

Being Social: Research in Context-aware and Personalized Information Access @ Telefonica

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The logo for Telefonica, featuring the word "Telefonica" in a blue, stylized, cursive font.

Telefónica
Investigación y Desarrollo

#SIGIR2010

Geneva, July '10

But first...

About Telefonica and Telefonica R&D

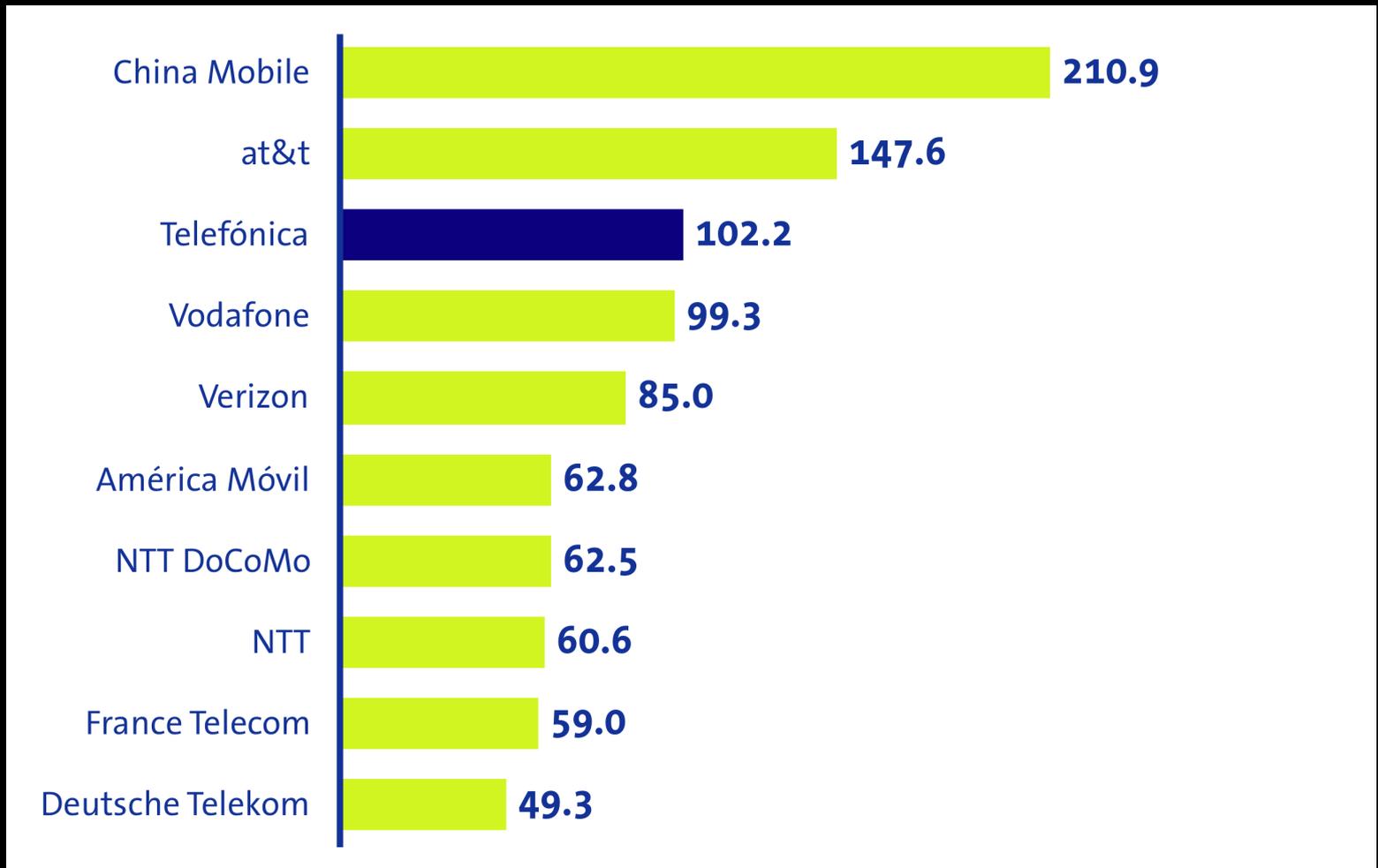
Telefonica is a fast-growing Telecom

	1989	2000	2008
Clients	 <p>About 12 million subscribers</p>	<p>About 68 million customers</p>	<p>About 260 million customers</p> 
Services	 <p>Basic telephone and data services</p>	<p>Wireline and mobile voice, data and Internet services</p>	<p>Integrated ICT solutions for all customers</p> 
Geographies	 <p>Spain</p>	<p>Operations in 16 countries</p>	<p>Operations in 25 countries</p> 
Staff	<p>⊥ About 71,000 professionals</p>	<p>About 149,000 professionals</p>	<p>About 257,000 ⊥ professionals</p>
Finances	<p>Rev: 4,273 M€ EPS(1): 0.45 €</p>	<p>Rev: 28,485 M€ EPS(1): 0.67 €</p>	<p>Rev: 57,946 M€ EPS: 1.63 €</p>

