Google as a Service: What does that mean?

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Google
September, 2006
What’s a service?

- I assume you know.

**Roughly:** anything you can get someone else to do for you

- *uninteresting tasks*: cost-reduction by shifting to efficient others
- *talent performance*: knowledge intensive business service
- *support performance*: knowledge and tooling to perform tasks

- Conference hosting
- Consulting
- Repair
- Real estate
- Order taking (McDonalds)
- Travel arranging

- Order processing
- Software development
- Concierge arrangements
- Personal calendar organization
- etc...
Focus of this talk

- Think about service from the user’s perspective
Sample Google Services
Google product space

Communication
- Gmail
- Instant Messaging
- Address Book
- Calendar
- Blogger
- Groups
- Website Publishing

My Broadband Internet
- Picasa
- Google Earth

Search & Monetization
- Search – Web, Image, News, Local, Video
- Maps
- AdSense for Search, Content, Error Pages, Browsers
- Toolbar
- Desktop Search
- Premium Content Search

Small Business
- Start Page
- Corporate Email
- Website Analytics
- Desktop Search
- Google Mini Search Appliance
- Adwords
- Earth Pro
- Website hosting

Video
- Video Search
- Video Hosting

Mobile
- Web Search
- Image Search
- Mobile Web Search
- Local
- Blogger Mobile
- SMS
- Gmail
- Mobile Portal Search

Google
Hosted video content: UCB

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Amazon

- EC2 – Elastic Compute Cloud (grid computation service)
- Mechanical Turk -- outsourcing human skills via web
- Alexa site thumbnails – compute webpage thumbnails
- S3 – simple, secure storage
- Simple Queue Service – like MQ, for storing messages reliably between services
Amazon's Library Services: What Will They Mean to Libraries?
August 07, 2006, By Kimberly Maul

Amazon.com announced its new Library Processing program last week, which will provide Mylar book jackets, bar codes and more to libraries that order from the online bookseller. But will librarians turn to Amazon for services that they currently get from companies like Baker & Taylor and Follett?

“Like many libraries, we order most of our materials from a library jobber—Baker & Taylor, in our case—and we are generally very satisfied with the discounts, selection and service they provide,” Teri Hennes, the manager of Adult Services and Electronic Resources at Glencoe Public Library in Illinois, told The Book Standard. “We have an Amazon account for the library and order from them selectively.”

But will libraries who order the occasional book from Amazon turn to the online store more often because of the library processing program?
Google Services Built on DataCenters

- The Dalles, OR
- 1 acre / DC
List of Google Services (partial)

- Blogger
- Froogle product search engine
- GMail email service; gives you over 2 gigabytes of storage
- Google AdSense contextual advertising service
- Onsite Advertiser Sign-Up advertisers buy ads on a site directly from the Google Ads on that page
- Google AdWords bid for ads on Google search pages
- Google Alerts e-mail monitoring updates on searches you specify
- Google Analytics crawls your website and keeps track of your visitors; analytic tools
- Google Answers hire someone to research a topic or answer a question for you
- Google Base structured data store
- Google Book Search scanning and indexing print media
- Google Catalogs is a search engine for mail-order catalogs.
- Google Click-to-Call lets users call advertisers directly from Google search results
- Google Compute exists as a part of the Google Toolbar and uses your computer’s idle time
- Google Deskbar search from TaskBar
- Google Desktop local desktop search, with gadgets
- Google Directory search by category.
- Google Earth
- Google Groups
- Google Homepage
- Google Image Search is Google’s slightly-lesser-known service to search for images.
- Google Local / Maps
Services (2)

- Google Mobile search on phone
- Google Movie Showtimes onebox
- Google News
- Google Reader RSS reader
- Google Ridefinder
- Google Scholar
- Google Search History for your personal history
- Google Sitemap index directory/annotations provided by webmaster to Google
- Google Suggest autocompletion function
- Google Talk is Google’s IM and VoIP
- Google Toolbar Swiss army knife of toolbars
- Google Language Tools automatic translation services
- Google Video
- Google Web Accelerator prefetches web pages for faster overall access
- Google Web Search
- Orkut social networking
- Picasa photo organizer
Google product history

