Application Level Frameworks

Network Application Frameworks

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Today

- Web 2.0 & Mashups

- Facebook as a platform

- Google Maps

- RSS & Yahoo Pipes

- Google Analytics

- Search Engine Optimization

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Mashups

- The website programmableWeb (2009), which tracks mashups and related open APIs, recorded 4,254 mashups and 1,425 APIs. It also reported an increase of three mashups every day on the average

- Mashups are highly popular and they frequently use Web 2.0 technologies such as AJAX, XML, RSS, JSON, Open APIs, and Web data sources

- rapid development and modification, crowd sourcing, extensive use of open standards and APIs, etc

API	Description	Category	Mashups
Google Maps	Mapping services	Mapping	2174
Flickr	Photo sharing service	Photos	566
YouTube	Video sharing and search	Video	546
Twitter	Microblogging service	Social	540
Amazon eCommerce	Online retailer	Shopping	383
Facebook	Social networking service	Social	233
eBay	Online auction marketplace	Shopping	203
Last.fm	Online radio service	Music	182
Microsoft Virtual Earth	Mapping services	Mapping	176
Google Search	Search services	Search	168
del.icio.us	Social bookmarking	Bookmarks	154
Twilio	Telephony service	Telephony	139
Yahoo Search	Search services	Search	139
Yahoo Maps	Mapping services	Mapping	134
Google Ajax Search	Web search components	Search	126
411Sync	SMS, WAP, and email messaging	Messaging	120
Google Homepage	Portal gadgets	Widgets	100

http://www.programmableweb.com
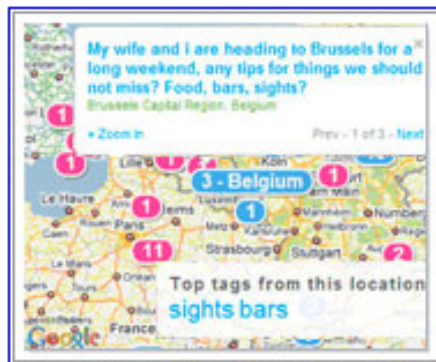
Google Maps

Maps JavaScript API

Embed a Google Map in your webpage using JavaScript. Manipulate the map and add content through many services.
Version 3 - Version 2

Maps API for Flash

Use this ActionScript API to embed a Google Map in your Flash-based web page or app. Manipulate the Map in three dimensions and add content through many services.
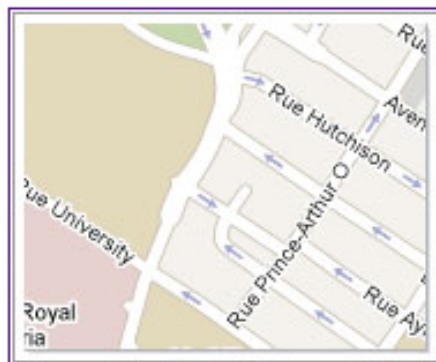Learn more

Google Earth API

Embed a true 3D digital globe into your web page. Take your visitors anywhere on the Earth (even below the ocean) without leaving your web page.
Learn more

Static Maps API

Embed a fast and simple Google Maps image in your web page or mobile site without requiring JavaScript or any dynamic page loading.
Learn more

Web Services

Use URL requests to access geocoding, directions, elevation, and places information from client applications, and manipulate the results in JSON or XML.
Learn more

Web Services Google Map API

- Geocoding API, Directions API, Elevation API, Places API

- Results returned either in XML or JSON
  - http://maps.google.com/maps/api/geocode/json?... (or ../xml?..)

- Some functions require authentication
  - Register => clientID & URL signing key
  - Construct URL for request
    - http://maps.googleapis.com/maps/api/staticmap?center=%E4%B8%8A%E6%B5%B7+%E4%B8%AD%E5%9C%8B&client=*clientID*&sensor=*true…*
  - Sign the URL (without domain part) using the HMAC-SHA1 algorithm
  - Encode the binary signature
  - Attach encoded signature to URL as `signature` parameter

Signing Example

- URL: http://maps.googleapis.com/maps/api/geocode/json?address=New+York&sensor=false&client=clientID

- Private Key: vNIXE0xscrmjlyV-12Nj_BvUPaw=

- URL Portion to Sign: /maps/api/geocode/json?address=New+York&sensor=false&client=clientID

- Signature: KrU1TzVQM7Ur0i8i7K3huiw3MsA=

- Full Signed URL: http://maps.googleapis.com/maps/api/geocode/json?address=New+York&sensor=false&client=clientID&signature=KrU1TzVQM7Ur0i8i7K3huiw3MsA=

Google Maps control with JavaScript

- http://doug.ricket.com/gdd2007/

- Run your own web service with Google maps embedded

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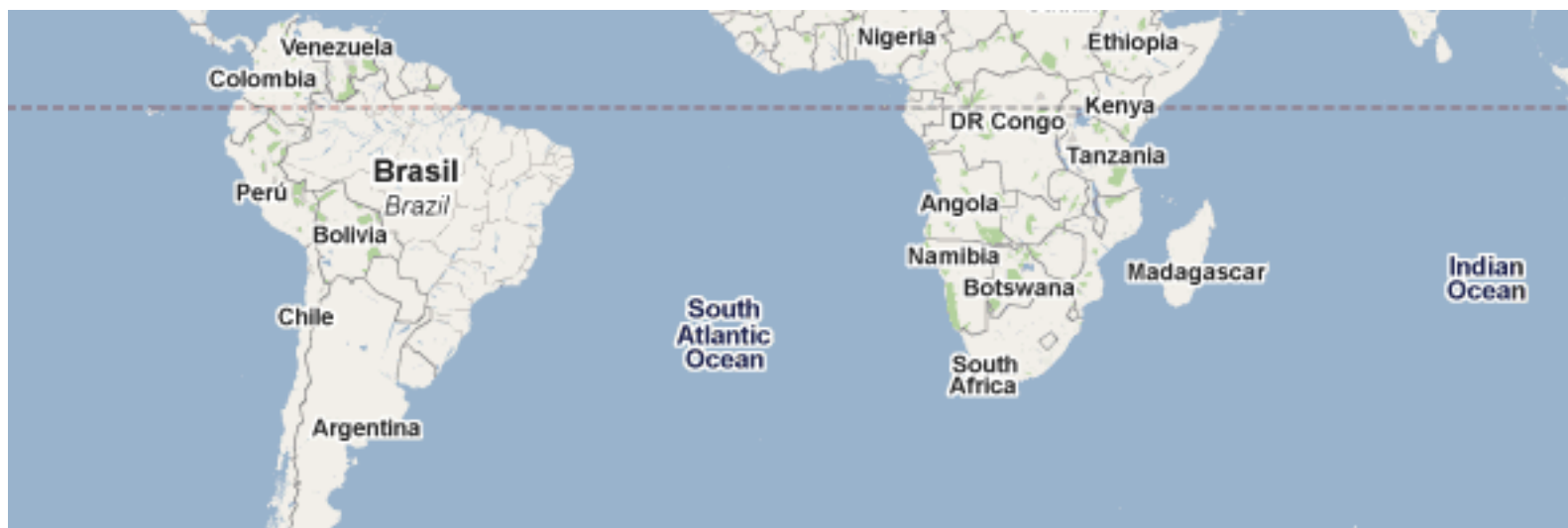
2. Basics

```html
<head>
  <script
   type="text/javascript"
   href="http://maps.google.com/maps?
        file=api&v=2&key=ABQ...c">
  function createMap() {
    var map = new GMap2(document.getElementById("map")
    map.setCenter(new GLatLng(37.44, -122.14), 14);
  }
  </script>
</head>
<body onload="createMap()" onunload="GUnload()">
```