(1) EPS: Earnings per share

Currently among the largest in the world

Telco sector worldwide ranking by market cap (US\$ bn)



Source: Bloomberg, 06/12/09

Telefonica R&D (TID)

Telefonica

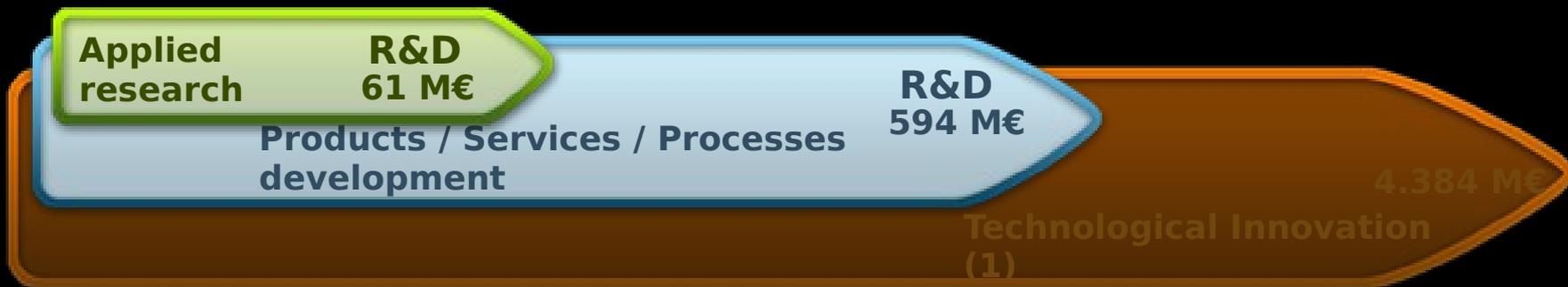
TELEFÓNICA I+D

- n Founded in 1988
- n Largest private R&D center in Spain
- n More than 1100 professionals
- n Five centers in Spain and two in Latin America

MISSION

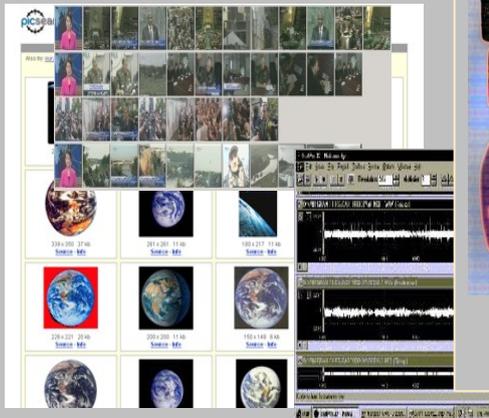
“To contribute to the improvement of the Telefónica Group’s competitiveness through technological innovation”

Telefónica was in 2008 the first Spanish company by R&D Investment and the third in the EU



Scientific Research

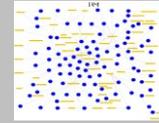
Multimedia Core



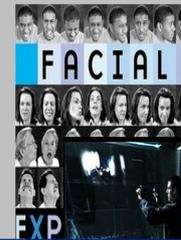
Mobile and UbiComp



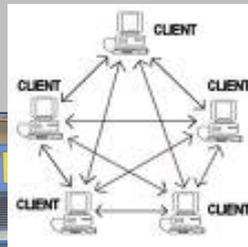
User Modelling & Data Mining



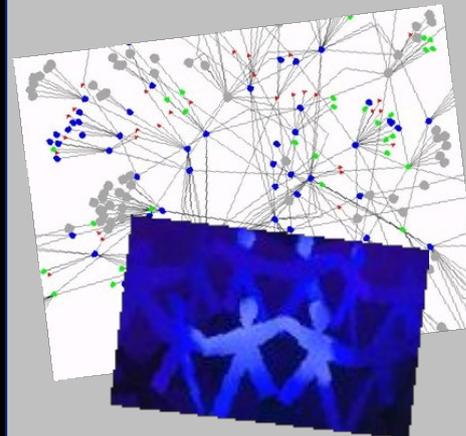
HCIR



Content Distribution & P2P



Social Networks



Wireless Systems



Enough company talk already...

Information Overload



INFO OVERLOAD

Before it could be processed, the
brain of 200 thousand
collapsed into a million fragments.

More is Less

Less Decisions

Worse Decisions

The Paradox of Choice

Why	9
More	9
is	9
Less	21

"Today's world offers us more choices but, ironically, less satisfaction. This provocative and riveting book shows us steps we can take toward a more rewarding life."
—David G. Myers, author of *Inhibition: Its Powers and Perils*.

Barry Schwartz

Search engines don't always hold the answer



No results for

Honalulu

No results for

Honoloulou

No results for

Hawaai

OH, FORGET IT.
LET'S JUST GO VISIT
MY MOTHER IN FARGO.





