cdec.water.ca.gov/robots.txt
  - Reason: Site blocked by robots.txt (database itself also uncrawled)

# Government's relationships with Google



# Agenda

Government information on the growing web

Sitemaps for search engines

Implementing the Sitemap protocol

Google Webmaster Tools

Success stories

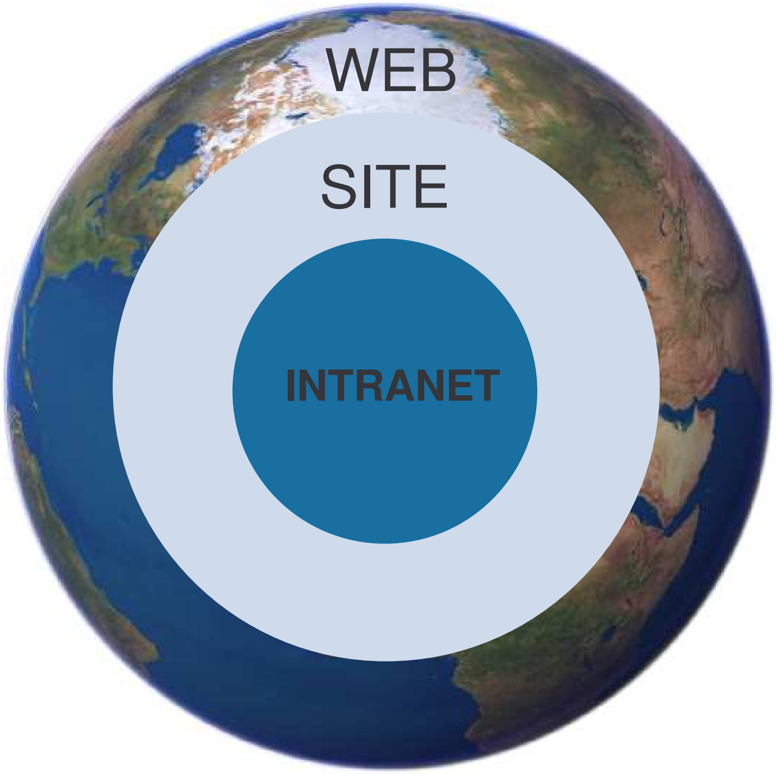
Q&A

# Common concerns

- No direct cost
- Non-proprietary
- No security risk
- Public content only

# What we’re talking about

- Intranet: Not your intranet or internal information
- Site: Nor search within your public site
- Web: Making content on your site accessible to web search engine users

