Google™
09
I/O

Beyond Cut & Paste: Deep Integrations with Google Friend Connect

Arne Roomann-Kurrik & Chris Schalk
5/27/2009

Post your questions for this talk on Google Moderator:
http://code.google.com/events/io/questions
Direct link:
http://bit.ly/beyondcutpaste-questions

Who We Are

- **Chris Schalk**
  - Developer Advocate, Google
  - Speaks about the benefits of Google Friend Connect around the world
  - Author of *Plane Crazy*
- **Arne Roomann-Kurrik**
  - Developer Programs, Google
  - Writes samples and documentation for developers
  - Author of *The Chow Down*

Who You Are

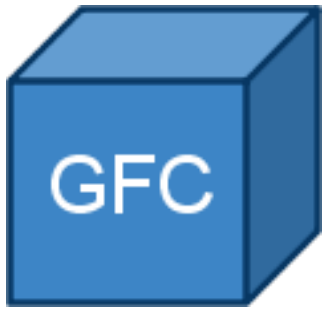
- Web developer
- Experienced working with server-side technology
  - Java, PHP, Ruby, Python
  - SQL, Object Data Store
- Probably have an existing website
  - Users visit your site for a specific theme or activity
  - Existing database of registered accounts
- Heard about Google Friend Connect
  - Don't need a quick integration
  - Have additional questions

You Might Be Interested In How Google Friend Connect...

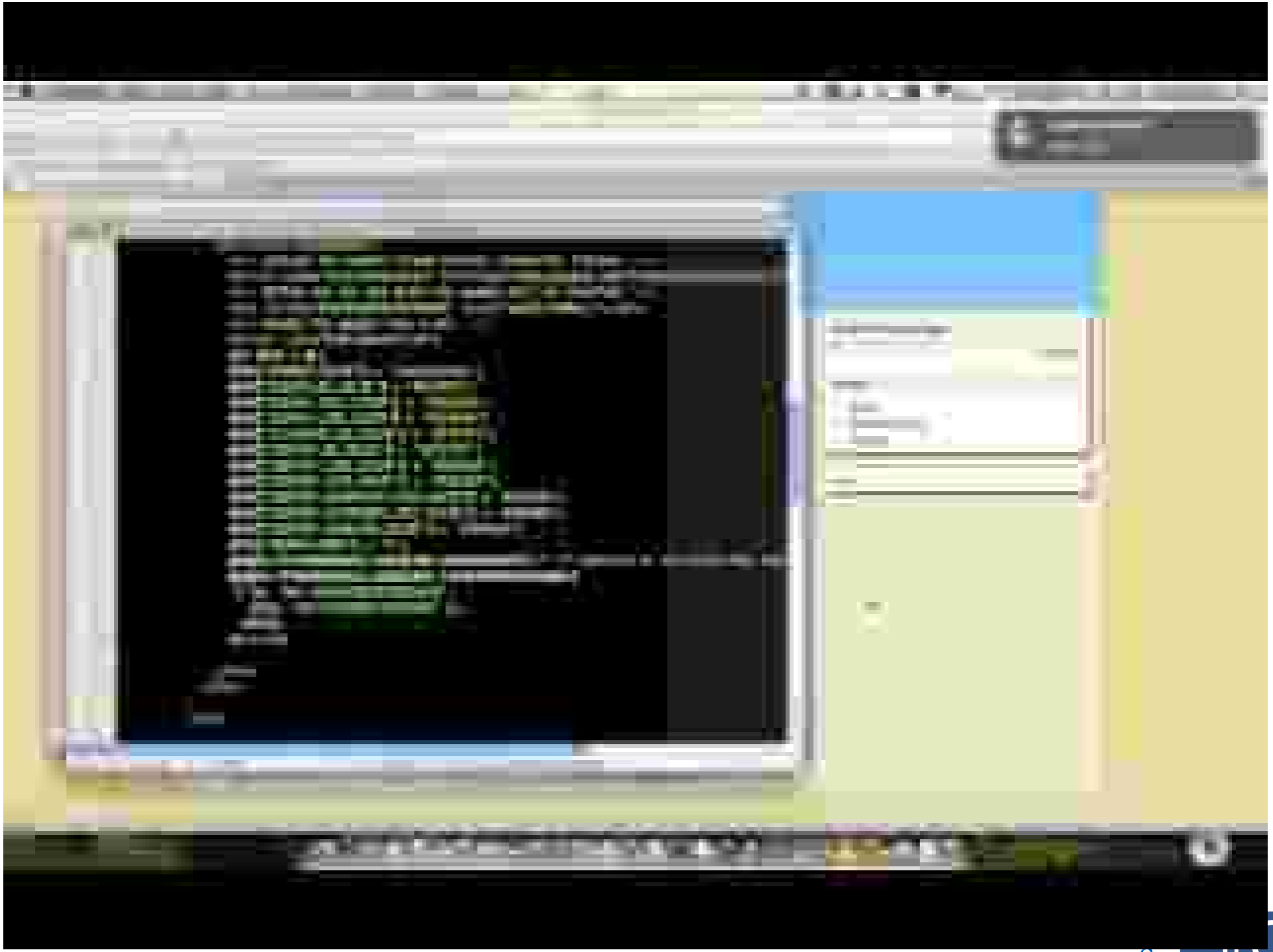
- Can let you accept sign-ins from several social networks *plus* OpenID
- Can deliver a richer social experience for all of your users
- Enables your users to send invites and notifications to their friends, increasing your site's exposure and growth

And We're Here To Answer Your Questions!

- Google Friend Connect (**GFC**):
  - Is a "meta" social network
  - Reads/Writes to OpenSocial social networks
  - Reads from Portable Contacts sites
  - Exposes its own OpenSocial developer APIs
    - JavaScript gadgets
    - RESTful server-to-server calls
  - Has no icon:



Demo: "Cut & Paste" Google Friend Conect

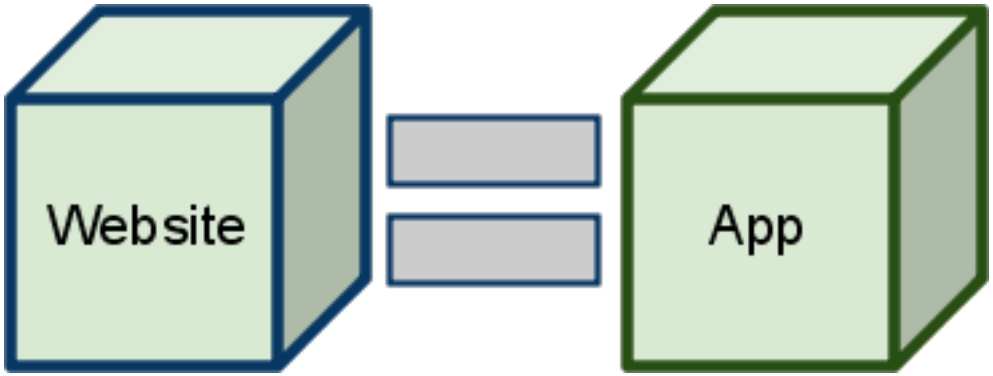


http://www.youtube.com/watch?v=ty5Q6XF1424

Photo by crowt59 http://www.flickr.com/photos/crowt59/1444807366/

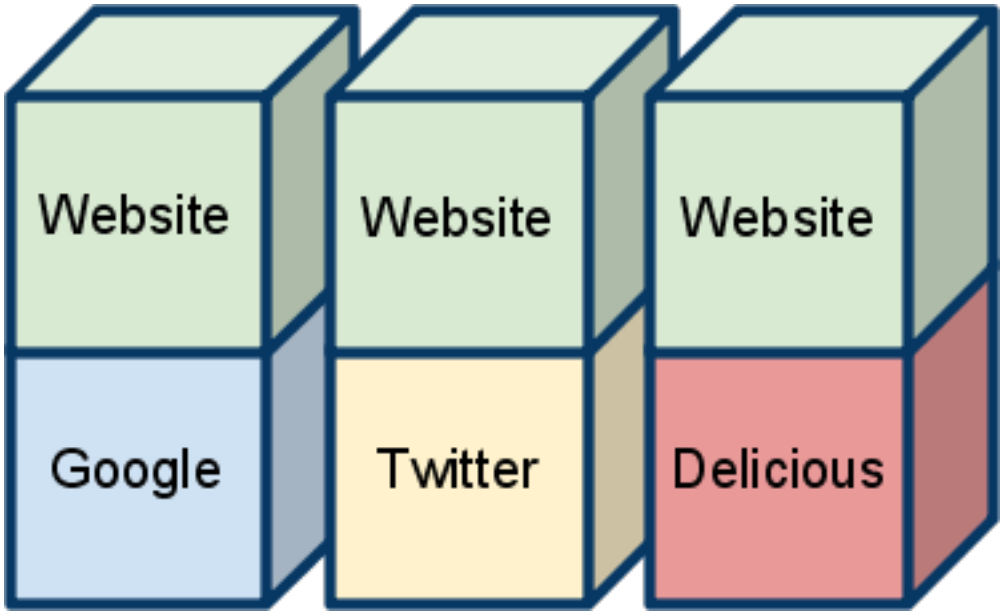
You're Probably A Social Developer Already

- A website is a social app!
  - Use social signals in your content
  - Highlight user generated content on your site
  - Pull data from web services
  - Post notices to social websites



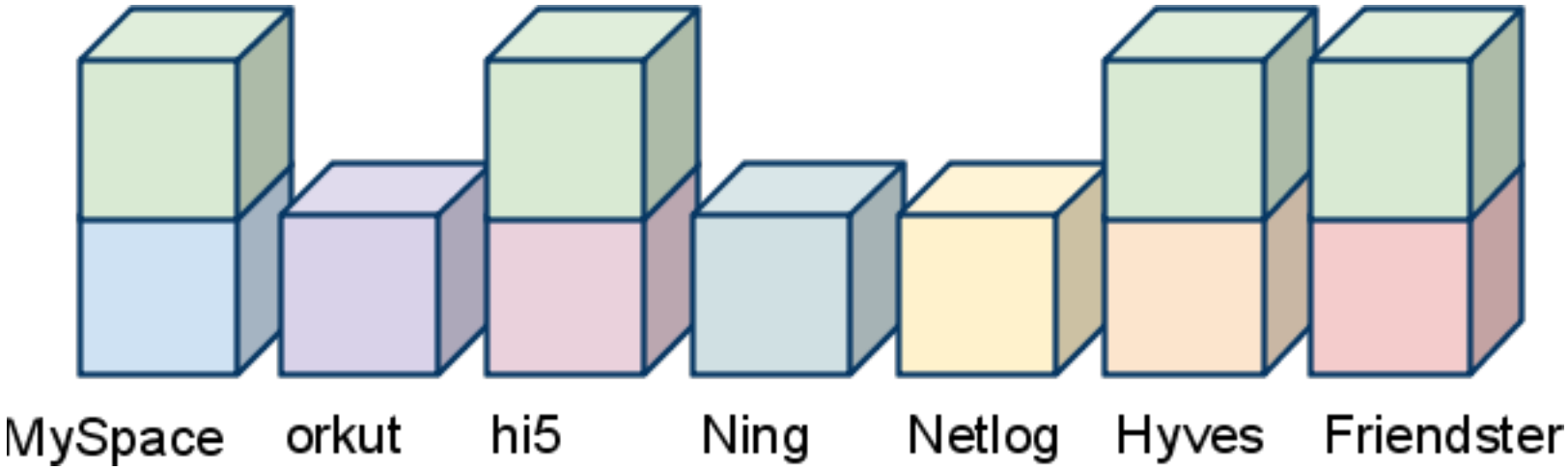
Every Site Has Its Platform(s)

- These interactions are driven by APIs
- These APIs are the platforms for your site
- Users can come from any integration point
  - You must be fundamentally cross platform
    - More than mobile
    - More than desktop



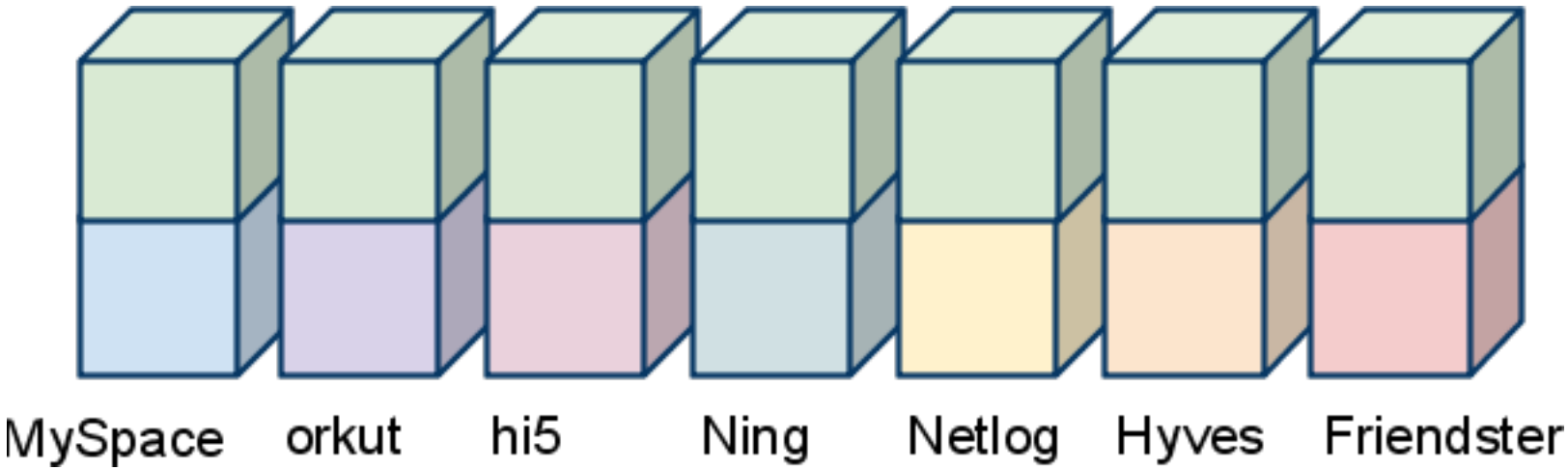
The Web Is Like A Series Of Platforms

- OpenSocial created a standard for writing social apps
  - Access users from several social networks
  - Adoption is fast!