Facebook

Apps on Facebook

- Applications try to become platforms
  - Key component of the success of Facebook, GoogleMaps etc.
- Ecosystem is the key
- Winner takes it all

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How to Use Facebook Framework?

- Social plug-ins
  - Add buttons and other widgets to your website
- Authentication
  - Use Facebook authentication on your website
- Personalize site
- Graphs API
  - Read and write data to Facebook
- Social channels
  - News feeds, requests, automatic channels (bookmarks, etc.)
- Apps on Facebook

Social plug-ins
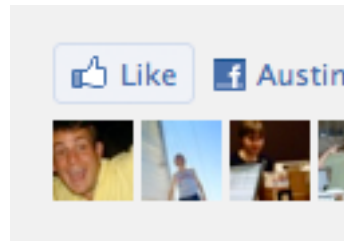
- Like button (and many others)
- When the user clicks the Like button on your site, a story appears in the user's friends' News Feed with a link back to your website.
- Steps:
  - Generate code with the tool
  - Add the generated code to your site

URL to Like (?)

Layout Style (?)

standard

Show Faces (?)

☑ Show faces

Width (?)

450

Verb to display (?)

like

Font (?)

Color Scheme (?)

light

Get Code

Your Own application inside Facebook
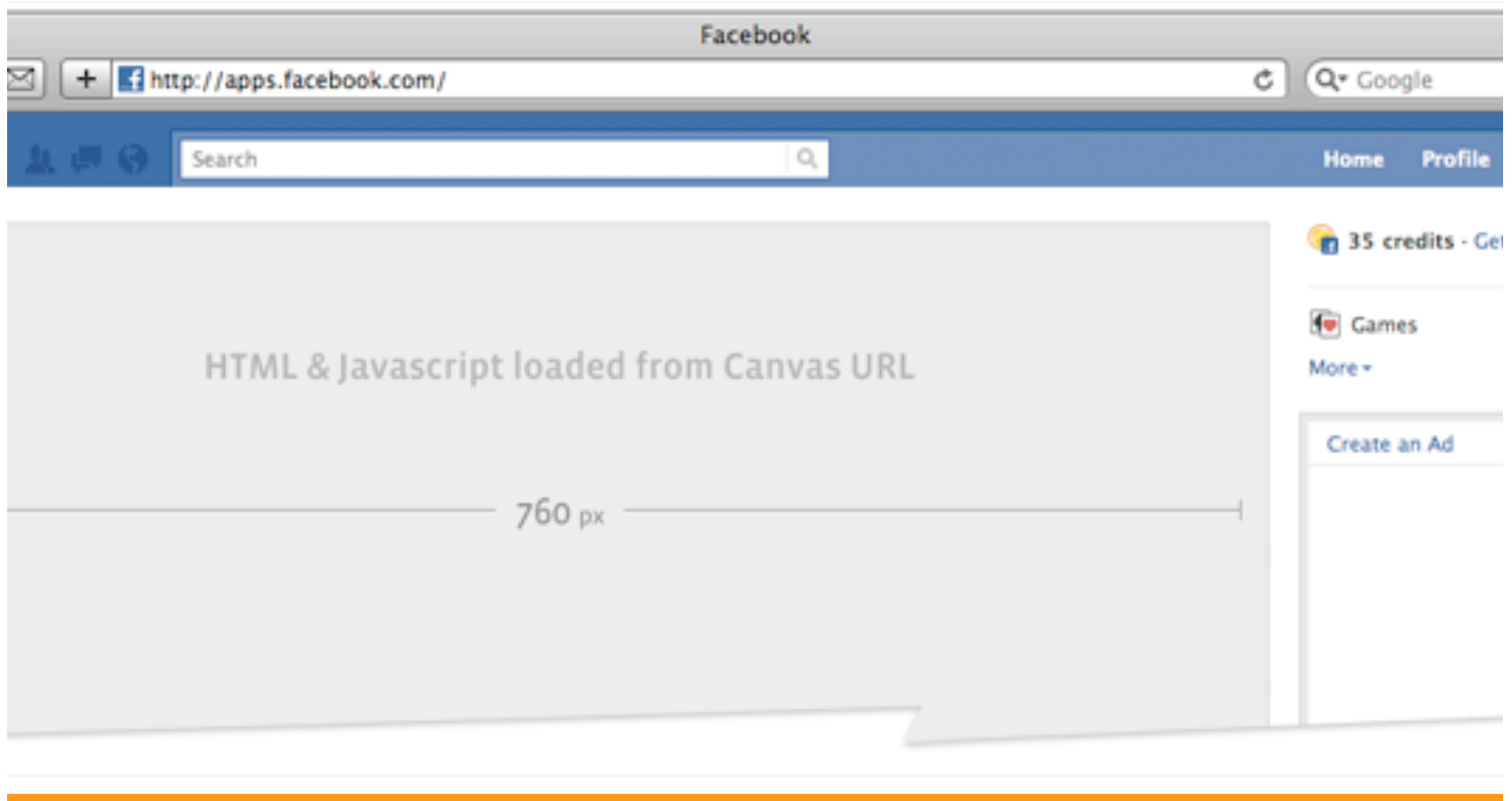
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Facebook Application Architecture

