Web Service APIs

The Landscape and Opportunities

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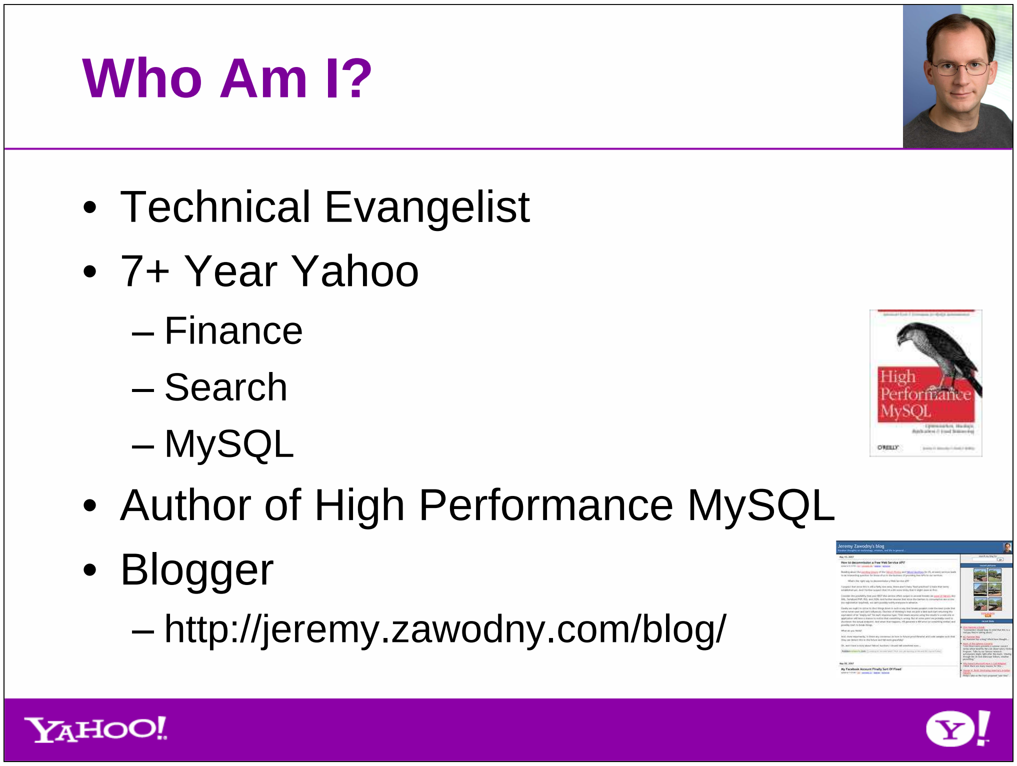
May 19th, 2007

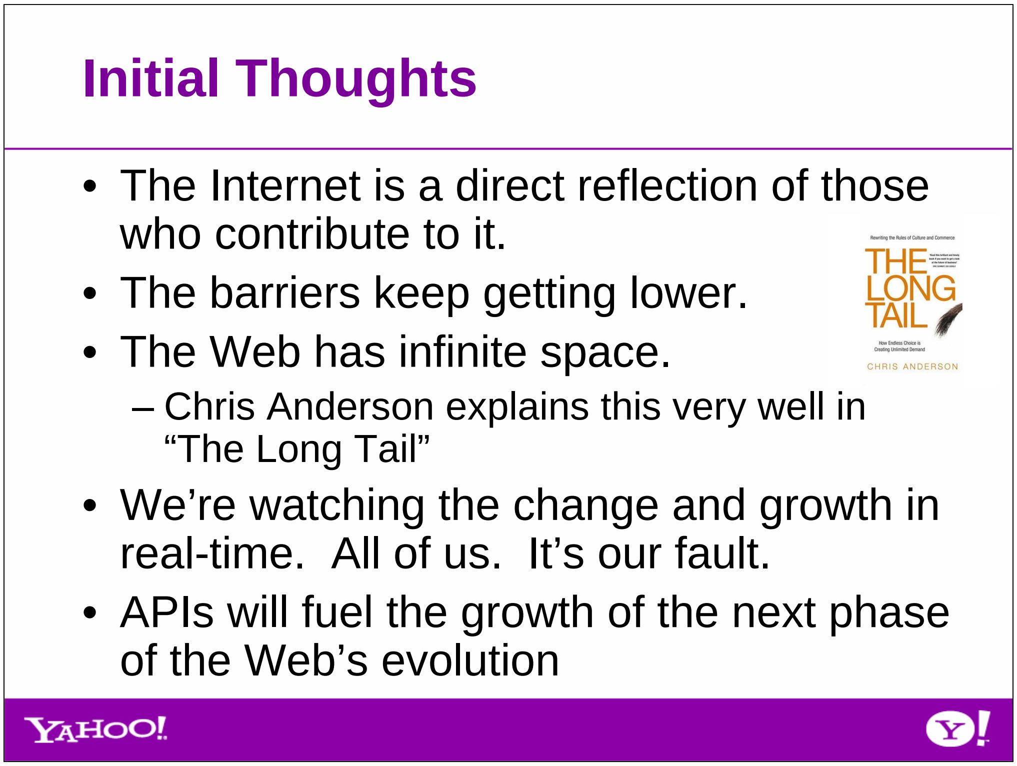
China Internet Developer Conference, Hangzhou, China



Who Am I?

- Technical Evangelist
- 7+ Year Yahoo
  - Finance
  - Search
  - MySQL
- Author of High Performance MySQL
- Blogger
  - http://jeremy.zawodny.com/blog/

Blah, blah, blah… yay me.



Initial Thoughts

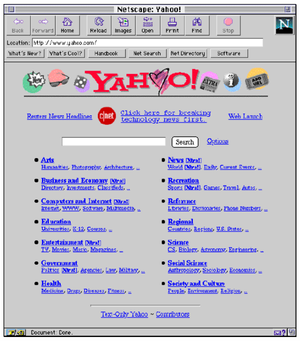
- The Internet is a direct reflection of those who contribute to it.
- The barriers keep getting lower.
- The Web has infinite space.
  - Chris Anderson explains this very well in “The Long Tail”
- We’re watching the change and growth in real-time. All of us. It’s our fault.
- APIs will fuel the growth of the next phase of the Web’s evolution

Rewriting the Rules of Culture and Commerce
THE LONG TAIL
How Endless Choice is Creating Unlimited Demand
CHRIS ANDERSON

A mirror that gets more clear every year.

The Early Web (and Yahoo)

- Difficult to navigate
- Few standards
- Yahoo Directory
  - – Library-like hierarchy
  - – Created by editors (surfers)
  - – Anyone could submit
  - – Moderation backlog
  - – Not scalable