Too Many Platforms?

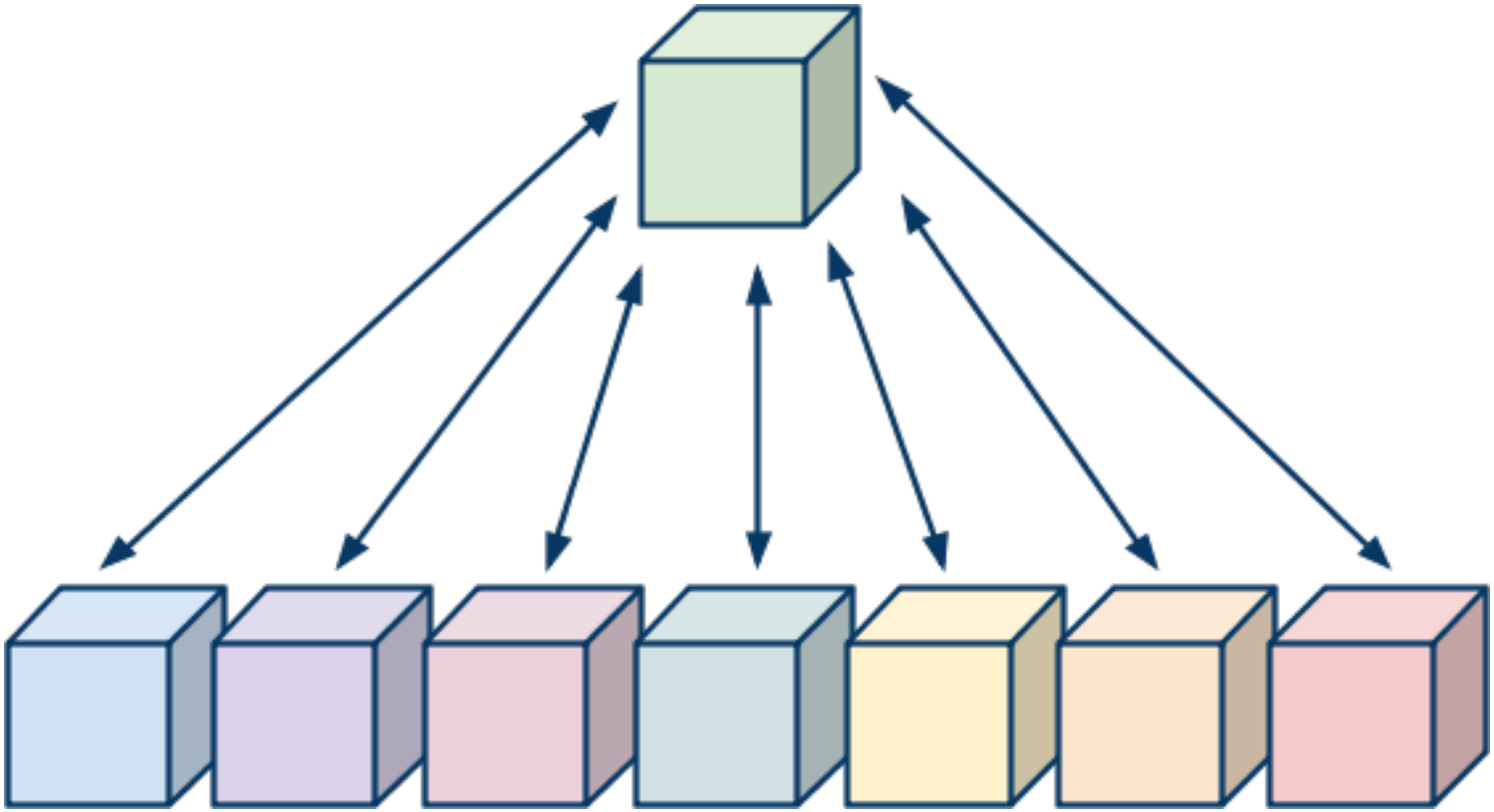
- Fixed costs can be prohibitive:
  - Deployment
  - Cross platform coding
  - Per - platform support
- Traditional cross-platform models stop working



- Don't think "which containers do I run on"!

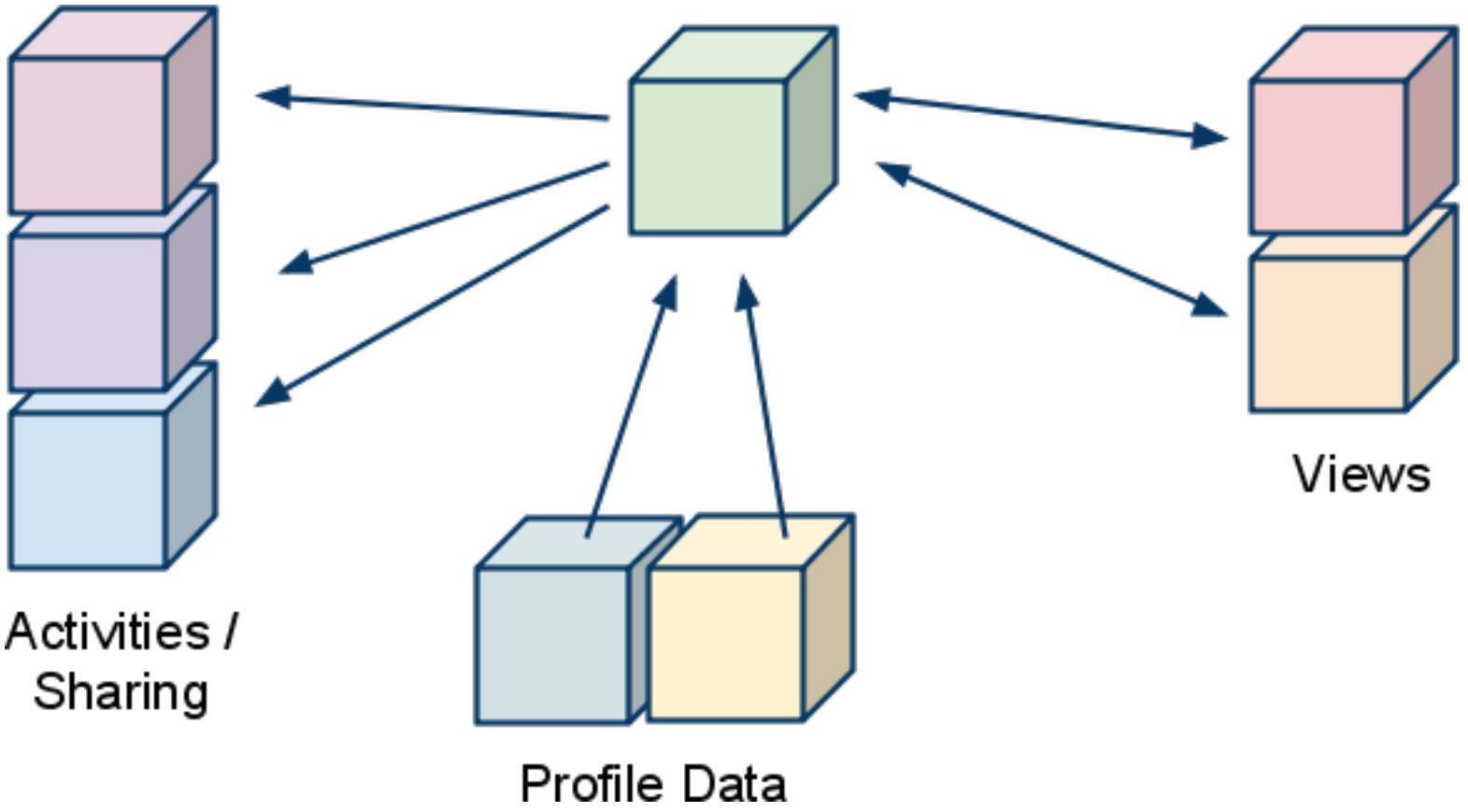
The New Model For Social

- Better to think, "who do I talk to"?...



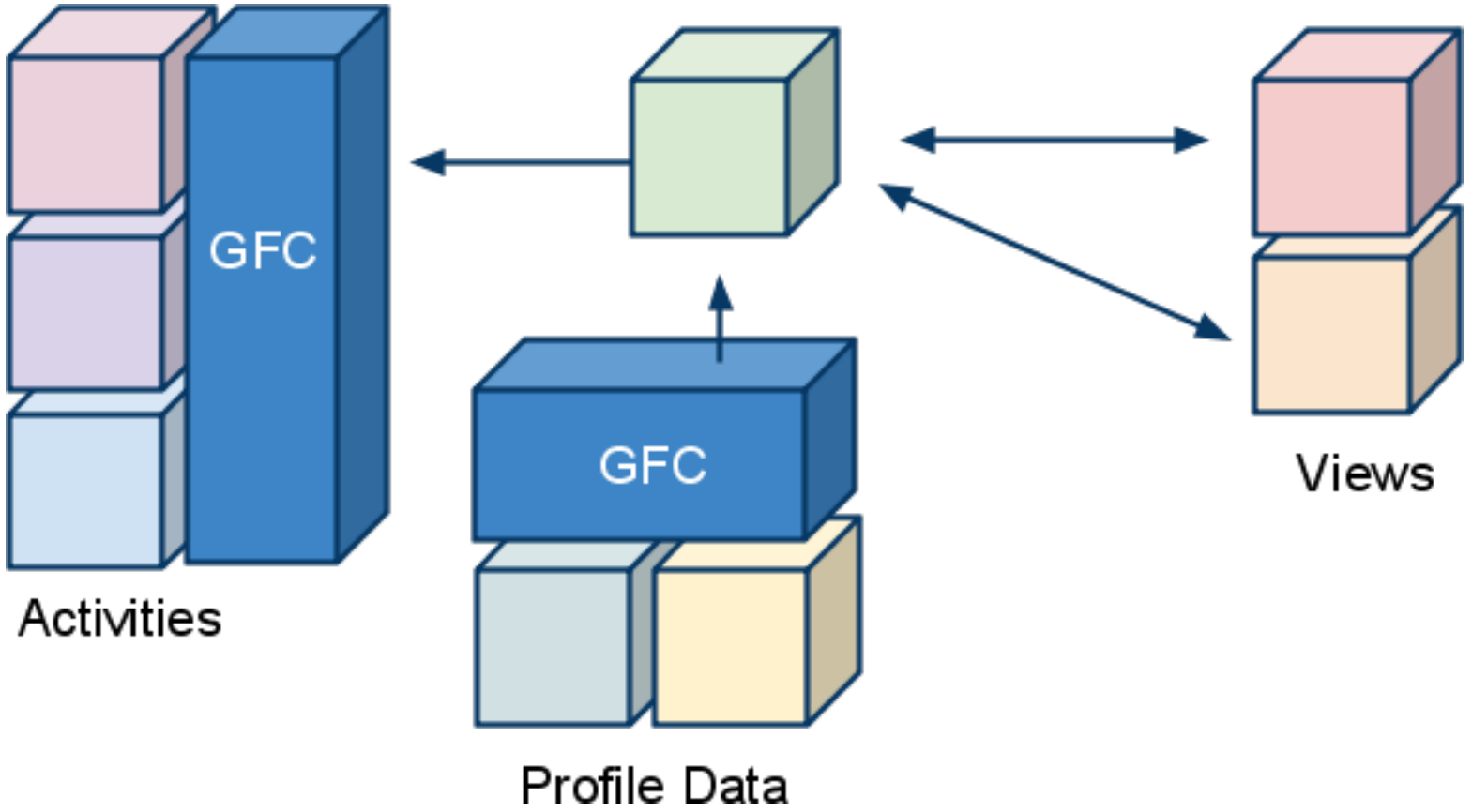
Defining Types Of API Interactions

- ... and how do I talk to them?



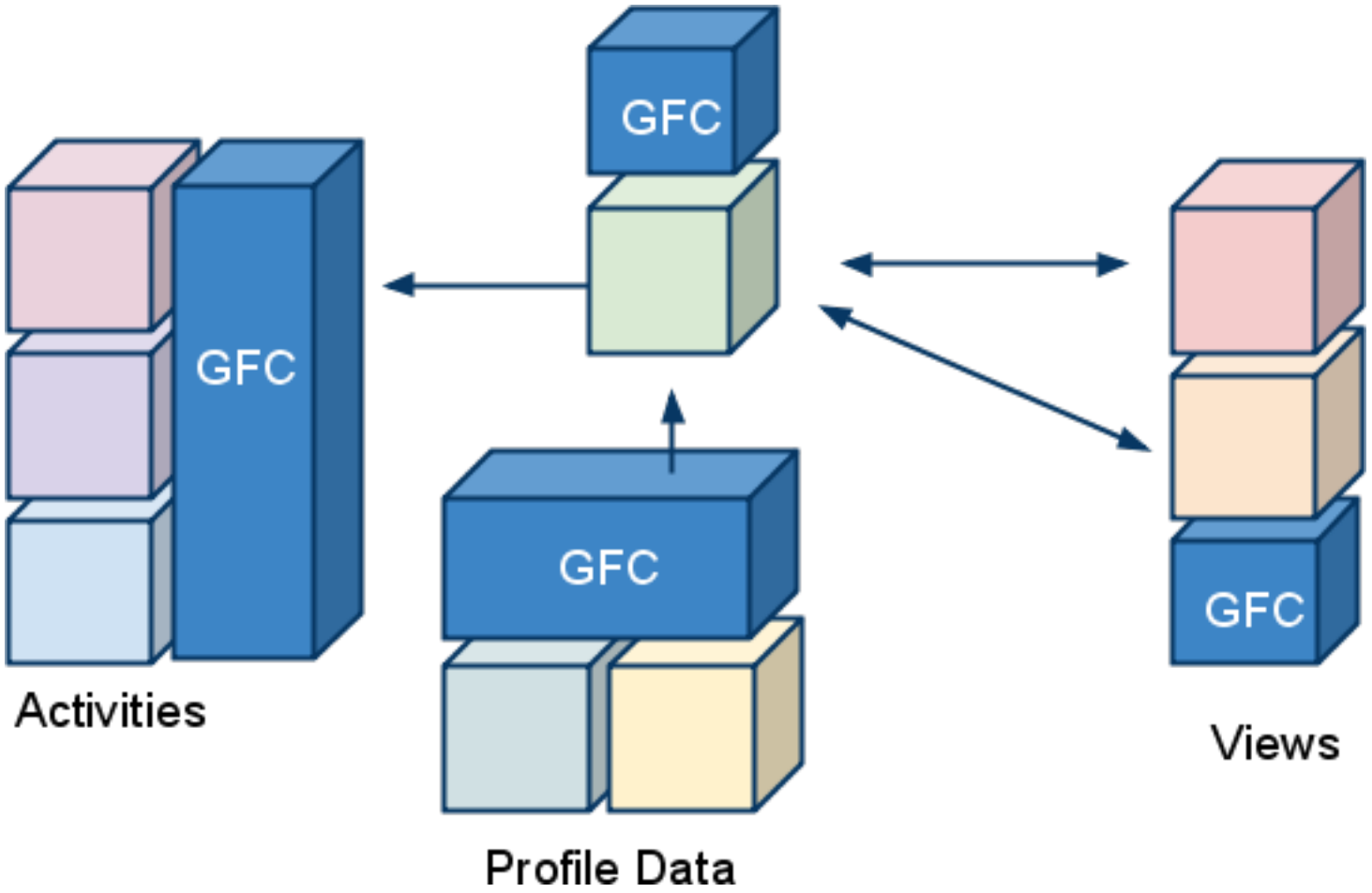
GFC Simplifies Your Development

- GFC lets you talk to one set of APIs to do common tasks...