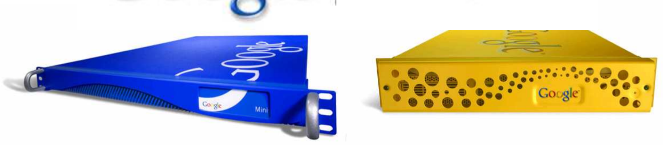


# Web search vs. site search

## Supporting the two levels of search

Google

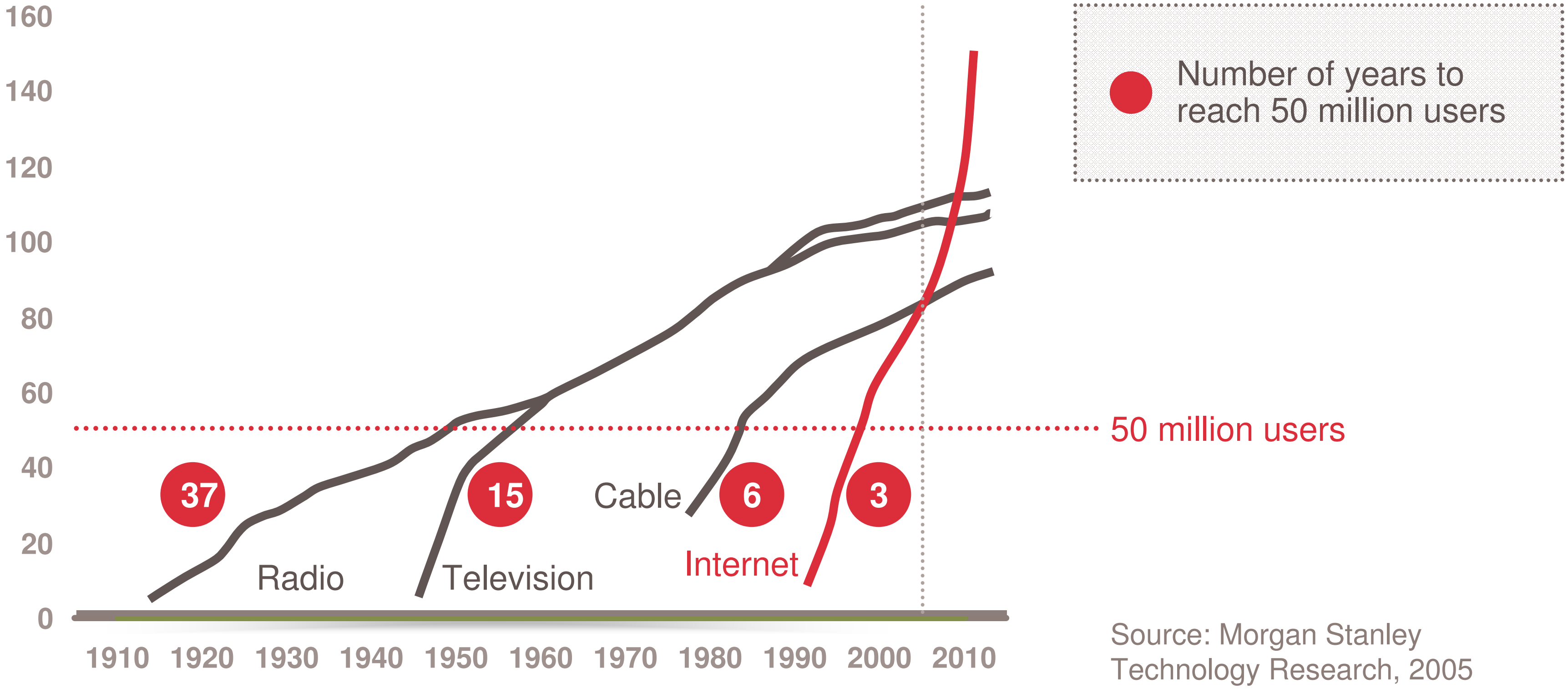
Google Enterprise



| | | |
|---|---|---|
| All of the open and accessible deep web | **Search scope** | A segment of your public site's content |
| Citizens and professionals | **User** | Professionals and citizens |
| Googlebot's crawling intervals | **Freshness** | Customizable |
| Limited by robots.txt, dynamic content. | **Crawling** | Limited by server capacity and cost |
| High-level stats | **Reporting tools** | More detailed, all facets |
| Free | **Cost** | Varies |

# The internet has come of age faster than previous media

## Internet adoption by North American users/households



Source: Morgan Stanley Technology Research, 2005

# US Internet user population is diversifying

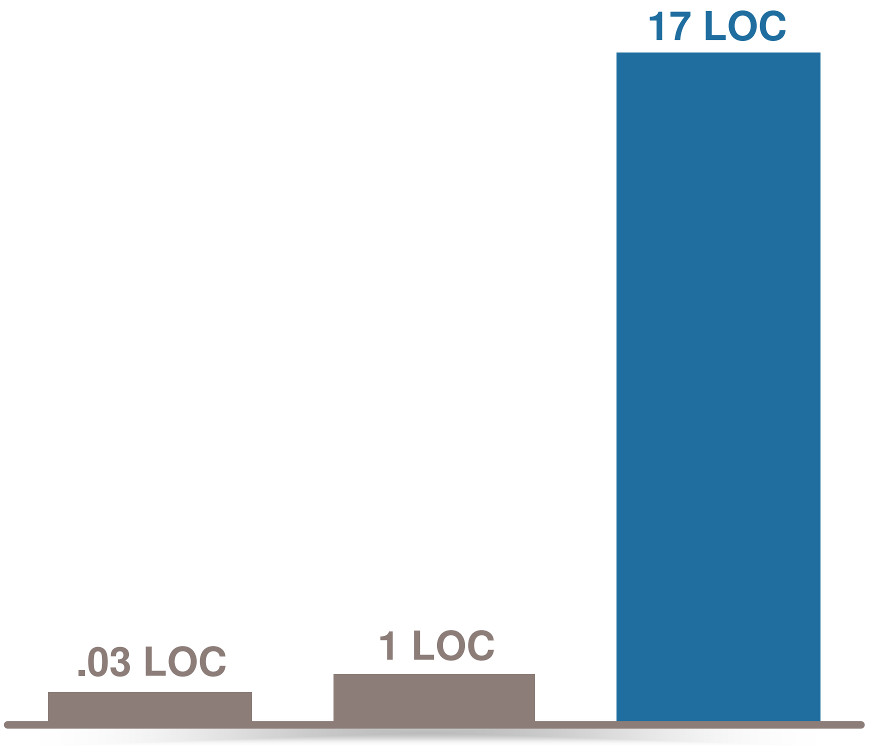
73% of adult population is online

- Not just youngsters: 71% of baby boomers (50–64)
- Not just urban and suburban: 63% of rural residents
- Not just highly educated: 84% with "some college"

Source: Pew Internet & American Life Project, 2006

# The growing web

## 7 million new pages every day



Library at Alexandria, 300 B.C.

