天 地 人

# Reclaiming Data Ownership with the Tian-Di-Ren Architecture

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with Dan Boneh, Jeff Heer, Hiroaki Kameyama, Ruven Chu, Ben Dodson, Bobby Georgescu, SudheendraHangal, Te-Yuan Huang, Diana MacLean, Byron Milligan, ChanhNguyen, DebangsuSengupta, JiwonSeo, Seok-Won Seong, ChinmaySoman, Steven Soneff, SengKeatTeh, Ian Vo, Kelvin Yue
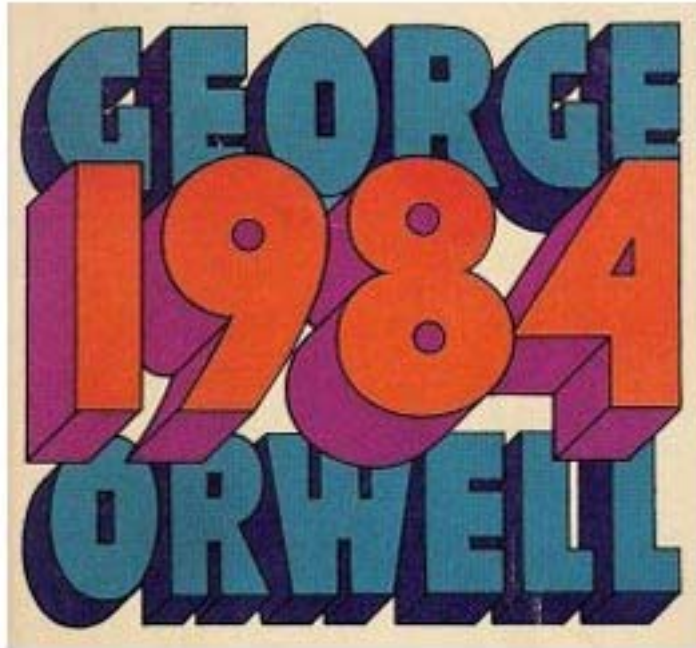
Server-Client Architecture
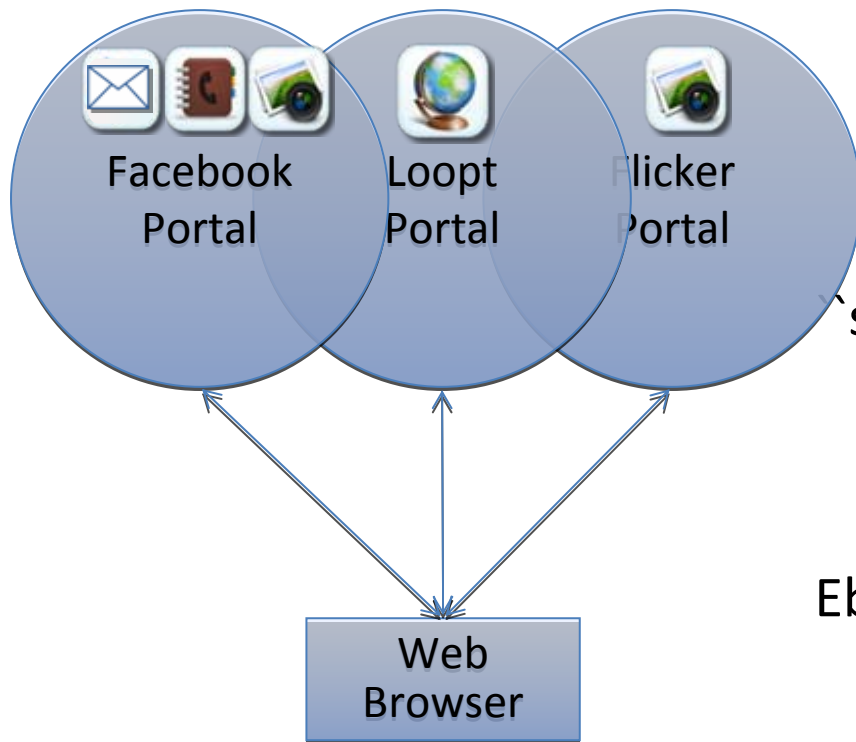
The Web log is ``monetisable, because it provides a form of surveillance which is attractive to both commercial and governmental social control.''