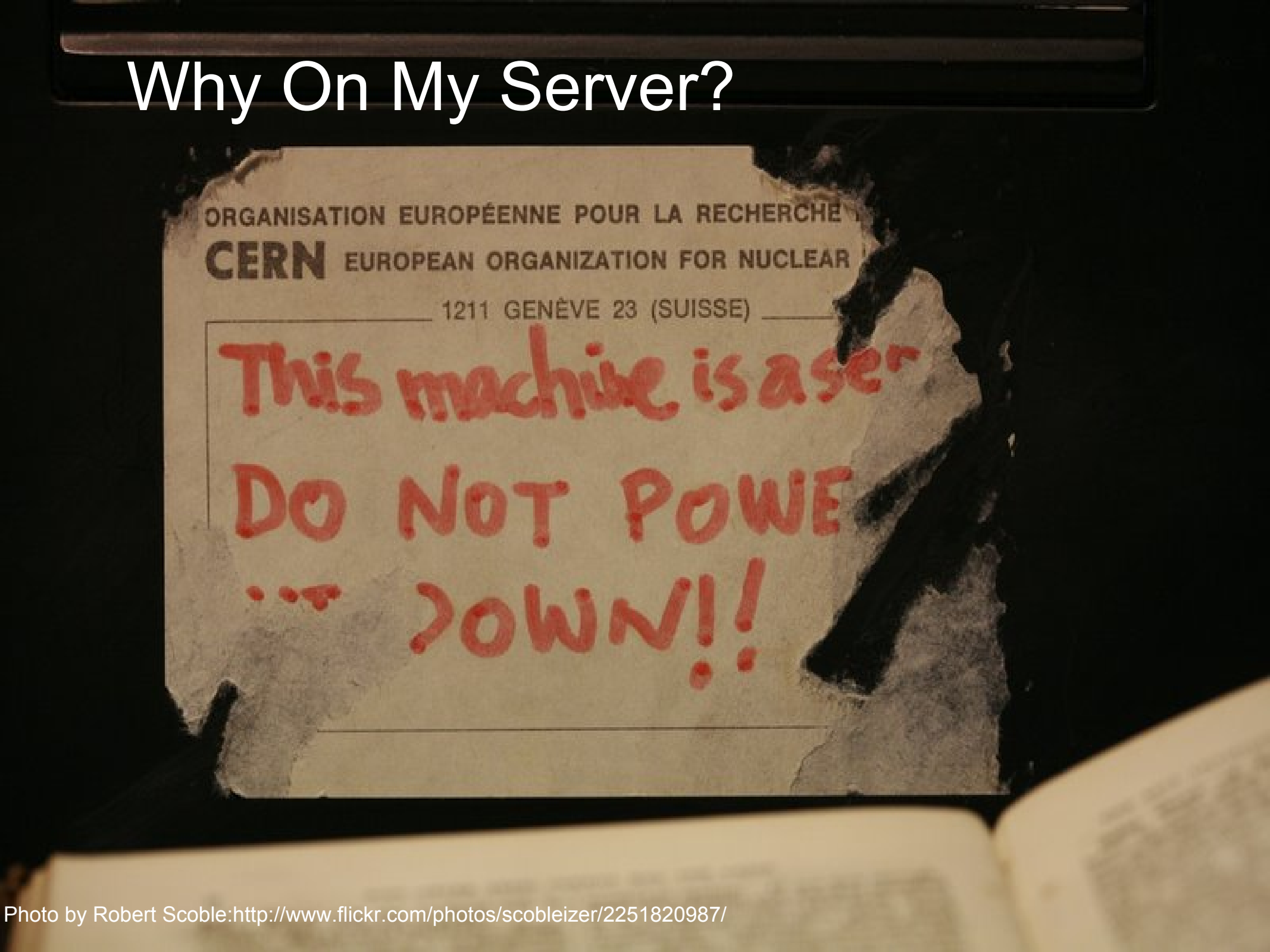


GFC Adds Value To Existing Infrastructure

- ...and gives you some nice bonuses.



Why On My Server?



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A Deeply Integrated Website:

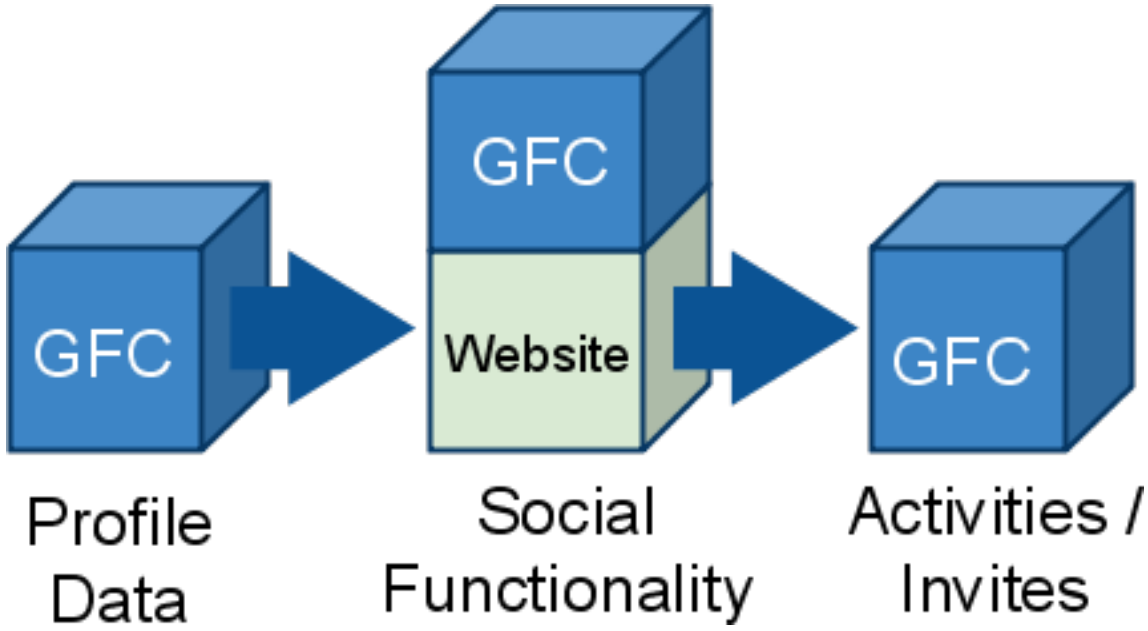
- Allows Google Friend Connect users to log in for the first time as if they were already registered on the site

- Uses social signals to highlight appropriate content
- Uses content to make new social connections

- Encourages users to share their experiences with the rest of the web

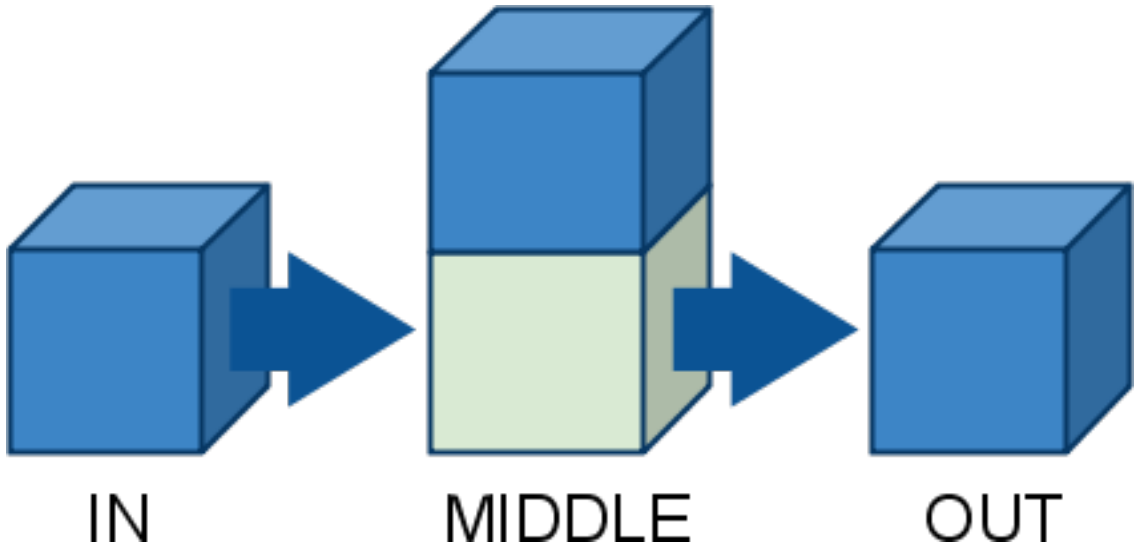
What Does GFC Give My Website?

- GFC is a wrapper between dozens of sites and your own.
- Integrations can be categorized in three ways:



A Simplified Model

- **IN**
  - who can access your site without registering?
- **MIDDLE**
  - what can a user do with their friends?
- **OUT**
  - where can users share their actions with the web?



The INs

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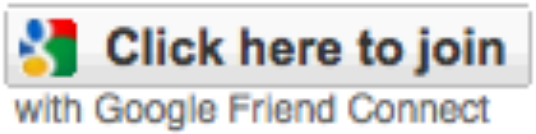
Identity Matters

- **Goal: Allow a Google Friend Connect user to log into your site as if they were a registered user.**

- Steps:
  - Signing In
  - Obtaining Data
  - Storing Data

Signing In

- To allow users to sign in, simply render a button:



- With a simple bit of JavaScript:

```
google.friendconnect.renderSignInButton({
  'id': 'target-id',
  'text' : 'Click here to join ',
  'style': 'standard' });
```

Demo: Creating a sign-in UI for a site with an existing registration system

Public REST Requests

- Much of a site's data is public
- Fetch site info:

```
http://www.google.com/friendconnect/api
  /people/@owner/@self?format=xml&id=<site id>
```

- Fetch site members: `@owner/@friends`
- Fetch a person's public profile: `<user id>/@self`

- Play with it! http://bit.ly/chowdownkurrik

Acting As A Website

- Sites are issued a **Consumer Key** and **Consumer Secret**
- Using these, your site may authorize **itself** to GFC with **two-legged** OAuth

- Sites may:
  - Read + write App Data for any of their users
  - Request activities to be posted for any of their users

- Good for background processing!

"Finding Yourself"

- Fetching the current user when you don't know their ID:

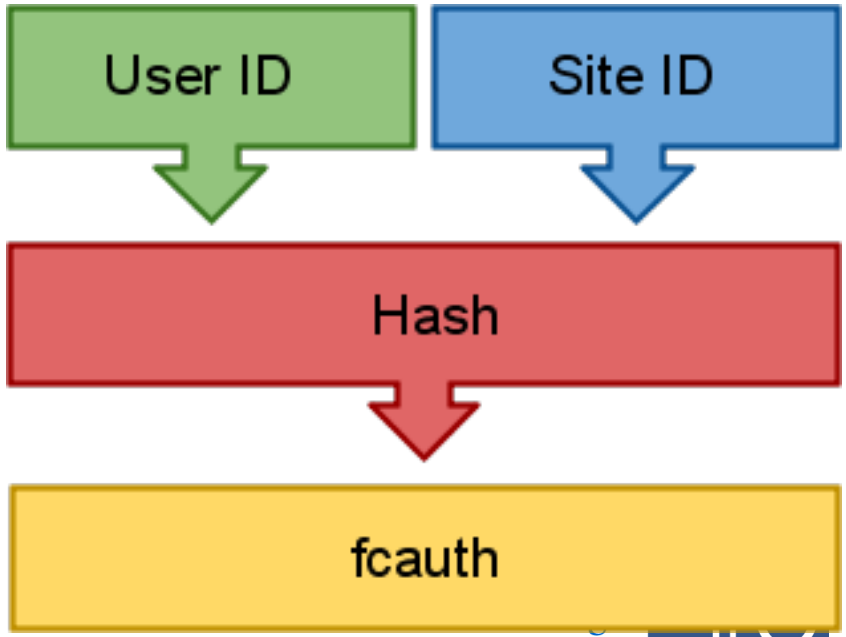
`/api/people/@me/@self`

- Can't just type that into a browser and expect data back!
  - Still need a user context
  - Expressed through **`fcauth`** tokens

- Logged in users send cookies named:

`fcauth09788020278569175613`

  - The number is your site ID
  - The value is the token



Acting As A User

- Now urls which require a context:

```
/api/people/@me/@self
```

- Get on by appending the **`fcauth`** value:

```
/api/people/@me/@self?fcauth=XXXXXXXXXXX
```

- Your site can:
  - Read and write App Data for the current user
  - Request activities to be posted for the current user*

- Does not need OAuth!
- Supported by most OpenSocial Client Libraries http://bit.ly/opensocialclientlibraries

Demo: Obtaining the fcauth token and making social requests

Gotta Put That Data Somewhere!