Library of Congress

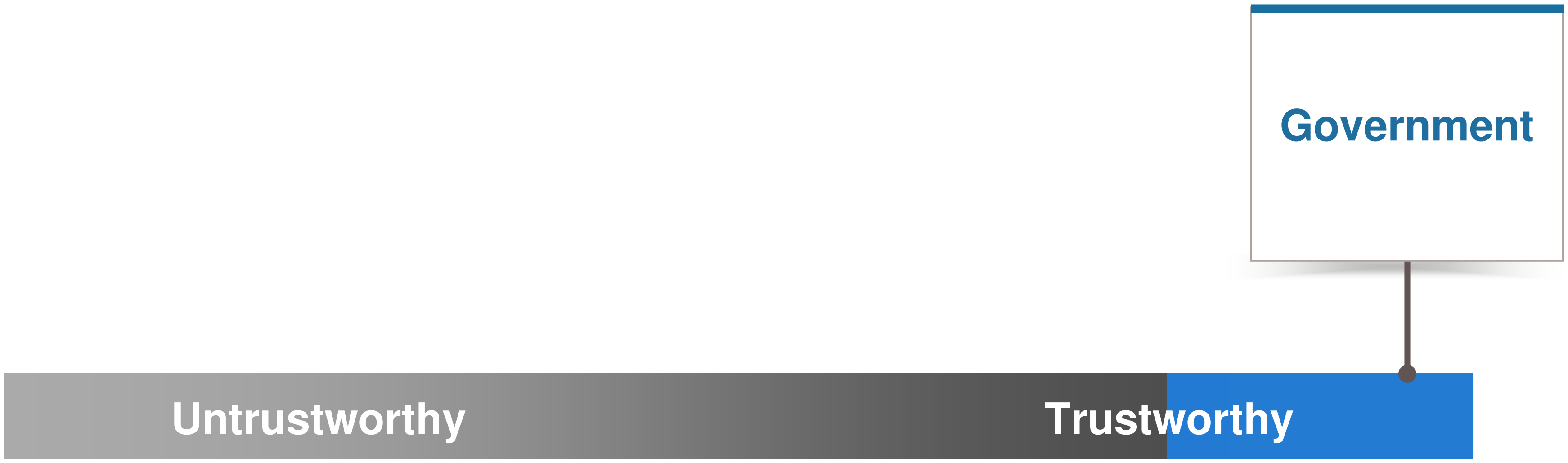
**World Wide Web**

Source: Peter Lyman and Hal Varian, 2003

Library of Congress (LOC)
**17M Books**

# Not all information is created equal

## The value of government content – a pillar of the web



Government

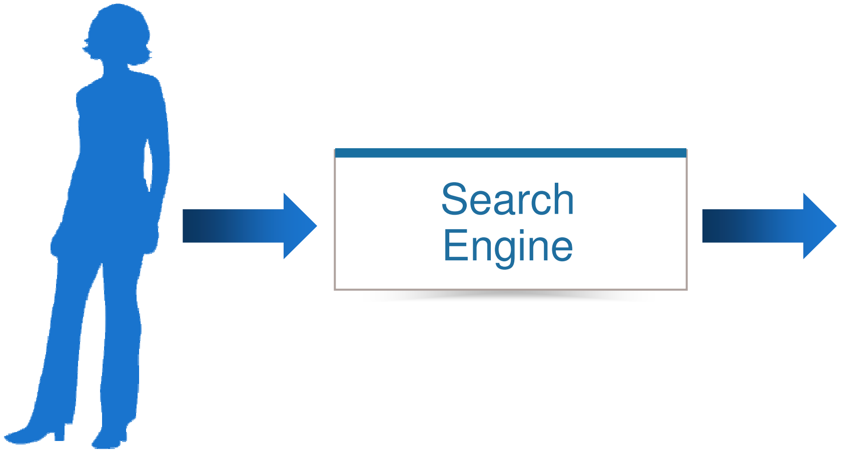
Untrustworthy

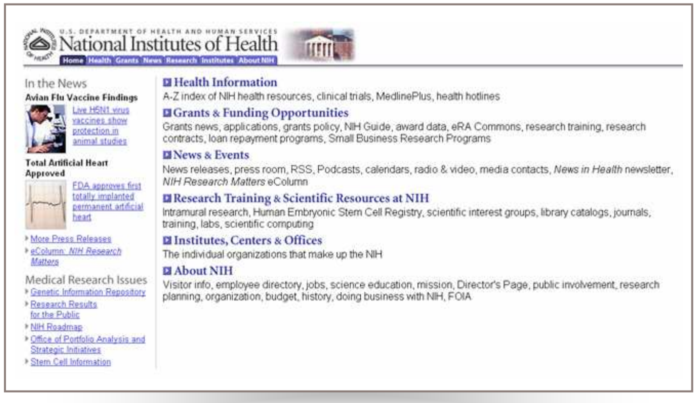
Trustworthy

# Citizens increasingly access government through search engines

## National Institutes of Health (nih.gov)

- 70% of unique users in July 2006 were referred by search engines (Google, Yahoo, MSN, AOL, Ask)