Browser

Application
Canvas

Facebook Server

Your Application
Server

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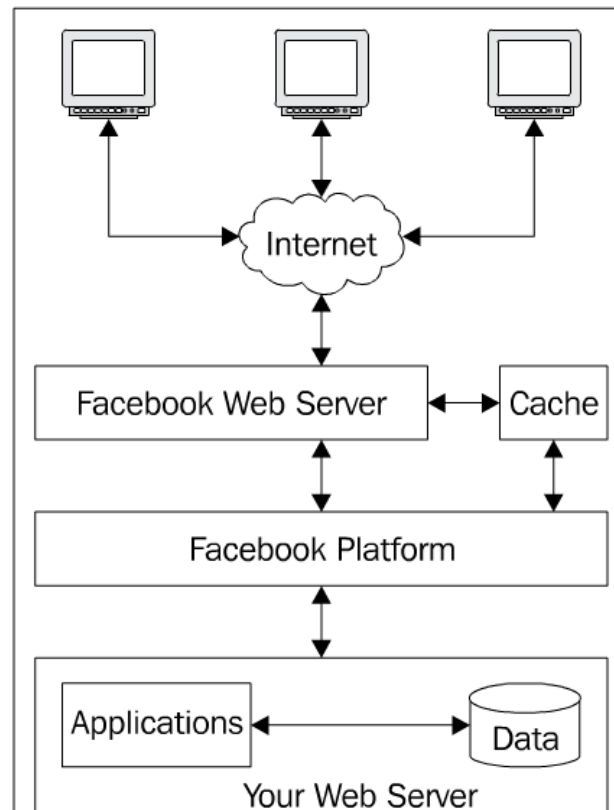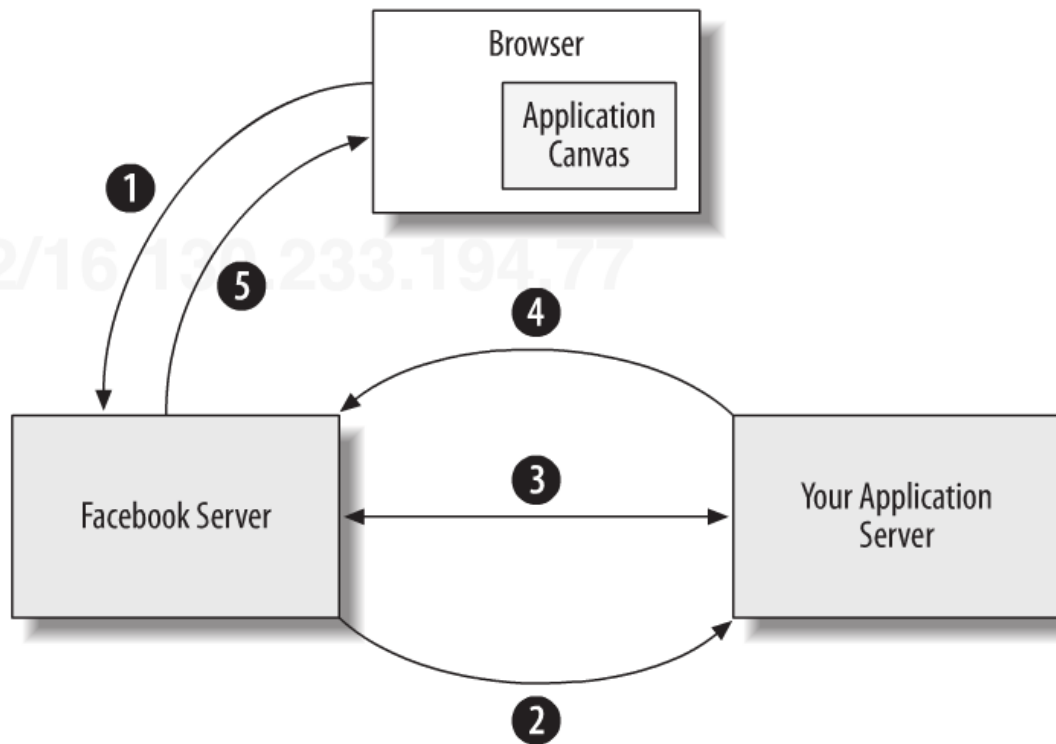
Your application inside facebook

- Register your app => ApplicationID, CanvasURL

- Authorization
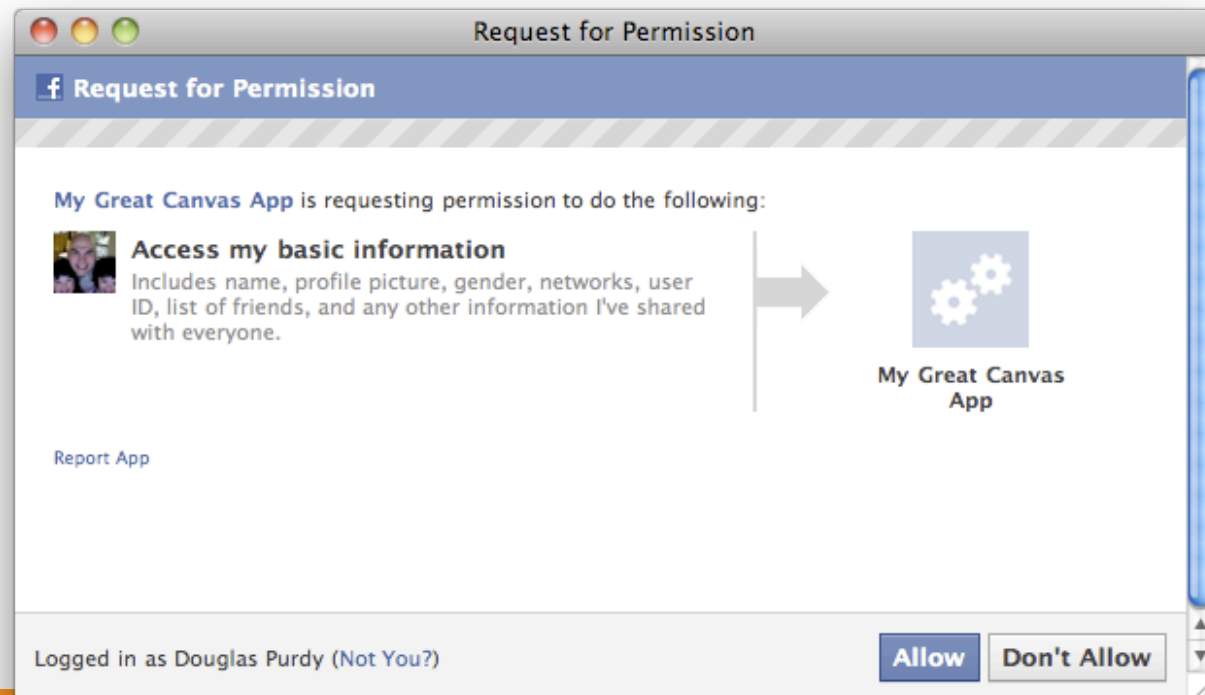
Advertising the app with social channel