September 2005
- Google Blog Search

August 2005
- Google Desktop 2
- Useful links from within a site
- Google Talk

July 2005
- Toolbar for Firefox

June 2005
- Currency Conversion
- Google Earth
- Google Sitemaps

May 2005
- Enterprise Desktop Search Tool
- Google Web Accelerator
- Personalize Your Homepage

April 2005
- Google Q&A
- Multilingual Google Definitions
- My Search History
- Satellite View from Google Maps
- Google Mobile - Local Search

March 2005
- Google Weather
- Live stock quotes
- Results Prefetching
- Google News: Personalized News
- Google Ride Finder
- Google Suggest in Japanese

February 2005
- Google Maps
- Google Movies

January 2005
- Raised search limit to 32 words
- Picasa 2
- Google Video

December 2004
- Google Library
- Froogle Product Reviews
- Google Suggest

November 2004
- Google Scholar
- Froogle Wish Lists
- Google Help: Cheat Sheet

October 2004
- Google Desktop Search
- Google SMS

June 2004
- Site-Flavored Google Search Box

May 2004
- Google Groups 2
- Added mailing list support to Google Groups

April 2004
- GMail

http://www.googleguide.com/feature_history.html
And bundles: “Google Apps for Your Domain”

- Suite of web apps:
  - Gmail (2gb) – can use your own domain name; look & feel; admin process; support and additional storage (premium)
  - Calendar
  - Google Talk
  - Page Creator

Ref: Google.com/a
What’s the overall picture?

- Consistency in service offerings?
- What can you learn from one and use at another?
Mashups

http://weathermole.com/
Population density mashup
Gmap2: create map

- Example: creates a map and centers it on Palo Alto, California

```javascript
var map = new GMap2(document.getElementById("map"));
map.setCenter(new GLatLng(37.4419, -122.1419), 13);
```
map.Panto

- Pans to point if onmap, else jumps to location

```javascript
var map = new GMap2(document.getElementById("map"));
  map.setCenter(new GLatLng(37.4419, -122.1419), 13);
  window.setTimeout(function() { map.panTo(new
  GLatLng(37.4569, -122.1569)); }, 1000);
```
var point = new GLatLng(southWest.lat() + 
    latSpan * LAT,
    southWest.lng() + lngSpan * LONG);
map.addOverlay(new GMarker(point));
Point is not to teach you Mashup APIs

- ... but to indicate that data is now a service
- ... and that building new documents that leverage that information is a kind of service in itself.

We care about the APIs and what they afford.

The information content is just as important.
Services you might have thought about

- Query refinement
  - Two kinds—Coop refinements
  - Conceptual rewrites

- Spell correction

- Gadgets
Coop refinement of query

Diabetes and Pain
www.DPNPmanagement.com  Diabetic peripheral neuropathic pain (DPNP)-learn about managing it

Refine results for diabetes:
Treatment  Tests/diagnosis  For patients  From medical authorities
Symptoms  Causes/risk factors  For health professionals  Alternative medicine

American Diabetes Association Home Page
Their mission is to prevent and cure diabetes and to improve the lives of all people affected by this disease. Available in English and Spanish.

www.diabetes.org/ - 46k - Cached - Similar pages - Note this
   Nutrition & Recipes - www.diabetes.org/.../nutrition/overview.jsp
   Recipes & our Virtual Grocery Store - vgs.diabetes.org/recipe/index.jsp
   Risk Test - www.diabetes.org/risk-test.jsp
   Tour de Cure Homepage - tour.diabetes.org/
   More results from www.diabetes.org »

Diabetes Information - American Diabetes Association
The American Diabetes Association recommends the FPG because it is easier, ... Take the first steps toward better diabetes care by visiting the Diabetes ...

www.diabetes.org/about-diabetes.jsp - 52k - Cached - Similar pages - Note this
Conceptual rewrites