You are not alone!



That's what friends are for...



What's her name?



LA VIDA A SANTA BARBARA
AVENTURES I DESVENTURES DE XAVIER AMATRIAIN I FAMÍLIA A SANTA BARBARA, CALIFÒRNIA.

DIMARTS, JUNY 26, 2007

The End

Acaba la nostra aventura a Santa Barbara i (segurament) aquest blog. Han estat dos anys inolvidables i sempre tindré a recordar-ho. Fins sempre **Catalan**

ENVIAT PER XAVIER AMATRIAIN A 3:07

ARXIU DEL BLOC

- 2007 (55)
- juny (7)
- The End
- Bye Bye Santa Barbara
- A San Francisco
- Adeu a les amigues de l'Adriana
- Tots malalts
- Adeu a Disneyland
- S'acaben els coles

- maig (8)
- abril (7)
- març (11)

Google Switzerland

xavier amatriain santa barbara

Google Search I'm Feeling Lucky

twitter

ocelma

twitter

HCIR_GeneG

twitter

neal_lathia

facebook

Xavier Amatriain

Edit My Profile

Photos

XAVIER AMATRIAIN'S WEB

Projects Publications Resume Teaching PhD My Music Other Hobbies

where you will find information about my research but also other (and boring) **professional page** please go here.

Summary

researcher and technology geek. I live in La Garriga, a small town in Catalonia, my wife and our two wonderful children, **Adriana** and Adriana. I work at a research and development company, Telefonica, one of the largest in the world (PhD on Computer Science and a degree in Telecommunications in the US). Previously, I spent two great years living in Santa Barbara, CA as Associate Director of Media Art and Technology Initiative and as the Technical Director of the Allosphere project.