- What kind of data will your site deal with?
- How can you structure your data store to handle this data?

Locally Registered Users

- Lives in your data store
- Site-specific profile fields
  - "What's my favorite airplane"
- Probably no friend data

Google Friend Connect Users

- Lives in the cloud
- Uses a common set of profile fields:
  - Thumbnail URL
  - Profile URL
  - "About Me"
  - Custom URLs
- Brings their friends with them

"Offline" Google Friend Connect Users

- GFC users live in the cloud
- Profiles, images, URLs can all change between sessions
- The only static data is the **user ID**

Data Representations

- Your data model must cope with multiple user providers
- Simple way:
  - Add a column to your existing users table:

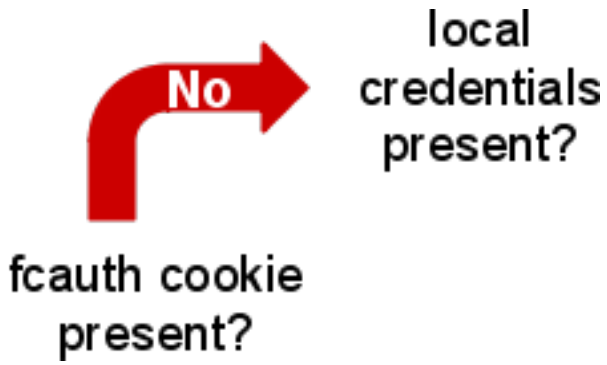
ID	GFC ID	User Name	Favorite Airplane	...
1	15243	arne	Cessna 152	...
2	90832	*Null*	Piper Warrior	...
3	*Null*	chris	Cessna 172	...
...	...	...	...	...

Demo: Storing site data keyed to a GFC user. Building "My Favorite Airplane".

Who Is Logging In?

fcauth cookie present?

Who Is Logging In?



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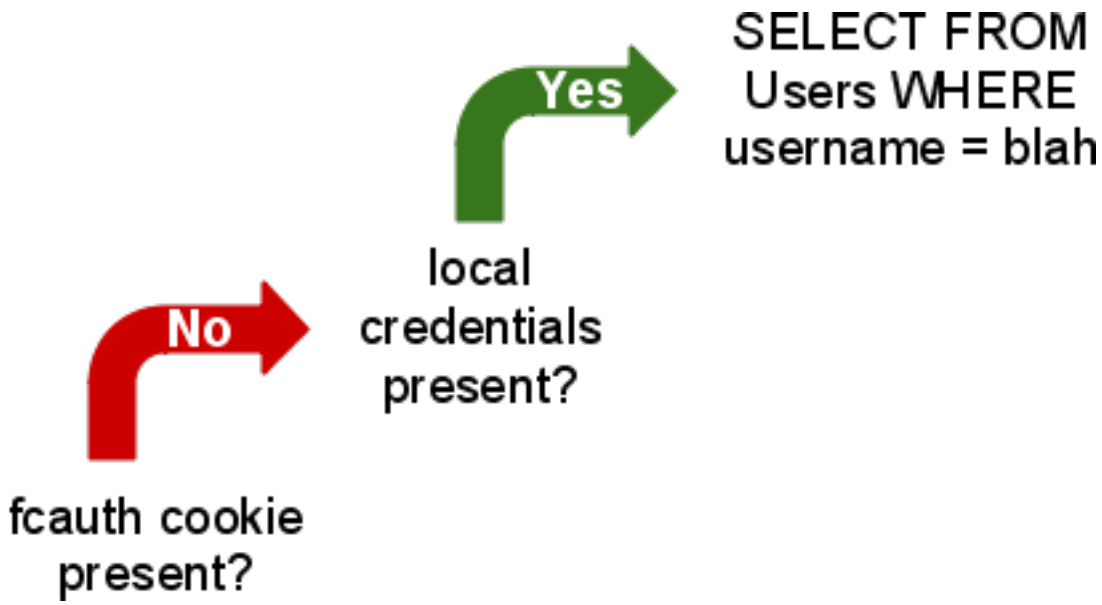

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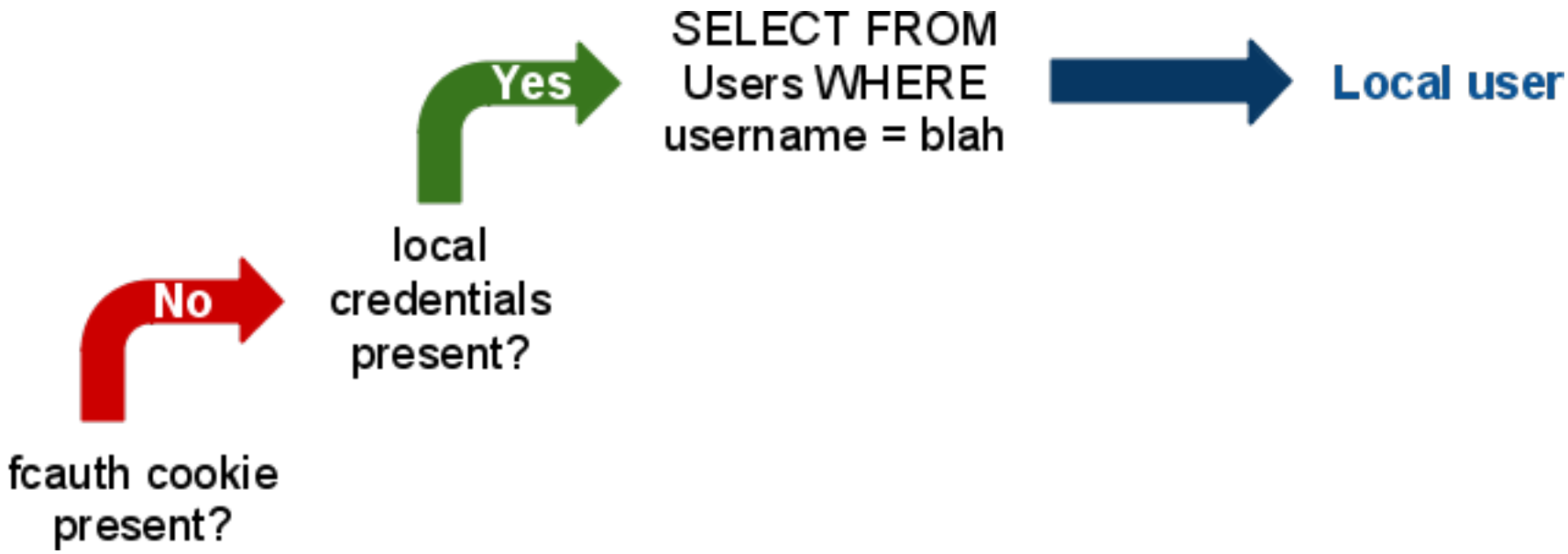

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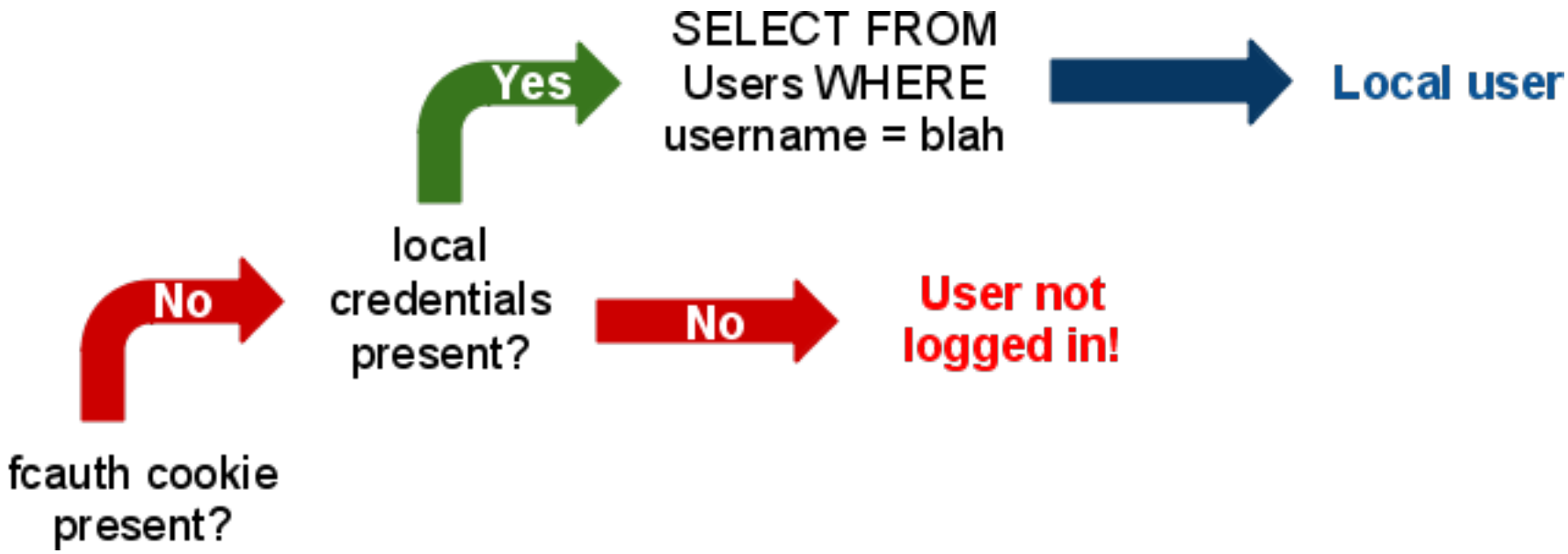

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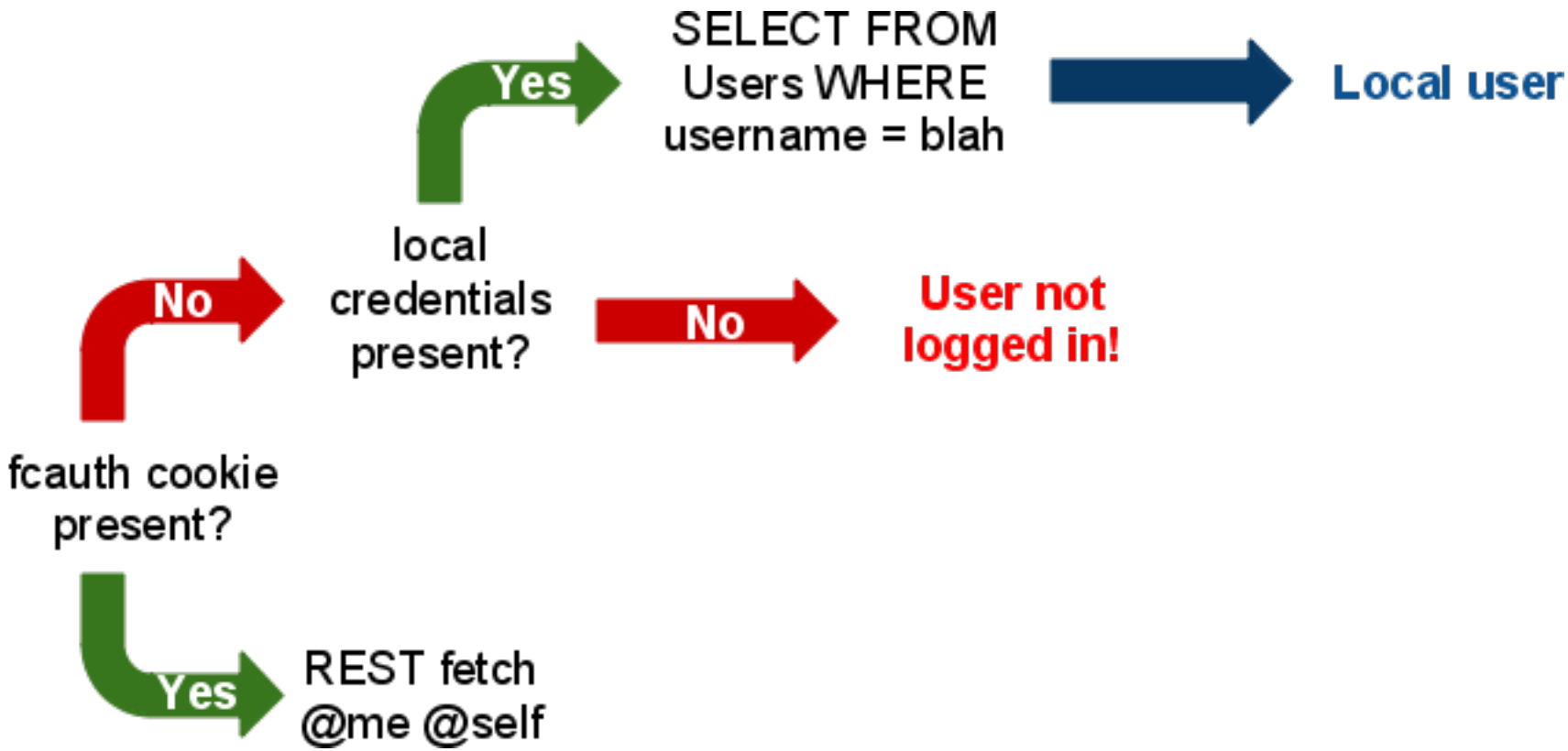