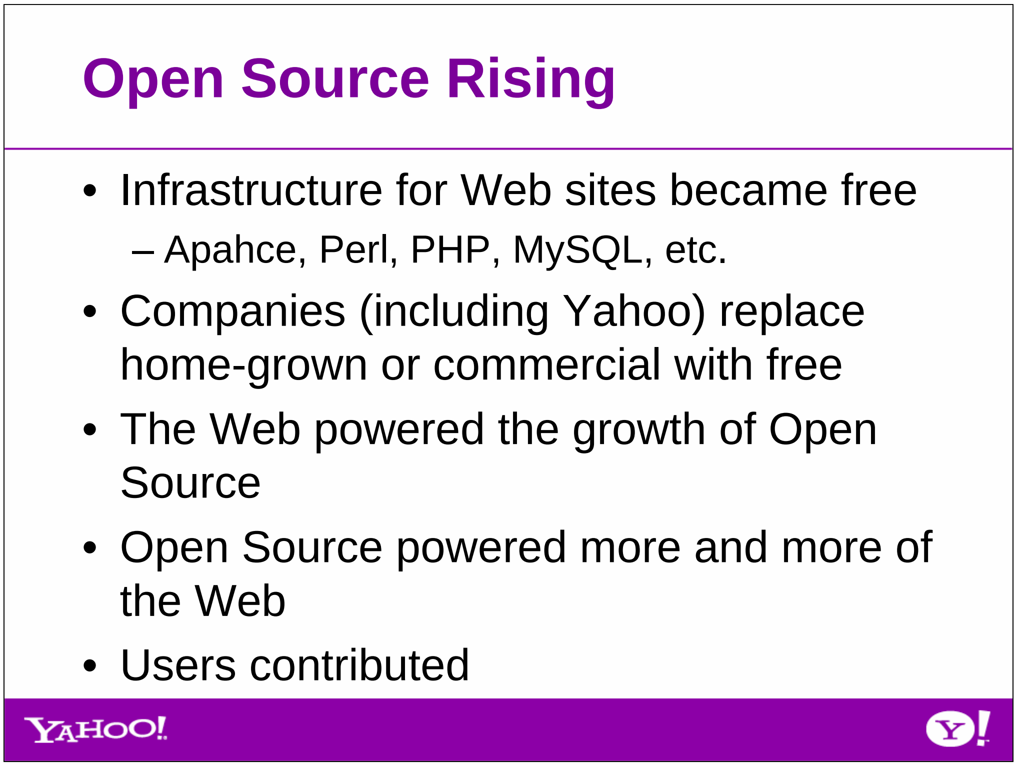


Reuters News Headlines c|net Click here for breaking technology news first. Web Launch

- **Arts**
  Humanities, Photography, Architecture, ...
- **Business and Economy** [Xtra!]
  Directory, Investments, Classifieds, ...
- **Computers and Internet** [Xtra!]
  Internet, WWW, Software, Multimedia, ...
- **Education**
  Universities, K-12, Courses, ...
- **Entertainment** [Xtra!]
  TV, Movies, Music, Magazines, ...
- **Government**
  Politics [Xtra!], Agencies, Law, Military, ...
- **Health**
  Medicine, Drugs, Diseases, Fitness, ...
- **News** [Xtra!]
  World [Xtra!], Daily, Current Events, ...
- **Recreation**
  Sports [Xtra!], Games, Travel, Autos, ...
- **Reference**
  Libraries, Dictionaries, Phone Numbers, ...
- **Regional**
  Countries, Regions, U.S. States, ...
- **Science**
  CS, Biology, Astronomy, Engineering, ...
- **Social Science**
  Anthropology, Sociology, Economics, ...
- **Society and Culture**
  People, Environment, Religion, ...

Text-Only Yahoo ~ Contributors

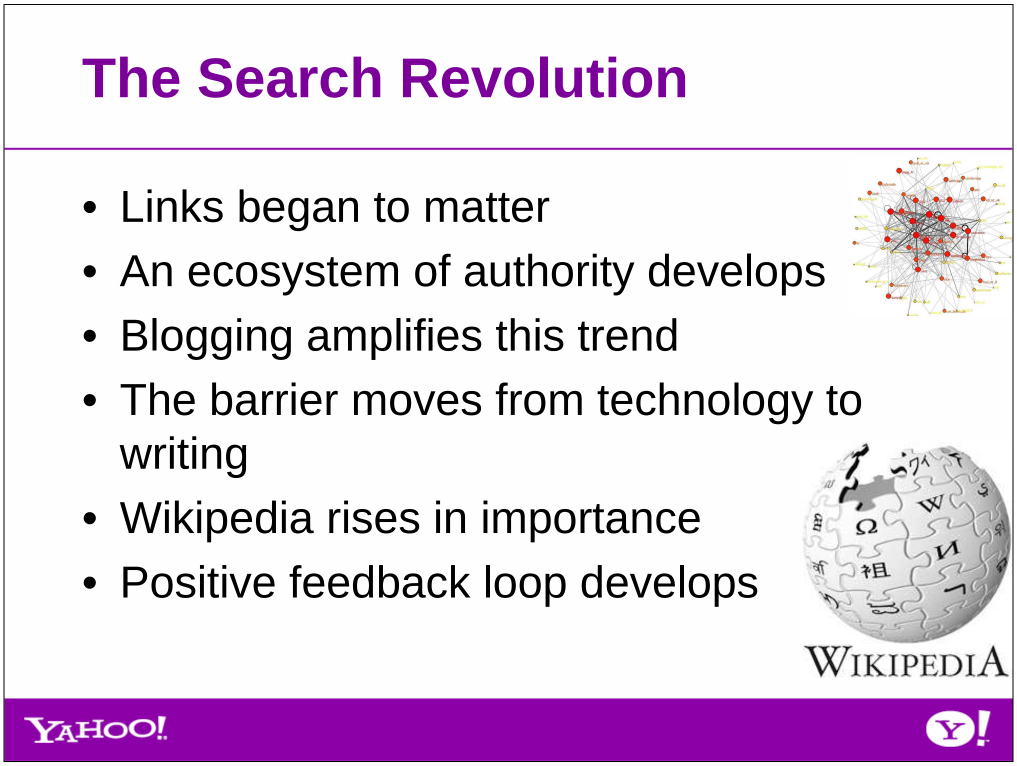
Small centralized group with authority.



Open Source Rising

- Infrastructure for Web sites became free
  - Apahce, Perl, PHP, MySQL, etc.
- Companies (including Yahoo) replace home-grown or commercial with free
- The Web powered the growth of Open Source
- Open Source powered more and more of the Web
- Users contributed

On-line collaboaration tools were key. Low barriers to entry too.



The Search Revolution

- Links began to matter
- An ecosystem of authority develops
- Blogging amplifies this trend
- The barrier moves from technology to writing
- Wikipedia rises in importance
- Positive feedback loop develops

WIKIPEDIA
YAHOO!

We move to *distributed* authority (vs. Yahoo! Directory)

Web 2.0: Participation

- The barrier moves from writing to clicking
  - Ratings
  - Reviews
  - Favorites
- Amazon.com, iTunes, Flickr, del.icio.us