Google Switzerland

xavier amatriain aitor

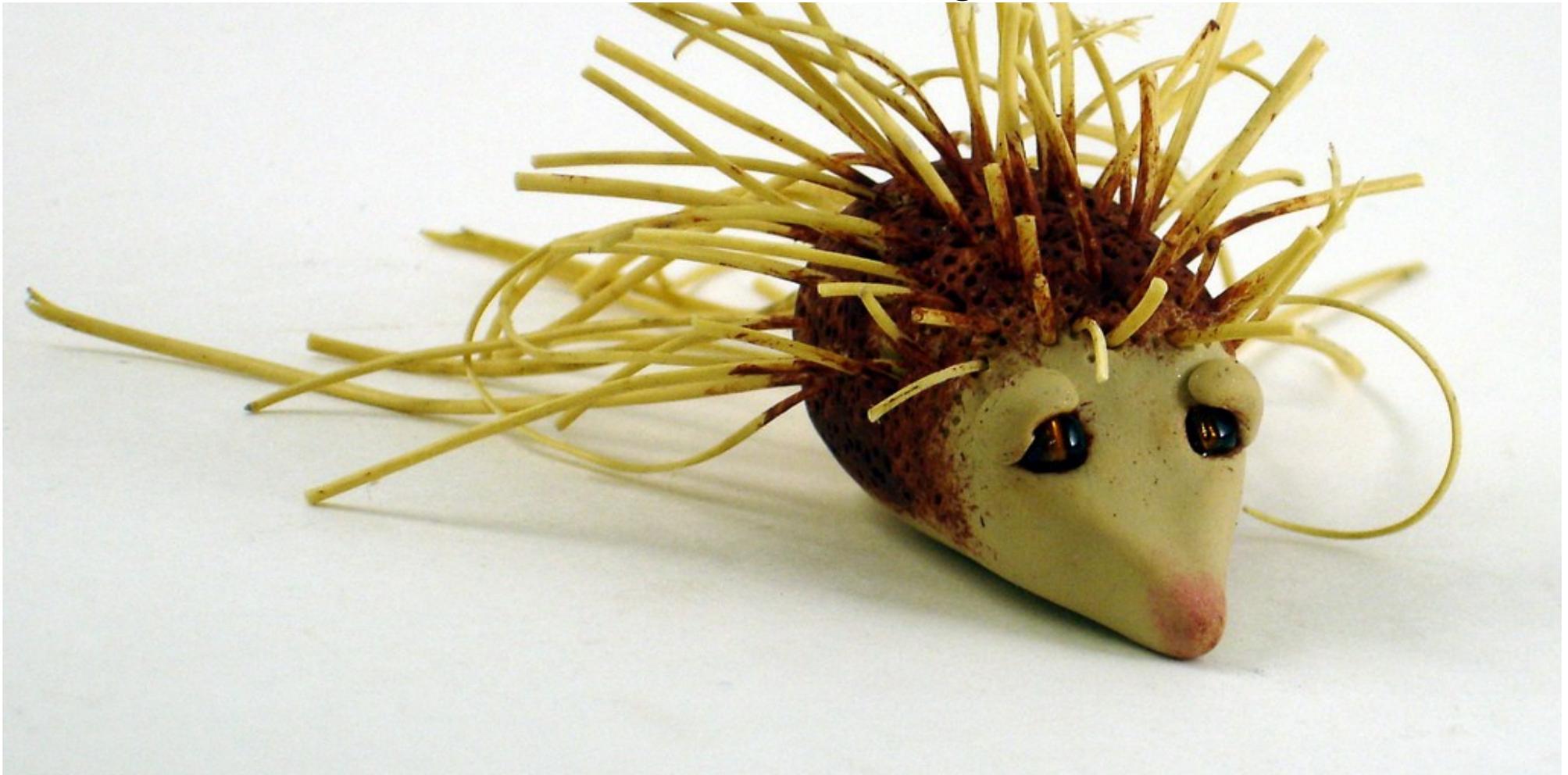
Google Search I'm Feeling Lucky

Adriana

Porqpine

J.M. Pujol and P. Rodriguez

"Towards Distributed Social Search Engines", in WWW '09



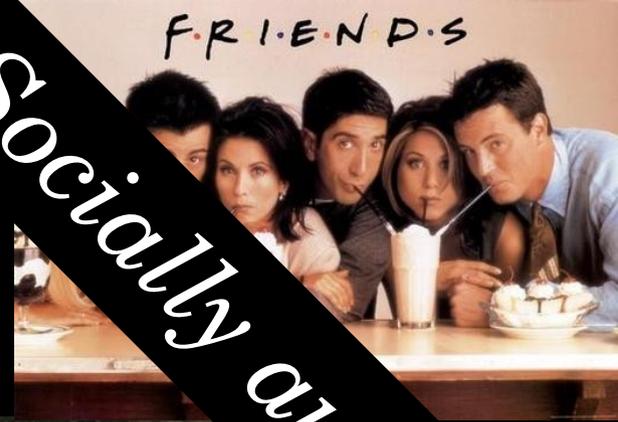
Context-aware

Stand-alone



Personalized

Socially aware



Lazy collaboration

Distributed

Cost effective



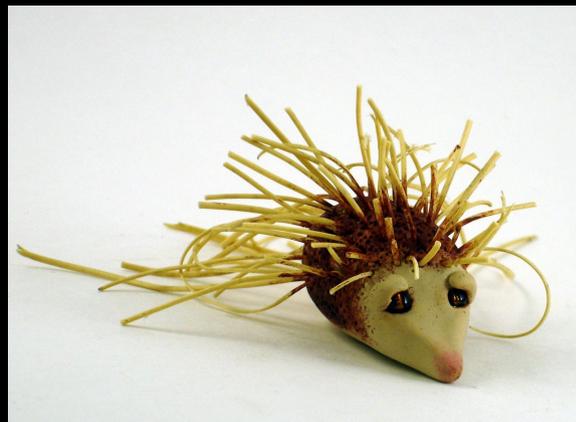
Can co-exist



Privacy-preserving

WHAT IS PORQPINE?

- Distributed social web search engine
- Locally caches the page & records user interactions (e.g., bookmarking).
- Searches by querying local caches of a user's friends
 - Pages that friends have “interacted with” are ranked higher
- It uses a proxy masking the identity of the friend



Web [Images](#) [Maps](#) [News](#) [Video](#) [Gmail](#) [more](#) ▼jmpujol@gmail.com | [Web History](#) | [My Account](#) | [Sign out](#)

Google™

karting

Search

[Advanced Search](#)
[Preferences](#)

Results provided by Porqpine

currently you have 11 persons in your social circle
more people better results, please spread the word!Top 10 of 48 results for *karting* in 0.77146sWeb [Video](#) [News](#) [Maps](#) Results 1 - 10 of about 8,660,000 for **karting** [[definition](#)]. (0.20 seconds)[UK Karting - www.karting.co.uk](#) Comprehensive information on **karting** in the UK. News, race dates, results, information, links, classified ads and more can be found at **UK Karting** ...[www.karting.co.uk/](#) - 76k - [Cached](#) - [Similar pages](#) - [Market Place](#)[Tracks Directory](#)[Notice Board](#)[Karts & Karting](#)[Race Results](#)[Events Calendar](#)[News](#)[Companies Directory](#)[More results from karting.co.uk »](#)[UK Karting - Tracks Directory](#) The UK's No.1 Indoor **Karting** Company. Amazing new track in North London! Here is the complete listing of all tracks in the UK **Karting** database. ...[www.karting.co.uk/tracks/](#) - 287k - [Cached](#) - [Similar pages](#) - [Kart racing - Wikipedia, the free encyclopedia](#) **Kart** racing or **karting** is a variant of open-wheel motor sport with simple, small four-wheeled vehicles called **karts**, **go-karts**, or **gearbox/shifter karts** ...[en.wikipedia.org/wiki/Kart_racing](#) - 64k - [Cached](#) - [Similar pages](#) - Video results for **karting**[Karting race of Prost and Senna 1993](#)
14 min
[video.google.com](#)[karting kart crash](#)
2 min 45 sec
[www.youtube.com](#)[Karting1.co.uk - Karting News and Tips from Kart Racing Experts](#) Provides exciting **karting** videos, latest **kart** racing news and hot **kart** driving and technical tips.[www.karting1.co.uk/](#) - 26k - [Cached](#) - [Similar pages](#) - [WKA - World Karting Association - Largest sanctioning body for \(go ...\)](#)