``surveillance becomes the hidden service wrapped inside everything we get for free."

EbenMoglen, Professor of Law, Columbia University

http://www.h-online.com/open/features/Interview-Eben-Moglen-Freedom-vs-the-Cloud-Log-955421.html

The Omniscient Monopoly

Loss of Data Ownership

Facebook's new 'privacy' policy catches users off guard

A new change in Facebook's privacy policy allows it to share information automatically with third party websites without users opting in

By Varun Aggarwal, InformationWeek, April 21, 2010

Canada, Britain, France, Germany, Ireland, Israel, Italy, Netherlands, New Zealand and Spain slam Google over privacy
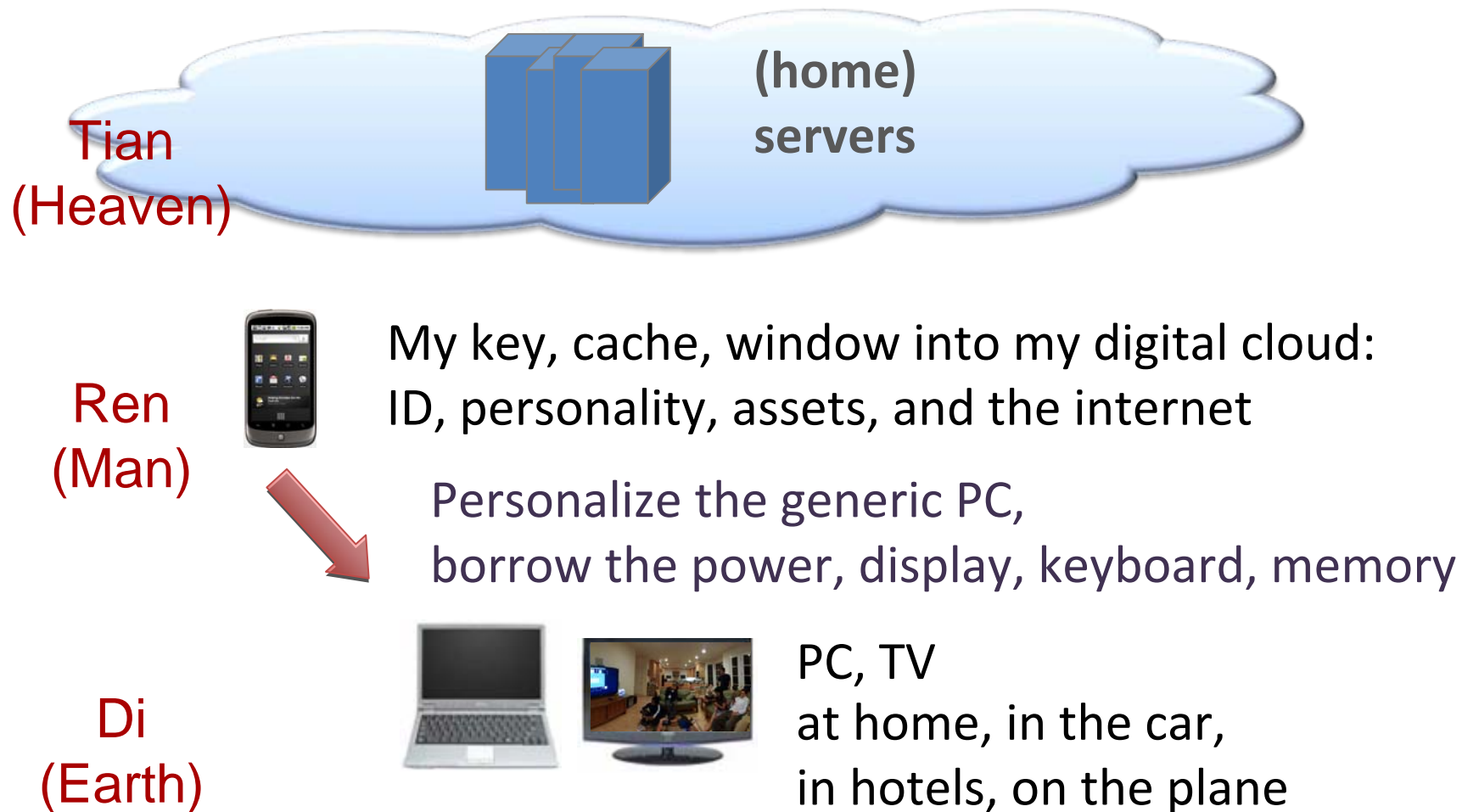
AFP | AFP | April 21, 2010 8:13AM