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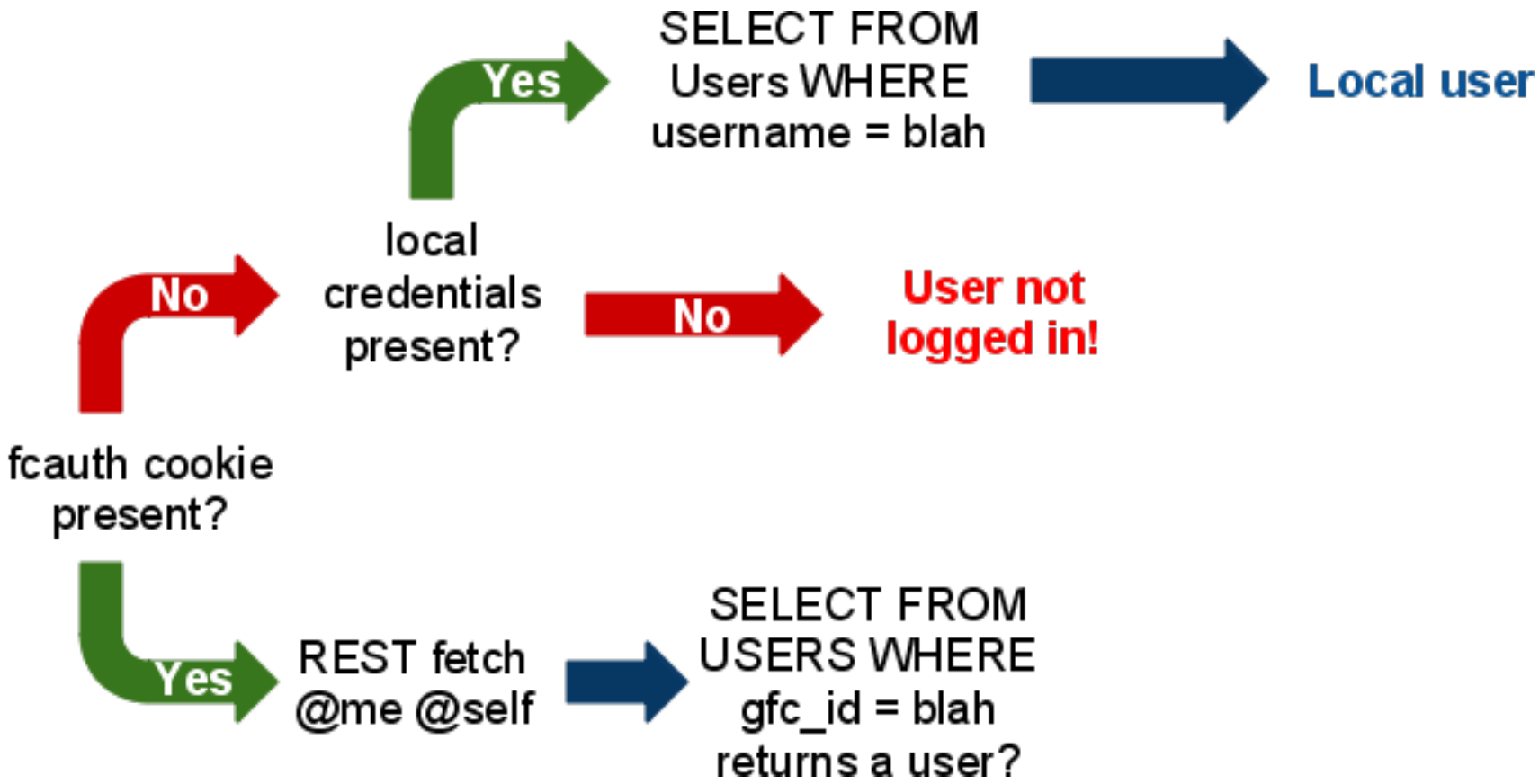

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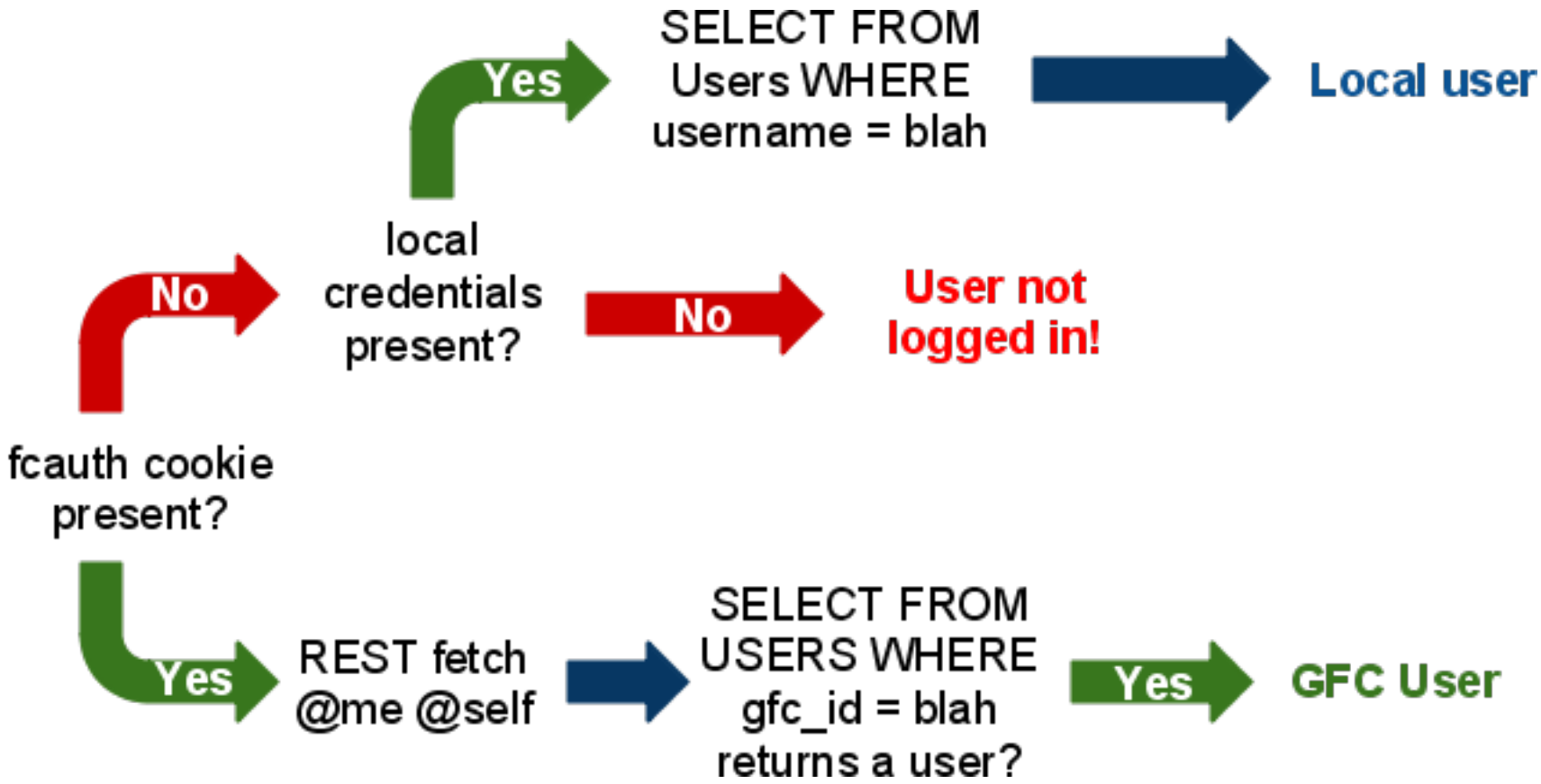

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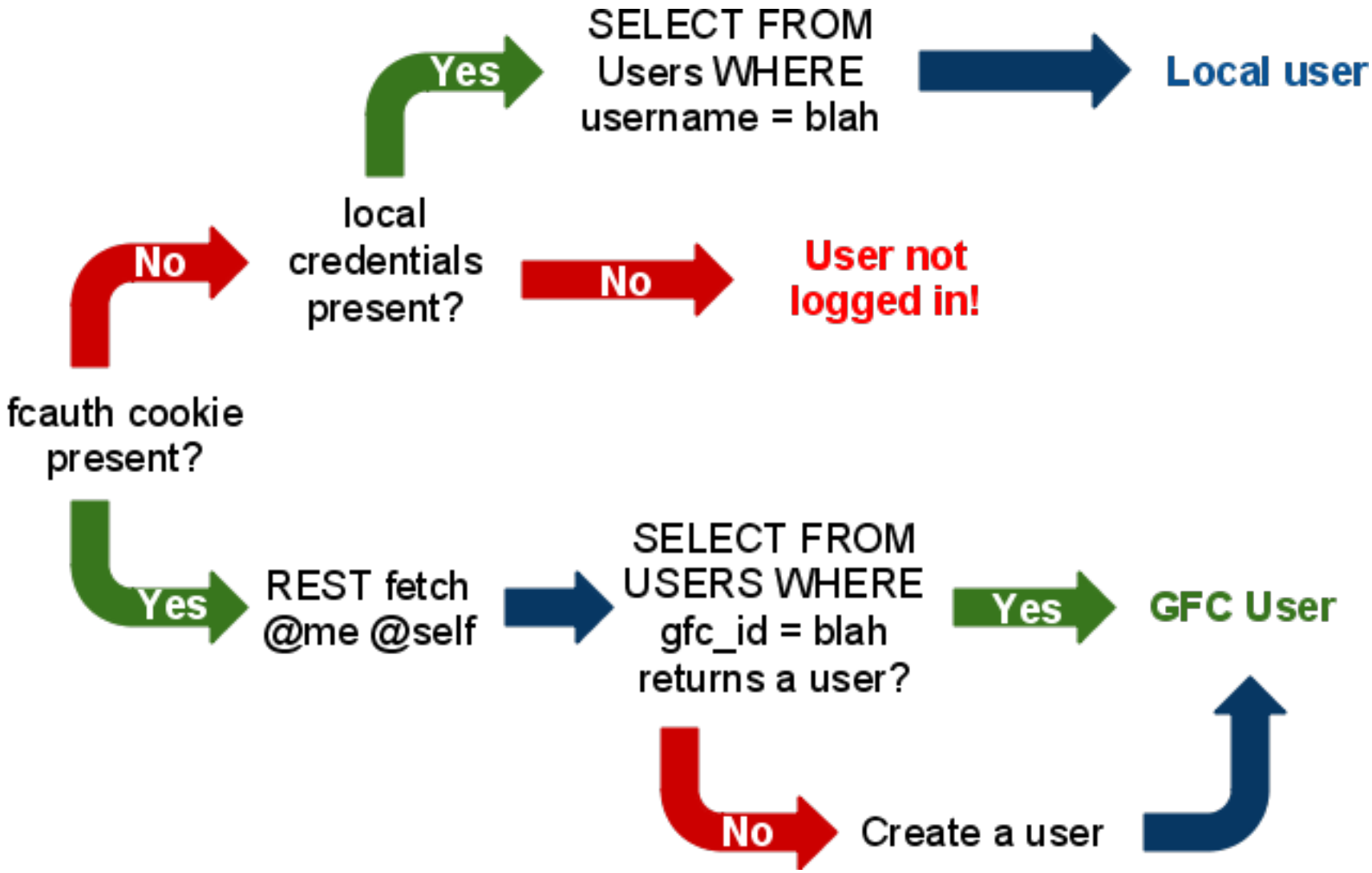

The INs Summary

- **Goal: Allow a Google Friend Connect user to log into your site as if they were a registered user.**

- Approach
  - Let users log in with JavaScript
  - Fetch social data with REST calls
  - Adapt your data store for social user data
  - Create an authorization flow
  - Cache for performance