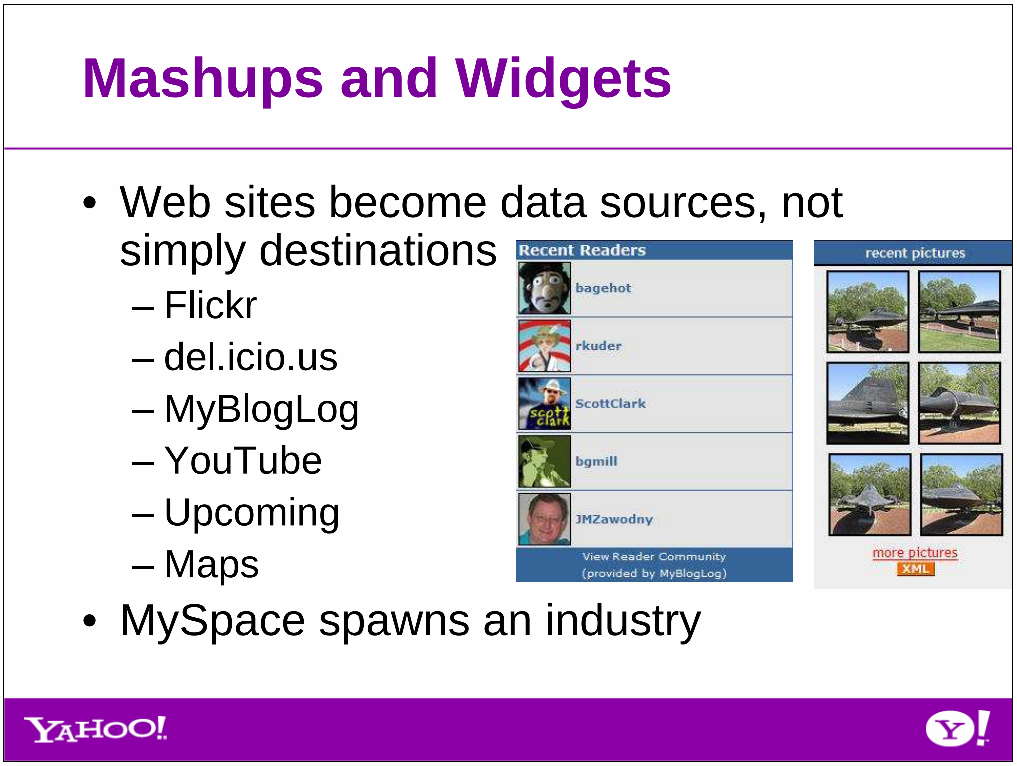
del.icio.us / popular /

your bookmarks | your network | subscriptions | links for you | post

Today's popular items → view all | fresh only

amazon.com
flickr GAMMA

It's all about participation, the 80/20 rule, and the 90%, 10%, 1% model.

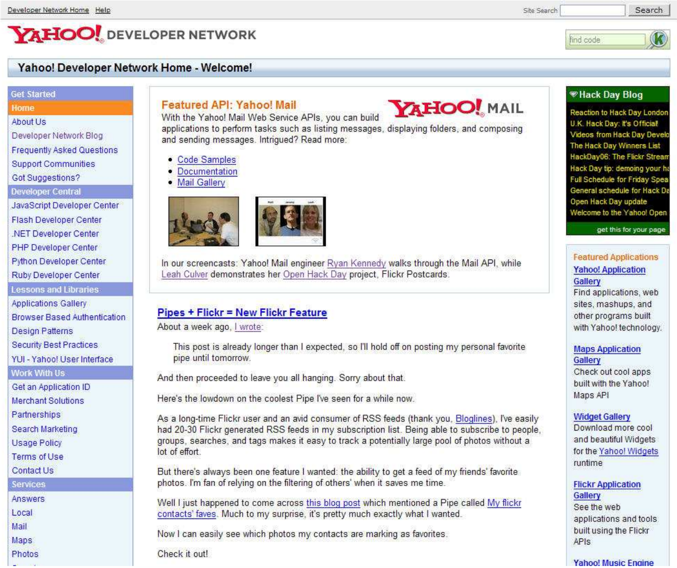


Mashups and Widgets

- Web sites become data sources, not simply destinations
  - – Flickr
  - – del.icio.us
  - – MyBlogLog
  - – YouTube
  - – Upcoming
  - – Maps
- MySpace spawns an industry

Destinations are often collections of widgets and/or aggregators.

Yahoo! Developer Network



Yahoo! Developer Network Home - Welcome!

Featured API: Yahoo! Mail

With the Yahoo! Mail Web Service APIs, you can build applications to perform tasks such as listing messages, displaying folders, and composing and sending messages. Intrigued? Read more:

- Code Samples
- Documentation
- Mail Gallery

In our screencasts: Yahoo! Mail engineer Ryan Kennedy walks through the Mail API, while Leah Culver demonstrates her Open Hack Day project, Flickr Postcards.

Pipes + Flickr = New Flickr Feature

About a week ago, I wrote:

> This post is already longer than I expected, so I'll hold off on posting my personal favorite pipe until tomorrow.

And then proceeded to leave you all hanging. Sorry about that.

Here's the lowdown on the coolest Pipe I've seen for a while now.

As a long-time Flickr user and an avid consumer of RSS feeds (thank you, Bloglines), I've easily had 20-30 Flickr generated RSS feeds in my subscription list. Being able to subscribe to people, groups, searches, and tags makes it easy to track a potentially large pool of photos without a lot of effort.

But there's always been one feature I wanted: the ability to get a feed of my friends' favorite photos. I'm fan of relying on the filtering of others' when it saves me time.

Well I just happened to come across this blog post which mentioned a Pipe called My flickr contacts' faves. Much to my surprise, it's pretty much exactly what I wanted.

Now I can easily see which photos my contacts are marking as favorites.

Check it out!

Featured Applications

Yahoo! Application Gallery
Find applications, web sites, mashups, and other programs built with Yahoo! technology.

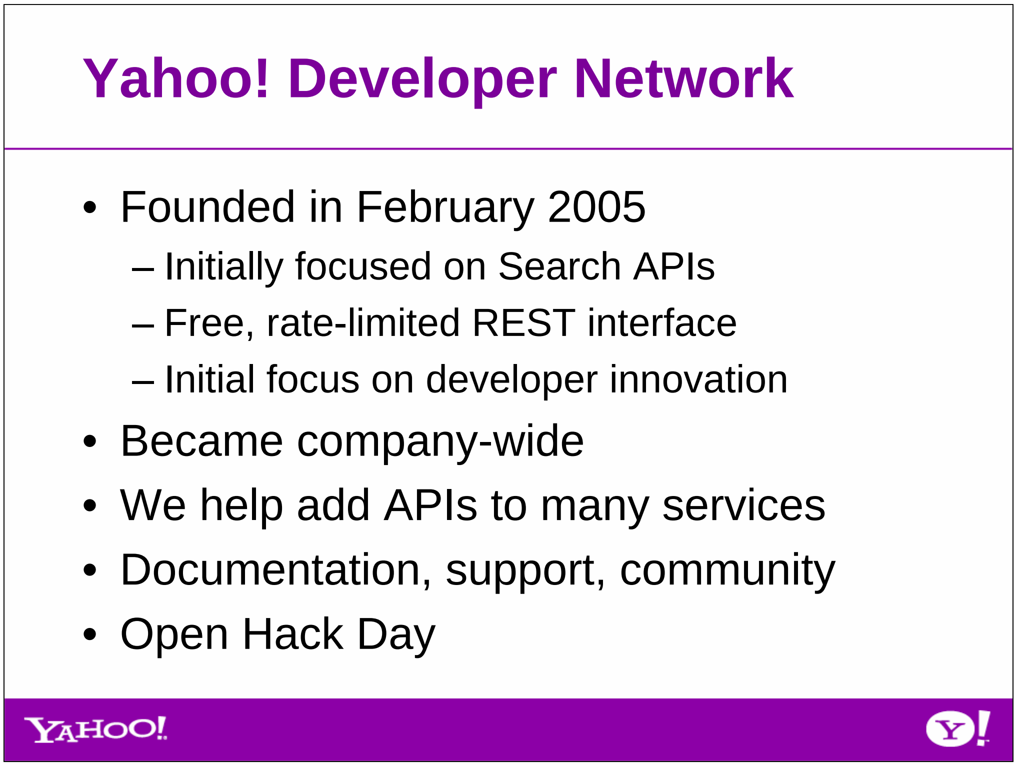
Maps Application Gallery
Check out cool apps built with the Yahoo! Maps API

Widget Gallery
Download more cool and beautiful Widgets for the Yahoo! Widgets runtime

Flickr Application Gallery
See the web applications and tools built using the Flickr APIs