·Share

While Facebook & Twitter Sit on Sidelines, MySpace Jumps Into Bulk User Data Sales

Written by Marshall Kirkpatrick / March 12, 2010 10:30 AM / 22 Comments

« Prior Post   Next Post »

Tian-Di-Ren Architecture

Tian
(Heaven)

(home) servers

Ren
(Man)

My key, cache, window into my digital cloud:
ID, personality, assets, and the internet

Personalize the generic PC,
borrow the power, display, keyboard, memory

Di
(Earth)

PC, TV
at home, in the car,
in hotels, on the plane

Personal Data Management

Where is our data consumed?

TBs of personal data!

Person-Cloud Butler

32 GB instantaneously.
With you all the time,
Even when not connected.
Private.

Pocket Butler

Network of Personal Clouds

Social networking with true friends anywhere

- Active social interactions
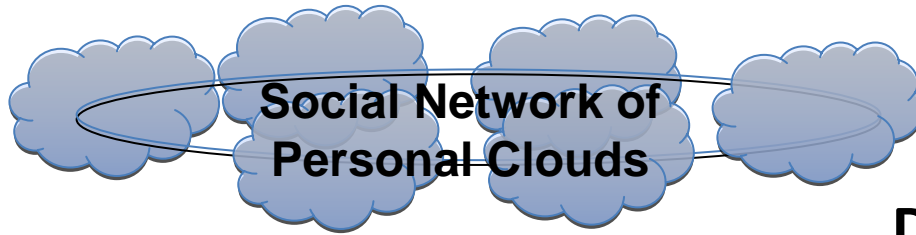- Sharing large volumes of data selectively

Ownership, privacy, comfort → more data → new apps

- Personal data management
- Better monetization with local personalization

API gives apps access to the network of personal clouds

- Easier to write and provision than facebook apps

Challenges
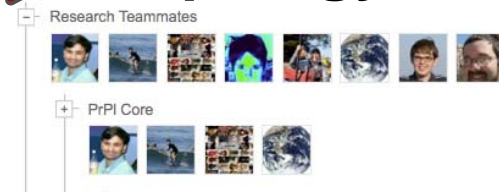
Social Network of Personal Clouds