- Social channels
  - Bookmarks
  - Feeds
  - Requests
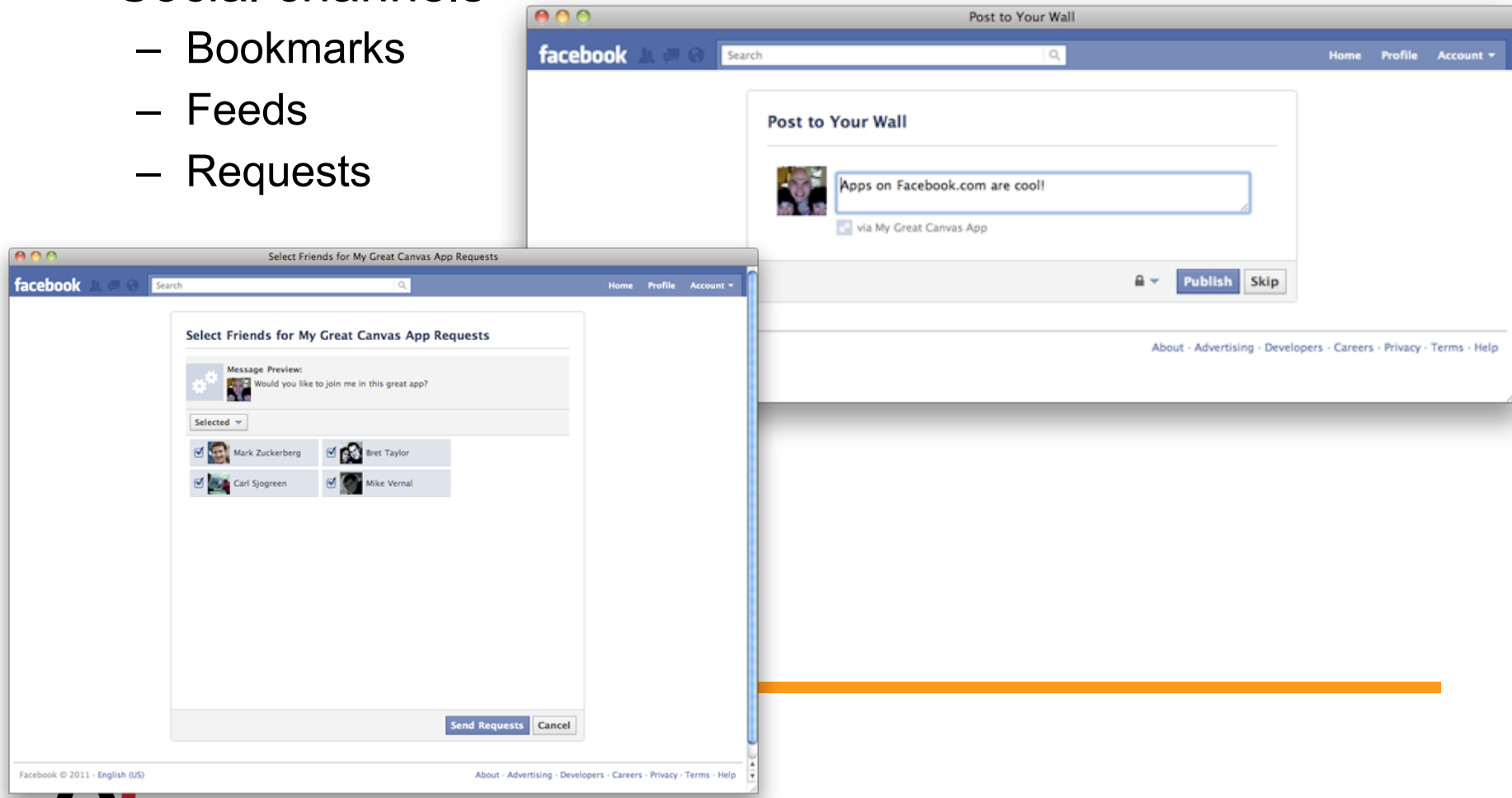
Facebook Mobile

- Native APIs
  - Android, iOS
  - Authentication
  - Single-sign-on
  - Graph API access