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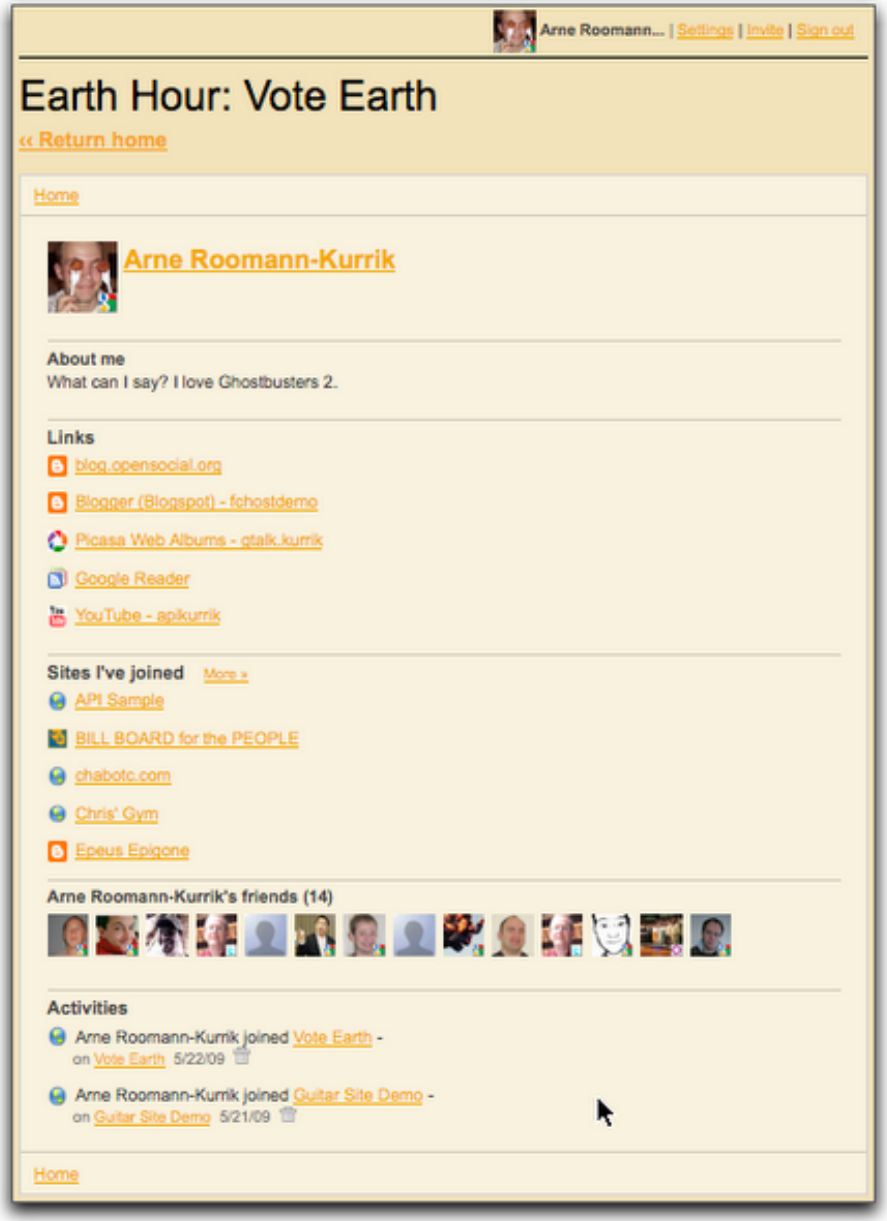
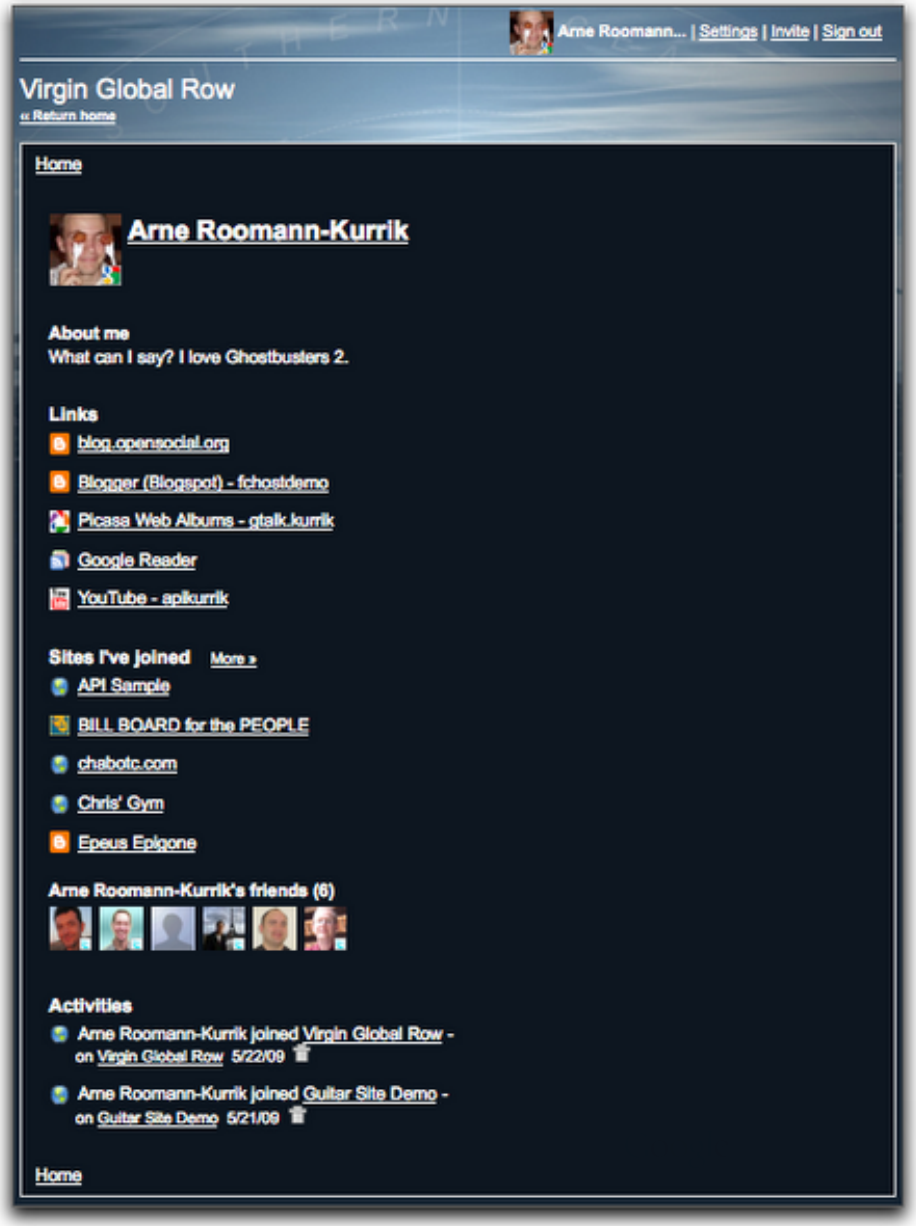
Being More Social

- **Goal: Use social signals to highlight content**
- **Goal: Use content to make new social connections**

- Steps:
  - Add social chrome to your site
  - Restructure your views to take advantage of the extra data

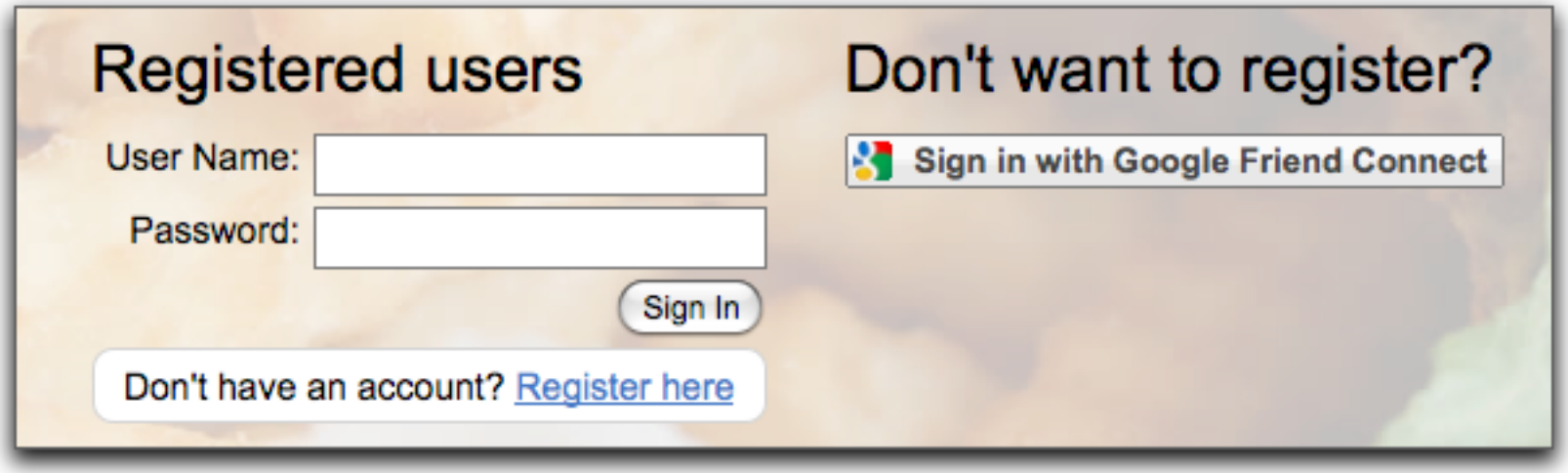
Social Chrome: Per-Site Profiles





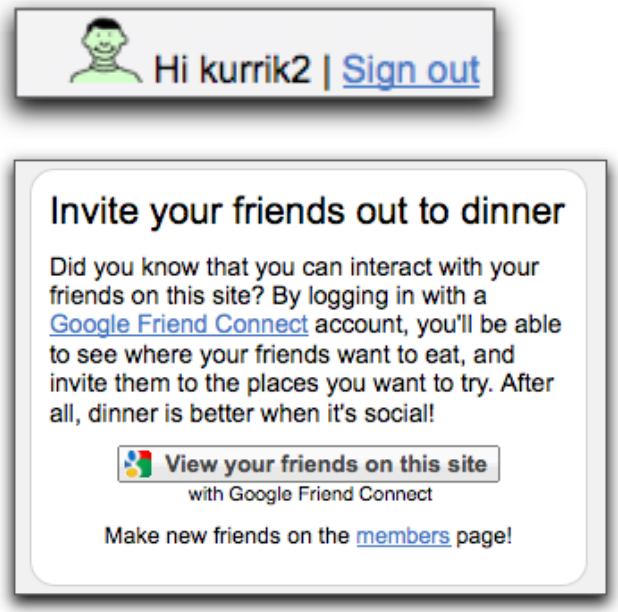
Social Chrome: Integrated UI

- "Click to login" as a first class citizen

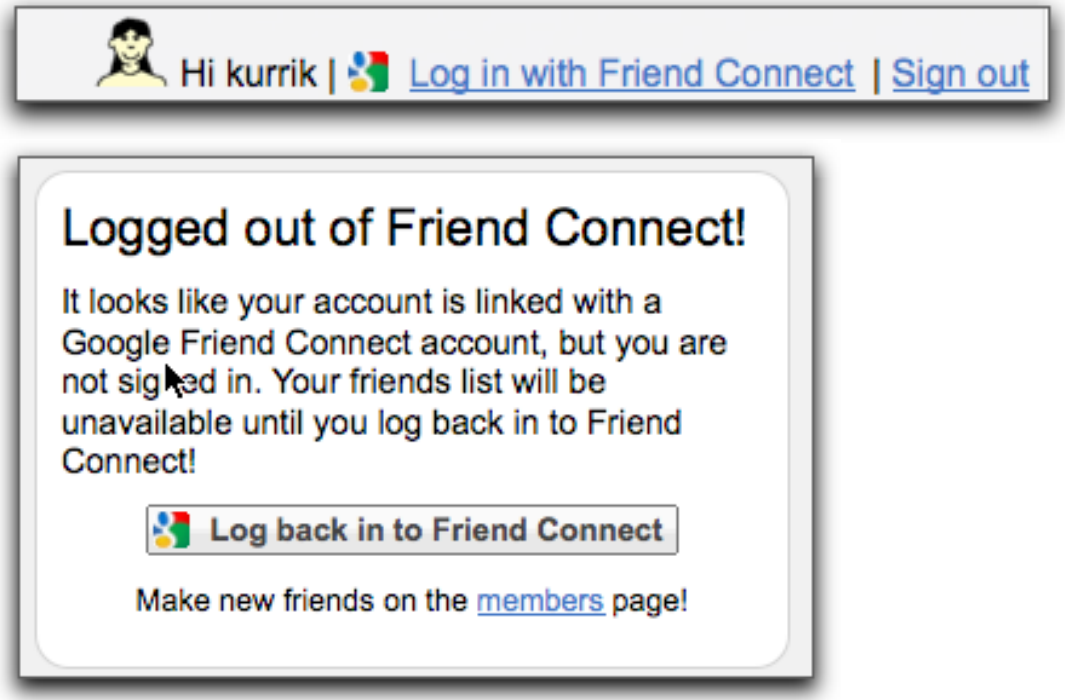


Social Chrome: Smart UI

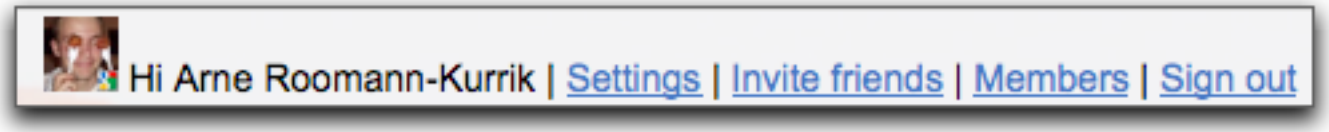
Registered user:



Registered user with GFC account:



GFC user:

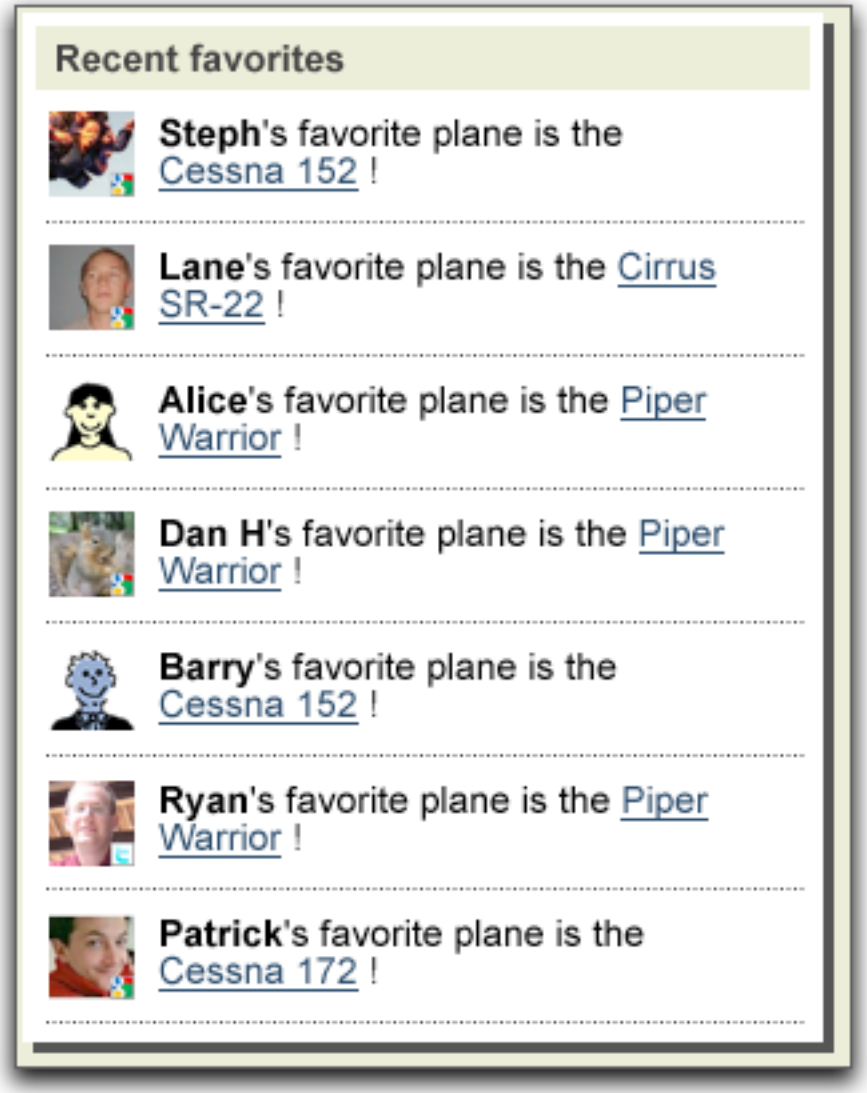


Social Makes Everything Better

- Structuring your site to encourage social behaviors
- Provide incentives for logging in
  - "Share this with your friends"
  - "See what your friends are doing"
- Provide data views that are useful for everyone