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Todo tipo de Accesorios.
[www.Kit-kart.com](#)[Calendario Temporada Indoor Karting](#)[http://www.indoorkartingbarcelona.com/Castellano/_calendario/calendario.html](#)Calendario Temporada Indoor **Karting** This page requires frames, but your browser does not support them.[Karting Sant Feliu De Llobregat](#)[http://www.paginasamarillas.es/karting_sant-feliu-de-lobregat_577_339.html](#)...**Karting** Espaa / **Karting** Barcelona / **Karting** Sant Feliu de Llobregat Mi anuncio en PaginasAmarillas.es Resultados:
1Karting?en Sant Feliu De Llobregat INDOOR **KARTING** BARCELONA **KARTING** KART: PISTAS...Queries: **karting sant feliu -josep membrillo,karting sant feli llobregat**["Indoor Karting Barcelona" Sant Feliu de Llobregat: Karting & Deportes & Aventura en Sant Feliu de Llobregat](#)[http://www.lovento.com/es/lugares/espana/sant_feliu_de_lobregat/deportes_salud/karting/indoor_karting_barcelona/](#)...Indoor **Karting** Barcelona" Sant Feliu de Llobregat: **Karting** & Deportes & Aventura en Sant Feliu.....Sant Feliu de Llobregat Deportes & Aventura **Karting** Indoor **Karting** Barcelona Aqu...Queries: **karting sant feli llobregat**[Suzuki Hayabusa Powered Go-Kart and Smart Fortwo](#)[http://www.ridelust.com/hayabusa-powered-go-kart-and-smart-fortwo/](#)...image what its like to swap out the regular **kart** motor with a 1300cc Suzuki Hayabusa powerplant.....padraic2112 on September 29, 2008 Found this today, from **Kart** Hayabusa, via Ride Lust, by way...[MarcaPlayer](#)[http://www.marcaplayer.com/](#)



Context Overload





≠





Mobile phones are “personal”

Mobile users tend to seek “fresh” content





Where is the nearest florist?



Where is that really cool cocktail bar I went to last month?

What about discovery?



ANSWERING MACHINES



...DO YOU
HAVE ANY
THAT CAN
MAKE DECISIONS?



What about information to help me decide?



Interesting things close to me?



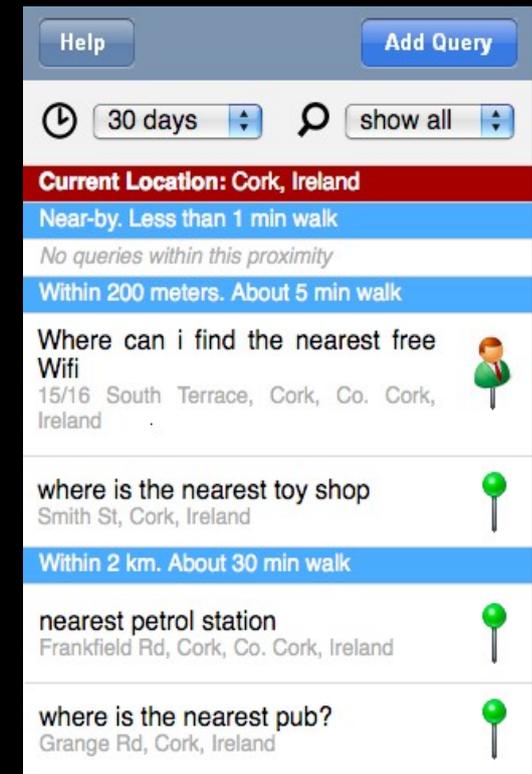
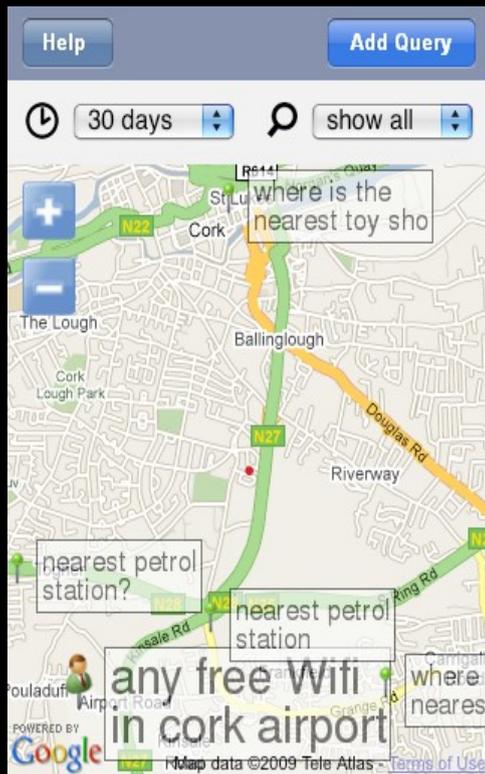
Events near me?