- Mobile Web API
  - JavaScript SDK
  - Register your website

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RSS

©2007 Jason Rhode - www.jasonrhode.com
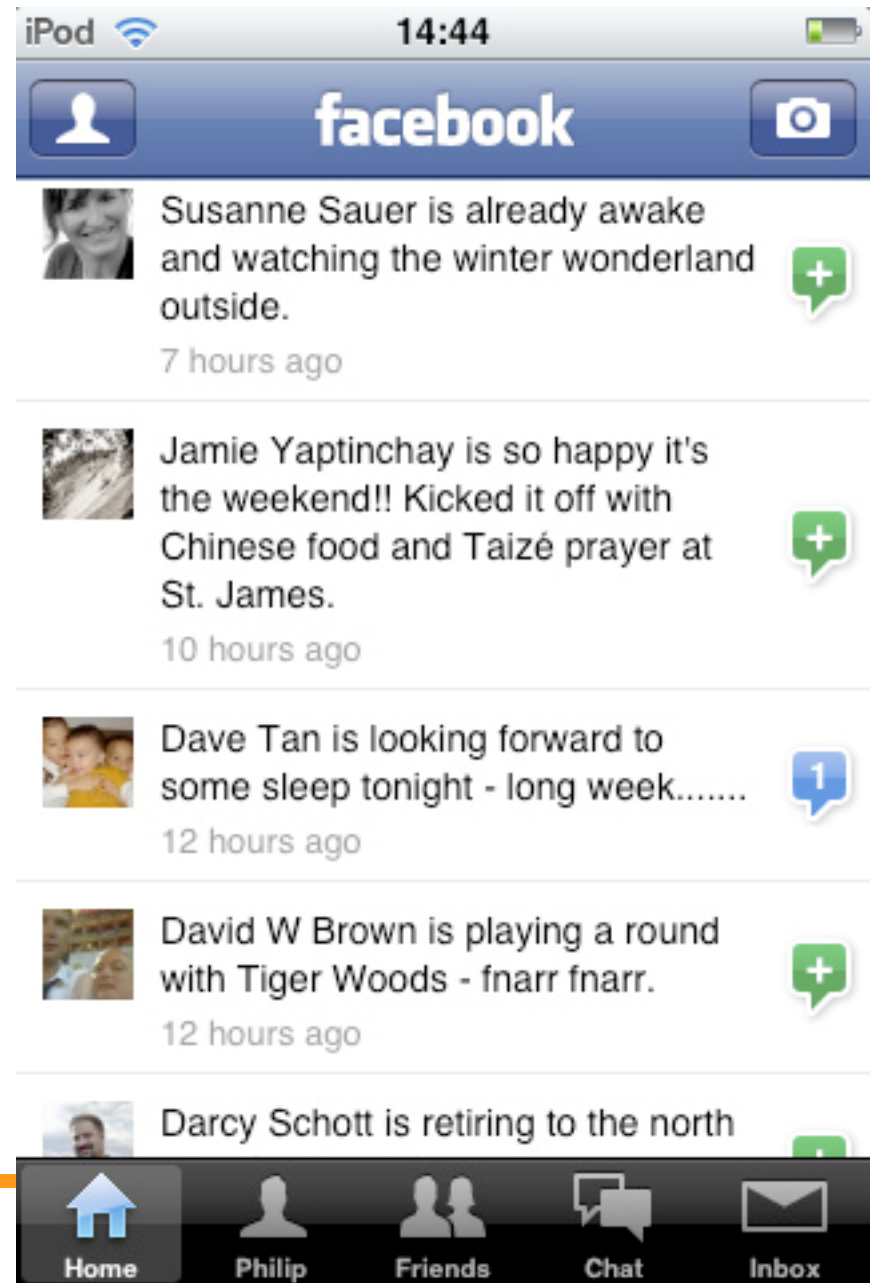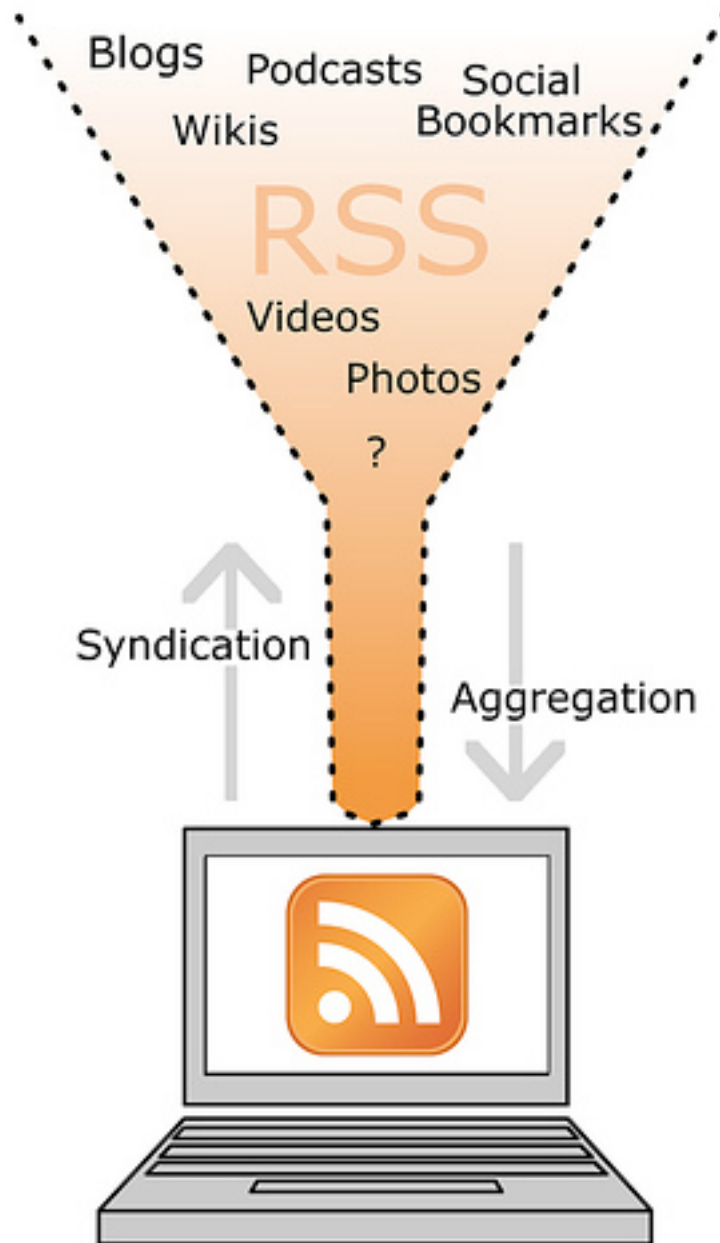
The Power of RSS Feeds

Without RSS
Users are forced to visit everytime to check for new content.

With RSS
New content is automatically delivered to a user.

New content is published and pushed through RSS.

RSS Reader

Content Aggregators

Search Results

Google, Yahoo, MSN

If optimized, RSS feeds can show on a search results page.

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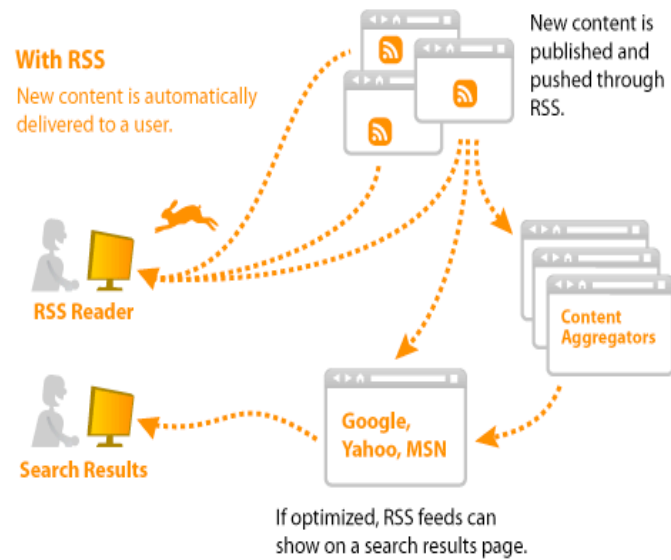
RSS

- Rich Site Summary or Really Simple Syndication
- Format for Syndicating Content
    - Updates distributed to subscribers
    - Viewed with RSS reader
- RSS is a text-based format, a type of XML