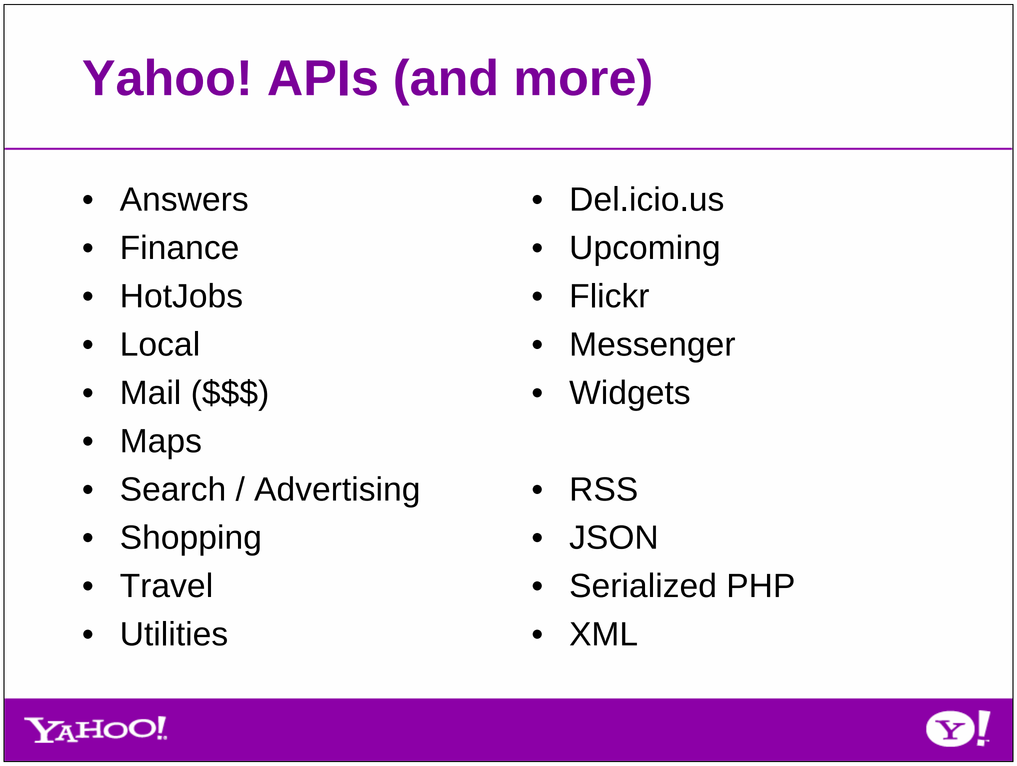
Yahoo! Music Engine

We’re at developer.yahoo.com (of course)



Yahoo! Developer Network

- Founded in February 2005
  - Initially focused on Search APIs
  - Free, rate-limited REST interface
  - Initial focus on developer innovation
- Became company-wide
- We help add APIs to many services
- Documentation, support, community
- Open Hack Day



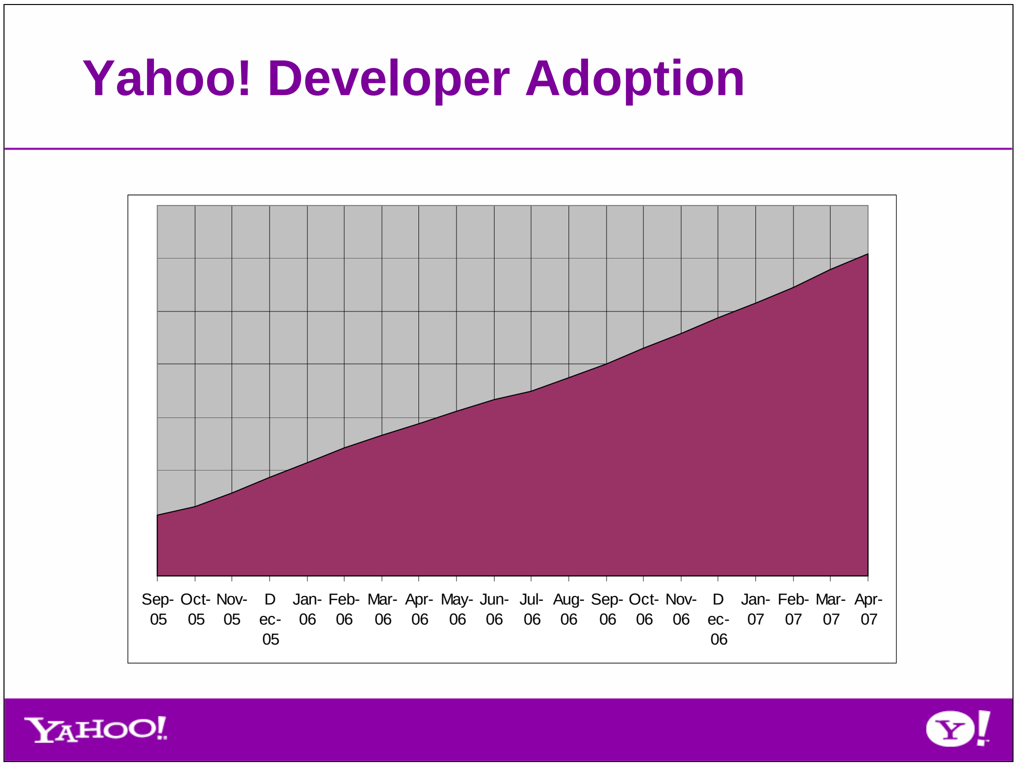
Yahoo! APIs (and more)

- Answers
- Finance
- HotJobs
- Local
- Mail ($$$)
- Maps
- Search / Advertising
- Shopping
- Travel
- Utilities

- Del.icio.us
- Upcoming
- Flickr
- Messenger
- Widgets

- RSS
- JSON
- Serialized PHP
- XML

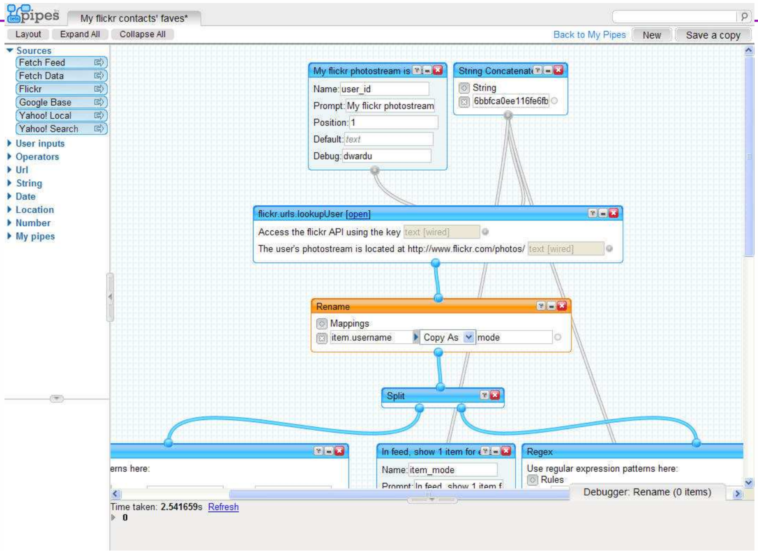
And advertising too!



Yahoo! Developer Adoption

Chart of issues AppIds based on month.