U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health

In the News

**Avian Flu Vaccine Findings**

Live H5N1 virus vaccines show protection in animal studies

**Total Artificial Heart Approved**

FDA approves first totally implanted permanent artificial heart

- More Press Releases
- eColumn: *NIH Research Matters*

Medical Research Issues

- Genetic Information Repository
- Research Results for the Public
- NIH Roadmap
- Office of Portfolio Analysis and Strategic Initiatives
- Stem Cell Information

**Health Information**
A-Z index of NIH health resources, clinical trials, MedlinePlus, health hotlines

**Grants & Funding Opportunities**
Grants news, applications, grants policy, NIH Guide, award data, eRA Commons, research training, research contracts, loan repayment programs, Small Business Research Programs

**News & Events**
News releases, press room, RSS, Podcasts, calendars, radio & video, media contacts, *News in Health* newsletter, *NIH Research Matters* eColumn

**Research Training & Scientific Resources at NIH**
Intramural research, Human Embryonic Stem Cell Registry, scientific interest groups, library catalogs, journals, training, labs, scientific computing

**Institutes, Centers & Offices**
The individual organizations that make up the NIH

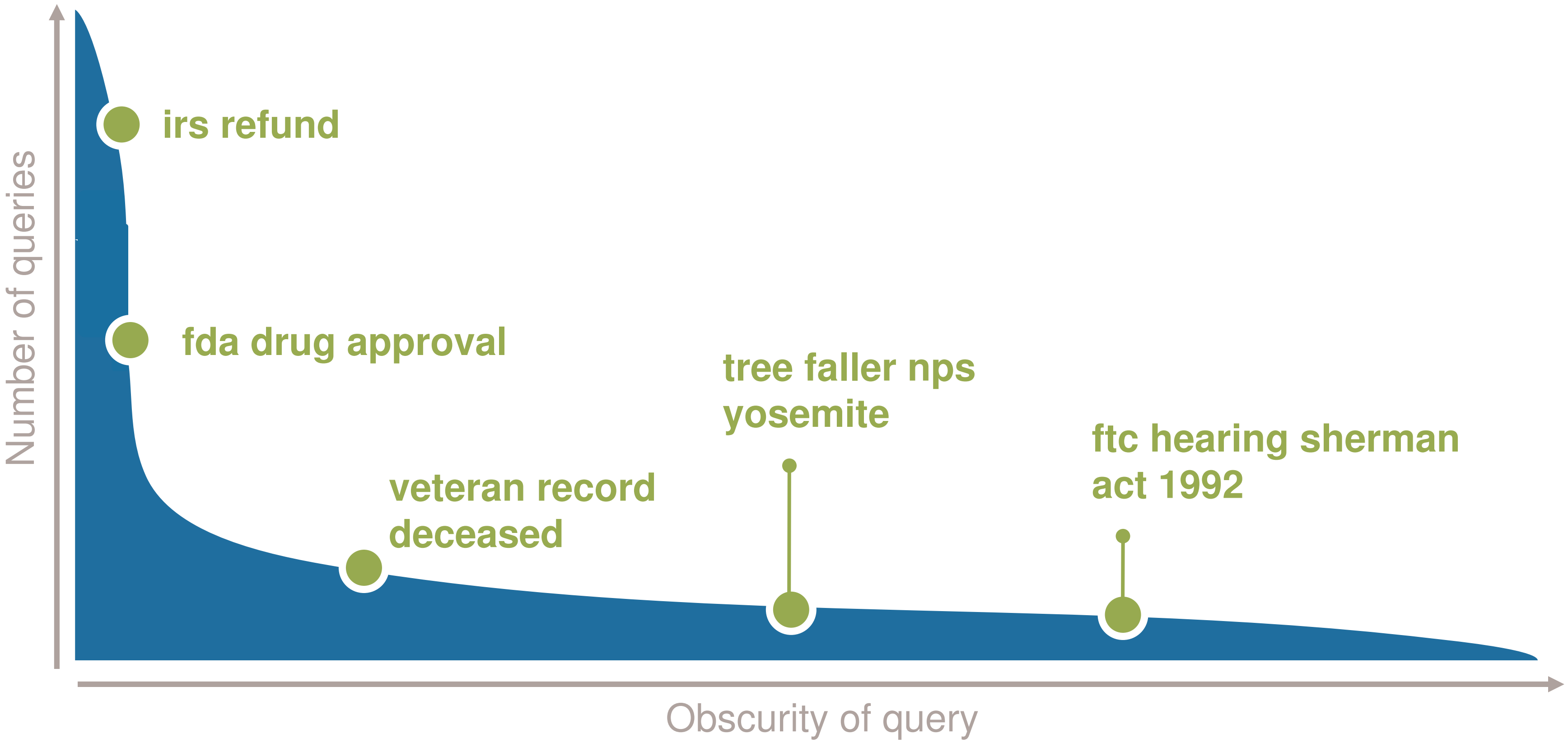
**About NIH**
Visitor info, employee directory, jobs, science education, mission, Director's Page, public involvement, research planning, organization, budget, history, doing business with NIH, FOIA