RSS Example

Example RSS Feed in XML

```
<title>Joe's Breakfast News</title>
<link>http://www.joe.com/news/</link>
    <item>
    <title>Orange Juice Voted Best Fruit Juice</title>
    <link>http://www.joe.com/news/orange-juice.html</link>
    </item>
    <item>
    <title>Acme Introduces New Flakes 'n' Nuts
Cereal</title>
    <link>http://www.joe.com/news/flakes-n-nuts.html</link>
    </item>
    <item>
    <title>Study Shows More are Skipping Breakfast</title>
    <link>http://www.joe.com/news/skipping.html</link>
    </item>
```

Example RSS Feed in English

- Joe's Breakfast News
- www.joe.com/news/
- Item
  - Orange Juice Voted Best Fruit Juice
  - www.joe.com/news/orange-juice.html
- Item
  - Acme Introduces New Flakes 'n' Nuts Cereal
  - www.joe.com/news/flakes-n-nuts.html
- Item
  - Study Shows More are Skipping Breakfast
  - www.joe.com/news/skipping.html

Atom

- Atom is a format quite similar to RSS. It was created by people who felt that RSS could be improved upon.

- The basic difference is that while Atom is somewhat more complex (for *producers* of Atom feeds), it is also able to carry more complex information, and it is consistent across the syndication, storage, and editing of information.

Yahoo Pipes

Yahoo Pipes

- …a hosted service that lets you remix feeds and create new data mashups in a visual programming environment. The name of the service pays tribute to Unix pipes, which make it easy to chain simple utilities together on the command line

About Yahoo! Pipes

- Combine many feeds into one, then sort, filter and translate to create your ultimate custom feed
- Geocode your favorite feeds and browse the items on an interactive map
- Remix your favorite data sources and use the Pipe to power a new application
- Build custom vertical search pages that are impossible with ordinary search engines
- Extend your web site by accessing the JSON or RSS output from Pipes

Date Builder Module
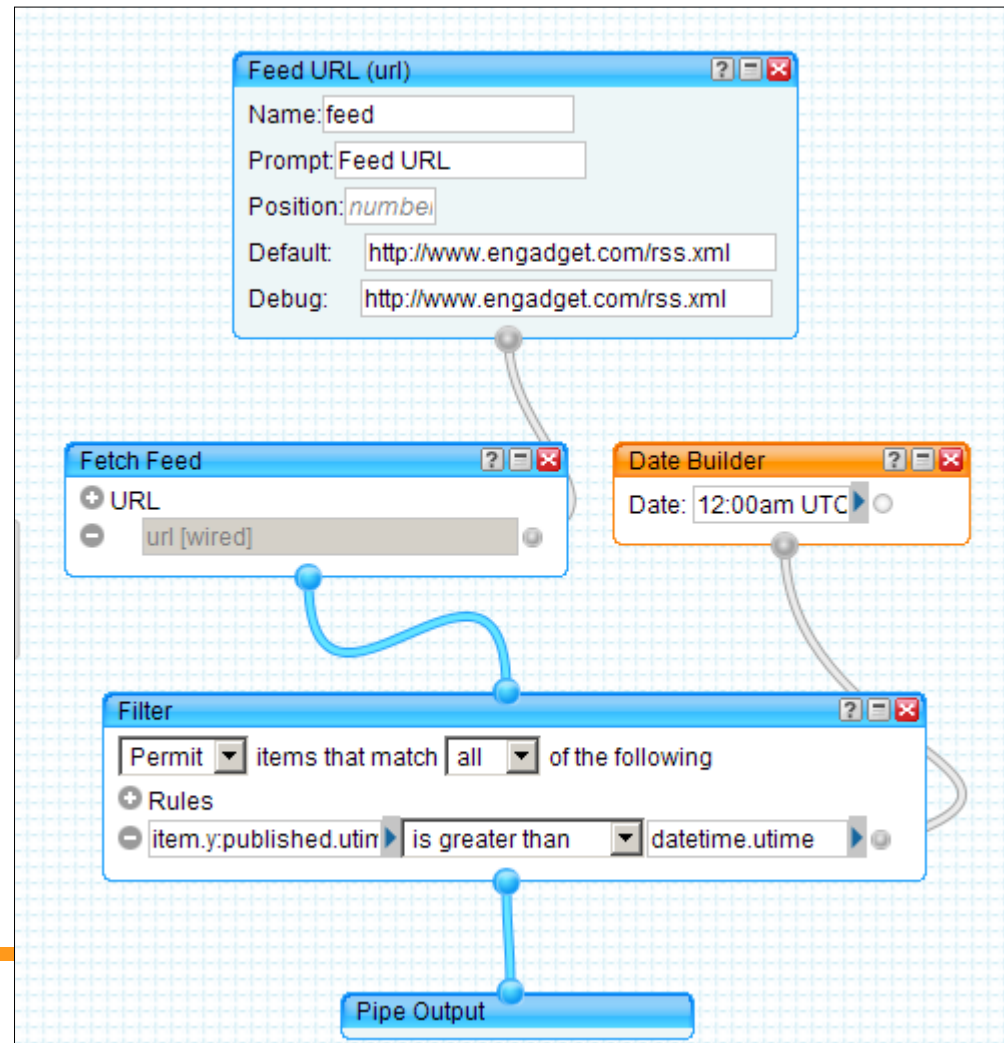
Google Analytics
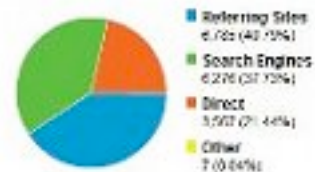
Google Analytics

- How it works:
  - A visitor loads a page on your website
  - In the process, her browser loads and runs some Javascript from Google
  - That Javascript collects information about the visitor
  - The information is sent to Google by requesting a URI and passing the details as CGI parameters
  - A program on Google's end then stores all the detailed observations that were recorded by the Javascript. It probably augments those observations with some of its own (IP address, user agent string, etc). At some point, all those details are analyzed and displayed in pretty graphs.