Example: Pipes & Flickr



My flickr photostream is

Name: user_id

Prompt: My flickr photostream

Position: 1

Default: text

Debug: dwardu

String Concatenate

String

6bbfca0ee116fe6fb

flickr.urls.lookupUser [open]

Access the flickr API using the key text [wired]

The user's photostream is located at http://www.flickr.com/photos/ text [wired]

Rename

Mappings

item.username Copy As mode

Split

erns here:

In feed, show 1 item for e

Name: item_mode

Prompt: In feed, show 1 item f

Regex

Use regular expression patterns here:

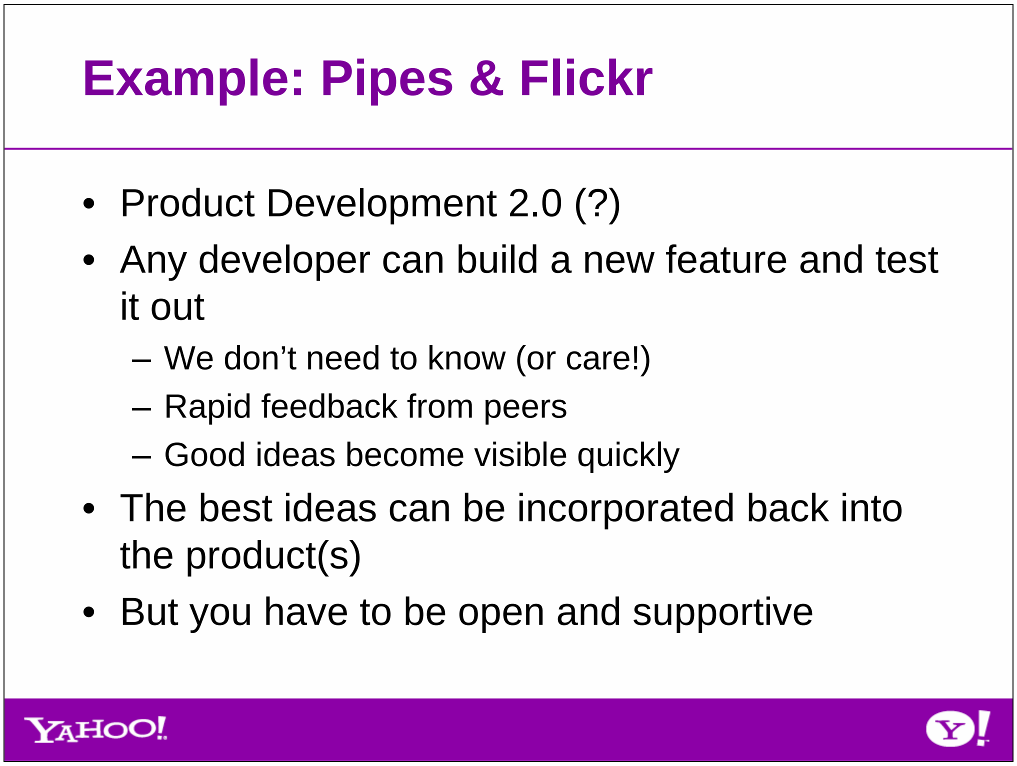
Rules

Debugger: Rename (0 items)

Time taken: 2.541659s Refresh

0

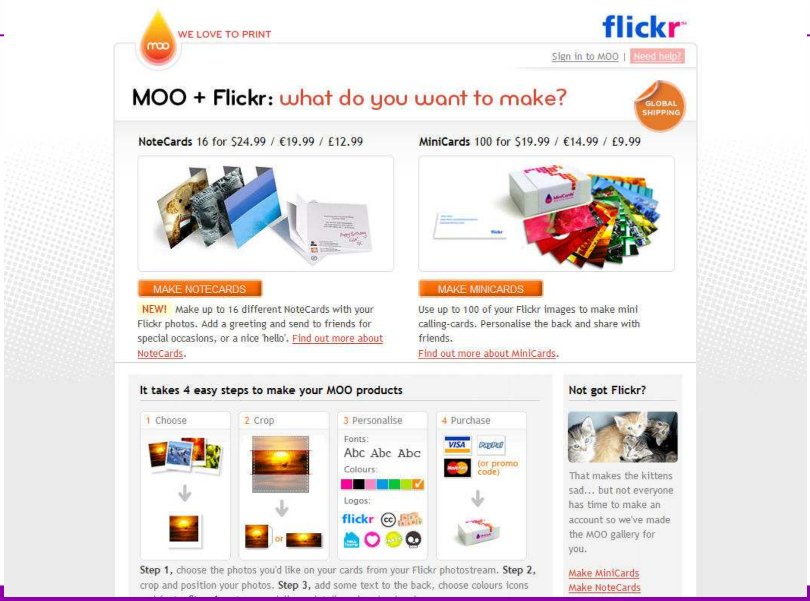
Don’t forget to describe Pipes first!



Example: Pipes & Flickr

- Product Development 2.0 (?)
- Any developer can build a new feature and test it out
  - We don’t need to know (or care!)
  - Rapid feedback from peers
  - Good ideas become visible quickly
- The best ideas can be incorporated back into the product(s)
- But you have to be open and supportive

Example: MOO & Flickr



MOO + Flickr: what do you want to make?

NoteCards 16 for $24.99 / €19.99 / £12.99

NEW! Make up to 16 different NoteCards with your Flickr photos. Add a greeting and send to friends for special occasions, or a nice 'hello'. Find out more about NoteCards.

MiniCards 100 for $19.99 / €14.99 / £9.99

Use up to 100 of your Flickr images to make mini calling-cards. Personalise the back and share with friends.

Find out more about MiniCards.

It takes 4 easy steps to make your MOO products

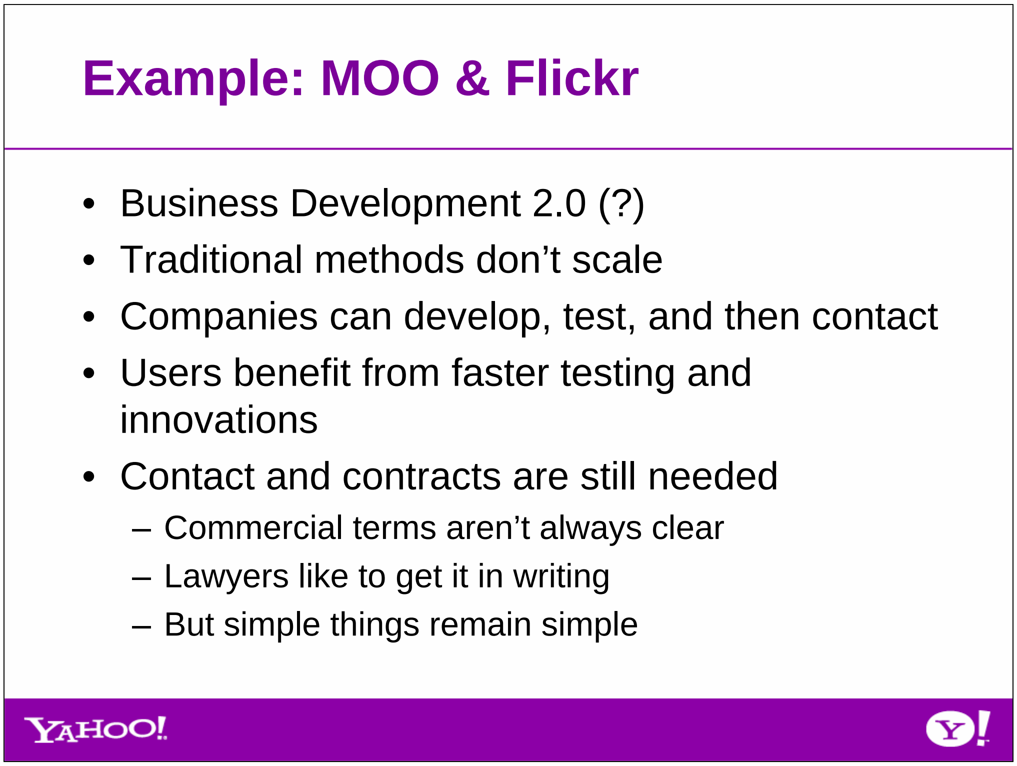
Step 1, choose the photos you'd like on your cards from your Flickr photostream. **Step 2,** crop and position your photos. **Step 3,** add some text to the back, choose colours icons

Not got Flickr?