- Only 4% of unique users came directly to nih.gov

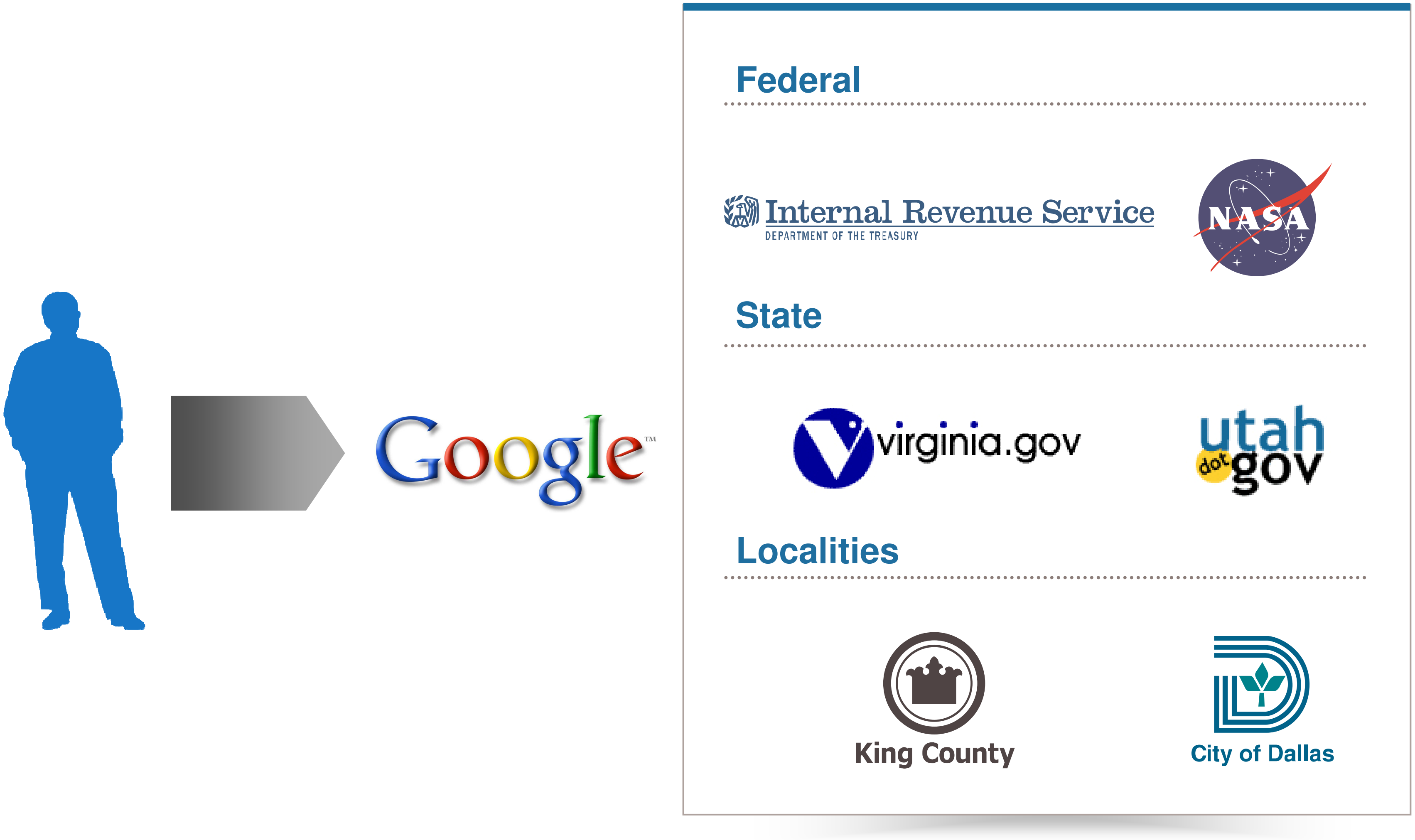
Source: ComScore, 2006

# And they expect to find everything

## The long tail of federal government information



# Search engines are the point of departure, government sites are the destination



Federal

State

Localities

# Government information on the growing web – recap

✓ Internet becoming dominant medium for accessing government

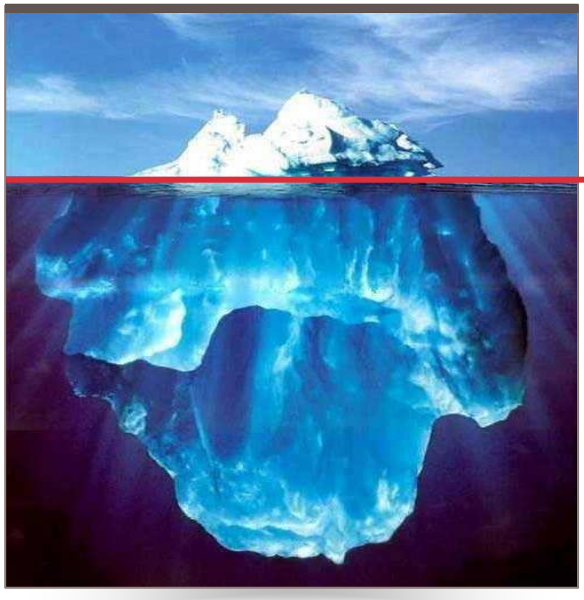
✓ Users value government information

✓ Users prefer to access government through search engines

# Growing deeper and more dynamic

## Challenges to web crawling are growing and multiplying

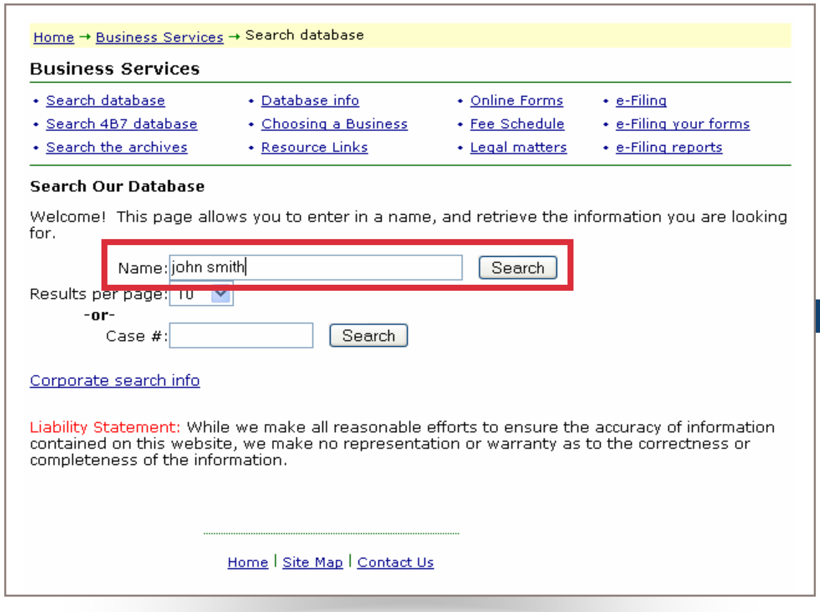
- Outdated robots.txt crawling instructions
- Non-html links
- Content “hidden” behind search forms