Search Engine Optimization

Web   Images   Maps   News   Video   Gmail   more ▼

seotechnologies@gmail.com | My Notebooks | My Account | Sign out

Google

web promotion company   [Search]   Advanced Search
                                          Preferences

Search: ⊙ the web ○ pages from Australia

Web   Results 1 - 10 of about 9,680,000 for web promotion company. (0.34 seconds)

Paid Ads

Organic

Website Promotion - Search Engine Optimization **Company** Gold Coast ...
Website Promotion is an Australian search engine optimization business that specialises in
all aspects of **Website Promotion** and Internet Marketing set up by ...
www.websitepromotion.net.au/ - 11k - Cached - Similar pages - Note this

Website Promotion company offering **promotion** & optimization services
Affordable **website promotion** services and **website** optimization services for small business
to mid size businesses. Customized **promotion** packages to choose ...
www.webpromotionguru.com/ - 10k - Cached - Similar pages - Note this

SEO **Company** Australia - Internet Marketing Australia Affordable ...
Webleaders is Internet Marketing Services and SEO **Company** in Australia Providing Seo
Services that includes complete **website promotion** such as link building ...
www.webleaders.com.au/ - 24k - Cached - Similar pages - Note this

S E O **web promotion company** - SEO Technologies - Flash, **web** ...
Australian SEO **web promotion company** offering search engine optimisation, multimedia,
Flash, design, e-commerce, cms, based in Sydney.
www.jhemans.powerup.com.au/ - 16k - Cached - Similar pages - Note this

web promotion and seo **company** - expert optimization service
web promotion and seo **company** - expert optimization ...
www.jhemans.powerup.com.au/Links/
web-promotion-and-seo-company---expert-optimization ...
Cached - Similar pages - Note this

Seo Experts,Search Engine Optimisation,Search Engine Optimization ...
We are an Australian based **web promotion** and seo consultants **company** that specialises
in providing customised strategies such as search engine optimisation ...
www.seoexperts.com.au/ - 22k - Cached - Similar pages - Note this

WebSite Promotion Australia
Why an Australian **website promotion company** rather than foreign? This **website**
promotion company, Australia based, is the best in the world ...
www.4webmarketing.biz/australia/index.htm - 43k - Cached - Similar pages - Note this

Website promotion Perth Western Australia
Why a Perth **website promotion company** rather than foreign? This **website promotion**
company in Perth is demonstrably the best in the world. ...
www.4webmarketing.biz/websitepromotion/perthwebsitepromotion.htm - 28k -

Sponsored Links

SEO for Australian Search
SE Optimisation with proven results
Top 10 rankings guaranteed
www.searchenginerankings.com.au/seo

Website Companies Sydney
Delivering High-Impact Websites.
Web Design & Management. Sydney.
www.netstarter.com.au

Business Growth
Growco - the new online resource
Get referals & grow your business
www.growco.com.au

Company Promotion
Make Your Brand Publicly Visible!
High Quality **Promotional** Products.
www.WavePromotions.com.au

Promotional Products
Promote your **company** with branded
products & gifts from Promoshop
www.promoshop.com.au

Web Site **Promotion**
Promote your **Website** Now
Effective Results in 48 hours!
www.LazyURL.com

Promotions & Events Staff
If your Fun, Energetic & Motivated
Positions Available - Apply Now
www.AidaSales.com.au/Events-Staff

Website Promotion
Request a free report on the
marketing potential of your **website**
www.WebMarketingWorkshop.com.au

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World Wide Web

Web pages

Scheduler

URLs

Multi-threaded downloader

Text and metadata

Queue

URLs

Storage

SEO

- Make the site genuinely interesting get many links from others

- Make your site crawler friendly
  - Robots.txt file at web root
    - Tells which directories to access and which links to follow
  - Sitemaps: location and freshness of site content

Robots.txt

```
User-agent: *
Disallow: /cgi-bin/
Disallow: /tmp/
Disallow: /~joe/
```

To exclude a single robot

```
User-agent: BadBot
Disallow: /
```

To allow a single robot

```
User-agent: Google
Disallow:

User-agent: *
Disallow: /
```