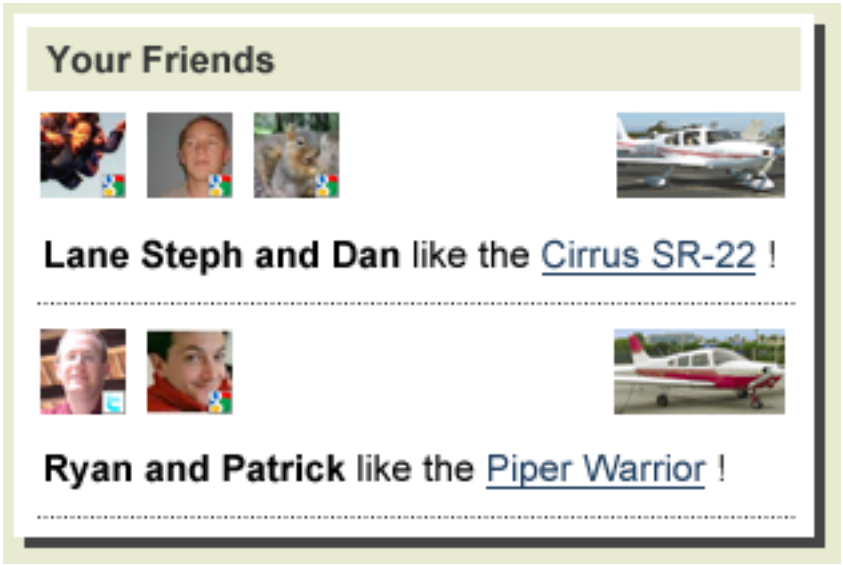
Simple Social Views - Registered Users

- Show data from all users
- Choose engaging views:
  - "Top scores"
  - "Highest rated reviewers"
  - "Recent updates"



Simple Social Views - GFC Users

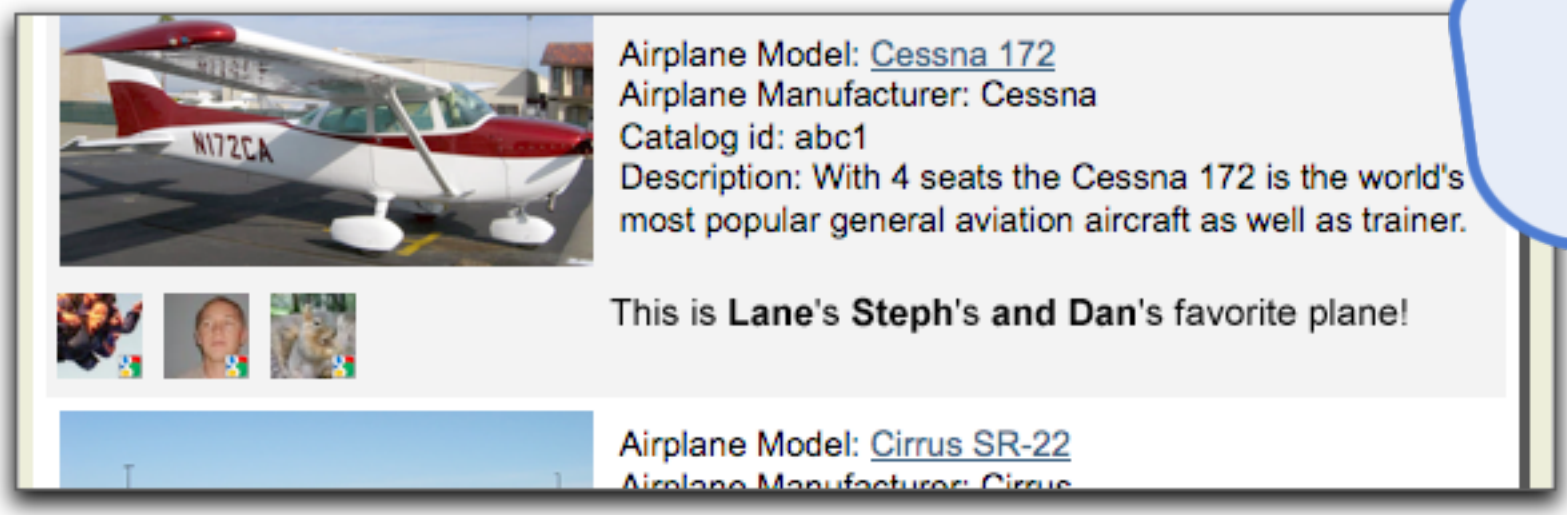
- Expose information in the context of friendships
  - "What are my friends' favorite airplanes?"
  - "Are my friends playing any games?"
  - "How do I rank compared to my friends?"



Demo: Simple social views. Building "What are my friends' favorite airplanes?"

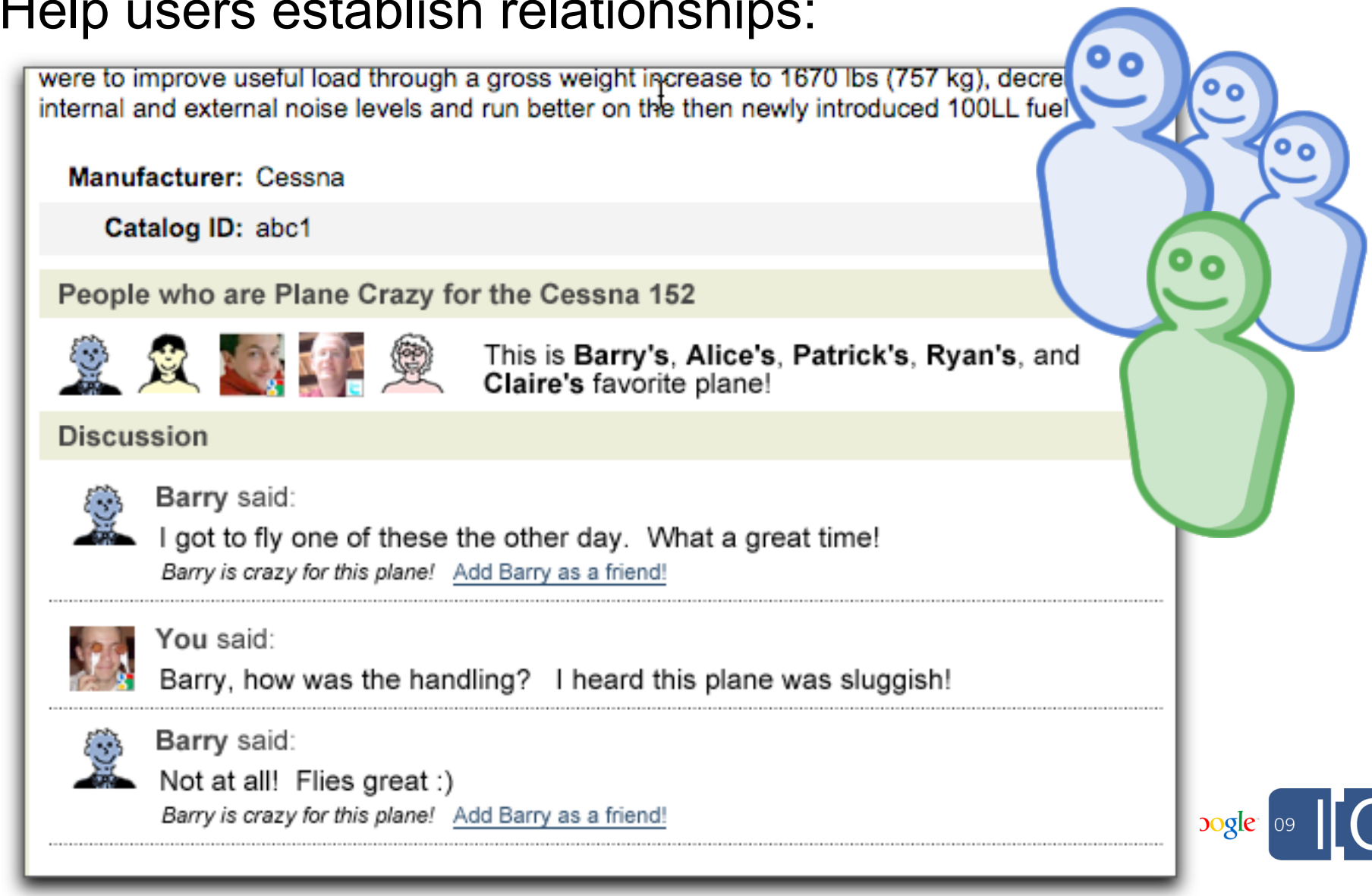
Intermediate Social Views - GFC Users

- Contextual data is valuable!
- Social signals help users navigate your content:
  - "Some of your friends liked this guitar"
  - "Your friend gave this restaurant a poor review"
  - "Two of your friends read this article"
  - "A friend of yours solved this puzzle"



Advanced Social Views - GFC Users

- **Give users a reason to come back to your site!**
- Help users establish relationships:



Demo: Advanced social views. Building "Users who also favorited this airplane."

The MIDDLE - Summary

- **Goal: Use social signals to direct users to appropriate content**
- **Goal: Use content as a context to make new social connections between users**

- Approach:
  - Promoted social users to first class citizens
  - Changed data views:
    - Displayed activities of site users and friends
    - Embedded friend data into content
    - Encouraged social interaction around content

The OUTs

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Learn To Share

- **Goal: Let users share their experiences on your site with the rest of the web.**

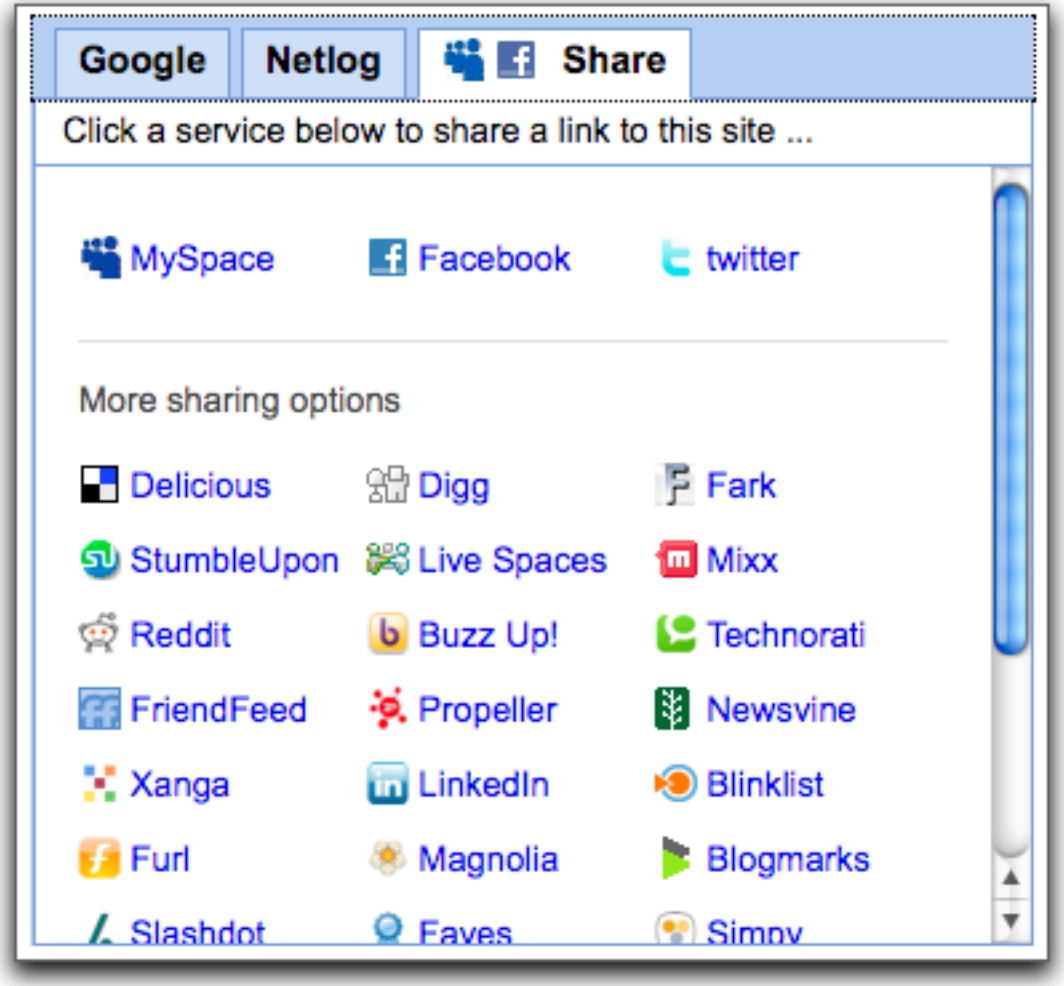
- Steps:
  - Invites
  - Activity Streams

Invites

- Built-in functionality, just put a button on your page
- Invite friends from linked accounts or email