Can we improve the search and discovery experience of mobile users by providing a readily available connection to their social network?

SSB (Social Search Browser)

K. Church et al. "SocialSearchBrowser: A novel mobile search and information discovery tool.", in IUI '10

K. Church et al. "The "Map Trap"? An evaluation of map versus text-based interfaces for location-based mobile search services", in WWW '10



SSB

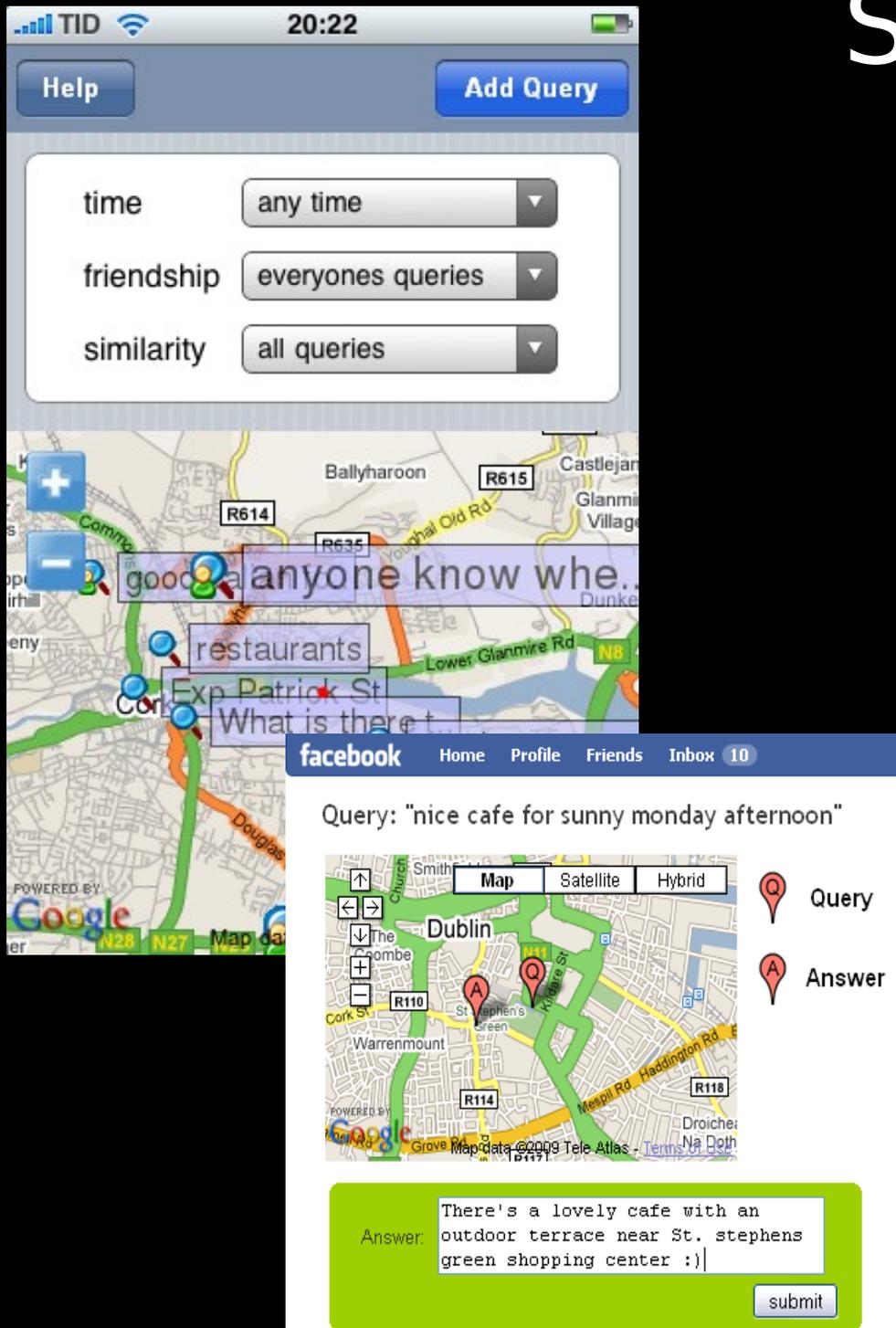
iPhone optimized web-application + Facebook app

When launched it centers on the users current physical location

Displays all queries/questions posted by other users in that location

As users pan/zoom the set of queries is updated

Users can post new queries or interact with queries of others





Apr 2009, 16 users, 1 week, ireland

Live Field Study *in-the-wild*

Sept 2009, 34 users, 1 month, ireland

A tool for helping and sharing.....



A tool for supporting curiosity





.....extension to my social network

But ...