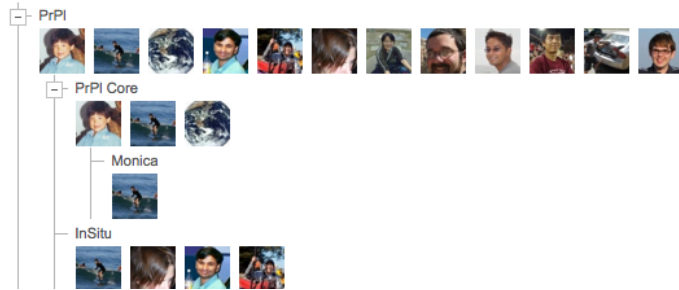**Distributed, real-time P2P apps**

- Junction
- Distributed computation on multi-databases
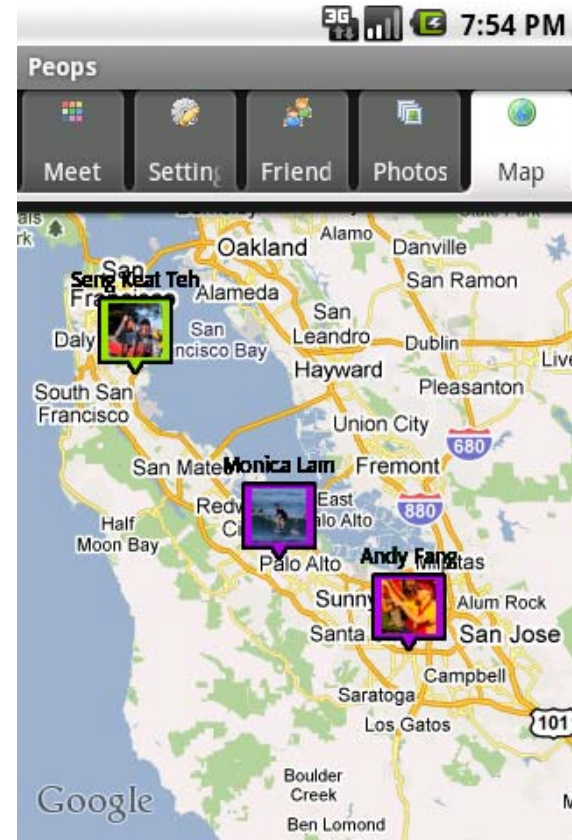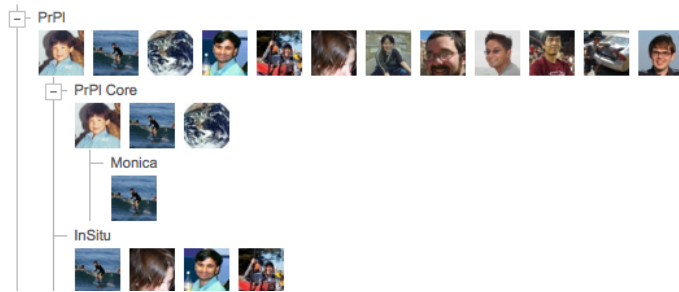
Sharing with privacy

- Access control
- "Spam filter"
- User friendliness

Sharing Personal Information

Share With

Catch up with

Programming API

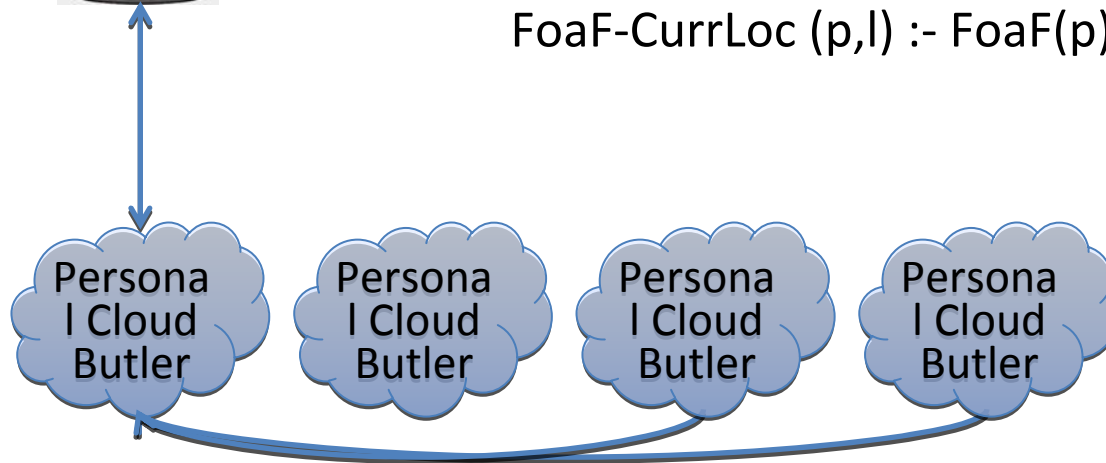SociaLite:

Location-agnostic query language based on Datalog

FoaF(p) :- Friend(p)
FoaF(p) :- FoaF(x), Friend [x] (p)
FoaF-CurrLoc (p,l) :- FoaF(p), CurrLoc[p] (l)

Personal Cloud Butler

Personal Cloud Butler

Personal Cloud Butler

Personal Cloud Butler

Distributed Datalog Query

- Localization
- User-defined functions
- Aggregate functions
- Pipelined execution

Social Multi-Database

SociaLite Database Query Language

Communication	Authorization	Authentication

Pocket Butler

Data Manager	Semantic Index	Access Control	OpenID Manager

Personal-Cloud Butler

Friends' Butlers

Data Steward API

home server	facebook	imap

Authentication

1. OpenID login
2. Get a session ticket from Butler.

Personal Cloud Butler

Directory

1. Butler self-issues a session ticket
2. Friend verifies with public key

Butler grants a blob ticket per resource.

Friends' Butlers

App directly fetches blob from a Steward.

Data Stewards
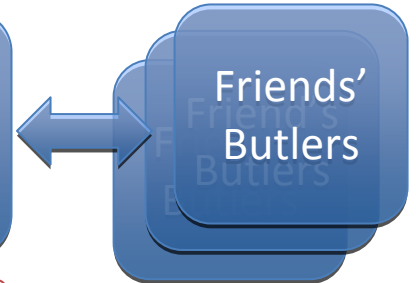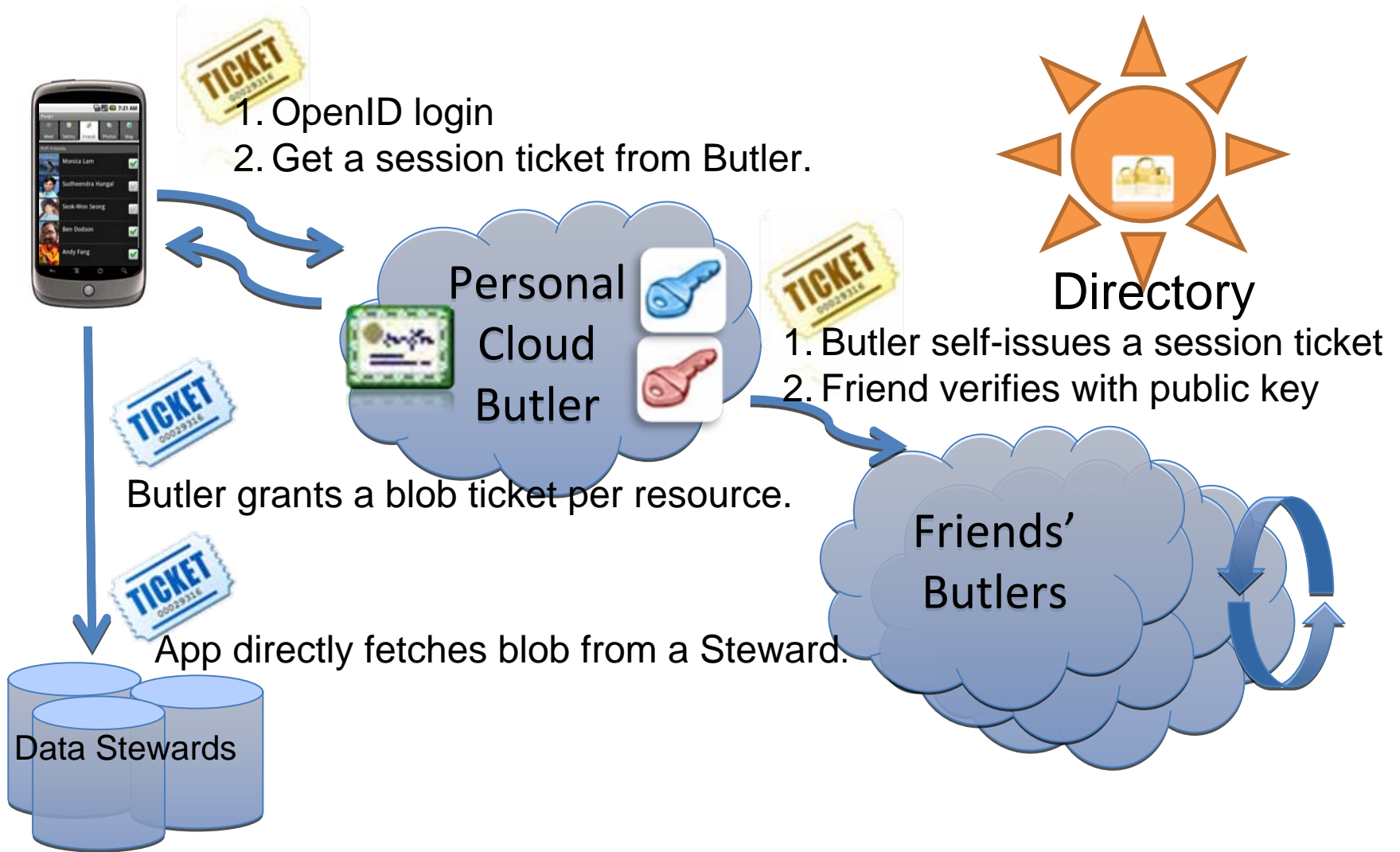
Social Flows: Facebook App