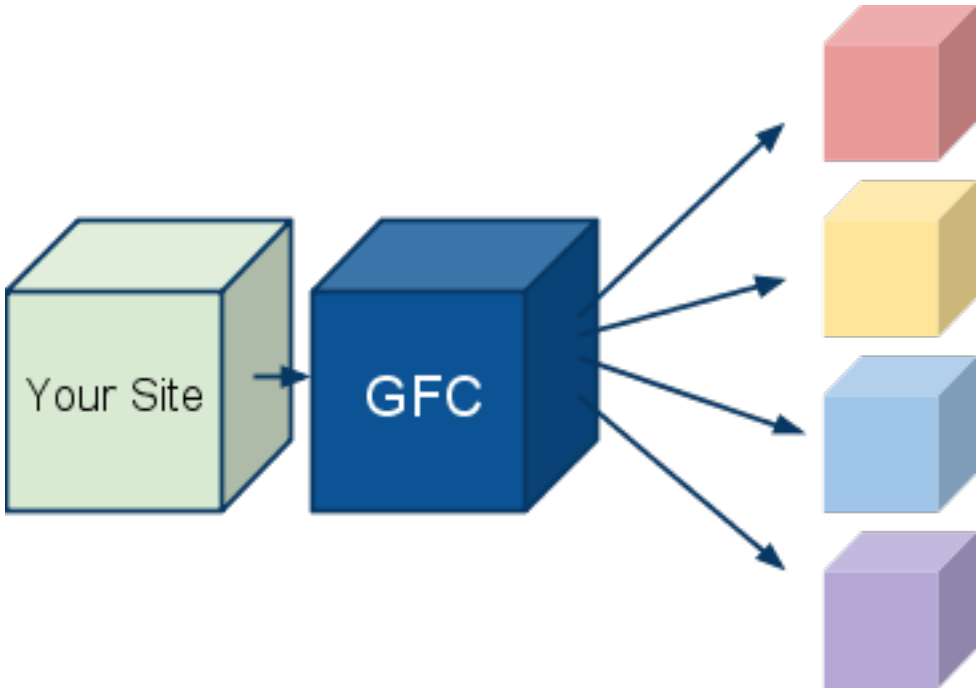
Sharing

- Get users to share your site with some of the most popular social websites



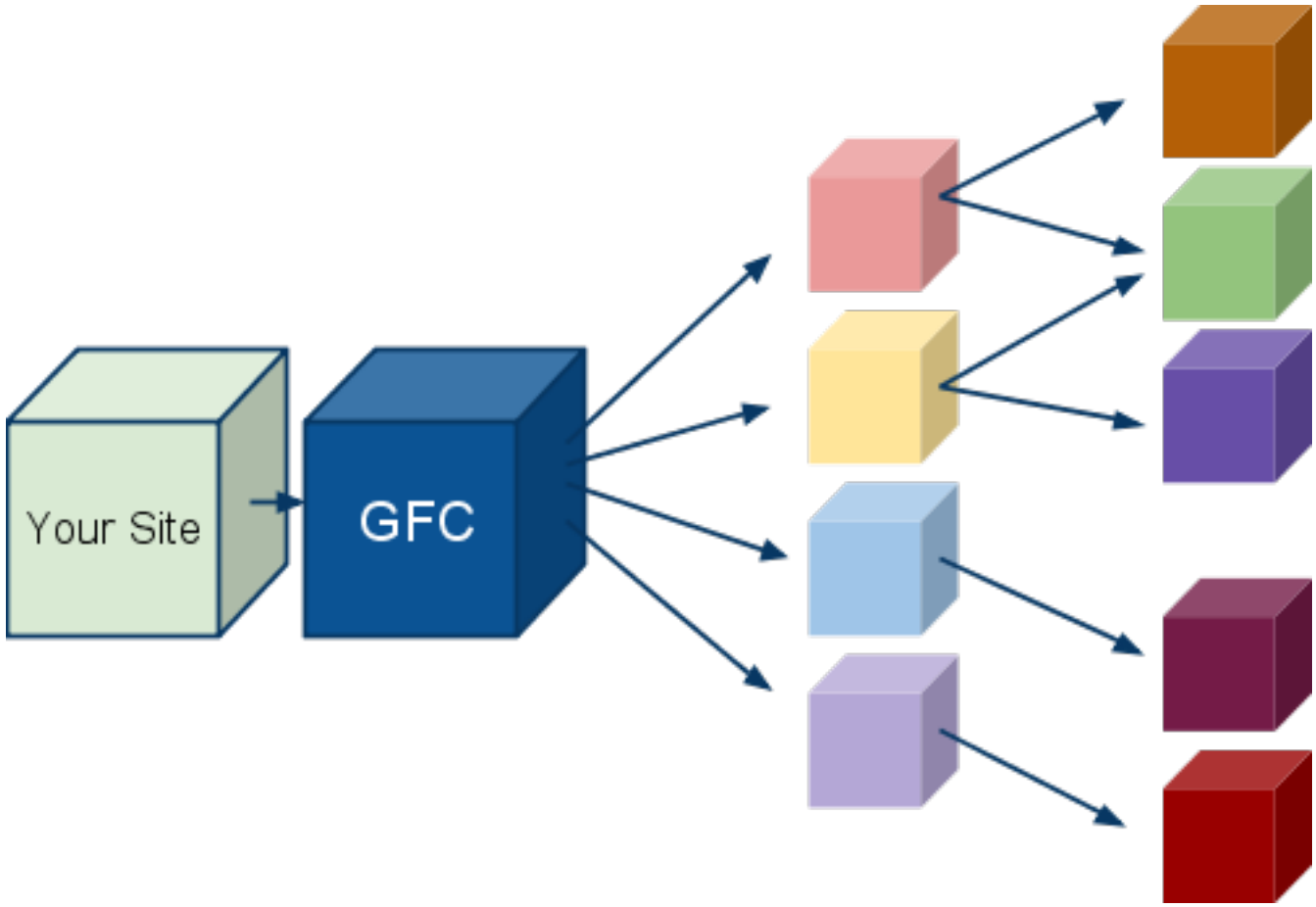
Activity Streams

- Destinations where your activities can go
- Different for each user
- Depends on user permissions



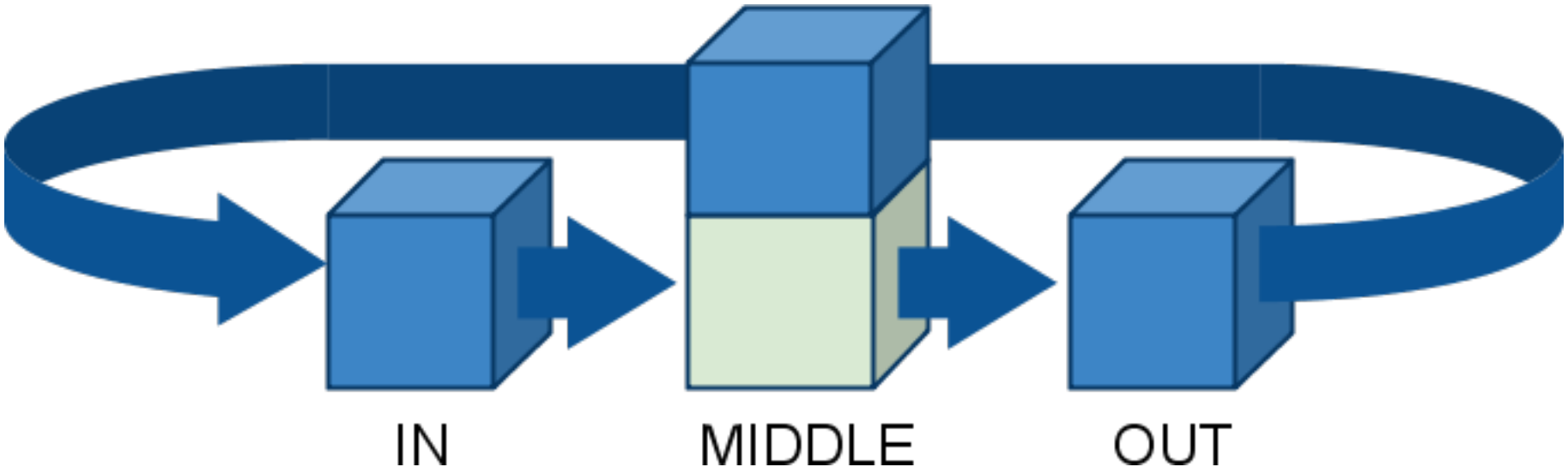
Activity Streams

- The social web has an inherent sharing nature
- One activity post may wind up in many places!



Activity Streams

- Activities mean greater exposure
- Exposure drives users to your site



Clever CURLing Related Title Here

- Posting activities also done via REST:

```
url = "http://www.google.com/friendconnect/api
       /activities/@me/@self?fcauth=<fcauth>
```

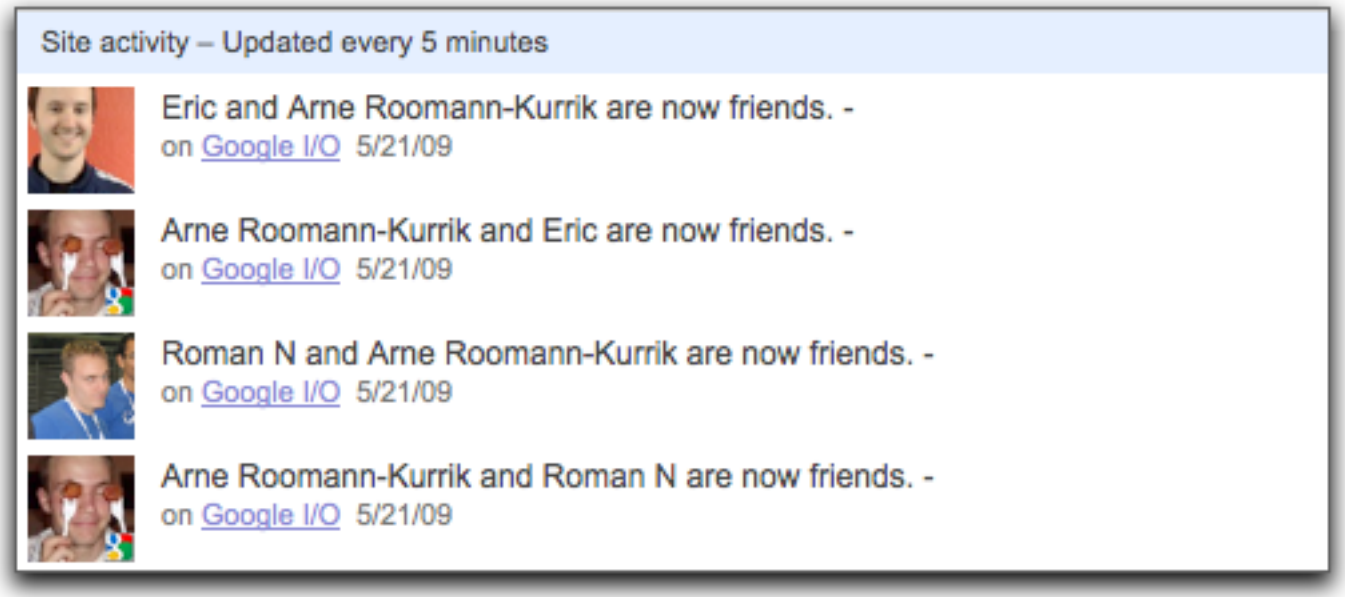
- Posting from the command line:

```
data="{\"title\":\"a title", \"body\":\"test\"}"

curl -X POST $url \
     -H "Content-Type: application/json" \
     -d "$data"
```

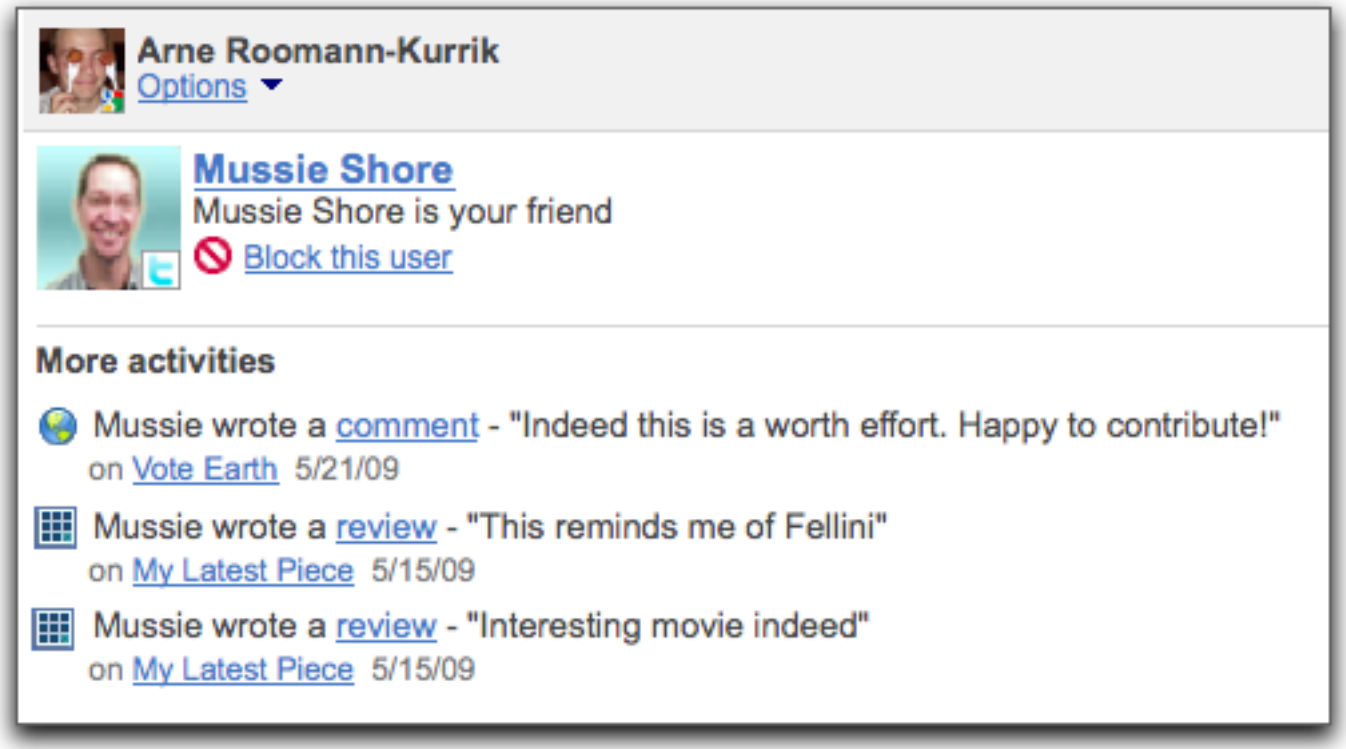
Sharing With Your Site Members

- Activity updates on your site are available in your site's activity stream feed:



Sharing With The World

- Activity updates are viewable across **every GFC site** by looking at a user's profile



Demo: Writing activities server-side.

Learn To Share

- **Goal: Let users share their experiences on your site with the rest of the web.**

- Approach:
  - Added invite chrome to let users share content
  - Used activity streams to maximize site exposure

In Conclusion...

Photo by specialkrb http://www.flickr.com/photos/specialkrb/3265303889/

Goals

- **Allow a Google Friend Connect user to log into your site as if they were a registered user.**
  - JavaScript sign in, social data via REST
  - Data model, cache

- **Use social signals to highlight content**
- **Use content to make new social connections**
  - Social Chrome
  - Social Views

- **Let users share their experiences on your site with the rest of the web.**
  - Invites
  - Activities

Q & A

Post your questions for this talk on Google Moderator:
http://code.google.com/events/io/questions

Direct link:
http://bit.ly/beyondcutpaste-questions

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