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```xml
<?xml version="1.0" encoding="UTF-8"?>
<urlset xmlns="http://www.example.com/sitemap/0.9">
<url>
<loc>http://www.example.com/?id=who</loc>
<lastmod> 2009-09-22</lastmod>
<changefreq>monthly</changefreq>
<priority>0.8</priority>
</url>
<url>
<loc>http://www.example.com/?id=what</loc>
<lastmod> 2009-09-22</lastmod>
<changefreq>monthly</changefreq>
<priority>0.5</priority>
</url>
<url>
<loc>http://www.example.com/?id=how</loc>
<lastmod> 2009-09-22</lastmod>
<changefreq>monthly</changefreq>
<priority>0.5</priority>
</url>
</urlset>
```
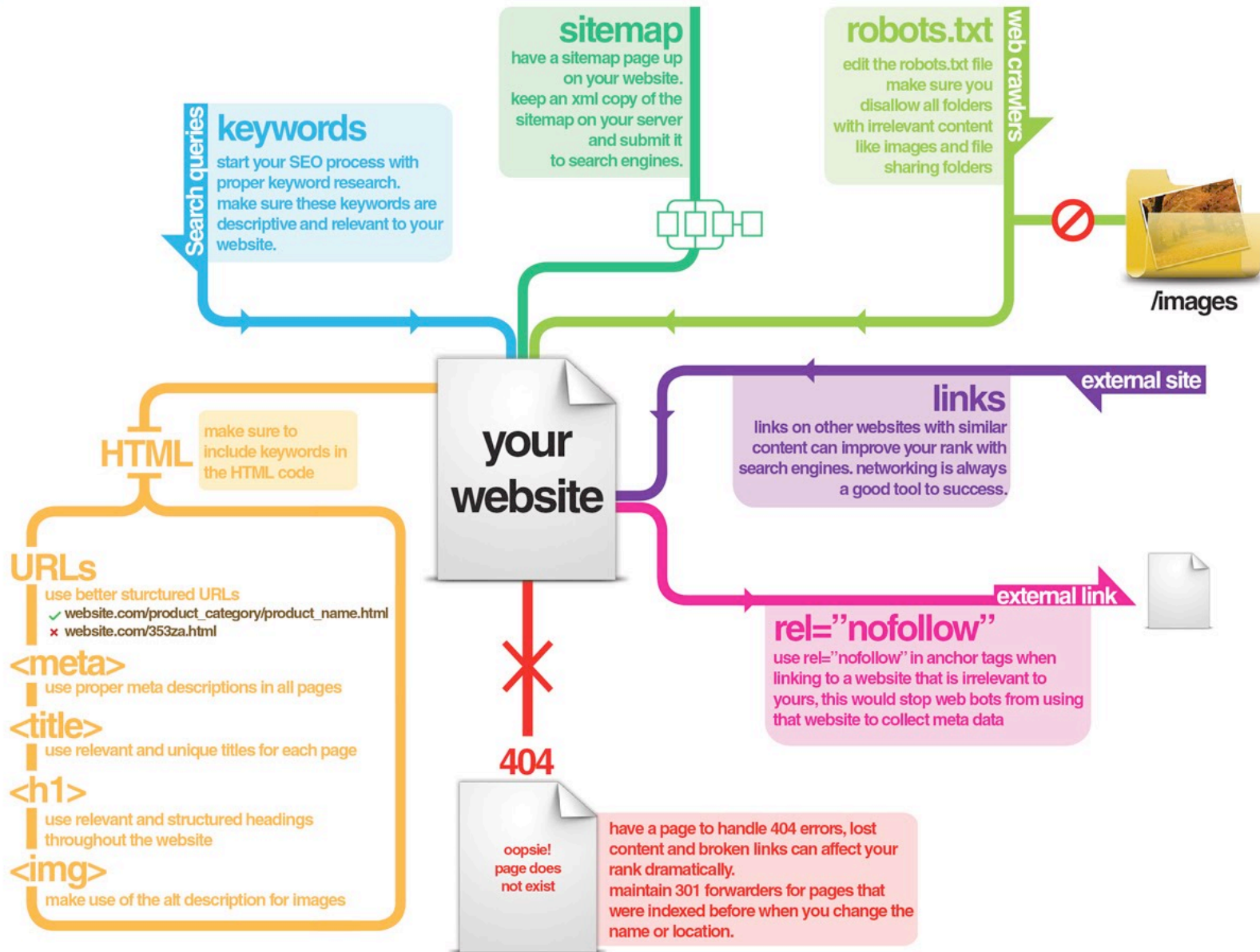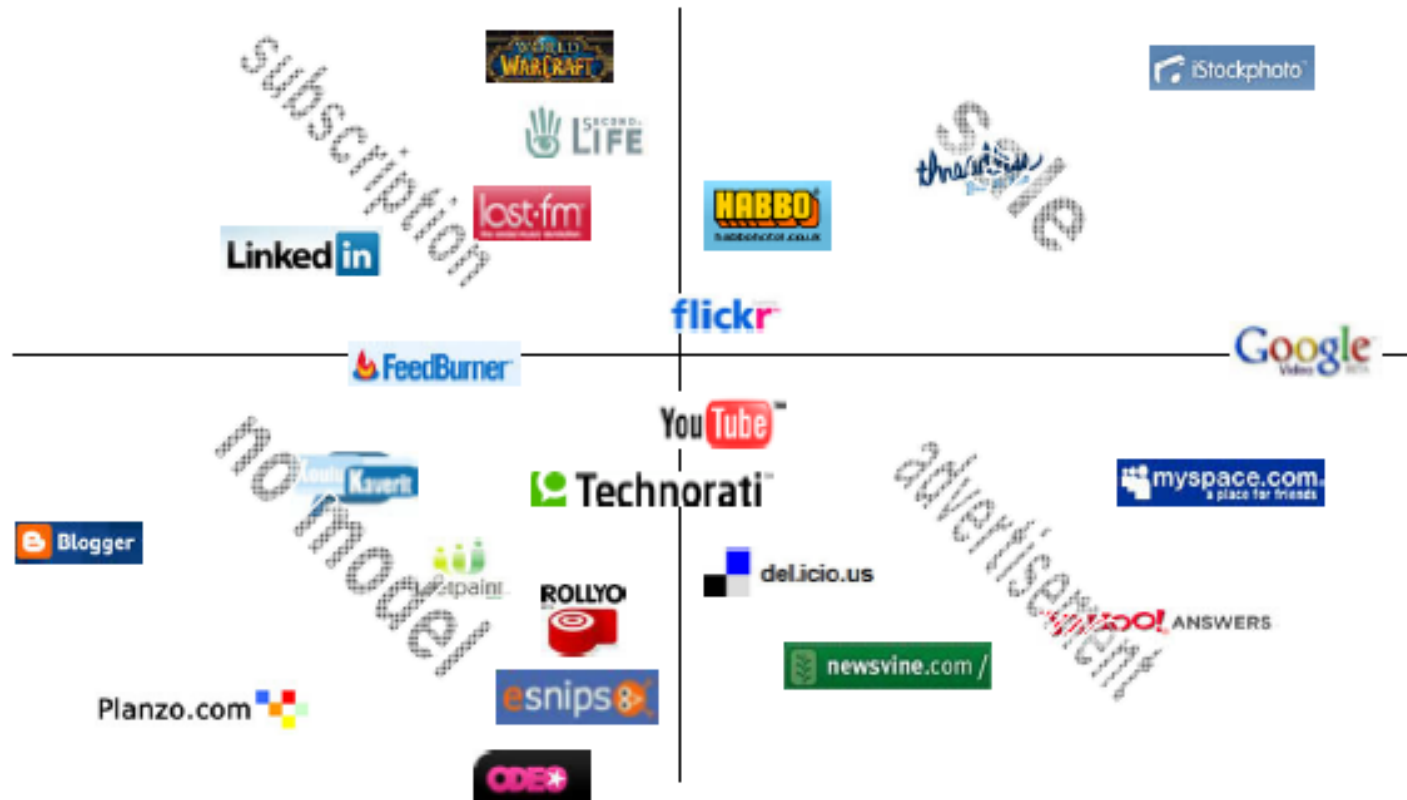
SEO:Explained

Search queries

keywords
start your SEO process with proper keyword research. make sure these keywords are descriptive and relevant to your website.

sitemap
have a sitemap page up on your website. keep an xml copy of the sitemap on your server and submit it to search engines.

robots.txt
web crawlers
edit the robots.txt file make sure you disallow all folders with irrelevant content like images and file sharing folders

/images

your website

HTML
make sure to include keywords in the HTML code

URLs
use better sturctured URLs
✓ website.com/product_category/product_name.html
✗ website.com/353za.html

<meta>
use proper meta descriptions in all pages

<title>
use relevant and unique titles for each page

<h1>
use relevant and structured headings throughout the website

<img>
make use of the alt description for images

links
external site
links on other websites with similar content can improve your rank with search engines. networking is always a good tool to success.

external link

rel="nofollow"
use rel="nofollow" in anchor tags when linking to a website that is irrelevant to yours, this would stop web bots from using that website to collect meta data

404
oopsie! page does not exist

have a page to handle 404 errors, lost content and broken links can affect your rank dramatically.
maintain 301 forwarders for pages that were indexed before when you change the name or location.

Web business models (VTT study, 2007)

Summary

- Mashups
- Google Maps
- Facebook as a platform
- RSS & Yahoo Pipes
- Google Analytics
- Search Engine Optimization