Extract social topology from your Facebook and Email data

Mobile Applications

photos

Selected friends'

gps

music play history
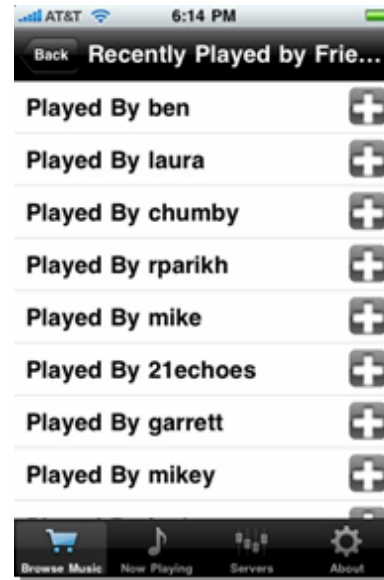
location history

Web Applications

Set-Top Box Applications

Share personal data from friends' Butlers on a TV

Semantic Photo Finder

Live feeds from your friends
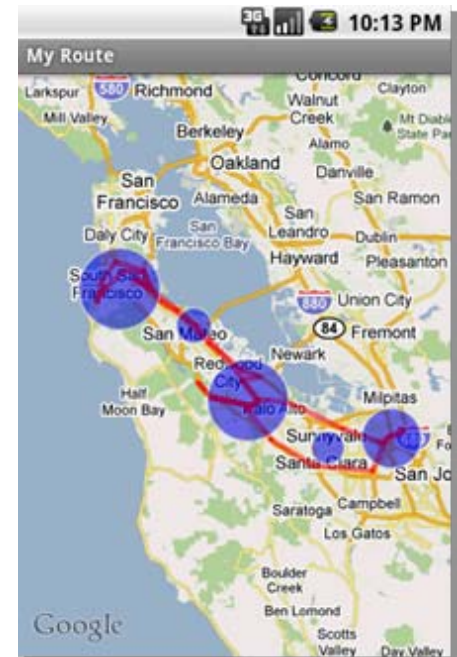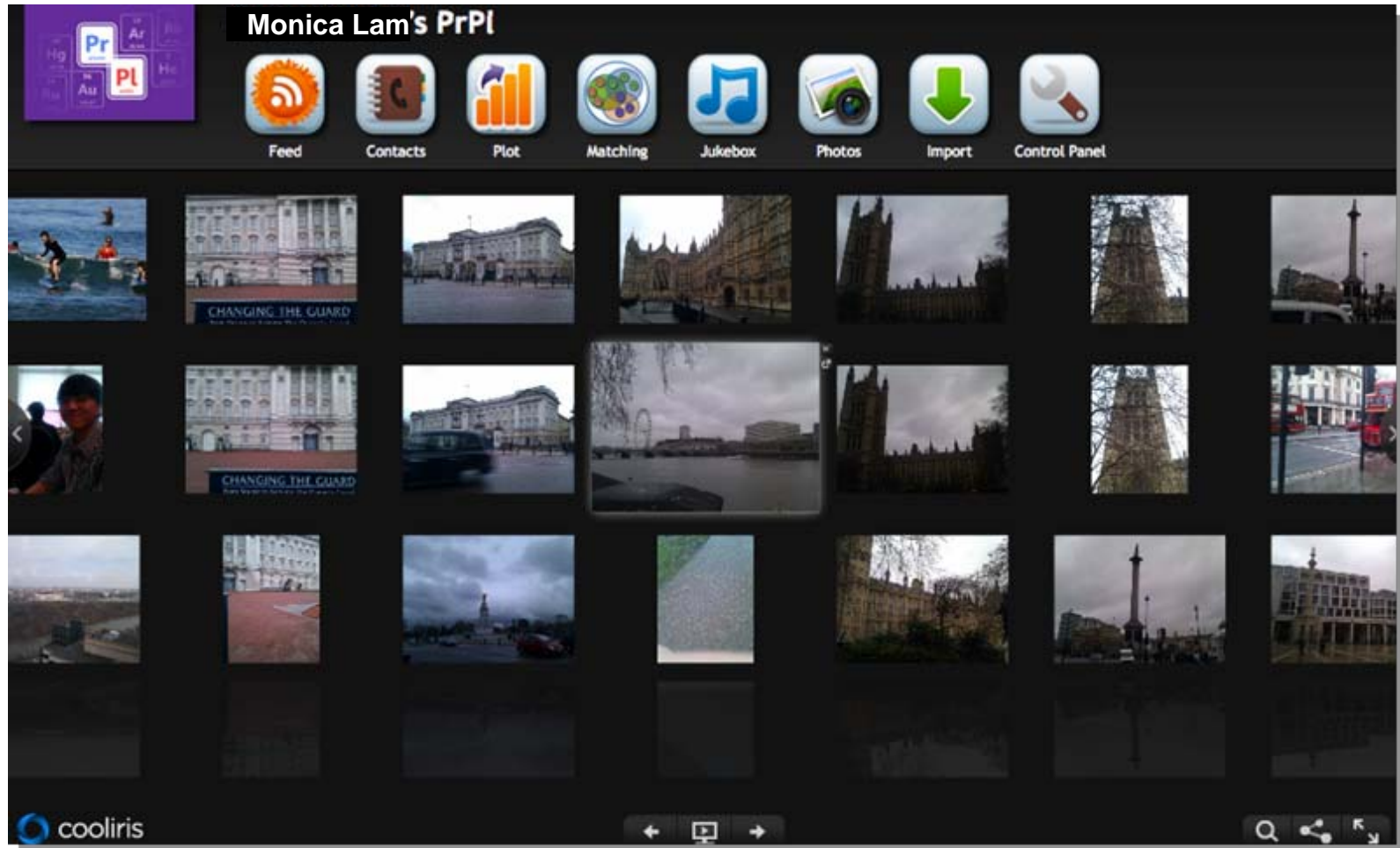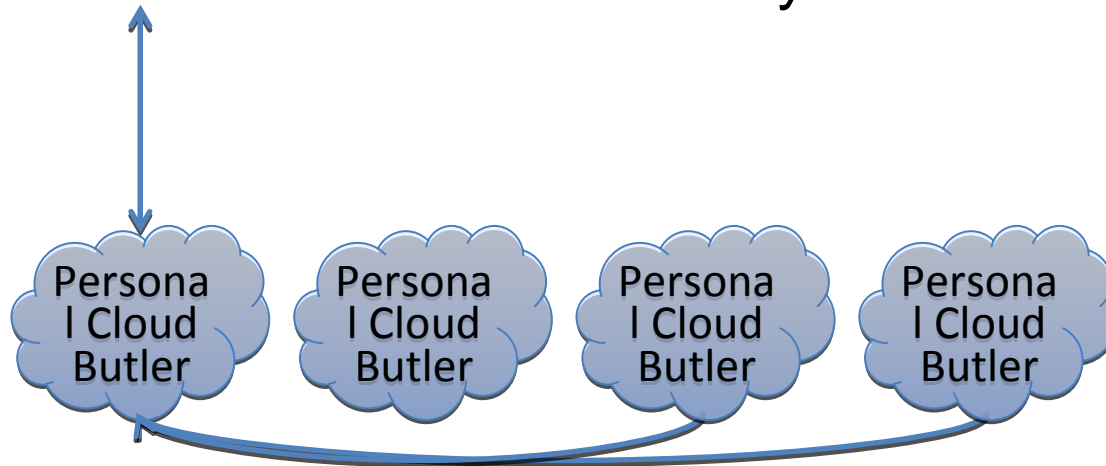Search for similarly tagged photos
from your friends' Butlers