- Synonym finders
Sitelinks: shortcuts deep into site

Beaches Caribbean Family Resorts - All-Inclusive Family Vacation
Caribbean family vacation at all-inclusive luxury family resorts in Jamaica and Turks & Caicos.
www.beaches.com/ - 44k - Cached - Similar pages
  Turks & Caicos - www.beaches.com/main/tc/tc-home.cfm
  The Resorts - www.beaches.com/general/resorts.cfm
  The Locations - www.beaches.com/general/locations.cfm
  The Ultra All-Inclusive Package - www.beaches.com/general/included.cfm
More results from www.beaches.com »

Beaches
All Beaches. The Beaches site has relocated to http://www.allbeaches.net/
www.oneweb.com/infoctrs/beaches.html - 1k - Cached - Similar pages
Personalized home page: full of gadgets
Trends

Google Trends

Tip: You can compare searches by separating with commas.

Trend history

Search volume

Google Trends

News reference volume

Top cities (normalized)

1. Berkeley, CA, USA
2. Oakland, CA, USA
3. Pleasanton, CA, USA
4. San Francisco, CA, USA
5. Santa Clara, CA, USA
6. Sunnyvale, CA, USA
7. San Jose, CA, USA
8. Sacramento, CA, USA
9. Los Angeles, CA, USA
10. Irvine, CA, USA

A. Stanford 68, Oklahomna 43
   The State - Mar 23 2004

B. Florida, Stanford, Georgia advance in NCAA women's gymnastics
   Access North Georgia - Apr 16 2004

C. USC 31, Stanford 28
   Los Angeles Times - Sep 26 2004

D. No. 2 Stanford 80, San Francisco 51
   Tallahassee.com - Dec 13 2004

E. Stanford, Internet charges a steep social cost
   Sacramento Business Journal - Feb 23 2005

F. Stanford No. 2 in NCAA, No. 1 in AP Poll
   Ridgecrest Daily Independent - Mar 14 2005
Advertising services

- Ads for Search
- Ads for Content
- Ads for Domains
- Related ads
Syndication

- Pushing services and results to 3rd parties
  - Content accessible via plain old programs, not necessarily within a web browser
  - Results can be integrated into 3rd party content or behavior
Syndication of search

- Google makes search available to other publishers
Syndication of ads

- Adsense:
  - Account creation / management / tracking / updates / ...
  - Reporting / re-targeting / ...
Case Study: Blogger

**Goal:** Blogger, Google’s blogging product, built in basic functionality to allow users to add AdSense ads into their blogs.

Sign up for an AdSense Account

What is AdSense? AdSense is an advertising program run by Google which enables you to place content-relevant advertisements on your blog. These ads generate revenue for you on a pay-click basis. Learn more about placing ads on your blog.

Use the form below to enter information about how you would like to be paid. You will receive an email with instructions for finishing the account creation process.

Already have an AdSense account? Sign in.
Syndication: Gdata

- RSS syndication: one-way over HTTP
- Multiple formats: Blogger API, Metaweblog API, Atom Publishing Protocol (APP)

- GData is essentially a store that supports APP plus OpenSearch with XML
What kinds of information services should we provide?

- What’s the path from question to answer?

www.cityranks.com
Huh?
Ah ha
What kinds of user experiences?

- Map idioms
  - hand grab
  - arrows & bubbles
What does it mean to offer a search UE?

- Toolbar
What kinds of building blocks?

- APIs are foundation on which UEs are built
- Content repositories
- Services to connect and re-interpret
Epic 2015: Googlezon

- [http://albinoblacksheep.com/flash/epic](http://albinoblacksheep.com/flash/epic)
**Key strategy element: Fast evolution**

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*Eric Schmidt (June, 2005)*

“We don’t know the right answer in almost all these cases, but we know how to test quickly. One of the characteristics of these innovative businesses is that you have to keep testing and testing and eventually you find it. The first trials may not work and so we have to find partners who want to work with us, and they understand that we may screw it up.”
The scope of the problem:

- Many different properties, many different idioms and UIs
- And it only gets more interesting
  - As we start to have cross-talk between properties
Summary

- Designing an information service
  - Requires thought about use cases
  - Requires design for evolution
  - Requires constant hunt for new opportunities