- Server errors (crawler times out when fetching content)
- Orphaned URLs
- Rich media: audio, video
- Paid/premium content databases



**WEB**
Searchable

**DEEP WEB**
Not searchable

# Crawlers cannot navigate search forms



Home → Business Services → Search database

**Business Services**

- Search database
- Search 4B7 database
- Search the archives
- Database info
- Choosing a Business
- Resource Links
- Online Forms
- Fee Schedule
- Legal matters
- e-Filing
- e-Filing your forms
- e-Filing reports

**Search Our Database**

Welcome! This page allows you to enter in a name, and retrieve the information you are looking for.

Name: john smith Search

Results per page: 10

-or-

Case #: Search

Corporate search info

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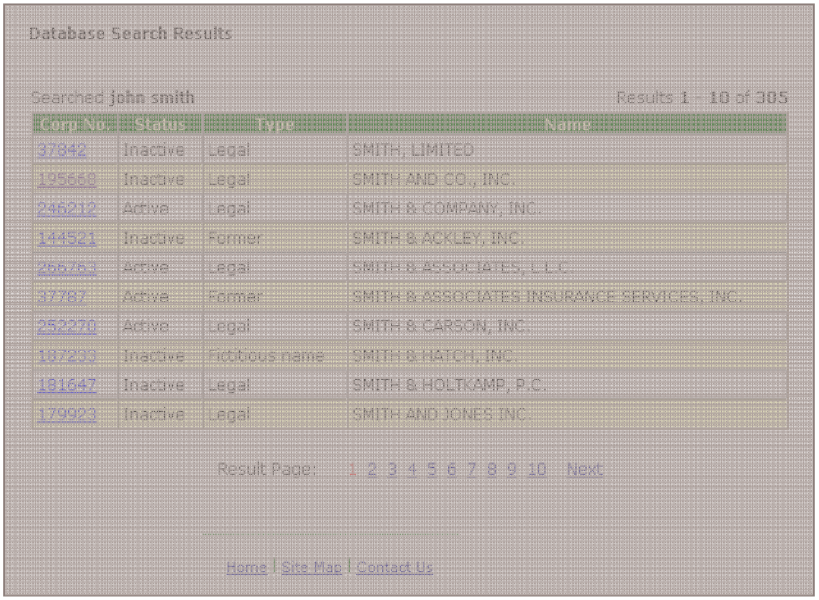
Home | Site Map | Contact Us