That makes the kittens sad... but not everyone has time to make an account so we've made the MOO gallery for you.

Make MiniCards
Make NoteCards

Describe MOO too.

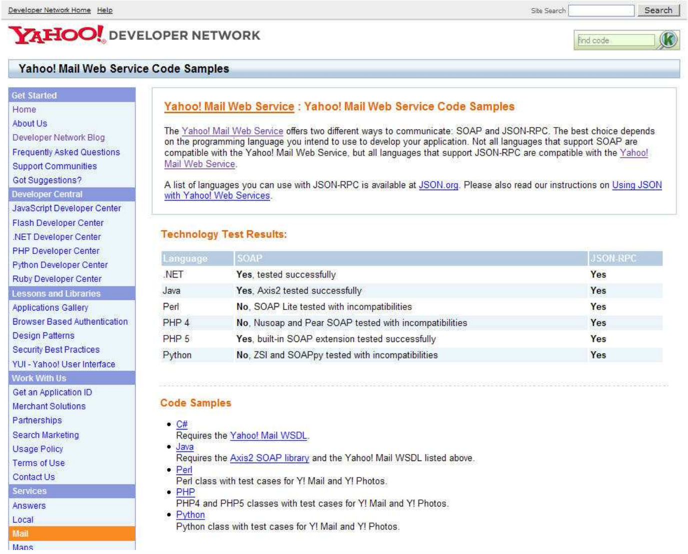


Example: MOO & Flickr

- Business Development 2.0 (?)
- Traditional methods don’t scale
- Companies can develop, test, and then contact
- Users benefit from faster testing and innovations
- Contact and contracts are still needed
  - Commercial terms aren’t always clear
  - Lawyers like to get it in writing
  - But simple things remain simple

Long Tail reference

Example: Yahoo! Mail



Yahoo! Mail Web Service Code Samples

Yahoo! Mail Web Service : Yahoo! Mail Web Service Code Samples

The Yahoo! Mail Web Service offers two different ways to communicate: SOAP and JSON-RPC. The best choice depends on the programming language you intend to use to develop your application. Not all languages that support SOAP are compatible with the Yahoo! Mail Web Service, but all languages that support JSON-RPC are compatible with the Yahoo! Mail Web Service.

A list of languages you can use with JSON-RPC is available at JSON.org. Please also read our instructions on Using JSON with Yahoo! Web Services.

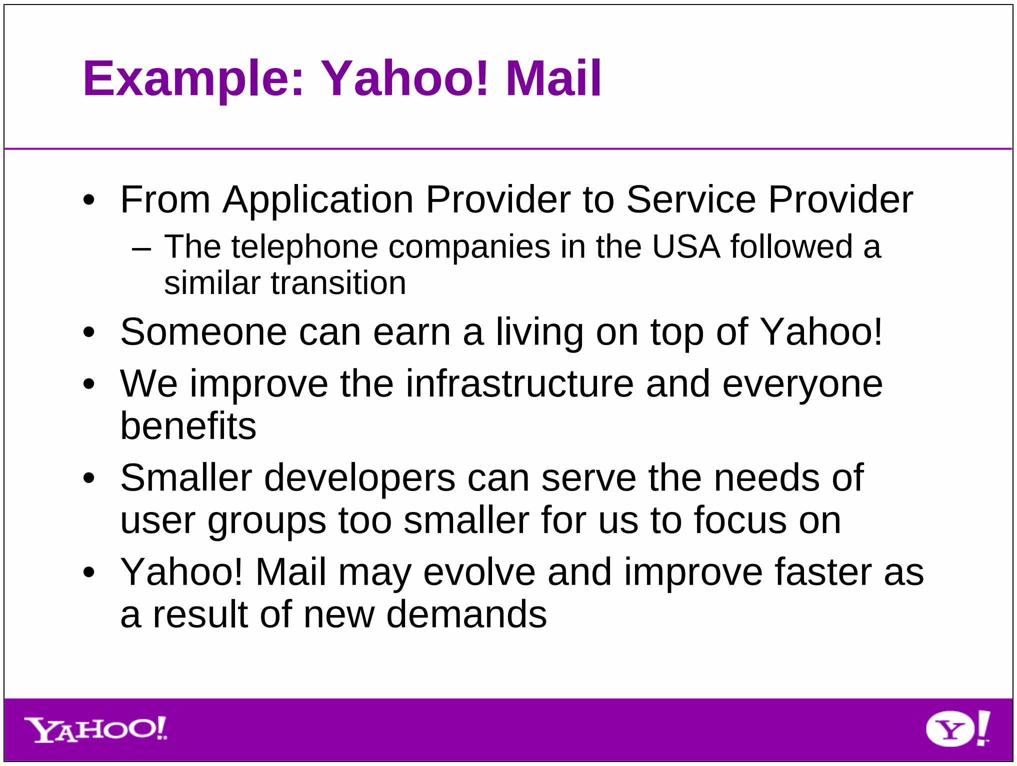
Technology Test Results:

Language	SOAP	JSON-RPC
.NET	**Yes**, tested successfully	**Yes**
Java	**Yes**, Axis2 tested successfully	**Yes**
Perl	**No**, SOAP Lite tested with incompatibilities	**Yes**
PHP 4	**No**, Nusoap and Pear SOAP tested with incompatibilities	**Yes**
PHP 5	**Yes**, built-in SOAP extension tested successfully	**Yes**
Python	**No**, ZSI and SOAPpy tested with incompatibilities	**Yes**

Code Samples

- C#
  Requires the Yahoo! Mail WSDL.
- Java
  Requires the Axis2 SOAP library and the Yahoo! Mail WSDL listed above.
- Perl
  Perl class with test cases for Y! Mail and Y! Photos.
- PHP
  PHP4 and PHP5 classes with test cases for Y! Mail and Y! Photos.
- Python
  Python class with test cases for Y! Mail and Y! Photos.

One of the most popular web mail services in the world. The whole world. Hundreds of millions of users.