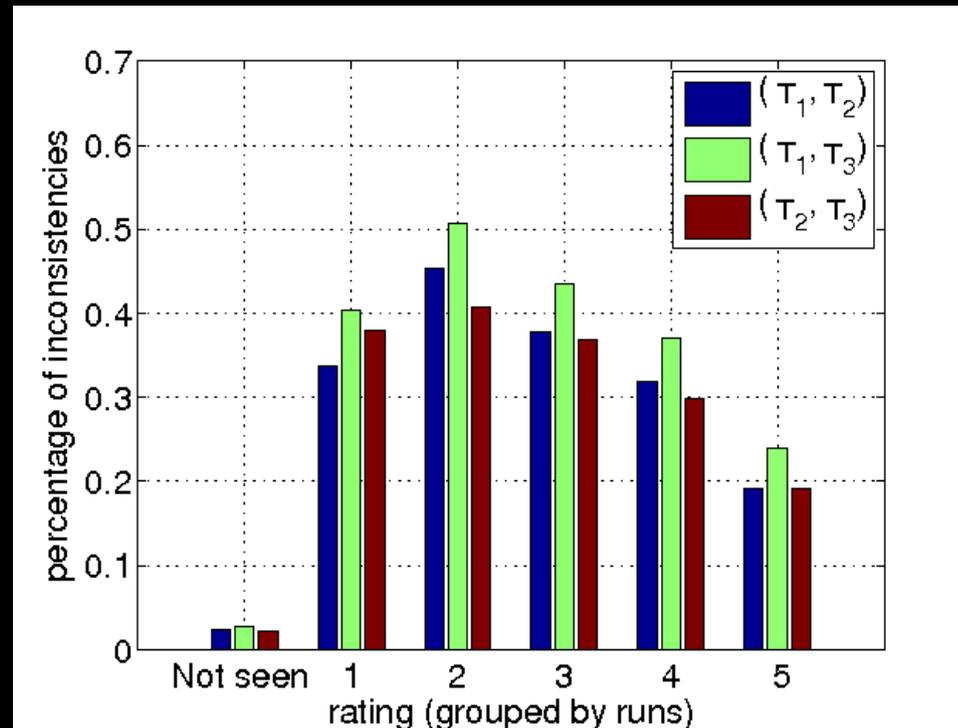
Crowds are not always wise



- Predictions based on **large** datasets that are **sparse** and **noisy**

User Feedback is Noisy

X. Amatriain et al. "I Like It, I Like It Not, Evaluating User Ratings Noise in Recommender Systems", UMAP '09



- *What is the percentage of inconsistencies given an original rating*

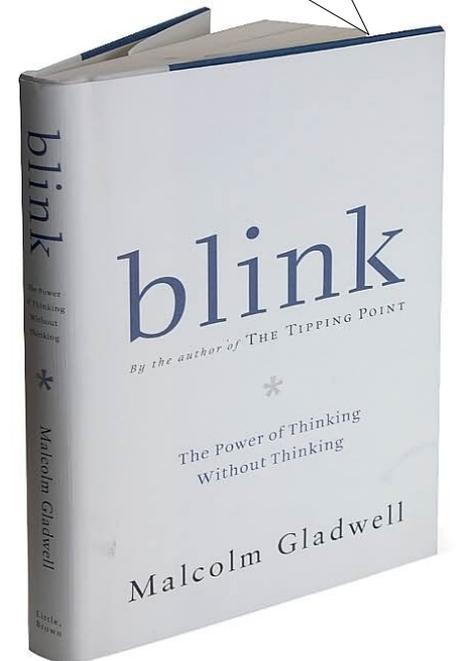


Who Can we trust?

**TRUST US—
WE'RE
EXPERTS!**

**JOHN STAUBER
AND
SHELDON RAMPTON**

*“It is really only **experts**
who can reliably account
for their reactions”*



The Wisdom of the Few

X. Amatriain et al. "The wisdom of the few: a collaborative filtering approach based on expert opinions from the web", SIGIR '09