## When crawled



Database Search Results

Searched **john smith** Results **1** - **10** of **305**

| Corp No. | Status | Type | Name |
|---|---|---|---|
| 37842 | Inactive | Legal | SMITH, LIMITED |
| 195668 | Inactive | Legal | SMITH AND CO., INC. |
| 246212 | Active | Legal | SMITH & COMPANY, INC. |
| 144521 | Inactive | Former | SMITH & ACKLEY, INC. |
| 266763 | Active | Legal | SMITH & ASSOCIATES, L.L.C. |
| 37787 | Active | Former | SMITH & ASSOCIATES INSURANCE SERVICES, INC. |
| 252270 | Active | Legal | SMITH & CARSON, INC. |
| 187233 | Inactive | Fictitious name | SMITH & HATCH, INC. |
| 181647 | Inactive | Legal | SMITH & HOLTKAMP, P.C. |
| 179923 | Inactive | Legal | SMITH AND JONES INC. |

Result Page: 1 2 3 4 5 6 7 8 9 10 Next

Home | Site Map | Contact Us

**Search results are invisible**

# The solution: Sitemaps

The Sitemap protocol enables a web publisher to proactively manage search engine crawling

Google™ YAHOO!® Microsoft®

“The launch of Sitemaps is significant because it allows for a single, easy way for websites to provide content and metadata to search engines”

—Tim Mayer, Senior Director of Product Management, Yahoo Search

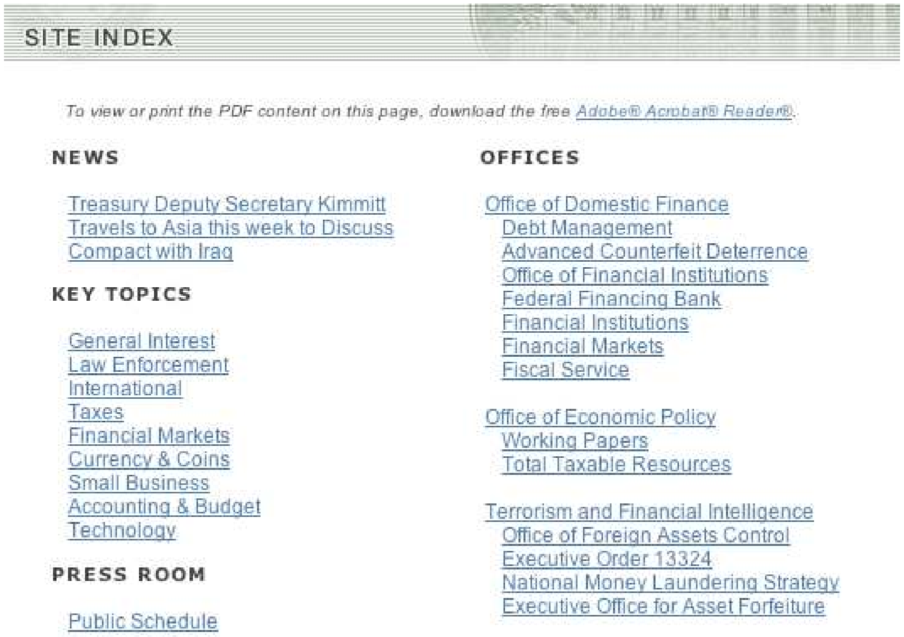
“We are 100% behind this protocol - this kind of collaboration will help improve the search experience for all of our customers”

—Ken Moss, General Manager, Live Search

- Sitemap protocol developed by Google in June 2005 and released under Creative Commons License
- Adopted as an industry standard in November 2006: www.sitemaps.org

# Navigational sitemap

## A browse index or sitemap enables a user to navigate throughout a site



SITE INDEX

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**NEWS**

Treasury Deputy Secretary Kimmitt Travels to Asia this week to Discuss Compact with Iraq