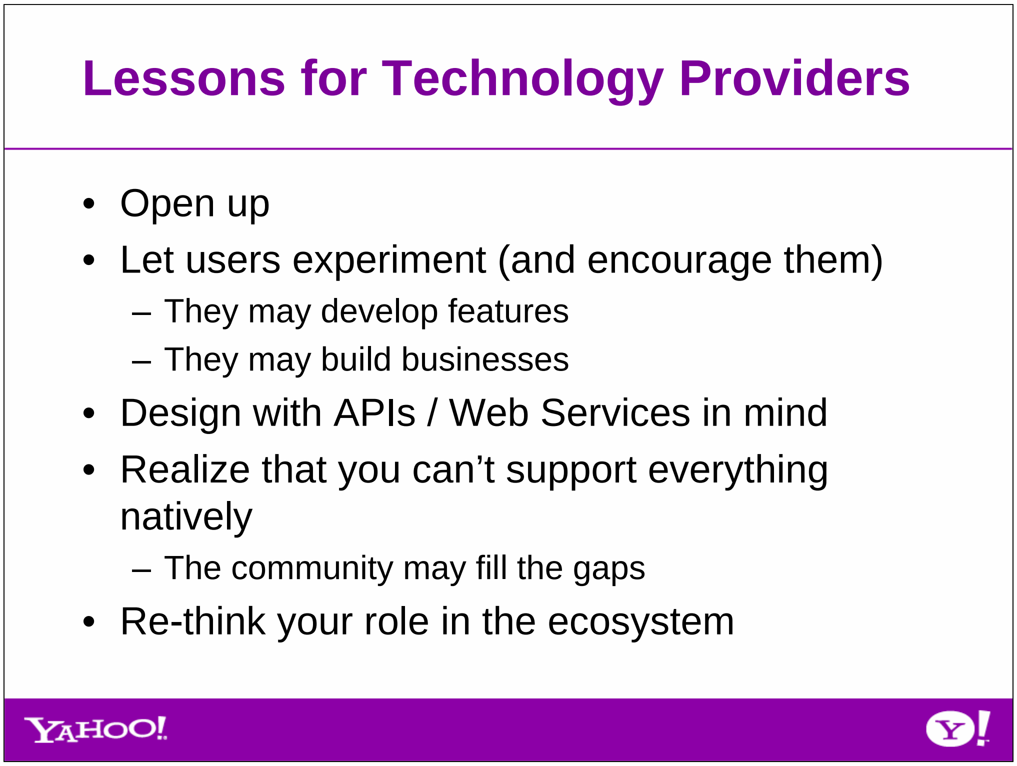


Example: Yahoo! Mail

- From Application Provider to Service Provider
  - The telephone companies in the USA followed a similar transition
- Someone can earn a living on top of Yahoo!
- We improve the infrastructure and everyone benefits
- Smaller developers can serve the needs of user groups too smaller for us to focus on
- Yahoo! Mail may evolve and improve faster as a result of new demands

Long Tail reference

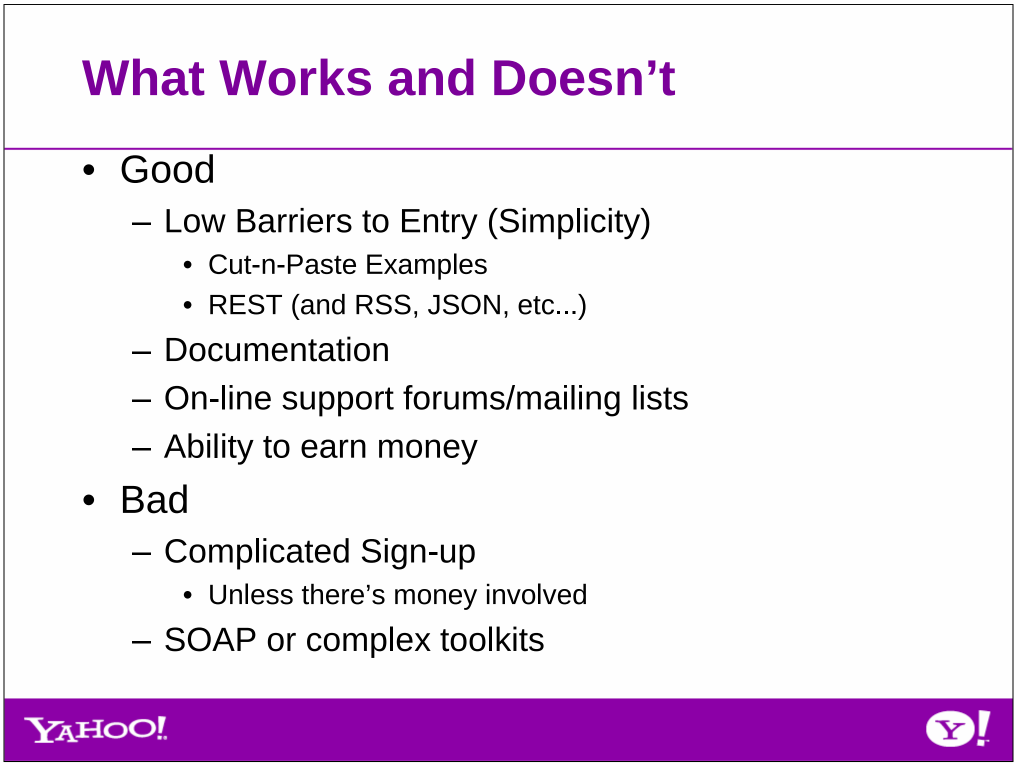
You can buy a phone from anyone know. The RJ-11 jack is the API.



Lessons for Technology Providers

- Open up
- Let users experiment (and encourage them)
  - They may develop features
  - They may build businesses
- Design with APIs / Web Services in mind
- Realize that you can't support everything natively
  - The community may fill the gaps
- Re-think your role in the ecosystem

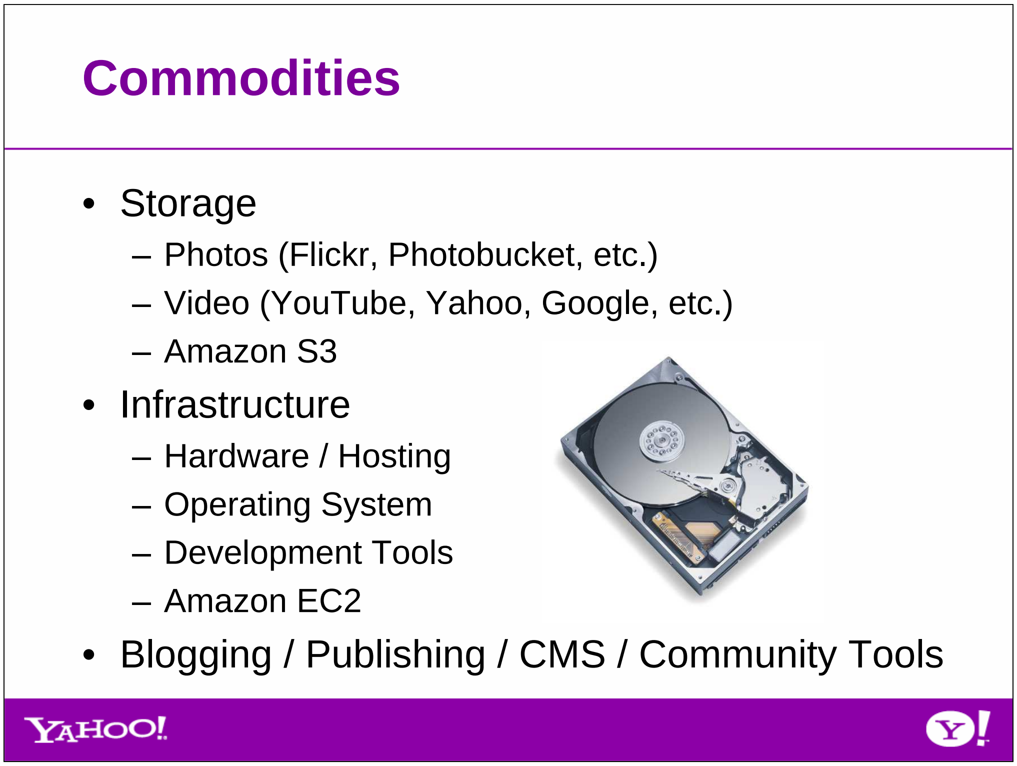
Retrofit is HARD work: tech, biz, product all need help.



What Works and Doesn't

- Good
  - – Low Barriers to Entry (Simplicity)
    - Cut-n-Paste Examples
    - REST (and RSS, JSON, etc...)
  - – Documentation
  - – On-line support forums/mailing lists
  - – Ability to earn money
- Bad
  - – Complicated Sign-up
    - Unless there's money involved
  - – SOAP or complex toolkits

FREE is good.