Personal Cloud Butler

Personal Cloud Butler

Personal Cloud Butler

Personal Cloud Butler

BOXEE
S SEONG

🕐 **7:19**   🌧 **52°F**

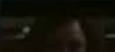📷 **PHOTOS**   🎵 **MUSIC**   🍿 **MOVIES**   📺 **TV SHOWS**   ✳ **APPS**   💼 **FILES**

❤ FEED

📺 **The Engadget Show - 0...**
The Engadget Show
❤ boxee staff

🎬 **The Wolfman - Theatri...**
❤ boxee staff

HP computers are racist
YouTube
💬 boxee staff

Dennis

👍 FEATURED

Second Wind
Redux Pick of the Week

80" le tour du monde en
quatre-vingts secondes

⭐ QUEUE 1

1   **Get Started**
How To Get Started With Boxee

Future: Consult Your Social Network

Your Reservation Confirmation for California Cafe - Palo Alto
From: California Cafe - Palo Alto Reservations <member services@opentable.com> Add to Co

Your Amazon.com order has shipped (#002-6019248-7461812)
From: Amazon.com <ship-confirm@amazon.com> Add to Contacts

Google | guitar | Search | Advanced Search

Web ⊞Show options...   Results **1 - 10** of about **146,000,000** for **guitar** [definition]. **(0.20 seconds)**

Guitar   Sponsored Link

Ask Seok-Won Seong

Guitar Center.com | Music Equipment from Guitar Center.
Free Shipping on 1000's of Items!
GuitarCenter.com is rated ★★★★★ on Google Products (1374 reviews)

Guitar - Wikipedia, the free encyclopedia
The **guitar** is a musical instrument of the chordophone family, being a stringed instrument played by plucking, either

Sponsored Links

Beginner Guitars
Guitar Packages designed for the Beginner, Free Same Day Shipping
AmericanMusical.com/Beginner-**Guitar**
Google Checkout 🛒
⊞Show products from this advertiser

Guitar

Tian-Di-Ren Architecture

Alternative: privacy-invading server-client architecture

- Collects personal data in the Personal Cloud Butler
- Friendly access control to allow easy sharing

KEY: Common API and platform to encourage apps