**KEY TOPICS**

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- Technology

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  - Financial Institutions
  - Financial Markets
  - Fiscal Service
- Office of Economic Policy
  - Working Papers
  - Total Taxable Resources
- Terrorism and Financial Intelligence
  - Office of Foreign Assets Control
  - Executive Order 13324
  - National Money Laundering Strategy
  - Executive Office for Asset Forfeiture

# Sitemaps for search engines

- HTML
- Simple text
- XML

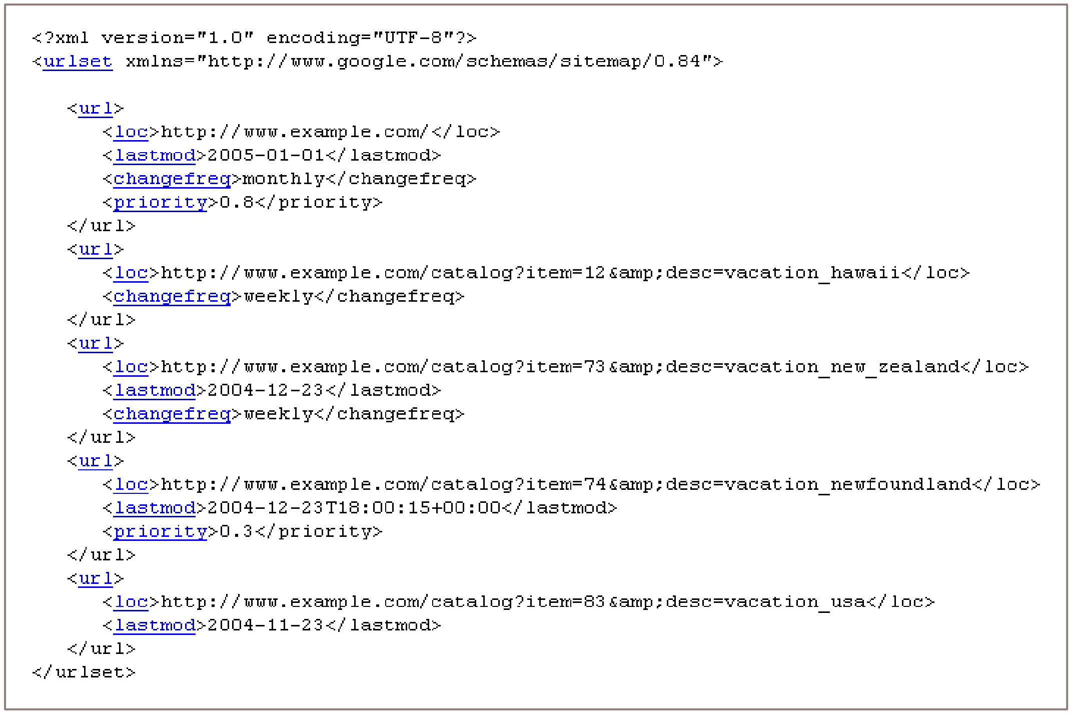
# Simple text sitemap

## A comprehensive list of URLs

```
http://www.firstgov.gov/index.shtml
http://www.firstgov.gov/About.shtml
http://www.firstgov.gov/Citizen/Services/Address_Changes.shtml
http://www.firstgov.gov/Topics/Parents_Adoptive.shtml
http://www.firstgov.gov/Government/State_Local/Ag_Environment.shtml
http://www.firstgov.gov/Citizen/Topics/Environment_Agriculture/Agriculture.shtml
http://www.firstgov.gov/Citizen/Facts/Facts_Agriculture.shtml
http://www.firstgov.gov/Agencies/Federal/Executive/Agriculture.shtml
```

# XML sitemap

- A comprehensive list of URLs in XML
- Tagged with each URL's location, last modification, change frequency and priority



```
<?xml version="1.0" encoding="UTF-8"?>
<urlset xmlns="http://www.google.com/schemas/sitemap/0.84">

   <url>
      <loc>http://www.example.com/</loc>
      <lastmod>2005-01-01</lastmod>
      <changefreq>monthly</changefreq>
      <priority>0.8</priority>
   </url>
   <url>
      <loc>http://www.example.com/catalog?item=12&amp;desc=vacation_hawaii</loc>
      <changefreq>weekly</changefreq>
   </url>
   <url>
      <loc>http://www.example.com/catalog?item=73&amp;desc=vacation_new_zealand</loc>
      <lastmod>2004-12-23</lastmod>
      <changefreq>weekly</changefreq>
   </url>
   <url>
      <loc>http://www.example.com/catalog?item=74&amp;desc=vacation_newfoundland</loc>
      <lastmod>2004-12-23T18:00:15+00:00</lastmod>
      <priority>0.3</priority>
   </url>
   <url>
      <loc>http://www.example.com/catalog?item=83&amp;desc=vacation_usa</loc>
      <lastmod>2004-11-23</lastmod>
   </url>
</urlset>
```