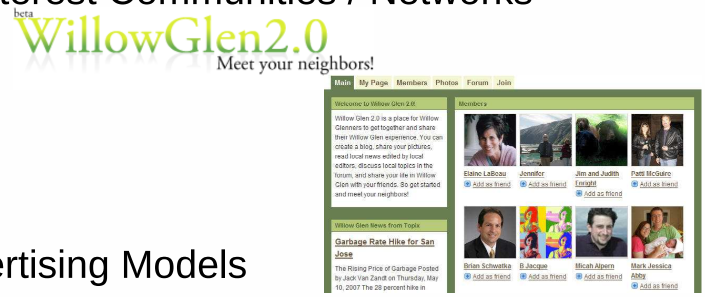


Commodities

- Storage
  - Photos (Flickr, Photobucket, etc.)
  - Video (YouTube, Yahoo, Google, etc.)
  - Amazon S3
- Infrastructure
  - Hardware / Hosting
  - Operating System
  - Development Tools
  - Amazon EC2
- Blogging / Publishing / CMS / Community Tools

Opportunities

- Special Interest Communities / Networks
  - Local
  - School
  - Clubs
  - Hobbies
  - Political
- New Advertising Models
- Federated Identity & Authentication
- Trust and Reputation
- Recommendations and Filtering
- Affiliate Marketing



Welcome to Willow Glen 2.0!

Willow Glen 2.0 is a place for Willow Glenners to get together and share their Willow Glen experience. You can create a blog, share your pictures, read local news edited by local editors, discuss local topics in the forum, and share your life in Willow Glen with your friends. So get started and meet your neighbors!

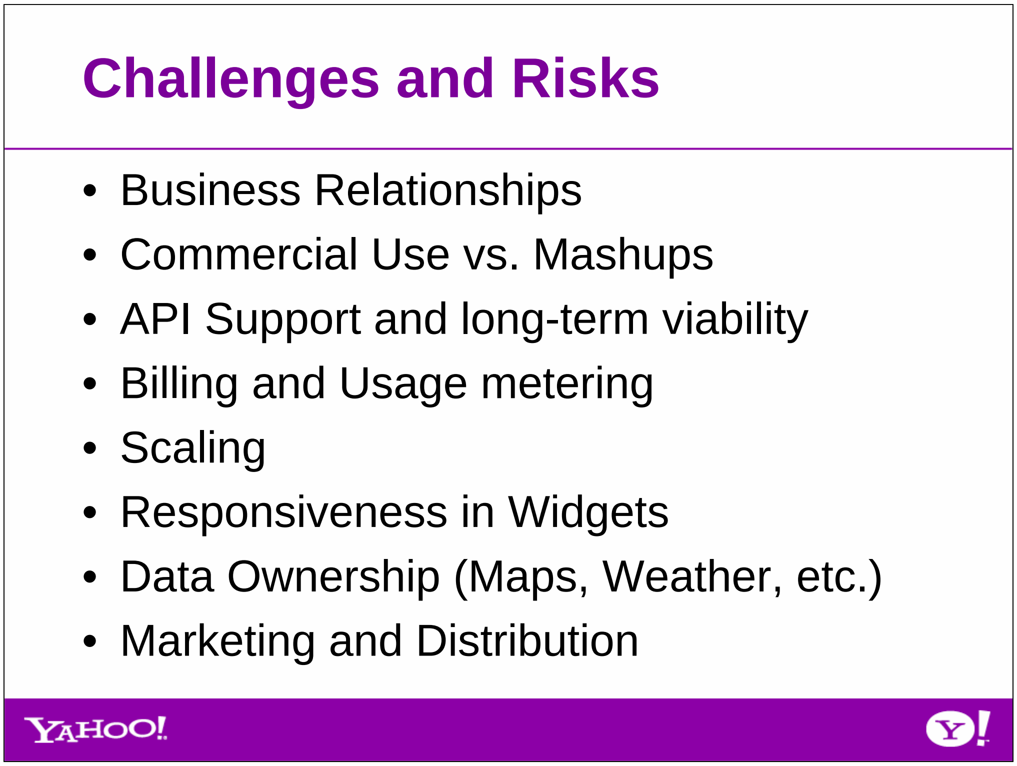
Willow Glen News from Topix

Garbage Rate Hike for San Jose

The Rising Price of Garbage Posted by Jack Van Zandt on Thursday, May 10, 2007 The 28 percent hike in

YAHOO!

Also: mobilizing services…



Challenges and Risks

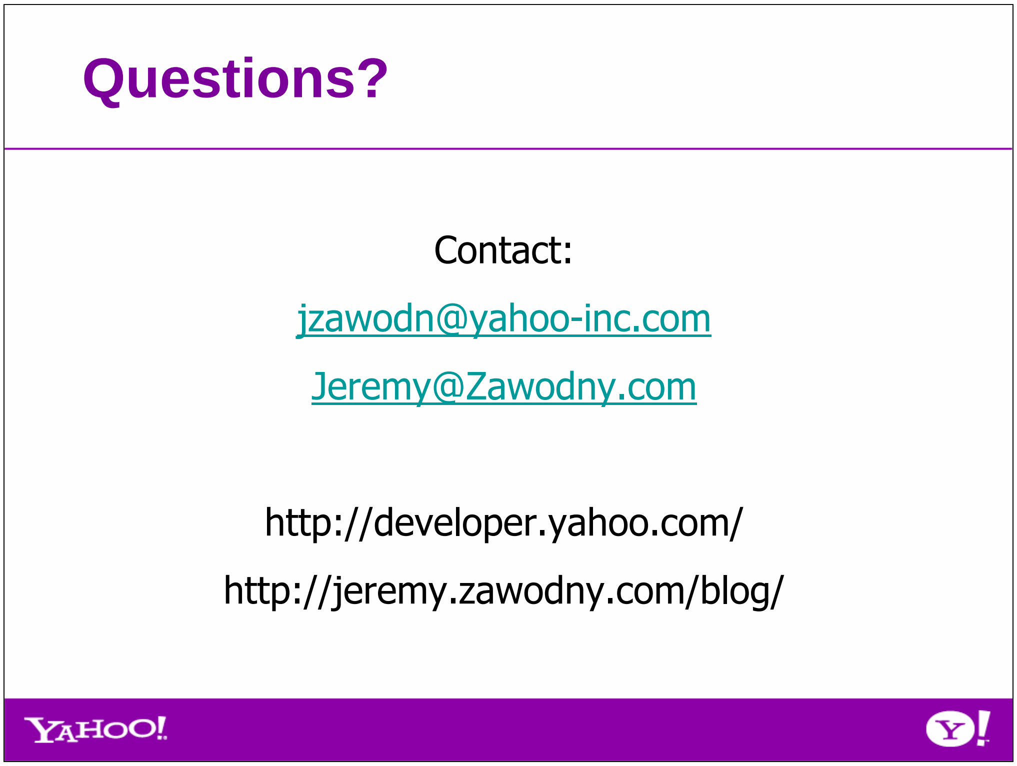
- Business Relationships
- Commercial Use vs. Mashups
- API Support and long-term viability
- Billing and Usage metering
- Scaling
- Responsiveness in Widgets
- Data Ownership (Maps, Weather, etc.)
- Marketing and Distribution

Microsoft is making headway on clarifiying what’s commercial.

Rate limiting / billing / usage matter because you might suddenly become popular.

Amazon EC2 and S3 help with scaling to some degree for some apps.

Viral marketing often doesn’t work.



Questions?

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