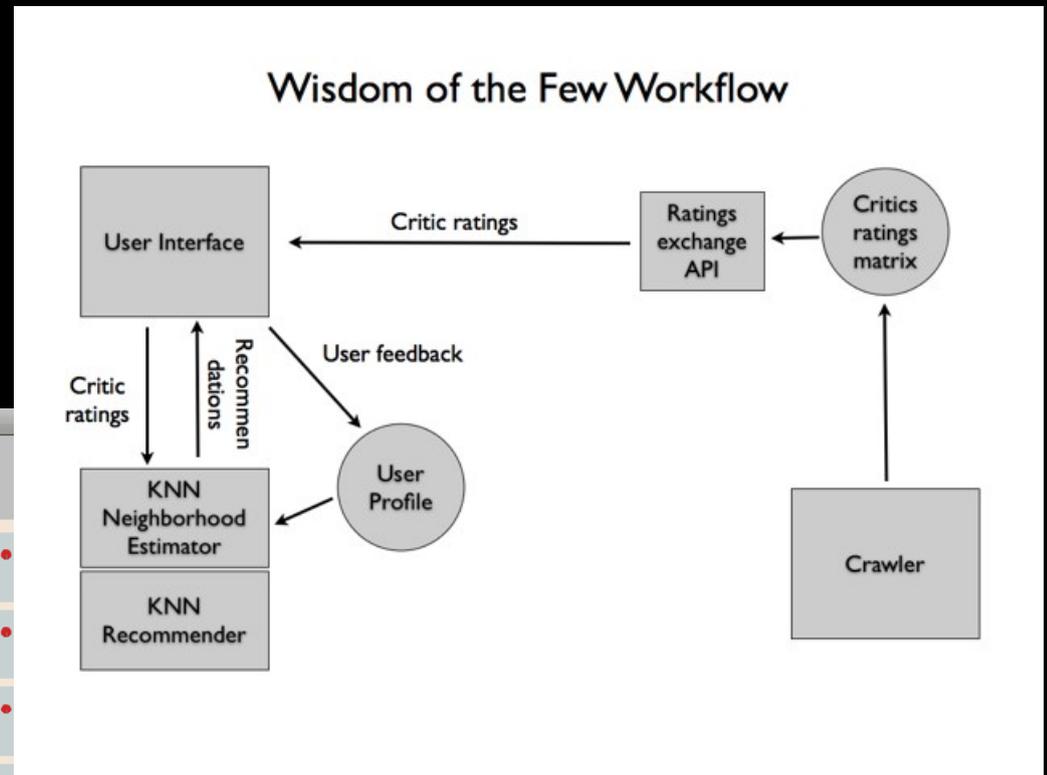
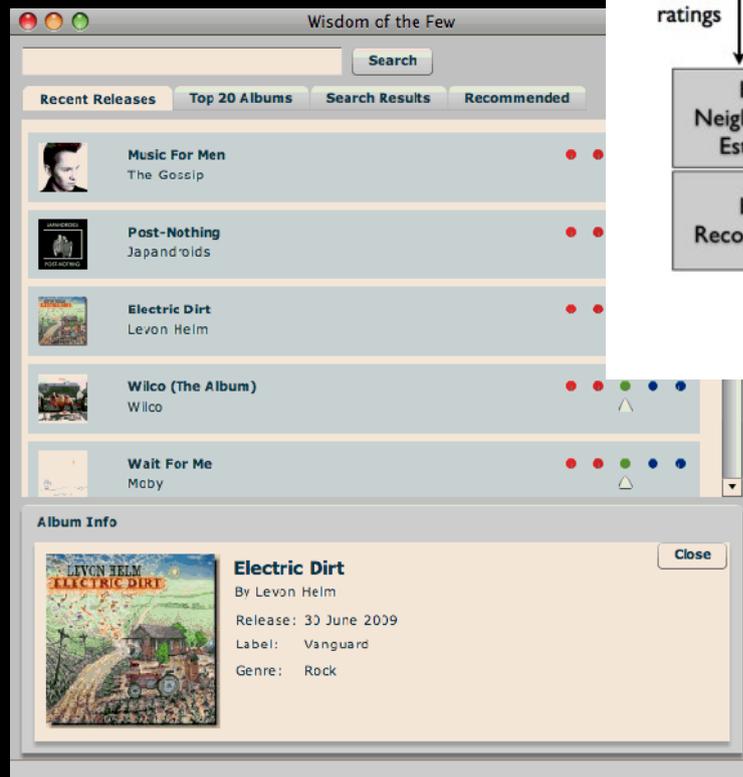


Expert-based CF

- **expert** = individual that we can trust to have produced thoughtful, consistent and reliable evaluations (ratings) of items in a given domain
- **Expert-based Collaborative Filtering**
 - Find neighbors from a reduced set of **experts** instead of regular users.
 1. Identify domain experts with reliable ratings
 2. For each user, compute “**expert neighbors**”
 3. Compute recommendations *similar* to standard kNN CF

Working Prototypes

Music recommendations,
mobile geo-located
recommendations...



Summary

- We all knew about information overload
- But now there is also context overload (especially on mobile)
- One way to deal with both is to tap into the social network
- Many times friends can help but others you need to move into the crowds
- But crowds are not always wise
- Sometimes you are better off with experts

ACM Recommender Systems 2010

Barcelona :: September 26-30, 2010



?+?+?=!

Search SEARCH

ACM Recommender Systems 2010



We are pleased to invite you to participate in this premier annual event on research and applications of recommender technologies.

Menu

- ACM Recommender Systems 2010
- Call For Papers
- Programme
- Registration
- Student Volunteers
- Submission Instructions
- Important Dates
- Organizing Committee
- News

Thank you!

@xamat

are expected to be widely read and cited.

In addition to a regular technical domain, a doctoral consortium, part of this and



Telefónica
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Local Attractions and Venue